# Poverty Reduction during the Rural-Urban Transformation: Rural Development is still more important than Urbanisation?

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## Abstract

Based on cross-country datasets, we find that (i) development of the rural agricultural sector is the most poverty reducing; (ii) rural non-agricultural sector also is poverty reducing in some cases, but its magnitude is much smaller than that associated with the rural agricultural sector; and (iii) increased population in the mega cities has no role in poverty reduction. In fact, growth of population in mega cities is “poverty-increasing” in a few cases. Given that a rapid population growth or rural-urban migration is likely to increase poverty, more emphasis should be placed on policies that enhance support for rural agricultural sector and rural non-agricultural sector. If our analysis has any validity, serious doubts are raised about recent research emphasising the role of secondary towns or urbanisation as the main driver of extreme poverty reduction.

## Keywords

Inequality, Poverty, Growth, Agriculture, Non-agriculture

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## I. Introduction

There has been a lively debate among both policy makers and academics as to whether structural transformation away from agriculture into manufacturing and services will accelerate growth and/or reduce poverty. This transformation is normally accompanied by an occupational shift from agricultural activities towards more remunerative non-agricultural activities with a time lag, and inequality rises as an economy's heavy dependence on agriculture evolves into greater dependence on non-agricultural sectors. The structural transformation involves two related, but distinct processes: (i) development of rural non-agricultural sector in rural areas, and (ii) urbanisation in which workers in rural areas typically migrate and seek employment in non-agricultural sector in urban areas – including both mega cities and secondary cities or towns in urban areas. These processes may have different implications for aggregate poverty reduction.

A recent study by Christiaensen and Todo (2013) – CT hereafter - argued that the past empirical literature *either* has investigated the role of urbanisation in development or poverty reduction without disaggregating the urban sector into mega cities and secondary cities/towns or suburbs in urban areas, *or* has focused on the role of rural non-agricultural sector in poverty reduction (without distinguishing secondary towns). They argued that it is necessary to examine the role of the "missing middle" (the aggregate of secondary towns and rural non-agricultural sector) and of "mega cities" to understand the relation between urbanisation and poverty reduction better. CT's study found that migration out of agriculture into "the missing middle" is *key* to faster poverty reduction than agglomeration in mega cities. Echoing CT, the recent paper by Collier and Dercon (2013) questions the role of smallholders in development process in the African context, while Imai and Gaiha (2014), an earlier contribution, clearly show that agricultural growth has the greater potential for poverty and inequality reduction over time than non-agricultural growth. Collier and Dercon's emphatic rejection of smallholders not only rests on shaky empirical foundation but could also slow poverty and inequality reduction, as discussed in detail by Gaiha (2014). Furthermore, Imai et al. (2014), based on the recent World Bank's estimates of rural, urban and aggregate poverty rates for 31 developing countries, show that the rural sector makes a substantial contribution to aggregate poverty reduction across all five regions, after taking account of the effects of different composition of rural-urban migrants (whether poverty neutral, all poor or all non-poor).

We argue in this paper that it will be misleading to treat secondary towns and rural non-agricultural sector as one aggregate sector in analysing the process of poverty reduction because of different locations of these sectors and dynamics between non-agricultural and agricultural sectors, and between non-agricultural in rural areas and secondary towns[1]. In this paper, we will analyse the rural non-agricultural sector as a separate sector by disaggregating "the missing middle" into rural non-agricultural sector and secondary towns. We find by econometric estimations applied to cross-country panel data for developing countries, that, if the "missing middle" is disaggregated into secondary towns and rural non-agricultural sector, i.e., the whole country is broken down into (i) rural agricultural sector, (ii) rural non-agricultural sector, (iii) secondary towns, and (iv) mega cities, the development of (i) rural agriculture sector as well as (ii) rural non-agricultural sectors - rather than (iii) secondary small towns - are the most important for acceleration of poverty reduction. It has also been observed that growth in mega cities does not contribute to poverty reduction, or in some cases, *increases* poverty. So the case for urbanisation-especially secondary towns-as the key driver of elimination of extreme

[1] For Illustrative evidence on selected Asian countries, see APR/IFAD (2013).

poverty rests on a somewhat arbitrary merging of non-agricultural in rural areas and secondary towns, and results that exaggerate the importance of urbanisation[2].

In a recent contribution, Cali and Menon (2013) identify and measure the impact of urbanisation on rural poverty in India using NSS and other relevant district data over the years 1983-84, 1993-94 and 1999-2000. They distinguish between the *location* and the economic *linkage* effects. The former entails variation in rural poverty due to the change in residency from rural areas to cities of some of the rural poor. The linkage effects, on the other hand, focus on the impact of urban population growth on the rural poverty rate. There are several *distinct* channels through which urban population growth affects poverty in surrounding areas: consumption linkages, rural non-farm employment, remittances, rural land/labour ratios, rural land prices, and consumer prices. Given the data constraints, a few of these are identified and measured.

Urbanisation has a significant poverty-reducing effect on the surrounding rural areas. An increase in the urban population of 200,000 determines a reduction in rural poverty in the same district between 1.3 (lower bound) and 2.6 percentage points. Over the entire period in question, urbanisation is associated with a reduction between 13 per cent and 25 per cent of the overall reduction in poverty. But this is not as substantial a reduction as due to the state-led rural bank branch expansion which explains approximately half of the overall reduction of rural poverty between 1961 and 2000. However, the contribution of urbanisation to rural poverty reduction is slightly higher than that of another important state rural policy in post-independence India- land reforms, which explain approximately one –tenth of the rural poverty reduction between 1958 and 1992. Whether these are valid comparisons, given differences in time periods covered and specifications used, is moot.

The poverty reducing effect of urbanisation is largely through economic linkage effects rather than through the direct movement of the rural poor to urban areas. This is justified on the grounds that rural-urban migrants, on average, are less poor and more educated than rural nonmigrants. The economic linkage effects are transmitted through four channels: consumer linkages, urban-rural remittances, the changing rural land/labour ratios, and nonfarm employment.

Another analysis (Kulkarni et al. 2014), not as detailed as this but based on National Sample Survey (NSS) household data covering the years 1993, 2004, 2009 and 2011, raises doubts about some of these findings. As far as rural poverty is concerned, there are two interesting effects. One is the locational effect captured through the ratio of rural to urban population. This is positive implying that the larger the number of rural inhabitants relative to the urban, the higher is the incidence of rural poverty. This is not surprising given that limited access to markets, health and education services constrain livelihood opportunities in rural areas relative to the urban. Evidently, lowering of the rural population will reduce rural poverty but it is not obvious that rural-urban migration is the solution. An additional variable, difference in urban and rural earnings per capita, has a positive coefficient suggesting that the larger the difference, the higher is the incidence of rural poverty presumably

[2] In another recent contribution (Christiaensen et al. 2013), a similar argument is developed by combining the evidence from the panel survey in Kagera (Tanzania), and cross-country data analysis (repetition of Christiaensen and Todo, 2013). Avoiding repetition, Christiaensen et al. (2013) rely on the merging of rural non-farm activities and secondary towns to restate the case that the "missing middle" is more important than mega cities in reducing poverty with spill over effects on the rural farm economy. It is further noted that, since infrastructure in secondary towns is much weaker than in metropoles/megacities, there is a strong case for directing more resources to the former.

because rural-urban migrants are typically younger, better endowed persons. The larger their number, the higher will be the proportion of poor nonmigrant inhabitants in rural areas.

The rest of the paper is organised as follows. Section II provides a background for the present study by critically reviewing the methodology and findings of Christiaensen and Todo (2013). Section III outlines the data and the econometric methods. The results of various econometric estimations will be presented in Section IV. Section V offers concluding observations and policy implications.

## II. Background: Critical Review of Christiaensen and Todo (2013)

In some countries, the structural transformation involves rapid agglomeration in mega cities (as in South Korea and the Philippines), while in others there is diversification out of agriculture into the rural non-farm economy and secondary towns (Taiwan and Thailand). So a testable hypothesis is whether different patterns of rural-urban transformation are associated with different rates of economic growth and poverty reduction. To do so, CT classify the population of each country according to their occupation and location: (i) those living in rural areas and engaged in agriculture; (ii) those living in megacities and employed in industry and services (1 million or more persons); and (iii) those living in rural areas and secondary cities and employed outside agriculture - especially rural non-farm activities[3] - on the contentious ground that the latter draw inputs through secondary cities. This is referred to as the "missing middle". Arguably, on this criterion, a part of the agricultural sector may also cease to be "rural" as it relies on inputs through secondary towns. CT's empirical investigation is based on 206 poverty spells across 51 countries from different regions during 1980-2004.

The authors aim to capture an "income level effect" that shifts the income distribution of each sector to the right and reduces poverty. Following Ravallion (2002), it is assumed that an increase in the population share of a sector may change its income distribution (holding average income constant), referred to as the "income distributional effect". If the distribution becomes less equal, the concentration may change the poverty level. To separate these effects, the authors propose a decomposition that *in principle* is *complete* but a less disaggregated decomposition is used which raises serious doubts about the empirical validation as well as interpretation of the income and income distributional effects. We have reproduced the simplified estimating equation that departs from the complete decomposition which requires average income in each of three sectors.

$$\frac{dP}{P} = \beta_u \frac{ds_u}{s_u} + \beta_N \frac{ds_N}{s_N} + \gamma \frac{dy}{y} \qquad (1)$$

Here *P* is a decomposable poverty measure (a sum of weighted poverty measure in each of the three sectors, with $s_u$ denoting share of urban metropolitan population, $s_N$ denoting share of rural non-farm and small towns' population, and $s_A$representing share of agricultural population). Instead of sectoral incomes required for the complete decomposition, the average income of each country is used, raising questions about the unbiasedness of the sectoral and income effects. So the total change in poverty is attributed to total changes in the urban and the missing middle population shares and per capita income (specifically, GDP per worker). In order to allow for country-specific and global year-specific effects, equation (1) is augmented as specified below.

$$\frac{dP_{it}}{P_{it}} = \beta_u \frac{ds_{uit}}{s_{uit}} + \beta_N \frac{ds_{Nit}}{s_{Nit}} + \gamma \frac{dy_{it}}{y_{it}} + \vartheta_i + \varepsilon_{it} \qquad (2)$$

[3] Rural non-farm or non-agricultural activities are synonymous.

where $\vartheta_i$denotes a country specific effect. Equation (2) is estimated using OLS with a correction for heteroscedasticity. By testing whether $\beta_u$=$\beta_N$, inferences are drawn about whether poverty reducing effects of movements out of agriculture into the missing middle and large cities differ.

Given that the specification in equation (2) is highly simplified, neither the income effect nor the sectoral income distributional effects can be accepted at face value as they are likely to be biased. Apart from the nomenclature difficulties (e.g. why were rural non-farm activities bundled together with small towns?), it is misleading to attribute the entire change in the share of the missing middle ($\frac{ds_{Nit}}{s_{Nit}}$) to movement out of agriculture as there is also a *natural* increase in the population of small/secondary cities. Besides, there is migration out of small cities into metropolitan ones. Furthermore, although attributing the coefficient to both rural non-farm and small towns is statistically valid, farm and non-farm activities in rural areas have a different dynamic than between the latter and small towns. In any case, rural non-farm activities merit consideration as a sub-sector in their own right. Finally, the change in the share of the missing middle ($\frac{ds_{Nit}}{s_{Nit}}$) or of the urban metropolitan ($\frac{ds_u}{s_u}$) is likely to be endogenous to the change in poverty because of the opposite direction of causality (e.g. worsening the share of population who are undernourished and are thus less productive in the labour market would affect the incentives for urban-to-rural migration).[4] With these caveats in mind, we will first summarise the main results of CT's study.

Controlling for overall growth in the economy, diversification into rural non-farm population and small/secondary towns is associated with poverty reduction, while agglomeration in the mega cities is not (as in Table 3 in CT). This holds for both the \$1 and \$2 per day poverty headcount rates. These effects are in addition to the poverty reducing effect of overall growth (per worker). Recall that rural diversification is not measured explicitly. Given that the results are controlled for differences in initial conditions (such as land inequality, institutional and political arrangements) through country-specific dummies, it is claimed that the sectoral effect of the missing middle is a striking result.[5] In a robustness check, quadratic terms of change in sectoral population shares are also employed (Table 4 in CT). There is no effect of mega cities on poverty while that of the missing middle is robust, with a strong poverty reducing effect that declines with the migration rate to this sector. Recall that this interpretation overlooks the natural increase in the population of secondary towns and outmigration to metropolitan/mega cities[6].

As another robustness exercise (Table 5), CT's study examined the effects of (share weighted) agricultural and non-agricultural growth rates. Growth originating in agriculture is more poverty reducing than growth originating outside agriculture, while the advantage of agricultural growth over

[4] The present study attempts to take into account the endogeneity problem by applying the dynamic panel model where the shares of sectoral population or their changes are instrumented by their own lags.

[5] An issue here is that these factors are observed and must therefore be directly incorporated in the analysis, as done by Imai and Gaiha (2014), as opposed to relying on country dummies which could capture other *time invariant unobservable* factors.

[6] Using an extensive historical dataset on urbanisation and the urban demographic transition, Jedwab et al. (2014) show that (i) rapid urban growth in 33 developing countries during 1960-2010 was driven mostly by natural increase, and not by migration; (ii) many of the cities in these countries could be classified as "mushroom cities", as fertility remains high while mortality has fallen, leading to high urban rates of natural increase; and (iii) fast urban growth, and urban natural increase in particular, are associated with congested cities which limit agglomeration economies. One policy option is to invest more in the cities. But this could further fuel migration, and not investing in them could make matters worse. Alternatively, more could be invested in rural areas of these countries to slowdown excessive migration and relieve the already congested cities (Jedwab et al. 2014). This policy choice is reinforced by our empirical analysis.

non-agricultural growth disappeared when it came to $2 per day poverty.[7] The conclusion that "Agricultural growth appears not to be driving the results" (p. 6) appears to be false, as in Columns (1), (2), and (4), it has a significant *negative* coefficient. CT in fact make a stronger assertion that "….part of the poverty reducing powers of agricultural growth appear to derive from its interactions with the rural non-farm sector and secondary towns (with the effects likely going in both directions), as agriculture seems to lose most of its edge over non-agriculture in reducing poverty after inclusion of the expansion rate of the rural non-farm and small town populations" (p.8). There are a few caveats. First, out of the two specifications in which sectoral shares are combined with agricultural and non-agricultural growth rates, in Column (4) of Table 5, both agricultural growth rate and share of the missing middle have significant negative coefficients. On the fact that the coefficient of the latter is larger in (absolute) terms, it is surmised that if the rural non-farm sector share were excluded, the gap would reduce or disappear altogether. It is also unclear whether the interaction effect between the missing middle share and agriculture is captured when the two terms appear additively. In Columns (5) and (6) of Table 5 where the dynamic specification is applied, growth rates of agriculture and non-agriculture are omitted and replaced by initial poverty rate which has a significant negative coefficient. This is interpreted in a somewhat convoluted manner to mean that there is no poverty induced migration. A simple and straightforward interpretation would be that the higher the initial poverty rate, the lower is the poverty change[8]. Two additional results have been derived by CT in Tables 7 and 8, that is, (i) mega cities accelerate growth through agglomeration economies but without any role for agriculture; and (ii) the former also aggravates inequality. These conclusions will have to be re-examined by using modified specifications and more disaggregated data. CT conclude that agglomeration in mega cities is on average associated with faster growth and higher income inequality, while diversification into rural non-farm and secondary towns typically facilitates a more inclusive but a slower growth process. As these findings are based on *ad hoc* specifications and explanations, the present study will seek to overcome these limitations through an alternative specification and more disaggregated data.

## III. Data and Methodology

### *Data*

The present study will extend CT in the following three ways. First, we will treat the rural non-agricultural sector as a separate sector by disaggregating "the missing middle" into the rural-non-agricultural sector and secondary towns. To do so we have used the share of people in agricultural sector available from FAO-STAT in 2013 and have derived the approximate share of rural non-agricultural population as the difference between the share of rural population in the total population (calculated based on World Development Indicator (WDI) in 2013) and the share of population in the agricultural sector in the total population (taken from FAO-STAT 2013). Here we assume that all the agricultural population lives in rural areas as agricultural activities are predominantly rural, that is,

[7] It is contradicted by the results of Imai and Gaiha (2014) based on a more detailed specifications applied to more recent data.

[8] Ravallion (2012) argues that the initial poverty rate matters to the subsequent rate of poverty reduction through two distinct channels, namely, the growth rate in mean consumption, and the elasticity of poverty to the mean. There is an adverse direct effect of poverty on growth, such that countries with a higher initial incidence of poverty tend to experience a lower rate of growth, controlling for the initial mean. Additionally, a high poverty rate makes it harder to achieve any given proportionate impact on poverty through growth in the mean. Thus the two "poverty effects" work against the mean convergence effect, leaving little or no correlation between the initial incidence of poverty and the subsequent rate of progress against poverty.

those in urban suburbs are rarely found in developing countries.[9] This will further reduce the sample size, as we will see later, but as we have argued in the previous section, it is crucial to treat rural non-agricultural sector separately from small or secondary towns in urban areas because these sectors differ in location and intersectoral dynamics. Definitions of other variables closely follow CT. For instance, the share of population in mega cities is defined as the population share living in cities with a population of more than one million and is based on the United Nations' World Urbanization Prospects (UNWUP). Real GDP per capita is taken from WDI 2013. We have used the World Bank's POVCAL data as well as WDI 2013 to update the international poverty data, that is, poverty headcounts and poverty gaps based on US$1.25 and US$2 (PPP).

Secondly, we have updated the data coverage to 2010. We have thus covered the period 1980-2010, while CT covered the period 1980-2004. However, as we have imposed further restrictions on the dataset by (i) calculating the approximate share of rural non-agricultural population, (ii) dropping the cases where the share of agricultural population exceeds that of rural population and (iii) further dropping a few cases showing data inconsistencies (e.g. the cases where the sum of the share of rural population and the share of mega city population exceeds one, that is, the share of small cities is negative). Admittedly, our approach suffers from a few limitations. First of all, we ignore the cases where urban agricultural sector is substantial, typically, Latin American countries and thus the number of observation is smaller than in CT. We have covered 45 countries and 135 country-years for the unbalanced panel (for Level-Level regressions). These have been further reduced to 25 countries and 117 country-years if we drop the country with observations for only one year of observation. Another limitation is related to the way for dividing the economy into the four sectors. As CT derived "the missing middle" (= [rural non-agricultural sector] + [small or secondary towns]) as the residual sector (= 1- [agricultural sector] – [mega cities]), we have derived "the small or secondary towns" as the residual sector (= 1- [rural sector (=rural agricultural sector + rural non-agricultural sector)] – [mega cities]). Hence the residual sector is likely to suffer from measurement errors. The details of the data, namely descriptive statistics and the list of countries/years with the corresponding data, are shown in Appendix 1 and Appendix 2.[10]

Finally, we use different specifications in the following ways. First, CT estimated the approximate annual rate of change of poverty, defined as the average annual change of poverty between the initial year (for which the data are available for each country) and the survey year (for which the data are available for that country), by the approximate annual change of sectoral population share for "the missing middle" and the mega cities similarly defined for the initial year and the survey year (as defined on p.4 of CT). It is not clear that in case where there are more than two data points for a country (e.g. 1992, 1997, 2000), why the initial year (1992) is used as the base year for them (1997 and 2000). The base year should be the previous data point (e.g. 1992 for 1997 and 1997 for 2000). While the number of observations is reduced, we have taken a more standard method of calculating

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[9] In some middle income countries (e.g. in Latin American countries) agricultural population is found in urban areas. In a few cases, the total agricultural population is larger than the total rural population and we have dropped such cases.

[10] In Appendix 3 we have summarised the regional changes of sectoral population shares over the period 2000-2010. It is observed that the rural-non agriculture share and the share of secondary towns have increased over the years, while the share of agricultural population and that of mega cities population have marginally decreased. The increase of the rural non-agricultural sector is due to the rapid increase of this sector in Middle East & North Africa as well as East Asia & Pacific, while the increase in secondary towns seems to be due to the increase in this sector in Sub-Saharan Africa, Latin America, and East Asia and the Pacific. It is noted that the agricultural population share in all the regions (except South Asia with only one observation in 2000) and the population share of mega cities has increased (except Sub-Saharan Africa). These regional patterns should not be generalised due to the small number of observations in each region.

the annual change, that is, by taking the first difference of log poverty or log sectoral population by using the difference operator for the panel data as well as estimating the level equations. That is, we have estimated *either* the level of poverty headcount *or* changes (both in logarithm) by *either* the level of sectorial population shares *or* their changes (both in logarithm), focusing on three cases of regression, namely "Level (dependent variable)-Level (explanatory variables)", "first difference (FD)-Level" and "FD-FD".[11] As FD in log terms denotes the approximate value of growth rate (e.g. $\frac{dP_{it}}{P_{it}}$ or $\frac{ds_{uit}}{s_{uit}}$ ), econometric models for equation (2) should be specified as "FD (in log)-FD (in log)" to estimate how changes in e.g. urban metropolitan population share are associated with changes in the poverty ratio where the positive (negative) and significant coefficient estimate implies that, if the growth rate of urban population increases, the growth rate of poverty rate increases (decreases) (i.e. the poverty rate increase will be accelerated (decelerated)). In the meantime, it would be meaningful to estimate the Level-Level regression (as in CT) (in which e.g. the positive coefficient estimate implies that if the urban population increases, the poverty rate tends to increase) or the FD-Level regression (in which the positive coefficient estimate implies that if the urban population increases, the change in poverty rate tends to increase).

### *Methodology*

As we have noted earlier, as an extension of CT, we have estimated three kinds of models based on "Level-Level", "FD-Level" or "FD-FD" specification. Either the robust fixed effects estimator or robust Arellano-Bover (1995) /Blundell-Bond (1998) linear dynamic panel estimator is applied to each specification. We have used log of the share of agricultural population in the total population (or its change), log of the share of non-agricultural population (or its change) and log of the share of mega city population (or its change) as explanatory variables to explain a dependent variable (defined for 4 different cases, *either* log of poverty headcount ratio *or* log of poverty gap, based on US$1.25 *or* US$2 poverty line). Either the change or the level of log GDP per capita is used as a control variable.

### *Fixed-Effects Model*

**Case A:** The "FD-FD" regression

$$dlogP_{it} = \beta_0 + \beta_A dlogS_{Ait} + \beta_{NA} dlogS_{NAit} + \beta_U dlogS_{Uit} + \gamma dlogGDPpc_{it} + \boldsymbol{X}\delta + \mu_i + e_{it} \qquad (3)$$

where *i* denotes country, *t* denotes year, $dlogP_{it}$ is the first difference of log of the poverty headcount ratio (or poverty gap) for the US$1.25 (or US$2) a day poverty line (i.e., the growth rate of poverty headcount or poverty gap), $dlogS_{Ait}$ is the first difference of log of the share of population in rural agricultural sector, $dlogS_{NAit}$ is the first difference of log of the share of population in rural non-agricultural sector, and $dlogS_{Uit}$ is the first difference of log of the share of population in mega cities (with the population more than one million). $dlogGDPpc_{it}$ is the first difference of log GDP per capita (i.e., the growth rate of GDP per capita). $\boldsymbol{X}$ is a vector of the control variables. In our case, we have tried the cases with and without the intensity of conflict and the aggregate level of institutional quality. Conflict intensity ("Conflict Intensity"), taking the value ranging from 0 to 2, shows how intense internal or external conflicts- including armed conflicts- that occurred in a country were in a particular year. The data were obtained from CSCW and Uppsala Conflict Data Program (UCDP) at the Department

[11] A few cases of "0", have been replaced by a small positive value (e.g. 0.01) in converting them to log. The cases of "FD-Level" are not presented as no meaningful results were obtained.

of Peace and Conflict Research, Uppsala University. The institutional quality is a simple average of 4 different World Bank's Governance Indicators, political stability, rule of law, control of conflict and voice and accountability (Imai et al., 2010). $\mu_i$ is the unobservable fixed effect specific to each country, and $e_{it}$ is the error term, independent and identically distributed (i.i.d.). This is a specification where the growth rate of poverty is estimated by the growth rate of population in each sector. For instance, the positive coefficient estimate for $\beta_U$ implies that if the mega city population grows at a higher rate, poverty headcount ratio also grows at a higher rate. We have used the Huber-White robust estimator in all the cases.

**Case B:** The "FD-Level" regression

$$dlogP_{it} = \beta'_0 + \beta'_A logS_{Ait} + \beta'_{NA} logS_{NAit} + \beta'_U logS_{Uit} + \gamma' logGDPpc_{it} + \boldsymbol{X}\delta' + \mu'_i + e'_{it} \quad (4)$$

Equation (4) in Case B is same as equation (3) in Case A except that the right hand side variables are in levels, rather than in first differences. This is a specification where the growth rate of poverty is estimated by the level of the share of population in each sector. For instance, the positive coefficient estimate for $\beta_U$ implies that if the mega city population increases, poverty headcount ratio grows at a higher rate.

**Case C:** The "Level-Level" regression

$$logP_{it} = \beta"_0 + \beta"_A logS_{Ait} + \beta"_{NA} logS_{NAit} + \beta"_U logS_{Uit} + \gamma" logGDPpc_{it} + \boldsymbol{X}\delta" + \mu"_i + \varepsilon"_{it} \quad (5)$$

Equation (5) in Case C is same as equation (3) in Case A except that variables in both left and right hand sides are defined in levels. This is a specification where poverty is estimated by the level of the share of population in each sector. For instance, the positive coefficient estimate for $\beta_U$ implies that if the mega city population increases, poverty headcount ratio is likely to increase.

***Dynamic Panel***

As an alternative to the fixed-effects model[12], we can use the lagged differences of all explanatory variables as instruments for the level equation and combine the difference equation and the level equation in a system whereby the panel estimators use instrument variables, based on previous realisations of the explanatory variables as the internal instruments, using the Blundell-Bond (1998) system GMM estimator based on additional moment conditions. Such a system gives consistent results under the assumptions that there is no second order serial correlation and the instruments are uncorrelated with the error terms.[13] The Blundell-Bond System GMM (SGMM) estimator is used, as in the previous study (Imai and Gaiha, 2014). This estimator is useful to address the problem of endogenous regressors, e.g., the shares of sectoral population or its changes. In the system of equations, endogenous variables can be treated similarly to lagged dependent variables. The second lagged levels of endogenous variables could be specified as instruments for the difference equation.

[12] Two issues have to be resolved in estimating the dynamic panel model. One is endogeneity of the regressors and the second is the correlation between($\Delta dlogP_{it-1} - \Delta dlogP_{it-2}$) and($\varepsilon_{it-}\varepsilon_{it-1}$), e.g., in the case where we estimate equation (3) (e.g. see Baltagi, 2005, Chapter 8). Assuming that $\varepsilon_{it}$ is not serially correlated and that the regressors in $\boldsymbol{X}_{it}$ are weakly exogenous, the generalized method-of-moments (GMM) first difference estimator (e.g. Arellano and Bond, 1991) can be used.

[13] We did not reject the assumption that there is no second order serial correlation in most cases. However, the assumption that the instruments are uncorrelated with the error terms is not rejected in most cases, which will justify the use of dynamic panel.

The first lagged differences of those variables could also be used as instruments for the level equation in the system. A disadvantage is that the number of observations is reduced and thus the results have to be interpreted cautiously. We will use the robust estimator based on Windmeijer's (2005) WC robust estimator. The results have to be interpreted with caution because of the small sample.

## IV. Results

In this section, we will report and discuss the econometric results for the models presented in the previous section. We have first used CT's data and have applied both robust fixed estimator and robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator to take account of the endogeneity of the sectoral population shares or their changes. The results are given in Appendix 4. In Appendix 4 we have obtained results broadly consistent with CS, while the magnitude of coefficient estimates is different reflecting the different specifications for the model. If we apply the "FD-FD" model for the annual data in the first four columns (Cases 1 to 4), the coefficient estimate for change in the share of the population in "the missing middle" is negative and significant irrespective of whether the fixed-effects model is applied, or the dynamic panel model is applied, or whether the US$1.25 poverty line or the US$2 poverty line is applied. That is, consistent with CT, increasing share of the missing middle, including rural non-agricultural sector and secondary towns, is associated with decreasing rate of poverty, while the coefficient estimate for the change in population in mega cities is statistically insignificant. It is notable that, unlike CT, we have taken into account the endogeneity of the share of the missing middle or the mega city.

When we apply the "FD-Level" model or the "Level-Level" model, the coefficient estimate for the missing middle is negative and significant, again consistent with CT, irrespective of the specification or the definition of poverty. That is, higher share of the missing middle tends to be associated with decreasing rate of poverty, or a lower level of poverty, irrespective of the specification, or the definition of poverty. We can conclude that CS's result that rising shares of the missing middle is associated with lower levels of poverty is robust as long as their data are used. However, deep questions remain: whether the rural non-farm sector alone has a poverty reducing role, or the secondary towns alone reduce poverty, whether the agricultural sector is poverty-reducing, or poverty-increasing, or whether CT's conclusion holds once the data are updated to cover more recent years.

Table 1 – Table 5 show the results of econometric models for equations (3)-(5) for 3 years average panel data (Tables 1-3) and annual data (Tables 4-5). Table 1 (or Table 4) reports the results for the "FD-FD" model, Table 2 (or Table 5) for the "FD-Level" model and Table 3 for the "Level-Level" model. In each table, the first four columns (Columns (1)-(4)) show four cases based on the robust fixed effects model, poverty gap based on the US$1.25 poverty line (Case 1), poverty headcount ratio based on the US$1.25 poverty line (Case 2), poverty gap based on the US$2 poverty line (Case 3), and poverty headcount ratio based on the US$2 poverty line (Case 4), while the next four columns (Cases 5-8) report the corresponding results based on the dynamic panel model (i.e., robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator). Cases 1-8 are the those only with the first difference of log GDP per capita, while Cases 9-16 are in the second half of each table, based on the regressions for Cases 1-8 by adding the variables on conflict intensity and the average of the macro indicators.

Below we will focus only on several key results and implications in explaining Tables 1-5 because the results are voluminous. First, agricultural sector plays the most important role in the specifications where the change in log poverty is estimated. For instance, in Table 1, the growth rate of the share of agricultural sector is negative and statistically significant in Cases 1-8 and Cases 14-15 with the largest coefficient estimate (in absolute values) among the three sectors (with secondary towns as the omitted sector). It is negative and significant in Case 1 (poverty gap for the US$1.25 poverty line, static model), Cases 5, 6 and 8 (dynamic model) and Cases 10-13 in Table 2. It also shows a negative and significant coefficient estimate in many cases in Table 4. However, the coefficient estimate is not significant in any cases of Table 3 where the level of log poverty is a dependent variable. Given that the specifications in Table 1 and Table 4 ("FD"-"FD") are the closest to equation (2) (or equation (7) on p.3 of CT) where the growth rates are taken in both left and right hand sides of the equation, these should be given most importance in interpreting the results. Hence, it can be concluded that the development in the rural agricultural sector is the most important for poverty reduction among the four sectors, the rural agricultural sector, the rural non-agricultural sector, small and secondary towns and mega cities in our context, which is in sharp contrast with the results in CT or in Appendix 4 based on CT's data. For instance, it can be surmised based on the first half of the results in Table 1 that, if agricultural share change increases by 10%, the reduction of poverty headcount ratio based on the US$1.25 (US$2) poverty line tends to increase by 8.6% or 12.2% (8.6% or 13.2%) in Cases 2 or 6 (Cases 4 or 8). For the same increase, the reduction of poverty headcount gap based on the US$1.25 (US$2) poverty line tends to increase by 12.5% or 11.1% (12.8% or 10.8%) in Cases 1 or 3 (Cases 5 or 7).[14]

Second, the role of rural non-agricultural sector in poverty reduction is observed in some cases, but the pattern of the results is less consistent or weaker than the results for the agricultural sector. For instance, growth in non-agricultural sector is negatively and significantly correlated with growth in poverty gap in Cases 1 and 3 of Table 1 as well as Cases 5-8 in Table 1, with the coefficient estimates in absolute values much smaller than those for agricultural sector growth. They cease to be statistically significant once additional explanatory variables (conflict and institutional quality) are added in Table 1. In Table 2, it is negative and significant only in Cases 1, 6, 8 and 11. No firm conclusions can be obtained from Table 4 where the annual panel is used for the "FD-FD" specification because the sign of the coefficient estimates of non-farm in rural areas turns from positive and significant (Cases 5-8 and 16) to negative and significant (Cases 9 and 13), possibly reflecting a small number of observations. If we restrict our attention to Cases 1-8 of Table 1, we can conclude that the growth in rural non-agricultural sector has some role - though its magnitude is smaller than that of rural agricultural sector's - in accelerating poverty reduction.

Third, it is clearly observed that the growth in mega city sector has no role in poverty reduction. Consistent with CT, the share of mega city sector is *positive* and significant in Cases 2-8 of Table 2 (the "FD-Level" specification for the 3 year- average panel) and in Cases 2-4, 6-7 and 14-16 in Table 3 (the "Level-Level" specification for the 3 year- average panel). However, it is negative and significant in a few cases (e.g. Cases 9 and 10 in Table 4, Cases 7, 13 and 15 in Table 5). Overall, there is no evidence in favour of poverty-reducing roles of mega cities.[15] [16]

[14] Very high coefficient estimates for agricultural sectoral growth in Table 4 should not be interpreted at face value. This may be due to the fact that there is high correlation between agricultural growth and poverty change when annual panel data are used.

[15] As a robustness check, we have tried the cases where the population share in mega cities is replaced by that in secondary towns in the urban areas. In these cases, agricultural sector, rural non-agricultural sector, and secondary towns are used as explanatory variables in log of levels or log in first differences using the same specifications. At the bottom of Tables 1-5, the coefficient estimates for secondary towns have been reported. It

Finally, it is observed that in Tables 1-3 where the three- year average panel data are used, increase in conflict intensity or improvement in institutional quality is important for poverty reduction, suggested by positive and statistically significant coefficient estimates for the former and negative and significant coefficients for the latter. Conflict intensity is dropped from the regressions in Tables 4 and 5 due to insufficient numbers of observations. The negative and significant coefficient estimates are clearly observed only in Cases 9-12 of Table 4 among the cases where annual panel data are used (Tables 4-5).

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is found that (i) the coefficient estimate for secondary towns is not significant and is smaller than those for of agricultural and rural non-agricultural sector in the “FD-FD” specification (Tables 1 and 4) except for Cases 8 and 16 for poverty headcount based on US$2 where it is positive and significant (or “poverty increasing”); (ii) it is negative and significant in some cases of the “FD-Level” specification (that is, in Cases 1-4 and 13-16 in Table 2 based on the three years average panel, but not significant in Table 5 based on the annual panel); and (iii) it is negative and significant in Cases 1-5 of Table 3 based on the “Level-Level” specification as consistent with CT. It should be noted that the results are interpreted with caution because the category of small towns is defined as a residual category and our main conclusions will be unchanged.

[16] Given the observation that the relationship between urbanisation and rural poverty reduction is conditional on the demographic factors, we have added the dependency ratio, that is, the population share below 15 years and that above 65 in the cases where the “Level-Level” specification is applied for fixed effects model based on 3 years-average panel. Irrespective of the definition of poverty, the coefficient estimates of these variables are positive and significant, implying that higher dependency rations are associated with higher levels of poverty.

**Table 1 Effects of Change in log Sectoral Population Compositions on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundelcountriesl-Bond linear dynamic panel estimator: (Based on *3 year* average panel; *Without* conflict or institutional quality)**

| | **First Difference (dep)- First Difference (exp)** | | | | **First Difference (dep)- First Difference (exp)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fixed Effects, Robust** | | | | **Dynamic Panel** | | | |
| **Dep Var** | (1) **Dlogpovertyg125 Gap $1.25** Case 1 | (2) **Dlogpovertyhc125 HC $1.25** Case 2 | (3) **Dlogpovertyg200 Gap $2.00** Case 3 | (4) **Dlogpovertyhc200 HC $2.00** Case 4 | (5) **Dlogpovertyg125 Gap $1.25** Case 5 | (6) **Dlogpovertyhc125 HC $1.25** Case 6 | (7) **Dlogpovertyg200 Gap $2.00** Case 7 | (8) **Dlogpovertyhc200 HC $2.00** Case 8 |
| VARIABLES | | | | | | | | |
| **D.logagri_share** | **-1.249***** | **-0.857*** | **-1.283***** | **-0.857*** | **-1.113***** | **-1.219***** | **-1.075***** | **-1.322***** |
| | **(0.411)** | **(0.444)** | **(0.178)** | **(0.444)** | **(0.296)** | **(0.291)** | **(0.221)** | **(0.290)** |
| **D.logrural_non_agri_share** | **-0.376***** | **-0.14** | **-0.311***** | **-0.14** | **-0.420***** | **-0.442***** | **-0.312***** | **-0.350***** |
| | **(0.0855)** | **(0.180)** | **(0.0331)** | **(0.180)** | **(0.0506)** | **(0.150)** | **(0.0345)** | **(0.114)** |
| **D.logmega_share** | **-0.05** | **0.223** | **0.091** | **0.223** | **-0.1** | **-0** | **0.001** | **0.11** |
| | **(0.198)** | **(0.191)** | **(0.0793)** | **(0.191)** | **(0.126)** | **(0.130)** | **(0.0992)** | **(0.0866)** |
| dloggdppc | 4.515 | 10.05 | 4.913 | 10.05 | 10.99 | 7.699 | 6.643 | 2.902 |
| | (5.894) | (7.813) | (3.942) | (7.813) | (10.30) | (8.205) | (7.298) | (3.870) |
| L.dlogpovertyg125 | | | | | -0.506*** | | | |
| | | | | | (0.0902) | | | |
| L.dlogpovertyhc125 | | | | | | -0.367*** | | |
| | | | | | | (0.0593) | | |
| L.dlogpovertyg200 | | | | | | | -0.343*** | |
| | | | | | | | (0.0456) | |
| L.dlogpovertyhc200 | | | | | | | | 0.034 |
| | | | | | | | | (0.196) |
| Conflict Intensity | | | | | | | | |
| Institutional Quality | | | | | | | | |
| Constant | -0.363 | -0.31 | -0.274 | -0.31 | -0.859 | -0.441 | -0.528 | -0.17 |
| | (0.172) | (0.206) | (0.116) | (0.206) | (0.362) | (0.251) | (0.231) | (0.114) |
| Observations | 45 | 48 | 46 | 48 | 29 | 30 | 29 | 30 |
| R-squared | 0.04 | 0.104 | 0.088 | 0.104 | | | | |
| Number of countries | 18 | 20 | 19 | 20 | 9 | 10 | 9 | 10 |

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.18 | 0.242 | 0.271 | 0.215 |
| 2 | | | | | 0.174 | 0.326 | 0.287 | 0.241 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(39) | Chi2(40) | Chi2(39) | Chi2(40) |
| | | | | | 29.28 | 38.79 | 28.35 | 30.67 |
| Prob > chi2 | | | | | 0.871 | 0.525 | 0.896 | 0.856 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **D.logmmid_share** | **0.17** | **-0.97** | **-0.39** | **-0.97** | **-0.1** | **-0** | **0.001** | **0.11** |
| | **(0.879)** | **(1.154)** | **(0.663)** | **(1.154)** | **(0.126)** | **(0.130)** | **(0.0992)** | **(0.0866)** |

**Table 1 (cont.) Effects of Change in log Sectoral Population Compositions on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *3 year* average panel; *With* conflict or institutional quality)**

| | **First Difference (dep)- First Difference (exp)** | | | | **First Difference (dep)- First Difference (exp)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fixed Effects, Robust** | | | | **Dynamic Panel** | | | |
| | (9) **Dlogpovertyg125** **Gap** **$1.25** | (10) **Dlogpovertyhc125** **HC** **$1.25** | (11) **Dlogpovertyg200** **Gap** **$2.00** | (12) **Dlogpovertyhc200** **HC** **$2.00** | (13) **Dlogpovertyg125** **Gap** **$1.25** | (14) **Dlogpovertyhc125** **HC** **$1.25** | (15) **Dlogpovertyg200** **Gap** **$2.00** | (16) **Dlogpovertyhc200** **HC** **$2.00** |
| VARIABLES | Case 9 | Case 10 | Case 11 | Case 12 | Case 13 | Case 14 | Case 15 | Case 16 |
| **D.logagri_share** | **0.109** | **-0.105** | **-0.424** | **-0.105** | **-0.226** | **-0.359*** ** | **-0.583*** ** | **-0.650*** ** |
| | **(1.373)** | **(0.748)** | **(0.549)** | **(0.748)** | **(0.159)** | **(0.139)** | **(0.150)** | **(0.153)** |
| **D.logrural_non_agri_share** | **0.114** | **0.0684** | **-0.0283** | **0.0684** | **0.00207** | **0.057** | **-0.011** | **-0.0025** |
| | **(0.539)** | **(0.301)** | **(0.231)** | **(0.301)** | **(0.101)** | **(0.0946)** | **(0.0700)** | **(0.0417)** |
| **D.logmega_share** | **0.129** | **0.161** | **0.147** | **0.161** | **0.0524** | **0.0744** | **0.067** | **0.0923** |
| | **(0.459)** | **(0.284)** | **(0.201)** | **(0.284)** | **(0.0838)** | **(0.0757)** | **(0.0793)** | **(0.0732)** |
| dloggdppc | -19.83** | -20.56** | -13.37** | -20.56** | -10.11*** | -7.369*** | -5.545*** | -3.153** |
| | (8.547) | (8.357) | (6.113) | (8.357) | (2.906) | (2.092) | (1.770) | (1.239) |
| L.dlogpovertyg125 | | | | | -0.182*** | | | |
| | | | | | (0.0535) | | | |
| L.dlogpovertyhc125 | | | | | | -0.150*** | | |
| | | | | | | (0.0233) | | |
| L.dlogpovertyg200 | | | | | | | -0.0946*** | |
| | | | | | | | (0.0207) | |
| L.dlogpovertyhc200 | | | | | | | | -0.0279** |
| | | | | | | | | (0.0124) |
| Conflict Intensity | 5.411*** | 4.014*** | 3.076*** | 4.014*** | 5.404*** | 3.681*** | 2.898*** | 1.953*** |
| | (1.778) | (1.234) | (0.980) | (1.234) | (0.265) | (0.229) | (0.191) | (0.125) |
| average institutional quality | -3.313 | -2.817** | -1.873* | -2.817** | -0.867*** | -0.822*** | -0.634*** | -0.525*** |
| | (3.019) | (1.259) | (0.932) | (1.259) | (0.309) | (0.158) | (0.162) | (0.0942) |
| Constant | -0.563 | -0.249 | -0.222 | -0.249 | -0.228 | -0.359 | -0.350 | -0.375 |
| | (0.769) | (0.466) | (0.371) | (0.466) | (0.153) | (0.118) | (0.117) | (0.0901) |
| Observations | 32 | 33 | 33 | 33 | 22 | 22 | 22 | 22 |
| R-squared | 0.645 | 0.772 | 0.81 | 0.772 | | | | |
| Number of code1 | 16 | 17 | 17 | 17 | 9 | 9 | 9 | 9 |

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.2779 | 0.2231 | 0.1636 | 0.1863 |
| 2 | | | | | 0.2999 | 0.3543 | 0.4363 | 0.7277 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(24) | Chi2(24) | Chi2(24) | Chi2(24) |
| | | | | | 13.09 | 12.33 | 15.01 | 13.5 |
| Prob > chi2 | | | | | 0.9646 | 0.9755 | 0.9203 | 0.9572 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **D.logmmid_share** | **0.968** | **0.59** | **0.0124** | **0.59** | **0.0524** | **0.0744** | **0.067** | **0.0923** |
| | **(1.395)** | **(1.114)** | **(0.858)** | **(1.114)** | **(0.0838)** | **(0.0757)** | **(0.0793)** | **(0.0732)** |

**Table 2 Effects of log Sectoral Population Compositions (Level) on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *3 year* average panel; *Without* conflict or institutional quality)**

| | First Difference (dep)- Level (exp) | | | | First Difference (dep)- Level (exp) | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Effects, Robust | | | | Dynamic Panel | | | |
| Dep Var | (1)<br>**Dlogpover tyg125**<br>**Gap**<br>**$1.25**<br>Case 1 | (2)<br>**Dlogpovert yhc125**<br>**HC**<br>**$1.25**<br>Case 2 | (3)<br>**Dlogpover tyg200**<br>**Gap**<br>**$2.00**<br>Case 3 | (4)<br>**Dlogpovert yhc200**<br>**HC**<br>**$2.00**<br>Case 4 | (5)<br>**Dlogpover tyg125**<br>**Gap**<br>**$1.25**<br>Case 5 | (6)<br>**Dlogpovert yhc125**<br>**HC**<br>**$1.25**<br>Case 6 | (7)<br>**Dlogpover tyg200**<br>**Gap**<br>**$2.00**<br>Case 7 | (8)<br>**Dlogpovert yhc200**<br>**HC**<br>**$2.00**<br>Case 8 |
| VARIABLES | | | | | | | | |
| **logagri_share** | **-0.752*** | **-0.61** | **-0.4** | **-0.61** | **-0.461**** | **-0.713**** | **-0.4** | **-0.602**** |
| | **(0.422)** | **(0.548)** | **(0.506)** | **(0.548)** | **(0.214)** | **(0.358)** | **(0.301)** | **(0.283)** |
| **logrural_non_agri_share** | **-0.326***** | **-0.29** | **-0.21** | **-0.29** | **-0.14** | **-0.212**** | **-0.13** | **-0.162**** |
| | **(0.0974)** | **(0.184)** | **(0.131)** | **(0.184)** | **(0.0989)** | **(0.0849)** | **(0.0863)** | **(0.0642)** |
| **logmega_share** | **0.618** | **1.001*** | **0.997*** | **1.001*** | **1.122**** | **1.470***** | **1.207**** | **1.233***** |
| | **(0.397)** | **(0.540)** | **(0.545)** | **(0.540)** | **(0.476)** | **(0.526)** | **(0.533)** | **(0.474)** |
| dloggdppc | 4.246 | 9.945 | 5.361 | 9.945 | 11.92 | 10.11 | 8.484 | 6.061 |
| | (6.473) | (7.995) | (5.090) | (7.995) | (11.79) | (9.274) | (9.933) | (6.153) |
| L.dlogpovertyg125 | | | | | -0.588*** | | | |
| | | | | | (0.127) | | | |
| L.dlogpovertyhc125 | | | | | | -0.538*** | | |
| | | | | | | (0.0905) | | |
| L.dlogpovertyg200 | | | | | | | -0.475*** | |
| | | | | | | | (0.0819) | |
| L.dlogpovertyhc200 | | | | | | | | -0.288*** |
| | | | | | | | | (0.102) |
| Conflict Intensity | | | | | | | | |
| average institutional quality | | | | | | | | |
| Constant | 1.411 | -0.27 | -0.98 | -0.27 | -1.92 | -1.61 | -2.09 | -1.15 |
| | (2.412) | (3.348) | (3.066) | (3.348) | (1.685) | (2.472) | (1.684) | (1.917) |
| Observations | 50 | 53 | 51 | 53 | 32 | 33 | 32 | 33 |
| R-squared | 0.065 | 0.168 | 0.167 | 0.168 | | | | |
| Number of countries | 19 | 21 | 20 | 21 | 10 | 11 | 10 | 11 |
| Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.112 | 0.229 | 0.235 | 0.261 |
| 2 | | | | | 0.128 | 0.912 | 0.564 | 0.497 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(43) | Chi2(44) | Chi2(43) | Chi2(44) |
| | | | | | 35.05 | 37.55 | 32.98 | 34.37 |
| Prob > chi2 | | | | | 0.801 | 0.743 | 0.865 | 0.852 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **-0.739*** | **-1.095*** | **-1.112*** | **-1.095*** | **-0.52** | **-0.33** | **-0.58** | **-0.32** |
| | **(0.406)** | **(0.580)** | **(0.584)** | **(0.580)** | **(0.446)** | **(0.529)** | **(0.479)** | **(0.451)** |

**Table 2 (cont.) Effects of log Sectoral Population Compositions (Level) on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *3 year* -average panel; *Without* conflict or institutional quality)**

| | **First Difference (dep)- Level (exp)** | | | | **First Difference (dep)- Level (exp)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fixed Effects, Robust** | | | | **Dynamic Panel** | | | |
| VARIABLES | (9) **Dlogpovertyg125 Gap $1.25** Case 9 | (10) **Dlogpovertyhc125 HC $1.25** Case 10 | (11) **Dlogpovertyg200 Gap $2.00** Case 11 | (12) **Dlogpovertyhc200 HC $2.00** Case 12 | (13) **Dlogpovertyg125 Gap $1.25** Case 13 | (14) **Dlogpovertyhc125 HC $1.25** Case 14 | (15) **Dlogpovertyg200 Gap $2.00** Case 15 | (16) **Dlogpovertyhc200 HC $2.00** Case 16 |
| **logagri_share** | **-1.458** | **-1.137**** | **-1.162***** | **-1.137**** | **0.33** | **0.17** | **0.0587** | **-0.0704** |
| | **(0.856)** | **(0.416)** | **(0.365)** | **(0.416)** | **(0.305)** | **(0.238)** | **(0.217)** | **(0.189)** |
| **logrural_non_agri_share** | **-0.18** | **-0.175** | **-0.271*** | **-0.175** | **0.0435** | **-0.0038** | **-0.0294** | **-0.0503** |
| | **(0.230)** | **(0.161)** | **(0.141)** | **(0.161)** | **(0.0759)** | **(0.0617)** | **(0.0510)** | **(0.0402)** |
| **logmega_share** | **-0.663*** | **-0.371**** | **-0.146** | **-0.371**** | **0.396** | **0.477*** | **0.514*** | **0.513**** |
| | **(0.342)** | **(0.168)** | **(0.101)** | **(0.168)** | **(0.264)** | **(0.252)** | **(0.264)** | **(0.230)** |
| dloggdppc | -32.76*** | -28.01*** | -19.16*** | -28.01*** | -11.30*** | -7.578*** | -5.778*** | -2.961** |
| | (11.05) | (7.882) | (5.823) | (7.882) | (2.525) | (2.005) | (1.474) | (1.181) |
| L.dlogpovertyg125 | | | | | -0.236*** | | | |
| | | | | | (0.0598) | | | |
| L.dlogpovertyhc125 | | | | | | -0.222*** | | |
| | | | | | | (0.0353) | | |
| L.dlogpovertyg200 | | | | | | | -0.190*** | |
| | | | | | | | (0.0316) | |
| L.dlogpovertyhc200 | | | | | | | | -0.154*** |
| | | | | | | | | (0.0287) |
| Conflict Intensity | 7.961*** | 5.613*** | 4.225*** | 5.613*** | 5.510*** | 3.888*** | 3.148*** | 2.265*** |
| | (2.235) | (1.180) | (0.781) | (1.180) | (0.337) | (0.284) | (0.224) | (0.189) |
| average institutional quality | -2.033 | -2.135* | -1.766* | -2.135* | -0.343 | -0.458* | -0.411* | -0.400** |
| | (2.410) | (1.091) | (0.863) | (1.091) | (0.396) | (0.274) | (0.233) | (0.175) |
| Constant | 7.244 | 5.314 | 4.895 | 5.314 | -2.352 | -2.102 | -1.756 | -1.317 |
| | (4.489) | (2.086) | (1.726) | (2.086) | (1.516) | (1.203) | (1.084) | (0.885) |
| Observations | 37 | 38 | 38 | 38 | 25 | 25 | 25 | 25 |
| R-squared | 0.524 | 0.68 | 0.686 | 0.68 | | | | |
| Number of countries | 18 | 19 | 19 | 19 | 10 | 10 | 10 | 10 |
| Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.2907 | 0.2453 | 0.102 | 0.0808* |
| 2 | | | | | 0.2976 | 0.3129 | 0.31 | 0.2926 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(27) | Chi2(27) | Chi2(27) | Chi2(27) |
| | | | | | 17.09 | 17.86 | 16.47 | 16.47 |
| Prob > chi2 | | | | | 0.9289 | 0.9076 | 0.9434 | 0.9434 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **0.0673** | **-0.423** | **-0.422** | **-0.423** | **-0.766***** | **-0.643***** | **-0.575***** | **-0.453***** |
| | **(1.080)** | **(0.596)** | **(0.392)** | **(0.596)** | **(0.177)** | **(0.124)** | **(0.143)** | **(0.167)** |

**Table 3 Effects of log Sectoral Population Compositions (Level) on log Poverty Gap or Headcount (Level)($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *3 year* average panel; *Without* conflict or institutional quality)**

| | Level (dep)- Level (exp) | | | | Level (dep)- Level (exp) | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Effects, Robust | | | | Dynamic Panel | | | |
| **Dep Var** | (1) **logpoverty g125 Gap $1.25** Case 1 | (2) **logpoverty hc125 HC $1.25** Case 2 | (3) **logpoverty g200 Gap $2.00** Case 3 | (4) **logpoverty hc200 HC $2.00** Case 4 | (5) **logpoverty g125 Gap $1.25** Case 5 | (6) **logpoverty hc125 HC $1.25** Case 6 | (7) **logpoverty g200 Gap $2.00** Case 7 | (8) **logpoverty hc200 HC $2.00** Case 8 |
| VARIABLES | | | | | | | | |
| **logagri_share** | **0.607** | **0.341** | **0.417** | **0.341** | **0.612** | **0.334** | **0.364** | **-0.09** |
| | **(0.425)** | **(0.388)** | **(0.300)** | **(0.388)** | **(0.487)** | **(0.439)** | **(0.369)** | **(0.320)** |
| **logrural_non_agri_share** | **0.039** | **-0.03** | **0.014** | **-0.03** | **-0.05** | **-0.03** | **-0.01** | **-0.08** |
| | **(0.0834)** | **(0.0934)** | **(0.0608)** | **(0.0934)** | **(0.0810)** | **(0.0664)** | **(0.0716)** | **(0.0573)** |
| **logmega_share** | **0.226** | **0.334**** | **0.285**** | **0.334**** | **0.375** | **0.579**** | **0.549**** | **0.660**** |
| | **(0.186)** | **(0.154)** | **(0.137)** | **(0.154)** | **(0.268)** | **(0.292)** | **(0.276)** | **(0.300)** |
| loggdppc | -1.156*** | -0.942*** | -0.834*** | -0.942*** | -0.818*** | -0.665*** | -0.591** | -0.420*** |
| | (0.170) | (0.172) | (0.146) | (0.172) | (0.303) | (0.253) | (0.231) | (0.153) |
| L.logpovertyg125 | | | | | 0.377** | | | |
| | | | | | (0.171) | | | |
| L.logpovertyhc125 | | | | | | 0.528*** | | |
| | | | | | | (0.137) | | |
| L.logpovertyg200 | | | | | | | 0.534*** | |
| | | | | | | | (0.133) | |
| L.logpovertyhc200 | | | | | | | | 0.665*** |
| | | | | | | | | (0.0964) |
| Conflict Intensity | | | | | | | | |
| average institutional quality | | | | | | | | |
| Constant | 6.642 | 6.839 | 5.793 | 6.839 | 3.377* | 3.060 | 2.390 | 2.712 |
| | (1.833) | (1.751) | (1.311) | (1.751) | (1.936) | (1.494) | (1.403) | (1.095) |
| Observations | 123 | 126 | 124 | 126 | 50 | 53 | 51 | 53 |
| R-squared | 0.283 | 0.17 | 0.213 | 0.17 | | | | |
| Number of countries | 45 | 45 | 45 | 45 | 19 | 21 | 20 | 21 |

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.161 | 0.21 | 0.22 | 0.244 |
| 2 | | | | | 0.554 | 0.337 | 0.848 | 0.453 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(54) | Chi2(56) | Chi2(54) | Chi2(56) |
| | | | | | 39.45 | 41.39 | 38.82 | 42.51 |
| Prob > chi2 | | | | | 0.931 | 0.928 | 0.941 | 0.908 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **-0.808**** | **-0.759**** | **-0.648**** | **-0.759**** | **-0.671*** | **-0.4** | **-0.5** | **-0.37** |
| | **(0.345)** | **(0.291)** | **(0.262)** | **(0.291)** | **(0.388)** | **(0.345)** | **(0.389)** | **(0.347)** |

**Table 3 (cont.) Effects of log Sectoral Population Compositions (Level) on log Poverty Gap or Headcount (Level)($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *3 year* average panel; *With* conflict or institutional quality)**

| | **Level (dep)- Level (exp)** | | | | **Level (dep)- Level (exp)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fixed Effects, Robust** | | | | **Dynamic Panel** | | | |
| | (9) **logpoverty g125** | (10) **logpoverty hc125** | (11) **logpoverty g200** | (12) **logpoverty hc200** | (13) **logpoverty g125** | (14) **logpoverty hc125** | (15) **logpoverty g200** | (16) **logpoverty hc200** |
| | **Gap** | **HC** | **Gap** | **HC** | **Gap** | **HC** | **Gap** | **HC** |
| | **$1.25** | **$1.25** | **$2.00** | **$2.00** | **$1.25** | **$1.25** | **$2.00** | **$2.00** |
| VARIABLES | Case 9 | Case 10 | Case 11 | Case 12 | Case 13 | Case 14 | Case 15 | Case 16 |
| **logagri_share** | **0.204** | **0.0366** | **-0.19** | **0.0366** | **0.420**** | **0.361**** | **0.325*** | **0.165** |
| | **(0.677)** | **(0.685)** | **(0.555)** | **(0.685)** | **(0.172)** | **(0.179)** | **(0.167)** | **(0.137)** |
| **logrural_non_agri_share** | **-0.0329** | **0.0361** | **-0.0117** | **0.0361** | **-0.0789** | **-0.034** | **-0.0178** | **-0.0184** |
| | **(0.127)** | **(0.131)** | **(0.110)** | **(0.131)** | **(0.0524)** | **(0.0487)** | **(0.0551)** | **(0.0496)** |
| **logmega_share** | **0.1** | **0.177** | **0.188** | **0.177** | **0.179** | **0.320**** | **0.365**** | **0.366**** |
| | **(0.147)** | **(0.145)** | **(0.117)** | **(0.145)** | **(0.123)** | **(0.127)** | **(0.160)** | **(0.157)** |
| loggdppc | -1.615*** | -1.798*** | -1.688*** | -1.798*** | -0.147 | -0.185 | -0.211 | -0.15 |
| | (0.196) | (0.339) | (0.298) | (0.339) | (0.240) | (0.189) | (0.151) | (0.125) |
| ` | | | | | 0.579*** | | | |
| | | | | | (0.0736) | | | |
| L.logpovertyhc125 | | | | | | 0.684*** | | |
| | | | | | | (0.0889) | | |
| L.logpovertyg200 | | | | | | | 0.724*** | |
| | | | | | | | (0.0993) | |
| L.logpovertyhc200 | | | | | | | | 0.801*** |
| | | | | | | | | (0.0832) |
| Conflict Intensity | 0.532*** | 0.374*** | 0.328*** | 0.374*** | 5.110*** | 4.710*** | 4.038** | 2.801** |
| | (0.139) | (0.128) | (0.108) | (0.128) | (1.043) | (1.711) | (1.788) | (1.256) |
| average institutional quality | 0.573 | 0.412 | 0.432* | 0.412 | -1.203*** | -0.962*** | -0.659* | -0.595* |
| | (0.406) | (0.292) | (0.254) | (0.292) | (0.206) | (0.330) | (0.371) | (0.304) |
| Constant | 11.67 | 14.16 | 14.08 | 14.16 | -1.056 | -0.631 | -0.426 | -0.197 |
| | (3.775) | (4.431) | (3.673) | (4.431) | (2.035) | (1.703) | (1.444) | (1.129) |
| Observations | 80 | 80 | 80 | 80 | 37 | 38 | 38 | 38 |
| R-squared | 0.451 | 0.52 | 0.555 | 0.52 | | | | |
| Number of countries | 38 | 38 | 38 | 38 | 18 | 19 | 19 | 19 |
| Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.2739 | 0.3711 | 0.4453 | 0.3365 |
| 2 | | | | | 0.2843 | 0.284 | 0.2809 | 0.2796 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(32) | Chi2(32) | Chi2(32) | Chi2(32) |
| | | | | | 17.67 | 27.92 | 34.52 | 37.22 |
| Prob > chi2 | | | | | 0.981 | 0.6734 | 0.3483 | 0.2414 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **-0.532** | **-0.513** | **-0.468** | **-0.513** | **-0.0512** | **-0.0715** | **-0.277** | **-0.282** |
| | **(0.746)** | **(0.744)** | **(0.657)** | **(0.744)** | **(0.201)** | **(0.232)** | **(0.266)** | **(0.279)** |

**Table 4 Effects of Change in log Sectoral Population Compositions on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *Annual* panel; *Without* institutional quality)**

| | **First Difference (dep)- First Difference (exp)** | | | | **First Difference (dep)- First Difference (exp)** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fixed Effects, Robust** | | | | **Dynamic Panel** | | | |
| **Dep Var** | (1) **Dlogpovertyg125 Gap $1.25** Case 1 | (2) **Dlogpovertyhc125 HC $1.25** Case 2 | (3) **Dlogpovertyg200 Gap $2.00** Case 3 | (4) **Dlogpovertyhc200 HC $2.00** Case 4 | (5) **Dlogpovertyg125 Gap $1.25** Case 5 | (6) **Dlogpovertyhc125 HC $1.25** Case 6 | (7) **Dlogpovertyg200 Gap $2.00** Case 7 | (8) **Dlogpovertyhc200 HC $2.00** Case 8 |
| VARIABLES | | | | | | | | |
| **D.logagri_share** | **-344.5*** ** | **-325.6*** ** | **-300.9*** ** | **-325.6*** ** | **-6.87** | **-7.079*** | **0.324** | **-2.07** |
| | **(61.34)** | **(65.30)** | **(61.66)** | **(65.30)** | **(10.08)** | **(4.138)** | **(3.473)** | **(3.125)** |
| **D.logrural_non_agri_share** | **0.096** | **0.843** | **1.215** | **0.843** | **1.989*** | **0.951*** | **1.442** ** | **1.091*** ** |
| | **(2.492)** | **(1.734)** | **(2.004)** | **(1.734)** | **(1.051)** | **(0.532)** | **(0.580)** | **(0.279)** |
| **D.logmega_share** | **-8.08** | **2.65** | **-1.54** | **2.65** | **3.786** | **8.91** | **1.516** | **5.121*** |
| | **(8.547)** | **(6.379)** | **(7.275)** | **(6.379)** | **(14.94)** | **(7.383)** | **(10.10)** | **(3.042)** |
| dloggdppc | -3.95 | -4.81 | -5.84 | -4.81 | -5.48 | -5.276** | -4.274** | -4.203*** |
| | (11.39) | (8.227) | (9.167) | (8.227) | (3.523) | (2.094) | (2.108) | (1.174) |
| L.dlogpovertyg125 | | | | | -0.213*** | | | |
| | | | | | (0.0401) | | | |
| L.dlogpovertyhc125 | | | | | | -0.157* | | |
| | | | | | | (0.0826) | | |
| L.dlogpovertyg200 | | | | | | | -0.329*** | |
| | | | | | | | (0.0690) | |
| L.dlogpovertyhc200 | | | | | | | | -0.372*** |
| | | | | | | | | (0.0416) |
| average institutional quality | | | | | | | | |
| Constant | -4.995 | -4.836 | -4.405 | -4.836 | -0.1 | -0.13 | -0 | -0.07 |
| | (1.268) | (1.207) | (1.139) | (1.207) | (0.276) | (0.140) | (0.209) | (0.118) |
| Observations | 28 | 28 | 28 | 28 | 21 | 21 | 21 | 21 |
| R-squared | 0.476 | 0.699 | 0.7 | 0.699 | | | | |
| Number of countries | 9 | 9 | 9 | 9 | 7 | 7 | 7 | 7 |
| Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| **Order 1** | | | | | 0.335 | 0.361 | 0.456 | 0.198 |
| 2 | | | | | 0.322 | 0.953 | 0.298 | 0.172 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(29) | Chi2(29) | Chi2(29) | Chi2(29) |
| | | | | | 14.44 | 13.99 | 27.83 | 43.31** |
| **Prob > chi2** | | | | | 0.989 | 0.991 | 0.527 | 0.043 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **dlogmmid_share** | **-3.76** | **-6.64** | **-6.69** | **-6.64** | **-2.73** | **-0.11** | **3.12** | **3.591** ** |
| | **(15.37)** | **(9.691)** | **(11.58)** | **(9.691)** | **(6.037)** | **(3.354)** | **(3.174)** | **(1.764)** |

**Table 4 (cont.) Effects of Change in log Sectoral Population Compositions on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *Annual* panel; *With* institutional quality)**

| | First Difference (dep)- First Difference (exp) | | | | First Difference (dep)- First Difference (exp) | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Effects, Robust | | | | Dynamic Panel | | | |
| | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| | **Dlogpovertyg125** | **Dlogpovertyhc125** | **Dlogpovertyg200** | **Dlogpovertyhc200** | **Dlogpovertyg125** | **Dlogpovertyhc125** | **Dlogpovertyg200** | **Dlogpovertyhc200** |
| | **Gap** | **HC** | **Gap** | **HC** | **Gap** | **HC** | **Gap** | **HC** |
| | **$1.25** | **$1.25** | **$2.00** | **$2.00** | **$1.25** | **$1.25** | **$2.00** | **$2.00** |
| VARIABLES | Case 9 | Case 10 | Case 11 | Case 12 | Case 13 | Case 14 | Case 15 | Case 16 |
| **D.logagri_share** | **-191.5** | **-133.9**** | **-112.1**** | **-133.9**** | **-10.35** | **-7.279*** | **-2.408** | **-2.579** |
| | **(106.8)** | **(43.28)** | **(42.92)** | **(43.28)** | **(9.944)** | **(3.971)** | **(4.590)** | **(2.699)** |
| **D.logrural_non_agri_share** | **-6.836**** | **-2.028** | **-1.474** | **-2.028** | **-3.184**** | **-0.268** | **-0.799** | **1.277**** |
| | **(2.641)** | **(1.288)** | **(1.084)** | **(1.288)** | **(1.400)** | **(0.506)** | **(1.154)** | **(0.560)** |
| **D.logmega_share** | **-18.45*** | **-11.46** | **-16.33**** | **-11.46** | **11.65** | **10.1** | **5.766** | **5.138** |
| | **(8.296)** | **(7.347)** | **(5.671)** | **(7.347)** | **(18.63)** | **(8.290)** | **(12.34)** | **(3.485)** |
| Dloggdppc | -2.296 | -4.575 | -4.328 | -4.575 | -4.81 | -5.309*** | -3.991* | -4.285*** |
| | (6.650) | (3.740) | (3.926) | (3.740) | (3.466) | (1.997) | (2.201) | (1.231) |
| L.dlogpovertyg125 | | | | | -0.196*** | | | |
| | | | | | (0.0340) | | | |
| L.dlogpovertyhc125 | | | | | | -0.155* | | |
| | | | | | | (0.0798) | | |
| L.dlogpovertyg200 | | | | | | | -0.315*** | |
| | | | | | | | (0.0740) | |
| L.dlogpovertyhc200 | | | | | | | | -0.377*** |
| | | | | | | | | (0.0374) |
| Institutional Quality | -3.415* | -2.627** | -3.502** | -2.627** | -0.192 | -0.0817 | -0.0227 | 0.0382 |
| | (1.580) | (0.882) | (1.052) | (0.882) | (0.142) | (0.0805) | (0.121) | (0.0723) |
| Constant | -2.982 | -2.113 | -1.917 | -2.113 | -0.174 | -0.127 | -0.0548 | -0.0707 |
| | (1.727) | (0.767) | (0.873) | (0.767) | (0.305) | (0.148) | (0.227) | (0.116) |
| Observations | 22 | 22 | 22 | 22 | 19 | 19 | 19 | 19 |
| R-squared | 0.149 | 0.383 | 0.735 | 0.383 | | | | |
| Number of countries | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation) Prob > z** | | | | | | | | |
| Order 1 | | | | | 0.3542 | 0.3608 | 0.9877 | 0.2609 |
| 2 | | | | | 0.2747 | 0.9794 | 0.2385 | 0.3685 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(24) | Chi2(24) | Chi2(24) | Chi2(24) |
| | | | | | 8.82 | 8.64 | 18.99 | 28.29 |
| Prob > chi2 | | | | | 0.9978 | 0.9983 | 0.7525 | 0.2912 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **dlogmmid_share** | **22.2** | **11.75** | **21.69** | **11.75** | **-0.558** | **-0.0643** | **4.319** | **3.258*** |
| | **(14.91)** | **(6.945)** | **(11.26)** | **(6.945)** | **(6.666)** | **(3.244)** | **(3.514)** | **(1.954)** |

**Table 5 Effects of log Sectoral Population Compositions (Level) on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *Annual* panel; *Without* institutional quality)**

| | First Difference (dep)- Level (exp) | | | | First Difference (dep)- Level (exp) | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Effects, Robust | | | | Dynamic Panel | | | |
| **Dep Var** | (1) **Dlogpovertyg125 Gap $1.25** Case 1 | (2) **Dlogpovertyhc125 HC $1.25** Case 2 | (3) **Dlogpovertyg200 Gap $2.00** Case 3 | (4) **Dlogpovertyhc200 HC $2.00** Case 4 | (5) **Dlogpovertyg125 Gap $1.25** Case 5 | (6) **Dlogpovertyhc125 HC $1.25** Case 6 | (7) **Dlogpovertyg200 Gap $2.00** Case 7 | (8) **Dlogpovertyhc200 HC $2.00** Case 8 |
| VARIABLES | | | | | | | | |
| **logagri_share** | **-15** | **-1.85** | **-3.42** | **-1.85** | **1.243** | **0.951** | **0.816** | **0.489*** |
| | **(12.02)** | **(1.555)** | **(3.936)** | **(1.555)** | **(0.942)** | **(0.608)** | **(0.554)** | **(0.291)** |
| **logrural_non_agri_share** | **-0.37** | **-0.72** | **-0.97** | **-0.72** | **0.223** | **0.163*** | **0.157*** | **0.0989**** |
| | **(1.328)** | **(0.615)** | **(0.731)** | **(0.615)** | **(0.154)** | **(0.0968)** | **(0.0893)** | **(0.0482)** |
| **logmega_share** | **-3.98** | **1.952***** | **1.21** | **1.952***** | **-0.84** | **-0.56** | **-0.555*** | **-0.24** |
| | **(5.716)** | **(0.592)** | **(1.919)** | **(0.592)** | **(0.540)** | **(0.354)** | **(0.309)** | **(0.163)** |
| dloggdppc | -4.31 | -6.32 | -8.04 | -6.32 | -2.56 | -3.67 | -3.12 | -3.492*** |
| | (14.52) | (8.118) | (9.080) | (8.118) | (3.758) | (2.480) | (2.272) | (1.141) |
| L.dlogpovertyg125 | | | | | -0.232*** | | | |
| | | | | | (0.0405) | | | |
| L.dlogpovertyhc125 | | | | | | -0.187** | | |
| | | | | | | (0.0757) | | |
| L.dlogpovertyg200 | | | | | | | -0.342*** | |
| | | | | | | | (0.0510) | |
| L.dlogpovertyhc200 | | | | | | | | -0.374*** |
| | | | | | | | | (0.0454) |
| average institutional quality | | | | | | | | |
| Constant | 66.21 | 2.837 | 11.06 | 2.837 | -3.13 | -2.48 | -2 | -1.369 |
| | (57.58) | (7.582) | (18.82) | (7.582) | (2.621) | (1.710) | (1.561) | (0.831) |
| Observations | 32 | 35 | 32 | 35 | 23 | 23 | 23 | 23 |
| R-squared | 0.53 | 0.76 | 0.845 | 0.76 | | | | |
| Number of countries | 10 | 12 | 10 | 12 | 7 | 7 | 7 | 7 |
| Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.312 | 0.331 | 0.958 | 0.334 |
| 2 | | | | | 0.8 | .0851* | 0.218 | 0.872 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(32) | Chi2(32) | Chi2(32) | Chi2(32) |
| | | | | | 20.32 | 22.84 | 34.01 | 41 |
| **Prob > chi2** | | | | | 0.946 | 0.883 | 0.371 | 0.132 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **1.381** | **-0.57** | **0.119** | **-0.57** | **0.43** | **0.332** | **0.466** | **0.248** |
| | **(2.103)** | **(1.712)** | **(0.495)** | **(1.712)** | **(0.668)** | **(0.400)** | **(0.408)** | **(0.210)** |

**Table 5 (cont.) Effects of log Sectoral Population Compositions (Level) on Change in log Poverty Gap or Headcount ($1.25 or $2): Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on *Annua*l panel; *With* institutional quality)**

| | First Difference (dep)- Level (exp) | | | | First Difference (dep)- Level (exp) | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Effects, Robust | | | | Dynamic Panel | | | |
| | (9) **Dlogpover tyg125** **Gap** **$1.25** | (10) **Dlogpovert yhc125** **HC** **$1.25** | (11) **Dlogpover tyg200** **Gap** **$2.00** | (12) **Dlogpovert yhc200** **HC** **$2.00** | (13) **Dlogpover tyg125** **Gap** **$1.25** | (14) **Dlogpovert yhc125** **HC** **$1.25** | (15) **Dlogpover tyg200** **Gap** **$2.00** | (16) **Dlogpovert yhc200** **HC** **$2.00** |
| VARIABLES | Case 9 | Case 10 | Case 11 | Case 12 | Case 13 | Case 14 | Case 15 | Case 16 |
| **logagri_share** | **-18.34** | **-9.75** | **-4.522** | **-9.75** | **1.393** | **1.076** | **0.881** | **0.545** |
| | **(17.32)** | **(9.696)** | **(7.196)** | **(9.696)** | **(1.294)** | **(0.917)** | **(0.735)** | **(0.412)** |
| **logrural_non_agri_share** | **-1.474** | **0.57** | **-0.679** | **0.57** | **0.251** | **0.184** | **0.17** | **0.109** |
| | **(3.416)** | **(1.795)** | **(1.673)** | **(1.795)** | **(0.214)** | **(0.150)** | **(0.118)** | **(0.0662)** |
| **logmega_share** | **2.855** | **-0.869** | **1.324** | **-0.869** | **-0.852*** | **-0.543** | **-0.557*** | **-0.226** |
| | **(4.490)** | **(2.728)** | **(2.381)** | **(2.728)** | **(0.517)** | **(0.358)** | **(0.300)** | **(0.177)** |
| dloggdppc | 2.048 | -2.033 | -3.439 | -2.033 | -4.967 | -3.998 | -4.562** | -4.013*** |
| | (11.60) | (7.406) | (6.158) | (7.406) | (3.761) | (2.944) | (2.239) | (1.299) |
| L.dlogpovertyg125 | | | | | -0.248*** | | | |
| | | | | | (0.0361) | | | |
| L.dlogpovertyhc125 | | | | | | -0.198*** | | |
| | | | | | | (0.0712) | | |
| L.dlogpovertyg200 | | | | | | | -0.351*** | |
| | | | | | | | (0.0285) | |
| L.dlogpovertyhc200 | | | | | | | | -0.389*** |
| | | | | | | | | (0.0354) |
| average institutional quality | -2.819 | -2.081 | -2.696* | -2.081 | 0.114 | 0.154 | 0.0786 | 0.0913 |
| | (2.883) | (1.979) | (1.168) | (1.979) | (0.452) | (0.324) | (0.284) | (0.169) |
| Constant | 63.48 | 37.46 | 14.14 | 37.46 | -3.596 | -2.974 | -2.2 | -1.591 |
| | (58.82) | (30.93) | (24.65) | (30.93) | (4.001) | (2.853) | (2.305) | (1.295) |
| Observations | 25 | 27 | 25 | 27 | 21 | 21 | 21 | 21 |
| R-squared | 0.157 | 0.249 | 0.44 | 0.249 | | | | |
| Number of countries | 7 | 9 | 7 | 9 | 7 | 7 | 7 | 7 |
| Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | |
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | |
| Prob > z | | | | | | | | |
| Order 1 | | | | | 0.3146 | 0.3029 | 0.442 | 0.3652 |
| 2 | | | | | 0.7296 | .0942* | 0.1567 | 0.776 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | |
| | | | | | Chi2(27) | Chi2(27) | Chi2(27) | Chi2(27) |
| | | | | | 14.26 | 16.02 | 22.56 | 22.95 |
| **Prob > chi2** | | | | | 0.9785 | 0.9536 | 0.7082 | 0.6876 |
| **In the specification where logmega_share is replaced by logmmid._share** | | | | | | | | |
| **logmmid_share** | **-0.781** | **0.329** | **-0.651** | **0.329** | **0.475** | **0.517** | **0.504** | **0.312** |
| | **(0.659)** | **(0.536)** | **(0.350)** | **(0.536)** | **(0.612)** | **(0.350)** | **(0.409)** | **(0.214)** |

## V. Concluding Observations

Based on cross-country datasets, a recent study by Christiaensen and Todo (2013) (CS) has argued that "migration out of agriculture into the missing middle (rural nonfarm economy and secondary towns) yields more inclusive growth patterns and faster poverty reduction than agglomeration in mega cities. This suggests that patterns of urbanization deserve much more attention when striving for faster poverty reduction" (p.1). It is, however, not clear that treating rural nonfarm economy and secondary towns as one aggregate sector is justifiable given that they are different in location as also in their intersectoal dynamics. Using the revised and updated datasets where "the missing middle" is disaggregated into rural nonfarm economy and secondary towns, the present study has found, contrary to CT, that (i) development of rural agricultural sector is the most poverty reducing; (ii) rural non-agricultural sector is poverty reducing in some cases, but its magnitude is much smaller than that of rural agricultural sector; and (iii) higher population in mega cities has no role in poverty reduction. In fact, it is "poverty-increasing" in a few cases.

Given that a rapid growth of population or rural-urban migration is likely to increase poverty, more emphasis should be placed on policies (e.g. rural infrastructure) that enhance support to rural agricultural sector and rural non-agricultural sector. If our analysis has any validity, serious doubts are raised about recent research emphasising the role of secondary towns or urbanisation as the key driver of elimination of extreme poverty.

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## Appendix 1 Descriptive Statistics

| Variable | Definitions | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|
| povertyhc125 | Poverty Headcount based on US1.25 a day PPP | 367 | 20.4 | 22.7 | 0.0 | 92.6 |
| povertyhc200 | Poverty Headcount based on US2.00 a day PPP | 367 | 41.1 | 29.1 | 0.0 | 98.5 |
| povertyg125 | Poverty Gap based on US1.25 a day PPP | 320 | 9.7 | 11.5 | 0.0 | 63.3 |
| povertyg200 | Poverty Gap based on US2.00 a day PPP | 320 | 18.0 | 17.0 | 0.0 | 75.6 |
| agri_share | Share of Agricultural Population | 135 | 40.2 | 24.6 | 5.8 | 92.4 |
| mega_share | Share of Population in Mega Cities | 135 | 16.4 | 9.0 | 3.4 | 48.7 |
| rural_non_~e | Share of Population in Rural Non Agricultural Population | 135 | 15.0 | 12.8 | 0.0 | 64.2 |
| mmid_share | Share of Population in Small/Secondary Towns | 135 | 28.4 | 16.3 | 1.3 | 63.8 |
| Institutional Quality | A Simple Average of 4 World Bank's Governance Indicators: political stability, rule of law, control of conflict and voice and accountability (Imai et al., 2010). | 211 | -0.4 | 0.5 | -1.7 | 1.1 |
| Conflict Intensity | conflict intensity (data obtained from CSCW and Uppsala Conflict Data Program (UCDP) at the Department of Peace and Conflict Research, Uppsala University covering armed conflicts, both internal and external, in the period 1946 to the present. | 367 | 0.3 | 0.5 | 0.0 | 2.0 |
| agri_share~CT | Share of Agricultural Population (based on CT) | 250 | 40.2 | 22.0 | 6.6 | 86.1 |
| mmid_share~CT | Share of Population in Missing Middle (based on CT) | 250 | 40.9 | 18.2 | 5.6 | 79.0 |
| mega_share~CT | Share of Population in megacities (based on CT) | 250 | 18.9 | 10.1 | 3.8 | 37.1 |
| pov1_CT | Poverty Headcount based on US1.25 a day PPP (based on CT) | 250 | 17.6 | 20.2 | 0.1 | 90.3 |
| pov2_CT | Poverty Headcount based on US2.00 a day PPP (based on CT) | 250 | 41.2 | 27.3 | 1.2 | 98.1 |
| Loggdppc | log of real GDP per capita | 361 | 7.007059 | 1.068369 | 4.710151 | 8.824546 |

## Appendix 2 Details of Poverty Data and Sectoral Population Data

| | | Data for the Presrent Study | | | | | | | | Data for Christiaensen and Toda (2013) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Poverty Headcount (HC) | | Poverty Gap (G) | | Sectoral Population Share | | | | HC | | Sectoral Population Share | | |
| | | $1.25 | $2 | $1.25 | $2 | agriculture | rural non-agri | secondary towns | mega cities | $1.25 | $2 | agriculture | missing middle | mega cities |
| series | year | povertyhc 125 | povertyhc 200 | povertyg 125 | povertyg 200 | agri_share | mega_share | rural_non_agri_share | mmid_share | pov1_CT | pov2_CT | agri_share_CT | mmid_share_CT | mega_share_CT |
| Algeria | 1988 | 1.8 | 13.9 | 1.2 | 6.7 | 28.0 | 7.6 | 16.0 | 48.4 | 1.8 | 13.9 | 28.0 | 64.4 | 7.6 |
| Algeria | 1995 | 1.8 | 13.9 | 1.4 | 6.5 | 25.4 | 8.1 | 11.5 | 55.0 | 1.8 | 13.9 | 25.4 | 66.5 | 8.1 |
| Argentina | 1986 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 39.6 | 0.4 | 52.2 | . | . | . | . | . |
| Argentina | 1987 | 0.0 | 0.2 | 0.0 | 0.0 | 7.7 | 39.8 | 0.3 | 52.2 | . | . | . | . | . |
| Argentina | 1991 | 0.6 | 2.5 | 0.2 | 0.6 | 7.1 | 40.3 | 0.2 | 52.3 | . | . | . | . | . |
| Armenia | 2002 | 3.4 | 36.1 | 3.1 | 13.6 | . | . | . | . | 3.4 | 36.1 | 45.3 | 18.4 | 36.3 |
| Armenia | 2003 | 1.7 | 30.3 | 1.9 | 11.3 | . | . | . | . | 1.7 | 30.3 | 46.0 | 17.6 | 36.4 |
| Azerbaijan | 1995 | 11.5 | 45.8 | 4.3 | 13.0 | . | . | . | . | 11.5 | 45.8 | 28.8 | 48.2 | 23.0 |
| Azerbaijan | 2001 | 3.6 | 33.3 | 1.1 | 6.8 | . | . | . | . | 3.6 | 33.3 | 26.3 | 51.4 | 22.3 |
| Azerbaijan | 2008 | 0.4 | 2.8 | 0.1 | 0.6 | 65.6 | 8.6 | 15.0 | 10.7 | . | . | . | . | . |
| Bangladesh | 1988 | 35.4 | 86.2 | . | . | . | . | . | . | 35.4 | 86.2 | 66.7 | 24.8 | 8.5 |
| Bangladesh | 1991 | 33.7 | 85.3 | . | . | . | . | . | . | 33.7 | 85.3 | 64.3 | 26.4 | 9.3 |
| Bangladesh | 1995 | 32.9 | 81.9 | . | . | . | . | . | . | 32.9 | 81.9 | 60.5 | 29.3 | 10.2 |
| Bangladesh | 2000 | 41.3 | 84.2 | 18.6 | 39.4 | . | . | . | . | 41.3 | 84.2 | 55.7 | 32.9 | 11.4 |
| Bangladesh | 2005 | 50.5 | 80.3 | 14.2 | 34.3 | 17.5 | 16.0 | 15.3 | 51.1 | . | . | . | . | . |
| Bangladesh | 2010 | 43.3 | 76.5 | 11.2 | 30.4 | 14.3 | 16.7 | 16.5 | 52.5 | . | . | . | . | . |
| Bolivia | 1990 | 5.7 | 28.7 | . | . | . | . | . | . | 5.7 | 28.7 | 46.9 | 27.9 | 25.2 |
| Bolivia | 1997 | 20.4 | 39.1 | 9.1 | 14.0 | . | . | . | . | 20.4 | 39.1 | 45.0 | 26.4 | 28.6 |
| Bolivia | 1999 | 26.2 | 44.2 | 14.1 | 19.5 | . | . | . | . | 26.2 | 44.2 | 44.5 | 26.4 | 29.1 |
| Bolivia | 2002 | 24.0 | 42.9 | 12.9 | 18.4 | . | . | . | . | 24.0 | 42.9 | 43.6 | 26.4 | 30.0 |
| Brazil | 1981 | 11.8 | 31.1 | 5.5 | 11.0 | . | . | . | . | 11.8 | 31.1 | 35.3 | 32.6 | 32.1 |
| Brazil | 1984 | 15.2 | 37.0 | 6.0 | 12.5 | . | . | . | . | 15.2 | 37.0 | 31.3 | 36.3 | 32.4 |
| Brazil | 1985 | 15.8 | 36.3 | 5.2 | 10.9 | . | . | . | . | 15.8 | 36.3 | 30.0 | 37.5 | 32.5 |
| Brazil | 1987 | 11.9 | 29.4 | 5.5 | 10.8 | . | . | . | . | 11.9 | 29.4 | 27.3 | 39.7 | 33.0 |
| Brazil | 1989 | 9.0 | 25.5 | 5.8 | 10.9 | . | . | . | . | 9.0 | 25.5 | 24.6 | 42.0 | 33.4 |
| Brazil | 1990 | 14.0 | 32.3 | 7.2 | 13.3 | . | . | . | . | 14.0 | 32.3 | 23.3 | 43.0 | 33.7 |
| Brazil | 1992 | 10.1 | 24.3 | 8.5 | 14.4 | . | . | . | . | 10.1 | 24.3 | 21.8 | 44.1 | 34.1 |
| Brazil | 1993 | 8.3 | 23.4 | 8.1 | 13.7 | . | . | . | . | 8.3 | 23.4 | 21.1 | 44.6 | 34.3 |
| Brazil | 1995 | 10.5 | 23.3 | 5.4 | 9.4 | . | . | . | . | 10.5 | 23.3 | 19.8 | 45.5 | 34.7 |
| Brazil | 1996 | 6.9 | 21.7 | 6.2 | 10.3 | . | . | . | . | 6.9 | 21.7 | 19.1 | 46.0 | 34.9 |
| Brazil | 1997 | 9.0 | 23.5 | 6.2 | 10.3 | . | . | . | . | 9.0 | 23.5 | 18.5 | 46.4 | 35.1 |
| Brazil | 1998 | 1.4 | 15.7 | 5.6 | 9.4 | . | . | . | . | 1.4 | 15.7 | 17.9 | 46.8 | 35.3 |
| Brazil | 1999 | 8.0 | 23.0 | 5.7 | 9.8 | . | . | . | . | 8.0 | 23.0 | 17.3 | 47.2 | 35.5 |
| Brazil | 2001 | 8.2 | 22.4 | 6.3 | 10.2 | . | . | . | . | 8.2 | 22.4 | 16.1 | 47.9 | 36.0 |
| Brazil | 2002 | 6.7 | 21.2 | 5.5 | 9.1 | . | . | . | . | 6.7 | 21.2 | 15.6 | 48.2 | 36.2 |
| Brazil | 2003 | 7.4 | 21.7 | 5.9 | 9.6 | . | . | . | . | 7.4 | 21.7 | 15.0 | 48.5 | 36.5 |
| Brazil | 2004 | 9.8 | 18.6 | 5.1 | 8.5 | 92.3 | 5.7 | 0.0 | 1.9 | . | . | . | . | . |
| Brazil | 2005 | 8.5 | 16.6 | 4.6 | 7.5 | 92.3 | 5.8 | 0.0 | 1.8 | . | . | . | . | . |
| Brazil | 2006 | 7.6 | 14.4 | 4.1 | 6.7 | 92.4 | 6.0 | 0.0 | 1.7 | . | . | . | . | . |
| Brazil | 2007 | 7.1 | 13.2 | 4.2 | 6.4 | 92.4 | 6.1 | 0.0 | 1.5 | . | . | . | . | . |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brazil | 2008 | 6.0 | 11.3 | 3.4 | 5.3 | 92.4 | 6.2 | 0.0 | 1.4 | . | . | . | . | . |
| Brazil | 2009 | 6.1 | 10.8 | 3.6 | 5.4 | 92.4 | 6.3 | 0.0 | 1.3 | . | . | . | . | . |
| Bulgaria | 1997 | 0.8 | 20.0 | 0.1 | 0.5 | . | . | . | . | 0.8 | 20.0 | 8.6 | 77.1 | 14.3 |
| Bulgaria | 2001 | 3.0 | 13.0 | 0.5 | 2.2 | . | . | . | . | 3.0 | 13.0 | 6.6 | 79.0 | 14.4 |
| Burkina Faso | 1994 | 71.2 | 85.8 | 34.7 | 51.6 | 73.3 | 7.0 | 10.8 | 8.9 | . | . | . | . | . |
| Burkina Faso | 1998 | 70.0 | 87.6 | 30.2 | 49.1 | 71.9 | 7.8 | 10.8 | 9.5 | . | . | . | . | . |
| Burkina Faso | 2003 | 56.5 | 81.2 | 20.3 | 39.3 | 69.9 | 9.4 | 11.5 | 9.2 | . | . | . | . | . |
| Burkina Faso | 2009 | 44.6 | 72.6 | 14.7 | 31.7 | 67.5 | 10.0 | 13.2 | 9.3 | . | . | . | . | . |
| Burundi | 1992 | 84.2 | 95.2 | 40.2 | 59.3 | 64.3 | 16.2 | 0.0 | 19.5 | . | . | . | . | . |
| Burundi | 1998 | 86.4 | 95.4 | 47.3 | 64.1 | 57.6 | 18.7 | 0.0 | 23.7 | . | . | . | . | . |
| Burundi | 2006 | 81.3 | 93.5 | 36.4 | 56.1 | 47.7 | 22.6 | 0.8 | 28.9 | . | . | . | . | . |
| Cameroon | 1996 | 35.8 | 71.8 | 6.3 | 18.4 | . | . | . | . | 35.8 | 71.8 | 63.8 | 20.0 | 16.2 |
| Cameroon | 2001 | 20.1 | 54.8 | 2.3 | 9.5 | . | . | . | . | 20.1 | 54.8 | 58.3 | 23.6 | 18.1 |
| Central African Republic | 2003 | 62.4 | 81.9 | 28.3 | 45.3 | 74.0 | 8.1 | 5.9 | 12.0 | . | . | . | . | . |
| Central African Republic | 2008 | 62.8 | 80.1 | 31.3 | 46.8 | 73.0 | 8.7 | 3.4 | 14.9 | . | . | . | . | . |
| Chad | 2003 | 61.9 | 83.3 | 25.6 | 43.9 | 28.5 | 30.6 | 4.3 | 36.6 | . | . | . | . | . |
| Chile | 1987 | 6.2 | 24.1 | 2.7 | 6.5 | . | . | . | . | 6.2 | 24.1 | 19.4 | 45.8 | 34.8 |
| Chile | 1990 | 2.0 | 14.1 | 1.9 | 4.7 | . | . | . | . | 2.0 | 14.1 | 18.8 | 46.2 | 35.0 |
| Chile | 1992 | 1.1 | 12.1 | 1.1 | 2.8 | . | . | . | . | 1.1 | 12.1 | 18.1 | 47.0 | 34.9 |
| Chile | 1994 | 0.9 | 10.8 | 1.4 | 3.0 | . | . | . | . | 0.9 | 10.8 | 17.5 | 47.8 | 34.7 |
| Chile | 2000 | 0.4 | 6.3 | 0.9 | 2.0 | . | . | . | . | 0.4 | 6.3 | 15.8 | 49.6 | 34.6 |
| Chile | 2003 | 0.5 | 5.6 | 0.8 | 1.8 | . | . | . | . | 0.5 | 5.6 | 14.9 | 50.4 | 34.7 |
| China | 1981 | 84.0 | 97.8 | 39.3 | 59.3 | 57.1 | 11.2 | 14.1 | 17.6 | . | . | . | . | . |
| China | 1984 | 69.4 | 92.9 | 25.6 | 47.3 | 54.7 | 12.0 | 17.0 | 16.3 | . | . | . | . | . |
| China | 1985 | 24.2 | 72.1 | . | . | . | . | . | . | 24.2 | 72.1 | 72.9 | 15.0 | 12.1 |
| China | 1987 | 28.8 | 69.0 | 18.5 | 38.2 | . | . | . | . | 28.8 | 69.0 | 72.5 | 15.1 | 12.4 |
| China | 1990 | 60.2 | 84.6 | 20.7 | 40.9 | 48.9 | 13.4 | 23.3 | 14.4 | . | . | . | . | . |
| China | 1992 | 29.1 | 64.7 | 28.6 | 45.6 | 70.9 | 13.4 | 1.3 | 14.4 | 29.1 | 64.7 | 70.9 | 15.7 | 13.4 |
| China | 1993 | 27.7 | 66.8 | 17.7 | 36.6 | 70.4 | 13.7 | 1.7 | 14.2 | 27.7 | 66.8 | 70.4 | 15.9 | 13.7 |
| China | 1994 | 24.3 | 59.9 | 25.6 | 42.3 | 69.9 | 14.0 | 2.1 | 14.0 | 24.3 | 59.9 | 69.9 | 16.1 | 14.0 |
| China | 1995 | 21.3 | 55.0 | 22.4 | 38.5 | 69.3 | 14.3 | 2.6 | 13.8 | 21.3 | 55.0 | 69.3 | 16.4 | 14.3 |
| China | 1996 | 16.9 | 52.2 | 10.7 | 26.3 | 68.8 | 14.7 | 3.0 | 13.5 | 16.9 | 52.2 | 68.8 | 16.5 | 14.7 |
| China | 1997 | 16.2 | 48.4 | 18.3 | 34.3 | 68.3 | 15.1 | 3.3 | 13.3 | 16.2 | 48.4 | 68.3 | 16.6 | 15.1 |
| China | 1998 | 16.3 | 48.6 | 18.4 | 34.1 | 67.7 | 15.6 | 3.7 | 13.0 | 16.3 | 48.6 | 67.7 | 16.7 | 15.6 |
| China | 1999 | 17.7 | 50.0 | 11.1 | 25.6 | 67.2 | 16.0 | 3.9 | 12.9 | 17.7 | 50.0 | 67.2 | 16.8 | 16.0 |
| China | 2002 | 14.1 | 41.8 | 8.7 | 20.6 | 65.5 | 16.9 | 4.8 | 12.8 | 14.1 | 41.8 | 65.5 | 17.6 | 16.9 |
| China | 2005 | 16.3 | 36.9 | 4.0 | 12.5 | 36.7 | 16.6 | 32.5 | 14.2 | . | . | . | . | . |
| China | 2008 | 13.1 | 29.8 | 3.2 | 10.1 | 34.3 | 17.4 | 33.5 | 14.8 | . | . | . | . | . |
| Colombia | 1980 | 7.8 | 20.2 | 6.2 | 11.9 | . | . | . | . | 7.8 | 20.2 | 40.5 | 31.2 | 28.3 |
| Colombia | 1988 | 4.5 | 14.7 | 3.7 | 8.2 | . | . | . | . | 4.5 | 14.7 | 29.4 | 40.7 | 29.9 |
| Colombia | 1989 | 2.5 | 12.0 | 2.3 | 6.4 | . | . | . | . | 2.5 | 12.0 | 28.0 | 42.0 | 30.0 |
| Colombia | 1991 | 2.8 | 11.6 | 2.6 | 6.4 | . | . | . | . | 2.8 | 11.6 | 25.9 | 43.7 | 30.4 |
| Colombia | 1995 | 3.1 | 16.3 | . | . | . | . | . | . | 3.1 | 16.3 | 23.4 | 45.1 | 31.5 |
| Colombia | 1996 | 5.6 | 18.9 | 7.6 | 11.2 | . | . | . | . | 5.6 | 18.9 | 22.8 | 45.1 | 32.1 |
| Colombia | 1998 | 8.1 | 20.5 | . | . | . | . | . | . | 8.1 | 20.5 | 21.6 | 45.0 | 33.4 |
| Colombia | 1999 | 7.9 | 22.0 | 9.5 | 14.1 | . | . | . | . | 7.9 | 22.0 | 21.0 | 45.0 | 34.0 |
| Colombia | 2000 | 8.4 | 21.3 | 11.5 | 16.4 | . | . | . | . | 8.4 | 21.3 | 20.4 | 45.0 | 34.6 |
| Colombia | 2003 | 7.6 | 19.4 | 10.9 | 16.6 | . | . | . | . | 7.6 | 19.4 | 18.8 | 46.0 | 35.2 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Costa Rica | 1981 | 14.8 | 32.0 | 9.1 | 16.4 | . | . | . | . | 14.8 | 32.0 | 27.6 | 49.8 | 22.6 |
| Costa Rica | 1986 | 7.3 | 18.1 | 4.9 | 9.0 | . | . | . | . | 7.3 | 18.1 | 26.9 | 49.7 | 23.4 |
| Costa Rica | 1990 | 5.2 | 16.1 | 4.8 | 7.4 | . | . | . | . | 5.2 | 16.1 | 25.9 | 50.1 | 24.0 |
| Costa Rica | 1992 | 4.4 | 15.5 | 4.3 | 6.9 | . | . | . | . | 4.4 | 15.5 | 24.1 | 51.5 | 24.4 |
| Costa Rica | 1993 | 4.1 | 14.6 | 4.2 | 6.2 | . | . | . | . | 4.1 | 14.6 | 22.6 | 52.8 | 24.6 |
| Costa Rica | 1996 | 3.6 | 13.3 | 3.8 | 6.0 | . | . | . | . | 3.6 | 13.3 | 21.6 | 53.2 | 25.2 |
| Costa Rica | 1997 | 1.9 | 10.1 | 2.7 | 4.5 | . | . | . | . | 1.9 | 10.1 | 20.6 | 53.9 | 25.5 |
| Costa Rica | 1998 | 1.4 | 9.1 | 2.1 | 3.6 | . | . | . | . | 1.4 | 9.1 | 20.1 | 54.2 | 25.7 |
| Costa Rica | 2000 | 2.0 | 9.4 | 2.8 | 4.7 | . | . | . | . | 2.0 | 9.4 | 20.4 | 53.3 | 26.3 |
| Costa Rica | 2001 | 1.4 | 8.2 | 3.5 | 5.3 | . | . | . | . | 1.4 | 8.2 | 15.6 | 57.8 | 26.6 |
| Costa Rica | 2003 | 1.8 | 9.6 | 3.1 | 4.9 | . | . | . | . | 1.8 | 9.6 | 15.1 | 57.5 | 27.4 |
| Cote d'Ivoire | 1987 | 3.3 | 28.5 | 1.4 | 7.4 | . | . | . | . | 3.3 | 28.5 | 61.3 | 22.3 | 16.4 |
| Cote d'Ivoire | 1988 | 7.5 | 36.4 | 3.0 | 10.9 | . | . | . | . | 7.5 | 36.4 | 60.7 | 22.8 | 16.5 |
| Cote d'Ivoire | 1993 | 9.9 | 44.9 | 4.0 | 14.1 | . | . | . | . | 9.9 | 44.9 | 56.7 | 26.4 | 16.9 |
| Cote d'Ivoire | 1995 | 12.3 | 49.4 | 4.8 | 16.1 | . | . | . | . | 12.3 | 49.4 | 54.6 | 28.2 | 17.2 |
| Cote d'Ivoire | 1998 | 15.5 | 50.4 | 6.7 | 18.2 | . | . | . | . | 15.5 | 50.4 | 51.4 | 30.8 | 17.8 |
| Cote d'Ivoire | 2002 | 15.7 | 48.4 | 6.8 | 17.6 | . | . | . | . | 15.7 | 48.4 | 47.0 | 34.2 | 18.8 |
| Cote d'Ivoire | 2008 | 23.8 | 46.3 | 7.5 | 17.8 | 28.0 | 26.7 | 14.3 | 31.0 | . | . | . | . | . |
| Croatia | 1988 | 0.0 | 0.1 | 0.1 | 0.1 | 51.2 | 22.1 | 5.0 | 21.8 | . | . | . | . | . |
| Croatia | 1998 | 0.1 | 0.1 | 0.1 | 0.1 | 37.4 | 21.3 | 19.4 | 21.9 | . | . | . | . | . |
| Croatia | 1999 | 0.2 | 0.3 | 0.2 | 0.2 | 36.6 | 21.3 | 20.3 | 21.8 | . | . | . | . | . |
| Croatia | 2000 | 0.1 | 0.1 | 0.1 | 0.1 | 35.9 | 21.3 | 21.1 | 21.7 | . | . | . | . | . |
| Croatia | 2001 | 0.1 | 0.2 | 0.0 | 0.1 | 35.0 | 21.2 | 22.2 | 21.6 | . | . | . | . | . |
| Croatia | 2004 | 0.1 | 0.1 | 0.1 | 0.1 | 32.7 | 21.0 | 24.5 | 21.8 | . | . | . | . | . |
| Croatia | 2008 | 0.1 | 0.1 | 0.1 | 0.1 | 30.3 | 20.6 | 26.8 | 22.3 | . | . | . | . | . |
| Czech Republic | 1988 | 0.0 | 0.0 | 0.0 | 0.0 | 32.7 | 17.8 | 18.6 | 30.9 | . | . | . | . | . |
| Czech Republic | 1993 | 0.0 | 0.0 | 0.0 | 0.0 | 31.8 | 19.0 | 15.2 | 34.0 | . | . | . | . | . |
| Czech Republic | 1996 | 0.1 | 0.2 | 0.2 | 0.2 | 30.6 | 19.9 | 13.5 | 36.1 | . | . | . | . | . |
| Ecuador | 1987 | 13.5 | 31.0 | 5.1 | 9.9 | . | . | . | . | 13.5 | 31.0 | 35.2 | 39.4 | 25.4 |
| Ecuador | 1994 | 16.8 | 37.4 | 7.1 | 12.0 | . | . | . | . | 16.8 | 37.4 | 30.2 | 43.4 | 26.4 |
| Ecuador | 1995 | 10.0 | 20.4 | 5.6 | 9.0 | 77.4 | 3.4 | 5.9 | 13.4 | . | . | . | . | . |
| Ecuador | 1998 | 14.7 | 35.2 | 7.8 | 12.6 | . | . | . | . | 14.7 | 35.2 | 27.2 | 45.4 | 27.4 |
| Egypt, Arab Rep. | 1990 | 4.0 | 42.6 | . | . | . | . | . | . | 4.0 | 42.6 | 40.5 | 37.7 | 21.8 |
| Egypt, Arab Rep. | 1995 | 3.8 | 47.0 | . | . | . | . | . | . | 3.8 | 47.0 | 37.0 | 41.8 | 21.2 |
| Egypt, Arab Rep. | 1999 | 3.2 | 44.2 | . | . | . | . | . | . | 3.2 | 44.2 | 34.3 | 44.9 | 20.8 |
| El Salvador | 1989 | 21.4 | 43.0 | 9.8 | 13.6 | . | . | . | . | 21.4 | 43.0 | 37.1 | 44.3 | 18.6 |
| El Salvador | 1995 | 20.8 | 47.1 | 4.3 | 8.1 | . | . | . | . | 20.8 | 47.1 | 32.6 | 47.3 | 20.1 |
| El Salvador | 1996 | 25.3 | 51.9 | 4.7 | 9.1 | . | . | . | . | 25.3 | 51.9 | 31.9 | 47.7 | 20.4 |
| El Salvador | 1997 | 21.5 | 47.5 | . | . | . | . | . | . | 21.5 | 47.5 | 31.2 | 48.1 | 20.7 |
| El Salvador | 1998 | 21.4 | 45.0 | 9.8 | 14.4 | . | . | . | . | 21.4 | 45.0 | 30.5 | 48.5 | 21.0 |
| El Salvador | 2000 | 18.9 | 39.2 | . | . | . | . | . | . | 18.9 | 39.2 | 29.1 | 49.4 | 21.5 |
| El Salvador | 2002 | 20.4 | 40.5 | 8.2 | 12.3 | . | . | . | . | 20.4 | 40.5 | 27.8 | 50.5 | 21.7 |
| Ethiopia | 1995 | 31.3 | 76.4 | 21.2 | 41.2 | . | . | . | . | 31.3 | 76.4 | 84.4 | 11.8 | 3.8 |
| Ethiopia | 2000 | 21.6 | 76.6 | 16.2 | 37.9 | . | . | . | . | 21.6 | 76.6 | 82.4 | 13.7 | 3.9 |
| Ethiopia | 2005 | 39.0 | 77.6 | 9.6 | 28.9 | 58.5 | 13.7 | 2.1 | 25.7 | . | . | . | . | . |
| Fiji | 2003 | 29.2 | 48.7 | 11.3 | 21.8 | 48.3 | 8.2 | 7.0 | 36.6 | . | . | . | . | . |
| Fiji | 2009 | 5.9 | 22.9 | 1.1 | 6.0 | 41.3 | 7.8 | 11.5 | 39.4 | . | . | . | . | . |
| Gambia, The | 1998 | 65.6 | 81.2 | 33.8 | 49.1 | 80.7 | 15.5 | 0.0 | 3.8 | . | . | . | . | . |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Georgia | 1999 | 2.6 | 14.6 | 6.0 | 13.9 | . | . | . | . | 2.6 | 14.6 | 52.2 | 24.5 | 23.3 |
| Georgia | 2000 | 2.8 | 16.1 | 6.5 | 14.9 | . | . | . | . | 2.8 | 16.1 | 52.1 | 24.6 | 23.3 |
| Georgia | 2001 | 2.7 | 15.8 | 6.0 | 15.0 | . | . | . | . | 2.7 | 15.8 | 52.8 | 23.9 | 23.3 |
| Georgia | 2002 | 5.3 | 23.3 | 4.6 | 12.2 | . | . | . | . | 5.3 | 23.3 | 53.8 | 22.9 | 23.3 |
| Georgia | 2003 | 6.4 | 25.8 | 5.4 | 13.5 | . | . | . | . | 6.4 | 25.8 | 54.9 | 21.7 | 23.4 |
| Ghana | 1987 | 46.5 | 85.6 | . | . | . | . | . | . | 46.5 | 85.6 | 60.0 | 28.2 | 11.8 |
| Ghana | 1988 | 45.5 | 84.5 | 18.0 | 36.3 | . | . | . | . | 45.5 | 84.5 | 59.8 | 28.3 | 11.9 |
| Ghana | 1991 | 47.2 | 84.0 | . | . | . | . | . | . | 47.2 | 84.0 | 59.1 | 28.5 | 12.4 |
| Ghana | 1998 | 36.2 | 71.1 | 14.4 | 28.5 | . | . | . | . | 36.2 | 71.1 | 57.3 | 28.3 | 13.9 |
| Guatemala | 2003 | 22.6 | 34.4 | 11.7 | 18.1 | 18.4 | 19.2 | 17.4 | 45.0 | . | . | . | . | . |
| Guatemala | 2004 | 24.4 | 39.2 | 13.2 | 20.2 | 18.1 | 19.2 | 17.5 | 45.2 | . | . | . | . | . |
| Guatemala | 2006 | 13.5 | 26.3 | 4.7 | 10.5 | 17.5 | 19.1 | 17.8 | 45.6 | . | . | . | . | . |
| Guinea-Bissau | 2002 | 48.9 | 78.0 | 16.6 | 34.9 | 65.4 | 9.3 | 10.0 | 15.3 | . | . | . | . | . |
| Guinea | 1991 | 92.6 | 98.5 | 63.3 | 75.6 | 12.1 | 9.2 | 64.2 | 14.5 | . | . | . | . | . |
| Guinea | 1994 | 63.8 | 81.7 | 29.7 | 46.3 | 11.9 | 9.4 | 62.0 | 16.7 | . | . | . | . | . |
| Guinea | 2003 | 56.3 | 80.8 | 21.3 | 39.7 | 12.1 | 9.5 | 53.4 | 25.1 | . | . | . | . | . |
| Guinea | 2007 | 43.3 | 69.6 | 15.0 | 31.0 | 11.7 | 9.2 | 48.9 | 30.2 | . | . | . | . | . |
| Guyana | 1993 | 6.9 | 17.1 | 1.5 | 5.4 | 31.6 | 23.4 | 11.3 | 33.7 | . | . | . | . | . |
| Guyana | 1998 | 8.7 | 18.0 | 2.8 | 6.7 | 28.9 | 23.8 | 10.1 | 37.2 | . | . | . | . | . |
| Haiti | 2001 | 61.7 | 77.5 | 32.3 | 46.7 | 6.8 | 27.1 | 26.3 | 39.8 | . | . | . | . | . |
| Hungary | 1987 | 0.1 | 0.1 | 0.1 | 0.1 | 7.5 | 19.5 | 11.1 | 61.9 | . | . | . | . | . |
| Hungary | 1989 | 0.0 | 0.2 | 0.0 | 0.1 | 6.9 | 19.3 | 11.2 | 62.7 | . | . | . | . | . |
| Hungary | 1993 | 0.2 | 0.3 | 0.2 | 0.2 | 5.8 | 19.2 | 11.2 | 63.8 | . | . | . | . | . |
| India | 1978 | 65.9 | 89.0 | 23.2 | 44.6 | 15.9 | 8.3 | 29.2 | 46.6 | . | . | . | . | . |
| India | 1983 | 48.0 | 87.9 | 17.2 | 38.2 | . | . | . | . | 48.0 | 87.9 | 67.9 | 23.2 | 8.9 |
| India | 1986 | 48.3 | 87.6 | . | . | . | . | . | . | 48.3 | 87.6 | 66.2 | 24.6 | 9.2 |
| India | 1987 | 46.2 | 87.0 | . | . | . | . | . | . | 46.2 | 87.0 | 65.6 | 25.1 | 9.3 |
| India | 1988 | 49.5 | 88.2 | 15.8 | 36.7 | . | . | . | . | 49.5 | 88.2 | 65.1 | 25.5 | 9.4 |
| India | 1992 | 51.1 | 88.0 | . | . | . | . | . | . | 51.1 | 88.0 | 63.2 | 26.9 | 9.9 |
| India | 1993 | 41.8 | 85.3 | . | . | . | . | . | . | 41.8 | 85.3 | 62.7 | 27.3 | 10.0 |
| India | 1994 | 45.1 | 86.9 | 13.6 | 34.1 | . | . | . | . | 45.1 | 86.9 | 62.3 | 27.6 | 10.1 |
| India | 1995 | 50.6 | 88.2 | . | . | . | . | . | . | 50.6 | 88.2 | 61.9 | 27.9 | 10.2 |
| India | 1997 | 44.3 | 86.3 | . | . | . | . | . | . | 44.3 | 86.3 | 61.0 | 28.5 | 10.5 |
| India | 1999 | 35.6 | 80.8 | . | . | . | . | . | . | 35.6 | 80.8 | 60.1 | 29.2 | 10.7 |
| India | 2010 | 32.7 | 68.7 | 7.5 | 24.5 | 81.7 | 5.4 | 2.6 | 10.4 | . | . | . | . | . |
| Indonesia | 1984 | 36.7 | 80.0 | 21.4 | 42.8 | . | . | . | . | 36.7 | 80.0 | 54.7 | 36.9 | 8.4 |
| Indonesia | 1987 | 28.1 | 75.8 | 23.1 | 45.4 | . | . | . | . | 28.1 | 75.8 | 55.0 | 36.4 | 8.6 |
| Indonesia | 1990 | 20.6 | 71.1 | 15.6 | 37.0 | . | . | . | . | 20.6 | 71.1 | 55.9 | 35.4 | 8.7 |
| Indonesia | 1993 | 17.4 | 64.2 | 15.7 | 37.1 | . | . | . | . | 17.4 | 64.2 | 50.6 | 40.3 | 9.1 |
| Indonesia | 1996 | 14.1 | 59.7 | 11.4 | 30.7 | . | . | . | . | 14.1 | 59.7 | 44.0 | 46.4 | 9.6 |
| Indonesia | 1998 | 26.3 | 75.9 | . | . | . | . | . | . | 26.3 | 75.9 | 45.0 | 45.0 | 10.0 |
| Indonesia | 1999 | 7.6 | 55.2 | 12.5 | 33.3 | . | . | . | . | 7.6 | 55.2 | 43.2 | 46.6 | 10.2 |
| Indonesia | 2000 | 7.2 | 55.4 | . | . | . | . | . | . | 7.2 | 55.4 | 45.1 | 44.5 | 10.4 |
| Indonesia | 2002 | 7.8 | 52.9 | 6.0 | 22.4 | . | . | . | . | 7.8 | 52.9 | 44.3 | 44.8 | 10.9 |
| Iran, Islamic Rep. | 1986 | 1.5 | 12.4 | 0.9 | 3.9 | . | . | . | . | 1.5 | 12.4 | 35.0 | 42.1 | 22.9 |
| Iran, Islamic Rep. | 1990 | 1.6 | 11.7 | 1.0 | 3.7 | . | . | . | . | 1.6 | 11.7 | 32.3 | 44.8 | 22.9 |
| Iran, Islamic Rep. | 1994 | 0.4 | 7.0 | 0.3 | 1.8 | . | . | . | . | 0.4 | 7.0 | 29.8 | 47.1 | 23.1 |
| Iran, Islamic | 1998 | 0.3 | 7.2 | 0.2 | 1.8 | . | . | . | . | 0.3 | 7.2 | 27.6 | 49.3 | 23.1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rep. | | | | | | | | | | | | | | |
| Kazakhstan | 1993 | 0.4 | 17.5 | 0.5 | 4.3 | . | . | . | . | 0.4 | 17.5 | 20.7 | 72.5 | 6.8 |
| Kazakhstan | 1996 | 1.9 | 18.7 | 0.9 | 4.9 | . | . | . | . | 1.9 | 18.7 | 19.3 | 73.6 | 7.1 |
| Kazakhstan | 2001 | 0.1 | 8.4 | 3.7 | 10.5 | . | . | . | . | 0.1 | 8.4 | 17.2 | 75.2 | 7.6 |
| Kazakhstan | 2002 | 1.8 | 21.4 | 0.9 | 5.4 | . | . | . | . | 1.8 | 21.4 | 16.8 | 75.6 | 7.6 |
| Kazakhstan | 2003 | 0.9 | 17.1 | 0.5 | 3.9 | . | . | . | . | 0.9 | 17.1 | 16.4 | 76.0 | 7.6 |
| Kenya | 1992 | 33.5 | 63.9 | 15.4 | 28.2 | . | . | . | . | 33.5 | 63.9 | 78.8 | 15.1 | 6.1 |
| Kenya | 1994 | 26.5 | 62.3 | 9.4 | 21.4 | . | . | . | . | 26.5 | 62.3 | 78.0 | 15.7 | 6.3 |
| Kenya | 1997 | 12.4 | 45.1 | 4.6 | 14.7 | . | . | . | . | 12.4 | 45.1 | 76.8 | 16.4 | 6.8 |
| Kyrgyz Republic | 2006 | 5.9 | 32.1 | 0.8 | 7.5 | 40.9 | 9.8 | 17.1 | 32.2 | . | . | . | . | . |
| Kyrgyz Republic | 2007 | 1.9 | 29.4 | 0.1 | 5.5 | 39.6 | 9.9 | 17.6 | 32.9 | . | . | . | . | . |
| Kyrgyz Republic | 2008 | 6.4 | 20.7 | 1.5 | 5.9 | 38.2 | 10.0 | 18.2 | 33.6 | . | . | . | . | . |
| Kyrgyz Republic | 2009 | 6.2 | 21.7 | 1.4 | 6.0 | 36.9 | 10.0 | 18.8 | 34.3 | . | . | . | . | . |
| Lao PDR | 2002 | 44.0 | 76.9 | 12.1 | 31.1 | 87.3 | 7.8 | 0.0 | 4.9 | . | . | . | . | . |
| Lao PDR | 2008 | 33.9 | 66.0 | 9.0 | 24.8 | 85.4 | 9.2 | 0.0 | 5.4 | . | . | . | . | . |
| Lesotho | 1987 | 44.4 | 62.2 | 20.9 | 33.3 | 33.4 | 32.2 | 0.0 | 34.3 | . | . | . | . | . |
| Lesotho | 1993 | 56.4 | 70.9 | 30.2 | 43.0 | 29.2 | 33.1 | 0.3 | 37.3 | . | . | . | . | . |
| Lesotho | 1994 | 46.2 | 59.7 | 25.6 | 36.1 | 28.5 | 33.3 | 0.5 | 37.7 | . | . | . | . | . |
| Lesotho | 2003 | 43.4 | 62.3 | 20.8 | 33.1 | 22.4 | 34.0 | 3.5 | 40.2 | . | . | . | . | . |
| Madagascar | 1980 | 49.2 | 80.3 | 50.5 | 65.7 | . | . | . | . | 49.2 | 80.3 | 81.5 | 12.1 | 6.4 |
| Madagascar | 1993 | 46.3 | 80.0 | 34.8 | 52.5 | . | . | . | . | 46.3 | 80.0 | 77.0 | 14.8 | 8.2 |
| Madagascar | 1997 | 49.8 | 84.7 | 32.8 | 51.4 | . | . | . | . | 49.8 | 84.7 | 75.5 | 16.1 | 8.4 |
| Madagascar | 1999 | 66.0 | 90.2 | 44.3 | 61.0 | . | . | . | . | 66.0 | 90.2 | 74.7 | 16.9 | 8.4 |
| Madagascar | 2001 | 61.0 | 85.1 | 41.4 | 57.2 | . | . | . | . | 61.0 | 85.1 | 73.8 | 17.8 | 8.4 |
| Malaysia | 1984 | 2.0 | 15.0 | 0.7 | 3.2 | . | . | . | . | 2.0 | 15.0 | 35.5 | 58.0 | 6.5 |
| Malaysia | 1987 | 1.2 | 14.7 | 0.4 | 2.8 | . | . | . | . | 1.2 | 14.7 | 31.4 | 62.2 | 6.4 |
| Malaysia | 1989 | 0.9 | 13.9 | 0.3 | 2.5 | . | . | . | . | 0.9 | 13.9 | 28.7 | 65.0 | 6.3 |
| Malaysia | 1992 | 0.4 | 13.8 | 0.1 | 2.4 | . | . | . | . | 0.4 | 13.8 | 25.4 | 68.5 | 6.1 |
| Malaysia | 1995 | 0.9 | 13.5 | 0.3 | 2.5 | . | . | . | . | 0.9 | 13.5 | 22.7 | 71.3 | 6.0 |
| Malaysia | 1997 | 0.1 | 8.8 | 0.1 | 1.3 | . | . | . | . | 0.1 | 8.8 | 21.0 | 73.2 | 5.8 |
| Mali | 1989 | 16.5 | 55.4 | . | . | . | . | . | . | 16.5 | 55.4 | 86.1 | 5.6 | 8.3 |
| Mali | 1994 | 72.3 | 90.6 | 53.1 | 67.2 | . | . | . | . | 72.3 | 90.6 | 84.0 | 7.2 | 8.8 |
| Mali | 2001 | 36.3 | 72.7 | 25.8 | 43.6 | . | . | . | . | 36.3 | 72.7 | 80.4 | 10.0 | 9.6 |
| Mauritania | 1993 | 42.8 | 68.6 | 14.4 | 30.5 | 34.8 | 16.4 | 14.5 | 34.2 | . | . | . | . | . |
| Mauritania | 1996 | 23.4 | 48.3 | 7.1 | 17.8 | 32.5 | 16.9 | 16.1 | 34.5 | . | . | . | . | . |
| Mauritania | 2000 | 21.2 | 44.1 | 5.7 | 15.9 | 28.5 | 17.8 | 19.2 | 34.6 | . | . | . | . | . |
| Mauritania | 2004 | 25.4 | 52.6 | 7.0 | 19.2 | 26.0 | 18.4 | 20.7 | 34.8 | . | . | . | . | . |
| Mauritania | 2008 | 23.4 | 47.7 | 6.8 | 17.7 | 23.1 | 19.4 | 22.6 | 34.9 | . | . | . | . | . |
| Mexico | 1984 | 12.8 | 28.5 | 3.0 | 9.6 | 52.7 | 10.0 | 18.1 | 19.2 | . | . | . | . | . |
| Mexico | 1989 | 4.0 | 6.6 | 4.3 | 4.7 | 47.3 | 11.5 | 20.2 | 21.0 | . | . | . | . | . |
| Mexico | 1992 | 4.8 | 15.2 | 0.8 | 4.3 | 44.0 | 12.2 | 21.4 | 22.4 | . | . | . | . | . |
| Mexico | 1994 | 3.6 | 14.0 | 0.5 | 3.6 | 42.0 | 12.6 | 22.0 | 23.4 | . | . | . | . | . |
| Mexico | 1996 | 7.9 | 20.1 | 1.9 | 6.4 | 40.0 | 12.9 | 22.6 | 24.5 | . | . | . | . | . |
| Mexico | 1998 | 8.6 | 20.1 | 2.2 | 6.8 | 38.0 | 13.2 | 23.2 | 25.6 | . | . | . | . | . |
| Mexico | 2000 | 5.5 | 15.1 | 1.5 | 4.7 | 36.1 | 13.4 | 23.7 | 26.8 | . | . | . | . | . |
| Mexico | 2002 | 3.9 | 13.5 | 0.8 | 3.7 | 34.2 | 13.7 | 24.2 | 27.9 | . | . | . | . | . |
| Mexico | 2004 | 1.6 | 7.6 | 0.1 | 1.8 | 32.3 | 14.0 | 24.6 | 29.0 | . | . | . | . | . |
| Mexico | 2006 | 0.7 | 4.9 | 0.1 | 1.0 | 30.6 | 14.3 | 25.0 | 30.1 | . | . | . | . | . |
| Mexico | 2008 | 1.2 | 5.2 | 0.3 | 1.3 | 28.9 | 14.6 | 25.4 | 31.2 | . | . | . | . | . |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Micronesia, Fed. Sts. | 2000 | 31.2 | 44.7 | 16.3 | 24.5 | 84.7 | 6.7 | 0.0 | 8.6 | . | . | . | . | . |
| Moldova | 1988 | 15.3 | 50.0 | 2.9 | 13.8 | 44.1 | 16.5 | 23.1 | 16.4 | . | . | . | . | . |
| Moldova | 1992 | 17.0 | 39.2 | 4.5 | 13.3 | 42.0 | 17.3 | 24.0 | 16.7 | . | . | . | . | . |
| Moldova | 1997 | 15.1 | 36.8 | 4.2 | 12.4 | 39.9 | 18.3 | 24.8 | 17.0 | . | . | . | . | . |
| Moldova | 1998 | 27.2 | 52.2 | 8.7 | 20.4 | 39.5 | 18.5 | 24.9 | 17.1 | . | . | . | . | . |
| Moldova | 1999 | 39.0 | 67.0 | 12.9 | 28.4 | 39.0 | 18.7 | 25.1 | 17.1 | . | . | . | . | . |
| Moldova | 2001 | 26.5 | 54.3 | 7.4 | 19.9 | 38.0 | 19.2 | 25.4 | 17.3 | . | . | . | . | . |
| Morocco | 1984 | 2.0 | 16.5 | . | . | . | . | . | . | 2.0 | 16.5 | 51.5 | 32.9 | 15.6 |
| Morocco | 1990 | 0.1 | 7.5 | . | . | . | . | . | . | 0.1 | 7.5 | 44.7 | 39.2 | 16.1 |
| Morocco | 1998 | 0.6 | 14.3 | . | . | . | . | . | . | 0.6 | 14.3 | 37.7 | 45.9 | 16.4 |
| Mozambique | 1996 | 45.6 | 80.9 | 41.2 | 58.7 | . | . | . | . | 45.6 | 80.9 | 82.2 | 11.9 | 5.9 |
| Mozambique | 2002 | 36.2 | 74.1 | . | . | . | . | . | . | 36.2 | 74.1 | 80.8 | 12.9 | 6.3 |
| Mozambique | 2003 | 74.7 | 90.0 | 35.4 | 53.6 | 38.7 | 25.7 | 0.0 | 35.6 | . | . | . | . | . |
| Mozambique | 2008 | 59.6 | 81.8 | 25.1 | 42.9 | 34.8 | 26.3 | 0.0 | 38.9 | . | . | . | . | . |
| Namibia | 2004 | 31.9 | 51.1 | 9.5 | 21.8 | 46.5 | 14.2 | 6.0 | 33.3 | . | . | . | . | . |
| Nepal | 1996 | 68.0 | 89.0 | 25.6 | 46.3 | 27.9 | 4.3 | 11.3 | 56.5 | . | . | . | . | . |
| Nepal | 2003 | 53.1 | 77.3 | 18.4 | 36.6 | 24.5 | 4.3 | 14.1 | 57.2 | . | . | . | . | . |
| Nepal | 2010 | 24.8 | 57.3 | 5.6 | 19.0 | 20.7 | 4.4 | 17.7 | 57.2 | . | . | . | . | . |
| Nicaragua | 1993 | 47.9 | 77.9 | 5.6 | 13.8 | 39.0 | 19.1 | 7.6 | 34.3 | 47.9 | 77.9 | 39.0 | 41.9 | 19.1 |
| Nicaragua | 1998 | 44.7 | 79.0 | 3.1 | 10.2 | 42.3 | 20.2 | 4.2 | 33.3 | 44.7 | 79.0 | 42.3 | 37.5 | 20.2 |
| Nicaragua | 2001 | 14.4 | 34.4 | 3.7 | 11.5 | 15.2 | 8.7 | 31.8 | 44.3 | . | . | . | . | . |
| Nicaragua | 2005 | 11.9 | 31.7 | 2.4 | 9.6 | 12.5 | 8.9 | 34.7 | 43.9 | . | . | . | . | . |
| Nigeria | 1985 | 65.7 | 90.9 | . | . | . | . | . | . | 65.7 | 90.9 | 48.4 | 40.8 | 10.8 |
| Nigeria | 1986 | 53.9 | 77.0 | 21.9 | 38.8 | 13.0 | 17.4 | 13.7 | 56.0 | . | . | . | . | . |
| Nigeria | 1992 | 59.2 | 85.3 | 31.1 | 46.6 | . | . | . | . | 59.2 | 85.3 | 41.0 | 47.3 | 11.7 |
| Nigeria | 1996 | 78.2 | 94.6 | 32.1 | 49.7 | . | . | . | . | 78.2 | 94.6 | 37.1 | 50.6 | 12.3 |
| Nigeria | 2003 | 71.2 | 92.3 | . | . | . | . | . | . | 71.2 | 92.3 | 30.6 | 55.6 | 13.8 |
| Nigeria | 2004 | 63.1 | 83.1 | 28.7 | 45.9 | 8.0 | 19.8 | 18.3 | 53.9 | . | . | . | . | . |
| Pakistan | 1987 | 49.6 | 88.9 | 23.9 | 45.2 | . | . | . | . | 49.6 | 88.9 | 55.4 | 28.9 | 15.7 |
| Pakistan | 1990 | 47.8 | 87.9 | . | . | . | . | . | . | 47.8 | 87.9 | 51.9 | 32.1 | 16.0 |
| Pakistan | 1992 | 8.5 | 63.0 | . | . | . | . | . | . | 8.5 | 63.0 | 51.0 | 32.8 | 16.2 |
| Pakistan | 1996 | 15.4 | 73.9 | . | . | . | . | . | . | 15.4 | 73.9 | 49.1 | 34.2 | 16.7 |
| Pakistan | 1998 | 13.5 | 65.8 | . | . | . | . | . | . | 13.5 | 65.8 | 48.1 | 34.9 | 17.0 |
| Pakistan | 2001 | 17.5 | 73.3 | . | . | . | . | . | . | 17.5 | 73.3 | 46.6 | 36.0 | 17.4 |
| Panama | 1979 | 8.0 | 19.2 | 1.6 | 6.1 | 71.6 | 21.8 | 0.0 | 6.5 | . | . | . | . | . |
| Panama | 1991 | 11.8 | 24.1 | 13.5 | 17.8 | . | . | . | . | 11.8 | 24.1 | 26.6 | 38.1 | 35.3 |
| Panama | 1995 | 7.4 | 17.4 | 10.7 | 13.9 | . | . | . | . | 7.4 | 17.4 | 20.8 | 43.5 | 35.7 |
| Panama | 1996 | 7.9 | 18.5 | . | . | . | . | . | . | 7.9 | 18.5 | 20.1 | 44.1 | 35.8 |
| Panama | 1997 | 3.2 | 12.9 | 9.0 | 12.4 | . | . | . | . | 3.2 | 12.9 | 18.6 | 45.4 | 36.0 |
| Panama | 2000 | 7.2 | 17.6 | . | . | . | . | . | . | 7.2 | 17.6 | 17.0 | 46.6 | 36.4 |
| Panama | 2001 | 9.4 | 20.2 | 8.4 | 12.5 | . | . | . | . | 9.4 | 20.2 | 18.1 | 45.3 | 36.6 |
| Panama | 2002 | 6.1 | 17.5 | 4.5 | 8.6 | . | . | . | . | 6.1 | 17.5 | 17.4 | 45.7 | 36.9 |
| Panama | 2003 | 4.9 | 26.3 | 4.4 | 8.3 | . | . | . | . | 4.9 | 26.3 | 17.5 | 45.4 | 37.1 |
| Paraguay | 1990 | 4.9 | 26.3 | 0.3 | 1.0 | . | . | . | . | 4.9 | 26.3 | 38.9 | 39.1 | 22.0 |
| Paraguay | 1995 | 19.4 | 38.5 | 4.8 | 8.9 | . | . | . | . | 19.4 | 38.5 | 36.6 | 39.7 | 23.7 |
| Paraguay | 1997 | 14.7 | 28.2 | . | . | . | . | . | . | 14.7 | 28.2 | 35.6 | 39.3 | 25.1 |
| Paraguay | 1999 | 13.6 | 28.2 | 6.5 | 10.8 | . | . | . | . | 13.6 | 28.2 | 34.8 | 38.7 | 26.5 |
| Paraguay | 2002 | 16.4 | 33.2 | 7.4 | 12.9 | . | . | . | . | 16.4 | 33.2 | 33.4 | 37.7 | 28.9 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paraguay | 2003 | 13.6 | 29.8 | 4.4 | 8.8 | . | . | . | . | 13.6 | 29.8 | 32.9 | 37.4 | 29.7 |
| Peru | 1985 | 1.1 | 9.9 | . | . | . | . | . | . | 1.1 | 9.9 | 38.0 | 35.9 | 26.1 |
| Peru | 1990 | 1.4 | 10.4 | . | . | . | . | . | . | 1.4 | 10.4 | 35.7 | 37.5 | 26.8 |
| Peru | 1994 | 9.4 | 31.6 | 3.3 | 9.8 | . | . | . | . | 9.4 | 31.6 | 33.5 | 39.5 | 27.0 |
| Peru | 1996 | 8.9 | 28.4 | . | . | . | . | . | . | 8.9 | 28.4 | 32.4 | 40.7 | 26.9 |
| Peru | 2000 | 18.1 | 37.7 | 4.6 | 9.7 | . | . | . | . | 18.1 | 37.7 | 30.4 | 43.4 | 26.2 |
| Peru | 2001 | 15.5 | 36.3 | 5.3 | 11.2 | . | . | . | . | 15.5 | 36.3 | 29.9 | 44.0 | 26.1 |
| Peru | 2002 | 12.9 | 32.2 | 4.4 | 9.6 | . | . | . | . | 12.9 | 32.2 | 29.4 | 44.6 | 26.0 |
| Peru | 2003 | 10.5 | 30.6 | 2.9 | 7.7 | . | . | . | . | 10.5 | 30.6 | 28.9 | 45.2 | 25.9 |
| Philippines | 1985 | 23.4 | 62.0 | 10.3 | 25.0 | . | . | . | . | 23.4 | 62.0 | 49.1 | 36.9 | 14.0 |
| Philippines | 1988 | 19.5 | 57.0 | 8.2 | 21.9 | . | . | . | . | 19.5 | 57.0 | 47.1 | 38.6 | 14.3 |
| Philippines | 1991 | 20.2 | 55.5 | 8.6 | 21.8 | . | . | . | . | 20.2 | 55.5 | 45.1 | 40.3 | 14.6 |
| Philippines | 1994 | 18.1 | 52.7 | 7.6 | 20.2 | . | . | . | . | 18.1 | 52.7 | 43.3 | 41.6 | 15.1 |
| Philippines | 1997 | 13.6 | 43.9 | 5.3 | 15.8 | . | . | . | . | 13.6 | 43.9 | 41.4 | 43.6 | 15.0 |
| Philippines | 2000 | 13.5 | 44.9 | 5.5 | 16.3 | . | . | . | . | 13.5 | 44.9 | 39.5 | 45.8 | 14.7 |
| Philippines | 2003 | 13.5 | 43.9 | 5.5 | 16.0 | . | . | . | . | 13.5 | 43.9 | 37.7 | 47.8 | 14.5 |
| Poland | 1985 | 0.1 | 0.3 | 0.1 | 0.2 | 12.0 | 28.5 | 34.5 | 25.0 | . | . | . | . | . |
| Poland | 1987 | 0.1 | 0.2 | 0.1 | 0.1 | 11.1 | 28.9 | 34.4 | 25.6 | . | . | . | . | . |
| Poland | 1989 | 0.1 | 0.2 | 0.1 | 0.1 | 10.4 | 29.3 | 34.2 | 26.2 | . | . | . | . | . |
| Poland | 1992 | 0.0 | 0.2 | 0.0 | 0.0 | 9.3 | 29.7 | 33.8 | 27.2 | . | . | . | . | . |
| Poland | 1993 | 4.2 | 8.5 | 1.6 | 3.3 | 9.0 | 30.0 | 33.7 | 27.4 | . | . | . | . | . |
| Poland | 1996 | 1.4 | 11.3 | 0.3 | 2.2 | 8.0 | 31.6 | 33.2 | 27.2 | . | . | . | . | . |
| Poland | 1998 | 0.1 | 1.9 | 0.1 | 0.1 | 22.8 | 4.3 | 17.5 | 55.4 | 0.1 | 1.9 | 22.8 | 72.9 | 4.3 |
| Poland | 1999 | 0.1 | 1.2 | 0.0 | 0.1 | 22.2 | 4.3 | 17.6 | 55.9 | 0.1 | 1.2 | 22.2 | 73.5 | 4.3 |
| Poland | 2000 | 0.1 | 1.3 | 0.1 | 0.2 | 21.7 | 4.3 | 17.7 | 56.3 | 0.1 | 1.3 | 21.7 | 74.0 | 4.3 |
| Poland | 2001 | 0.1 | 1.4 | 0.1 | 0.1 | 21.2 | 4.3 | 17.7 | 56.8 | 0.1 | 1.4 | 21.2 | 74.5 | 4.3 |
| Poland | 2002 | 0.1 | 1.5 | 0.0 | 0.1 | 20.7 | 4.4 | 17.8 | 57.1 | 0.1 | 1.5 | 20.7 | 74.9 | 4.4 |
| Poland | 2004 | 0.1 | 0.4 | 0.0 | 0.1 | 6.0 | 34.9 | 31.6 | 27.5 | . | . | . | . | . |
| Romania | 1994 | 2.8 | 27.4 | 1.2 | 5.7 | . | . | . | . | 2.8 | 27.4 | 20.1 | 71.2 | 8.7 |
| Romania | 1998 | 1.0 | 12.8 | 0.5 | 2.2 | . | . | . | . | 1.0 | 12.8 | 16.7 | 74.3 | 9.0 |
| Romania | 2000 | 2.1 | 20.4 | 0.9 | 4.2 | . | . | . | . | 2.1 | 20.4 | 15.1 | 75.9 | 9.0 |
| Romania | 2001 | 1.5 | 16.8 | 0.7 | 3.2 | . | . | . | . | 1.5 | 16.8 | 14.4 | 76.6 | 9.0 |
| Romania | 2002 | 1.7 | 15.6 | 0.8 | 3.2 | . | . | . | . | 1.7 | 15.6 | 13.7 | 77.4 | 8.9 |
| Romania | 2003 | 1.1 | 12.6 | 0.5 | 2.3 | . | . | . | . | 1.1 | 12.6 | 13.1 | 78.0 | 8.9 |
| Russian Federation | 1993 | 6.1 | 22.7 | 0.1 | 1.9 | . | . | . | . | 6.1 | 22.7 | 12.7 | 69.6 | 17.7 |
| Russian Federation | 1996 | 7.0 | 22.6 | 0.4 | 2.5 | . | . | . | . | 7.0 | 22.6 | 11.7 | 70.3 | 18.0 |
| Russian Federation | 1998 | 2.8 | 18.6 | . | . | . | . | . | . | 2.8 | 18.6 | 11.1 | 70.7 | 18.2 |
| Russian Federation | 2000 | 6.2 | 23.8 | . | . | . | . | . | . | 6.2 | 23.8 | 10.5 | 71.0 | 18.5 |
| Russian Federation | 2001 | 1.8 | 16.8 | 0.2 | 1.2 | . | . | . | . | 1.8 | 16.8 | 10.2 | 71.2 | 18.6 |
| Russian Federation | 2002 | 0.7 | 13.5 | 0.1 | 0.6 | . | . | . | . | 0.7 | 13.5 | 10.0 | 71.2 | 18.8 |
| Senegal | 1991 | 45.4 | 73.0 | 34.3 | 49.5 | . | . | . | . | 45.4 | 73.0 | 76.5 | 6.1 | 17.4 |
| Senegal | 1994 | 24.0 | 65.7 | 19.2 | 37.6 | . | . | . | . | 24.0 | 65.7 | 75.6 | 6.8 | 17.6 |
| Senegal | 2001 | 16.8 | 55.9 | 14.3 | 31.2 | . | . | . | . | 16.8 | 55.9 | 73.5 | 8.4 | 18.1 |
| Senegal | 2005 | 33.5 | 60.4 | 10.8 | 24.7 | 28.7 | 30.7 | 21.4 | 19.2 | . | . | . | . | . |
| Slovenia | 1987 | 0.0 | 0.0 | 0.0 | 0.0 | 52.8 | 23.5 | 9.2 | 14.5 | . | . | . | . | . |
| South Africa | 1993 | 10.0 | 34.2 | 6.9 | 16.8 | . | . | . | . | 10.0 | 34.2 | 12.2 | 61.7 | 26.1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South Africa | 1995 | 6.3 | 32.2 | 5.2 | 15.0 | . | . | . | . | 6.3 | 32.2 | 11.4 | 62.1 | 26.5 |
| South Africa | 2000 | 12.4 | 36.0 | 8.2 | 18.3 | . | . | . | . | 12.4 | 36.0 | 9.6 | 62.8 | 27.6 |
| St. Lucia | 1995 | 20.9 | 40.6 | 7.2 | 15.5 | 85.5 | 4.1 | 5.0 | 5.4 | . | . | . | . | . |
| Sudan | 2009 | 19.8 | 44.1 | 5.5 | 15.4 | 11.4 | 13.4 | 20.4 | 54.8 | . | . | . | . | . |
| Suriname | 1999 | 15.5 | 27.2 | 5.9 | 11.7 | 12.0 | 48.7 | 0.0 | 39.3 | . | . | . | . | . |
| Swaziland | 1995 | 78.6 | 89.3 | 47.7 | 61.7 | 5.9 | 32.3 | 1.6 | 60.1 | . | . | . | . | . |
| Tajikistan | 2009 | 6.6 | 27.7 | 1.2 | 7.0 | 74.5 | 9.1 | 0.0 | 16.3 | . | . | . | . | . |
| Thailand | 1981 | 21.6 | 55.0 | 5.5 | 16.0 | . | . | . | . | 21.6 | 55.0 | 70.2 | 19.6 | 10.2 |
| Thailand | 1988 | 17.9 | 54.1 | 3.4 | 12.9 | . | . | . | . | 17.9 | 54.1 | 65.4 | 24.0 | 10.6 |
| Thailand | 1992 | 6.0 | 37.5 | 1.6 | 8.2 | . | . | . | . | 6.0 | 37.5 | 62.6 | 26.7 | 10.7 |
| Thailand | 1996 | 2.2 | 28.3 | 0.4 | 3.1 | . | . | . | . | 2.2 | 28.3 | 59.6 | 30.0 | 10.4 |
| Thailand | 1999 | 2.0 | 31.6 | 0.5 | 4.0 | . | . | . | . | 2.0 | 31.6 | 57.2 | 32.5 | 10.3 |
| Thailand | 2000 | 2.0 | 32.5 | 0.5 | 4.0 | . | . | . | . | 2.0 | 32.5 | 56.5 | 33.2 | 10.3 |
| Thailand | 2002 | 0.9 | 25.8 | 0.3 | 2.7 | . | . | . | . | 0.9 | 25.8 | 54.9 | 34.8 | 10.3 |
| Uganda | 1989 | 87.7 | 97.1 | 33.2 | 50.3 | . | . | . | . | 87.7 | 97.1 | 84.8 | 11.0 | 4.2 |
| Uganda | 1992 | 90.3 | 98.1 | 30.3 | 49.4 | . | . | . | . | 90.3 | 98.1 | 83.7 | 12.0 | 4.3 |
| Uganda | 1996 | 87.9 | 97.5 | 24.8 | 44.5 | . | . | . | . | 87.9 | 97.5 | 82.0 | 13.6 | 4.4 |
| Uganda | 1999 | 84.9 | 96.6 | 24.5 | 42.9 | . | . | . | . | 84.9 | 96.6 | 80.6 | 14.9 | 4.5 |
| Uganda | 2002 | 82.3 | 95.7 | 22.7 | 40.6 | . | . | . | . | 82.3 | 95.7 | 79.1 | 16.4 | 4.5 |
| Ukraine | 1995 | 2.1 | 14.8 | 0.6 | 2.1 | . | . | . | . | 2.1 | 14.8 | 17.0 | 70.8 | 12.2 |
| Ukraine | 1996 | 2.0 | 16.4 | 0.6 | 2.1 | . | . | . | . | 2.0 | 16.4 | 16.4 | 71.3 | 12.3 |
| Ukraine | 1999 | 2.2 | 26.9 | 0.5 | 2.8 | . | . | . | . | 2.2 | 26.9 | 14.9 | 72.6 | 12.5 |
| Ukraine | 2002 | 0.5 | 9.3 | 0.2 | 0.7 | . | . | . | . | 0.5 | 9.3 | 13.5 | 73.7 | 12.8 |
| Ukraine | 2003 | 0.2 | 5.0 | 0.1 | 0.3 | . | . | . | . | 0.2 | 5.0 | 13.1 | 74.0 | 12.9 |
| Venezuela, RB | 1981 | 6.3 | 22.6 | 0.3 | 3.1 | . | . | . | . | 6.3 | 22.6 | 14.3 | 50.4 | 35.3 |
| Venezuela, RB | 1987 | 6.6 | 24.7 | 0.3 | 3.3 | . | . | . | . | 6.6 | 24.7 | 12.8 | 52.8 | 34.4 |
| Venezuela, RB | 1989 | 3.0 | 14.5 | 3.6 | 6.0 | . | . | . | . | 3.0 | 14.5 | 12.3 | 53.4 | 34.3 |
| Venezuela, RB | 1993 | 2.7 | 17.9 | . | . | . | . | . | . | 2.7 | 17.9 | 10.7 | 55.0 | 34.3 |
| Venezuela, RB | 1995 | 9.4 | 28.8 | 4.0 | 8.1 | . | . | . | . | 9.4 | 28.8 | 9.9 | 55.7 | 34.4 |
| Venezuela, RB | 1996 | 14.8 | 36.6 | . | . | . | . | . | . | 14.8 | 36.6 | 9.5 | 55.9 | 34.6 |
| Venezuela, RB | 1997 | 9.6 | 28.6 | . | . | . | . | . | . | 9.6 | 28.6 | 9.1 | 56.1 | 34.8 |
| Venezuela, RB | 1998 | 14.3 | 30.6 | 5.0 | 8.8 | . | . | . | . | 14.3 | 30.6 | 8.8 | 56.2 | 35.0 |
| Venezuela, RB | 2003 | 18.7 | 40.2 | 9.4 | 15.9 | . | . | . | . | 18.7 | 40.2 | 7.2 | 56.5 | 36.3 |
| Vietnam | 1998 | 3.8 | 39.7 | 15.1 | 34.2 | . | . | . | . | 3.8 | 39.7 | 64.8 | 22.4 | 12.8 |
| Vietnam | 2002 | 1.8 | 33.2 | 11.2 | 28.0 | . | . | . | . | 1.8 | 33.2 | 62.0 | 25.0 | 13.0 |
| Yemen, Rep. | 1992 | 3.4 | 19.9 | . | . | . | . | . | . | 3.4 | 19.9 | 58.2 | 35.9 | 5.9 |
| Yemen, Rep. | 1998 | 9.4 | 43.5 | 3.0 | 11.1 | . | . | . | . | 9.4 | 43.5 | 52.4 | 40.3 | 7.3 |
| Zambia | 1991 | 60.4 | 82.1 | 40.0 | 50.8 | . | . | . | . | 60.4 | 82.1 | 74.0 | 16.9 | 9.1 |
| Zambia | 1993 | 73.6 | 90.7 | 35.6 | 50.0 | . | . | . | . | 73.6 | 90.7 | 73.0 | 17.7 | 9.3 |
| Zambia | 1996 | 72.2 | 91.5 | 29.5 | 45.7 | . | . | . | . | 72.2 | 91.5 | 71.5 | 19.0 | 9.5 |
| Zambia | 1998 | 65.7 | 87.8 | 26.9 | 41.7 | . | . | . | . | 65.7 | 87.8 | 70.4 | 19.8 | 9.8 |

## Appendix 3 Regional Changes of Sectoral Population Shares in 2000-2010

| | | Sector (Population Share) (%) | | | | |
|---|---|---|---|---|---|---|
| | | Agriculture | Rural Non-Agriculture | Secondary Towns | Mega Cities | Total |
| East Europe and Central Asia | 2000 | 34.7 | 16.7 | 33.7 | 14.8 | 100.0 |
| (ECA) | 2010 | 36.5 | 16.2 | 31.0 | 16.3 | 100.0 |
| Middle East & North Africa | 2000 | 52.5 | 7.4 | 25.5 | 14.5 | 100.0 |
| (MENA) | 2010 | 49.6 | 18.1 | 15.3 | 17.0 | 100.0 |
| Sub-Saharan Africa | 2000 | 35.2 | 12.0 | 30.8 | 22.0 | 100.0 |
| (SSA) | 2010 | 37.3 | 12.4 | 31.5 | 18.8 | 100.0 |
| Latin America & Caribbean | 2000 | 43.9 | 15.8 | 26.6 | 13.7 | 100.0 |
| (LAC) | 2010 | 39.7 | 14.5 | 29.8 | 16.1 | 100.0 |
| East Asia & Pacific | 2000 | 74.0 | 7.2 | 8.9 | 9.9 | 100.0 |
| (EAP) | 2010 | 57.5 | 17.3 | 11.0 | 14.2 | 100.0 |
| South Asia | 2000 | 26.2 | 12.4 | 57.1 | 4.3 | 100.0 |
| (SA) | 2010 | 38.0 | 12.8 | 40.2 | 9.0 | 100.0 |
| Total | 2000 | 41.2 | 12.6 | 28.9 | 17.4 | 100.0 |
| | 2010 | 39.4 | 14.0 | 29.8 | 16.7 | 100.0 |

Notes: 1. This is based on 3 years average data. The average for 2000 is based on 1998-2000 and that for 2010 is based on 201-2011.
2. Numbers of observation are: 5 for 2000 and 6 for 2010 for ECA), 3 and 2 for MENA, 17 and 17 for SSA, 6 and 7 for LAC, 3 and 2 for EAP, 1 and 3 for SA, and 35 and 37 for total. Details are shown in Appendix 2.

## Appendix 4 Effects of "Missing Middle" on log Poverty Headcount ($1.25 or $2), using Christiaensen-Todo (2014)'s data: Robust Fixed Estimator, or Robust Arellano-Bover/Blundell-Bond linear dynamic panel estimator (Based on Annual Panel)

| | First Difference (dep)- First Difference (exp) | | | | First Difference (dep)- Level (exp) | | | | Level (dep)- Level (exp) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fixed-effects, robust | | Dynamic panel, robust | | Fixed-effects, robust | | Dynamic panel, robust | | Fixed-effects, robust | | Dynamic panel, robust | |
| | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | Case 9 | Case 10 | Case 11 | Case 12 |
| | **Dlogpoverty hc125** | **Dlogpoverty hc200** | **Dlogpoverty hc125** | **Dlogpoverty hc200** | **Dlogpoverty hc125** | **Dlogpoverty hc200** | **Dlogpoverty hc125** | **Dlogpoverty hc200** | **logpoverty hc125** | **logpoverty hc200** | **logpoverty hc125** | **logpoverty hc200** |
| | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** | **HC** |
| | **$1.25** | **$2.00** | **$1.25** | **$2.00** | **$1.25** | **$2.00** | **$1.25** | **$2.00** | **$1.25** | **$2.00** | **$1.25** | **$2.00** |
| VARIABLES | | | | | | | | | | | | |
| **D.logmmid_share_CT** | **-9.809**** | **-4.130***** | **-15.29***** | **-9.953***** | | | | | | | | |
| | **(3.511)** | **(1.224)** | **(4.860)** | **(1.447)** | | | | | | | | |
| **D.logmega_share_CT** | **-5.53** | **-1.13** | **1.99** | **2.83** | | | | | | | | |
| | **(10.42)** | **(3.931)** | **(7.075)** | **(2.591)** | | | | | | | | |
| **logmmid_share_CT** | | | | | **-2.959**** | **-1.321**** | **-0.39** | **-0.161***** | **-2.111*** | **-0.52** | **-1.037***** | **-0.308***** |
| | | | | | **(1.317)** | **(0.628)** | **(0.295)** | **(0.0583)** | **(1.165)** | **(0.404)** | **(0.362)** | **(0.0747)** |
| **logmega_share_CT** | | | | | **2.720*** | **0.93** | **0.03** | **-0.02** | **1.02** | **-0.14** | **0.21** | **0.02** |
| | | | | | **(1.427)** | **(0.782)** | **(0.191)** | **(0.0520)** | **(1.509)** | **(0.604)** | **(0.286)** | **(0.0513)** |
| dloggdppc | -3.656*** | -2.718*** | 5.45 | -0.65 | -3.147** | -2.596*** | -2.42 | -2.200* | -0.86 | -0.22 | -2.24 | -1.589** |
| | (1.153) | (0.630) | (4.611) | (1.435) | (1.343) | (0.645) | (5.289) | (1.247) | (1.306) | (0.566) | (1.876) | (0.740) |
| L.dlogpov1_CT | | | -1.298*** | | | | -0.636* | | | | | |
| | | | (0.247) | | | | (0.380) | | | | | |
| L.dlogpov2_CT | | | | -0.779** | | | | -0.35 | | | | |
| | | | | (0.320) | | | | (0.219) | | | | |
| L.logpov1_CT | | | | | | | | | | | 0.598*** | |
| | | | | | | | | | | | (0.198) | |
| L.logpov2_CT | | | | | | | | | | | | 0.858*** |
| | | | | | | | | | | | | (0.0491) |
| Constant | 0.16 | 0.106** | -0.44 | -0.01 | 3.04 | 2.26 | 1.31 | 0.705 | 6.814 | 5.683 | 3.924 | 1.551 |
| | (0.128) | (0.0492) | (0.272) | (0.0740) | (3.361) | (1.630) | (1.372) | (0.280) | (3.166) | (1.389) | (1.590) | (0.393) |
| Observations | 67 | 68 | 35 | 36 | 67 | 68 | 35 | 36 | 250 | 254 | 67 | 68 |
| R-squared | 0.08 | 0.21 | | | 0.04 | 0.15 | | | 0.08 | 0.04 | | |
| Number of countries | 21 | 21 | 15 | 16 | 21 | 21 | 15 | 16 | 48 | 48 | 21 | 21 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arellano-Bond test for zero autocorrelation in first-differenced errors (H0: No autocorrelation)** | | | | | | | | | | |
| Prob > z | | | | | | | | | | |
| Order 1 | 0.066* | 0.17 | | | 0.15 | 0.21 | | | 0.23 | 0.11 |
| **2** | 0.33 | 0.49 | | | 0.4 | 0.46 | | | 0.27 | 0.27 |
| **Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid)** | | | | | | | | | | |
| | Chi2(28) | Chi2(28) | | | Chi2(36) | Chi2(28) | | | Chi2(56) | Chi2(52) |
| | 26.4 | 22.2 | | | 26.6 | 22.2 | | | 47.5 | 41.2 |
| Prob > chi2 | 0.55 | 0.77 | | | 0.87 | 0.77 | | | 0.78 | 0.86 |