



## **Revisiting Inequality: New Data, New Results**

**KLAUS DEININGER**

**AND**

**LYN SQUIRE**

***Distinguished Lecture Series 18***

**A PUBLICATION OF  
THE EGYPTIAN CENTER FOR ECONOMIC STUDIES**

## Contents

---

Foreword	<i>v</i>
Arabic Foreword	<i>vii</i>
About the Speaker	<i>ix</i>
Part I. Revisiting Inequality: New Data, New Results	
1. INTRODUCTION	1
2. THE USEFULNESS OF A CROSS-COUNTRY DATASET ON INEQUALITY	4
3. DESIRABLE FEATURES OF A CROSS-COUNTRY DATASET	11
4. THE EXPANDED DATASET	16
5. THE EVOLUTION OF INEQUALITY	22
6. CONCLUSION AND POLICY IMPLICATIONS	29
ANNEX	31
Part II. Discussion	
SUMMARY OF THE DISCUSSION	41
LIST OF ATTENDEES	52
REFERENCES	55
OTHER ECES PUBLICATIONS	57

## Foreword

---

During my first visit to Rio de Janeiro a few years ago, I was struck by the sight of the high metal fences in front of many of the luxurious multi-story buildings along the lovely beaches of Copacabana and Ipanema. As it turned out, this observation has had its roots in an unusually high crime rate in Rio exacerbated by high income and asset inequality in Brazil. Not only is inequality bad for both rich and poor, but recent evidence suggests that more egalitarian societies grow faster than less egalitarian societies.

This edition of the DLS is about inequality. Deininger and Squire provide a wealth of data on the changes in income inequality for a large number of developed and developing countries over the period from the 1960s until 2001. They point out that while inequality among countries increased in the 1990s, the increase was not significant within countries with the exception of the transition economies of Eastern Europe and the former Soviet Union. Equally important, their analysis suggests that income equality is a good predictor of future economic growth.

Squire's presentation at ECES stimulated extensive discussion, which is summarized at the end of this publication. Perhaps the most important point made by several participants is the dire need for systematic analysis of policies to bring about equality short of outright redistribution of assets. The data and insights in this DLS provide an excellent starting point for researchers to do just that, at the national and regional levels.

Ahmed Galal

Executive Director, ECES

November 2002



ABOUT THE SPEAKER

**Lyn Squire**

*Director of the Global Development Network*

---

Lyn Squire currently serves as the Director of the Global Development Network, an emerging association of research and policy institutes whose goal is to generate and share knowledge related to development. Prior to this, he worked with the World Bank for 30 years where he held several prestigious positions both in Operations and Research. Among his many accomplishments, Dr. Squire established the Economic Research Forum in Cairo when he was Chief Economist for the Middle East and North Africa. He also served as Director of Development Policy in the Office of the Bank's Chief Economist and as Staff Director for the 1990 World Development Report on Poverty.

Dr. Squire has researched and written extensively on a wide array of development related subjects and has co-authored six books. His current area of research focuses on aid effectiveness, inequality and project evaluation.

## PART I

### REVISITING INEQUALITY: NEW DATA, NEW RESULTS

---

#### 1. Introduction

During the last decade, a large and growing literature has focused on inequality from both a conceptual and an empirical perspective. Theoretical contributions have been motivated by considerations such as the scope for an unequal distribution of assets to limit investment in the presence of credit constraints (Aghion et al., 1999) and the potentially greater difficulty of providing public goods in highly unequal societies (Bardhan et al., 1999; Baland and Platteau, 1999; Durlauf, 1996; Benabou, 2000). On the empirical side, several authors conclude that the last decade has experienced a significant increase in inequality in many parts of the world, not just in Eastern Europe (Galbraith, 2002; Birdsall, 2001; Stewart and Berry, 2000; Kanbur and Lustig, 1999). Together, these two strands of literature suggest that inequality is something policymakers should worry about in general, especially now that inequality is on the rise. These broad conclusions (Stewart, 2000) have potentially far-reaching policy implications.

Data on inequality that are comparable across, as well as within countries, can help to determine whether such conclusions are justified, and if so, help explain the reasons for such trends, differentiate more finely across countries, and monitor progress toward improved distribution and greater equality of opportunities. The purpose of the dataset we published in 1996 (Deininger and Squire, 1996) was to provide an initial basis for such an assessment. In this paper, we update the 1996 dataset by drawing on household surveys that have become available in the interim, especially those for developing countries. Before doing so, we first discuss the lessons emerging from the use of these data and the remaining deficiencies encountered in conducting empirical analysis with respect to both quality and coverage of the data. We then describe the coverage and presentation of the new dataset. Finally, we use these data to provide some new insights on inequality trends in the 1990s.

The wide use of the 1996 dataset illustrates that there is apparently great demand for a cross-national dataset on inequality. This makes it imperative to assess whether, as argued by some reviewers, the use of such data is potentially hazardous leading to erroneous results. To accomplish this, we first assess whether the principles used in assembling our original dataset were suitable and whether the data have been used prudently and appropriately. With few exceptions, we find that the criteria used to include observations in our original dataset have been widely accepted. Also, there is little evidence of the data having been used for inappropriate purposes or without the necessary precaution to check the robustness of results. In view of the wide and relatively responsible way the data have been used, we conclude that an update that remedies some of the obvious shortcomings and makes use of the vastly improved data sources now available would be of great use for policy as well as research, especially to assess longer-term trends in developing countries and the evolution of inequality in the 1990s.

Even though there is little doubt that an updated dataset on inequality across countries will be useful, there are a number of areas relating to presentation and documentation where users of our earlier database have made very thoughtful suggestions. We discuss these suggestions as well as the criteria used to expand geographical and temporal coverage of the dataset. The coverage was expanded by integrating household surveys that have become available since our original compilation. This effort yields a new and larger compilation of data (over 1,000 observations) with a much stronger focus on developing countries, greater reliance on primary household data, and a format that allows researchers more scope to select data according to different attributes (definition, coverage, etc.). We anticipate that the additional information in the new dataset will add significantly to its value. For example, information on different income sources at the household level can be used to assess the extent to which incomplete coverage of all sources (e.g., wage income versus total income) will bias measures of inequality, both at one point in time and over time.

In terms of coverage, we compare our dataset to two widely used databases: the World Income Inequality Database (WIID) compiled by UNU/WIDER, and a dataset on wage

inequality compiled as part of the University of Texas Inequality Project (UTIP). The UNU/WIDER database is an extension of our 1996 database, undertaken with the primary goal of expanding coverage. We show that, despite an impressive increase in the number of observations (from 2,600 to 5,300), many of these additions are multiple observations for the same country/year, or low-quality observations. This implies that the net gain in high-quality, unique country/year pairs is quite limited. Moreover, our expanded dataset actually has superior coverage for the 1990s. Use of manufacturing wage data assembled by the United Nations Industrial Development Organization (UNIDO) allows the UTIP to achieve much greater coverage. However, not surprisingly, in view of the limitations of wage data, these trends are significantly different from those emerging from our dataset which focuses on total income.

Having laid the foundation in terms of data, we explore changes in the Gini index and the share of real income received by different groups in the population between 5-year periods. We also examine long-term trends in inequality (20-30 years) and the evolution of inequality in the 1990s, which is the most hotly debated issue. Doing so reveals considerable heterogeneity in the evolution of inequality, producing results that are significantly different from those reported in the literature (Cornia and Kiskii, 2000; Galbraith, 2002). While the data confirm a sharp increase in inequality in Eastern Europe that has, in many cases, made the bottom deciles worse off, we do not find evidence that changes in inequality for the remainder of countries in the 1990s were sharply different than those experienced in earlier decades. This suggests that consistent data on inequality can provide useful information that in some cases runs counter to popular opinion.

In the next section, we review the criteria used to include observations in the dataset, the uses made of the dataset, and the extent to which researchers have been aware of deficiencies remaining in the data and used appropriate robustness checks. Section 3 evaluates the evidence supporting the claim that secondary datasets are of questionable value for the empirical analysis of inequality. Also, this section draws on the many useful comments from users of the original database suggesting ways its construction and presentation can be improved. Section 4 presents the new database. It discusses coverage and provides a broad overview of inequality across



regions and time. It also compares our database with those of UNU/WIDER and UTIP. Section 5 presents a simple statistical analysis of changes and trends in inequality with emphasis on the 1990s, and we compare our results with those emerging from the UNU/WIDER and UTIP databases. Section 6 draws several implications for policy and future research.

## **2. The Usefulness of a Cross-Country Dataset on Inequality**

Given the difficulties involved in ensuring consistency in definition, as well as outliers' sensitivity to conclusions drawn from the relative paucity of observations within each country, the case for a cross-national dataset is controversial. To assess whether an update of our earlier dataset can be justified, we discuss the extent to which the earlier dataset has added value to the profession and whether the data have been used appropriately and prudently. Assessment of the empirical literature suggests a positive answer to these questions. In particular, the criteria we established for including data points in the dataset and the resulting significant decrease in the number of high-quality observations have been almost universally accepted. Researchers have been aware of the fact that without using the primary data only certain questions can be explored, and they have recognized that results have to be checked for robustness. Moreover, while there are areas undoubtedly in need of improvement, there is little evidence to suggest that such data have led to erroneous results. Developing countries should be encouraged to use micro data, like those available from the Luxembourg Income Study (LIS) database for the countries belonging to the Organization for Economic Cooperation and Development (OECD), complemented by other evidence. However, cross-country datasets on inequality can make a valuable contribution in the absence of micro data and help to strengthen demand for more.

### ***Quality Standards***

To arrive at the 1996 dataset, we reviewed more than 2,600 observations on inequality. We also suggested three minimum criteria for quality, namely that the data be based on: (i) actual observations of individual units drawn from household surveys; (ii) a representative sample covering all of the population; and (iii) comprehensive coverage of all income and/or expenditure sources. Application of these three criteria led to a dataset comprising 693

observations. These criteria have been widely accepted, although a number of contributions have suggested that we failed to include specific types of information, thereby greatly impairing the ability to make inferences on longer-term developments of inequality in a larger number of countries. Suggestions regarding this issue include the inclusion of synthetic estimates (Pyatt, 1999), incorporation of administrative data and especially tax records (Atkinson and Brandolini, 2001), and use of different inequality concepts based on earnings (Galbraith, 2002). Each of these issues is discussed below.

In 1996, we argued for the exclusion of synthetic estimates of income distribution in developing countries that were based on national accounts data and assumptions concerning the functional distribution of income or on extrapolations from small surveys to the national level. We do not think this position has to be modified for two reasons. First, there is no way to compare these constructions with estimates based on household surveys because researchers only resort to such constructions when estimates from household surveys are not available. Second, and more importantly, appropriately documenting the process followed in the construction of such figures is virtually impossible on a large scale. While construction of synthetic measures may be informative and valuable in the context of single-country research, doing so on a large scale carries very high costs. Such estimates, while “noisy” in the best of cases, will have a large impact on long-term trend analysis, implying that the return is also likely to be low.

A similar argument has been made regarding the inclusion of evidence from income tax records and other administrative data (Atkinson and Brandolini, 2001). This is likely to be feasible for OECD countries but not for developing countries where, in view of the limited scope of formal tax systems, such records (presuming they are available) may be at best incomplete and at worst misleading. Similarly, ensuring comparability of tax records over time appears a daunting task with limited returns compared to expansion of the database in other directions. In some countries, tax records may provide useful information and may be easily available, in which case there is nothing wrong with including them, with appropriate caveats, in a

comprehensive database.<sup>1</sup> However, they are unlikely to provide a reliable source for analysis of income distribution in a multi-country context, especially for developing countries.

The University of Texas Inequality Project is the one contribution that has proceeded farthest with constructing an index of inequality that does not satisfy our criteria (Galbraith, 2002).<sup>2</sup> The Project uses UNIDO data on manufacturing wage inequality across sectors to construct Theil indices for a large number of countries. The following reasons led us to reject such an approach, especially for developing countries which are our prime interest: wage income is only an element of total income; the wage data are for industrial sectors rather than for households; and it is difficult to determine whether changes in wage inequality are due to entry into or exit from the labor force or changes in the distribution of incomes received. We elaborate on these points in section 4 when examining the UTIP database in more detail.

While all of this suggests that there is no need to modify the criteria applied, there are some errors and inconsistencies that are corrected in the revised compilation. For example, we have corrected deficiencies such as the reporting of inequality across families rather than households in the US, and individual country observations that had been inadvertently dropped. Following the suggestion of Pratt (1999), differences between our dataset and that prepared by Chen and Ravallion<sup>3</sup> have also been eliminated by including all observations from the latest version of the Chen-Ravallion compilation. All observations from the UNU/WIDER income inequality database have also been included with appropriate qualifications regarding quality.

### ***Dealing with Measurement Error***

The above notwithstanding, several critics have expressed concern regarding the measurement error remaining in the dataset. Clearly, a cross-country dataset of the type we put together can

---

<sup>1</sup> Following this suggestion, we have included the data available from the UN compilations. Atkinson and Brandolini note that we failed to take account of the observations contained in United Nations (1951) and the United Nations Economic Commission for Europe (1957). While the first falls largely outside the period of our exercise (we only reported information prior to 1950 for two countries), both clearly should have been consulted. For the new dataset, however, we focused solely on observations for 1960 and after.

<sup>2</sup> More information on this project as well as the data generated is available at <http://utip.gov.utexas.edu>.

<sup>3</sup> These data are also on the web (<http://www.worldbank.org/research/povmonitor/index.htm>).

not be applied indiscriminately to any type of problem. Even when the data are used for appropriate purposes, remaining weaknesses in the database imply that it would be desirable to explore the robustness of results. In fact, we cautioned researchers interested in using the dataset for cross-country analysis regarding a range of definitional and measurement problems. For example, we noted that “variations in the definition of the variables used to measure inequality – gross income or net income, income or expenditure, data per capita or data per household – can seriously affect the magnitude of the indicators of inequality and undermine the international and intertemporal comparability of the data” (Deininger and Squire, 1996, p. 566). Therefore, we proposed a two-step strategy. First, as previously noted, we identified a dataset in which every observation met three requirements. Second, because of remaining differences in definitions, we suggested that researchers examine whether their results hold for the raw data in our preferred dataset, for data that have been adjusted for differences in definition (especially between income-based measures and expenditure-based measures) in various ways, and for data consistently based on a common definition.

To examine whether researchers heeded our warnings, we reviewed papers that made use of our data and determined that they have been used for two main issues. On one hand, several papers examine the determinants of inequality, largely using cross-sectional data. A second set of papers focus on the impact of inequality on growth, an issue that can be approached in a number of different ways, using both within-country and cross-country analyses. One conclusion is that the data have almost exclusively been used for cross-country analysis, the intended purpose of the dataset.<sup>4</sup> We stress this point because Atkinson and Brandolini (2001) rightly argue that using the earlier dataset for within-country analysis would be hazardous and that (especially for OECD countries) researchers interested in such analysis should draw on a wider variety of country specific data sources that are relatively easily available, an assessment with which we completely agree. Indeed, most of the examples presented by Atkinson and Brandolini show that the

---

<sup>4</sup> Of the articles in the Social Science Citation Index that cite our 1996 paper, 8 conduct single-country analysis. All of them make use of country-specific information on inequality and only refer to the 1996 data in passing or to provide context.

possibility of misleading results concern single-country analysis for OECD countries. Some of their key points draw on single-country analysis for the Netherlands, the UK, the US, and Canada. They correctly point out that measurement error can seriously distort inequality trends in specific countries, that information not covered in our database (e.g., tax records) can help our understanding of the evolution of inequality in a particular country, and that information outside the period covered by our dataset can provide important historical context. While we agree with all these points, they are not relevant to the multi-country analysis for which the data were assembled and for which they have been used.

A second issue is whether researchers have been aware of the need to check the robustness of their results given the remaining measurement errors and differences in definition. Also, given the criticism that one “cannot be sure that results from comparative or econometric analysis using such data are genuine or a product of data differences” (Atkinson and Brandolini, 2001), it would also be of interest to assess what can be learned from the results of different analyses. We find that, by and large, researchers have been cognizant of the limitations of the data, adjusted for differences in definition, and conducted the recommended robustness checks. Of 22 papers referenced in the Social Science Citation Index, which clearly made use of our dataset, 18 explicitly discussed measurement issues, indicating that they were well aware of remaining measurement errors. Whether they acknowledged remaining measurement errors or not, most researchers (19 out of 22) used our preferred dataset. Also, several of the papers (11) adjusted Gini indices for differences between expenditure-based and income-based surveys, employed controls for different definitions, or purged the data to eliminate within-country changes in definition. Thus, the vast majority of researchers using the Deininger-Squire data demonstrated their awareness of the measurement problems and many sought to reduce remaining problems of data quality.

Results from empirical studies using our data suggest that analysis of changes in inequality over time is obviously affected by differences in definition, analysis of the impact of inequality in the cross section is relatively robust to data quality issues, while panel analysis is clearly more

susceptible to measurement error. We discuss these findings in turn. First, three authors find that controlling for the difference between income and expenditure is important: the results indicate the Gini index measured on income is 6.9 points (Alderson and Nielsen, 1999), 5.5 points (Tanninen, 1999), and 5.0 points (Barro, 2000) higher than that based on income. Controlling for other differences (household/individual, net/gross) does not appear to be statistically important. Similarly, we found that one of our results (with inequality as the dependent variable) changed when the raw Gini index was replaced by one that adjusted for differences between income-based and expenditure-based surveys (Deininger and Squire, 1998). This suggests that some effort should be made to put income-based and expenditure-based Gini indices on a common footing when inequality is the dependent variable. When Li, Squire, and Zou (1998) construct an “adjusted” Gini index that corrects for the difference between income-based and expenditure-based coefficients, and control for definitional differences by introducing dummies, none of the dummies, including that on the income/expenditure difference, is significant. Barro (2000), on the other hand, finds that adding additional observations of lower quality has a very limited impact on results.<sup>5</sup>

Second, results of cross-sectional studies with inequality as an independent variable seem to be relatively immune to the various degrees of measurement error found in different datasets. Smith (2001) conducts a direct test of this trade-off when he replaces our preferred dataset with an earlier dataset used by Alesina and Rodrik (1994). His results remain unchanged despite that fact that the Alesina-Rodrik data contain many observations that were dropped for the Deininger-Squire dataset. Forbes (2000) reaches a similar conclusion in a cross-sectional analysis using growth over 30 years as the dependent variable where results are robust to introducing additional data on inequality that are of lower quality. Only Atkinson and Brandolini’s replication of a

---

<sup>5</sup> Specifically, Barro (2000, p.14) states: “As an attempt to expand the sample size – even at the expense of some reduction in accuracy of measurement – I added to the Deininger-Squire high-quality set a number of observations that appeared to be based on representative, national coverage.” Whether or not one agrees with Barro’s expansion, his approach is exactly right in recognizing the trade-off between measurement accuracy and sample size. He finds that the estimated coefficient on a dummy variable to indicate whether the observation comes from the high-quality dataset or not was “essentially zero” (Barro, 2000, p. 26). In other words, in this instance the expansion in the sample achieved by including observations that fail our three tests was not offset by measurement error.

result by Romer and Romer (1998) finds “significant” differences by using different types of data. They replicate indicating a strong and positive association between inequality and average inflation for a sub-sample of 16 OECD countries. While use of our data confirms the result (with a coefficient on inflation of 0.68 and a t-statistic of 2.11), use of a different dataset on inequality (Gotschalk and Smeeding, 1997) from different years results in the coefficient losing significance (0.65 with a t-statistic of 1.35), even though (as they reported in a footnote), the coefficient remains significant at the 10 percent level if data for the same years are used. Even though this illustrates that definitional issues are important, we do not think it warrants the sweeping conclusion that the “noise” in secondary datasets is of sufficient magnitude to undermine the credibility of any empirical results reached through the use of those data (Atkinson and Brandolini, 2001). Indeed, in view of the fact that our dataset for OECD countries included several easily corrected inaccuracies, the strength of their example is further weakened. We conclude that if this is the most compelling example Atkinson and Brandolini could find to support their point, then we are reasonably assured of the general usefulness of our dataset. Indeed, the lesson that we take from this example is that small samples (only 16 countries) have serious limitations for empirical analysis.

Finally, the situation is quite different for panel data, as is most clearly illustrated by the shift of the coefficient on inequality from insignificant to significant and positive (Forbes, 2000).<sup>6</sup> Tests for further reduction in measurement error do not produce different results, suggesting that the switch from low-quality to high-quality data is important in this instance but further refinement is not. A cautious summary of the above evidence yields three observations. First, there is no evidence that the measurement error implied by the use of the Deininger-Squire dataset is affecting results of cross-sectional analysis in which inequality is introduced as an explanatory variable. Second, data quality clearly matters more in panel data with inequality as an independent variable, implying that more care is needed and great improvements can be

---

<sup>6</sup> She notes that “It is not surprising that minimizing measurement error is more important in panel than cross-country estimation; the correlation between the random term in initial inequality and disturbance in the growth regression would be larger over 5-year than 30-year periods” (Forbes, 2000, p. 881).

obtained from expanded data. Third, given that measurement error will always bias results toward zero (a result that is most clearly illustrated by Banerjee and Duflo, 2000), the most desirable strategy to gain new insights on inequality, especially for developing countries, is to add new data points. This is particularly relevant in view of the limited scope for improving the quality of past data. While primary data, rather than a secondary dataset, will have to be used for in-depth longitudinal analysis within a country,<sup>7</sup> there are still many areas where expanding the previous dataset can add significant value and help derive substantive conclusions and hypotheses for further research.

There are a number of implications for a probable expansion, as well as for the analysis that is possible with an expanded dataset. First, the most promising area to expand existing studies of the determinants of inequality is data on inequality during the 1990s, especially for developing countries, in order to explore the relationship between “globalization” and inequality and to assess whether inequality is increasing. Second, the 1996 dataset was still severely limited by the extent to which it allowed the construction of a panel of observations on inequality that would be consistently-defined within countries. As noted by Forbes, “regional coverage is far from representative, with no countries from sub-Saharan Africa and nearly half the sample from the OECD” (Forbes, 2000, p. 873). Thus, providing more and consistently-defined evidence on developing countries would seem to be very important.

### **3. Desirable Features of a Cross-Country Dataset**

This section deals with the expanded dataset, focusing on sources as well as presentation, and then discusses some of the remaining quality issues that need to be accounted for in its use and further development. Beyond the issue of consistency in definitions which was highlighted earlier, non-sampling errors, changes and improvements in survey methodology, questionnaires, and sample size, as well as consistency with national accounts, are other issues that have been

---

<sup>7</sup> The observation that “questions about the sort of data that might be included in any compilation, and the checks it should be exposed to, must ultimately depend on the uses envisaged” (Pyatt, 1999, p. 1) is of particular relevance for such longitudinal analysis.



raised. We discuss how we have dealt with each of these problems and suggest areas for improvement.

### ***Coverage and Criteria for Inclusion and Exclusion***

To expand coverage of our earlier dataset, we used information from 168 expenditure and 264 income surveys in developing countries.<sup>8</sup> The main source for our update is unit record data from household surveys. South and East Asian countries have a long tradition of such surveys that aim to comprehensively measure household welfare (as approximated by expenditure) and the new dataset builds on these in virtually all cases. In Latin American countries, surveys that emphasized incomes in the formal sector, and which were initially often restricted to urban areas, have been common for quite some time.<sup>9</sup> In this region, the main focus of the revision and expansion of our dataset is to include more recent data points, especially in countries that have only recently started to undertake household surveys with national coverage. Over the last decade, comprehensive surveys as a means of monitoring the well-being of the population have become widely used in the developing countries of Africa and Eastern Europe. Given the limited coverage and low quality of surveys in these two regions before the 1990s, an expansion of the database offers the greatest scope for increased coverage and improved quality. Access to micro data constitutes a huge improvement over the earlier need to rely on aggregate information, often in tabular form, to make inferences on distribution of income and expenditure. Micro data also allows us to provide information on the income of different deciles on a more consistent basis.

In addition, users of the dataset have provided us with several important suggestions for improving the database on inequality, many of which can be undertaken at a negligible cost. These include the elimination of several mistakes in the original dataset, provision of more information on the sources and characteristics of each observation, and a format that allows researchers to be fully aware of the nature of any particular sample. Various reviews (Pyatt, 1999; Atkinson and Brandolini, 2001) have pointed out that a dataset of this nature should be

---

<sup>8</sup> In addition, we use the LIS data to compute a total of 122 Gini coefficients (based on different definitions).

<sup>9</sup> While similar surveys have been undertaken in Eastern Europe, the differences in concepts used and lack of access make these of limited use.

cumulative and argued for better and more systematic documentation, in particular, a more consistent ranking of data quality. In response, we have included all the previously published datasets, including the compilation by Ravallion and Chen, the UNU/WIDER database and a quality ranking.

The use of a quality ranking allows us to abandon the concept of a “high-quality” dataset and instead allow the user to choose all data points with a specific definition and/or those that satisfy a minimum quality standard for different countries and years. Instead of a zero/one classification, we summarize key features of data quality by providing a quality ranking on a scale of 1-5 for each of the surveys included. The rankings are: 1 for cases where we could draw on original micro data; 2 for cases where somebody else had access to micro data to compute a Gini index; 3 for cases where a Gini index based on a household survey is reported by somebody but it was impossible to obtain a trace to the original micro data; 4 for cases where measures of inequality were computed based on group data using a parametric extrapolation such as the one provided by POVCAL; and 5 for cases that do not meet the criteria we used in our 1996 article with respect to coverage of population and income.

Although still subjective, these rankings allow the analyst to pick the highest quality observation for each period or to establish variable cut-off points and test the robustness of any result against these depending on the problem at hand. This ranking explicitly takes account of the fact that it will be next to impossible to improve the quality of data that were collected too far back in the past and where the only decision is whether or not to include a specific data point. Clearly, even for the data that are deemed acceptable, the average rating improves over time, reflecting the improvements made in conduct and documentation of household surveys. Of course, exclusion of observations that do not correspond to certain minimum standards (e.g., reporting of home consumption) will result in a significant reduction of country/year observations, highlighting that the main improvement of data quality will come from the addition of new material over time. Letting users decide which data to use is particularly appropriate

since there may be a number of data points (with different definitions) that satisfy our three minimum criteria.

### ***Remaining Issues***

While this methodology constitutes a significant improvement, it can not eliminate all the problems remaining in the data or deal with all the issues raised in discussions of our earlier database. In fact, consistent use of micro data in the update more systematically exposes the shortcomings in the underlying datasets. We now discuss several remaining issues.

The first issue relates to survey methodology. While the methodology for some critical issues in the construction of consumption aggregates is well-established (Deaton and Zaidi, 2000), the data to do so may not be available. Problems are likely to arise regarding the availability of information on home consumption, the treatment of household-based enterprises, the imputation of rental values to owner-occupied housing, the distinction between recurrent expenditure and investment, and so on. If there is a tendency for survey methodology and questionnaire design to improve over time, this is likely to bias measures of inequality (Pyatt, 1999). Minor changes in survey methodology are almost impossible to detect without detailed analysis of the primary source but may not be a major source of bias. While we can use the surveys where such information is available to illustrate the impact of missing information on measured inequality, it is nearly impossible to adjust such figures in order to, for instance, make a survey that does not include information on home consumption comparable to one that does.<sup>10</sup> This may not cause many problems in cases where data are consistently defined within one country, but warrants attention in cases where improvements in survey techniques have led to

---

<sup>10</sup> Obviously, as the share of expenditures devoted to food declines with higher income levels, the importance of omitting home produced foods will be the more important the lower the levels of per capita income. A systematic comparison of the impact of omitting home production on measured levels of welfare and inequality would entirely be feasible with the data at hand but transcends the scope of this paper and is thus deferred to a later stage.

shifts in questionnaire coverage within one country.<sup>11</sup> Below we mention some of these issues which may merit further research. To deal with this, we have, for the surveys available to us, identified the main components of expenditure and income respectively, without using this information in a systematic manner in the dataset.

Even if coverage in terms of different components of household income or expenditure is satisfactory, data quality may still be a problem, especially in early surveys where insufficient attention may have been paid to careful data entry and cross checks of the information. In cases where the number of consumption or expenditure items is large, replacing clearly identifiable outliers<sup>12</sup> with the mean for this sub-group should not pose much of a problem. This does, however, require availability of the original dataset. When this is not the case, use of “top coding” and “bottom coding” can have a significant impact on the resulting inequality coefficients.<sup>13</sup> Therefore, we adhere to the original data as much as possible.

Related to this, it has been noted that the sample size may be a significant factor. For 18 surveys from Latin America, allowance for sample size leads to a slight modification in inequality rankings (Szekely and Hilgert, 1999). In other regions, especially Africa, where the desire to have regionally representative estimates has led to the adoption of large sample sizes, this would appear to be even less of an issue and non-sampling error is generally considered to

---

<sup>11</sup> It has often been noted (e.g., Szekely and Hilgert, 2000) that failure to include the implicit value of home-produced food will result in considerably higher levels of inequality and may be responsible for at least part of the much higher levels of measured inequality that are regularly observed in Latin America as compared to other countries. Our data allow to not only confirm this result but also to obtain an estimate of its likely importance at different levels of per capita income or expenditure in a country.

<sup>12</sup> Use of “999999” for missing values is a common error that increases reported expenditures and which can be corrected quite easily.

<sup>13</sup> The LIS cuts off any observations greater than ten times the median and less than one percent of the mean. This can have non-negligible impacts, as illustrated by the case of Mexico in the 1980s and 1990s where use of the raw data produces Gini indices in the lower 50s, as compared to estimates based on the LIS data which are in the upper 40s.

be the main problem (Grosh and Munoz, 1996).<sup>14</sup> Sampling does become an important concern once regional or rural-urban disaggregation is envisaged. To deal with this issue, we provide information on sample size wherever possible and note that the sample for most of the surveys is sufficiently large to allow analysis of inequality at the level of regions within countries.

Other concerns that have been raised is the consistency between national accounts data and data drawn from household surveys as well as the scope to improve both sources through attempts to combine them. This is of particular importance if the goal is to test the relationship between growth in income from national accounts and inequality from household surveys (Pyatt, 1999). We have conducted this comparison for the cases where we have primary household data available, and similar to Ravallion (2000a), we find that, with the notable exception of the transition economies, the growth rate in per capita consumption from the national accounts is an unbiased estimate of the growth rate of mean income from household surveys, even though the levels of both may diverge sharply. Further exploration of this issue by national statistical agencies should be encouraged.

#### **4. The Expanded Dataset**

This section introduces the expanded dataset. It describes the coverage of the new dataset, illustrates its usefulness with a simple descriptive analysis by region and period, and compares this dataset with that of UNU/WIDER and UTIP. Availability of household level information allows us to empirically assess this survey's very limited correspondence between data on wage distribution and overall inequality, further reinforcing the need for minimum quality standards if inferences are to be made about country-level inequality trends.

---

<sup>14</sup> Africa, Ethiopia, Kenya, Nigeria, and Zambia all have samples per survey of around or above 10,000 households and data that cover at least the 1990s. A similar combination of large sample sizes and a relatively long time horizon is also observed in the Czech Republic, Poland, and Romania for Eastern Europe; Brazil, Chile, Colombia, and Venezuela for Latin America; Indonesia, Malaysia, and the Philippines for East Asia; and Bangladesh, India, Pakistan, and Sri Lanka for South Asia. Although formation of new provinces and districts implies that some effort may be needed to ensure regional comparability over time, the micro datasets offer scope to compare the evolution of inequality across sub-national units and thus explore the impact of specific policies on inequality within a given macroeconomic policy framework.

### *Coverage*

Table 1 provides statistics on 105 countries with at least 3 observations of acceptable quality available in our database. The mean number of observations per country is slightly above 9 and the average time span between the first and last observation for each country is almost 24 years. The average difference between the minimum and maximum Gini index for each country is 9 points. Note, however, that neither the minimum nor the maximum need occur at the beginning or end of the period respectively as would be implied by an increase or decrease in overall inequality. In contrast, the mean difference between the first and the last observation is much lower, something that is addressed in our analysis of changes in inequality in 5-year averages as discussed below.

Before turning to a substantive analysis of the changes in inequality revealed by the expanded dataset, we compare its coverage to our earlier dataset as well as the recently published UNU/WIDER inequality database and the UTIP database on wage inequality. Since the same survey may have formed the basis for estimates for different population sub-groups or for assessments by different authors that are only marginally different from each other, we report the number of unique country/year observations, noting that for most countries and years there has only been one survey and therefore all estimates of inequality for this country and year are likely to be derived from this one source. The importance of focusing on unique country/year combinations can be illustrated using the UNU/WIDER dataset which contains 5,067 observations.

Eliminating estimates that do not have complete population and area coverage reduces this number to 3,173 observations. Concentrating on unique country/year pairs reduces this number to 1,257 of which 1,133 observations are from after 1959. Compared to the slightly less than 700 observations we considered to be of sufficiently high quality in our original database, our expanded dataset comprises 1,021 such observations.<sup>15</sup> Although our failure to include some of the early observations for quality reasons implies that this number is slightly lower than the

---

<sup>15</sup> Note that, since “acceptable” observations were defined as being unique, each “acceptable” observation in the old dataset corresponds to one unique country/year combination.

number of country/year pairs in the UNU/WIDER database. As we illustrate below, in a number of respects our expanded data may actually be considered superior.

Mean levels of inequality by region and period are reported in Table 2. They show that in the 30 years starting in 1971, inequality of income or expenditure has been highest in Latin America with an average Gini index of almost 50. This is followed by Africa (47), the Middle East and East Asia (40), South Asia (34) and Eastern Europe (29). While there is some variation from period to period, inequality at the end of the 1990s is not very different from inequality at the start of the 1970s in the OECD, South Asia, and East Asia. The regional averages suggest decreases in inequality in Africa and the Middle East, but increases in Latin America and Eastern Europe. The increase in Eastern Europe is especially sharp in the 1990s. Regional averages can be deceptive, however, both because country coverage changes over time and because the experience of individual countries can be disparate. We illustrate with some country-specific evidence from Latin America and Eastern Europe, the two regions that appear to have experienced increased inequality.

While it is well-known that Latin America has some of the highest levels of inequality in the world, the country-level data point toward differences in levels across countries and suggest even further increases in a few of them, something that is of interest as most of the surveys reported herein are based on a relatively consistent set of definitions. Despite the rising regional average, relatively stable (albeit high) levels of inequality are observed in several countries: Barbados, Bolivia, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Jamaica, and Mexico. Indeed, declining levels of inequality are found in a few, mainly small countries: Bahamas, Honduras, Peru, and Trinidad and Tobago. Even though initial levels of inequality were quite high, further increases seem to have occurred in Brazil, Chile, Panama, and Venezuela.

The rise in average inequality in Eastern Europe in the 1990s is reflected in most countries, although even here the variation in country outcomes is pronounced with the magnitude of observed changes varying widely. While Georgia, Russia, and Romania have seen inequality

jump to almost Latin American levels, others such as Bulgaria, Estonia, Hungary, Latvia, Poland, the Slovak Republic, and Ukraine are characterized by an increase of inequality to OECD levels. While some non-reformers such as Belarus have maintained inequality levels at pre-reform levels, relatively modest shifts are also observed in the Czech Republic, Kazakhstan, Lithuania, and Slovenia. One country, the Kyrgyz Republic, even shows a drop in inequality, although this is based on only four observations. Clearly, more detailed analysis of the factors driving this varied experience would be of great interest. The ability to use our data for an assessment that is differentiated by region and source of income should allow some initial progress toward this goal.

### ***Comparison with Other Datasets***

Table 3 compares the number of unique observations (i.e., country/year pairs) that meet our quality standards in the old database, the new database, and the UNU/WIDER inequality database. Compared to the dataset published in 1996, the expansion of coverage implies a clear shift toward developing countries. OECD countries, which accounted for 43 percent of all observations in the earlier dataset, make up only 28 percent in the revised version. This improvement is most noticeable in the case of Africa where the number of country/year observations has more than doubled, from 49 to 101, implying that this continent now accounts for about 17 percent of the countries with data covering a spell of more than 5 years. Within Africa, the number of countries for which any data are available increased only marginally from 30 to 35; at the same time, the number of countries with more than 3 data points has tripled from 6 to 18. Similar improvements are observable in Latin America and in East Asia. The increase in information in the latter is, however, largely confined to countries where such surveys had been undertaken earlier, thus expanding the time horizon of the information available and enabling us to make more robust inferences on inequality trends over time. Coverage, defined in terms of the number of unique country/year observations, also expanded greatly for countries in Eastern and Central Europe with an increase of 60 percent. In this region there are now 18 countries with more than 3 observations and 16 with data that cover a spell longer than 5 years. In contrast, availability of data is still a problem in many countries of the Middle East and North Africa



(MENA), a region which contributes only about 3 percent of the observations in the dataset and in many cases, whatever data are available are not accessible at the household level.

Even though the UNU/WIDER database has a higher number of observations, our expanded dataset contains information on a slightly larger number of countries (137 compared to 134), more countries with 3 or more observations (105 compared to 99), and more countries with a spell longer than 5 years (108 compared to 103).<sup>16</sup> To explore these differences, we illustrate the distribution of observations over time and region in Table 4. We note that the higher number of observations in the UNU/WIDER database compared to ours is due to its “better” coverage of Eastern Europe, the OECD countries, and Africa. For Eastern Europe, the UNU/WIDER data derive from the Transmonee database which we excluded because in many cases it is difficult to trace the source of the information. We have fewer observations for OECD countries because we did not include a significant number of annual observations which would have resulted in inconsistent definitions within the same country. For Africa, the higher number of observations in UNU/WIDER is similarly due to use of information from years before 1985 which we have excluded for quality reasons; after 1990 our coverage in Africa is decidedly better. While there is very little difference in the overall number of observations for East and South Asia as well as MENA, our data have considerably better coverage for Latin America. Table 4 illustrates that our expanded dataset provides a real improvement over the UNU/WIDER database concerning more recent years, including the critical 1990s. Since our dataset includes all of the UNU/WIDER observations, any disagreement with our quality ranking can easily be resolved by going back to this underlying compilation.

Comparison with the UTIP database reveals the importance of one of our original three criteria for including observations in a database on inequality, namely, that the underlying survey should cover all sources of income. The UTIP database is based on information from manufacturing payrolls. With nearly 3,200 country/year observations between 1963 and 1998, it has three times the coverage of even our expanded dataset. However, there are three reasons why

---

<sup>16</sup> Disaggregating these by region suggests that our data are slightly stronger in Africa, Latin America, and the OECD.

these data, plentiful though they may be, cannot provide an accurate picture of income inequality. First, even in industrialized countries where a large portion of the labor force is in salaried employment, this type of data is affected by shortcomings in coverage since self-employed and unemployed persons, as well as capital income, are excluded. In developing countries where the share of people in wage employment remains very low and can therefore hardly be considered representative of the broader population,<sup>17</sup> this constitutes a very serious shortcoming. Second, and equally important, there is no reason for the population of wage workers to stay constant over time, implying that changes in this type of inequality can give rise to very misleading statements. For example, large-scale layoffs of lowly paid workers who fail to find new jobs and have to subsist on unemployment benefits below their earlier wage can easily lead to a drop in the inequality of the wage distribution, while actual inequality in the country increases markedly. Conversely, marginal subsistence producers taking up lowly paid wage employment during the slack season can easily lead to a worsening of the distribution of wages but an improvement in the distribution of actual income. And third, the UTIP data are drawn from manufacturing surveys rather than from household surveys.

The information included in our dataset allows us to assess the extent to which data on wage inequality can be used to make inferences on inequality within the broader population.<sup>18</sup> To do so, we compute Gini indices based on total as well as wage incomes for a subset of 275 surveys where these two sources could be easily identified. We then compute simple correlations between the two indices. We also compare the extent to which changes indicated by indices of wage inequality correspond to changes in broader inequality. The results, illustrated in column 2 of Table 5, indicate that the ability to make inferences from wage inequality differs across regions; it is higher in countries where a greater share of the population is in the labor force. For

---

<sup>17</sup> Survey evidence from Uganda illustrates that less than 10 percent of the households in this country receive wage income at all and the percentages are similar in other African countries. Of course, one would expect this percentage to increase with economic development but it is worth pointing out that even in Asian middle income countries such as Sri Lanka, the share of wage recipients remains significantly below 50 percent.

<sup>18</sup> This is similar to Szekely and Hilgert (1999) who show that the relationship between growth and inequality in 11 Latin American countries is different depending on whether inequality is measured on total income or on labor income alone.

the overall sample, the correlation coefficient is 0.77, with the highest for the OECD (0.8), followed by Latin America (0.73), Asia (0.66), and Eastern Europe (0.61). For the 23 African countries included in the sample, there was no significant correlation between the two figures at all, suggesting that, at least for this region, the scope for making such inferences is extremely limited.

This argument is supported if we consider the extent to which both measures coincide in illustrating changes over time. To illustrate the latter, we used the data to construct 5-year averages and then calculated the change in the Gini index between adjacent 5-year periods. A movement in excess of 2 Gini points was considered to constitute a change. For the 92 spells we were able to construct, the changes from the two datasets coincide in only about 55 percent of the cases and yield different results in the remainder (Table 5). We take this as an indication that using wage data to make inferences on overall inequality is inappropriate, and that the differences between the evolution of inequality suggested by our data and that suggested by the manufacturing wage data used by UTIP are due to the nature of these data (see section 5).

### **5. The Evolution of Inequality**

Whether or not inequality has been stable or increasing over time and whether policies should aim to counteract a secular rise of inequality are issues that have been discussed intensively in the literature. While some believe that there is considerable variability with only limited trends (Atkinson and Brandolini, 2001), others maintain that levels of inequality are relatively stable (Li, Squire and Zou, 1998). While it is well-known that levels of inequality in Eastern Europe and the former Soviet Union (FSU) have recently experienced a sharp increase, there is disagreement on whether globalization in the last decade has been associated with widespread and extraordinary increases in other regions of the world as well (Kanbur and Lustig, 1999). Since the UTIP and UNU/WIDER databases point to considerable increases in inequality in the 1990s, and given the relevance of the issue for public policy aimed at arresting this apparent

trend, bringing more recent information to bear on this question is of obvious importance.<sup>19</sup> We examine the issue by considering spells within specific countries and trends in inequality over time.

### ***Spell Analysis***

To analyze spells within countries, we construct changes in average levels of inequality between contiguous, 5-year periods (i.e. 1960-65, 65-70, 70-75, etc.), thereby facilitating inclusion of countries that might not have enough data points for trend analysis.<sup>20</sup> We consider inequality to have increased if the Gini index increased by more than 2 points over this period and it decreased if the index decreased by more than 2 points; otherwise inequality is labeled “unchanged.” This procedure reduces the possibility that random measurement error will unduly affect results.

Table 6 shows that of the 431 spells constructed in this fashion, the large majority (73 percent) were characterized by unchanged levels of inequality, 18 percent by increased inequality, and 9 percent by decreased inequality. Across regions, inequality was highly unstable in Africa and Eastern Europe where only 38 percent and 42 percent of incidences respectively are classified as unchanged. It was most stable in the OECD (91 percent), the Middle East and North Africa (89 percent), and South Asia (81 percent). While the latter regions are likely to be affected by the changes in inequality in Eastern Europe, the former can be viewed as resulting from improvements in the quality of data collection and survey instruments, especially in African countries which have often had a significant impact on changes in measured inequality. For the period ending in 2000, increases in inequality are observed in almost 40 percent of the cases. Half of the cases exhibited no change, and the remaining 10 percent saw inequality fall. Over time, inequality levels appear to have been less stable before the 1970s and after 1990.

To facilitate a more rigorous assessment of changes in inequality, we complement this evidence with an analysis of trends for the whole period as well as for the 1990s. This analysis is

---

<sup>19</sup> “Since the early to mid 1980s inequality has risen in most countries, and in many cases sharply” (Cornia and Court, 2001); and “we find that in the last two decades, inequality has increased throughout the world” (Galbraith, 2002).

<sup>20</sup> We interpolate linearly if there is one 5-year period missing.

motivated by two questions raised in the literature. First, did the concentration on linear trends in earlier analysis cause an over-estimation of the number of countries without a significant trend as claimed by analysts using the UNU/WIDER database? Second, is there a clear break in inequality trends in the 1990s that was impossible to detect with the earlier data?

***Trend Analysis: Whole Period***

The first question is motivated by the finding that allowance for higher order trends greatly increases the number of countries with a significant increase in levels of inequality (Cornia and Kiskii, 2001). Therefore, we estimate linear, quadratic, and asymptotic trends for the 67 countries where such an attempt is likely to yield results (i.e., where we have at least 4 observations).<sup>21</sup> The results, summarized in Table 7,<sup>22</sup> do not support the conclusion of a significant increase as reported by analysts using the UNU/WIDER data. The share of countries where we cannot statistically reject the hypothesis of “no linear trend” has decreased slightly compared with the earlier version of the data (as would be expected if one extends the number of observations). However, the share of countries where, based on the linear model, we can not reject stability or a significant decrease in inequality has remained virtually constant at about 80 percent, implying no major change in the share of counties with rising inequality between the two datasets.

Shifting to a quadratic or asymptotic model does not significantly alter the overall number of observations with significant trends; in fact, we now have 52 (43) countries with no significant trend, 9 (10) with an increase, and 6 (14) with a decrease (Table 7).<sup>23</sup> As might be expected, different functional forms do not always coincide in their assessment. However, even if we consider a country to have experienced an increase in inequality (signified by an increase in any one of the three trends) then the maximum number of increases is only 20. There are still 44 countries with no significant trend and 3 with a decrease. Reversing the process, if we

---

<sup>21</sup> In addition, for a country to be included in the trend analysis for the entire period, we require that the first observation must be from before 1985 in order to prevent spurious estimates of the intercept.

<sup>22</sup> Detailed results are available from the authors upon request.

<sup>23</sup> Figures in brackets are for the asymptotic model.

consider a country to have experienced stable inequality or declining inequality (signified by any one of the trends pointing in this direction) then none of the countries can be said to have experienced an increase in inequality. Thus, whether one focuses exclusively on the linear model or on the best fit from among several alternatives, it seems that stability of inequality cannot be rejected for a large number of countries and increases in inequality are less widespread than some authors have claimed.

Table 8 provides more detail for the linear model. It shows both the intercept and the time trend (if significant) country by country.<sup>24</sup> Countries that saw a decline over the whole period are the Bahamas, Ivory Coast, Egypt, Honduras, Italy, Japan, Madagascar, Norway, Peru, the Slovak Republic, Taiwan, Trinidad and Tobago, and Turkey. Since the development community has increasingly focused on reducing inequality as part of an overall development strategy, these countries deserve more detailed analysis to ascertain how they managed to achieve this desirable outcome. Even in these countries, however, the rate of decline in inequality is relatively slow. The fastest rate of decline is observed in Turkey. However, even at this rate (0.39 Gini points a year), it would take over 50 years to bring inequality down from Latin American levels (Gini index of 55) to the average of other developing countries (Gini index of 35). Increases were observed in Australia, Brazil, Bulgaria, Chile, Hong Kong, Hungary, New Zealand, Panama, Poland, Russia, Singapore, Thailand, the US, and Venezuela.

In contrast to our results, the UTIP dataset suggests much greater variability in inequality outcomes: the share of countries where one fails to reject a statistically significant trend is less than 50 percent of the total. Of the countries that show a significant trend, about 70 percent (41 observations) show an increase, apparently supporting the conclusion of a secular increase in inequality (Table 7). Table 8 compares our results for the whole period<sup>25</sup> with those of the UTIP database. The differences are especially marked for low income countries where the wage labor

---

<sup>24</sup> The time trend has been set to 0 if the estimation did not produce a time trend that is significantly different from zero at the 5 percent level of significance.

<sup>25</sup> In the two countries (Uganda and Ghana) where UTIP data was available but our data were insufficient to produce a trend for the whole period, we substituted the trend during the 1990s to obtain the counts in appendix Table 1.

force makes up only a small fraction of the total population and, consequently, shifts in and out of this group may lead to sharp swings in wage inequality that do not necessarily translate into broader movements in income inequality. For example, there are a number of countries (Ivory Coast, Ghana, Egypt, Honduras, Japan, and Trinidad) where our data suggest a negative trend while the UTIP database indicates a positive one, and in one instance (Singapore), the opposite is the case. Indeed, summarizing the evidence in a cross tabulation (Table 9) suggests that both databases coincide in indicating an increase, a decrease, or no significant trend in less than 50 percent of the total (or 29 cases), mainly in developed countries. This clearly suggests that the two inequality datasets do not measure the same thing and that extreme care needs to be taken in making inferences from “good” wage data on the broader distribution of income or welfare since using such data to replace supposedly “bad” but nationally representative data on total income is potentially very hazardous.

***Trend Analysis: The 1990s***

The reason for exploring different functional forms is the widespread view that inequality experienced a turning point in the 1990s. Another way to examine this issue is to analyze the trend in the decade of the 1990s itself. For this period, we are actually unable to reject the hypothesis of a significant trend in inequality for a higher share (70 percent) of countries compared with both the entire period (60 percent for the linear model) and 65 percent for in the earlier dataset (Table 7). However, for the countries experiencing a significant trend, the large majority saw inequality increase. Undoubtedly, the countries of Eastern Europe are partly responsible for this. Still, it is very difficult to conclude from this analysis that the decade of the 1990s experienced a significant and widespread increase in inequality beyond Eastern Europe.

The results reported in Table 8 reveal three interesting conclusions. First, of the 13 countries experiencing an increase in inequality in the 1990s, 10 are transition economies (including China). Many of these countries experienced extraordinarily rapid increases in inequality, albeit often from very low levels. Only 3 non-transition economies have significant increases in inequality in the 1990s: Colombia, Singapore, and Zambia. Second, few countries

with an upward trend for the whole period also have a significant upward trend in the 1990s (Bulgaria, Poland, Russia and Singapore) suggesting that rising inequality eventually levels off. The same point applies for declines in inequality; for the 6 countries that experienced declining levels of inequality for the entire period and for which data are available for the 1990s, the trend either came to a halt (5 countries) or reversed itself (1 country) in that decade. The important implication of these results is that short-run fluctuations in inequality are to be expected but consistent long-term trends either upward or downward are harder to find. And third, the number of countries exhibiting a decline in inequality in the 1990s has fallen sharply to only 2 compared with 13 for the entire period. These results suggest that globalization rather than widespread increases in inequality may be associated with a precipitous decrease in the number of countries able to reduce inequality.

We can take this analysis one step further. The literature clearly suggests that to explore the links between inequality and poverty in a satisfactory manner, it will be necessary to go “beyond averages” (Ravallion, 2000b) toward the level of income received by specific groups.<sup>26</sup> The greater availability of household level data in the expanded dataset allows us to do this. We continue with the analysis of spells, but now focus on the share of income or expenditure received by each decile in any 5-year period and assess the change in the share as well as the increase or decrease in real income received. We consider an increase to have occurred if there is an annual change of more than 0.25 points in the share or a 2 percent change in the level of real income received. Limiting ourselves to spells for which a consistently-defined income or expenditure measure is available yields information for 162 spells.

Table 10 reports results by time period. The most striking finding is that the number of country cases indicating there has been a significant decrease in the share of the bottom groups has increased sharply over time. Looking at the numbers in the top panel, the share of income

---

<sup>26</sup> As the extent to which public goods are provided, and/or effectively targeted, to low-income groups varies significantly across countries and over time, another area of research that can, at least in principle, be tackled using the household level data is to complement information on monetary income with access to public services by different income groups in the population. This would not only imply a more comprehensive concept of welfare but may also be useful to monitor government policies.



received by the bottom decile decreased for less than 10 percent of countries in all periods ending before 1990 taken together (4 out of 41 cases), this figure increased to more than 40 percent in the 1990-95 period (29 out of 68), before slightly decreasing to about 30 percent after 1995.<sup>27</sup> Even though such a change in *relative* well-being may not directly translate into an absolute deterioration of living conditions in cases where there was strong economic growth, the bottom panel of Table 7 illustrates that, for a significant share of countries (20 percent in the 1990-95 period and 32 percent in the 1995-2000 period), there was a considerable drop in absolute income received. Moreover, the share of countries where the upper deciles experienced similar losses especially in the last period, was significantly lower than that for the bottom groups, pointing toward increased polarization. Does this imply that the critics are right and that despite the lack of significant trends the plight of the world's poorest has become much worse during the last decade? To answer this question, we turn to regional disaggregation.

Results by region (Table 11) confirm the earlier conclusion regarding significant differences in the volatility of income across countries. As indicated in the bottom row, in about 60 percent of the countries, the bottom quintile experienced a change in their income share, ranging from 30 percent in Asia, Latin America, and the OECD to 90 percent in Eastern Europe. In all of the regions, except Eastern Europe, the share of the bottom groups increased in about half of the cases and decreased in the remainder. In contrast, in Eastern Europe, the share of the bottom two deciles decreased in more than 80 percent of the countries included in the analysis.

Differences are even more pronounced if absolute welfare in the form of real income rather than the share of income received is considered. It is striking to observe that in all of the Asian and in a large share of the OECD and Latin American countries that experienced a change, income received by the poor increased. In contrast, the experience in Africa is more mixed (with a higher number of countries showing a decrease in the income of the poor than showing an increase) and events in Eastern Europe were extremely disadvantageous for the poor. In the latter

---

<sup>27</sup> This was combined with an increase in the share of countries (from 32 percent to 56 percent) where a significant change for the bottom decile is observed (columns 3, 6, and 9 of Table 8).

case, there is only one country where the income of the bottom decile increased, compared to half of those included in the sample where it increased. Although this analysis does not support the hypothesis of a generalized increase in inequality during the 1990s, it highlights that there have been big swings in households' access to resources and opportunities which are only imperfectly revealed in aggregate statistics such as the Gini index. Further analysis, possibly at a regional level of disaggregation, would help to clarify which groups have lost either relatively or absolutely.

## **6. Conclusion and Policy Implications**

We conclude by reviewing some of the major advances made. First, we have demonstrated that data quality clearly matters and that different datasets lead to significantly different conclusions. This suggests that, while the purpose for which data are to be put will in many cases dictate the precise requirements, insisting on minimum standards is appropriate. In fact, our ability to derive fundamentally different results from a different database with somewhat relaxed standards illustrates the importance of maintaining minimum accepted standards of data quality. We attempted to remedy as many of the deficiencies pointed out in our earlier compilation as possible and, even though there will, no doubt, be further improvement in data quality and coverage as surveys that are currently under planning and implementation become available, we are convinced that the expanded dataset will provide an improved basis for analyzing these important issues.

Second, we have demonstrated that within a relatively short time significant improvements are feasible in terms of coverage, quality, and most importantly, the type of analysis that can be done. Without the efforts at data collection and the improved scope of these data by many statistical agencies in developing countries, and the support they received from multilateral and bilateral institutions, it would not have been possible to increase coverage as rapidly as we were able to do. From a formal point of view, this includes the ability to demonstrate the difference between wage and income/expenditure inequality empirically, and to consistently use income for decile groups in the population. More substantively, we are able to show that, with the notable

exception of the transition economies, the tendency for inequality to persist still holds for many countries even in the 1990s. The claim of substantial and widespread increases in inequality in the 1990s made by many analysts is not supported by the data. Surprisingly enough, the data reveal some examples of significant downward trends in inequality which might be of interest for further study especially when combined with a more thorough assessment of different decile groups' income as well as their ability to access different types of public services and changes therein.

This also suggests that there are many issues that can be resolved appropriately only if access to household level data (preferably in a standardized format) is available. The most desirable way of disseminating data would, of course, be to make the underlying micro data available to users online and in a standardized form, similar to that already available for developed countries (LIS). Although current restrictions on access to micro data for many surveys would not permit this for all countries, we believe that there is a critical mass of surveys with public access rights available to make such an endeavor worthwhile. In fact, analysis of cross-country data, such as those presented in this paper, is by itself likely to increase demand for such a database. Making it available would be an appropriate task for international institutions such as the World Bank.

**Table 1: Countries with 3 or More Observations Included in the Expanded Dataset**

	No. of Observations	Year of data availability		Gini Coefficient		
		First	Last	Minimum	Maximum	Average
Armenia	3	1989	1998	25.90	37.26	30.02
Australia	10	1968	1999	31.70	39.60	36.00
Austria	5	1970	1995	29.30	31.60	30.78
Azerbaijan	4	1988	1995	31.70	45.53	36.13
Bahamas	11	1970	1993	40.64	54.09	45.77
Bangladesh	14	1963	1996	33.34	38.09	35.97
Barbados	17	1951	1981	31.10	37.20	33.98
Belarus	7	1988	1999	21.60	28.76	25.46
Belgium	4	1979	1997	24.44	28.25	26.20
Bolivia	6	1968	1999	52.50	59.21	56.57
Botswana	4	1971	1994	53.70	57.40	55.23
Brazil	23	1960	1998	53.00	63.42	58.84
Bulgaria	33	1957	1997	17.83	34.42	23.86
Cambodia	3	1993	1999	36.46	41.25	38.14
Canada	23	1951	1998	27.41	32.97	31.29
Chile	18	1968	1998	46.00	57.65	54.07
China	22	1953	1998	25.70	55.80	35.44
Colombia	12	1962	1998	51.32	59.65	54.70
Costa Rica	17	1961	1998	45.00	50.00	47.68
Cote d'Ivoire	7	1959	1995	36.89	51.70	42.56
Czech Republic	14	1958	1996	19.37	29.53	23.11
Denmark	4	1987	1997	28.91	29.69	29.30
Dominican Republic	8	1976	1998	43.29	50.82	48.01
Ecuador	3	1970	1999	53.00	62.50	56.66
Egypt	5	1959	1997	32.00	42.00	37.88
El Salvador	7	1961	1998	48.40	55.08	52.06
Estonia	6	1988	1998	27.80	39.31	33.18
Ethiopia	3	1981	1998	28.66	34.94	32.01
Finland	14	1971	1998	25.10	29.60	26.57
France	6	1979	1995	29.18	32.52	31.48
Gabon	3	1960	1977	58.40	63.18	60.28
Gambia	3	1992	1994	46.87	57.74	54.02
Georgia	4	1989	1997	29.10	58.00	42.58
Germany	10	1962	1997	30.06	32.66	31.47
Ghana	7	1987	1997	32.70	36.74	34.61
Greece	4	1974	1993	32.70	35.19	34.07
Guatemala	6	1979	2000	49.72	58.26	55.44
Guinea	3	1991	1995	40.30	47.93	42.88
Guyana	3	1956	1999	40.75	56.16	50.28
Honduras	12	1968	1999	53.08	61.88	56.24
Hong Kong	8	1971	2001	39.80	52.50	45.61
Hungary	9	1962	1997	21.54	33.20	26.29
India	37	1951	2000	29.17	37.83	32.72
Indonesia	13	1964	1999	30.70	38.59	33.85
Iran, Islamic Rep.	6	1969	1993	41.88	45.45	43.11

	No. of Observations	Year of data availability		Gini Coefficient		
		First	Last	Minimum	Maximum	Average
Ireland	3	1973	1987	33.43	36.70	35.38
Israel	4	1979	1997	30.50	34.44	32.33
Italy	24	1967	1995	30.65	42.00	36.36
Jamaica	13	1971	2000	34.62	45.02	40.96
Japan	26	1962	1999	28.00	37.20	33.44
Jordan	5	1980	1997	36.06	43.36	39.46
Kazakhstan	5	1988	1996	28.90	35.25	31.78
Kenya	3	1992	1997	40.39	58.23	50.91
Korea, Rep.	10	1953	1988	32.00	39.10	34.83
Kyrgyz Republic	4	1993	1998	41.73	55.09	48.36
Latvia	6	1988	1998	22.49	35.86	28.55
Lithuania	6	1988	1998	22.48	34.14	28.94
Luxembourg	3	1985	1994	26.59	26.89	26.72
Madagascar	4	1980	1999	39.49	46.85	42.54
Malawi	3	1977	1993	51.80	62.00	56.83
Malaysia	9	1970	1997	48.77	53.00	50.87
Mauritania	7	1987	2000	33.80	47.54	39.77
Mauritius	3	1980	1991	36.69	45.70	40.67
Mexico	13	1950	1998	50.00	57.90	54.21
Moldova	4	1988	1997	24.14	41.21	31.19
Morocco	4	1984	1991	38.50	39.70	39.15
Netherlands	16	1973	1997	26.66	32.20	29.60
New Zealand	14	1973	1997	30.04	40.40	34.98
Nigeria	5	1980	1996	44.43	50.61	47.58
Norway	10	1962	1995	25.67	37.52	33.35
Pakistan	17	1963	1997	28.32	38.65	32.34
Panama	9	1969	1998	44.80	57.19	52.85
Paraguay	3	1995	1999	45.87	62.05	54.85
Peru	7	1961	1997	47.93	57.00	51.07
Philippines	10	1957	1997	44.48	51.32	47.39
Poland	24	1960	1999	20.88	33.70	26.79
Portugal	5	1973	1995	35.63	40.58	37.48
Puerto Rico	3	1969	1989	50.15	52.32	51.11
Romania	5	1988	1997	23.00	43.87	28.77
Russian Federation	10	1980	2000	24.50	48.86	37.66
Singapore	13	1972	2000	37.00	48.10	42.49
Slovak Republic	7	1958	1996	18.00	30.60	22.09
Slovenia	5	1987	1996	19.49	29.18	25.27
South Africa	3	1993	1997	59.00	60.21	59.51
Spain	10	1965	1991	25.19	34.50	30.74
Sri Lanka	7	1963	2000	27.38	38.80	32.03
Sweden	15	1967	1996	22.93	33.41	30.76
Sweden	5	1987	1996	19.49	29.18	25.27
Switzerland	3	1971	1992	32.88	35.31	34.34
Taiwán	33	1953	2000	27.70	55.80	31.86

	No. of Observations	Year of data availability		Gini Coefficient		
		First	Last	Minimum	Maximum	Average
Tajikistan	3	1988	1990	30.80	33.40	32.00
Tanzania	3	1969	1993	38.59	44.00	40.53
Thailand	11	1962	1998	41.28	51.50	45.13
Trinidad & Tobago	6	1958	1992	40.27	51.00	44.62
Tunisia	5	1965	1990	40.24	44.00	42.51
Turkey	6	1963	1994	35.76	56.00	47.92
Turkmenistan	3	1989	1998	30.70	40.80	35.77
Uganda	4	1989	2000	39.20	44.36	41.96
Ukraine	6	1988	1996	21.80	39.29	27.94
United Kingdom	8	1951	1995	28.77	35.60	32.42
United States	34	1967	2000	38.80	46.00	42.00
Uzbekistan	4	1988	2001	24.95	42.53	33.06
Venezuela	23	1971	1998	39.42	52.08	44.90
Yugoslavia	12	1963	1997	31.18	34.73	32.69
Zambia	7	1959	1998	43.51	52.26	49.23
Zimbabwe	3	1968	1995	56.80	66.27	61.09

**Table 2: Mean Gini Coefficients for Different Regions and Time Periods**

	Africa	East Asia	Eastern Europe*	Latin America	Middle East	OECD	South Asia
1971	51.85	41.07	24.98	46.77	45.37	36.64	33.16
1981	48.16	36.73	23.58	46.56	43.18	35.05	33.40
1986	48.08	34.09	26.02	51.70	40.17	33.09	33.68
1991	44.11	37.76	26.14	50.10	38.87	33.19	32.78
1996	46.42	39.35	33.28	51.52	41.19	35.59	33.82
2001	46.14	40.01	37.39	51.57	36.87	37.46	31.62
<b>Total</b>	<b>46.86</b>	<b>38.24</b>	<b>28.90</b>	<b>49.52</b>	<b>41.44</b>	<b>34.92</b>	<b>33.20</b>

\*Including Central Asia

**Table 3: Comparison Between the Old and New Datasets and the UNU/WIDER Inequality Database<sup>1</sup>**

	Old data	New data	WIDER	Old data	New data	WIDER	Old data	New data	WIDER	Old data	New data	WIDER
Africa	49	101	109	30	35	33	6	18	16	6	18	16
ECA	101	189	237	19	27	26	8	23	26	6	21	23
EAP	52	119	118	8	12	12	6	8	7	6	9	8
South Asia	60	77	75	5	5	5	4	4	5	4	5	5
LAC.	105	214	187	22	24	24	14	20	16	17	21	20
MENA	23	35	35	7	8	8	5	6	6	6	8	7
OECD	303	286	372	24	26	26	23	26	23	23	26	24
<b>Total</b>	<b>693</b>	<b>1021</b>	<b>1133</b>	<b>115</b>	<b>137</b>	<b>134</b>	<b>66</b>	<b>105</b>	<b>99</b>	<b>68</b>	<b>108</b>	<b>103</b>

<sup>1</sup> Comparisons are between the "accept" category in the old dataset and the unique and consistent values in the new one.

**Table 4: Comparison Between Our Data and the UNU/WIDER Inequality Database**

	Our Data							
Period until	AFR	EAP	ECA	LAC	MENA	OECD	SAS	Total
1965	3	11	13	18	4	20	18	87
1970	5	7	6	11	3	23	12	67
1975	4	9	7	15	5	36	5	81
1980	7	14	15	27	2	42	5	112
1985	7	15	16	23	4	49	8	122
1990	14	20	52	37	6	49	13	191
1995	43	21	45	41	8	43	8	209
2001	18	22	35	42	3	24	8	152
<b>Total</b>	<b>101</b>	<b>119</b>	<b>189</b>	<b>214</b>	<b>35</b>	<b>286</b>	<b>77</b>	<b>1,021</b>
	WIDER Database							
Period until	AFR	EAP	ECA	LAC	MENA	OECD	SAS	Total
1965	10	10	5	10	5	32	10	82
1970	12	11	7	16	3	36	15	100
1975	8	14	9	15	6	41	8	101
1980	11	16	15	28	4	58	9	141
1985	10	17	16	23	4	63	9	142
1990	15	21	72	36	4	67	13	228
1995	38	19	69	44	7	58	7	242
2001	5	10	44	15	2	17	4	97
<b>Total</b>	<b>109</b>	<b>118</b>	<b>237</b>	<b>187</b>	<b>35</b>	<b>372</b>	<b>75</b>	<b>1,133</b>

**Table 5: Comparison Between Wage-based and Overall Inequality Measures**

Region	Levels		Changes		
	No. of Observations	Correlation	Fit	No Fit	Spells
AFR	23	0.19 <sup>1</sup>	1	2	3
EAP	26	0.66	7	5	12
ECA	50	0.61	4	5	9
LAC	93	0.73	15	11	26
OECD	83	0.79	24	18	42
<b>Total</b>	<b>275</b>	<b>0.77</b>	<b>51</b>	<b>41</b>	<b>92</b>

<sup>1</sup> Not significantly different from zero.

**Table 6: Within-Country Changes in Inequality by Region and Period Over 5-Year Spells**

Regional Disaggregation	Change in Inequality			No. of observations
	Increase	Unchanged	Decrease	
Africa	40.5%	37.8%	21.6%	37
East Asia & Pacific	9.8%	76.5%	13.7%	51
East & Central Europe	55.1%	42.0%	2.9%	69
Latin America & Caribbean	11.2%	76.4%	12.4%	89
Middle East & North Africa	3.9%	88.5%	7.7%	26
OECD	6.0%	91.7%	2.3%	133
South Asia	3.9%	80.8%	15.4%	26
<b>Total</b>	<b>18.1%</b>	<b>73.3%</b>	<b>8.6%</b>	<b>431</b>
Disaggregation by Time	Change in Inequality			No. of observations
	Increase	Unchanged	Decrease	
Period ending in 1965	26.7%	46.7%	26.7%	15
Period ending in 1970	6.7%	83.3%	10.0%	30
Period ending in 1975	4.9%	87.8%	7.3%	41
Period ending in 1980	5.7%	88.7%	5.7%	53
Period ending in 1985	8.1%	83.9%	8.1%	62
Period ending in 1990	10.9%	81.3%	7.8%	64
Period ending in 1995	27.3%	65.9%	6.8%	88
Period ending in 2000	39.7%	50.0%	10.3%	78
<b>Total</b>	<b>18.1%</b>	<b>73.3%</b>	<b>8.6%</b>	<b>431</b>

**Table 7: Trends in Inequality – Summary Statistics**

	Orig. Data	Expanded Data					After 1989 <sup>++</sup>	UTIP
	Linear	Linear <sup>+</sup>	Quadratic	Asymptotic	Max.	Min.	Linear	Linear
Rising	10	14	9	10	20	0	13	41
Stable	32	40	52	43	44	48	36	57
Falling	7	13	6	14	3	19	2	18
<b>Total</b>	<b>49</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>51</b>	<b>116</b>

<sup>+</sup>Countries with four or more observations and the first observation earlier than 1985.

<sup>++</sup>Countries with four or more observations.

Source: Li, Squire, Zou (1997).



**Table 8: Trend Analysis by Country with Our data and UTIP Data**

Country	Our Data				UTIP Data
	Entire Period		Period After 1989		
	Intercept	Trend	Intercept	Trend	
Australia	29.0	0.219	.	.	0
Austria	29.6	0.000	.	.	0
Bahamas	55.7	-0.301	43.39	0.000	na
Bangladesh	33.4	0.000	.	.	+
Barbados	34.4	0.000	.	.	0
Belarus	.	.	22.48	0.000	na
Belgium	31.0	0.000	.	.	0
Bolivia	48.7	0.000	52.94	0.000	+
Botswana	60.7	0.000	.	.	+
Brazil	54.1	0.137	62.45	0.000	na
Bulgaria	18.6	0.184	23.72	1.437	+
Canada	32.5	0.000	26.95	0.000	0
Chile	45.7	0.232	52.20	0.000	+
China	34.4	0.000	36.25	0.639	0
Colombia	52.8	0.000	49.59	0.974	0
Costa Rica	50.1	0.000	46.32	0.000	0
Cote d'Ivoire	49.2	-0.206	.	.	+
Czech Republic	21.1	0.000	21.19	0.000	0
Dominican Republic	39.5	0.000	51.29	0.000	+
Egypt	42.8	-0.180	.	.	+
El Salvador	51.7	0.000	48.63	0.000	0
Estonia	.	.	30.16	0.930	na
Finland	24.3	0.000	24.70	0.000	0
France	34.9	0.000	.	.	0
Georgia	.	.	27.70	3.718	na
Germany	31.5	0.000	.	.	0
Ghana	.	.	35.42	0.000	+
Greece	36.7	0.000	.	.	0
Guatemala	49.3	0.000	.	.	+
Honduras	65.0	-0.211	57.77	0.000	+
Hong Kong	32.7	0.375	.	.	0
Hungary	20.5	0.170	25.57	0.000	+
India	33.6	0.000	30.91	0.000	+
Indonesia	33.5	0.000	33.83	0.000	-
Iran, Islamic Rep.	44.0	0.000	.	.	-
Israel	34.8	0.000	.	.	+

Country	Our Data				UTIP Data
	Entire Period		Period After 1989		
	Intercept	Trend	Intercept	Trend	
Italy	44.9	-0.291	32.53	0.000	0
Jamaica	44.6	0.000	40.04	0.000	+
Japan	38.8	-0.201	29.31	0.000	+
Jordan	42.3	0.000	.	.	-
Kazakhstan	.	.	28.89	0.000	na
Korea, Rep.	32.9	0.000	.	.	0
Kyrgyz Republic	.	.	63.47	-2.158	na
Latvia	.	.	25.50	0.820	na
Lithuania	.	.	27.29	0.000	na
Madagascar	59.0	-0.390	.	.	-
Malaysia	52.1	0.000	48.70	0.000	0
Mauritania	.	.	40.67	0.000	
Mexico	54.6	0.000	53.13	0.000	+
Morocco	42.9	0.000	40.67	0.000	0
Netherlands	24.3	0.000	29.62	0.000	0
New Zealand	21.5	0.397	38.51	0.000	0
Nigeria	39.7	0.000	.	.	0
Norway	42.2	-0.296	.	.	0
Pakistan	36.0	0.000	32.78	0.000	+
Panama	37.3	0.406	55.45	0.000	+
Peru	59.2	-0.247	.	.	+
Philippines	48.8	0.000	.	.	+
Poland	21.7	0.151	25.84	0.956	+
Portugal	42.6	0.000	.	.	0
Romania	.	.	20.21	2.500	0
Russian Federation	-20.9	1.403	36.19	1.146	na
Singapore	32.9	0.254	40.73	0.569	-
Slovak Republic	30.6	-0.232	16.53	1.570	0
Slovenia	.	.	20.41	0.000	na
Spain	36.3	0.000	.	.	0
Sri Lanka	29.7	0.000	.	.	-
Sweden	36.8	0.000	32.79	0.000	0
Taiwan	39.8	-0.244	30.64	0.000	0
Thailand	39.8	0.161	51.83	-0.981	0
Trinidad & Tobago	50.7	-0.218	.	.	+
Tunisia	44.4	0.000	.	.	+
Turkey	59.6	-0.393	.	.	+

	Our Data				UTIP Data
	Entire Period		Period After 1989		
Country	Intercept	Trend	Intercept	Trend	
Uganda	.	.	43.09	0.000	+
Ukraine	.	.	20.98	2.108	na
United Kingdom	34.7	0.000	.	.	0
United States	34.3	0.229	43.01	0.000	0
Venezuela	38.1	0.190	45.34	0.000	0
Yugoslavia	33.4	0.000	.	.	na
Zambia	53.0	0.000	41.46	1.114	

**Table 9: Summary Comparison Between Trends Based on Our Data and the UTIP Data**

	UTIP Data			Total
	Decrease	Unchanged	Increase	
Decrease	1	4	7	12
Unchanged	4	23	14	41
Increase	1	8	5	14
<b>Total</b>	<b>6</b>	<b>35</b>	<b>26</b>	<b>67</b>

*Note:* Our revised data.

**Table 10: Changes in Absolute and Relative Incomes by Deciles Over Time Periods**

	<b>Income Shares</b>								
	Before 1990			1990-1995			After 1995		
	Increase	Decrease	% chg.	Increase	Decrease	% chg.	Increase	Decrease	% chg.
Decile 1	9	4	31.7%	9	29	55.9%	8	15	43.4%
Decile 2	8	6	34.1%	9	25	50.0%	10	17	50.9%
Decile 3	9	6	36.6%	8	29	54.4%	10	15	47.2%
Decile 4	10	6	39.0%	8	33	60.3%	10	16	49.1%
Decile 5	8	6	34.1%	11	32	63.2%	10	17	50.9%
Decile 6	8	5	31.7%	9	30	57.4%	11	16	50.9%
Decile 7	6	5	26.8%	5	25	44.1%	8	17	47.2%
Decile 8	8	6	34.1%	11	22	48.5%	10	12	41.5%
Decile 9	8	11	46.3%	23	20	63.2%	16	13	54.7%
Decile 10	15	21	87.8%	44	19	92.6%	30	22	98.1%
	<b>Amount of Income Received</b>								
	Before 1990			1990-1995			After 1995		
	Increase	Decrease	% chg.	Increase	Decrease	% chg.	Increase	Decrease	% chg.
Decile 1	18	4	53.7%	17	14	45.6%	20	17	69.8%
Decile 2	18	2	48.8%	21	13	50.0%	18	10	52.8%
Decile 3	18	2	48.8%	19	13	47.1%	19	11	56.6%
Decile 4	19	2	51.2%	17	14	45.6%	18	8	49.1%
Decile 5	18	1	46.3%	15	15	44.1%	16	9	47.2%
Decile 6	18	3	51.2%	14	15	42.6%	15	9	45.3%
Decile 7	20	3	56.1%	17	13	44.1%	13	8	39.6%
Decile 8	19	3	53.7%	15	12	39.7%	16	6	41.5%
Decile 9	16	3	46.3%	15	10	36.8%	17	4	39.6%
Decile 10	18	4	53.7%	23	7	44.1%	22	8	56.6%
<b>Total</b>	<b>41</b>			<b>68</b>			<b>53</b>		

**Table 11: Changes in Absolute and Relative Incomes by Deciles by Regions**

	<b>Income Share</b>									
	Africa & M. East		Asia		E. Europe		Latin America		OECD	
	Increase	Decrease	In.	De.	In.	De.	In.	De.	In.	De.
Decile 1	7	8	3	3	2	23	5	5	9	9
Decile 2	9	8	6	5	1	23	6	6	5	6
Decile 3	7	10	7	6	1	21	6	8	6	5
Decile 4	7	10	7	8	1	22	6	9	7	6
Decile 5	8	10	5	8	0	22	10	9	6	6
Decile 6	7	10	4	7	0	20	9	11	8	3
Decile 7	7	10	3	8	0	15	4	10	5	4
Decile 8	8	12	3	6	4	7	4	9	10	6
Decile 9	7	10	4	11	19	2	6	13	11	8
Decile 10	11	15	14	12	27	1	15	17	22	17
	<b>Amount of Income Received</b>									
	Africa & M. East		Asia		E. Europe		Latin America		OECD	
	Increase	Decrease	In.	De.	In.	De.	In.	De.	In.	De.
Decile 1	8	10	17	0	1	14	14	8	15	3
Decile 2	7	7	17	0	1	12	14	4	18	2
Decile 3	7	8	18	0	2	13	12	4	17	1
Decile 4	7	8	18	0	2	11	8	4	19	1
Decile 5	6	10	18	0	3	11	6	3	16	1
Decile 6	6	11	17	0	3	11	5	4	16	1
Decile 7	6	10	17	0	4	11	5	2	18	1
Decile 8	5	8	17	0	4	11	5	1	19	1
Decile 9	5	7	18	0	4	8	6	1	15	1
Decile 10	6	8	17	0	7	6	12	4	21	1
<b>Total</b>	<b>27</b>		<b>26</b>		<b>28</b>		<b>34</b>		<b>47</b>	
Share chg.	59.3%		32.7%		87.5%		32.4%		30.9%	

## PART II: DISCUSSION

### REVISITING INEQUALITY: NEW DATA, NEW RESULTS

---

Participants in the discussion following Lyn Squire's presentation included Ahmed Galal, Executive Director of the Egyptian Center for Economic Studies; Said El Naggar, President of the New Civic Forum; Ahmed El Dersh, former Minister of Planning and International Cooperation; Mostafa Kamel El Sayed, professor of political science, Faculty of Economics and Political Science; Mounir Abdel Nour, Managing Director of the Egyptian-French Food Industries Co. (Vitrac); Karima Korayem, professor of economics, Faculty of Commerce; Abdel Moneim Said, Director of the Center for Political and Strategic Studies, Al Ahram; Wolfgang Heinz, Director of Friederich-Naumann Stiftung; Aziza Helmy from the Office of Economic Analysis and Policy for the USAID Cairo Mission; Ahmed Noushy from the Central Bank; Mohammed H. Magued, Chairman and Managing Director of the Egyptian Banks Co. for Technological Advancement; Iman Abdel Maksoud from the Arab Labor Organization; Sherine El Shawarby, economist at the World Bank; and Doha Mounir, Counselor to the Minister for the Ministry of Finance. The following is a summary of the discussion.

**Moderator:** Thank you very much for an excellent presentation. I'd like to make two or three comments. I think the first conclusion that inequality within countries is stable over time is significant, especially in light of increased globalization in the last few decades.

Secondly, I think that the preliminary results showing a positive relationship between equality and future growth is quite relevant and supportive of policies favoring more equal distribution. The point that I feel a bit dissatisfied with is the focus on income inequality rather than on asset inequality.

**Participant:** I think this presentation has given us a good account of the data on inequality and the conclusions that can be reached using regression analysis. What bothers me is the absence of the policies which are followed by different countries that act directly on quality and inequality.

This is a very important point in the case of cross country analysis because countries vary a great deal with respect to the policies they follow.

Therefore, the question is: What kind of policies should we analyze to improve equality? In answer, it is instructive to look at such policies as minimum wages, social safety nets, ease of access to education, the progressiveness and effectiveness of taxation, the quality of education, and social expenditure. It is also instructive to ask such questions as: How far was development based on labor intensive industries? How far was labor unionized or not? If we ignore the policies that act directly on equality and inequality and only deal with factors such as growth and equality, I seriously doubt that we can reach conclusive and reliable conclusions.

The final point I want to mention relates to globalization. Globalization has definitely had an impact on equality and inequality. The precise and concrete nature of the impact depends on the kinds of policies applied by different countries. Some countries follow policies which magnify inequality; others follow policies that do not. That is why I put greater emphasis on policies than on regression analysis.

**Speaker:** I definitely agree with the point about looking at policies. This exercise is statistical in nature. However, as I have demonstrated, a lot of countries' inequality stays relatively constant. There is no way around that finding. It is significant because those countries have adopted all kinds of different policies, which is why I gave you India and Taiwan as examples. Those two countries have completely different sets of policies and yet inequality remained more or less the same in both countries.

The point is that inequality is almost immune to a large number of different policies which different countries apply at different times. I agree that we should look at which policies seem to work well in producing equality. The findings indicate that it is going to be tough to find such policies because for whatever reasons - economic, cultural, social - inequality would be difficult to change.

You said that globalization has definitely impacted inequality. What these results show is that inequality within countries, even in the 1990s has not changed a great deal. However, I must agree to some extent because differences in countries' growth rates are what are driving worldwide inequality. Imagine you have two countries in the world, both with inequality within the country perfectly stable, but one growing very quickly and one growing very slowly. World inequality is going increase. When we look at the issue of globalization, what is happening is that countries that participate in a global economy are growing faster than countries that do not, that is leading to global inequality. It is not the case that inequality within countries is changing a great deal as a result of globalization.

**Participant:** I think that the policy implications of any research are paramount. Unless research has some policy implications, it raises many questions in everyone's mind.

Turning to the key conclusion, it seems that nothing affects inequality. Inequality persists under different sets of policies and in different countries. How can policy makers tackle this problem? If one of the main objectives of economic policy is to reduce inequality, how do we go about it? I do not think the research to date has helped us define a set of policies that can help us achieve this objective. The answer may lie with the distribution of wealth, although the literature on wealth and wealth distribution and their impact on savings and growth is still primitive. I think this is an area where we can complement the income distribution analysis and its impact on equality.

**Speaker:** I am a strong believer in doing research on policy issues. It just so happened that I was not particularly focused on those issues in this research, which is at a preliminary stage in a larger research strategy. Nevertheless, it shows is that there are only a few countries where we have seen declines in inequality, although everyone has said how important it is to reduce it. The logical next step would be to go to those countries and see what policies they pursued in order to reduce inequality.



Keep in mind that even though I said that “inequality persists” we should differentiate that statement from the statement that says “redistributive policies do not matter.” In order to maintain a particular degree of equality, countries may have been obliged to take all kinds of distributive policies, without which inequality may have increased very dramatically. I don’t want my statement about persistence of inequality to be confused with a statement about the importance of redistributive policies.

**Participant:** Over the last two decades, we have not seen any redistribution of wealth and I think your conclusion about the stability of income inequality makes sense. These are not the golden years of agrarian reform.

I think we should be very cautious about drawing any conclusions about the impact of globalization on income inequality. We talk about globalization, but countries have only integrated in the world economy to varying degrees. For example, globalization in Egypt is limited and we get very little foreign investment. I think this would apply to many other countries. You pointed out that global inequality is increasing. There are some figures which were mentioned in the human development report which suggest that from 1962-1997 inequality increased tremendously among countries and these were also the years of increased globalization.

**Speaker:** There are important issues about wealth distribution and this particular research does not deal with them, but there is a lot of work that does. Take, for instance, human capital. A lot of countries are engaged in exercises to use human capital as a redistributive mechanism. They use very different educational policies over long periods of time. Yet, it is still surprising to me that we don’t see world variations in inequality measures.

I want to make a point about wealth distribution that is related to the difficulty of redistributing assets. Land reform is the obvious case because to redistribute land you have to take it from somebody and give it to someone else. I personally think that whatever education

can do for the cause is a much more productive route to follow because you are not trying to reallocate the stock of assets, you're trying to change the flow.

**Participant :** I would like to say that policies should be reflected in the Gini coefficient as a measure of equality. I also think this could be studied statistically. My questions are: how accurate is the Gini coefficient and how relevant is it as a measure of equality and inequality?

**Speaker:** The Gini index may not be the best way of measuring inequality. In a simple way, it captures a whole distribution in a single number so it is obviously losing information somewhere along the way. However, when we use different measures of inequality the same result persists.

In terms of accuracy, all I can say is that the numbers come from household surveys. So the question then becomes, how good were the household surveys? It is almost certain that in some countries they are very good, in some countries they are not, which will increase the measurement error in this work. For statistical purposes, however, the errors do not cause a systematic bias.

**Participant:** First, I would caution against using the data for the 1990s to reach the conclusion that globalization does not have a significant effect on distribution among countries. Why? Because GATT became effective in 1994, and the period from 1994-2000 is too short.

Secondly, it is possible to argue that inequality is increasing by looking at trade, financial flows, and technology. Putting technology transfer to developing countries aside, we know that about 75 percent of trade is among developed countries. Therefore, the main benefits are not available for the developing countries. We also know that financial flows are more important than trade. But if we look at what has happened, we find that FDI in infrastructure went to a few developing countries. The rest of the LDCs remain short on capital. If we put these pieces together, we expect globalization to increase inequality.

Let us now look at the impact of globalization on inequality within countries. Policy makers will try to apply policies which redistribute income, but the question is: Will the political and economic structure of those developing countries give the government the power to do so?

Third, the Gini coefficient does not give us a good picture about what is happening to equality and inequality. Why? The answer is that the Lorenz curve does not show what happened to each income group of society. How can we measure that? Can your data be used by others to test this hypothesis?

**Speaker:** For the reasons you mentioned, your expectation about the impact of globalization on inequality may be correct. There are a lot of people today who say that equality has increased in a lot of countries in 1990s. Is that true or not? Regardless of whether we identify a plausible explanation, the answer is no. It does not seem to be the case. I basically agree with your point about inequality among countries.

You raised an important point about the adequacy of the Gini in capturing different distribution points at the Lorenz curve. If we had done the analysis on the bottom quintile and top quintile, we would probably have gotten a better sense of what was happening to the distribution. That is a good point and an important research technique that is worth pursuing.

With respect to the last question of whether the data are available for others to use, the answer is yes. The reason the data was compiled in 1996 was to encourage more research on inequality and to let people explore all the policy issues they wanted to. Part of the exercise was to do our own research, but it was mainly to put the database out so that others could look at these issues. We will do that with this data set.

**Participant:** I want to take the discussion to another track. Inequality is increasing in China with higher growth. Since I am a social scientist I'd like to know which is better for the individual; to be in China today or to be in China in the 60s and the 70s when equality was much higher and growth was much lower.

I would also like to add something important to this discussion from other branches of social sciences, which is related to perceptions. I think the perception of equality and inequality continuum is very important. Do people in China feel they are unequal or do they feel better off? Lastly, I want to ask you to give us more about Egypt in particular.

**Speaker:** Are people better off in China now that they have growth and an increase in inequality? This really comes down to questions of subjective preferences and what constitutes a good life. I can give you my personal view. What I would really be interested in regarding China is what has happened to the bottom 10 or 20 percent of the population. I would be asking them are they better off now in terms of income because growth has been so fast, even though inequality of the society may have gone against them? My measure of progress would be based on what has happened to the poorest groups of society.

You are making a very important distinction between the provision of both goods and personal income. Everything I have talked about is related to income, but people also benefit from all kinds of public services such as infrastructure and water supply. That surely must be an important part of the quality of life. I agree very much with your point and my Gini coefficients do not speak to that issue.

You also asked about Egypt and I did note the information that we have on inequality. What is interesting, if you believe the numbers, is that inequality did seem to fall quite significantly from the early 1960s to the early 1990s. This would be one country that I would want to look at to see the policies that led to that result.

However, if you believe the results of the latest surveys, we see an upturn in equality in the 1990s. Again, figuring out what causes that upturn would be fascinating research. Since several of you have made the link between my research to policies, it is my turn to say now you have the opportunity to look into your own country. The data are there, you have some interesting questions, and you've got the general context to really see what is happening in Egypt.

**Participant:** I work for a political foundation in Germany and I am not sure about the basic assumptions in this research. There seems to be an assumption that equality is good and I have some problems with that from a liberal viewpoint. As a German, I am suffering from the transfer payments we pay to try to equalize the society. We have 130 transfer payments from one pocket into the other feeding the bureaucracy. For many years, I have lived close to the socialist boarders in Europe. They had a joke that said: What is Socialism? Socialism is the equal distribution of poverty. I think it would be better to bring the entire economy up rather than equalize poverty.

**Speaker:** Is equality the goal? You made some very important points about being engaged in redistributive policies that may be at the expense of investment and future growth. This is why in some of the analysis we tried to capture those points by looking at both inequality today and growth in the future.

I do not think that I was making the presumption that equality is good. I am presenting what has actually happened to equality: has it gotten better, has it gotten worse? I think this research is a very objective data driven exercise, which is not taking a position on whether we want equality or inequality or faster growth. It is just trying to see what the relationships between those variables are.

**Participant:** I claim that gender inequality is a very important issue that needs to be looked into in the context of assessing issues of inequality. In a world where the poorest of the poor constitute 1.3 billion, the majority of those are women. Also, women earn 30 percent to 40 percent less than men for the same or equal work. The list goes on and on, including gender educational inequality and employment inequality. Given that, I highly recommend that the issue of gender inequality be addressed one way or another.

**Speaker:** The data that have been collected and I presented here today are at the aggregate household level. That said, many of the household surveys which go into producing those data will allow a lot of gender disaggregation.

There are also important issues on the input side. Does the access of females to the labor market offer better and equal rights and so forth? Does that have implications for what inequality looks like in particular countries? I think the point you made previously about the importance of opportunities can also be made in the specific context of females.

**Participant:** In the limited work that has been done in and outside the bank, researchers have shown that greater democracy has contributed to efficiency of investment, to better quality of services, and even to better distribution of income. With increased democratization, I would have expected your results to look better.

Another thought I wanted to share is that in an interview in the December 1999 issue of the IMF's Finance & Development Magazine, John Galbraith said the northern countries should begin to think about guaranteeing a minimum wage or income for all citizens regardless of what they do. When he was asked about the inflationary impact of his proposal, Mr. Galbraith said he was not talking about lending money; he was talking about providing these people with the means to live and to spend. Perhaps the bank could focus on minimum wage as one way of dealing with inequality, rather than making a dangerous statement about the stability of inequality.

**Speaker:** There is danger in the idea of proposing a minimum income worldwide. I did not read Galbraith's article, but I can not visualize how such a system would be administered. I don't think a statement based on statistics is going to be dangerous, I think its going to be helpful. However, I think a statement based on an idea like Mr. Galbraith's, which as far as I know has no concrete basis from anything that I have seen anywhere in the world, is potentially dangerous.

**Participant:** Reading into what you are saying, the message keeps coming up that if efforts and policies directed at inequality are ineffective, then we really have to look at other options. Inequality of opportunity as opposed to inequality of income could serve as a better alternative. Income today is a reflection of opportunities of the past. What we really need to do is address the question of how to change opportunities in the future.

Also, if we are going to look at Egypt, we will have to look at the impact of transfers from abroad because they go directly to the poor. In Egypt, there are 2.25 million people that work in the Gulf and other oil-rich countries and their transfers serve 2.25 million families at the bottom end of the scale. The policy that enabled that was the policy that made that possible speaks directly to the issue of opportunities.

**Speaker:** I agree with the importance of transfers from abroad in some cases. But I also want to say that this research will inform a lot of countries that while they may have said they are very keen in pursuing policies to increase distribution, more than likely they have not. I think it is a tough message to many countries. They have been claiming to be moving in a particular direction, when in reality they have not.

**Participant:** I have one comment and it is related to the fact that I'm a non-economist. Why are we talking about inequality only in terms of income? The real question is the notion of inequality itself. How are we defining it? What is the value of spending so much time and effort in getting data? I think that assets and the provision of public services, health, and education are key to social stability and human security.

**Speaker:** Inequality should not be exclusively related to income. We should be worrying about assets and public services. If I was trying to do a comprehensive analysis on what is going on in Egypt, I would bring in all those factors.

Why spend so much time on just looking at income? I think a lot of people today think that inequality, as I've measured it, has been increasing and they are attributing that to globalization. That may have implications on how individual countries or the international community generally think about globalization.

**Participant:** I have two comments. First, the statistical significance of your estimates of 1.6 and 1.8 are only marginally significant and I don't think that inequality is the main determinant of growth. If we include the other determinants of growth, the relationship between inequality and growth might be insignificant. Your coefficient is 0.001, which means that an increase in Gini coefficient by 1 percent will affect growth very modestly. It turns out to be almost a zero effect.

Secondly, as I recall, you said that there is a positive relationship between inequality and growth in LDCs, while the relationship is negative in the case of developing countries. Can you give us the theoretical background behind this?

**Speaker:** You are absolutely right about the marginal significance of the coefficient. I made that point myself. Obviously when we do more analysis with the data we'll be introducing all kinds of controls and I would not be surprised if this particular result disappears.

Turning to the theoretical arguments, there are a lot of theories that explain these sorts of relationships. Starting from the very early ones, for example, to get rapid growth you need more savings, to get more savings in the economy you need more inequality. More recent theories use human capital arguments.

**Participant:** I think Lyn's presentation is an important one. I would have loved to see some kind of regional studies to test the implications.

**Speaker:** The point about regional analysis is a good one. We will put the data on the web and I invite researchers to use them.



**LIST OF ATTENDEES**

---

Abdel Moneim Said

*Director, Center for Political and Strategic Studies, Al Ahram*

Aladdin Saba

*Managing Director, Hermes Fund Management*

Ali Dergham

*Advisor to the Minister, Public Enterprise Office*

Aly Lotfy

*Chairman, Financial Economic Consultancy Center*

Ahmed Abu Shadi

*Director General, Cairo Center for Economic Information*

Ahmed El Dersh

*Former Minister of Planning and International Cooperation*

Ahmed Gheith

*Deputy Editor-in-Chief, Middle East News Agency*

Ahmed Noushy

*The Central Bank*

Antonio Vigilante

*Resident Representative, United Nations Development Program (UNDP)*

Aziza Helmy

*Office of Economic Analysis and Policy, USAID Cairo Mission*

Bassma Codmiani Darwish

*Program Officer, The Ford Foundation*

Bruce Lendon

*Counselor, Embassy of Australia*

Carol Best-Aaron

*Administrative Coordinator, Global Development Network*

Doha Mounir

*Counselor to the Minister, Ministry of Finance*

Hala El Said

*Lecturer, Economics Department, Faculty of Economics and Political Science*

Hala Ismail

*Head of International Cooperation, Ministry of Foreign Affairs*

Iman Abdel Maksoud

*Arab Labor Organization*

Karima Korayem

*Professor, Economics Department, Faculty of Commerce*

Khalil Mohamed Rashad

*Journalist, Middle East News Agency*

Laila El Khawaga

*Professor, Economics Department, Faculty of Economics and Political Science*

Mikio Nakamura

*Resident Representative, Japan International Cooperation Agency*

Moataz El Alfi

*Chairman, Americana Group*

Mohamed Negm

*Deputy Editor-in-Chief, October Magazine*

Mohammed H. Magued

*Chairman and Managing Director, Egyptian Banks Co. for Technological Advancement*

Mona Kaldas

*ECES Team Leader, Export Development, USAID Cairo Mission*

Mounir Abdel Nour

*Managing Director, The Egyptian-French Food Industries Co. (Vitrac)*

Moustafa Kamel El Sayed

*Professor, Political Science Department, Faculty of Economics and Political Science*

Nadine Azmy

*Global Development Network*

Noha El Mahdy

*Economic Analyst Manager, CEMEX*

Omneia Amin Helmy

*Assist. Professor of Economics, Faculty of Economics and Political Science*

Rasha Kenawy

*Economic Specialist, Embassy of the United States of America*

Raymond Kunz

*Ambassador, Embassy of Switzerland*

Reham Mohsen

*Economist, Economic Section, Embassy of the United States of America*

Said Abou El Ela

*General Authority for Investment*

Said El Naggar

*President, New Civic Forum*

Samir Korayem

*Chairman, Orbit Stock Brokerage House*

Shehata Smeida

*General Manager, Egyptian Textile Manufacturers Federation (ETMF)*

Sherine El Shawarby

*Economist, The World Bank*

Sherine Ghoneim

*Economic Research Forum*

Tawfik Abdel Wahab

*The Central Bank*

## REFERENCES

- Aghion, Philippe, Eve Caroli and Cecilia Garcia-Penalosa (1999), "Inequality and Economic Growth: The Perspective of the New Growth Theories," *Journal of Economic Literature*, 37 (4), 1615-1660.
- Alderson, Arthur S. and Fancois Nielsen (1999), "Income Inequality, Development, and Dependence: A Reconsideration," *American Sociological Review Vol. 64*, 606-636.
- Alesina, Alberto and Dani Rodrik (1994), "Distributive Politics and Economic Growth," *Quarterly Journal of Economics*, 109, No. 2, 463-90.
- Atkinson, Anthony and Andrea Brandolini (2001), "Promise and Pitfalls in the Use of 'Secondary' Data-Sets: Income Inequality in OECD Countries," *Journal of Economic Literature*.
- Baland, Jean Marie and Jean Philippe Platteau (1999), "The Ambiguous Impact of Inequality on Local Resource Management," *World Development*, 27 (5), 773-788.
- Banerjee, Abhijit and Esther Duflo (2000), *Inequality and Growth: What Can the Data Say?* Department of Economics, MIT.
- Bardhan, P., Samuel Bowles and Herbert Gintis (1999), Wealth Inequality, Wealth Constraints and Economic Performance, Handbook of Income Distribution, 541-603, Elsevier North Holland
- Barro, Robert J. (2000), "Inequality and Growth in a Panel of Countries," *Journal of Economic Growth* 5: 5-32, Kluwer Academic Publishers, printed in the Netherlands.
- Benabou, Roland (2000), "Unequal Societies: Income Distribution and the Social Contract," *American Economic Review*, 90 (1), 96-129.
- Birdsall, Nancy (2001), "Why Inequality Matters: Some Economic Issues," *Carnegie Endowment for International Peace*, Discussion Paper No. 5.
- Cornia, Giovanni and Sampsa Kiiski (2000), "Trends in Income Distribution in the Post World War II Period: Evidence and Interpretation," UNU/WIDER.
- Deaton, Angus and Salman Zaidi (2000), "Guidelines for Constructing Consumption Aggregates for Welfare Analysis," World Bank.
- Deininger, Klaus and Lyn Squire (1996), "Measuring Inequality: A New Data-Base", *World Bank Economic Review* 10(3), September 1996, 565-91.
- Deininger, Klaus and Lyn Squire (1998), "New ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics Vol. 57*, 259-287.
- Durlauf, Steven N. (1996), "A Theory of Persistent Income Inequality," *Journal of Economic Growth*, 1 (1), 75-93.

- Forbes, Kristin J. (2000), "A Reassessment of the Relationship Between Inequality and Growth," *American Economic Review* Vol. 90, No. 4, 869-887.
- Galbraith, James K. (2002), "Is Inequality Decreasing? Debating the Wealth and Poverty of Nations: By the Numbers," *Foreign Affairs* 81 (4): 178-79.
- Gottschalk, Peter and T.M. Smeeding (1997), "Cross-National Comparisons of Earnings and Income Inequality," *Journal of Economic Literature* 35(2): 633-87.
- Grosh, Margaret and Juan Munoz (1996), *A Manual for Planning and Implementing the Living Standards Measurement Study Survey*, World Bank.
- Kanbur, Ravi and Nora Lustig (1999), "Why is Inequality Back on the Agenda," *Annual Bank Conference on Development Economics*.
- Li, Hongyi, Lyn Squire and Heng-fu Zou (1998), "Explaining International and Intertemporal Variations in Income Inequality," *The Economic Journal* 108, 26-43.
- Pyatt, Graham (1999), "The Distribution of Living Standards Within Countries: A Historical Perspective on a New International Data Base," *Netherlands Institute of Social Studies*.
- Ravallion, Martin (2000a), "Should Poverty Measures be Anchored to the National Accounts?" *Economic and Political Weekly*, Vol. 34(35&36), August 26, pp. 3245-3252.
- Ravallion, Martin (2000b), *Growth, Inequality, and Poverty: Looking Beyond Averages*, World Bank Development Research Group 29:11, 1803-15.
- Romer, Christina D. and David H. Romer (1998), "Monetary Policy and the Well-being of the Poor," in *Income Inequality: Issues and Policy Options*, Kansas City, Federal Reserve Bank of Kansas City.
- Smith, Douglas (2001), "International Evidence and How Income Inequality and Credit Market Imperfections Affect Private Saving Rates," *Journal of Development Economics* Vol. 64, 103-127.
- Stewart, Frances (2000), "Income Distribution and Development," *Queen Elizabeth House*, Working Paper No. 37.
- Stewart, Frances and Albert Berry (2000), "Globalization, Liberalization, and Inequality: Real Causes: Expectations and Experience," *Challenge* 43 (1), 44-92.
- Szekely, Miguel and Marianne Hilgert (1999), *What's Behind the Inequality We Measure: An Investigation Using Latin American Data*, Inter-American Development Bank.
- Tanninen, Hannu (1999), "Income Inequality, Government Expenditures and Growth," *Applied Economics* 3, 1109-1117.