

d·i·e

Deutsches Institut für  
Entwicklungspolitik



German Development  
Institute

Discussion Paper

2/2019

# Comparing Global Trends in Multidimensional and Income Poverty and Assessing Horizontal Inequalities

*Francesco Burchi*  
*Daniele Malerba*  
*Nicole Rippin*  
*Claudio E. Montenegro*

# Comparing global trends in multidimensional and income poverty and assessing horizontal inequalities

Francesco Burchi  
Daniele Malerba  
Nicole Rippin  
Claudio E. Montenegro

Bonn 2019

Discussion Paper / Deutsches Institut für Entwicklungspolitik  
ISSN (Print) 1860-0441  
ISSN (Online) 2512-8698

Die deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.  
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at <http://dnb.d-nb.de>.

ISBN 978-3-96021-092-4 (printed edition)

DOI:10.23661/dp2.2019

Printed on eco-friendly, certified paper

**Dr Francesco Burchi** is a senior researcher with the research programme “Transformation of Economic and Social Systems” at the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Email: [francesco.burchi@die-gdi.de](mailto:francesco.burchi@die-gdi.de)

**Dr Daniele Malerba** is a researcher with the research programme “Transformation of Economic and Social Systems” at the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Email: [daniele.malerba@die-gdi.de](mailto:daniele.malerba@die-gdi.de)

**Dr Nicole Rippin** is a researcher with the research programme “Transformation of Economic and Social Systems” at the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Email: [nicole.rippin@die-gdi.de](mailto:nicole.rippin@die-gdi.de)

**Claudio E. Montenegro** is a consultant with the World Bank’s Development Research Group.

*Published with financial support from GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)*

© Deutsches Institut für Entwicklungspolitik gGmbH  
Tulpenfeld 6, 53113 Bonn  
☎ +49 (0)228 94927-0  
☎ +49 (0)228 94927-130  
Email: [die@die-gdi.de](mailto:die@die-gdi.de)  
[www.die-gdi.de](http://www.die-gdi.de)



## Abstract

The 2030 Agenda has provided new impetus to two facets of the struggle for poverty alleviation, which is a central goal of the international development community. First, poverty is no longer viewed strictly in monetary terms, but rather as a multidimensional phenomenon. Second, the need to reduce poverty for different social groups and not just at the aggregate, national level is explicitly recognised. Against this background, this paper has three objectives: (1) to analyse the trends in multidimensional poverty in low- and middle-income countries, (2) to explore rural-urban differences in poverty over time, and (3) to assess the validity of the claim that there has been a feminisation of poverty. The analysis relies on a new indicator of multidimensional poverty, the Global Correlation Sensitive Poverty Index (G-CSPI), that incorporates three key components: education, employment and health. The G-CSPI has several methodological advantages over existing measures, including that it is an individual rather than a household-level measure of poverty, which is crucial for gender-disaggregated analysis.

Regarding aggregate trends, this paper shows that both income poverty and multidimensional poverty fell between 2000 and 2012. However, the decline in (extreme) income poverty in percentage terms was twice as large as the decline in multidimensional poverty. There is significant heterogeneity in the results across regions. Multidimensional poverty declined the most in Asia, converging towards the relatively low levels of Latin America and Europe, while sub-Saharan Africa's slow progress further distanced it from other regions. These findings point to the existence of poverty traps and indicate that more efforts are needed to eradicate poverty.

Regarding the urban-rural comparison, our analysis shows that poverty is predominantly a rural phenomenon: the rural G-CSPI was more than four times the urban G-CSPI. This difference remained nearly constant over time.

As for the third objective, we find no gender bias in 2000 at the global level. This contrasts with the claim made in 1995 in Beijing that 70 per cent of the poor were women. However, we find that multidimensional poverty declined more among men (-18.5 per cent from 2000) than women (-15 per cent), indicating a process of feminisation of poverty. This was triggered by the decline in employment poverty, which was much slower among women. As most existing studies conclude that there was no evidence of the feminisation of poverty, this finding is new to the literature.

## Acknowledgments

The authors would like to thank Tilman Altenburg, Raoul Herrmann and Lennart Kaplan for their precious comments on different versions of this paper. Their insights have significantly improved the quality of this study. This work is funded by the Federal Ministry for Economic Cooperation and Development (BMZ).

## Contents

Abstract

Acknowledgements

Abbreviations

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>The Global Correlation Sensitive Poverty Index (G-CSPI)</b>	<b>5</b>
2.1	Poverty dimensions and their weights	5
2.2	Indicators of poverty and thresholds	6
2.3	The CSPI as an aggregation function	6
2.4	Units of analysis	9
<b>3</b>	<b>Data and methodology</b>	<b>10</b>
<b>4</b>	<b>Trends in multidimensional and income poverty</b>	<b>11</b>
4.1	Global trends in the G-CSPI	11
4.2	Heterogeneity by region, income group and country	13
4.3	Trends in decent employment, health and education	16
4.4	Comparison between trends in G-CSPI and income poverty	16
4.5	Linking poverty trends to economic growth	18
<b>5</b>	<b>Rural-urban inequalities in poverty levels: is there still an urban bias?</b>	<b>19</b>
5.1	World trends in urban and rural multidimensional poverty	19
5.2	Country-level trends in urban and rural multidimensional poverty	21
5.3	Mapping the changes in rural/urban G-CSPI ratios	22
<b>6</b>	<b>Gender inequalities in poverty levels: is there a feminisation of poverty?</b>	<b>23</b>
6.1	World trends in female and male multidimensional poverty	24
6.2	Mapping the changes in female/male G-CSPI ratios	27
<b>7</b>	<b>Case studies</b>	<b>29</b>
7.1	Latin America and the Caribbean: Brazil and the Dominican Republic	30
7.2	Sub-Saharan Africa: Mozambique and Zambia	33
<b>8</b>	<b>Conclusions</b>	<b>35</b>
	<b>References</b>	<b>39</b>
	<b>Appendix</b>	<b>43</b>

## Figures

Figure 1:	G-CSPI changes, 2000-2012 (n=48)	12
Figure 2:	G-CSPI changes, 2000, 2006, 2012 (n=37)	13
Figure 3:	G-CSPI changes, 2000-2012, by region (n=48)	14
Figure 4:	G-CSPI changes, 2000-2012, by income group (n=48)	14
Figure 5:	Changes in the G-CSPI dimensions (n=48)	16
Figure 6:	Changes in monetary and multidimensional poverty, 2000-2012, weighted (n=42)	17
Figure 7:	Relationship between economic growth and changes in income poverty and G-CSPI (n=51)	18
Figure 8:	Trends in rural and urban G-CSPI poverty: population-weighted means for 2000 and 2012 (n=45)	20
Figure 9:	Trends in rural and urban G-CSPI poverty: population-weighted means 2000, 2006 and 2012 (n=32)	21
Figure 10:	Map of absolute changes in the rural/urban G-CSPI ratio	22
Figure 11:	Map of proportional changes in the rural/urban G-CSPI ratio	23
Figure 12:	Trends in female and male G-CSPI, 2000-2012, population weighted, (n=48)	25
Figure 13:	Trends in female and male G-CSPI, 2000-2012, population weighted, by income classification (n=48)	26
Figure 14:	Trends in G-CSPI poverty dimensions, 2000-2012, by gender (n=48)	27
Figure 15:	Map of absolute changes in the female/male G-CSPI ratio	28
Figure 16:	Map of proportional changes in the female/male G-CSPI ratio	29
Figure 17:	Poverty dynamics in Brazil	31
Figure 18:	Poverty dynamics in the Dominican Republic	32
Figure 19:	Poverty dynamics in Mozambique	34
Figure 20:	Poverty dynamics in Zambia	35

## Tables

Table 1:	Changes in G-CSPI, by country	15
Table 2:	Changes in G-CSPI vs. income poverty, 2000-2012 (n=42)	17
Table 3:	Trends in urban bias, 2000-2012 (n=45)	20
Table 4:	Number of countries by direction of changes in rural and urban poverty (based on G-CSPI)	22
Table 5:	Trends in gender bias, 2000-2012 (n=48)	25
Table 6:	Changes in weighted mean G-CSPI female/male ratio, by country income classification	26

## Abbreviations

ECLAC	Economic Commission for Latin America and the Caribbean
G-CSPI	Global Correlation Sensitive Poverty Index
I2D2	International Income Distribution Database
MDG	Millennium Development Goal
MPI	Multidimensional Poverty Index
SDG	Sustainable Development Goal

## 1 Introduction

Poverty reduction has long been one of the most important policy goals for the international development community. The first target of the first Millennium Development Goal (MDG) called for halving the proportion of people with an income below the international extreme poverty line in the period 1990-2015. The centrality of poverty is confirmed in the 2030 Agenda; with Sustainable Development Goal (SDG) 1 all countries committed to “end poverty in all its forms everywhere”.

Two major changes have occurred with the 2030 Agenda. The first is that poverty is no longer viewed only in monetary terms, but rather as a multidimensional phenomenon. While Target 1.1 concentrates on the eradication of income poverty, now measured as the proportion of people living on less than USD 1.90 a day, Target 1.2 goes beyond the income dimension and calls for a reduction of “poverty in all its dimensions according to national definitions”. The latter target is a direct consequence of the debate that has taken place both in academia and in some international organisations over the past three decades (Narayan-Parker & Patel, 2000; A. Sen, 1985; 1987; 1999; UNDP, 1997; 2010). The most notable critiques of the view of poverty as lowness of income have been raised by Amartya Sen. The Nobel prize economist argued that income is only one of the possible instruments to avoid or escape poverty, and that the focus should rather be on deprivations in key domains, such as education, health, employment, nutrition and participation in political life. This is because the relationship between income (or commodities) on the one hand, and these poverty dimensions on the other hand is not straightforward, but mediated by several factors at the individual (e.g., age, gender, health, metabolism), social (e.g., formal and informal rules, power relations) and environmental (climate) levels (Robeyns, 2005; A. Sen, 1985).<sup>1</sup> Moreover, this way we can account for non-market attributes, namely characteristics such as education or social participation that people may value but for which markets are either non-existent or imperfect (Thorbecke, 2007). Other critiques of the monetary approach to poverty pertain to the difficulty of measuring income or consumption – especially in rural contexts of developing countries. Some scholars have raised serious doubts about the international (extreme and moderate) poverty lines identified by the World Bank (Reddy, 2011; Reddy & Pogge, 2010), thereby contesting the quality of the data on poverty incidence and depth. For all these reasons, the broader understanding of poverty as recognised in SDG1 is highly appreciated.

The other fundamental change in the 2030 Agenda is the focus on horizontal inequalities. For many goals, the international community committed not just to improve the situation at the national level, but among different social and demographic groups. In the case of poverty, for example, Target 1.2 states: “by 2030, reduce at least by half the proportion of *men, women and children of all ages* living in poverty in all its dimensions according to national definitions” (emphasis added). More generally, *leaving no one behind* is a key principle throughout the whole Agenda.

This paper addresses three interrelated research questions, all concerning trends in poverty and the evolution of horizontal inequalities in poverty level in low- and middle-income

---

1 For example, Robeyns (2005) argues that the *utility* derived from owning a good, such as a bicycle, depends on the possibility to make use of its main characteristics, in this case, the possibility to move around freely. She states: “if there are no paved roads or if a government or the dominant societal culture imposes a social or legal norm that women are not allowed to cycle without being accompanied by a male family member, then it becomes much more difficult or even impossible to use the good to enable the functioning” (p. 99).



countries. First, it assesses whether, to what extent, and where two types of poverty (multidimensional and monetary) have fallen since 2000, the beginning of the MDGs era. Second, it examines trends in rural-urban disparities, to verify whether the problem of “urban bias” is still as acute as it was in the 1970s (Lipton, 1977). Finally, this paper explores whether there has really been a “feminisation” of poverty across several countries – a question which has not yet been adequately answered due to a lack of suitable data.

A considerable bulk of work has addressed the first research question, focusing on income poverty. Based on the international estimates carried out by the World Bank, the incidence of extreme poverty in the world fell from 35.9 per cent in 1990 to 10.0 per cent in 2015. In the same period, a reduction in poverty was registered in all world regions, with East Asia and the Pacific being the best performing region with a decrease from 61.6 per cent to 2.3 per cent. On the other hand, sub-Saharan Africa had a much slower pace of poverty reduction and currently has by far the largest incidence of extreme poverty (54.3 per cent in 1990 and 41.1 per cent in 2015).

Little evidence is, however, available with regard to other dimensions of poverty. Most studies have focused on specific countries, such as Vietnam (Mahadevan & Hoang, 2016; Tran, Alkire, & Klasen, 2015), Indonesia (Hanandita & Tampubolon, 2016), South Africa (Fransman & Yu, 2019) and Ecuador (Mideros, 2012). Only recently, has one study provided an in-depth analysis of the evolution of multidimensional poverty, using the global Multidimensional Poverty Index (MPI), elaborated by the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford (Alkire & Santos, 2010). This index combines three dimensions: education, health and standard of living – measured mostly by ownership of specific assets. The three dimensions are aggregated through the Alkire-Foster Method (Alkire & Foster, 2011) and account for both poverty incidence and poverty intensity. Based on this index, Alkire, Roche and Vaz (2017) examine poverty trends that started around 2000 in 34 countries. The authors find that multidimensional poverty has significantly declined (at least at the 1 per cent significance level) in 31 countries, while in two countries (Jordan and Senegal) the reduction is not statistically significant. The only exception is Madagascar, which registered a statistically significant increase in poverty between 2004 and 2008/2009.

The work of Alkire et al. (2017), while original and informative, has major drawbacks related to the soundness of the figures generated through the global MPI. First, the three dimensions used are not adequately justified on the basis of a clear and sound approach (Wisor et al., 2016). Second, some indicators are not available for some countries. In the work of Alkire et al. (2017), not all 34 countries are evaluated on the basis of exactly the same indicators. Third, the MPI adopts a dual cut-off procedure: first, a cut-off is used to identify who is deprived in each dimension, and then a second cut-off is needed to identify who is multidimensionally poor. The MPI uses 0.33 as the second cut-off; this means that if a household is deprived in at least 33 per cent of the weighted indicators it is considered poor. The problem is that this value cannot be theoretically justified. Fourth, the MPI is insensitive to inequality among the poor, which is an important property that every poverty index should have (Dotter & Klasen, 2014; Jenkins & Lambert, 1997; Rippin, 2014; 2017). This means that the MPI implicitly overestimates the poverty-eradication efforts of countries trying to lift those individuals out of poverty that are closest to the artificial cut-off point. Fifth, a specific weakness of the MPI when used for trend analysis is that its variation over time is, due to the dual cut-off method, almost entirely due to changes in the

headcount ratio and only minimally due to changes in the poverty intensity (Dotter & Klasen, 2014; Tran et al., 2015). Effort is wasted by calculating an index that goes beyond a simple headcount ratio when, due to its construction, it provides very little information besides the headcount. Finally, the comparison between the trends in multidimensional and income poverty as presented in Alkire et al. (2017, p. 239) is not straightforward. This is because the MPI is calculated dominantly on the Demographic and Health Surveys, which have a very different sample size and sampling strategy than the surveys used for the calculation of monetary poverty – mostly living standard measurement surveys and household budget surveys. Even more relevant is the fact that the two types of surveys are conducted in different years. Therefore, it is hard to say if diverging country trends in monetary and multidimensional poverty are genuinely due to the form of poverty examined.

For all the above reasons, the findings of Alkire et al. (2017), and others that analyse poverty trends with the MPI, should be taken with a grain of salt.<sup>2</sup> To investigate trends in multidimensional poverty alone and in comparison with monetary poverty trends, in this paper we rely on a new index of multidimensional poverty: the Global Correlation Sensitive Poverty Index (G-CSPI). This index combines deprivations in three dimensions (work, education and health) derived using the new Constitutional Approach (Burchi, Rippin, & Montenegro, in press). Compared with the MPI, the final index requires only the dimensional cut-offs and accounts not just for poverty incidence and poverty intensity, but also for inequality among the poor (see Section 2 for details). The G-CSPI is available in total for more than 500 surveys since the late 1980s. In this paper we focus on the 1998-2015 period, for which we have data for at least two points in time for about 60 countries (see Section 3 for details).<sup>3</sup> In most of the cases the survey that was used to calculate the G-CSPI is exactly the same as that used to measure income poverty, while in a few cases it is not, but is still conducted in the same year. We thereby assess whether and to what degree the different components of poverty have declined and avoid most of the pitfalls of previous studies.

The second objective of this paper is to compare the poverty incidence in rural areas with that of urban areas using a historical perspective. In the 1970s, Lipton (1977) argued that many governments in developing countries tend to allocate disproportionately more resources to urban areas for political economy reasons. This inevitably resulted in significantly larger poverty figures in rural areas. We investigate whether that is still the case. Further, the literature has relied almost entirely on measures of monetary poverty. Sahn and Stifel (2003), for example, focus on 24 African countries between the end of the 1980s and the end of the 1990s and find no evidence of changes in the rural-urban disparities in asset-based poverty. Based on poverty figures estimated ad-hoc by the World Bank,<sup>4</sup> the International Fund for Agricultural Development's (IFAD) 2016 Rural Development Report (IFAD, 2016) shows the trends in extreme poverty in urban and rural areas in different world regions between 1999 and 2011. What emerges is that in only one region, Asia and the

---

2 In the 2018 “Poverty and Shared Prosperity” report, the World Bank proposed a new measure of multidimensional poverty and calculated it for 119 countries for the years around 2013 (World Bank, 2018). For each country the indicator was calculated only for one point in time, therefore no poverty trend analysis was carried out.

3 It is important to highlight that this study does not include data from two large countries: China and India.

4 The World Bank prefers not to provide separate figures for rural and urban poverty based on the international poverty lines. However, in the case of the report produced by IFAD, the World Bank provided these estimates.

Pacific, can we firmly conclude that the gap has been reduced. A substantial problem in assessing the trends in the urban/rural ratio of poverty incidence is that the World Bank, through the PovcalNet system, does not provide statistics on urban and rural poverty based on the international poverty line due to a lack of spatial deflators for most of the countries. Rural and urban estimates of poverty are available only based on national poverty lines, which are calculated differently across countries.

The above problem is substantially alleviated when measuring poverty in the multi-dimensional space. As long as the choice of the dimensions, indicators and cut-offs are made with consideration for minimum achievements that are valid for both urban and rural areas, a straight comparison between urban and rural areas can be made. On a sample of 34 countries, Alkire, Chatterje, Conconi, Seth and Vaz (2014, p. 3) find that “both rural and urban regions reduced MPI although rural areas as a whole reduced MPI significantly faster than urban areas – as might be expected given the higher rates of poverty in rural areas”. In this case, the same critiques of the MPI that were highlighted above can be made. With our innovative dataset we are better positioned to examine whether there is a convergence in the levels of the G-CSPI between rural and urban areas.

The last research question concerns the gender differences in poverty levels and their evolution over time. Since the United Nations Fourth World Conference on Women, held in Beijing in 1995, rhetoric over the problem of *feminisation of poverty* has permeated the international community. It was argued that about 70 per cent of the world’s poor were women and that over time the incidence of female poverty was growing in comparison with male poverty (Chant, 2010; UNDP, 1995). However, so far, the problem of feminisation of poverty has not been empirically tested in low- and middle-income countries. The main reason is that monetary poverty is measured at the household level, under the assumption that income is equally shared among all household members – this is the World Bank approach used for the calculation of PovcalNet figures – or eventually distributed on the basis of physical needs (by using the equivalence scales). Therefore, the only possible comparison has been between female- and male-headed households. In this regard, the recent paper of Castañeda et al. (2018) concludes that there are hardly any gender disparities in poverty. Similar results are obtained by Medeiros and Costa (2010). This comparison, however, is very limiting and biased as often female-headed households differ systematically to male-headed households regarding several socio-economic and demographic characteristics (Davids & van Driel, 2010). Moreover, using a household-level measure of poverty does not allow for the identification of situations of female poverty in households where males are non-poor and (theoretically) vice-versa (G. Sen, 2010).

The global MPI, as it is constructed at the household level, suffers from the same problem. An attempt to measure multidimensional poverty at the individual level with a gender-sensitive perspective has been made by Wisor et al. (2016). The authors used an extensive participatory approach to derive an individual measure piloted in the Philippines and Fiji. While the findings from the Philippines indicate minor differences in poverty between men and women (Hunt et al., 2017), those from Fiji point to larger female deprivations in many poverty dimensions (Fisk & Crawford, 2017). However, this remarkable initiative focuses only on very few countries, requires ad-hoc surveys and will not provide data for at least two points in time in the near future. Therefore, it cannot be used to adequately test the dynamics of gender differences in poverty.

Our measure of multidimensional poverty has two fundamental advantages over the existing ones in addressing this question. First, it is an individual measure, as it focuses on adults in the 15-65 age group. Therefore, we can distinguish the individual poverty status of different individuals living in the same household. Second, it focuses on key dimensions for women, education and decent work, the latter of which is missed by the MPI. In conclusion, we can provide much more clarity on the question of whether there is a tendency for poverty to become disproportionately a female matter.

The remainder of this paper is structured as follows. Section 2 introduces our measure of multidimensional poverty. Section 3 describes our sample of countries, the period of analysis and the methodology employed. Section 4 provides an analysis of historical trends in both multidimensional poverty alone and compared with income poverty, as well as preliminary hints at their relationship with economic growth. Section 5 investigates trends in rural and urban poverty. Section 6 verifies whether the claim of feminisation of poverty is supported by empirical evidence. Section 7 discusses four country case studies. Our concluding remarks are presented in Section 8.

## 2 The Global Correlation Sensitive Poverty Index (G-CSPI)

In order to construct the G-CSPI for several countries and different points in time we relied on the International Income Distribution Database (I2D2). The I2D2 is the result of a tremendous initiative of the World Bank to standardise several demographic, socioeconomic and income/consumption variables across countries, drawing on nationally representative household surveys, including household budget surveys, household income and consumption surveys, labour force surveys and multi-topic surveys (for example, the Living Standards Measurement Study surveys).

While all the details in the index are discussed in Burchi, Rippin, et al. (2018), below we report the most important features.

### 2.1 Poverty dimensions and their weights

To identify the most important dimensions of poverty and compare different countries, we used a new approach, called the Constitutional Approach (Burchi, De Muro, & Kollar, 2014; 2018). It relies on Rawls' method of political constructivism and uses the constitution together with all the relevant documents to interpret it as an ethically suitable informational basis for identifying shared poverty dimensions. In line with this approach and based on a large list of constitutions from all world regions, three dimensions were found to be most important: education, (decent) work and health (Burchi, Rippin, et al., 2018). Cross checking this ideal list with the information available in the I2D2 database, the dimensions we selected are

- **education,**
- **decent work** and
- **access to potable water and adequate sanitation** (a proxy for health).

Direct information on health status was not available. However, substantial empirical evidence supports the idea that a lack of access to safe drinkable water and basic sanitation impedes a good health status (Checkley et al., 2004; Fink, Günther, & Hill, 2011; Fogden, 2009). Under this assumption, we have data on the dimensions that emerged as the most important based on the Constitutional Approach. As they emerged as being of similar relevance, we used an equal weighting scheme: each dimension was assigned a weight of one-third.

## 2.2 Indicators of poverty and thresholds

The main variable used to measure education is literacy. If a person is not literate, they are poor in the education dimension. In cases where a survey did not have data on literacy for at least two-thirds of the sample population, education was measured as the number of years of schooling: all individuals with less than four years of schooling are classified as poor in education.<sup>5</sup> In cases where there was no data on years of schooling for two-thirds of the sample population, we used the variable “educational level”. An individual who has not completed primary education is, in this case, considered poor in the education dimension.<sup>6</sup>

Decent work is measured by combining two variables from the I2D2 dataset, one indicating the labour status and one the employment status. The first variable indicates whether a person is employed, unemployed or not in the labour force. The second variable contains five categories: paid employee, non-paid employee, employer, self-employed and other type of worker. By construction, the categories “non-paid employees” and “self-employed” indicate a lower pay and lower job quality. “Unemployed” individuals and individuals who are “self-employed” or “non-paid employees” are classified as poor in the work dimension; all others are non-poor.

To construct the health indicator, we merge information on access to drinkable water and adequate sanitation. Based on empirical evidence (Fuller, Westphal, Kenney, & Eisenberg, 2015), individuals without access to either facility are treated as poor in the health dimension, while those with access to at least one are considered non-poor.

## 2.3 The CSPI as an aggregation function

As mentioned before, one of the weaknesses of the MPI is the dual cut-off method that is used to identify the multidimensionally poor. The MPI is a specific measure of the broader class of  $M_0$  multidimensional poverty measures developed by Alkire and Foster (2011). The  $M_0$  poverty measures are simply the sum of weighted deprivations suffered by the poor

---

5 This threshold was obtained by comparing the number of years of schooling with the literacy rate in a sample of countries with information on both variables.

6 This threshold was obtained by comparing educational levels with the literacy rate in a sample of countries with information on both variables.

divided by the maximum possible number of deprivations (i.e., the extreme case in which all individuals suffer from all deprivations):<sup>7</sup>

$$M_0 = \frac{\sum_{i=1}^n \sum_{j=1}^d g_{ij}^0(k)}{n} = \frac{\sum_{i=1}^n c_i(k)}{n} \quad (1)$$

where  $i = 1, \dots, n$  is the number of individuals;  $j = 1, \dots, d$  the number of dimensions;  $k$  is the dual cut-off (1/3 in the case of the MPI); and  $\sum_{j=1}^d g_{ij}^0(k) = c_i(k)$  is the sum of weighted deprivations suffered by individual  $i$  in case individual  $i$  is poor (i.e., in case their sum of weighted deprivations is at least  $k$ ).

It is easy to see that  $M_0$  is the product of the (censored) poverty headcount  $\tilde{H}$  and the (censored) average deprivation share among the poor  $\tilde{A}$ :

$$M_0 = \frac{q}{n} \frac{\sum_{i=1}^n c_i(k)}{q} = \tilde{H} \tilde{A} \quad (2)$$

where  $q$  is the number of the poor (i.e., those individuals with a sum of weighted deprivations of at least  $k$ ).

One problem with the decomposition is that the two components  $\tilde{H}$  and  $\tilde{A}$  are truncated from below as they are required by definition to be greater than the dual cut-off  $k$ . Dotter and Klasen (2014) demonstrate that this truncation implies that any variation of  $M_0$ , between countries as well as over time, is almost exclusively driven by the headcount. In other words, instead of meticulously calculating  $M_0$ , one could simply use the headcount as generated by the dual cut-off method because the loss of information is negligible.

Another problem is the fact that  $M_0$  neglects inequality. In 1976, Amartya Sen required any reasonable poverty index to be decomposable according to what Jenkins and Lambert (1997) called the “three I’s of poverty”: incidence, intensity and inequality.

The inability of the  $M_0$  class of poverty measures to capture inequality among the poor is usually justified by claiming that any poverty measure that is able to capture inequality cannot be decomposed according to the poverty contributions of the different poverty dimensions. The very same claim is used to justify the fact that the  $M_0$  class of poverty measures is unable to capture any correlations between poverty dimensions. Again, it is argued that any poverty measure that is able to capture correlations between poverty dimensions cannot be decomposed according to poverty dimensions. The existence of the CSPI proves that both claims are false: the CSPI captures the inequality among the poor as well as the correlations between poverty dimensions while at the same time being fully decomposable according to poverty dimensions. The CSPI is a representative of the  $P_{CS}$  class of multidimensional poverty measures that defines inequality across poverty dimensions as the correlation-sensitive spread of simultaneous deprivations across the population. This is a more holistic definition of this type of inequality that combines

---

7 Please note that unlike Alkire and Foster (2011), we do not make the assumption of equal weights and we assume that the sum of the weights is 1 instead of  $d$ . This is why formula (1) looks different from the formula introduced by Alkire and Foster in their 2011 paper.

considerations of distributive justice as well as efficiency (Burchi, Rippin, et al., 2018; Rippin, 2014, 2017).<sup>8</sup>

More precisely, the CSPI is based on the fuzzy identification method  $\varphi_f: \widehat{\varphi}_f(x_i, z) = \sum_{j=1}^d g_{ij}^0 = c_i$ . In other words, the  $P_{CS}$  class of poverty measures does not only differentiate between those who are poor and those who are not, but in addition differentiates among the poor themselves according to their degree of poverty severity – which in the case of the CSPI is simply the sum of the weighted deprivations.

Consequently, the CSPI is the squared sum of weighted deprivations suffered by the poor divided by the maximum possible number of weighted deprivations:

$$CSPI = \frac{\sum_{i=1}^n \widehat{\varphi}_f(x_i, z) \sum_{j=1}^d g_{ij}^0}{n} = \frac{\sum_{i=1}^n [\sum_{j=1}^d g_{ij}^0]^2}{n} = \frac{\sum_{i=1}^n c_i^2}{n} \quad (3)$$

Please note that the CSPI assumes a weak substitute relationship between poverty dimensions (an assumption that can easily be altered by choosing a different identification function  $\varphi_f$ ) and consequently ensures distribution-sensitivity. At the same time, the squaring is achieved in two subsequent steps (the identification and the aggregation step), ensuring that the CSPI is as decomposable as  $M_0$ , which includes its decomposability according to the poverty contributions of the different poverty dimensions (Burchi, Rippin, et al., 2018; Dotter & Klasen, 2014; Jolliffe, 2014; Rippin, 2014; 2017; Silber, 2011).

Hence, the CSPI can be decomposed into the product of poverty incidence (expressed as the headcount,  $H$ ), poverty intensity (expressed as the average deprivation share among the poor,  $A$ ) and poverty inequality (expressed as a generalised entropy measure of inequality,  $GE$ ):

$$CSPI = \frac{q}{n} \left[ \frac{\sum_{i=1}^n c_i}{q} \right]^2 \left[ 1 + 2 \left[ \frac{1}{2q} \frac{\sum_{i=1}^n c_i}{\frac{1}{q} \sum_{i=1}^n c_i} \right] \right] = HA^2(1 + 2GE) \quad (4)$$

The theoretical differences between the CSPI and  $M_0$  have significant implications:<sup>9</sup>

First, the CSPI is less sensitive to the (controversial) choice of weights than  $M_0$ .

Second, unlike  $M_0$  the CSPI is distribution-sensitive. When there is a redistribution that reduces the deprivation of a less poor household at the cost of a poorer household, the CSPI increases (as any reasonable poverty index should), whereas  $M_0$  remains unchanged (when both households remain poor even after the transfer) or even decreases (when the less poor household falls below the cut-off level  $k$  as the result of the reduction in its deprivation).

---

8 As Datt (2018) points out, the  $P_{CS}$  class of multidimensional poverty measures does not rule out a violation of distribution-sensitivity per se. The reason is precisely the more holistic definition of inequality across poverty dimensions that not only accounts for distributive justice but also for efficiency. As, for instance, Duclos, Sahn, and Younger (2006) point out, where the degree of complementarity between poverty dimensions is very high, a reasonable poverty index should allow for a violation of distribution-sensitivity in order to ensure an efficient distribution of scarce resources (Burchi, Rippin, et al., 2018).

9 Please refer to Rippin (2017) for a detailed discussion.

Third, because  $M_0$  discards deprivations, its dual cut-off method approximates the intersection method in the most affluent countries (leading to impractically low poverty rates) and the union method in the poorest countries (leading to impractically high poverty rates). The CSPI, however, does not discard any information on deprivations, and therefore allows for better targeting of poverty reduction policies.

Fourth, the fuzzy identification method of the CSPI introduces a very easy way to classify the poor according to their deprivations: the *deprivation affected* (with a sum of weighted deprivations below 33 per cent), the *poor* (with a sum of weighted deprivations between 33 and 66 per cent) and the *extremely poor* (with a sum of weighted deprivations above 66 per cent up). The United Nations Development Programme (UNDP) uses a rather similar classification by calculating the censored MPI headcount for the i) “share of the poor people in the population”, ii) “share of severely poor in the population”, and iii) “share of vulnerable in the population” (UNDP, 2013, p. 3). The only difference is that the censored headcounts of  $M_0$  must be calculated separately whereas in the case of the CSPI they are a natural by-product of the identification method and thus do not affect the poverty rates, that is, they serve descriptive purposes only. In other words, the CSPI provides this information naturally, as one single poverty rate that is simply decomposed. Whenever  $M_0$  is required to provide this information, it needs to be calculated three times, for three different  $k$ -values, with each  $k$ -value leading to an entirely different poverty rate.

Fifth, unlike  $M_0$ , the average poverty intensity of the CSPI is not truncated from below, allowing for much more variation and, consequently, much more information, in particular when it comes to analysing trends (Dotter & Klasen, 2014).

Sixth, unlike  $M_0$ , the CSPI can be decomposed into all three “I’s of poverty”, including inequality. This implies that any poverty reduction policy that targets the CSPI must automatically deal with all three “I’s of poverty”, allowing for more informed and detailed policy making.

For all the above reasons, we employ the CSPI for the aggregation of our three dimensions of poverty into one single multidimensional poverty index. This aggregation function has already been used in several studies on multidimensional poverty and vulnerability (Espinoza-Delgado & Klasen, 2018; Milan, Oakes, & Campbell, 2016; Rippin, 2016; Tosi, 2015).

## 2.4 Units of analysis

While the World Bank measures of poverty (both the monetary and the recently introduced multidimensional measures) and the MPI are computed at the household level, analysis of the G-CSPI is done for individuals between 15 and 65 years of age. Therefore, we do not need to make assumptions about intrahousehold distribution of resources/capabilities, and we can identify whether two individuals living in the same household have a different poverty status.

It is important to make a clarification. Information on the dimension of access to drinkable water and sanitation (our proxy for health) is *collected* at the household level and not at the individual level. However, it is difficult to imagine that some household members could be excluded from the use of these facilities. Therefore, it is reasonable to assign the same value



(0 or 1) to all household members and treat the information as if it were collected at the individual level.

### 3 Data and methodology

Using the I2D2 database, we were able to compute the G-CSPI and all its components (poverty incidence, intensity and inequality) for 550 surveys and 108 countries. As the derived G-CSPI dataset at our disposal is an unbalanced panel, to look at aggregate trends we had to take a few decisions to ensure data comparability.

The first decision concerned the time frame: we originally decided to focus on the period starting from around 2000 until the most recent survey years as this represents the period of the MDGs. Although the reference period for MDG 1 starts in 1990, the MDG agenda was agreed only in 2001. It is important to see the trends in poverty after this major event in the international arena. Moreover, this choice is related to data availability: choosing this time frame allows us to utilise nearly all the data at our disposal, as information on previous periods is scarce.

Given that surveys were carried out in different years in different countries, our second choice consisted of dividing the selected timeframe into three separate periods. We considered “baseline” to be between 1998 and 2003; for countries with more than one survey during this period we used the average value.<sup>10</sup> The same procedure was applied to the “intermediate” period, between 2004 and 2008, and to the “end line” period, between 2009 and 2015. For simplicity, in the empirical analysis we refer to these three periods, as 2000, 2006 and 2012, respectively. We do not apply the same methodology used by the World Bank, which scales up values from different survey-years to a common year (Jolliffe & Prydz, 2016). Their methodology relies on the strong assumptions that income distribution remains unchanged between one country’s household survey and the next one and that individual incomes increase according to the overall economic growth rate. Given the lower and lagged responsiveness of multidimensional poverty to economic growth (Santos, Dabus, & Delbianco, 2019), we therefore decided to use the average values for each period.<sup>11</sup>

The obtained dataset includes estimates of multidimensional poverty for 71 countries for at least two of the three periods (2000, 2006 and 2012). As mentioned in the previous section, there is no data for India or China. Of the remaining population of low- and middle-income countries, the sample represents around half of the total population.<sup>12</sup> Given the aim of assessing trends starting from 2000, in the analysis we exclude countries with data for just the second and third periods. This brings the final number of countries to 60: for 37 countries we have information for all three periods, for 11 countries only for 2000 and 2012 and for 12 countries only for 2000 and 2006.<sup>13</sup> Moreover, due to some missing values in the original

---

10 Weighted by population.

11 An alternative solution would have been to obtain values for the same years for each country, by interpolation.

12 Using the World Bank classification from 2000.

13 For five countries there is information for just one period. In addition, some data points have been removed because the surveys were not comparable with the other surveys conducted in the same country. In total, throughout this paper we focus on 60 countries. The list of survey years used for each period for every country is reported in Table A1.

household surveys and due to the peculiar nature of some surveys,<sup>14</sup> some decomposed poverty figures related to trend analysis by rural-urban areas and by gender status are missing. Therefore, the number of total observations used in the analysis differs slightly between the section analysing the general trends in multidimensional poverty and the sections exploring trends by urban-rural areas or gender status. The number of observations will be made clear in each section.

Finally, data from our dataset were then merged with data from PovcalNet and other datasets on income poverty, inequality, population and GDP. As I2D2 and PovcalNet do not follow the same method to identify the survey year, when a survey was run in two consecutive years, we adjusted the PovcalNet survey year to match that of I2D2.

## 4 Trends in multidimensional and income poverty

In this section we analyse the trends in multidimensional and income poverty with two main goals in mind. First, we are interested in verifying whether, at the aggregate level, poverty has fallen dramatically since the introduction of the MDGs as argued by most scholars. Second, the analysis also aims at studying the heterogeneity of these trends between sub-periods, countries, regions and income groups. It is of interest to pinpoint country cases where the poverty-reduction performance must be reassessed as a consequence of the use of our index.

In order to study trends in multidimensional poverty, in Section 4 – similar steps will be followed also in Sections 5 and 6, to allow comparability between sections – we focus mainly on the overall G-CSPI index because it is the most comprehensive index of the class of G-CSPI indices (see Section 2). However, when looking at the general trends we also consider the G-CSPI headcount, specifically the sum of the CSPI headcounts of the poor and the extremely poor (or the headcount ratio of people deprived in at least two dimensions) (Burchi, Rippin, et al., 2018). This is especially relevant for the comparison between multidimensional and income poverty, given that the headcount ratio is by far the most used and known index of income poverty.<sup>15</sup> Moreover, given the richness of the analysis and the multiplicity of the objectives of this paper, we never analyse separately the specific contribution of the other two ‘I’s: poverty intensity and poverty inequality. These components, indeed, enter the overall G-CSPI directly.

### 4.1 Global trends in the G-CSPI

Figure 1 shows the aggregate trend in multidimensional poverty between 2000 and 2012. The figure shows that both the G-CSPI and its headcount ratio have decreased following the MDGs agreement in 2000. When considering the group of countries with data for the first and third periods, the population-weighted aggregated value of the G-CSPI has decreased by 16.7 per cent, from 0.23 to 0.19.<sup>16</sup> In the same period, the headcount ratio has decreased only

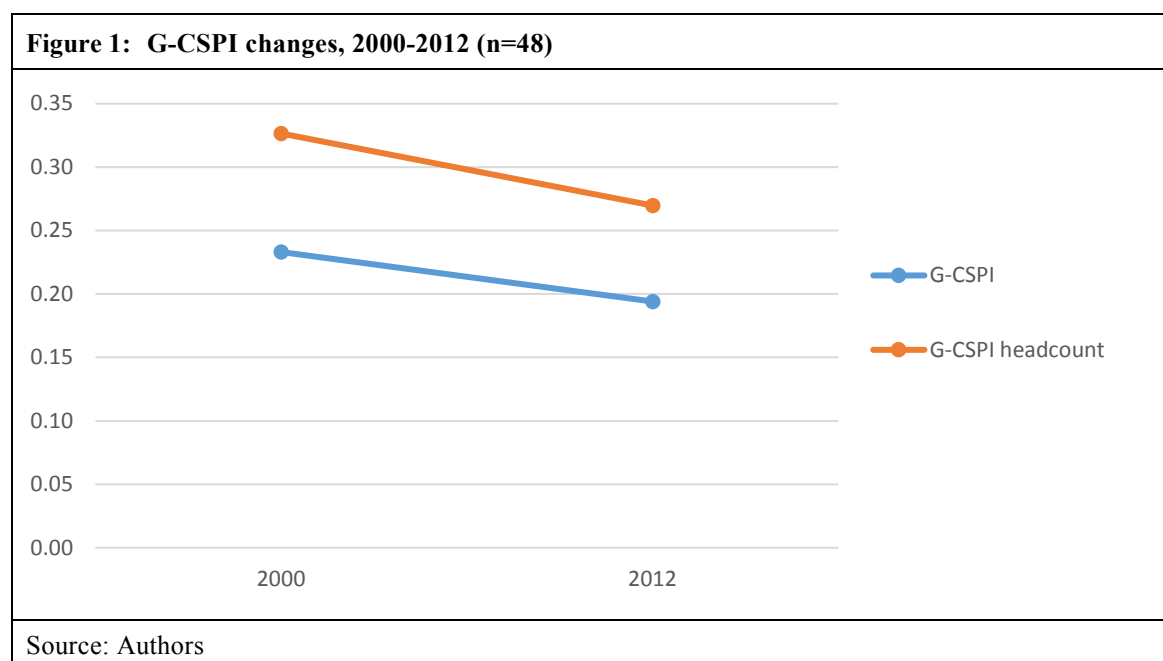
---

14 For example, national surveys in Argentina cover only urban areas, therefore rural figures are not available.

15 Theoretically, the overall G-CSPI should be compared with the squared poverty gap, however, the latter is hardly ever used.

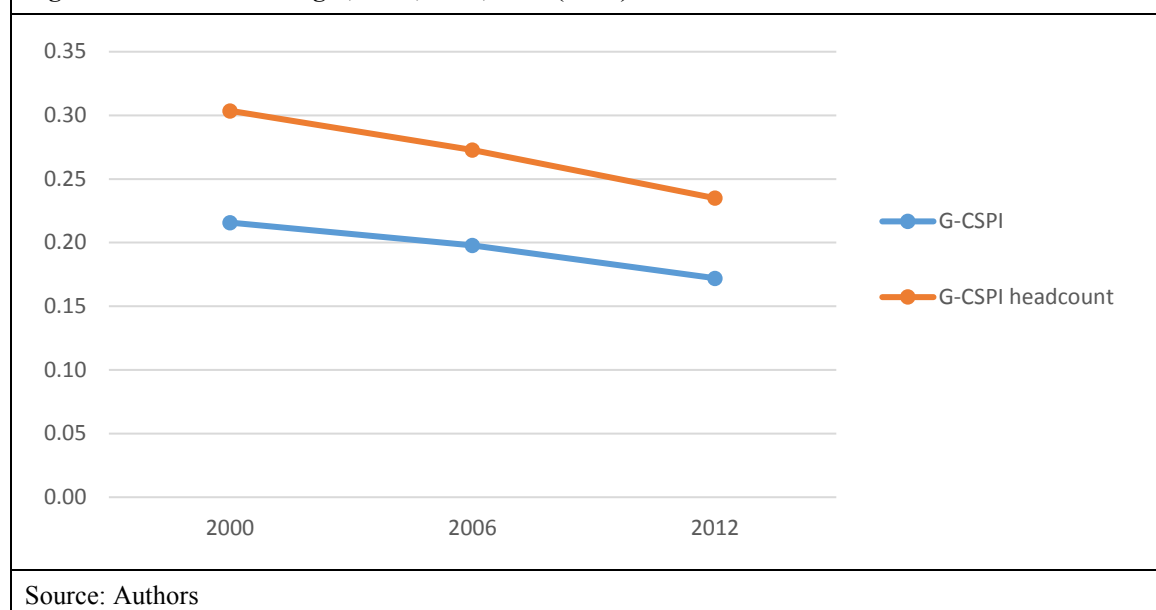
16 The estimates below are weighted by population size (for the entire period) for the country.

slightly more, by 17.4 per cent (from 0.33 to 0.27). The unweighted trends (Table A2 in the Appendix) show similar trajectories: both the G-CSPI and the headcount ratio have decreased equally in proportional terms, both by around 19.5 per cent between 2000 and 2012. Given that the mean unweighted poverty is slightly higher than the mean weighted poverty and the former decreases more than the latter in the period examined, it can be inferred that the most populous countries are less poor than the average but are also performing below average in terms of poverty reduction. As this sub-section focuses on global, aggregate trends, we leave the explanation of these country-specific trajectories to the next sub-sections.



To better understand this general long-term trend, the sub-sample of countries with available data for all three periods is used to analyse differences in two time intervals: from 2000 to 2006 and from 2006 to 2012.<sup>17</sup> However, the findings from this analysis should be interpreted with caution when comparing them with the previous figure, as the sample of countries with data for all three periods is composed of better-off countries. The G-CSPI value for 2000 is in fact lower for this sub-sample (n=37) compared with the sample of countries with data for the first and third periods (n=48). Therefore, caution needs to be used when comparing the two sets of data. Figure 2 below shows that, whilst multidimensional poverty has decreased in both sub-periods, the decrease between 2006 and 2012 has been slightly more pronounced. The G-CSPI headcount ratio decreased by 10 per cent in the first interval, and by 14 per cent in the second, while the overall G-CSPI decreased by 8 per cent in the first interval and by 13 per cent in the second. In summary, the reduction of multidimensional poverty has been continuous between 2000 and 2012, with a minimally larger decrease in the later time interval. This could be due to the time needed to implement policies derived from the MDGs.

<sup>17</sup> Therefore, the figure is not directly comparable with the previous figure.

**Figure 2: G-CSPI changes, 2000, 2006, 2012 (n=37)**

## 4.2 Heterogeneity by region, income group and country

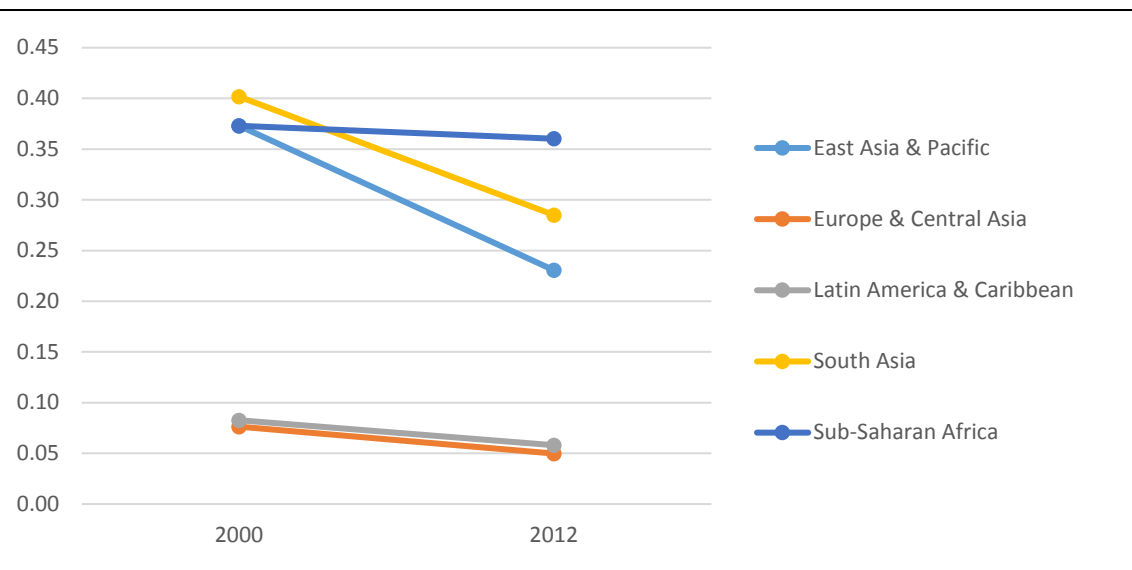
The overall trends in multidimensional poverty previously presented might conceal significant heterogeneity in relation to both regions and income levels. Knowing whether multidimensional poverty has changed more in certain regions than in others, for example, is relevant to identify successful cases and for the targeting of policy interventions designed by national governments and other actors involved in development cooperation.<sup>18</sup>

Figure 3 shows that between 2000 and 2012 the G-CSPI value decreased in all regions, but with substantial differences.<sup>19</sup> While both South Asia and East Asia experienced large reductions (29 per cent and 38 per cent, respectively), multidimensional poverty remained nearly constant in sub-Saharan Africa (with an overall decrease of 3 per cent). Therefore, as the three regions had similar starting values of the G-CSPI in 2000, the sub-Saharan region witnessed the highest multidimensional poverty in 2012. On the other hand, G-CSPI values in East Asia and the Pacific and South Asia converged on those of Eastern Europe and Central Asia and Latin America and the Caribbean. The latter two regions, in fact, had a G-CSPI value of 0.08 in 2000 that decreased to 0.05 and 0.06, respectively, by 2012 (a proportional decrease of 35 per cent and 30 per cent, respectively). One point to consider is that the sample includes numerous countries from Latin America and the Caribbean (16) and sub-Saharan Africa (18), while the number of countries for East Asia and South Asia is just three for each.

18 For simplicity we look at the trends by region and income level using just the countries with observations for the first and third periods to have the largest sample size.

19 This paper uses the regional classifications from the World Bank.

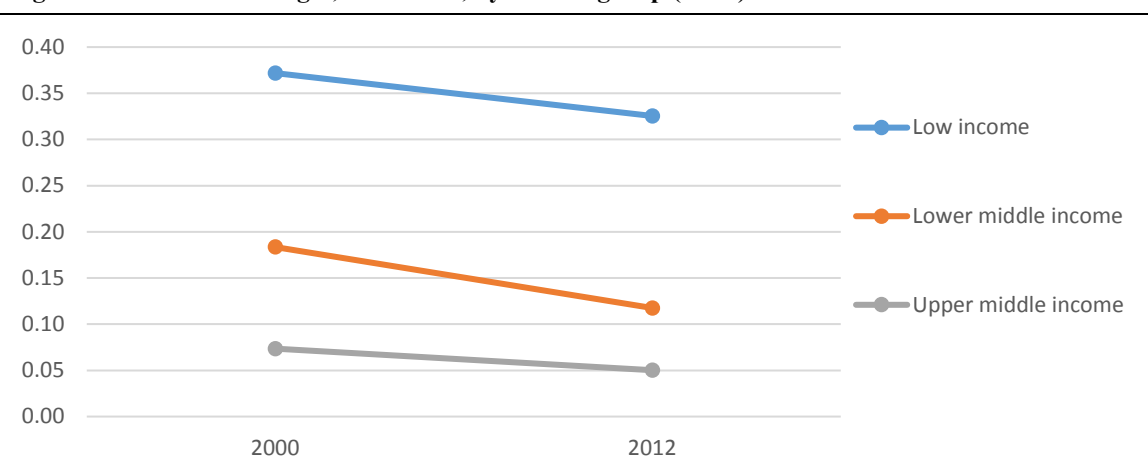
**Figure 3: G-CSPI changes, 2000-2012, by region (n=48)**



Source: Authors

Like the previous findings on regional heterogeneity, all income groups have witnessed decreases in multidimensional poverty.<sup>20</sup> Lower middle-income countries experienced the largest decrease, as shown in Figure 4, from 0.18 to 0.12 (a reduction of 36 per cent). Upper middle-income countries show a slightly worse performance, with a decrease of 32 per cent. On the other hand, low income countries decreased their poverty by just 12 per cent. The convergence between lower and upper middle-income countries, and the substandard performance of poorer economies are linked to the regional trends seen previously. In fact, the low-income group is composed mainly of sub-Saharan countries. Compared with the previous inter-regional analysis, the number of countries included in the three income groups is more balanced. Nonetheless, the sample of countries consists mostly of low-income (22) and lower middle-income countries (16), with the remaining ten being upper middle-income countries.

**Figure 4: G-CSPI changes, 2000-2012, by income group (n=48)**



Source: Authors

<sup>20</sup> This distinction is based on the classification of the World Bank in 2000, the first period used in this study.

To complete the picture on the general trends and their heterogeneity, Figures A1-A4 in the Appendix show the values by period and country, for both the G-CSPI and the G-CSPI headcount. Table 1 summarises country-level changes of the G-CSPI and its headcount by interval. One preliminary finding is the similarity in the trends for the G-CSPI and its headcount: for the long interval (2000-2012) all the changes in the G-CSPI go in the same direction as the changes in the headcount. Focusing separately on the two periods, there are a few cases in which the changes in the two indicators go in opposite directions, which highlights the importance of going beyond the headcount.<sup>21</sup> Looking at the size of the changes by country, the largest absolute increase in multidimensional poverty in the long interval (2000 to 2012) was experienced by Ethiopia, Ghana and São Tomé and Príncipe (all more than 5 percentage points). The same countries also witnessed the largest increase in proportional terms. Switching now to the positive cases, Bhutan, Thailand and Chad registered the largest absolute decreases of the G-CSPI, all by more than 15 percentage points; Serbia, Belarus and Bhutan, instead, were the most successful countries in reducing their G-CSPI relative to the 2000 value, with a decrease by more than 50 per cent. Especially in the case of Serbia and Belarus, this large proportional decrease depended on a low G-CSPI value in 2000.<sup>22</sup> A general finding is that while multidimensional poverty in sub-Saharan Africa was found to be relatively stable, this masks substantial heterogeneity among countries that both significantly increased and decreased multidimensional poverty.

Splitting the analysis into the two intervals (2000 to 2006 and 2006 to 2012), Thailand witnessed the largest decreases, both in absolute and percentage terms, between 2000 and 2006. Ethiopia showed the largest absolute increase; while Hungary had the largest proportional one. When considering the second interval (2006 to 2012), Afghanistan witnessed the largest absolute decrease, while Serbia proportionally decreased the most. Liberia was second in both categories. Conversely, South Africa and Cambodia had the largest increase in both proportional and absolute terms.

Finally, looking at the most populous countries that drive global trends and are relevant for global poverty eradication, Bangladesh decreased in the second period, Pakistan in the first period. On the negative side, poverty has increased in Ethiopia.

	<b>2000-2012</b>		<b>2000-2006</b>		<b>2006-2012</b>	
	G-CSPI	G-CSPI headcount	G-CSPI	G-CSPI headcount	G-CSPI	G-CSPI headcount
<b>Decrease</b>	42	42	38	37	41	42
<b>Increase</b>	6	6	11	12	7	6
<b>Total</b>	48	48	49	49	48	48
Source: Authors						

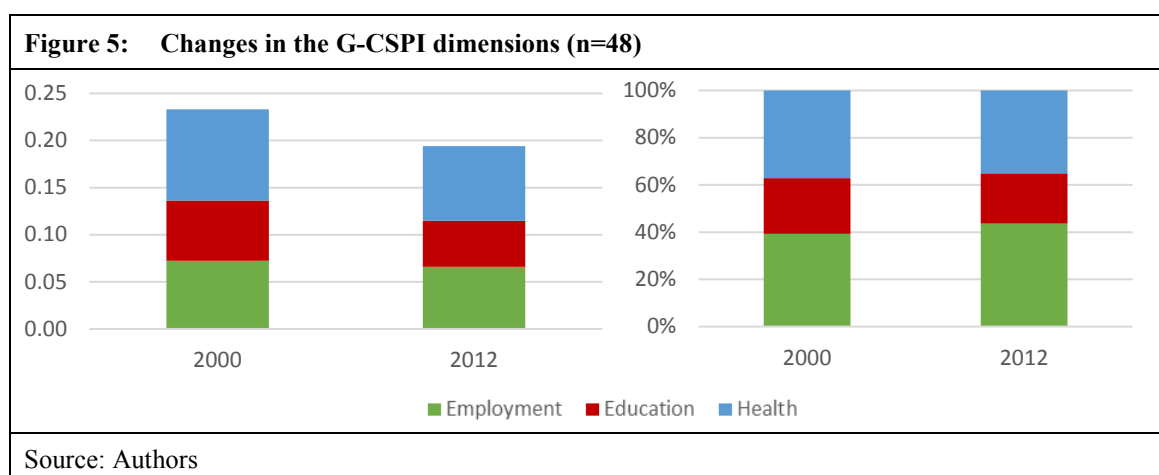
21 These cases are Mozambique, Uruguay and Guinea between the first and second period, and Costa Rica, Mongolia and Bolivia for the interval between 2006 and 2012.

22 In cases of very low values of the G-CSPI there are also more risks of measurement error.

### 4.3 Trends in decent employment, health and education

This section deals with the decomposition of the trends in the G-CSPI. As explained in Section 2, the G-CSPI is a measure of multidimensional poverty composed of three dimensions: employment, health and education. It is crucial, especially from a policy perspective, to understand which dimensions drive the trends in multidimensional poverty that were discussed in the previous sub-section.

Figure 5 shows that poverty in all its dimensions decreased in absolute terms between 2000 and 2012 (data for 2006 not used). Deprivations in education and health decreased by 24 per cent and 18 per cent, respectively; deprivation in decent employment, instead, decreased less, by 9 per cent. As a consequence, the relative contributions of the three dimensions to the overall G-CSPI also changed. While the relative importance of health and education decreased, that of employment increased. In 2012 employment represented the largest contributor to the G-CSPI, with a share of around 44 per cent, followed by health (35 per cent) and education (21 per cent).<sup>23</sup>



### 4.4 Comparison between trends in G-CSPI and income poverty

This sub-section compares multidimensional poverty (G-CSPI) with income poverty. This is particularly important for two main reasons. First, eradicating both types of poverty is crucial and both are explicitly addressed by SDG1. It is therefore important to analyse both, rather than narrowly focusing on one. Second, one of the main advantages of the data at hand is the possibility to compare the two types of poverty (using the same survey data) for the same years, and explore how they develop relative to each other.<sup>24</sup> In order to carry out this analysis we had to drop observations (country/year) that lacked information on monetary poverty.<sup>25</sup> The final sample consists of 42 countries with complete data for the

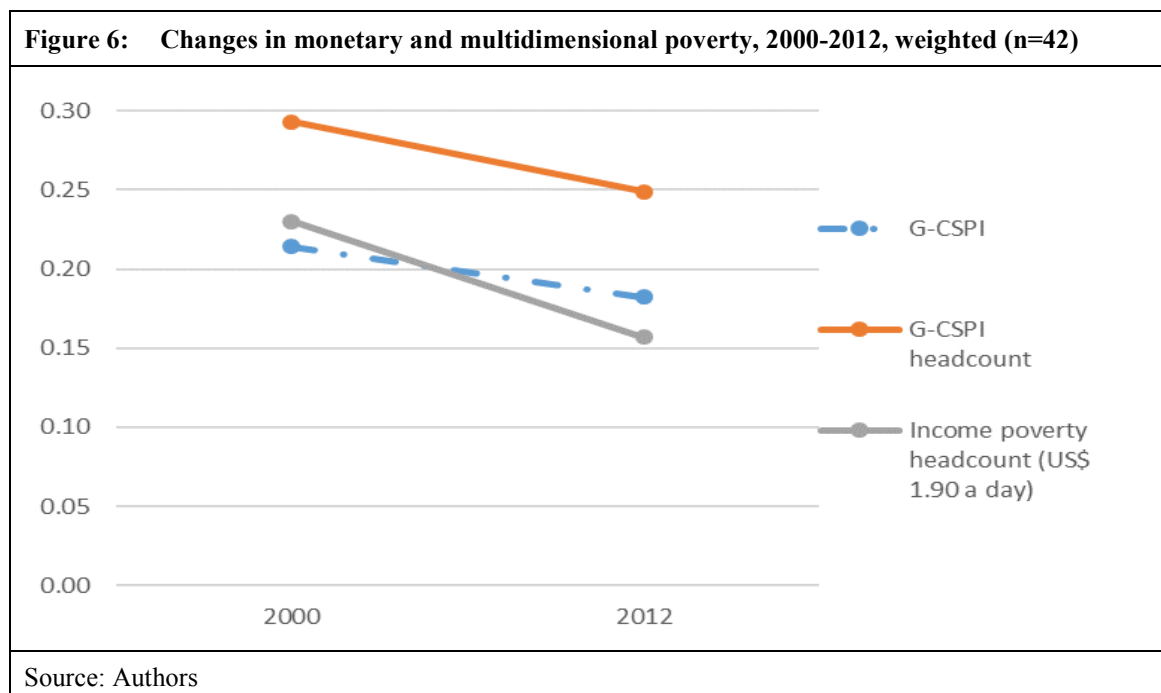
23 When looking at the three periods (Figure A5 in the Appendix), further heterogeneity can be noted (keeping in mind the differences in the composition of the samples with respect to the previous figures). Deprivations in the employment and health dimensions decreased in the second period, while the share of the population without decent employment increased between 2000 and 2006.

24 In order to achieve this, we keep the country-year observations with both multidimensional and income poverty.

25 The countries that were dropped are Bangladesh, Cambodia, Guatemala, Kosovo, South Africa and Uruguay.

first and last periods, and 32 countries with complete data for all three periods. The analysis uses the extreme international poverty line of USD 1.90 a day, which is the poverty line used to track progress in SDG1.

When looking at the aggregate trends, Figure 6 shows that the headcount ratio of monetary poverty declined more drastically than the G-CSPI headcount. The difference between the two widened between 2000 and 2012: in 2000, the G-CSPI headcount was about 6 percentage points higher than the monetary poverty headcount, while this difference was 9 percentage points in 2012.<sup>26</sup> Therefore, while trends in multidimensional and monetary poverty are similar, some differences are found in relation to the magnitude of the changes.



Finally, Table 2 summarises the trends for single countries and not at the aggregate level. The sample used in the table consists of 42 countries, for which we have disaggregated data for 2000 and 2012, for both income poverty and the G-CSPI headcount. The table shows that the majority of countries (76 per cent) reduced both monetary and multidimensional poverty, while just two countries (Nigeria and São Tomé and Príncipe) increased both. On the other hand, eight countries had contrasting trends of multidimensional and monetary poverty.

**Table 2: Changes in G-CSPI vs. income poverty, 2000-2012 (n=42)**

	Income poverty (USD 1.90 a day) headcount			
		Increase	Decrease	Countries
G-CSPI headcount	Increase	2 (4.8%)	4 (9.5%)	6 (14.3%)
	Decrease	4 (9.5%)	32 (76.2%)	36 (85.7%)
	Countries	6 (14.3%)	36 (85.7%)	42 (100%)

Source: Authors

26 The same trends for the sample of countries with information on all three periods are reported in Figure A6 in the Appendix.

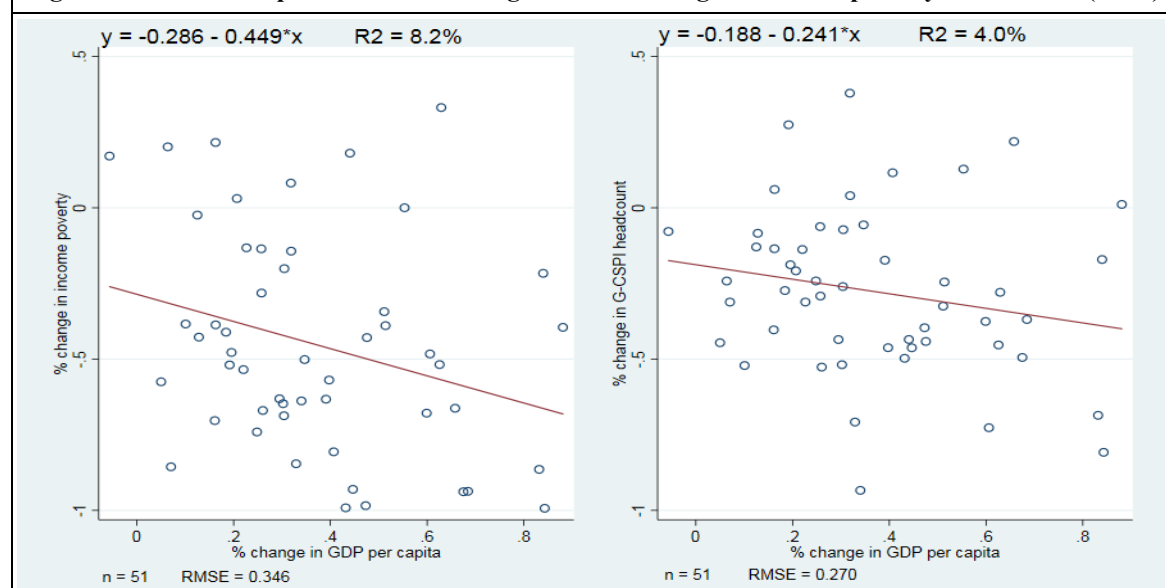


### 4.5 Linking poverty trends to economic growth

Apart from looking at the comparison in trends between multidimensional and monetary poverty, it is also interesting to explore the role of economic growth. The literature has shown that economic growth is a crucial determinant of monetary poverty reduction (Adams, 2004). However, evidence of the role of economic growth for the reduction in multidimensional poverty is scarce. The preliminary analysis presented here gives a first glance at the relationships between economic growth (measured by GDP per capita) on the one hand, and multidimensional (the G-CSPI) and income (USD 1.90 a day) poverty on the other hand.

In Figure 7 we investigate this relationship for the sample of countries (51)<sup>27</sup> with available data for 2000 and 2012 (or 2000 and 2006 if 2012 was not available) for both poverty measures and economic growth. As expected, the relationship is negative for both types of poverty. However, the relationship is larger and more significant for income poverty than for multidimensional poverty. A simple regression reveals that both the coefficient and the fit of the relationship are higher when income growth is regressed against income poverty as compared with multidimensional poverty. This is because income poverty is more directly linked to economic growth: an increase in the average income is likely to increase the income of at least some people below the poverty line and, therefore, reduce income poverty. The relationship between economic growth and other dimensions of poverty, such as education, health and employment, is more indirect as it depends, for example, on how the income generated through growth is used or on how the education and health systems function (e.g., public or private). Sectoral policies, such as education or health policies or active labour market policies, may have a more direct impact on these dimensions of poverty or may enhance the effects of growth on multidimensional poverty. While an in-depth analysis of growth-poverty elasticity falls outside the scope of this paper, these preliminary results seem to confirm findings from previous research using other multidimensional poverty indicators (Santos et al., 2019).

**Figure 7: Relationship between economic growth and changes in income poverty and G-CSPI (n=51)**



Source: Authors

27 Some data points were excluded as they were clear statistical outliers (Lithuania and Timor-Leste) that skewed the correlation analysis.

## 5 Rural-urban inequalities in poverty levels: is there still an urban bias?

In developing countries, rural areas have generally been neglected by national governments. In 1977, Michael Lipton analysed this phenomenon through a political economy lens and proposed the “urban bias” thesis. He claimed that influential elites live in urban areas and the urban population has a stronger voice and greater power resources with which to challenge governments. In contrast, collective action in rural areas is difficult to mobilise as population density is low and the people are less educated and not well connected, and therefore are less able to influence policy-making at the national level. As a consequence, governments adopt policies that favour the urban sector, including special subsidies and lower taxation. Another key point of Lipton’s thesis is that in the pursuit of industrialisation the objective was to keep urban wages low by depressing food prices (shifting resources from rural farmers to urban workers). This resulted in national resources being allocated disproportionately to urban areas over rural areas. While this thesis has been subject to criticisms (Currie, 1979; Jones & Corbridge, 2010; Varshney, 1993), disaggregated statistics have traditionally highlighted large differences in socio-economic conditions between rural and urban areas. In a similar fashion, A. Sen (1982) argued that famines usually do not hit urban areas. Against this background, it is important to understand whether there are still large differences in poverty levels between rural and urban areas and how such differences have evolved over the past decades.

### 5.1 World trends in urban and rural multidimensional poverty

In line with the procedure followed in Section 4.1, we analysed the trends in urban and rural poverty for all those countries for which we had country-level data for the initial period (around 2000) and at least one of the two following periods. The number of countries is only slightly lower compared with the previous section because in a few cases the rural or urban sample had too many missing values.<sup>28</sup>

Figure 8 depicts long-run trends (from 2000 to 2012) in the population-weighted mean G-CSPI for urban and rural areas for 45 countries.<sup>29</sup> The graph clearly shows that rural poverty is much higher (more than four times larger) than urban poverty around 2000, highlighting the existence of the urban bias. This result points to a rural-urban gap that is even larger than that estimated by Castañeda et al. (2018) for income poverty around the same period. In fact, they find that the incidence of extreme income poverty is about 3.3 times larger in rural areas compared with urban ones. In our analysis, in absolute terms rural poverty has fallen more than urban poverty. However, in relative terms, in both rural and urban areas the mean weighted poverty has declined slightly more in rural areas (14 per cent) compared with urban areas (12 per cent). The direct consequence is that urban bias remains

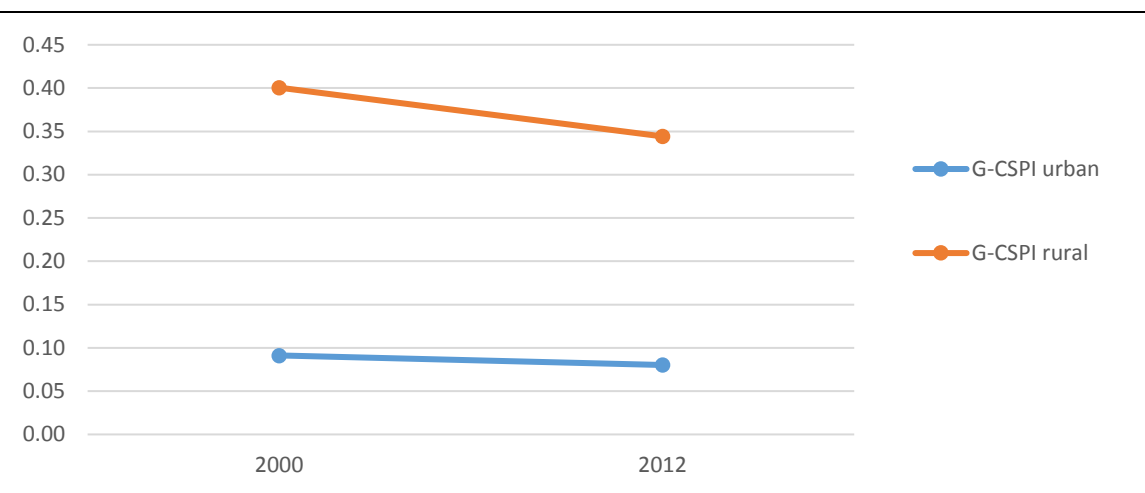
---

28 In Section 5 we do not compare rural and urban trends in the G-CSPI with the rural and urban trends in income poverty because, as explained in the Introduction, the World Bank does not calculate these figures based on the international poverty line. Income poverty data for rural and urban areas, computed based on the national poverty lines, are available only for a small number of countries and years and cannot be easily compared as the methods used to identify the poverty lines vary significantly from country to country.

29 Weights are assigned to each country for each period based on the country share of the population (of 15-65-year-olds) living in the specific region (urban or rural) in that year.

substantially unchanged. A more intuitive way to assess the changes in the urban bias – in other words to check whether there is a convergence of poverty levels between rural and urban areas – is to focus directly on the changes in the rural/urban G-CSPI ratios. Indeed, a rural/urban G-CSPI ratio higher (lower) than 1 means that rural poverty is higher (lower) than urban poverty at a given point in time: an increase (decrease) in this ratio from one period to another indicates that poverty has become increasingly a rural (urban) problem.<sup>30</sup> As reported in Table 3, this ratio decreased by a negligible amount (0.097 or 2.22 per cent). These results are in line with an IFAD study (2016) that found no evidence of rural-urban convergence in monetary poverty.

**Figure 8: Trends in rural and urban G-CSPI poverty: population-weighted means for 2000 and 2012 (n=45)**



Source: Authors

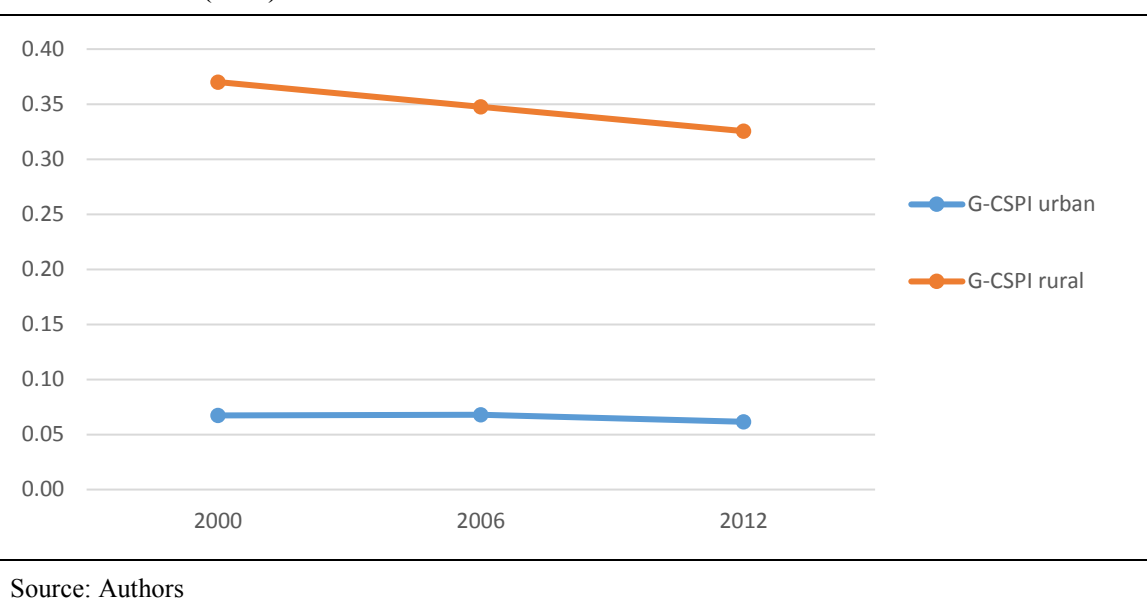
**Table 3: Trends in urban bias, 2000-2012 (n=45)**

	2000	2012
Rural/urban G-CSPI ratio	4.390	4.293
Absolute change in rural/urban G-CSPI ratio	-0.097	
Percentage change in rural/urban G-CSPI ratio	-2.22%	

Source: Authors

In order to understand these trends even better, we relied on a subset of 32 countries with information for both intervals (2000-2006 and 2006-2012). Figure 9 points to some initial convergence between urban and rural areas in poverty in the period 2000-2006, when rural poverty fell by about 6 per cent, while urban poverty remained substantially unchanged. In the period 2006-2012, rural poverty continued to fall (-6.4 per cent), while urban poverty declined slightly in absolute terms (-0.006), but substantially in percentage terms (-9.4 per cent). As a consequence, the rural-urban G-CSPI ratio declined in the first interval (from 5.50 to 5.12) and then increased slightly in the second interval (from 5.12 to 5.29).

30 An exclusive focus on the changes in the urban-rural G-CSPI ratio does not reveal the direction of the changes in urban and rural poverty. For example, a reduction in the ratio can be due to a higher relative reduction in poverty in rural areas as compared with urban areas or to a lower relative increase in poverty in rural areas as compared with urban areas.

**Figure 9: Trends in rural and urban G-CSPI poverty: population-weighted means 2000, 2006 and 2012 (n=32)**

## 5.2 Country-level trends in urban and rural multidimensional poverty

Following the approach used in Section 4.2, in this sub-section we analyse rural and urban poverty trends in the long term (between 2000 and 2012), when data are available, or in the short term (between 2000 and 2006, when 2012 data are not available). This increases our sample to 57 countries.

Graphs of the country-level trends are provided in Figure A7 in the Appendix. In order to visualise them better, the countries were split into three groups according to their level of multidimensional poverty in rural areas. A quick look at the graphs reveals that urban and rural poverty follow a similar trend, or at least move in the same direction. Indeed, 38 countries experienced a decrease in poverty in both geographic areas, while six countries experienced an increase in both (Table 4). The latter trend occurred only in countries in Latin America (Colombia and Paraguay) and sub-Saharan Africa (Ethiopia, Ghana, São Tomé and Príncipe and Zimbabwe<sup>31</sup>). Countries in Eastern Europe and Central Asia followed a different pattern, with five out of 11 experiencing clearly different poverty trajectories in rural and urban areas. Rural poverty declined while urban poverty increased in Lithuania, Albania and Kosovo; the opposite occurred in Bosnia and Herzegovina and the Republic of Macedonia.

Finally, the static picture for the last available period confirms the point highlighted in the previous sub-section: the urban bias – simply conceived as higher poverty rates in rural areas compared with urban areas – still exists. Rural poverty exceeds urban poverty everywhere.

31 For Zimbabwe, data availability allowed only for the study of the trend between 2000 and 2006.

**Table 4: Number of countries by direction of changes in rural and urban poverty (based on G-CSPI)**

	Decline in rural poverty (G-CSPI headcount ratio)	Increase in rural poverty (G-CSPI headcount ratio)
Decline in urban poverty (G-CSPI H)	38	3
Increase in urban poverty (G-CSPI H)	10	6

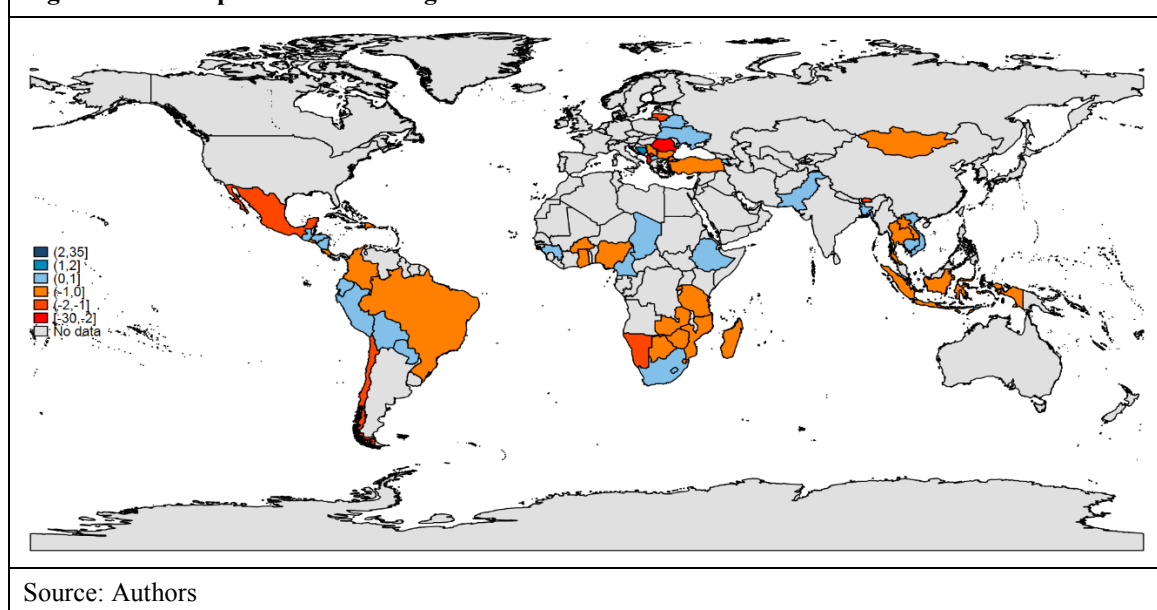
Source: Authors

### 5.3 Mapping the changes in rural/urban G-CSPI ratios

In order to investigate the country-specific patterns that have occurred since the establishment of the MDG agenda, we use here one indicator: the ratio between rural G-CSPI and urban G-CSPI. By means of maps, we display the temporal changes in this indicator to verify whether geographical patterns can also be identified. First, we focus on the simple (absolute) difference between the rural/urban G-CSPI ratio between the last available period (around 2012 where available, otherwise around 2006) and the first period (around 2000).<sup>32</sup> In the map in Figure 10, countries where the rural areas became even poorer compared with urban areas (the rural-urban poverty ratio increased) are coloured in blue (the darker, the higher the increase), while countries where rural areas became less poor compared with urban areas (the ratio decreased) are coloured in orange.

The red/orange colour prevails; for 34 out of the 57 countries the rural-urban poverty ratio fell. A clear pattern is visible especially in sub-Saharan Africa, where 15 out of 21 countries reduced the rural-urban gap. Zooming into the southern part of this region allows us to identify an even higher homogeneity across countries, with the only exception being South Africa.

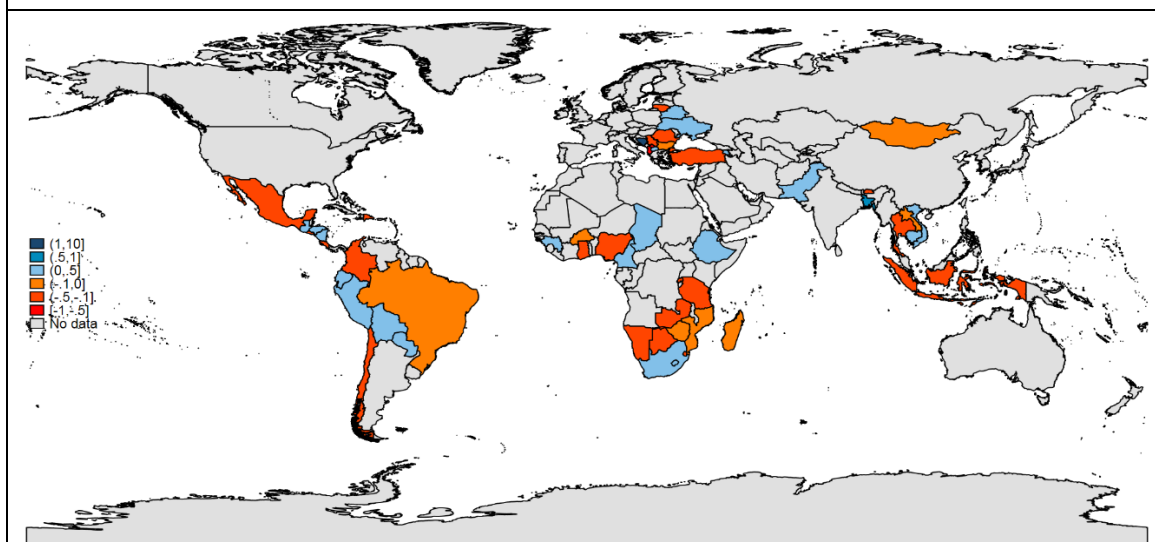
**Figure 10: Map of absolute changes in the rural/urban G-CSPI ratio**



32 For 12 countries we used the changes between 2000 and 2006 as no estimates were available for 2012. These countries are: Bulgaria, Bosnia and Herzegovina, Cabo Verde, Indonesia, Lao PDR, Lithuania, Macedonia, Mozambique, Timor-Leste, Vietnam, South Africa and Zimbabwe.

In a second stage we focus on the changes in the rural/urban G-CSPI ratio *relative* to the ratio in the first period. This additional exercise is particularly useful because the initial values of the rural/urban G-CSPI ratio may influence the trends in this indicator. In particular, countries with low overall multidimensional poverty in 2000 are more likely to register higher rural/urban poverty ratios and, in turn, larger changes in the ratio across time. The new map (Figure 11) largely mirrors the situation depicted in the previous map. Among the few differences, we notice an even more remarkable reduction in the urban bias in a few countries in sub-Saharan Africa, namely Tanzania, Malawi, Zambia and Botswana. On the other hand, a focus on the relative changes in Lithuania and Romania leads to a reduced emphasis on these countries' results in reducing the rural-urban poverty ratios.

**Figure 11: Map of proportional changes in the rural/urban G-CSPI ratio**



Source: Authors

## 6 Gender inequalities in poverty levels: is there a feminisation of poverty?

This section focuses on differences in poverty between men and women. The objective is to verify whether there is a problem of “feminisation of poverty”, a concern initially raised in the mid-1990s. As highlighted in the Introduction, empirical evidence to support or reject this argument is only based on a few countries, mostly high-income or upper middle-income countries. Moreover, most of these studies rely on (monetary or non-monetary) measures of poverty constructed at the household level and compare female-headed with male-headed households. The use of an individual measure of poverty, which focuses on key dimensions of women’s lives, namely education, employment and health, such as the G-CSPI can provide a substantial contribution to this debate.<sup>33</sup>

33 As stated in the section on the methodology, information on access to drinkable water and sanitation is collected at the household level but treated as if it were collected at the individual level given the difficulty in excluding some household members from the use of water and sanitation facilities. This has, however, an effect on the gender analysis, as it reduces the variability of the overall G-CSPI by gender.

As in previous sections, the starting point is the period around 2000, and the final point is around the year 2012. When information on the latter period is not available, we concentrate on the changes between 2000 and 2006.<sup>34</sup> With our database we are able to analyse the long-term trends for 48 countries, and short-term trends for 12 countries. Given this time frame, it should be highlighted that we do not directly test the validity of the early *feminisation of poverty* argument of 1995, but rather look at the period immediately after that.

In line with the prevalent literature (Chant, 2010; Medeiros & Costa, 2010), the feminisation of poverty is conceived in dynamic terms, as a process through which “poverty increasingly has a female face” (Medeiros & Costa, 2010, p. 97). For this reason, we compare the trends in G-CSPI poverty among women with those among men. At the same time, it is useful to examine the phenomenon in static terms, looking at the gender composition of poverty at different points in time. By doing so we can see whether at a given moment women (or men) are disproportionately represented among the poor.

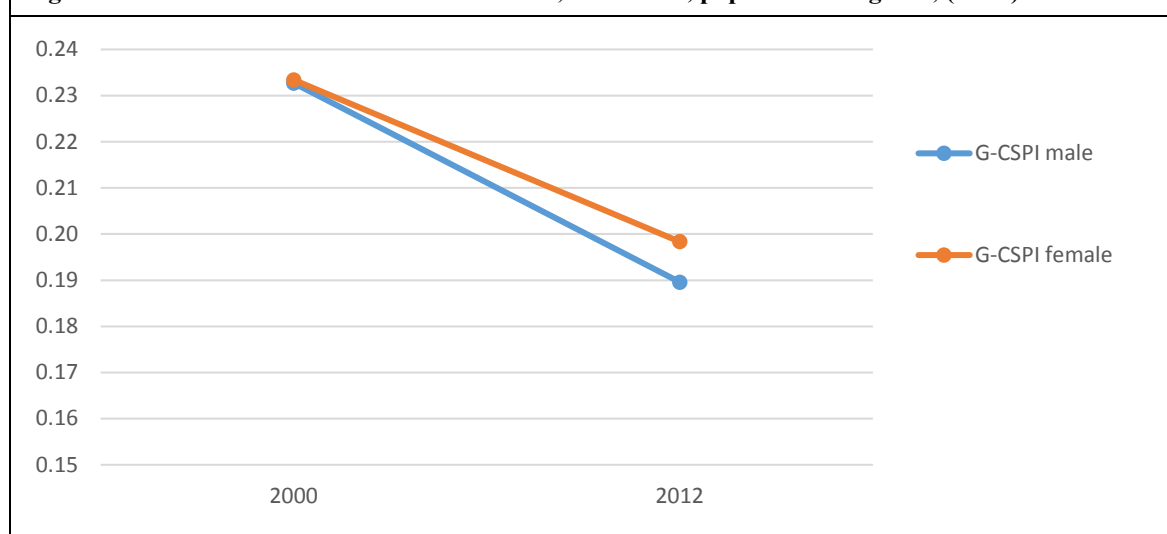
## 6.1 World trends in female and male multidimensional poverty

Figure 12 shows the average (population-weighted) trends in multidimensional poverty, based on the overall G-CSPI, for the 48 countries with information for 2000 and 2012. Looking at the situation in 2000, female and male poverty are basically identical (G-CSPI=0.230). This finding clearly contrasts with the statement made in 1995 that 70 per cent of the world’s poor were women (Chant, 2010). On the other hand, this finding is in line with the results obtained by Castañeda et al. (2018) and Medeiros and Costa (2010), which pointed to the lack of substantial gender differences in poverty. However, these authors could only rely on information from a few countries and, above all, only on a comparison between male- and female-headed households.

After 2000, multidimensional poverty followed a clear downward trend for both groups, but the speed of poverty reduction was higher among men (-18.5 per cent) than among women (-15 per cent). As a consequence, the female-male G-CSPI ratio increased from 1 to 1.05 (+ 4.4 per cent) (Table 5). In line with the methodology employed in Section 5 and the work of the Economic Commission for Latin America and the Caribbean (ECLAC) (2014) the increase in the female-male G-CSPI ratio reveals some small signs of the process of feminisation of poverty.

---

34 These countries are: Bulgaria, Bosnia and Herzegovina, Cabo Verde, Indonesia, Lao PDR, Lithuania, Macedonia, Mozambique, Timor-Leste, Venezuela, Vietnam and Zimbabwe.

**Figure 12: Trends in female and male G-CSPI, 2000-2012, population weighted, (n=48)**

Source: Authors

**Table 5: Trends in gender bias, 2000-2012 (n=48)**

	2000	2012
Female/male G-CSPI ratio	1.003	1.046
Absolute change in female/male G-CSPI ratio	+0.043	
Percentage change in female/male G-CSPI ratio	+4.31%	

Source: Authors

Given that the mean (weighted) G-CSPI values for females and males used above have high standard deviations,<sup>35</sup> we expect significant heterogeneity in both values and trends across country groups. For this reason, we examined whether patterns changed between low-, lower middle- and upper middle-income countries, based on the World Bank income classification of 2000. Twenty-two of the 48 countries were classified as low-income countries, 16 as lower middle-income countries and the remaining 10 as upper middle-income countries.

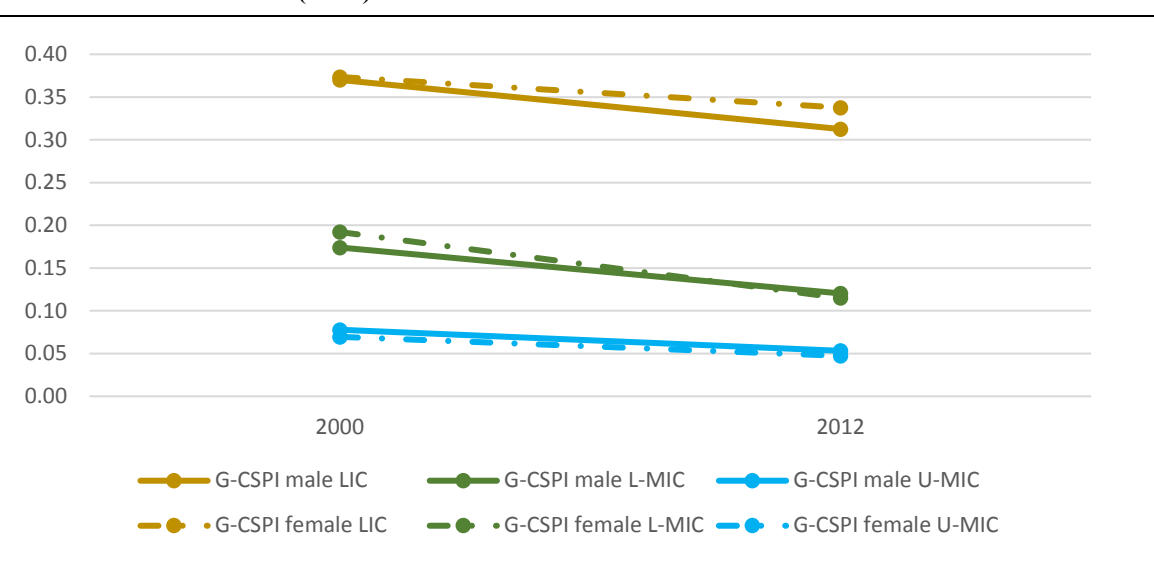
Figure 13 reveals substantial differences between the two groups. First, in 2000, both female and male poverty were about five times higher among low-income countries than in upper middle-income countries, and about two times higher than in lower middle-income countries. This means that average economic conditions are an important determinant of multidimensional poverty, as touched upon in Section 4. Second, a gender bias in 2000 can be noticed only in lower middle-income countries, where female poverty was nearly 10 per cent higher than male poverty. In low-income countries, there is no difference between the two groups, while in upper middle-income countries poverty is predominantly a male issue. However, in the latter case, it is difficult to make a conclusive statement, as deprivations are very low. Third, while poverty fell for both females and males in all three country groups, high heterogeneity characterises the intensity of these trends. In low-income countries, poverty reduction was stronger for men (-16 per cent) than for women (-10 per cent), leading

35 In 2000, the weighted mean female G-CSPI was 0.23 with a standard deviation of 0.18, while the weighted mean male G-CSPI was 0.23 with a standard deviation of 0.17.



to an increase in the female/male poverty ratio (see Table 6). Therefore, there is an indication of some feminisation of poverty between 2000 and 2012. The opposite occurred for lower middle-income countries, where female poverty fell by a remarkable 40 per cent, against 31 per cent of male poverty. As a consequence, gender differences in poverty were no longer present in this group of countries in 2012. Finally, the two lines for female and male poverty in upper middle-income countries are parallel: poverty fell by nearly 32 per cent, with male poverty prevailing over female poverty in 2012, too.

**Figure 13: Trends in female and male G-CSPI, 2000-2012, population weighted, by income classification (n=48)**



Source: Authors

**Table 6: Changes in weighted mean G-CSPI female/male ratio, by country income classification**

	G-CSPI female/male ratio	
	2000	2012
Low-income countries	1.009	1.080
Lower middle-income countries	1.104	0.955
Upper middle-income countries	0.893	0.890

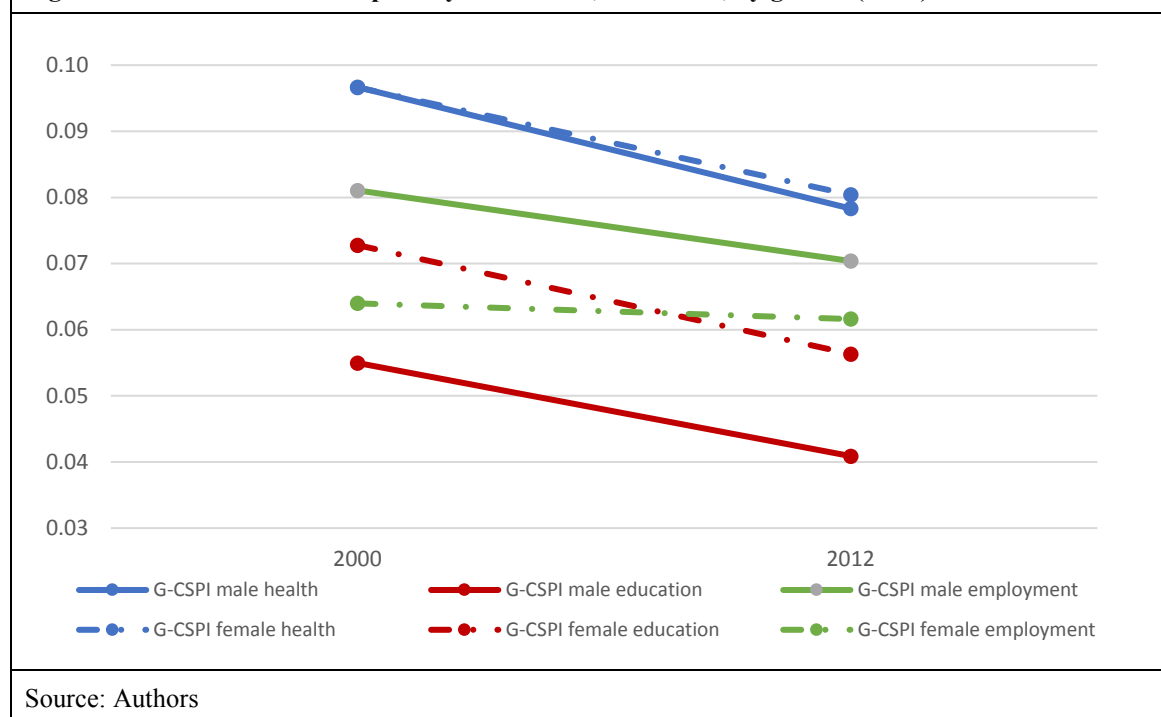
Source: Authors

Given that the G-CSPI encompasses three dimensions, it is worth verifying which dimensional deprivation triggers the above time trends. Figure 14 reports the trends in health, employment and education deprivations for females and males. In 2000, the largest female and male deprivations concerned health (access to water and sanitation). The second largest deprivations were found in education for females and in employment for males. A quick look at the values of these deprivations for the two groups reveals that the almost identical 2000 poverty figures for women and men mask substantial differences across poverty dimensions. While health deprivations are of a similar intensity because information about this variable is collected at the household level, educational deprivations are

significantly higher among women (0.073 compared with 0.055 for men), whereas employment deprivations concern predominantly men.<sup>36</sup>

Between 2000 and 2012, poverty fell for men and women in all its dimensions. This is a reason to celebrate. Interestingly, the situation for men improved faster. This holds for all the dimensions: education, health and employment. In particular, female employment deprivations declined at a much slower speed than male education deprivations (-4 per cent vs. -13 per cent). Thus, it is labour market trends that mainly drive the observed feminisation of poverty.

**Figure 14: Trends in G-CSPI poverty dimensions, 2000-2012, by gender (n=48)**



## 6.2 Mapping the changes in female/male G-CSPI ratios

This sub-section examines country-level trends in the female-male G-CSPI ratio, used as a measure for gender differences in poverty. In other words, we investigate the dynamics of female poverty in relation to male poverty, regardless of trends in the absolute values. As in Section 5, we use geographical maps to graphically display in which countries women became even poorer compared with men (revealed by an increase in the female-male G-CSPI ratio), and in which countries women became less poor in relation to men (revealed by a reduction in the female-male G-CSPI ratio). As in the maps related to rural and urban poverty, we focus on long-term changes (between 2000 and 2012) where available, otherwise on shorter term changes (between 2000 and 2006).

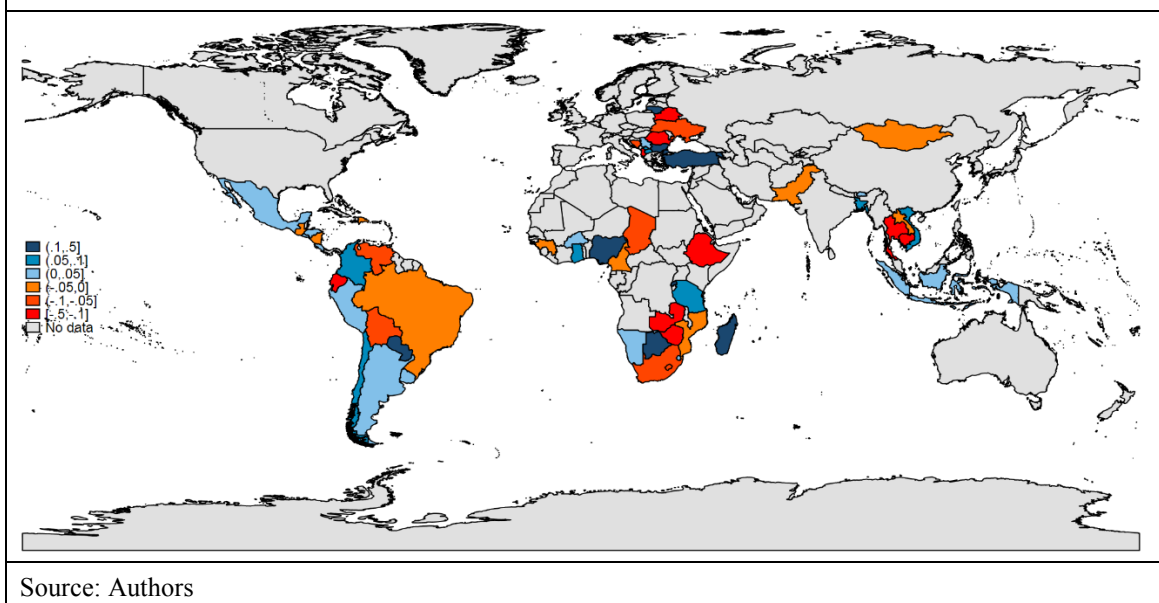
<sup>36</sup> This in part may depend on the way the measure of employment poverty is constructed. Women are less likely than men to actively search for a job, and therefore are more often categorised as “not-in-labour force”. In turn, people in this category are not counted as poor in the employment dimension. While this can be an important concern for higher income countries, this is not a major problem for the countries included in this paper.

Figure 15 does not reveal clear geographical patterns. In most countries of Latin America and the Caribbean the blue colour prevails (10 out of 17 countries), indicating a feminisation of poverty. This is not immediately clear because the largest country, Brazil, experienced a slight reduction in the female-male poverty ratio. These results support the findings from the ECLAC (2014) study: out of the seven countries included in both studies, four saw a feminisation of poverty, while two saw a de-feminisation of poverty (Bradshaw, Chant, & Linneker, 2018). Only in one country, Argentina, do the results diverge, with our data suggesting a feminisation of poverty while ECLAC data suggest the opposite. In the case of Paraguay – for which data are not available in the ECLAC (2014) report – G-CSPI poverty declined significantly more for men than women. However, one must bear in mind that Paraguay has relatively low multidimensional poverty and this is one of the few cases where the changes are in the 2000-2006 period rather than the 2000-2012 period.

Substantial heterogeneity characterises sub-Saharan African countries, where the countries are basically equally divided among those that managed to reduce the gender ratio and those that increased it. On the one hand, in countries such as Ethiopia, Zimbabwe, Zambia and Côte d'Ivoire the gender differences fell substantially, while the opposite occurred in São Tomé and Príncipe as well as Nigeria.

The region of Eastern Europe and Central Asia seems to be divided in two: in most of the northern countries included in our sample – Romania and Belarus above all – the poverty trends were more favourable for women, while in most of the southern countries – Bulgaria and Turkey above all – such trends were more favourable among men. The clear exception to this generalisation is Lithuania, the most northern country, where poverty increased both among men and women, but proportionally more among the latter. In the case of Lithuania, as in the case of Paraguay, the changes refer to the period between 2000 and 2006.

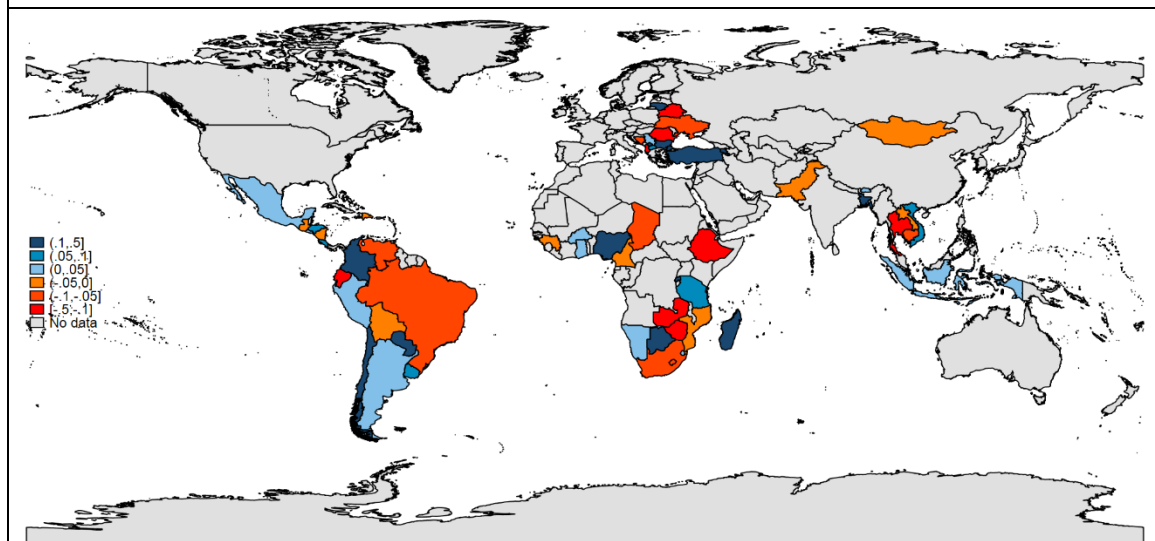
**Figure 15: Map of absolute changes in the female/male G-CSPI ratio**



These findings largely hold when we no longer look at the absolute changes in the female-male poverty ratio, but at their changes in relation to the value in 2000 (Figure 16). The only remarkable difference concerns Brazil, which reduced the ratio by 5.5 per cent. Therefore,

by accounting for the initial conditions, Brazil’s “pro-female” poverty reduction emerges more clearly.<sup>37</sup>

**Figure 16: Map of proportional changes in the female/male G-CSPI ratio**



Source: Authors

## 7 Case studies

This section explores four country cases with a twofold aim. The first is to show the trends for countries with patterns similar to the average situation, as described in Sections 4, 5 and 6. As aggregate patterns may hide significant intra-country heterogeneity, we also show situations that look quite different from the average. The second aim is to bring all trends that were previously analysed together to verify how the different trends interact. It is useful, for example, to see if a country that experienced a higher reduction in multidimensional poverty than income poverty also experienced similar poverty trends in rural and urban areas and eventually a relative worsening of poverty among women. The analysis conducted in Sections 4, 5 and 6, despite focusing on basically the same countries, assessed the three trends separately.

We selected the two regions for which we have more countries, namely Latin America and the Caribbean and sub-Saharan Africa. These regions also contain countries in all three income groups and are the regions for which we have more frequent data. Within each region, we identified a “representative” country-case – a country that follows poverty trends similar to the average regional trends – and an “anomalous case” – a country that performs differently from the regional average in one or more aspects. In identifying these case studies we paid particular attention to the trends in the G-CSPI and income poverty. Following these criteria, for Latin America and the Caribbean we selected Brazil and the Dominican Republic as representative and anomalous cases, respectively, and for sub-Saharan Africa, Mozambique and Zambia.

<sup>37</sup> As Brazil is one of the four case studies analysed in Section 6, more information on its poverty-reduction patterns can be found there.

As an important methodological note, in this section we use all available country data-points and not just the values for the periods (2000, 2006 and 2012) used so far in the paper. The main reason is that, for a good deal of countries, data for many survey years are available; this richness of data will not be fully exploited if the averages for the three main periods are considered. Moreover, as we are not aggregating and comparing data from different countries, there is no need to select uniform periods and years. Nonetheless, to be consistent with the previous section we still consider the period between 1998 and 2015. Another advantage of using all the data points is that for the four countries examined we can also check whether trends differ from those constructed previously for the two or three periods. This would be the case if there were a large amount of variability within periods; nonetheless, we do not expect this to be the case.

Given the purpose of this Section, a detailed description of the countries' trends and their interpretations is not given.

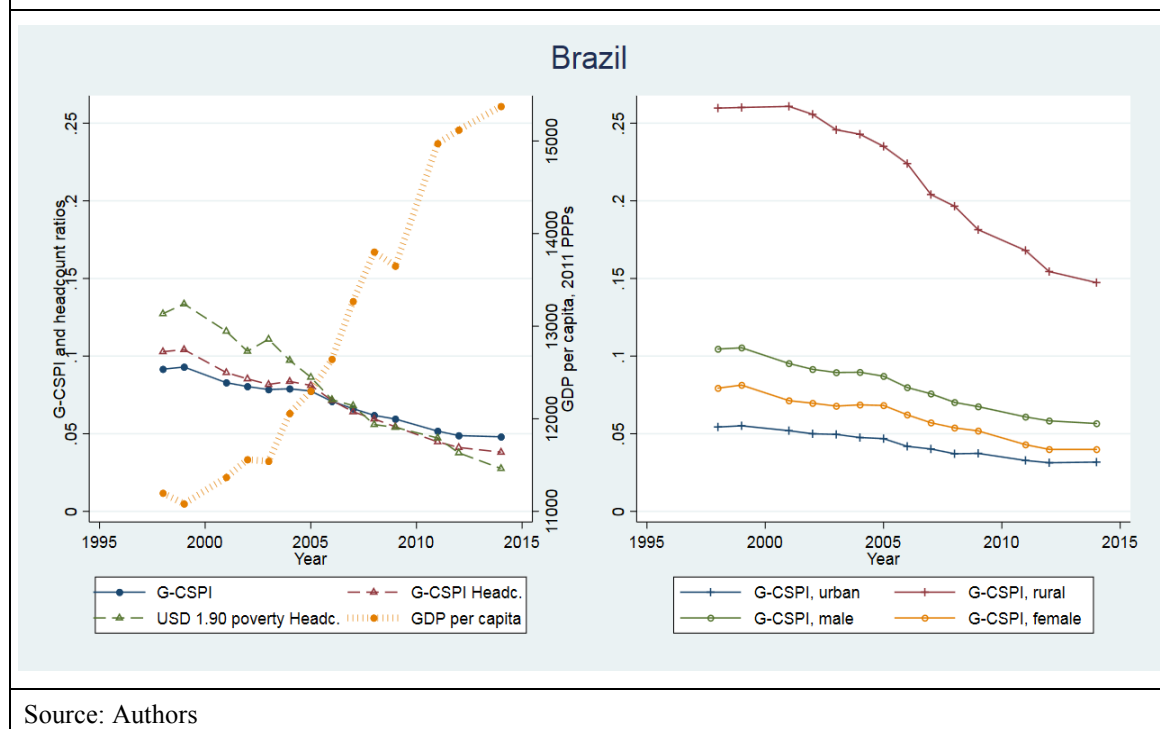
### 7.1 Latin America and the Caribbean: Brazil and the Dominican Republic

The representative case for Latin America and the Caribbean is Brazil. Figure 17 shows that all forms of poverty have decreased since 1998. While it started at a higher rate compared with multidimensional poverty, monetary poverty – as measured by the headcount ratio – decreased more and presented lower values compared with multidimensional poverty in 2014, the last available country-year observation. The empirical literature attributes this positive performance in poverty reduction (as well as reduction in inequality) to economic growth (which has been sustained, as shown in Figure 17) as well as the redistributive and direct anti-poverty policies that have been implemented since the beginning of the 21st century (Lustig, 2017; Ravallion, 2011). In particular, the work of Nora Lustig and her colleagues points to the contributions of labour market reforms, the introduction or increase in the minimum wage and the implementation of cash transfer programmes (Lustig, Lopez-Calva, & Ortiz-Juarez, 2013). These policies have impacted economic conditions as well as the three poverty dimensions included in the G-CSPI: education, employment and health.

When looking at the more disaggregated multidimensional poverty trends (right-hand side of Figure 17), we note that performance has been similar in urban and rural areas. Only a slight reduction in urban bias has been witnessed, with the rural/urban ratio falling by 2.9 per cent. However, it is important to highlight that rural poverty in 2014 was still strikingly higher than urban poverty (4.6 times higher). On the other hand, female poverty is lower than male poverty,<sup>38</sup> and the ratio changes slightly throughout the period examined. It is also important to stress that as Brazil is an upper middle-income country, this trend mirrors the trend for upper middle-income countries as demonstrated in Section 6.

---

38 Poverty is higher among men than women for all three dimensions of the G-CSPI.

**Figure 17: Poverty dynamics in Brazil**

Source: Authors

The Dominican Republic is an outlier in the region of Latin America and the Caribbean. Unlike Brazil, it shows contrasting trends between income poverty and multidimensional poverty (Figure 18). While income poverty increased between 2001 and 2004, then decreased at a constant rate, the G-CSPI values show nearly identical values for the first and last years (2000 and 2013) with small changes in different directions between years. These short-term trends show that multidimensional and monetary poverty have witnessed contrasting trends in many intervals. This is against a background of sustained economic growth especially from 2004 onwards.

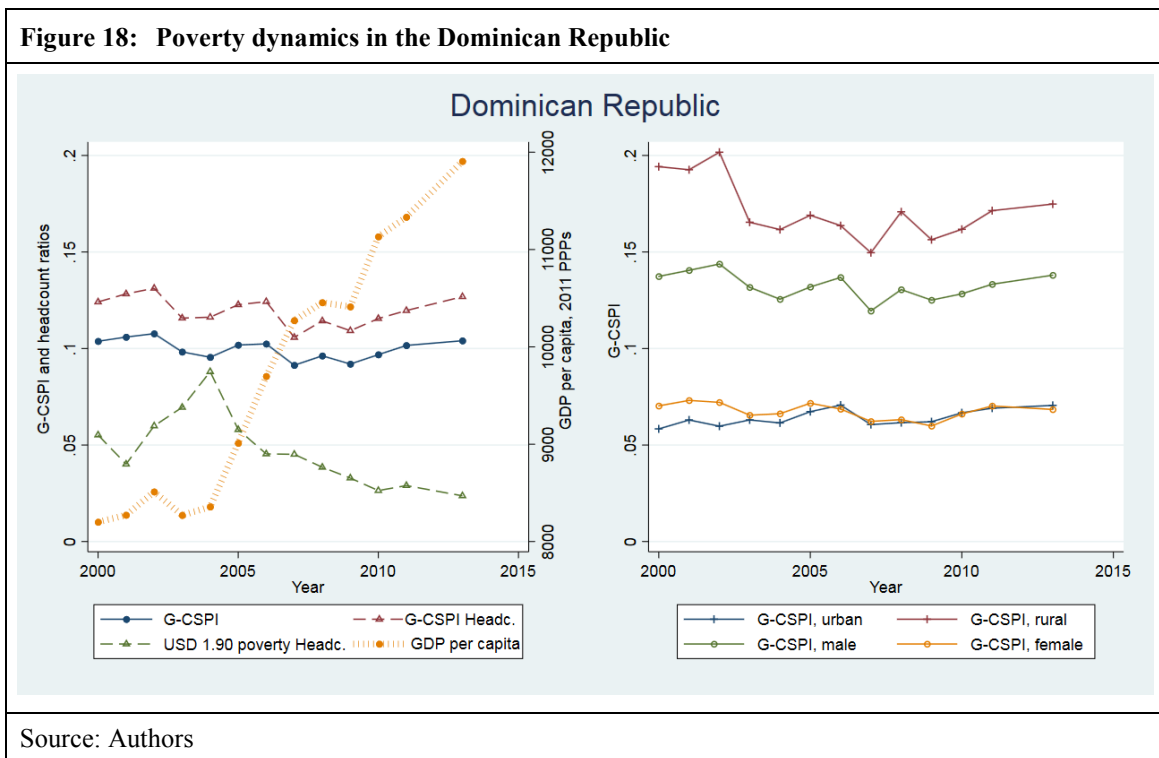
One of the peculiarities of the Dominican Republic is its low public expenditure relative to other countries of the region, in particular on education (about 2 per cent of GDP, based on World Bank data). As a consequence, the quality of education is poor (Paus, 2012). The educational system is remarkably unequal and basically divided in two sub-systems: one high-quality private system for the rich and one low-quality public system for the poor. In 1997 – immediately before the beginning of the period examined here – after continuous demand from the civil society to change the education systems and increase investments in the sector, a new law was introduced that fixed investment in education at a minimum of 4 per cent of GDP. However, as suggested by Giliberti (2013), this law has not been adequately enforced.

Flechtner (2017) argues that the policies carried out by the different governments of the Dominican Republic since the 1930s are strictly dependent on the development model adopted since then. This model is based on the concentration of economic and political power in the hands of a few firms that often interact with political elites. These business elites pushed for a shift in the economic structure towards service and tourism, sectors that required relatively low qualifications. They have shown little interest in increasing expenditure in the social sectors of education and health. Productivity increased and through

that came economic growth, but income poverty declined at a rather low rate (Flechtner, 2017). Our analysis shows that these policies even led to an increase in multidimensional poverty between 1998 and 2012, thereby casting further doubt on the effectiveness of this development model.<sup>39</sup>

Regarding the disaggregated analysis, it is possible to notice that around 2000, rural poverty was more than three times higher than urban poverty. Both urban and rural poverty fell between 2000 and 2008 and rose again afterwards, but the intensity of these changes is rather different in the two areas. If we compare the final value (in 2013) with the initial value (1998), we notice an increase in urban poverty by 21 per cent and a reduction in rural poverty by 10 per cent.

As for the gender-disaggregated trends, interestingly, multidimensional poverty is higher among men than women. Male poverty remained at about the same level throughout the period, while female poverty fell to a limited extent (-2.65 per cent between 2000 and 2013). This led to a further divergence in male and female poverty.



39 The headcount ratio of the MPI indicates that multidimensional poverty is larger than income poverty in the Dominican Republic. However, comparable values of the MPI are available only for the years 2002 and 2007; during this period the MPI followed a different trend from our G-CSPI (low reduction of poverty in absolute terms).

## 7.2 Sub-Saharan Africa: Mozambique and Zambia

For sub-Saharan Africa, Mozambique and Zambia are examined. Mozambique is representative of the aggregated trends found for the region in Section 4. It is important to highlight that for Mozambique we have data only for two points in time, 2002 and 2008, which reflects the lower availability of data in the region compared with Latin America and the Caribbean. The left-hand side of Figure 19 shows that multidimensional poverty indicators – as measured by the G-CSPI – did not change at all between 2002 and 2008; the overall G-CSPI headcount ratio increased from 0.75 to 0.78 while monetary poverty decreased from 0.81 to 0.69.

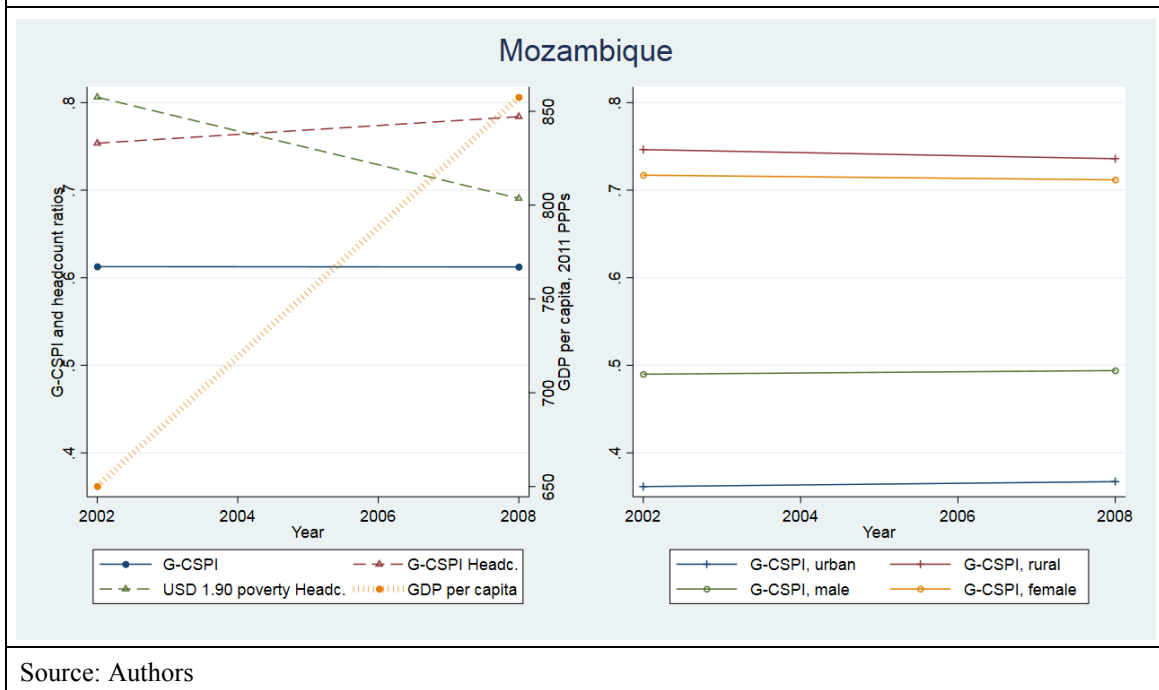
These changes in poverty took place during a period of remarkable economic growth. Between the end of the 1990s and the beginning of the 2000s, when Mozambique registered large increases in GDP, scholars argued that growth was accompanied by a rather modest reduction in income poverty (Arndt, James, & Simler, 2006). With regard to the initial phase of the time frame under examination here (2003-2005), Fox et al. (2008) define Mozambique as a “paradox” as poverty seemed to fall in a period in which child malnourishment increased. Hanlon (2007) digs into the causes of this paradox. He argues that the economic model followed by the country – “driven primarily by foreign-financed ‘mega-projects’ and large aid inflows” – has benefited predominantly the non-poor and, therefore, exacerbated inequalities and reduced employment. Moreover, the author argues that the poverty reduction performance is likely to be over-estimated due to problems in the basket of goods –in particular the food basket – used to compute the national poverty line. It is also important to highlight that income poverty, based on the national poverty line, increased slightly between 2002 and 2009 (the headcount ratio went up from 54.1 per cent to 51.7 per cent). Looking at other dimensions of poverty and well-being, the United Nations International Children’s Emergency Fund (UNICEF) (2009) concludes that access to safe water and sanitation is among the lowest in the region and has not increased since 2002, causing outbreaks of diarrhoea and other water-borne diseases. Finally, regarding the education dimension, World Bank data show a negligible improvement in literacy (from 48.1 per cent to 50 per cent) between 2003 and 2009. The main finding that multi-dimensional poverty has remained stable through a period of high economic growth is supported by evidence and points to the partial inability of income poverty figures to adequately portray poverty conditions as well as the limits of the country’s economic model.

Looking at the disaggregated G-CSPI trends (right-hand side of Figure 19) one main point needs to be underlined. The differences between the categories (urban vs. rural, and female vs. male) have remained nearly constant throughout the period. This means that all G-CSPI values and the overall G-CSPI remained nearly constant between 2002 and 2008.

Two additional issues are worth mentioning. First, just two data points are available for Mozambique in the 1998-2015 period. Such scarcity of data is common among sub-Saharan countries due to the lack of household surveys. Second, (starting) values of poverty are much higher than in the countries in Latin American and the Caribbean that were previously analysed. This needs to be considered when comparing poverty trends and dynamics between these countries/regions. Nonetheless, the figures in this section have different scales to focus more on intra-country dynamics instead of cross-country comparisons.



**Figure 19: Poverty dynamics in Mozambique**



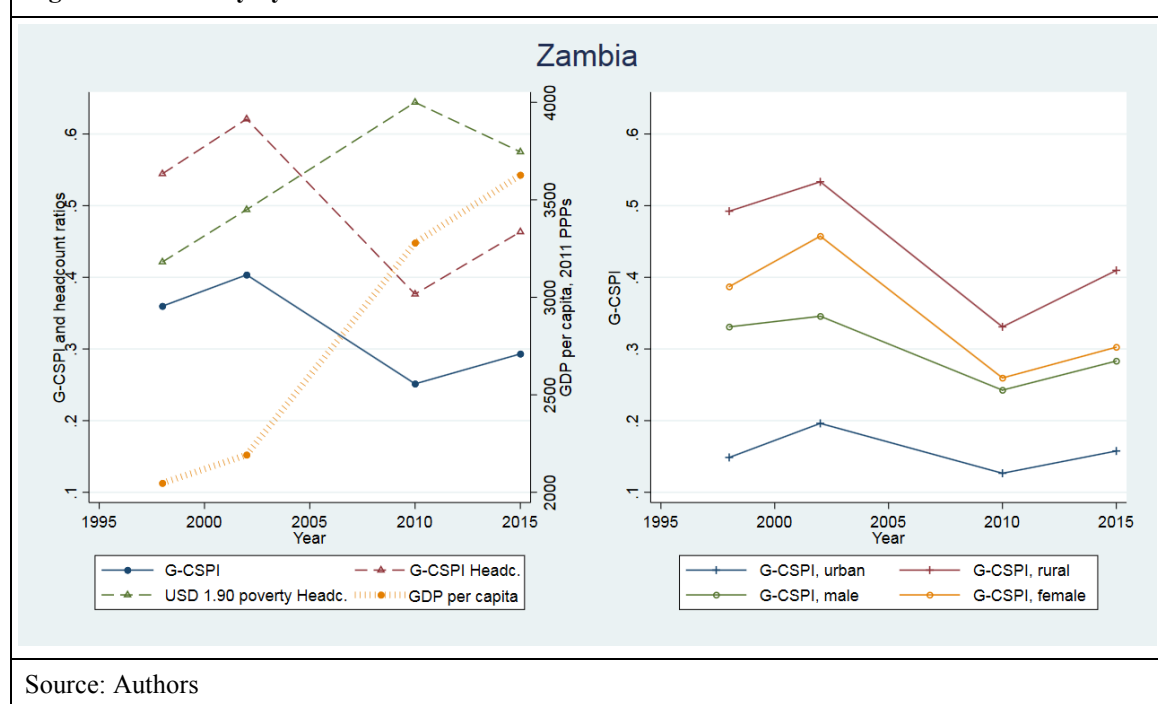
Unlike in Mozambique, four data points are available for Zambia. Still, compared with the countries in Latin American and the Caribbean previously described, it is more difficult to perform a very accurate analysis of poverty trends for the country. Looking at Figure 20, Zambia shows a different picture than Mozambique. In parallel to continuous economic growth between 1998 and 2015, multidimensional poverty (both the G-CSPI and its headcount) decreased between 2002 and 2010 but witnessed increases in the years before and after. On the other hand, monetary poverty increased until 2010, before decreasing again (from 0.64 to 0.58).

In relation to the more disaggregated trends, as in Mozambique, all G-CSPI categories (rural, urban, male and female) follow similar trends: they increased from 1998 to 2002 and from 2010 to 2015 and decreased between 2002 and 2010. It is also worth noting that the rural-urban G-CSPI ratio decreased during the entire period (from 3.3 in 1998 to 2.6 in 2015).

The finding that multidimensional and income poverty (based on the international poverty line of USD 1.90 a day) follow such different paths in the 2000s appears puzzling at first but some reasons can be advanced. Zambia was one of the fastest growing economies in southern Africa in the 2000s, when it became a middle-income country (Mahrt & Masumbu, 2016). Economic growth was mainly driven by mining (especially by a copper boom), with agricultural productivity remaining low. Rural areas continued to be poor. This unequal development of the country might still not justify the large increase in monetary poverty seen in Figure 20. In fact, official national poverty estimates, based on the national poverty line and a different methodology, show that monetary poverty decreased. This trend was driven by a significant reduction in urban monetary poverty, while the situation in rural areas did not improve. Therefore, the increased values of the USD 1.90 a day poverty in Zambia in the 2000s (shown in Figure 20) could be the result of measurement issues arising

from World Bank estimations and need to be taken with caution.<sup>40</sup> More importantly, results using the G-CSPI are more in line with income poverty as measured by national sources. The improvements in multidimensional poverty can be explained by a relevant increase in spending in social sectors, following debt cancellation, which led to the improvement of many social indicators (World Bank, 2012). This is especially true for education.

**Figure 20: Poverty dynamics in Zambia**



## 8 Conclusions

Poverty alleviation has historically been one of the main policy goals of development cooperation. However, the 2030 Agenda introduced two big changes: poverty is no longer defined strictly as a lack of sufficient income, but rather as deprivation in several dimensions of life. Second, the Agenda looks beyond national averages and identifies poverty reduction targets for specific population groups. Against this background, the general aim of this paper was to analyse the trends in multidimensional poverty and the inequalities between groups – also defined as *horizontal inequalities* – in poverty levels in low- and middle-income countries.

This paper relies on a new indicator of multidimensional poverty, the Global Correlation Sensitive Poverty Index (G-CSPI), calculated for more than 500 household surveys (Burchi, Rippin, et al., 2018). This indicator has various advantages compared with existing indicators, including the well-known MPI. First, it is rooted in a clear conceptual framework, Amartya Sen’s capability approach. Second, it encompasses three dimensions – education, employment

40 One critical issue is the use of spatial deflators to adjust for different price levels in urban and rural areas. Moreover, significant changes were made in the household survey between years, hindering comparability if the methodology is not adjusted (World Bank, 2012).

and health – that are deemed the most relevant when looking at the constitutions of several countries in the world. Third, it is a class of indices that can be decomposed into three components: poverty incidence, poverty intensity and poverty inequality. While, for example, the MPI incorporates the first two components, it does not incorporate the latter. Fourth, the G-CSPI is an individual measure of poverty, while the MPI is constructed at the household level. Therefore, we can directly explore intrahousehold differences (e.g., by gender) without having to make risky assumptions about intrahousehold allocation of resources.

This paper had three main objectives. The first was to reassess the trends in poverty during the period of the MDGs from a multidimensional perspective. While World Bank studies show a massive reduction in income poverty, little was known about deprivations in other dimensions. The second objective was to analyse the rural-urban differences in the values and trends in multidimensional poverty and examine whether the problem of urban bias is still as acute as claimed by Michael Lipton in 1970s. The third objective was to focus on gender disparities in poverty and, above all, to verify whether a process of feminisation of poverty has occurred. Given that all cross-country indicators of poverty – both monetary and multidimensional – are calculated at the household level, until now it has been impossible to adequately address this point.

Regarding the first objective, this paper shows for a sample of 48 countries that multidimensional poverty fell by about 17 per cent during the time frame examined. A comparison between the trends in (extreme) income poverty and multidimensional poverty – based on a sample of 42 countries for which information was available for both indicators – reveals the former has declined significantly more than the latter (32 per cent vs. 15 per cent). Moreover, the prevalence of multidimensional poverty (as measured by the headcount ratio of the G-CSPI) is substantially higher than the prevalence of extreme income poverty (as measured by the headcount ratio for USD 1.90 a day). These findings highlight that – once we take other, non-monetary dimensions into account – the progress in poverty eradication has not been as remarkable as believed and calls for stronger efforts in tackling the different forms of poverty. The findings on the aggregate trends, however, should be taken with caution, as many countries are not included in our sample, including China and India.

A focus on a sub-set of countries for which we had information for the three periods (2000, 2006 and 2012) suggests that the downward trend in multidimensional poverty – as measured by both the overall G-CSPI and the G-CSPI headcount ratio – was almost linear from 2000 to 2012. Results, however, differ between regions and income groups. While lower middle-income countries reduced poverty quickly, and thereby closed the gap with the group of upper middle-income countries, poverty reduction in low-income countries has been slower, and these countries are falling further behind. In line with this, the value of multidimensional poverty in Asia converged towards that found in Latin America and Eastern Europe, while sub-Saharan Africa's slow progress has led to a widening of the gap with the other regions. This confirms findings from monetary poverty studies and points to the existence of poverty traps.

Some additional analyses reveal further important policy information. While deprivations in all three dimensions of poverty have declined, the employment dimension has registered the smallest improvements. Moreover, the latter is the dimension that contributes the most to overall poverty: therefore, major attention should be given by policy makers to the functioning of labour markets. A preliminary analysis indicates that economic growth

correlates with poverty reduction, but this elasticity is much lower for our G-CSPI than for income poverty. This finding is in line with that of Santos et al. (2019), who used the MPI as a measure of multidimensional poverty (Santos et al., 2019). The direct policy implication is that, in order to address pockets of multidimensional poverty, a focus on the quantity aspect of growth is not enough. More attention must be given to the quality of the growth process and to the potential of social protection schemes and, more broadly, social policies to alleviate the multiple deprivations suffered by the poor.

Regarding the second objective – to investigate rural-urban differences in poverty – our analysis confirms that poverty is predominantly a rural phenomenon. The rural G-CSPI is more than four times higher than the urban G-CSPI, indicating a rural gap even higher than that found for income poverty (Castañeda et al., 2018). In most of the countries, rural poverty declined faster (in percentage points) than urban poverty, but that was not the case for more populous countries. Consequently, the urban bias (measured as the urban-rural G-CSPI ratio) on average did not change between 2000 and 2012. Differences, however, are present across regions. Countries in sub-Saharan Africa – and in particular those located in the southern part of the region – reduced poverty in rural areas substantially more than in urban areas. The same occurred in large countries, like Brazil and Mexico, and the south-eastern part of Europe.

As for the third objective, the first important finding is that there was almost no gender bias in 2000. This clearly contrasts with the claim made at the 1995 United Nations Fourth World Conference on Women in Beijing that 70 per cent of the poor were women. Our analysis suggests that multidimensional poverty declined more among men (-18.5 per cent compared with the 2000 value) than women (-15 per cent), therefore indicating a process of feminisation of poverty. This was triggered by the decline in deprivations in the employment dimension being much slower among women than men. While the intensity of this process is weak, this finding is new to the literature, as most existing studies conclude that there is no evidence of the feminisation of poverty. It should be, however, pointed out that previous findings were based on only a few countries, mostly high-income and upper middle-income countries. Our results build on data for almost 50 countries, mostly classified as low-income or lower middle-income countries.

Finally, a more disaggregated gender analysis of poverty trends reveals that the average picture highlighted above masks high heterogeneity across countries' income groups. The feminisation of poverty concerns mostly low-income countries. In lower middle-income countries, where gender differences were visible in 2000, female poverty declined more than male poverty.

In conclusion, this paper has presented new empirical evidence about trends in poverty. It has shown the potential of the G-CSPI database to track country and regional progress towards the achievement of SDG 1. Moreover, it has provided several policy-relevant findings. First, poverty is still a big problem, especially in sub-Saharan Africa, and interventions succeeding in alleviating income poverty are not necessarily effective in reducing multidimensional poverty. Indeed, our paper finds that the trends in income and multidimensional poverty diverge significantly in some countries and, the two forms of poverty must be considered complements rather than substitutes. Second, it highlights the need for new labour market policies in Africa, which could increase both the quantity and the quality of employment, together with a minimum wage. Third, it shows that most of the

poor still live in rural areas. Despite the recent emphasis on urbanisation and rural-urban migration, a considerable part of poverty-alleviating efforts should still focus on improving the lives of those in rural households.

## References

- Adams, R. H. (2004). Economic growth, inequality and poverty: Estimating the growth elasticity of poverty. *World Development*, 32(12), 1989-2014. doi:<https://doi.org/10.1016/j.worlddev.2004.08.006>
- Alkire, S., Chatterje, M., Conconi, A., Seth, S., & Vaz, A. (2014). Poverty in rural and urban areas: Direct comparisons using the global MPI 2014. OPHI Briefing 24, University of Oxford. <https://ophi.org.uk/poverty-in-rural-and-urban-areas/>
- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 95(7), 476-487. doi:<https://doi.org/10.1016/j.jpubeco.2010.11.006>
- Alkire, S., Roche, J. M., & Vaz, A. (2017). Changes over time in multidimensional poverty: Methodology and results for 34 countries. *World Development*, 94, 232-249.
- Alkire, S., & Santos, M. E. (2010). Acute multidimensional poverty: A new index for developing countries. OPHI Working Paper 38, University of Oxford. [https://www.ophi.org.uk/wp-content/uploads/OPHI-wp38\\_with\\_note.pdf](https://www.ophi.org.uk/wp-content/uploads/OPHI-wp38_with_note.pdf)
- Arndt, C., James, R. C., & Simler, K. R. (2006). Has economic growth in Mozambique been pro-poor? *Journal of African Economies*, 15(4), 571-602. doi:10.1093/jae/ejk011
- Bradshaw, S., Chant, S., & Linneker, B. (2018). Challenges and changes in gendered poverty: The feminization, de-feminization, and re-feminization of poverty in Latin America. *Feminist Economics*, 1-26.
- Burchi, F., De Muro, P., & Kollar, E. (2014). Which dimensions should matter for capabilities? A constitutional approach. *Ethics and Social Welfare*, 8(3), 233-247. doi:10.1080/17496535.2014.932415
- Burchi, F., De Muro, P., & Kollar, E. (2018). Constructing well-being and poverty dimensions on political grounds. *Social Indicators Research*, 137(2), 441-462. doi:10.1007/s11205-017-1618-0
- Burchi, F., Rippin, N., & Montenegro, C. E. (2018). *From income poverty to multidimensional poverty? An international comparison* (IPC-IG Working Paper 174). International Policy Centre for Inclusive Growth. [http://www.ipc-undp.org/pub/eng/WP174\\_From\\_income\\_poverty\\_to\\_multidimensional\\_poverty.pdf](http://www.ipc-undp.org/pub/eng/WP174_From_income_poverty_to_multidimensional_poverty.pdf)
- Burchi, F., Rippin, N., & Montenegro, C. E. (in press). The measurement of multidimensional poverty across countries: A proposal for selecting dimensions. In V. Beck, S. Gosepath, H. Hahn, & R. Lepenies (Eds.), *Dimensions of poverty*. Springer.
- Castañeda, A., Doan, D., Newhouse, D., Nguyen, M. C., Uematsu, H., & Azevedo, J. P. (2018). A new profile of the global poor. *World Development*, 101, 250-267. doi:<https://doi.org/10.1016/j.worlddev.2017.08.002>
- Chant, S. (2010). Towards a (re)conceptualisation of the “Feminisation of Poverty”: Reflections on gender-differentiated poverty from The Gambia, Philippines and Costa Rica. In S. Chant (Ed.), *The international handbook of gender and poverty: Concepts, research, policy* (pp. 111-116). Cheltenham, UK: Edward Elgar Publishing.
- Checkley, W., Gilman, R. H., Black, R. E., Epstein, L. D., Cabrera, L., Sterling, C. R., & Moulton, L. H. (2004). Effect of water and sanitation on childhood health in a poor Peruvian peri-urban community. *The Lancet*, 363(9403), 112-118.
- Currie, L. (1979). Is there an urban bias? Critique of Michael Lipton’s “Why poor people stay poor?” *Journal of Economic Studies*, 6(1), 86-105. doi:10.1108/eb002499
- Datt, G. (2018). *Distribution-sensitive multidimensional poverty measures* (Policy Research Working Papers 8346). Washington, DC: The World Bank. <https://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-8346>
- Davids, T., & van Driel, F. (2010). Globalisation and the need for a ‘Gender Lens’: A discussion of dichotomies and orthodoxies with particular reference to the ‘Feminisation of Poverty’. In S. H. Chant (Ed.), *The international handbook of gender and poverty: Concepts, research, policy* (pp. 105-110). Cheltenham, UK: Edward Elgar Publishing.
- Dotter, C., & Klasen, S. (2014). *The Multidimensional Poverty Index: Achievements, conceptual and empirical issues*. Retrieved from [http://hdr.undp.org/sites/default/files/mpi\\_dotter\\_and\\_klasen.pdf](http://hdr.undp.org/sites/default/files/mpi_dotter_and_klasen.pdf)

- Duclos, J. Y., Sahn, D. E., & Younger, S. D. (2006). Robust multidimensional poverty comparisons. *The Economic Journal*, 116(514), 943-968.
- ECLAC (Economic Commission for Latin America and the Caribbean). (2014). *Social panorama of Latin America 2014*. Santiago de Chile: Author.
- Espinoza-Delgado, J., & Klasen, S. (2018). Gender and multidimensional poverty in Nicaragua: An individual based approach. *World Development*, 110, 466-491. doi:<https://doi.org/10.1016/j.worlddev.2018.06.016>
- Fink, G., Günther, I., & Hill, K. (2011). The effect of water and sanitation on child health: Evidence from the demographic and health surveys 1986-2007. *International Journal of Epidemiology*, 40(5), 1196-1204.
- Fisk, K., & Crawford, J. (2017). *IDM Fiji Study 2015-2016: Initial findings*. Retrieved from <https://iwda.org.au/assets/files/IDM-Fiji-Final-Study-Report-31072017.pdf>
- Flehtner, S. (2017). Growth miracle or endangered development? Vested interests, policy-making, and economic development in the Dominican Republic. *Journal of Economic Issues*, 51(2), 323-331. doi:10.1080/00213624.2017.1320510
- Fogden, J. (2009). *Access to safe drinking water and its impact on global economic growth*. Bothell, WA: HaloSource.
- Fox, L., Benfica, R. M., Ehrenpreis, M., Gaal, M. S., Nordang, H., & Owen, D. (2008). *Beating the odds: Sustaining inclusion in a growing economy: A Mozambique poverty, gender, and social assessment*. Washington, DC: World Bank.
- Fransman, T., & Yu, D. (2019). Multidimensional poverty in South Africa in 2001-16. *Development Southern Africa*, (36)1, 50-79.
- Fuller, J. A., Westphal, J. A., Kenney, B., & Eisenberg, J. N. (2015). The joint effects of water and sanitation on diarrhoeal disease: A multicountry analysis of the Demographic and Health Surveys. *Tropical Medicine & International Health*, 20(3), 284-292.
- Giliberti, L. (2013). Sistema educativo, jóvenes y desigualdades sociales: Un estudio sobre la escuela dominicana. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud*, 11(1), 151-162.
- Hanandita, W., & Tampubolon, G. (2016). Multidimensional poverty in Indonesia: Trend over the last decade (2003-2013). *Social Indicators Research*, 128(2), 559-587.
- Hanlon, J. (2007). *Is poverty decreasing in Mozambique*. Paper presented at the Open University, England  
Paper presented at the Inaugural Conference of the Instituto de Estudos Sociais e Económicos.
- Hunt, J., Bessell, S., Crawford, J., Fisk, K., Nguyen, H., Pham, T., ... Yap, M. (2017). *The individual deprivation measure: Methodology update 2017*. Retrieved from [http://www.individualdeprivationmeasure.org/wp-content/uploads/Methodology\\_Update\\_2017\\_FINAL\\_print-friendly.pdf](http://www.individualdeprivationmeasure.org/wp-content/uploads/Methodology_Update_2017_FINAL_print-friendly.pdf)
- IFAD (International Fund for Agricultural Development). (2016). *Rural development report*. Retrieved from <https://www.ifad.org/documents/38714170/39155702/Rural+development+report+2016.pdf/347402dda37f-41b7-9990-aa745dc113b9>
- Jenkins, S. P., & Lambert, P. J. (1997). Three 'I's of poverty curves, with an analysis of UK poverty trends. *Oxford Economic Papers*, 49(3), 317-327.
- Jolliffe, D. (2014). *A measured approach to ending poverty and boosting shared prosperity: Concepts, data, and the twin goals*. Washington, DC: World Bank Publications.
- Jolliffe, D., & Prydz, E. B. (2016). Estimating international poverty lines from comparable national thresholds. *The Journal of Economic Inequality*, 14(2), 185-198. doi:10.1007/s10888-016-9327-5
- Jones, G. A., & Corbridge, S. (2010). The continuing debate about urban bias: The thesis, its critics, its influence and its implications for poverty-reduction strategies. *Progress in Development Studies*, 10(1), 1-18. doi:10.1177/146499340901000101
- Lipton, M. (1977). *Why the poor stay poor: A study of urban bias in world development*. London: Temple Smith.

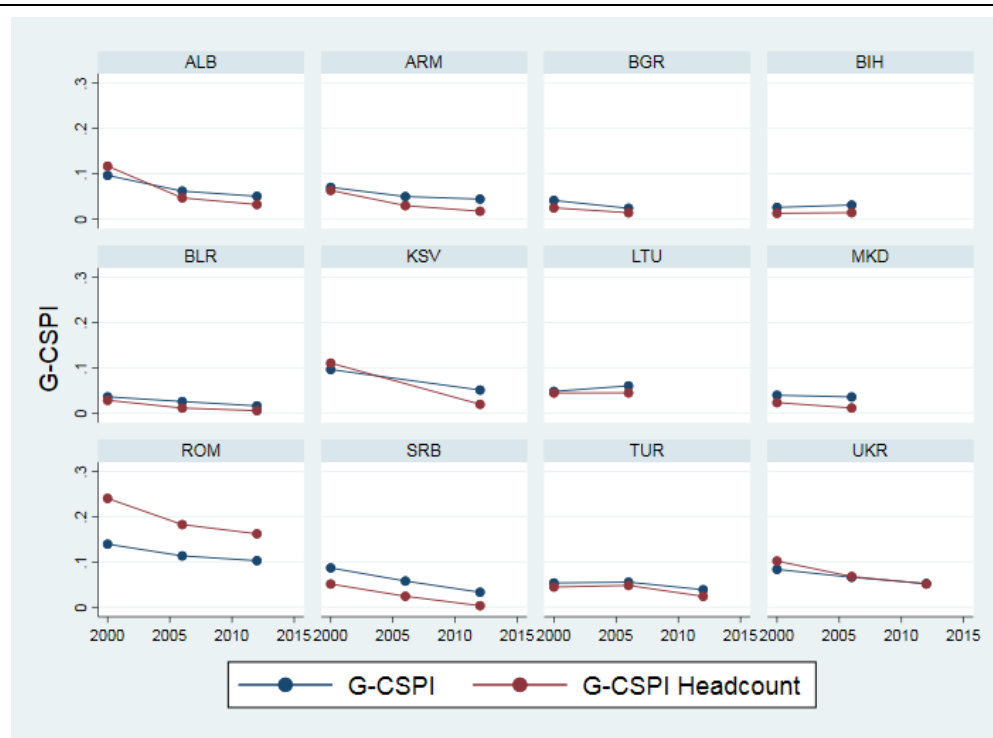
- Lustig, N. (2017). *Fiscal policy, income redistribution and poverty reduction in low and middle income countries* (Working Paper 448). Washington, DC: Center for Global Development.
- Lustig, N., Lopez-Calva, L. F., & Ortiz-Juarez, E. (2013). Declining inequality in Latin America in the 2000s: The cases of Argentina, Brazil, and Mexico. *World Development*, 44, 129-141. doi:<https://doi.org/10.1016/j.worlddev.2012.09.013>
- Mahadevan, R., & Hoang, V.-N. (2016). The nexus between poverty and deprivation in Vietnam. *Journal of Policy Modeling*, 38(2), 290-303.
- Mahrt, K., & Masumbu, G. (2016). Estimating multidimensional poverty in Zambia. *Measuring Poverty and Wellbeing in Developing Countries*, 242.
- Medeiros, M., & Costa, J. (2010). The ‘feminisation of poverty’: A widespread phenomenon. In S. Chant (Ed.), *The international handbook of gender and poverty: Concepts, research, policy* (pp. 95-100). Edward Elgar Publishing.
- Mideros, A. (2012). Ecuador: Defining and measuring multidimensional poverty, 2006-2010. *Cepal Review*.
- Milan, A., Oakes, R., & Campbell, J. (2016). *Tuvalu: Climate change and migration – Relationships between household vulnerability, human mobility and climate change*. Report no. 18. Bonn: United Nations University Institute for Environment and Human Security (UNU-EHS). <https://www.unescap.org/resources/tuvalu-climate-change-and-migration-relationships-between-household-vulnerability-human>
- Narayan-Parker, D., & Patel, R. (2000). *Voices of the poor: Can anyone hear us?* (Vol. 1). Washington, DC: World Bank Publications.
- Paus, E. (2012). Confronting the middle income trap: Insights from small latecomers. *Studies in Comparative International Development*, 47(2), 115-138. doi:10.1007/s12116-012-9110-y
- Ravallion, M. (2011). A comparative perspective on poverty reduction in Brazil, China, and India. *The World Bank Research Observer*, 26(1), 71-104.
- Reddy, S. G. (2011). The emperor’s new suit global poverty estimates reappraised. In K. Jomo & A. Chowdhury (Eds.), *Poor poverty: The impoverishment of analysis, measurement and policies*. London and New York: United Nations Publications and Bloomsbury Publishing.
- Reddy, S. G., & Pogge, T. (2010). How not to count the poor. In J. Stiglitz, S. Anand, & P. Segal (Eds.), *Debates in the measurement of poverty*. Oxford: Oxford University Press.
- Rippin, N. (2014). *Considerations of efficiency and distributive justice in multidimensional poverty measurement*. Doctoral Thesis, University of Goettingen.
- Rippin, N. (2016). Multidimensional poverty in Germany: A capability approach. *Forum for Social Economics*, 45(2-3), 230-255. doi:10.1080/07360932.2014.995199
- Rippin, N. (2017). Efficiency and distributive justice in multidimensional poverty issues. In R. White (Ed.), *Measuring multidimensional poverty and deprivation* (pp. 31-67). New York: Palgrave Macmillan.
- Robeyns, I. (2005). The capability approach: A theoretical survey. *Journal of Human Development*, 6(1), 93-117. doi:10.1080/146498805200034266
- Sahn, D. E., & Stifel, D. C. (2003). Urban-rural inequality in living standards in Africa. *Journal of African Economies*, 12(4), 564-597. doi:10.1093/jae/12.4.564
- Santos, M. E., Dabus, C., & Delbianco, F. (2019). Growth and poverty revisited from a multidimensional perspective. *The Journal of Development Studies*, 55(2), 260-277. doi:10.1080/00220388.2017.1393520
- Sen, A. (1982). *Poverty and famines: An essay on entitlement and deprivation*. Oxford: Oxford University Press.
- Sen, A. (1985). *Capabilities and commodities*. Amsterdam and New York: North-Holland.
- Sen, A. (1987). *The standard of living*. Cambridge: Cambridge University Press.
- Sen, A. (1999). *Development as freedom*. Oxford: Oxford University Press.



- Sen, G. (2010). Poor households or poor women: Is there a difference? In S. Chant (Ed.), *The international handbook of gender and poverty: Concepts, research, poverty* (pp. 101-104). Cheltenham, UK: Edward Elgar.
- Silber, J. (2011). A comment on the MPI index. *The Journal of Economic Inequality*, 9(3), 479. doi:10.1007/s10888-011-9198-8
- Thorbecke, E. (2007). Multidimensional poverty: Conceptual and measurement issues. In N. Kakwani & J. Silber (Eds.), *The many dimensions of poverty* (pp. 3-19). Houndmills: Palgrave Macmillan.
- Tosi, F. (2015). *The constitutional approach to poverty measurement. A multiple deprivations framework for high-income countries*. Rome: Roma Tre University.
- Tran, V. Q., Alkire, S., & Klasen, S. (2015). Static and dynamic disparities between monetary and multidimensional poverty measurement: Evidence from Vietnam. In T. I. Garner & K. S. Short (Eds.), *Measurement of poverty, deprivation, and economic mobility* (pp. 249-281). Bingley, UK: Emerald Group Publishing Limited.
- UNDP (United Nations Development Programme). (1995). *Human development report 1995*. New York: Author.
- UNDP. (1997). *Human development report 1997: Human development to eradicate poverty*. New York: Oxford University Press.
- UNDP. (2010). *The real wealth of nations: Pathways to human development*. New York: Author.
- UNDP. (2013). *The rise of the South: Human progress in a diverse world. Human Development Report*. New York: Author.
- UNICEF (United Nations International Children's Emergency Fund). (2009). *The state of the world's children 2009: Maternal and newborn health* (Vol. 9). New York: Author. [https://www.unicef.org/publications/files/SOWC\\_2009\\_Main\\_Report\\_03112009.pdf](https://www.unicef.org/publications/files/SOWC_2009_Main_Report_03112009.pdf)
- Varshney, A. (1993). Introduction: Urban bias in perspective. *The Journal of Development Studies*, 29(4), 3-22. doi:10.1080/00220389308422293
- Wisor, S., Bessell, S., Castillo, F., Crawford, J., Donaghue, K., & Hunt, J. (2016). *The individual deprivation measure. A gender-sensitive approach to poverty measurement*. Australia: International Women's Development Agency.
- World Bank. (2012). *Zambia poverty assessment: Stagnant poverty and inequality in a natural resource-based economy*. Retrieved from <http://documents.worldbank.org/curated/en/495301468170959601/pdf/810010ESW0P1230Box0379831B00PUBLIC0.pdf>
- World Bank (2018). *Poverty and shared prosperity 2018: Piecing together the poverty puzzle*. Washington, DC: World Bank Publications.

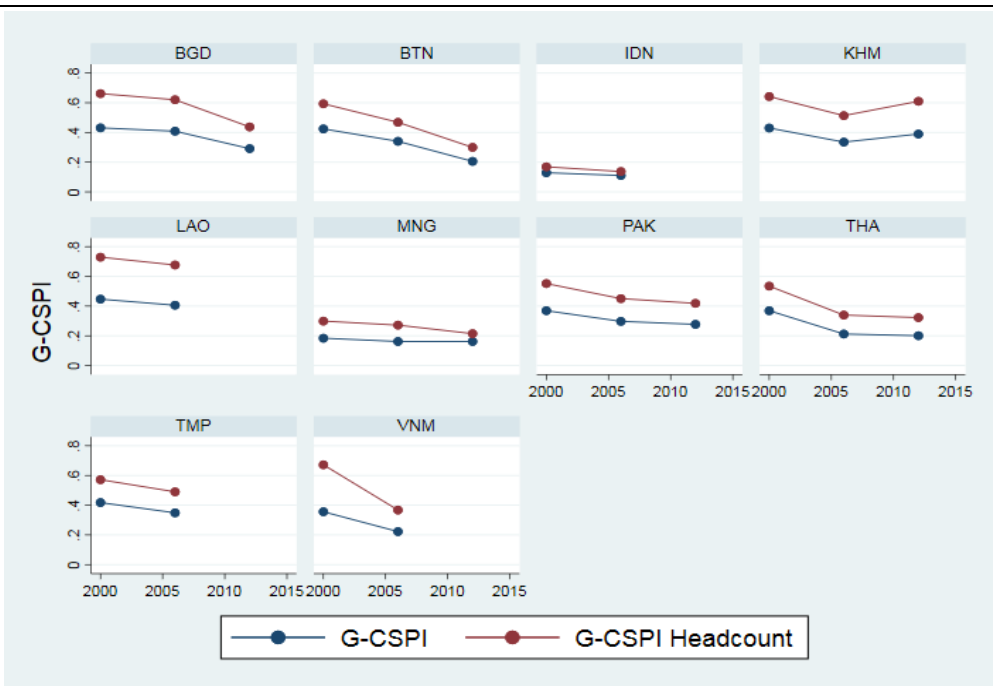
## Appendix

**Figure A1: G-CSPI changes by country, Europe and central Asia**



Source: Authors

**Figure A2: G-CSPI changes by country, other Asia**



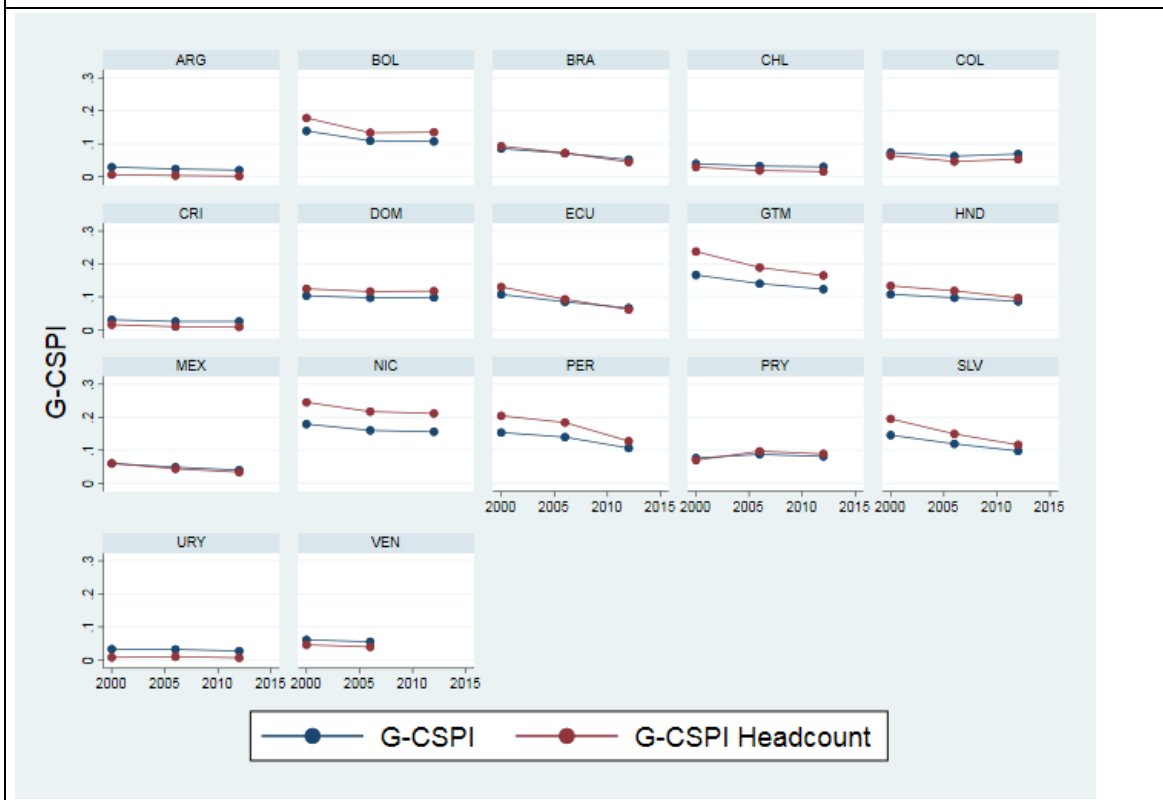
Source: Authors

**Figure A3: G-CSPI changes by country, sub-Saharan Africa**

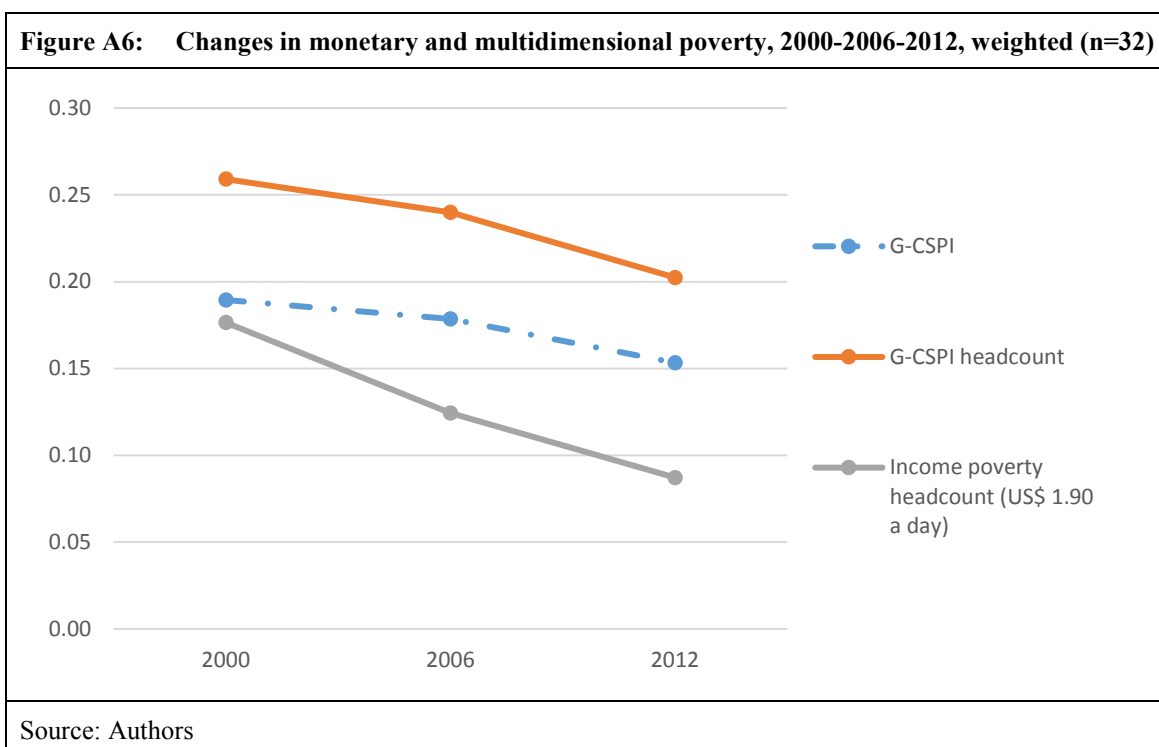
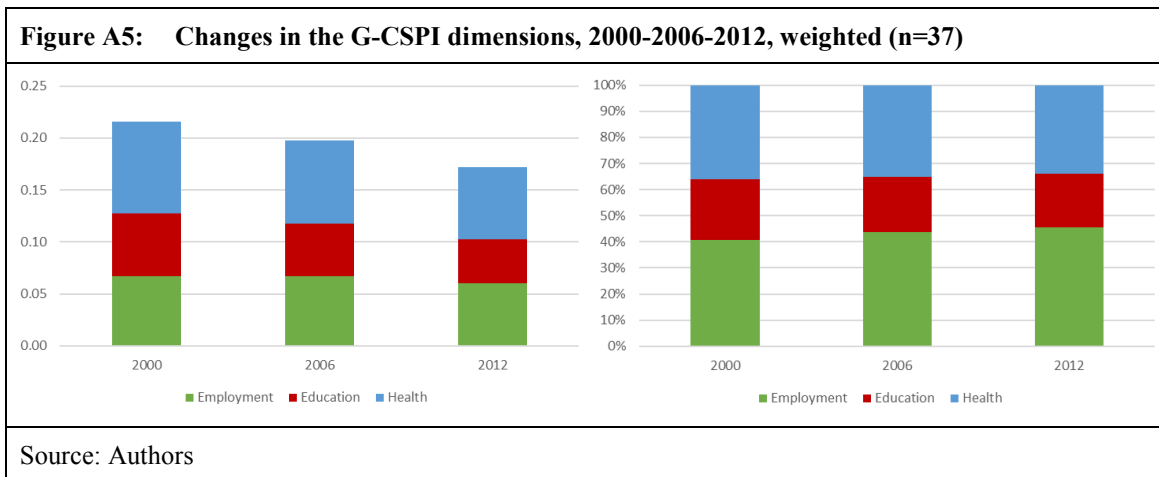


Source: Authors

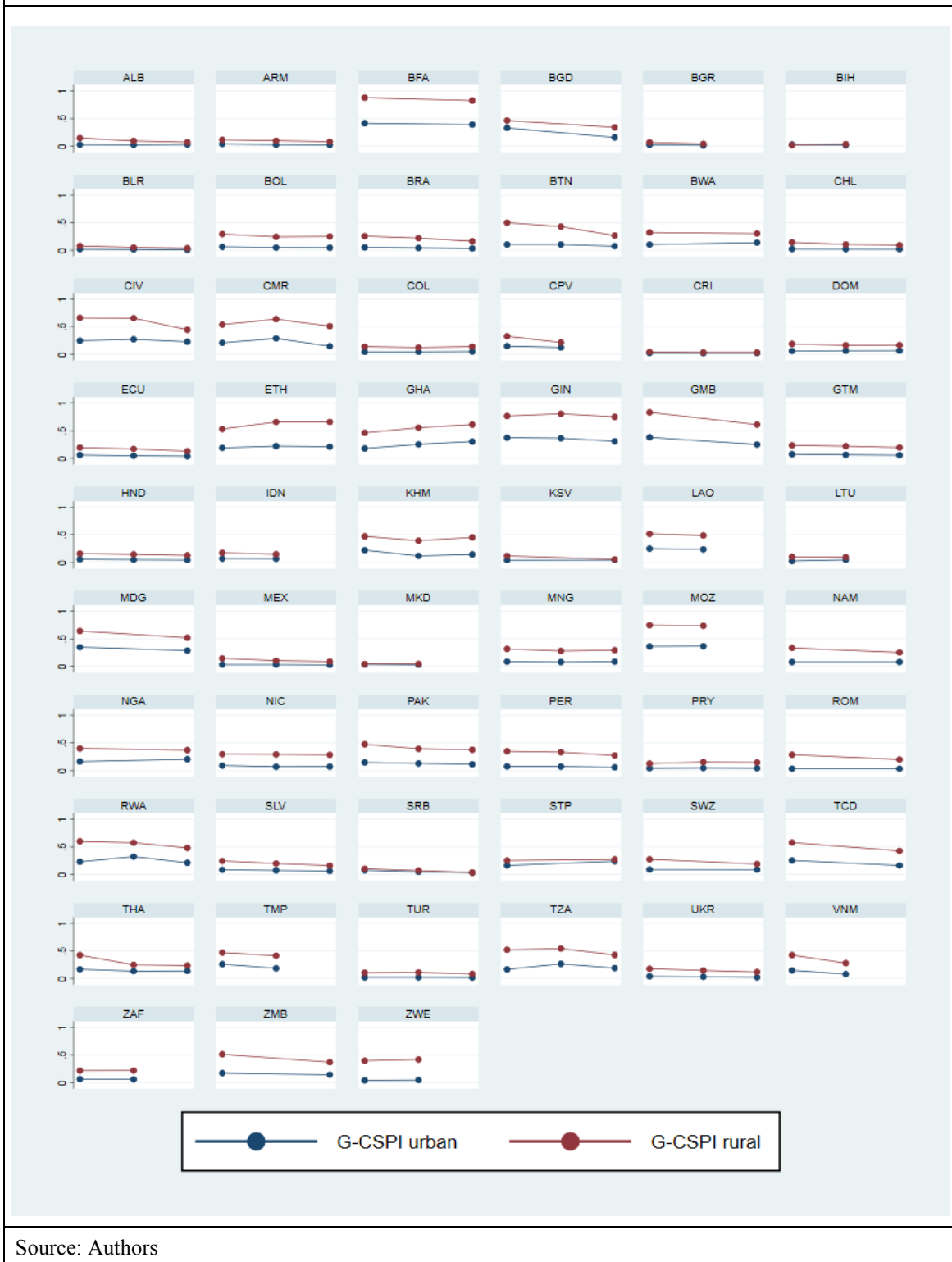
**Figure A4: G-CSPI changes by country, Latin America and the Caribbean**



Source: Authors



**Figure A7: Trends in urban and rural G-CSPI by country (n=57)**



Source: Authors

<b>Table A1: Survey-years used in this study for the calculation of the overall G-CSPI and income poverty, by country and period (n=60)</b>												
	<b>G-CSPI</b>									<b>USD 1.90 income poverty</b>		
	<b>Period 1 (1998-2003)</b>			<b>Period 2 (2004-2008)</b>			<b>Period 3 (2009-2015)</b>			<b>Period 1 (1998-2003)</b>	<b>Period 2 (2004-2008)</b>	<b>Period 3 (2009-2015)</b>
	<b>Survey years</b>	<b>G-CSPI value</b>	<b>G-CSPI headcount</b>	<b>Survey years</b>	<b>G-CSPI</b>	<b>G-CSPI headcount</b>	<b>Survey years</b>	<b>G-CSPI</b>	<b>G-CSPI headcount</b>	<b>Survey years</b>	<b>Survey years</b>	<b>Survey years</b>
Albania	2002	0.096	0.117	2005, 2008	0.061	0.047	2012	0.050	0.032	2002	2005, 2008	2012
Argentina	1998, 1999, 2000, 2001, 2002, 2003	0.029	0.007	2004, 2005, 2006, 2007, 2008	0.024	0.004	2009, 2010, 2011, 2012, 2013, 2014	0.020	0.002	1998, 1999, 2000, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011, 2012, 2013, 2014
Armenia	1998, 2001, 2002, 2003	0.070	0.063	2004, 2008	0.049	0.029	2009, 2011	0.044	0.017	2001, 2002, 2003	2004, 2008	2009, 2011
Bangladesh	2003	0.431	0.662	2005	0.409	0.620	2010, 2013, 2015	0.292	0.438	-	2005	2010
Belarus	2001, 2002, 2003	0.036	0.028	2004, 2005, 2006, 2007, 2008	0.026	0.011	2009, 2010	0.016	0.005	2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010
Bhutan	2003	0.424	0.593	2007	0.341	0.469	2012	0.206	0.300	2003	2007	2012
Bolivia	1999, 2000, 2001, 2002, 2003	0.139	0.178	2005, 2006, 2007, 2008	0.109	0.133	2009, 2011, 2012, 2014,	0.107	0.135	1999, 2000, 2001, 2002	2005, 2006, 2007, 2008	2009, 2011, 2012, 2014
Bosnia and Herzegovina	2001	0.026	0.012	2007	0.031	0.014	-	-	-	2001	2007	-
Botswana	2002	0.187	0.273	-	-	-	2009	0.201	0.290	2002	-	2009
Brazil	1998, 1999, 2001, 2002, 2003	0.085	0.093	2004, 2005, 2006, 2007, 2008	0.071	0.072	2009, 2011, 2012, 2014	0.052	0.045	1998, 1999, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2011, 2012, 2014
Bulgaria	2001, 2003	0.041	0.025	2007	0.024	0.014	-	-	-	2001, 2003	2007	-
Burkina Faso	2003	0.777	0.875	-	-	-	2009, 2014	0.700	0.821	2003	-	2009, 2014
Cabo Verde	2000	0.224	0.327	2007	0.160	0.220	-	-	-	-	2007	-
Cambodia	2003	0.430	0.642	2006, 2008	0.335	0.514	2009	0.390	0.610	-	-	-
Cameroon	2001	0.408	0.569	2007	0.456	0.664	2014	0.313	0.450	2001	2007	2014
Chad	2003	0.539	0.771	-	-	-	2011	0.376	0.582	2003	-	2011
Chile	1998, 2000, 2003	0.039	0.029	2006	0.032	0.019	2009, 2011, 2013	0.030	0.016	1998, 2000, 2003	2006	2009, 2011, 2013
Colombia	1999, 2001	0.073	0.064	2006, 2007, 2008	0.062	0.046	2009, 2010, 2014	0.069	0.053	1999, 2001	2008	2009, 2010, 2014

Costa Rica	2000, 2001, 2002, 2003	0.031	0.016	2004, 2005, 2006, 2007, 2008	0.026	0.010	2009, 2010, 2012	0.026	0.009	2000, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2012
Côte d'Ivoire	2002	0.461	0.600	2008	0.498	0.651	2015	0.342	0.518	2002	2008	2015
Dominican Republic	2000, 2001, 2002, 2003	0.104	0.125	2004, 2005, 2006, 2007, 2008	0.097	0.117	2009, 2010, 2011, 2013	0.099	0.118	2000, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011, 2013
Ecuador	1998, 2003	0.108	0.131	2005, 2006, 2007, 2008	0.085	0.093	2009, 2010, 2012, 2014	0.067	0.062	1998, 2003	2005, 2006, 2007, 2008	2009, 2010, 2012, 2014
El Salvador	1998, 1999, 2000, 2001, 2002, 2003	0.146	0.195	2004, 2005, 2006, 2007, 2008	0.119	0.150	2009, 2012, 2014	0.098	0.116	1998, 1999, 2000, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2012, 2014
Ethiopia	2000	0.478	0.743	2004	0.583	0.790	2011	0.565	0.751	-	2004	-
Gambia, The	1998	0.636	0.734	-	-	-	2015	0.378	0.506	1998		2015
Ghana	1998	0.360	0.489	2005	0.431	0.581	2012	0.447	0.596	1998	2005	2012
Guatemala	2000	0.167	0.238	2004, 2006	0.141	0.189	2011	0.124	0.165	2000	2006	-
Guinea	2002	0.633	0.776	2007	0.650	0.774	2012	0.586	0.711	2002	2007	2012
Honduras	1998, 1999, 2002, 2003	0.108	0.134	2004, 2005, 2006, 2007, 2008	0.098	0.119	2009, 2010, 2011	0.087	0.097	1998, 1999, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011
Indonesia	1999, 2000	0.129	0.169	2005	0.111	0.137	-	-	-	1999, 2000	2005	-
Kosovo	2002	0.096	0.110	-	-	-	2010, 2011	0.051	0.019	-	-	2010, 2011
Lao PDR	2002	0.447	0.729	2007	0.406	0.677	-	-	-	2002	2007	-
Lithuania	1998, 2000, 2001, 2003	0.048	0.044	2004, 2008	0.060	0.045	-	-	-	1998, 2000, 2001, 2003	2004, 2008	-
Macedonia, FYR	1999, 2000, 2002, 2003	0.039	0.023	2004, 2005, 2006	0.036	0.011	-	-	-	2000, 2002, 2003	2004, 2005, 2006	-
Madagascar	1999, 2001	0.572	0.776	-	-	-	2012	0.474	0.715	1999, 2001	-	2012
Mexico	1998, 2000, 2002,	0.060	0.060	2004, 2005, 2006, 2008	0.049	0.044	2010, 2012	0.040	0.033	1998, 2000, 2002	2004, 2005, 2006, 2008	2010, 2012
Mongolia	2002	0.184	0.299	2007	0.162	0.272	2009, 2010, 2011	0.162	0.215	2002	2007	2010, 2011
Mozambique	2002	0.613	0.754	2008	0.612	0.784	-	-	-	2002	2008	-
Namibia	2003	0.227	0.352	-	-	-	2009	0.177	0.250	2003	-	2009
Nicaragua	1998	0.179	0.245	2005	0.160	0.217	2009	0.156	0.212	1998	2005	2009
Nigeria	2003	0.289	0.409	-	-	-	2009	0.303	0.462	2003	-	2009

Comparing global trends in multidimensional and income poverty and assessing horizontal inequalities

Pakistan	2001	0.369	0.552	2004, 2005, 2006, 2008	0.297	0.450	2010, 2011, 2013	0.277	0.419	2001	2004, 2005	2010, 2011, 2013
Paraguay	1999, 2001, 2002, 2003	0.076	0.070	2004, 2005, 2006, 2007, 2008	0.088	0.097	2009, 2010, 2011, 2012	0.081	0.089	1999, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011, 2012
Peru	1998, 1999, 2000, 2001, 2002, 2003	0.154	0.204	2004, 2005, 2006, 2007, 2008	0.140	0.184	2009, 2010, 2011, 2012, 2013, 2014	0.107	0.128	1998, 1999, 2000, 2001, 2002, 2003	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011, 2012, 2013, 2014
Romania	2001, 2002, 2003	0.139	0.240	2004, 2007, 2008	0.113	0.183	2009, 2010, 2011, 2013	0.103	0.162	2001, 2002, 2003	2004, 2007, 2008	2009, 2010, 2011, 2013
Rwanda	2000	0.558	0.772	2005	0.531	0.739	2010, 2013	0.434	0.640	2000	2005	2010, 2013
São Tomé and Príncipe	2000	0.202	0.287	-	-	-	2010	0.256	0.395	2000	-	2010
Serbia	2003	0.087	0.051	2004, 2005, 2007, 2008	0.058	0.024	2009, 2010	0.033	0.003	2003	2004, 2005, 2007, 2008	2009, 2010
South Africa	2002	0.125	0.171	2004, 2005, 2006, 2007, 2008	0.084	0.093	2009, 2010	0.107	0.134	-	2005, 2008	2010
Swaziland	2000	0.220	0.314	-	-	-	2009	0.160	0.216	2000	-	2009
Tanzania	2000	0.443	0.683	2006, 2007	0.466	0.744	2009, 2011, 2014	0.351	0.545	2000	2007	2011
Thailand	2000	0.369	0.535	2006	0.212	0.340	2011	0.201	0.323	2000	2006	2011
Timor-Leste	2001	0.418	0.572	2007	0.349	0.490	-	-	-	2001	2007	-
Turkey	2003	0.054	0.045	2004, 2005	0.055	0.048	2012	0.039	0.024	2003	2004, 2005	2012
Ukraine	2002	0.084	0.102	2004, 2005, 2006, 2007, 2008	0.066	0.068	2009, 2010, 2011, 2012, 2013	0.052	0.051	2002	2004, 2005, 2006, 2007, 2008	2009, 2010, 2011, 2012, 2013
Uruguay	1998, 2000, 2001, 2002, 2003	0.033	0.008	2004, 2005, 2006, 2007, 2008	0.032	0.010	2009, 2010, 2011, 2012, 2014	0.027	0.007	-	2005, 2006, 2007, 2008	2009, 2010, 2011, 2012, 2014
Venezuela, RB	1998, 1999, 2000, 2001, 2002, 2003	0.061	0.046	2005, 2006	0.055	0.040	-	-	-	1998, 1999, 2001, 2002, 2003	2005, 2006	-
Vietnam	1998	0.356	0.672	2006, 2008	0.223	0.367	-	-	-	1998	2006, 2008	-
Zambia	1998, 2002	0.382	0.583	-	-	-	2010, 2015	0.272	0.420	1998, 2002	-	2010, 2015
Zimbabwe	2001	0.267	0.431	2007	0.275	0.473	-	-	-	-	-	-
Source: Authors												



<b>Table A2: G-CSPI changes, 2000-2012, unweighted</b>				
	<b>2000</b>	<b>2012</b>	<b>Total % change</b>	<b>Countries</b>
<b>G-CSPI</b>	0.25	0.20	-19.77%	48
<b>G-CSPI headcount</b>	0.33	0.27	-19.40%	48
Source: Authors				

Publications of the German Development Institute /  
Deutsches Institut für Entwicklungspolitik (DIE)

Discussion Papers

- 1/2019 Schöffberger, Irene. *Migration: solid nations and liquid transnationalism? The EU's struggle to find a shared course on African migration 1999-2019* (34 pp.). ISBN 978-3-96021-091-7. DOI:10.23661/dp1.2019.
- 32/2018 Burchi, Francesco, & Christoph Strupat. *Unbundling the impacts of economic empowerment programmes: Evidence from Malawi* (62 pp.). ISBN 978-3-96021-089-4. DOI:10.23661/dp32.2018.
- 31/2018 Hahn, Tina, & Georgeta Vidican Auktor. *Industrial policy in Morocco and its potential contribution to a new social contract* (67 pp.). ISBN 978-3-96021-088-7. DOI: 10.23661/dp31.2018.
- 30/2018 Hulse, Merran, Lisa Gürth, Helena Kavsek, Verena Stauber, Daniel Wegner, & Jan Weinreich. *Civil society engagement in regional governance: A network analysis in Southern Africa* (51 pp.). ISBN 978-3-96021-087-0. DOI: 10.23661/dp30.2018.
- 29/2019 Munir-Asen, Katrina. *(Re)negotiating refugee protection in Malaysia: Implications for future policy in refugee management* (31 pp.). ISBN 978-3-96021-086-3. DOI:10.23661/dp29.2018.
- 28/2018 Funk, Evelyn, Lisa Groß, Julia Leininger, & Armin von Schiller. *Lessons learnt from impact-oriented accompanying research: Potentials and limitations to rigorously assessing the impact of governance programmes* (34 pp.). ISBN 978-3-96021-085-6. DOI:10.23661/dp28.2018.
- 27/2018 Nowack, Daniel. *Cultural values, attitudes, and democracy promotion in Malawi: How values mediate the effectiveness of donor support for the reform of presidential term limits and family law* (52 pp.). ISBN 978-3-96021-084-9. DOI: 10.23661/dp27.2018.
- 26/2018 Hulse, Merran. *Cultural values, popular attitudes and democracy promotion: How values mediate the effectiveness of donor support for term limits and LGBT+ rights in Uganda* (45 pp.). ISBN 978-3-96021-082-5. DOI: 10.23661/dp26.2018.
- 25/2018 El-Haddad, Amirah. *Exporting for growth: Identifying leading sectors for Egypt and Tunisia using the Product Space Methodology* (49 pp.). ISBN 978-3-96021-075-7. DOI: 10.23661/dp25.2018.
- 24/2018 Chmiel, Oskar. *The engagement of Visegrad countries in EU-Africa relations* (40 pp.). ISBN 978-3-96021-081-8. DOI: 10.23661/dp24.2018.
- 23/2018 Belke, Ansgar, & Ulrich Volz. *Capital flows to emerging market and developing economies: Global liquidity and uncertainty versus country-specific pull factors* (57 pp.). ISBN 978-3-96021-080-1. DOI: 10.23661/dp23.2018.
- 22/2018 Baydag, Rena Melis, Stephan Klingebiel, & Paul Marschall. *Shaping the patterns of aid allocation: A comparative analysis of seven bilateral donors and the European Union* (42 pp.). ISBN 978-3-96021-079-5. DOI: 10.23661/dp22.2018.
- 21/2018 Wehrmann, Dorothea. *Incentivising and regulating multi-actor partnerships and private sector engagement in development cooperation* (50 pp.). ISBN 978-3-96021-078-8. DOI:10.23661/dp21.2018.

[Price: EUR 6.00; publications may be ordered from the DIE or through bookshops.]

For a complete list of DIE publications:  
[www.die-gdi.de](http://www.die-gdi.de)