Changes in income, education and health inequality over the last 20 years: evidence from Latin America, sub-Saharan Africa and South Asia

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ABSTRACT

This paper analyses the interactions among income, health and educational inequality, and reviews changes in the distribution of income, health and education during the last three decades in Latin America, sub-Saharan Africa and South Asia. The analysis tries to relate such changes to the development strategies followed by the countries of these regions during this period. Such strategies have exerted a considerable influence on public policy and human development inequality. The paper concludes with a set of policies that would help reduce inequality in these three dimensions based on the interconnections among them.

Main findings of the study

From 2002 to 2012, Latin America recorded an average decline of 6.1 Gini points in the distribution of income. Such a large and near universal decrease was unparalleled by other regions of the world, which, in most cases, recorded a worsening of income inequality. This unprecedented result stemmed from the 'left turn' in the political orientation of incumbent governments in the 2000s, following the return to democracy in the 1990s. In several countries of the region, the inequality decline was facilitated by improved global economic conditions, but would not have occurred without progressive policies introduced in the fields of education and health, income transfers, the labour market and taxation. Innovative, if prudent, macroeconomic policies avoided a repeat of the financial crises observed in the past and so contributed to the inequality decline. The stagnation or increase of inequality observed in about half of the countries of the region during 2013 to 2014 seems to be related to the exhaustion of the redistributive potential of the policy package mentioned above, to a worsening in global economic conditions and to recent macroeconomic policy mistakes in countries such as Argentina and Brazil.

Latin America's large income inequality decline was due to a considerable extent to a sharp improvement in the distribution of education and health status, which generated important gains in the inequality-adjusted human development index. In fact, the decline in income inequality was driven, *inter alia,* by a considerable improvement in the level and distribution of education, following a large increase in average public expenditure on education per child from US $320 (constant purchasing power parity or PPP) in 1990 to $756 in 2000 to $1,451 in 2010. As a result, the net secondary enrolment rate and its interquintile ratio improved in all 16 countries with available data (Table 2). In 13 of them, the fastest gains in the level and distribution of secondary enrolments took place during the 'left turn' of 2002 to 2013. Tertiary enrolments also improved (Table 3). However, while the interquintile ratio improved in all countries but Brazil, the absolute distance between the enrolment rates of the first and top quintile rose in almost half of the countries. Consistent with the above results, the Gini index of the distribution of years of education declined sharply over 2000 to 2013. The fastest decline was for 20 to 30 year olds who benefitted from the progressive educational policy of the 1990s and, especially, from the targeting of educational efforts to the children of the poor during the 2000s. The Barro-Lee series on the Gini index of the years of education for the workforce produce similar results.

As for the health dimension of human development, World Health Organization (WHO) macro-data report a rapid increase in life expectancy at birth from 68.4 years to 74.5 years between 1980 and 1995 and 2000 and 2015. Such improvement is consistent with changes in the under-five mortality rate for seven low-income countries with at least two DHS surveys over the 1995-2015 period. The rate fell over these years in all seven countries analysed except Honduras, where it

stagnated (Table 6), while the interquintile ratio fell in four cases but rose in two. The decline in the under-five mortality rate was due to falling income inequality, a universal rise in average vaccination coverage and the fall of its interquintile ratio in five out of seven countries. An additional equalizing factor was the rise in the percentage of women (mothers) with secondary or higher education in four out of the six countries analysed, and the improvement of the interquintile ratio in two-thirds of them.

In sub-Saharan Africa, changes in human development recorded during the 2000s were mixed. While GDP per capita grew throughout the region, the distribution of household consumption per capita improved in 17 countries, but deteriorated in 12 relying mainly on the extraction and export of oil and metals (Figure 4). A key factor affecting most of the changes in consumption inequality was the evolution of the sectoral composition of value added. Inequality fell in countries that witnessed an increase in the value added share of labour-intensive sectors such as agriculture, manufacturing, construction and some services, while it rose where growth and exports were driven by extractive activities, skill-intensive services, public services and highly unequal informal services. The changing distribution of human capital, land and other assets generated in many countries a negative effect on consumption inequality. In turn, changes in global economic conditions had a mixed effect, while domestic policies, such as direct taxation, the expansion of secondary education and social spending were generally equalizing. There is some evidence that where social spending increased, consumption inequality declined (Figure 7). Macroeconomic policies were generally equalizing, except in the case of trade and financial liberalization (Figure 6). The modest decline in the incidence of HIV/AIDS since the mid-2000s and the fall in the number of conflicts exerted favourable, if limited, influences on the level of inequality.

DHS and WHO data on the health status of the population point to large aggregate improvements epitomized by a rise in life expectancy at birth to 60 years by 2015, and a rapid aggregate decline in under-five mortality in 22 of 26 countries analysed. Despite such improvements, from 2010 to 2015, six West African countries still had under-five average year mortality rates higher than 100 per 1,000 (Table 11). Aggregate gains were characterized by frequent increases in the interquintile ratio, which worsened in 12 out of 26 countries, did not change appreciably in 8, and, despite an average increase in health expenditure as a share of GDP, declined in only 7. This unequalizing progress correlates with the unequal gains recorded in three of the interquintile ratio's main determinants, i.e., the increase in consumption inequality in 12 countries, and the often unequalizing progress in secondary and higher education among women (a proxy of mothers), and in the vaccination rate. For instance, the average years of education of the population of over 15 years of age increased in 88 percent of the countries, but its interquintile ratio improved in only 61 percent. Likewise, the average vaccination rate improved in 69 per cent of cases, but its interquintile ratio

improved in only 59 percent of the cases. Overall, in 15 countries out of 27, there was a worsening in one of these two key determinants of the distribution of under-five mortality.

Educational inequality followed a similar pattern of change. Improvements in the average level of education were positive, but the distribution of such gains across quintiles was uneven, as was the distribution of income. For instance, despite an uneven increase in public spending on education, which rose the most for tertiary education (the data concern only 12 countries—see Annex Table 1), the interquintile ratio of the distribution of years of education among 15 to 19 year olds improved in half of the countries but deteriorated or stagnated in the other half (Table 10). As for tertiary education, there was a near universal increase for men and—at lower rates—for women, though in both cases, these average improvements were characterized by a clear deterioration of their interquintile ratios (Annex Tables 2 and 3).

In the seven countries of South and South-East Asia with at least two DHS surveys over the period of analysis, progress in determinants of human development and their interquintile distribution was even more mixed than in sub-Saharan Africa. Despite exceptionally rapid growth in gross domestic product (GDP), much of the region (especially India) recorded a sharp increase in income inequality. In the seven countries analysed, income inequality rose in three, stagnated in two and fell in two. The surge in income inequality was driven by a rise in the skill premium, an increase in the capital share in total income, and limited redistribution via taxes and transfers. The distribution of the years of education across quintiles for 15 to 19 year olds was uneven, as four countries recorded an improvement and three a stagnation despite the increased volume of public expenditure as a share of rising GDP (the data on public expenditure on education are limited and inconclusive—see Annex Table 1). Persistent educational inequality is singled out by Kanbur et al. (2014) as responsible for up to 45 percent of the rising level of income inequality in the region. While average health conditions (proxied by the under-five mortality rate) improved in all seven countries analysed here, the interquintile distribution of such gains deteriorated in six (Table 18). This unsatisfactory result was due to a skewed distribution of vaccination coverage across income quintiles, despite an increase in public and private health expenditure on GDP. It was due also to completely uneven distribution across quintiles of the increase over time of the proportion of women with secondary or higher education.

These less than satisfactory results were possibly in part explained by a slow increase or stagnation in government spending on education. An additional factor that could explain the limited improvement in various dimensions of well-being in this region is the effect of path-dependent social norms that discriminate against marginal groups in the access to the labour market, schooling and health care. While we provide no data on this, the arguments put forward by Ghosh (2015) illustrate

the deep-seated and unequalizing labour market, educational and health segregation suffered by minority groups.

The paper concludes by discussing a package of policies shown to reduce income, educational and health inequality. It must be underlined that, as noted in the second section, an improvement in any of these three dimensions generates—*ceteris paribus*—positive spillover effects on the other two components. This is true also in case of deterioration. The measures proposed in the final section can be divided into social policies, structural policies and macroeconomic policies. The first group includes an increase in well-targeted public and private expenditure on education (especially secondary education), public health (including water and sanitation), population policies, conditional and non-conditional cash transfers (especially in sub-Saharan Africa and South Asia), progressive labour policies and an intensification of progressive taxation. Econometric analysis has shown that such policies reduced—*ceteris paribus*—income inequality in Latin America and sub-Saharan Africa during the 2000s.

In turn, inequality-decreasing structural policies include a reduction of asset inequality (i.e., in the distribution of land, human capital and access to credit), and a correction of discriminatory market failures, especially in highly skewed credit and insurance markets. They include also the abolition of persistent and illegal discriminatory practices that severely penalize minority groups in the labour market, and in access to health, education, and water and sanitation.

Finally, inequality-reducing macroeconomic policies include cutting the foreign public debt and mobilizing domestic saving, as well as adopting countercyclical fiscal and monetary policies that avoid the severe recessionary effects of the traditional contractionary approach to macroeconomic stabilization. They require adopting an export-promoting exchange rate that shifts resources towards unskilled and semiskilled labour-intensive trading sectors, and regulating the financial sector, which is a frequent source of highly unequalizing banking and currency crises. Finally, there is a need to introduce trade policies that correct the unequalizing effects of traditional free trade by adopting an open-economy industrial policy.

Interrelations among different dimensions of inequality

Inequalities in income, health and education are closely interrelated among each other as well as with asset concentration, the level and incidence of public spending, and the evolution of social norms that discriminate against people based on caste, tribe, religion, ethnicity, gender and so on. Such inequalities are in most cases path-dependent and tend to reinforce each other. Most obviously, high asset inequality raises income concentration. The evidence shows that high land concentration worsens the distribution of agricultural incomes as well as that of urban incomes, due to the

migration to urban areas of landless labourers with a low reservation wage. In turn, high inequality in the distribution of incomes (and thus of savings) affects long-term asset concentration as well as the ability of households to access educational and health services, which in developing countries are only partly state financed. In turn, an increase in and an egalitarian distribution of education among parents (mothers in particular) improves both the average and the distribution of health across family quintiles, as mothers are the main health providers, and influence in an important way the health and nutrition of family members, children in particular.

Much is known about the two-way aggregate relation between income inequality and health inequality. To start with, it is generally accepted that, as the relation between income per capita and life expectancy at birth is concave, a decline in income inequality will—*ceteris paribus*—cause a rise in life expectancy among the poor and middle class that is larger than the almost imperceptible loss of life expectancy recorded by the rich. Second, as already noted, high inequality reduces access to health care by the poor, who often have insufficient income to buy health services in the market or pay the user-fees often levied in public clinics. High inequality also reduces the state capacity to tax the elites and provide state-subsidized health services to all. Third, there is evidence that high vertical and horizontal inequality raise the crime rate, social and ethnic conflicts, and the number of violent deaths. Fourth, there is also evidence that high inequality reduces social cohesion and the ability of communities to undertake collective action in housing, water supply, basic health and education, and road construction. Finally, there is considerable—though controversial—evidence that high income inequality affects long-term health and educational status via a decline in GDP growth. Indeed, most theories and some empirical evidence suggest that GDP growth slows over the long term as a result—*inter alia*—of low investment in health, education and nutrition. At the micro level, a better distribution of health and nutritional outcomes among children has been shown to enhance learning and reduce educational inequality, thanks to improvements in the hemoglobin level, school attendance, attention span and active participation in school activities. Likewise, an egalitarian rise in human capital formation not only reduces educational and health inequality but affects—*ceteris paribus*—income inequality by reducing the skill premium. Finally, effectively removing social norms that discriminate against marginalized groups reduces segmentation in education, health and the labour market, with beneficial effects on national human development. More examples of these interrelations can be given. The conclusion is always the same, however: A favourable intervention in one of these social areas tends to generate positive 'spillover effects' in all the others. The opposite is also true.

Some current policies have been shown to markedly affect income inequality and—through that—inequality in most other dimensions of human development. During the 1980s and 1990s (and in some regions during the 2000s), neoliberal economic policies in the fields of macroeconomics, taxation, social spending, the labour market, foreign trade and finance, and so on raised income

inequality. There is evidence that this retarded improvements in average health and educational status, while worsening the distribution between the rich and poor in all these areas. In contrast, the adoption of policies inspired by the Millennium Development Goal (MDG)/Sustainable Development Goals (SDG) paradigms or by the development-and-distribution sensitive structuralist paradigm has generated positive effects on various dimensions of inequality. The key point to bring home here is that not only structural reforms (e.g., changing access to assets) matter, but also that current economic and social policies can affect in an important way the inequality-adjusted human development index, even in the presence of an unchanged distribution of assets.

An equitable distribution of human capital (basic literacy, good nutrition and health) constitutes a precondition for raising individual and collective productivity, and the ability to rise above poverty and reduce inequality. Education creates new 'reproduceable' assets, and so improves social welfare directly and, because of its spillover effects, without making anyone worse off, as might be the case if a land reform was carried out. As shown in the section of this paper on Latin America, a more egalitarian distribution of secondary school enrolment and—with a lag—of human capital in the labour force leads to reducing the skill premium and overall income inequality. As argued by most growth theories, this accelerates growth and reduces health inequality. In addition, as noted, an equitable diffusion of female education reduces the under-five mortality rate and improves other health indicators in an egalitarian way. Finally, a rise in education reduces the crime rate and deadly collective violence.

De facto, despite the spillover effects mentioned above, breaking the vicious interrelations among various aspects of inequality requires acting simultaneously on various fronts. A key unresolved issue concerns the choice of the best policy instruments to raise human development, as such a choice may depend on specific local conditions. Much of the literature suggests, however, that over the long-term, the most effective way to reduce inequality in all its dimensions is to increase the level of education in an egalitarian manner. From a political-economy perspective, one must also keep in mind that some sources of inequality (e.g., high land concentration) are very difficult to tackle, and that the implementation of land reform was successful only when the reformers disposed of overwhelming power to evict the agrarian elites. Political-economic considerations and the power relations among social classes thus determine which policies can be chosen to reduce inequality in all its dimensions. As shown by the experience of Latin America in the 2000s, inequality fell thanks to the implementation of 'social democratic policies' and only seldom (and less successfully) thanks to radical reforms focusing on asset redistribution. The latter policies were, instead, at the basis of the successful 'growth with equity' model pursued by the first wave of Asian Tigers of the 1960s and 1970s.

The evolution of income, health and education inequality in Latin America

THE UNPRECEDENTED DECLINE OF INCOME INEQUALITY FROM 2002 TO 2012

The high path-dependent income inequality that afflicted Latin America for centuries continued until the last two decades of the 20th century, a period during which the region was affected by slow growth, a long series of financial crises, and an average Gini rise from 48.9 in the early 1980s to 54.1 in 2002 (Figure 1). Things changed markedly in the 2000s. Except for 2009, from 2002 to 2012 the region enhanced its growth performance, stabilized its macroeconomy, improved income inequality, and reduced educational and health differentials by income quintile (Cornia 2014, Tables 3, 4 and 6). The most striking change was a 6.1-point decline of the Gini-income over 2002 to 2012. In only 10 years, this more than offset the increase during the two previous neoliberal decades (Figure 1). The largest falls were recorded in the Southern Cone and Andean countries, in particular Bolivia (which recorded a 13.7-point decline over 2000 to 2014), Argentina (12.3 points), Ecuador, Brazil and Peru. Smaller gains were registered in countries affected by domestic conflicts and widespread violence (such as Colombia and Mexico) and Central America. By 2014, all countries except Costa Rica had a lower Gini coefficient than in 2000.

Figure 1. Trend in the average unweighted regional Gini coefficient of the distribution of household income per capita, early 1980s to 2014
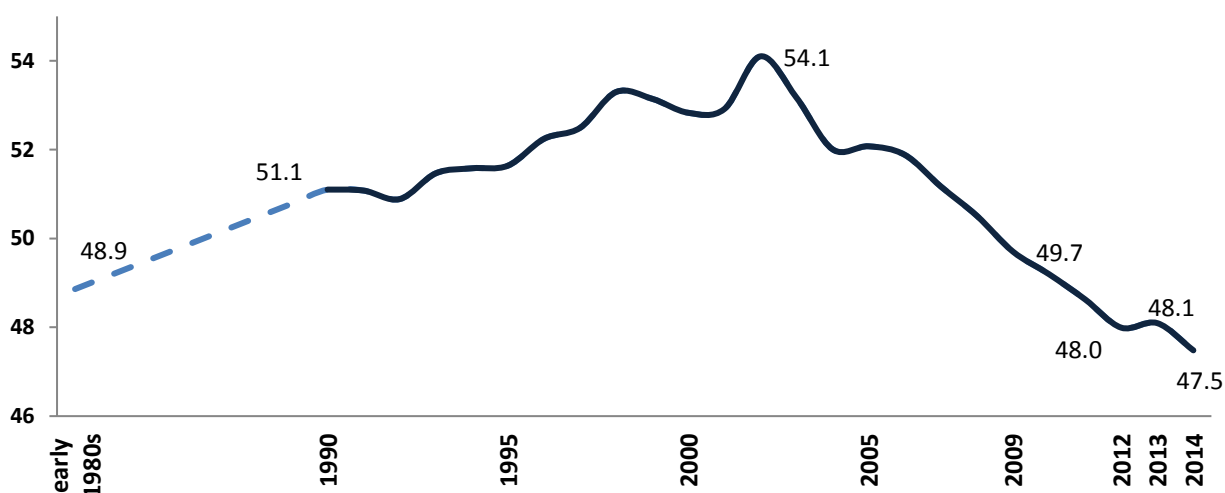
Source: Author's elaboration on Cornia 2014 and SEDLAC data, http://sedlac.econo.unlp.edu.ar/esp/estadisticas.php, accessed on 10 June 2016. *Note*: The trend for 1990 to 2006 covers 18 countries. That for 2006 to 2014 covers 15 countries, as it excludes Venezuela, for which there are no data since 2006, and Guatemala and Nicaragua for which there are only two data points since 2006.

What explains the income inequality decline observed between 2002 and 2012? A decomposition by income source of the total Gini fall over 2002 to 2010 for the six countries analysed in Cornia (2014)[1] shows that the *immediate* causes of the fall were (in order of importance): a drop in the skill premium, an increase in social transfers and a lower concentration of capital incomes. In the agriculture-dependent economies of Central America, a fall in the urban-rural wage gap was also important, while in countries of emigration, increasingly better distributed remittances helped reduce overall inequality (ibid.). As for the *underlying* causes of the inequality decline, the main alternative explanations are discussed hereafter.

'Luck'. A few commentators have argued that the inequality decline of the 2000s was due to 'luck', i.e., the improvement in global economic conditions. Better terms of trade, rising capital inflows and growing remittances produced beneficial effects on growth.[2] Yet given the high asset concentration prevailing in the export sector, and the unequal access to credit typical of the region, this improvement in exports and capital inflows generated, *ceteris paribus,* an unequalizing effect on the distribution of market income. At the same time, it produced a positive income effect, an increase in government revenue and a relaxation of the balance of payment constraint to growth. Faster growth per se is no guarantee of falling inequality, as shown by the recent experience of China and India. In fact, a more favourable global environment would not have reduced inequality in the absence of the redistributive changes introduced in the 2000s that—together with a general rise in tax/GDP ratios—allowed the funding of new and well-targeted social spending in a non-inflationary way. Regression analysis (Cornia 2017) confirms that until 2002, gains in terms of trade and export volumes did not reduce income inequality, while after that point they did.

The 'left turn' and progressive policy changes. Beginning in the early 1990s, the region experienced a return to and consolidation of democracy, and from the late 1990s, a shift in political orientation towards centre-left regimes (Figure 2). As suggested by the Latinobarometro,[3] a major factor in this unprecedented political turnaround was growing frustration with the sluggish growth, rising unemployment and informalization of the economy brought about by the neoliberal policies adopted in the 1980s and 1990s. The 'left turn' evolved from the rising demand for a more active role of the state in the provision of public services and from the reorganization of the left. As noted by Panizza (2005), the coalitions supporting the new left regimes included organizations of the urban and rural poor (such as the Argentinean '*Cartoneros*'), unemployed people, informal sector workers,

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[1] These six countries are Chile, Ecuador, El Salvador, Honduras, Mexico and Uruguay.

[2] During the same period, migrant remittances rose steadily in Ecuador and all Central American countries except for Costa Rica. At least in El Salvador and Mexico, their impact was equalizing.

[3] See: www.latinobarometro.org/lat.jsp.

indigenous groups and local communities that replaced the formal trade unions and historical left parties at the forefront of social mobilization. The new coalitions included part of the middle class that had traditionally voted for centrist or conservative parties, but that switched allegiance after experiencing a fall in their income level and share during the prior two decades.

Figure 2. Trends in ideological orientation of 18 Latin American governments, 1990-2013
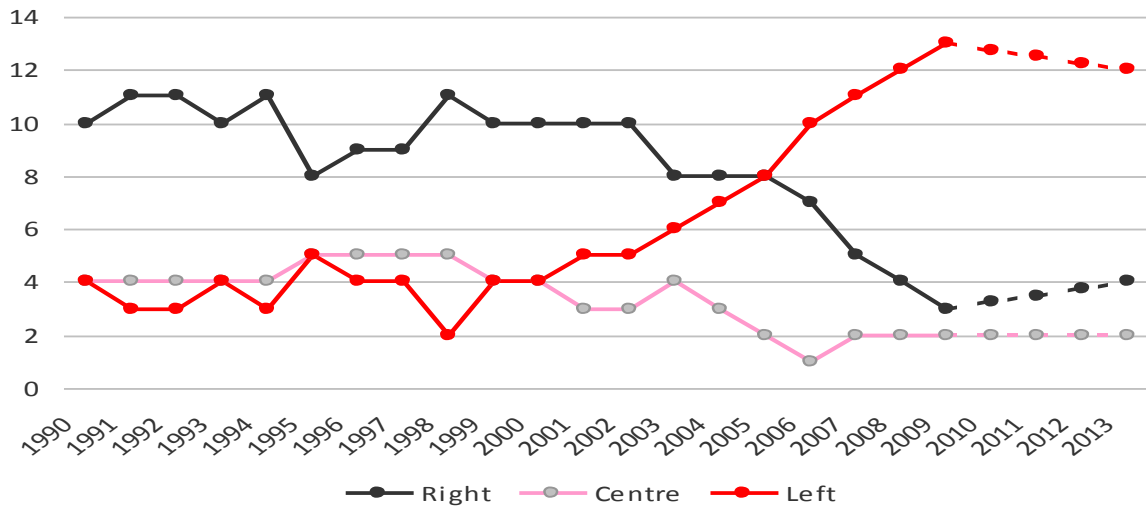
Source: Cornia 2014, updated by the author to 2013.

What policies were introduced by the new-left regimes? Their package included not only social assistance transfers (as often mentioned by the uninformed observer), but also a comprehensive set of policies discussed hereafter. Macroeconomic policy avoided the traditional procyclical fiscal and monetary biases of the past. Budget deficits were reduced below 1 percent of GDP (ECLAC 2014), and Chile and Venezuela created stabilization funds to draw upon in times of revenue shortfalls. Fiscal policy was countercyclical or a-cyclical. This expansionary stance sustained GDP growth over 2010 to 2013, despite a drop in export earnings due to the world crisis. Monetary policy controlled the money supply in periods of bonanza, but reduced interest rates and expanded lending by public banks in periods of crisis. Meanwhile, the financial sector was re-regulated to avoid a repeat of the highly disequalizing banking crises of the past. Macroeconomic policy also aimed at reducing the region's vulnerability to external shocks: Governments avoided the large balance of payments deficits and debt accumulation of the past by raising tax/GDP ratios, and reduced their dependence on foreign finance. With the exception of Brazil and Venezuela, fixed pegs were replaced by export-promoting exchange rates, while between 2002 and 2010, central bank reserves quadrupled, and the region's gross foreign debt was cut in half (ibid.).

During the 2000s, tax policy placed growing emphasis on revenue collection, reduced exemptions, progressive taxation, cutting unequalizing excises and raising indirect taxes on luxuries.

Argentina also imposed a progressive tax on agricultural exports fetching very high prices. As a result, the regional tax/GDP ratio rose by 3.5 points over 2003 to 2012 (Figure 3). The surge in commodity prices contributed to this increase in six oil/metals exporters, but the revenue rise had begun before the commodity boom and involved non-commodity exporters as well. These changes helped improve the progressivity of traditionally regressive tax systems, while higher revenue permitted a non-inflationary expansion of social spending.

Labour policies in many countries addressed problems inherited from the two liberal decades, i.e., high unemployment, job informalization, falling unskilled and minimum wages, and declining social security coverage. Thirteen governments decreed sizeable hikes in real minimum wages (Table 1), which rose faster than average wages, thus reducing earnings inequality (Keifman and Maurizio 2014). Due to the 'beacon effect' observed in most Latin American countries (Kristensen and Cunningham 2006), higher minimum wages in the formal sector became a reference norm also for informal sector wages. In Argentina, Brazil and Uruguay, labour policies also extended the coverage of formal employment, increased work inspections and promoted collective bargaining. Except during the recession of 2009, unemployment declined, due also to the increasing labour-intensity of GDP growth.

Figure 3. Average unweighted regional tax/GDP ratio (excluding social security contributions), during the debt crisis of the 1980s, the Augmented Washington Consensus and the new-left regimes
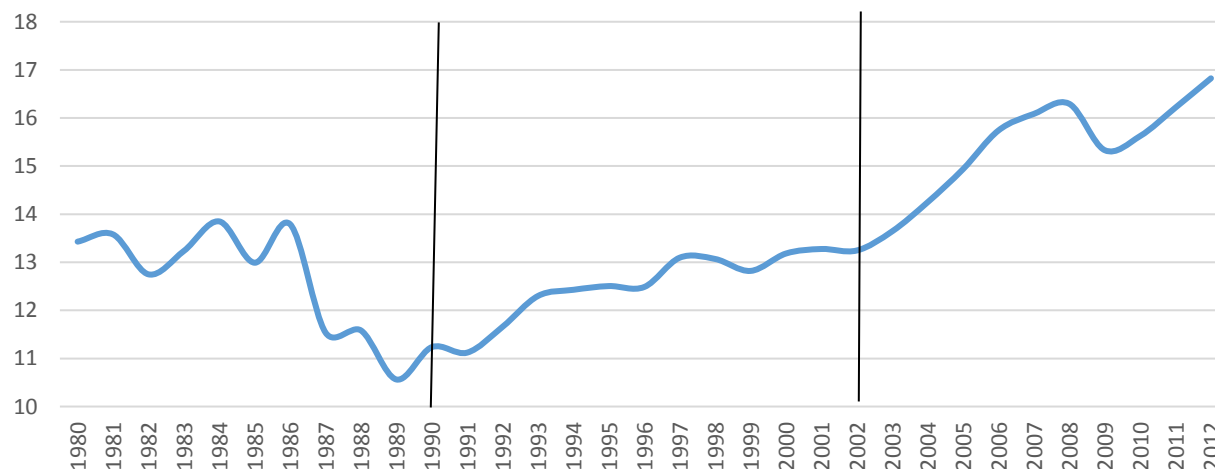
Source: Martorano 2016, based on the Government Revenue Database.

Table 1. Trend in the index of real minimum wages (2000=100)[a]

	2002	2004	2006	2008	2010
Chile (2000-2010)[b]	*106.8*	*111.3*	*116.3*	*118.3*	*127.7*
Brazil (2002)	*114.3*	*121.4*	*145.3*	*160.8*	*182.0*
Argentina (2003)	81.4	*129.8*	*193.2*	*253.3*	*321.3*
Panama (2004-2009)	105.8	*107.5*	*108.1*	*109.2*	*113.3*
Uruguay (2005)	88.7	77.5	*153.2*	*176.9*	*196.8*
Costa Rica (2006)	99.5	97.6	*99.5*	*99.5*	*105.8*
Bolivia (2006)	116.0	112.0	*111.1*	*117.0*	*119.9*
Honduras (2006-2009)	104.6	114.5	127.4	*131.1*	*225.5[c]*
Nicaragua (2007)	105.9	113.5	128.5	*141.6*	*174.6*
Ecuador (2007)	112.5	122.2	130.0	*146.7*	*161.5*
Guatemala (2008)	108.6	117.6	119.6	111.9	*122.0*
El Salvador (2009)	94.6	95.3	90.5	92.9	*100.9*
Colombia (centre-right)	101.9	103.8	108.0	106.9	111.6

Source: CEPAL 2011. Notes: a/ nominal wages deflated by the consumer price index. b/ Figures in bold refer to the years of rule of centre-left regimes. c/ 2009. Minimum wages remained broadly constant in Paraguay, Peru and Venezuela, and fell moderately in the Dominican Republic and Mexico.

Increased social spending per capita played a key role in reducing inequality. While spending rose on average by 50 percent in the 1990s, it almost doubled in the 2000s (Gasparini et al. 2016). In particular, social assistance expenditure grew substantially. All governments introduced programmes to complement the uneven coverage of social insurance. Cash transfers absorbed up to 1 percent to 1.5 percent of GDP, covered a large share of the poor and had a clearly equalizing impact. Such programmes aimed at reducing child poverty, ensuring that children have access to educational and health services and proper nutrition (as in the case of Brazil's *Bolsa Familia*), and breaking the intergenerational transmission of poverty. In addition, the centre-left regimes of Argentina, Bolivia, Brazil, Chile and Costa Rica introduced non-contributory social pensions costing 0.18 percent to 1.3 percent of GDP.

EXPLAINING THE DECELERATION OF THE INCOME INEQUALITY DECLINE FROM 2013 TO 2014

The financial crises recorded in the United States of America and the European Union, and the slowdown of East Asian growth led to a fall in remittances, exports and commodity prices that caused a 2 percent contraction of regional GDP in 2009, a growth decline from 5 percent to 3 percent between 2002 to 2008 and 2010 to 2013 (ECLAC 2014) and to 1.2 percent in 2014. Yet inequality continued declining until 2012 (Figure 1) due to the countercyclical policies adopted in the region. With slowing growth in incomes and revenue over 2013 to 2014, however, the trend towards falling

inequality became unstable. If Honduras (which recorded a large Gini decline) is excluded, over 2013 to 2014, the regional Gini coefficient stagnated (Figure 1). What are the causes of such stagnation?

A first explanation is that the social democratic policies that drove the inequality decline of the 2000s exhausted their redistributive potential in the Southern Cone and Andean region (Gasparini et al. 2016). A further expansion of cash transfers faced a natural limit as most of the target population was covered. Likewise, minimum wages (Table 2) could not continue rising forever. In turn, by the early 2010s, male and female unemployment had reached 3.5 percent and 5.5 percent. Finally, the equalizing effect of the decline in the number of children of poor families has almost stopped since 2010. Social democratic policies could, however, still be intensified in Central America, Mexico and a few other countries.

A second, complementary interpretation emphasizes that almost nowhere in the region were politically difficult reforms introduced to tackle the historical problems of polarized access to land, assets, credit and tertiary education. Bolivia (which nationalized foreign gas companies) and Nicaragua are exceptions. Land redistribution was promised in Bolivia, Brazil and Paraguay, but was not implemented due to the strong opposition of landlords. Meanwhile, the average improvement to tertiary education was regressive in almost half of the countries (Table 3). The 2008 crisis also brought to the fore the dependent nature of the region's development strategy. The foreign-financed, export-led growth strategy promoted by neoliberal reformers was not overturned during the 'left-decade'. Even during the years of rapid growth, the region experienced a large-scale deindustrialization that sacrificed middle-class jobs, led to the 're-primarization' of output and exports (Ocampo 2012), and exposed the region to the risks of unstable terms of trade and capital inflows.

A third interpretation focuses on falling terms of trade, 'policy mistakes' and loss of middle-class support to centre-left governments. While until 2013 the left continued dominating the political scene (Figure 2), the drop in commodity prices and exports reduced a redistributive capacity that has since then focused on the poor and neglected the middle class. Latinobarometro (2013) captures well the dissatisfaction emerging in countries such as Argentina, Brazil, El Salvador, Mexico, Paraguay and Venezuela. These countries experienced a fall/stagnation of the income share of the middle class over 2010 to 2013, a modest Gini rise in 2013 to 2014, and electoral reversals in 2015 to 2016. In these countries, policy decisions and the choice to focus redistribution mainly on the poor alienated the middle class. Argentina and Brazil offer good illustrations of this phenomenon. In Brazil, hundreds of thousands of middle-class people took to the streets in 2015 to protest against the centre-left government. For years, its policies delivered growth, jobs, minimum wages and social transfers. The commodity boom of 2003 to 2008 sustained redistribution, and the creation of 21 million low-wage jobs in services (Saad-Filho 2015). A further reduction in inequality was, however,

hampered by global stagnation and the country's conservative macro stance, which precluded a countercyclical fiscal expansion, industrial restructuring and devaluation of an overvalued *reais*. Because of such a stance, 4.5 million middle-class manufacturing jobs were lost in the 2000s (ibid.). Meanwhile, low past investments led to a worsening of transport, water and health infrastructure that also affected the middle class. In Argentina, the global slowdown has been accompanied since 2010 to 2011 by a rise of inflation to around 25 percent. Yet official data posted a rate of 10 percent. This led to a strong real overvaluation of the peso that affected exports and caused a loss of support by the exporting and professional middle class.

TRENDS IN EDUCATIONAL INEQUALITY

Already by 2000, substantial improvements had been recorded in the region in the field of primary education. In turn, household budget surveys data show universal progress (Table 2), due to the expansion of educational spending mentioned above. Indeed, in the region, average public expenditure on education per child rose from $320 PPP in 1990 to $756 in 2000 to $1,451 in 2010 (Cruces at al. 2014) due to an increase in GDP/c, declining student cohorts and a public policy that prioritized secondary education. The SEDLAC database on secondary education (http://sedlac.econo.unlp.edu.ar/eng/statistics-detalle.php?idE=37) shows, in fact, that the net secondary enrolment rate and its interquintile ratio rose steadily over time. In the majority of cases, such improvements were more rapid under the left regimes of 2000 to 2013 than in the years of the Washington Consensus (Table 2). The only exceptions are Argentina, Chile and Uruguay, which had already reached enrolment rates of 75 percent to 80 percent in 2000. The increase in secondary enrolments was faster among the children of the poor. The resulting increase in the supply of skilled labour improved the distribution of human capital and, together with other factors discussed in Cornia (2014), reduced the skilled/unskilled wage ratio.

As for tertiary education, all countries recorded an increase in enrolment rates and, in many cases, of the distribution of enrolments across income quintiles (Table 3). Yet the distribution of tertiary educational gains was not always as equitable as in the case of secondary education. For instance, in Argentina, Chile, Mexico and Uruguay, such an increase was equitable both in terms of the Q1/Q5 ratio and absolute distance between the first and fifth quintile. Yet in El Salvador, Paraguay and Peru, the increase in enrolments was equitable if measured with the Q1/Q5 ratio but not in terms of absolute distance. In Brazil, the increase in enrolments was inequitable in terms of both inequality measures used in Table 3.

As a result of this massive and mostly equitable increase at all levels of schooling, the average years of education of the labour force rose steadily. The SEDLAC database provides detailed data on the distribution of years of education by age cohorts (Table 4) for eight sample countries. These

include Argentina and Uruguay, where human capital has historically been fairly equally distributed, and Honduras and Nicaragua, where substantial inequality in the distribution of human capital still exists. The table indicates that in all eight countries in 2013, the lowest Gini was observed for the age group 21 to 30, which benefitted from the educational reforms of the 2000s. It also shows that the Gini of this age group does not differ excessively across the eight countries selected, while that of the age group 61-plus shows very large variations, due to the countries' different educational policies of the 1960s and 1970s.

In conclusion, to continue equalizing the income distribution, governments need to broaden the access to education in a number of countries, improve the quality of teaching in secondary education, and reduce the direct and opportunity costs of education of poor adolescents wishing to enroll in tertiary education by providing tuition waivers and stipends. This will help avoid an increase in the skill premium and overall inequality, and a fall in the inequality-adjusted human development index, in case of new technological shocks.

Table 2. Trend in net secondary enrolment rate and interquintile ratio for 1990, 2000 and 2013 (or closest year) for 16 Latin American countries

	Net secondary enrolment rate			Interquintile ratio (Q1/Q5)		
	1990	2000	2013	1990	2000	2013
Argentina	63.7	81.3	88.1	0.53	0.71	0.87
Bolivia	…	56.6	86.5	…	0.29	0.86
Brazil	17.0	41.6	63.3	0.04	0.18	0.52
Chile	65.7	74.1	84.3	0.61	0.67	0.85
Colombia	…	75.0	79.9	…	0.60	0.76
Costa Rica	39.8	48.0	79.8	0.34	0.40	0.69'
Dominican Republic	…	40.3	67.4	…	0.26	0.54
Ecuador	…	61.9	82.8	…	0.59	0.83
El Salvador	17.5	26.4	40.3	0.14	0.15	0.36
Honduras	27.3	43.2	46.3	0.26	0.33	0.36
Mexico	52.5	67.9	77.8	0.34	0.53	0.77
Nicaragua	26.9	39.0	42.5	0.19	0.21	0.36
Panama	60.7	70.9	77.7	0.34	0.53	0.62
Paraguay	…	59.0	79.0	…	0.43	0.70
Peru	…	62.4	86.7	…	0.38	0.79
Uruguay	65.0	75.7	82.0	0.45	0.58	0.73
Improvements			**16 of 16**			**16 of 16**
Fastest absolute improvements:						
- 1990-2000			**5/16**			**5/10**
- 2000-2013			**5/16**			**10/16**
- No data for 1990			**6/16**			**6/16**

Source: Author's elaboration on http://sedlac.econo.unlp.edu.ar/eng/statistics-detalle.php?idE=37, accessed on 30 June 2016. Note: No recent data are available for Guatemala and Venezuela.

Table 3. Enrolment rates in tertiary education for the first and fifth quintile, Q1/Q5 ratio and absolute distance between enrolment rates for 2000 and 2013, for eight Latin American countries

Country	Year	1st quintile	5th quintile	Q1/Q5 ratio (%)	Absolute distance
Argentina	2000	30.7	73.6	41.7	42.9
	2013	43.7	65.2	67.0	21.5
Brazil	2000	31.1	57.9	53.7	26.8
	2013	27.3	58.3	46.8	31.0
Chile	2000	26.0	67.8	30.3	41.8
	2013	48.5	77.5	62.5	29.0
El Salvador	2000	12.9	49.4	26.2	36.5
	2013	18.4	56.2	32.7	37.8
Mexico	2000	20.1	59.1	34.0	39.0
	2013	27.7	59.0	46.9	31.3
Paraguay	2000	15.6	51.1	30.5	35.5
	2013	26.4	68.2	38.7	41.8
Peru	2000	23.0	52.4	43.9	29.4
	2013	34.9	69.6	50.1	34.7
Uruguay	2000	14.3	71.2	20.0	56.9
	2013	20.1	72.4	27.7	50.3

Source: Author's elaboration on the SEDLAC database (http://sedlac.econo.unlp.edu.ar/eng/statistics-detalle.php?idE=37) updated to June 2014 and accessed on 10 October 2016. Note: Green highlighting indicates a distributive improvement, purple highlights a deterioration.

Table 4. Gini index of the distribution of years of education by selected age groups

Age groups	Argentina (lowest)			Uruguay			Costa Rica			Peru		
	25-65	21-30	61+	25-65	21-30	61+	25-65	21-30	61+	25-65	21-30	61+
1990	0.234	0.194	0.297	0.271	0.202	0.364	0.346	0.242	0.524	…	…	…
2000	0.231	0.178	0.296	0.240	0.190	0.333	0.316	0.266	0.522	0.354	0.229	0.564
2013	0.189	0.143	0.268	0.220	0.181	0.302	0.275	0.211	0.424	0.283	0.160	0.520

Age groups	Brazil			Bolivia			Honduras			Nicaragua (highest)		
	25-65	21-30	61+	25-65	21-30	61+	25-65	21-30	61+	25-65	21-30	61+
1990	0.479	0.314	0.674	…	…	…	0.523	0.387	0.718	0.528	0.387	0.731
2000	0.411	0.306	0.624	0.416	0.288	0.674	0.464	0.347	0.706	0.448	0.338	0.684
2013	0.319	0.189	0.543	0.338	0.185	0.574	0.411	0.302	0.624	0.442	0.330	0.667

Source: Author's elaboration on the SEDLAC database (http://sedlac.econo.unlp.edu.ar/eng/statistics-detalle.php?idE=37), accessed on 30 June 2016. Note: The datum highlighted in green is the lowest Gini in the table, the red one the highest. For Nicaragua, the reference years are slightly different (see SEDLAC database).

HEALTH INEQUALITY TRENDS

GENERAL HEALTH INEQUALITY TRENDS DURING THE LAST 40 YEARS

Before discussing trends in health outcomes and inequality in Latin America, it is important to provide a general picture of health trends in developing countries, as these have gone through

different phases over the last 40 years. In the 1980s and 1990s, the rate of improvement in the under-five mortality rate and life expectancy at birth slowed in relation to that recorded in the 1960s and 1970s in both developing and transitional countries (Cornia and Menchini 2006). Such a slowdown was robust to the removal from the sample of the former communist countries of Europe and sub-Saharan Africa, which had been affected by an acute transition mortality crisis, and the spread of HIV/AIDS and civil conflicts, respectively. In addition, in 50 percent to 60 percent of the countries with two or more DHS surveys, the under-five mortality rate interquintile ratio worsened, regardless of whether its average had improved, stagnated or worsened. Finally, yet importantly, health trends were affected by slow or negative GDP growth and soaring income inequality in the 1980s and 1990s in many developing and transition countries that adopted botched liberalization and globalization programmes (Cornia, Rosignoli and Tiberti 2011).

In contrast, during the last 15 years, average health improved universally (Table 5). According to the 2015 *World Health Statistics: Monitoring Health for the SDGs*, life expectancy at birth increased by five years between 2000 and 2015, the fastest increase since the 1960s. The increase was greatest in the African Region as defined by the WHO, where life expectancy at birth rose by 9.4 years to 60 years, driven mainly by improvements in child survival, progress in malaria control and expanded access to antiretrovirals for the treatment of HIV. Yet such improvements were often unequally distributed. As confirmed by Gwatkin et al. (2007) on the basis of 56 DHS surveys covering 20 years, the under-five mortality rate, infant mortality rate and child malnutrition are systematically almost double in the first quintile in relation to the top one, reflecting differences in income per capita, maternal education and access to basic services. The two health care interventions that are more equally distributed are immunization and oral rehydration (ibid.).

To assess recent trends in health inequality, we compiled DHS data for 44 developing countries (28 from Africa, 7 from Latin America and 9 from Asia), with at least two surveys including under-five mortality rate[4] data over the years 1991 to 1995 to 2011 to 2015. To assess average progress over time, we use the aggregate value of the under-five mortality rate for each country, while health inequality is proxied by its interquintile ratio (Q1/Q5), i.e., the ratio of the rate of the poorest quintile (Q1) divided by that of the top quintile (Q5). A rise in such a ratio signifies a worsening of health distribution.

Overall, the under-five mortality rate declined steadily in 39 of the 44 countries analysed, while it stagnated in five. The speed of the decline seems to have accelerated during the last 15 years. In 23 countries, the Q1/Q5 ratio rose, while it declined in only 13, mainly from Latin America.

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[4] In low-income developing countries, the under-five mortality rate is an appropriate measure of health inequality as a large share of total deaths occur among young children.

Table 5. Absolute decadal changes (∆) in life expectancy at birth and percentage decadal changes in (100-life expectancy at birth)

	Life expectancy at birth 1980-1985	1980-1995 to 1990-1995	1990-1995 to 2000-2005	2000-2005 to 2010-2015	1980-1995 to 1990-1995	1990-1995 to 2000-2005	2000-2005 to 2010-2015
					% decadal change in 100-life expectancy at birth		
World	61.2	3.3	2.5	3.5	-8.5	- 7.0	-11.8
Sub-Saharan Africa	48.3	0.6	1.4	6.9	- 1.1	- 2.7	-13.9
South Asia	54.8	4.9	4.3	3.7	-10.8	-10.7	-9.3
South-East Asia	61.9	3.8	2.3	2.3	-9.9	-6.7	-7.1
East Asia	68.4	2.2	3.4	2.6	- 6.9	- 11.5	-10.0
West Asia	62.6	5.2	3.0	1.9	-13.9	-9.3	-6.3
Latin America	64.9	3.5	3.7	2.4	- 9.9	-11.8	-8.6
Average		*3.4*	*3.0*	*3.3*	*-8.7*	*-8.8*	*-9.2*

Source: Author's elaboration on life expectancy at birth data from the UN Population Division (2015). Note: The use of (100-life expectancy at birth) to measure progress in health status is justified by the fact that life expectancy at birth is an upper-bounded variable, and that measuring progress in terms of the percentage increase in countries with already high life expectancy at birth would underestimate the progress achieved.

To explain rapid but unequal gains, we examined trends in income inequality, the Q1/Q5 ratio of the vaccination rate and that of the percentage of women (proxying mothers) with secondary or higher education, i.e., a level of education that, much more than primary education, has been shown to reduce under-five mortality perceptibly. In line with the findings of Gwatkin et al. 2007, we observe that progress in the vaccination rate involves most quintiles, in particular when the rate exceeds 70 percent to 80 percent. The data for the 44 countries selected show that the percentage of women with secondary or higher education rose over the reference period in 32 out of 41 countries, while it stagnated in nine. Yet in 25 of these countries, the Q5/Q1 ratio rose, and in 9 it stagnated, suggesting that, especially in Africa and Asia, the increase in female (maternal) education mostly favoured the highest income groups.

All in all, the skewed decline in under-five mortality seems to be due not to the inherently unequalizing impact of public health interventions such as the immunization rate, but rather to an increasingly poorly distributed increase in high education among females, and, in sub-Saharan Africa, South Asia and Indonesia, to rising income inequality and uneven increases in social spending/GDP. Other factors that may explain the unequal access to education are the 'urban bias' of higher education, and the difficulties met in continuing health progress once the 'low-hanging fruits' of primary health interventions have been harvested. Other authors argue that rising Q1/Q5 ratios are to be expected, and that 'the poor have to wait', as social services are first extended to areas close

to the (richer) urban centres, and only later to remote rural areas (where many poor live). Finally, the still high number of conflicts and high HIV/AIDS incidence recorded in sub-Saharan Africa, and the food price increases of the late 2000s were additional factors in rapid but unequal progress recorded for under-five mortality rates, as shown by regression analysis by Cornia, Rosignoli and Tiberti 2011.

HEALTH INEQUALITY CHANGES IN LATIN AMERICA

Latin America recorded important and fairly egalitarian gains in health. Table 6 shows that over the period considered, the average under-five mortality rate declined in six out of seven (mostly low-income) countries with at least two DHS surveys. In middle-income countries, progress was even faster; in Chile and Costa Rica, the rate fell to between 11 and 12 per 1,000 (UN Population Division 2015). Table 6 also shows that the Q1/Q5 ratio improved in four out of the seven countries considered, while in Guyana, the ratio worsened but from levels below one.

As discussed in the prior section, such equitable under-five mortality rate gains depend on improvements in the level and distribution of key determinants of under-five mortality, i.e., the level and distribution of income (Figure 1), maternal education, vaccination coverage and local factors.

Table 6. Average under-five mortality rate (per 1,000) and related Q1/Q5 ratios

	1991-1995		1996-2000		2001-2005		2006-2010		2011-2015		△ total under-five mortality rate 2000-2011 ▯▯▯▯-▯▯▯▯	△ ▯ Q1/Q5 ratio 2000-2011
	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total		
Bolivia	3.32	116	4.56	92	3.21	75	3.74	63			-	+
Colombia	2.16	36	1.95	25	2.43	22	2.23	19			-	-
Guyana					0.38	51	0.72	40			-	+
Haiti	1.53	131	1.50	119			2.27	86	1.67	88	-	-
Honduras					2.50	30			0.95	29	=	-
Nicaragua			2.30	50	3.38	39					-	+
Peru	4.53	78	5.00	59	7.25	30	3.90	23	2.33	21	-	-
Improvements											6	4
No change											1	0
Deteriorations											0	3

Source: Author's elaboration on U.S. Agency for International Development (USAID) DHS data.

In turn, Table 7 shows in panel a) that the vaccination rate rose in five out of six countries with data, and that the related Q1/Q5 improved in four cases and did not change in two where the ratio was close to one (a situation of perfect equality). Panel b) shows that the percentage of women (mothers) with secondary or higher education increased in four out of six (mostly low-income) countries, while the related Q1/Q5 ratio improved in four cases and worsened in two (in the case of Guyana at a relatively egalitarian level).

Table 7. Percentage of children fully vaccinated and Q1/Q5 ratio

	1991-1995		1996-2000		2001-2005		2006-2010		2011-2015		Δ total	Δ Q1/Q5 2000-2015
	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total		
a. Percentage of children fully vaccinated and the related Q1/Q5 ratio												
Bolivia	**0.41**	36.6	**0.71**	25.5	**0.83**	50.4	**1.02**	76.7			+	+
Colombia	**0.72**	65.5	**0.74**	62.4	**0.76**	63.9	**0.95**	67.7			+	+
Haiti	**0.42**	30.2	**0.60**	33.5			**0.60**	41.3	**1.03**	45.2	+	+
Honduras					**1.12**	74.9			**0.98**	84.5	+	=
Nicaragua			**0.83**	72.6	**0.84**	70.1					=	=
Peru	**0.58**	57.7	**0.83**	63.0	**0.76**	64.7	**0.76**	59.0	**0.88**	73.5	+	+
Improvements											**5**	**4**
No change											**1**	**2**
Deteriorations											**0**	**0**
b. Percentage of women (mothers) with secondary or higher education and related Q1/Q5 ratio												
Bolivia	**13.1**	50.4	**13.2**	57.5	**9.3**	47.4	**15.0**	54.3			=	+
Colombia	**18.5**	59.7	**27.0**	64.8	**36.4**	70.3	**47.8**	76.1			+	+
Guyana					**77.8**	78.9	**60.8**	79.6			=	-
Haiti	**3.2**	22.8	**5.6**	28.1			**7.4**	37.5	**18.5**	48.9	+	+
Nicaragua			**8.1**	44.0	**5.5**	46.0					+	-
Peru	**21.4**	65.6	**17.7**	64.5	**22.2**	71.6	**33.3**	73.8	**33.9**	75.2	+	+
Improvements											**4**	**4**
No change											**2**	**0**
Deteriorations											**0**	**2**

Source: USAID DHS data.

These long-term trends in access to vaccination and high female education are related to rising social sector spending connected to the 'democratic dividend' and 'left-turn' experienced by the region since the early 1990s. Indeed, social spending increased from 11.3 percent of GDP in the early 1990s to over 18.6 percent in 2009 to 2010 (ECLAC 2011). World Development Indicator data confirm that the total of public and private health expenditure over GDP rose in five of the seven countries with under-five mortality rate data by quintiles, while it stagnated in two (Table 8).

The major effect of rising social spending was to increase access to education and health. This has led to increases in the non-income dimensions of human development that were generally faster than advances in the dimension of income per capita. In addition, the equitable increase of social spending has, *inter alia*, lead to a situation in which the inequality in the non-income dimensions of human development are significantly lower than those associated with income. There remain, of course, major issues in relation to the expansion of social service provision. The first is the low quality of some services. The second is the segmentation of service provision, which leads to different

quality services for different social classes, as a rising middle class often opts out of social services provided by the public sector.

Table 8. Trend in total (public and private) health expenditure as a percentage of GDP

	1996-2000	2001-2005	2006-2010	2011-2014
Bolivia	5.10	5.30	5.00	
Colombia	5.90	5.81	6.75	
Guyana		5.82	7.32	
Haiti	6.05		5.70	9.88
Honduras		7.81		8.56
Nicaragua	5.62	5.25		
Peru	4.50	4.56	5.03	5.17

Source: Author's elaboration based on World Development Indicators, World Bank. Note: Green highlighting indicates a distributive improvement.

The divergence of income, educational and health inequality trends in sub-Saharan Africa
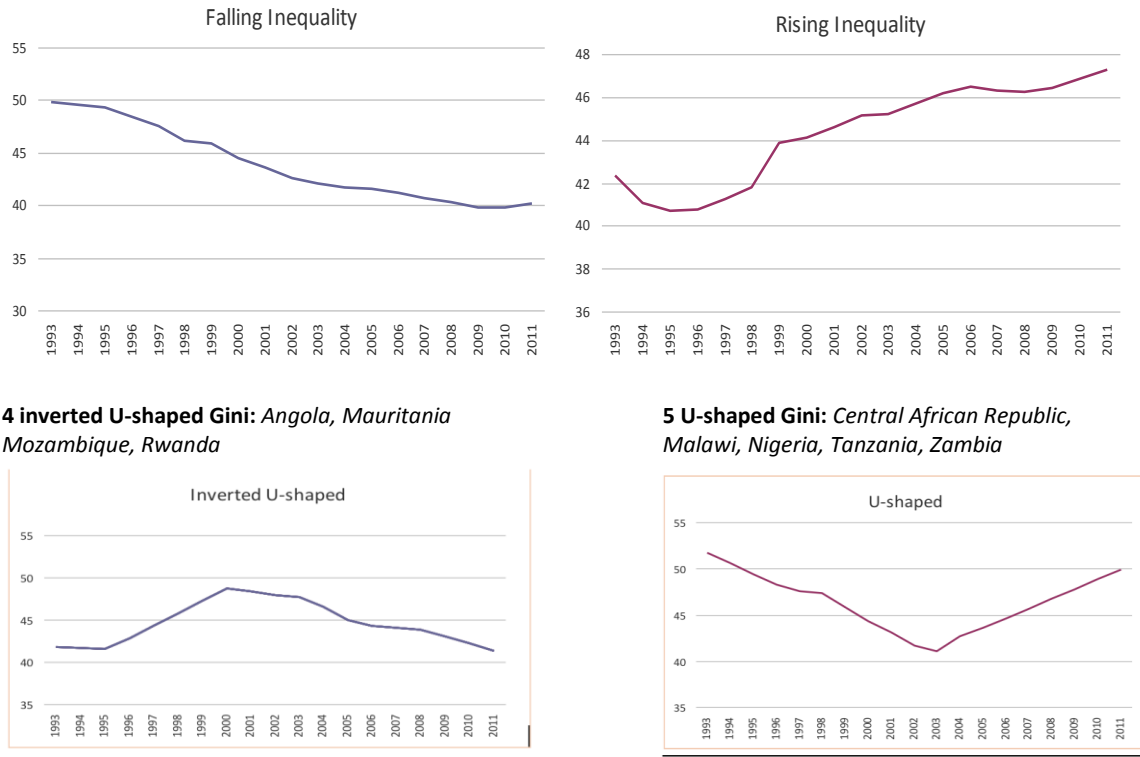
CONSUMPTION INEQUALITY TRENDS

Due to fragmentary data availability, Cornia and Martorano (2016a) developed an Integrated Inequality Database that, according to a standard protocol, compiles and selects the best Gini coefficients of consumption inequality (income inequality statistics are available for only two countries) from all existing datasets for 29 countries that comprise 81 percent of sub-Saharan Africa's population. The country selected must have at least four well-spaced and good-quality consumption inequality Gini over the period 1991 to 2011.

These consumption inequality data show that the average unweighted Gini of these 29 countries fell between 1993 and 2011 by 3.4 points (2 points for the population-weighted Gini). Yet a detailed, country-by-country analysis shows that such an average decline is the result of diverging falling, rising, ∩-shaped and U-shaped inequality country trends, as illustrated in Figure 4. By restricting the analysis to the 2000s, one obtains a steadily declining trend for 17 countries (the two left panels in Figure 4) and a steadily rising one for 12 countries (the two right panels). One thus observes a bifurcation of inequality trends in the region. In West Africa, inequality fell steadily in 9 mostly agricultural economies out of 12, while a modest decline was recorded also in East Africa. In contrast, Southern Africa and Central Africa have recorded a rise since around 2003, in line with the increase in the world prices of oil and minerals. These trends point also to growing intraregional divergence in inequality levels, as most low-inequality nations experienced a Gini fall, and the high-inequality ones a rise or stagnation.

Figure 4. Trend of the unweighted Gini coefficient of the distribution of consumption expenditure per capita for four groups of countries, 1993-2011

13 falling Gini: *Burkina Faso, Cameroon, Ethiopia, Gambia, Guinea Bissau, Lesotho, Madagascar, Mali, Niger, Senegal, Sierra Leone, Swaziland*

7 rising Gini: *Botswana, Côte d'Ivoire, Ghana, Kenya, Mauritius, South Africa, Uganda*

Falling Inequality

Rising Inequality

4 inverted U-shaped Gini: *Angola, Mauritania Mozambique, Rwanda*

5 U-shaped Gini: *Central African Republic, Malawi, Nigeria, Tanzania, Zambia*

Inverted U-shaped

U-shaped

Source: Cornia 2016.

What were the main drivers of the divergence of consumption inequality trends? We discuss first the *immediate causes of inequality* of the changes observed. While the growth rate of GDP/c could be expected to reduce consumption inequality by reducing un/underemployment, the heterogeneity of growth patterns in the region meant that—on average—no statistically significant relation is found between these two variables. In fact, more than the 'rate of growth', what really matters for inequality is the 'pattern of growth', i.e., the change in the structure of total value added. Inequality rose in countries that experienced a shift in the structure of output towards sectors characterized by high asset concentration and high capital- and skilled-labour intensity—such as mining, oil extraction, finance-insurance-real estate and the public sector—or towards highly unequal (mostly urban-based) informal services. In contrast, inequality fell or remained stable where growth occurred in agriculture, manufacturing, construction and a number of service subsectors. Regression analysis shows that Gini fell where growth was characterized by a surge in the value added share of agriculture driven by increases in land yields and total factors productivity following

the modernization of agriculture (Block 2010). In turn, a rise in the share of manufacturing left inequality unchanged. In contrast, in 10 countries there was a rapid surge of the unequalizing mining sector. For instance, in Equatorial Guinea, oil extraction in 2011 accounted for 89.4 percent of total value added, up from 4.2 percent in 1990. In another nine countries, there was an 'informal tertiarization', with most value added and jobs created in services subsectors characterized by high informality and inequality. Overall, despite a regional growth of GDP/c of 4.1 percent, over 1990 to 2011, a number of sub-Saharan African countries followed a 'suboptimal pattern of growth' characterized by reprimarization, de-industrialization, and informal tertiarization[5] that exerted an upward pressure on inequality.

Within each production sector, consumption inequality depends on the intrahousehold distribution of production factors and on factor returns. In agriculture, inequality is affected by the distribution of land, access to irrigation, inputs and human capital (where modern farming techniques are in use). For instance, in countries such as Ethiopia, where land distribution is very egalitarian, rapid agricultural growth did not increase a low rural Gini of 0.26 to 0.27, while this was not the case in other parts of the region. Yet few land redistribution programmes were carried out during this period. Tenancy reforms and land-titling programmes improved the security of tillers and raised investment, benefitting in particular the poor and women (Cheong 2014). At the same time, the Land Matrix database lists at least 375 state-blessed 'land grabs' that took place in 27 countries, including countries with very low land/person ratios. The distributive impact of land grabs is controversial. Yet it is unclear whether large foreign farms can generate enough rural jobs, promote broad development and not infringe on the rights of traditional users.

The spread of secondary education is also essential for raising land yields, as it permits people to absorb new farming techniques. Figure 5 shows that while primary enrolment rates rose on average by over 20 points between 1998 and 2012, secondary enrolments rose only by half that amount. Raising the supply of secondary and tertiary graduates is even more crucial in the urban sector, where the demand for skilled workers has been rising. As suggested by econometric analyses (Cornia 2016), where the increase in secondary and higher enrolments was slow, the 'skill premium' and consumption inequality rose.

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[5] A large share of wholesale and retail commerce, hotel, restaurant, repair, domestic, and community and personal services are not skill intensive and are dominated by informal labour relations, the adoption of survival strategies and considerable income polarization.

Figure 5. Trends in average enrolments in primary (blue, left scale) and secondary (red, right scale)
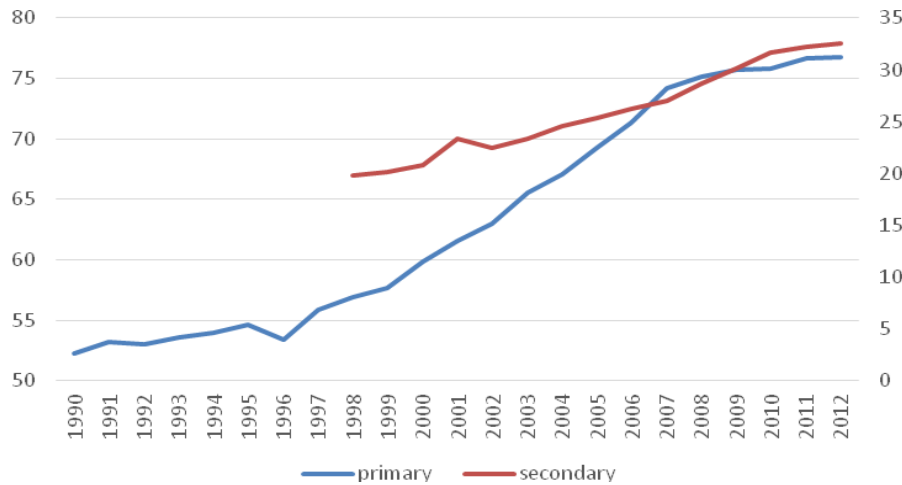
Source: Author's elaboration on data compiled by Martorano and Cornia 2015.

We discuss now changes that intervened in the underlying causes of inequality, that is, changes in public policies, global economic conditions, governance and various types of shocks.

Inequality was reduced where a stable and competitive real effective exchange rate shifted production towards the labour-intensive tradable sector, while offering protection to the import-competing domestic production of tradable goods. The opposite was true where there has been a real appreciation. With trade liberalization, average tariff rates declined from about 15 percent to 8 percent (Figure 6). Yet such measures reduced the size of the labour-intensive manufacturing sector, with its outputs replaced by imports. This generated unequalizing effects as it shifted resources from manufacturing to the high inequality formal and informal services. Such an effect confirms the results of Koujianou-Goldberg and Pavcnik (2007), who found that trade liberalization raises inequality for several years after its introduction.

The tax/GDP ratio and, in several countries, direct taxation relative to total tax revenue have increased since 2003. While an increase in tax revenue/GDP may or may not reduce inequality, a rise of direct taxation is likely to be equalizing. The progressivity of taxation may not have improved, however, in mining economies experiencing large capital flights despite a rise in corporate tax revenue. Raising tax revenue and foreign debt cancellation due to the Heavily Indebted Poor Countries (HIPC) programme allowed several countries to increase public social spending as a proportion of a generally rising GDP (Figure 7). Where this occurred, the effect was equalizing. Expenditures on health and education as a percentage of GDP have risen in much of the region, and their targeting has improved due to the MDG emphasis on pro-poor public spending. In Southern

Africa, public expenditure on social transfers and non-contributory pensions rose perceptibly. In contrast, where social spending stagnated, in spite of a growing fiscal space, the Gini index rose.

Figure 6. Average regional tariff rate (blue line, right scale) and average value added of the manufacturing sector (red line, left scale).
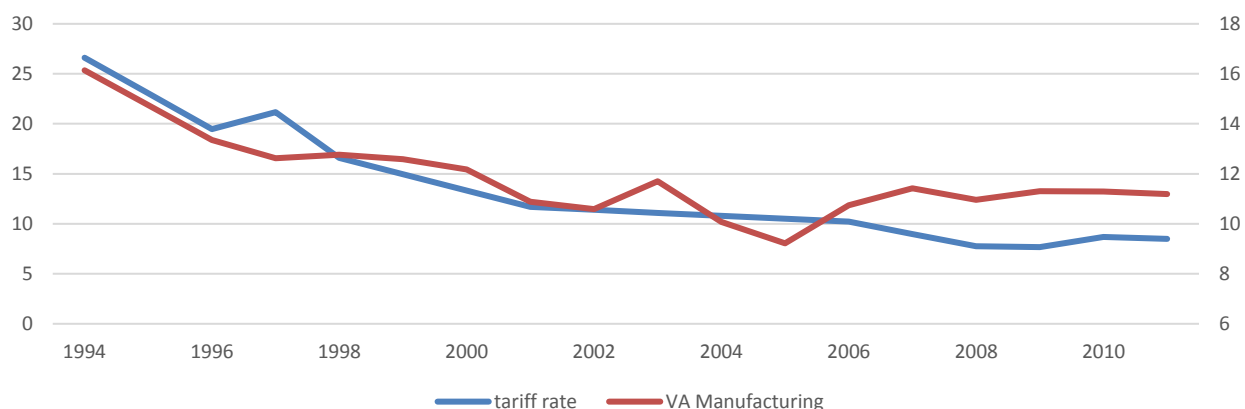
Source. Author's elaboration on data by Martorano and Cornia (2015). Note: outliers (i.e., manufacturing value added shares >30 or < 10) were dropped.

Figure 7. Evolution of public spending on health, education and social transfers as a share of GDP in relation to the Gini coefficient in countries with falling and inverted U-shaped Gini (left panel), and rising and U-shaped Gini (right panel)
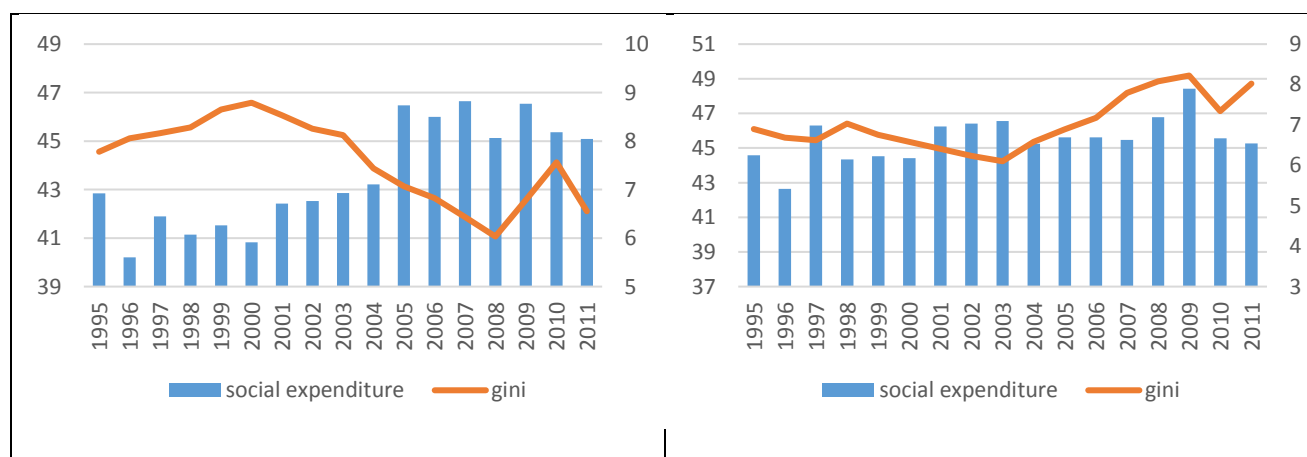
Source. Author's elaboration on data from Martorano and Cornia 2015.

Changes in global economic conditions affected inequality in a variety of ways. Africa's regional terms of trade index and export/GDP ratio rose during the 2000s. Meanwhile, foreign direct investment (FDI) stock (mostly directed to the oil and mining sector) rose from 3 percent to 5.3 percent of GDP over 2000 to 2011. Overall, it is likely that growing FDI and gains in terms of trade in oil/minerals-exporting countries had a disequalizing effect, given these sectors' high capital- and

skilled-labour intensity and asset concentration. Where these resources were taxed and redistributed, their rise possibly generated equalizing effects.

Due to its specific features (i.e., the comparatively low cost and a high share of migration to neighbouring countries), rising remittances in sub-Saharan Africa were equalizing, as the rural poor can migrate and remit moneys to their households. Gains in international terms of trade were also equalizing, except for the mineral rich countries.

Between 1990 and 2011, the region experienced negligible or negative portfolio inflows. It recorded a large and equalizing cancellation of the foreign debt/GDP ratio thanks to the completion of the HIPC initiative, however. Foreign aid declined from 25 billion to 15 billion over 1990 to 2001, but rebounded to about 40 billion by 2006 to 2007. In examining aid allocation since 2000, Hailu and Tsukada (2012) found that it was distributed according to MDG-sensitive criteria.

Starting in the early 1990s, HIV/AIDS incidence rose in all regions of sub-Saharan Africa, if at very different rates. Microeconomic evidence indicates that HIV/AIDS sharpened the income gap between non-affected and affected households, who forego the income of their sick adults and family members who care for them, while having to bear large medical and funeral costs (Cornia and Zagonari 2007). Since the mid-2000s, the incidence of HIV/AIDS has started to slowly decline. Regression analysis shows this exerted a modest equalizing impact (Cornia 2016).

In the last decade, sub-Saharan Africa also witnessed the endogenous diffusion of low-cost and highly divisible technologies, such as cell phones, Internet services and solar panels that might have helped integrate marginalized producers and consumers into markets. Between 2004 and 2011, the average share of people with access to mobile phones rose from 10 percent to 60 percent of the population, and that of Internet users to 10 percent. While the growth effect was favourable, the effect on inequality was likely to be concave, as these new technologies were initially acquired by the middle class. Only when their use is sufficiently broad may inequality start falling.

The number of conflicts in the region fell from 25 in 1993 to 10 in 2010, favourably influencing growth and inequality. Though democracy is difficult to theorize, define and measure, most analyses conclude that it started improving in the mid-1990s. If it leads to accountable institutions, democracy may trigger a decline in corruption and clientelistic policies, and so reduce inequality. The econometric attempts to capture such effects, however, did not produce satisfactory results.

TRENDS IN EDUCATIONAL INEQUALITY

The DHS surveys used for this analysis (unfortunately only for 21 of the 29 countries utilized in the analysis of consumption inequality) show that the number of years of education rose for countries

where such information is available, to reach a maximum of 7.6 years in Zimbabwe in 2005 to 2010. Likewise, for the reasons given above, the Gini index of the distribution of the years of education fell in 20 of these 21 countries. Given the still limited spread of secondary education, such Gini indexes are substantially higher than those observed in Latin America (compare Table 9 with Table 4). Therefore, there still is considerable scope for reducing the Gini of the distribution of years of education.

Table 9. Average years of education and the Gini index of years of education for people over the age of 15

	1991-1995		1996-2000		2001-2005		2006-2010		Δ years of education	ⵀΔ Gini
	Average years of education 15+	Gini years of education 15+	Average years of education 15+	Gini years of education 15+	Average years of education 15+	Gini years of education 15+	Average years of education 15+	Gini years of education 15+		
Benin			.	77.9	.	73.6	.	71.1		-
Burkina Faso	.	88.1			.	85.5	.	71.3		-
Cameroon	.	58.9	.	50.8	.	45.1				-
Côte d'Ivoire	.	71.1	.	68.0	4.2	66.5				-
Ethiopia			.	81.1	.	75.2				-
Ghana	.	51.0	.	46.8	.	48.2	.	41.8		-
Guinea			.	83.8	.	81.0				-
Kenya	.	39.9	.	34.1	.	35.2	.	30.2		-
Lesotho					.	35.7	.	33.0		-
Malawi	.	56.5	3.5	46.4	.	43.6	4.8	39.5	+	-
Mali					.	85.3	.	84.1		-
Mozambique			.	62.8	.	58.1	.	56.1		-
Niger			.	87.8			.	87.8		=
Nigeria					.	55.4	.	50.3		-
Republic of the Congo					5.7	33.9	.	29.4		-
Rwanda	.	57.9	3.2	51.1	3.8	49.1	4.3	43.9	+	-
Senegal			.		1.5	74.5	2.7	72.4	+	-
Tanzania			.	42.5	.	41.0	5.8	35.7		-
Uganda	3.9	49.7	4.3	44.7			.	42.2	+	-
Zambia			.	36.6			.	31.9		-
Zimbabwe	.	35.0	.	30.4	7.4	25.9	7.6	24.6	+	-
Improvements									5	20
No change									0	1
Deteriorations									0	0

Source: Author's elaboration on USAID DHS data.

Table 10 shows that, as expected, the average net primary attendance rate rose during the last 15 years, reaching average values of 60 percent to 100 percent in 2011 to 2015, with the exception of Guinea and Nigeria. The higher the rate, the higher the interquintile ratio (not shown) of such a variable. In contrast, enrolments in secondary education (up to grade six) have risen more slowly, and attendance by income quintiles remains in several cases fairly skewed (Figure 8). This shows that, with the exception of the Southern African states, the average enrolment rate in secondary

education in the late 2000s was still in the 20 percent to 55 percent range. Significant inequality still exists among children aged 15 to 19 who have completed grade six.

Table 10. Sub-Saharan Africa interquintile ratios of the net primary attendance rate, 2001-2015, and interquintile ratios of average years of schooling of people aged 15 to 19, 1991-2015

	NPAR Q1/Q5 ratio 2001-2005	NPAR Q1/Q5 ratio 2006-2010	NPAR Q1/Q5 ratio 2011-2015	Δ NPAR Q1/Q5 Ratio	AYS Q1/Q5 ratio 1991-1995	AYS Q1/Q5 ratio 1996-2000	AYS Q1/Q5 ratio 2001-2005	AYS Q1/Q5 ratio 2005-2010	AYS Q1/Q5 ratio 2010-2015	Δ AYS Q1/Q5 ratio
Benin	.	0.56	.			0.51	0.61	0.68	0.67	+
Burkina Faso	0.24	0.37		+	0.69		0.62	0.69		+
Cameroon	0.78		0.73	-	0.65	0.57	0.56		0.52	-
Comoros			.			0.65			0.70	+
Côte d'Ivoire	.		.		0.60	0.58	0.63		0.56	-
Ethiopia	0.41		0.60	+		0.43	0.52		0.53	+
Gabon			1.04			0.58			0.65	+
Ghana	.	.	.		0.81	0.68	0.69	0.67	0.69	=
Guinea	0.43		0.39	-		0.74	0.67		0.63	-
Kenya	0.67	0.78	.		0.81	0.75	0.72	0.77	0.76	=
Lesotho	.	0.95					0.59	0.65		+
Malawi	0.85	0.90		+	0.62	0.68	0.66	0.65		-
Mali	.	0.46					0.57	0.68		+
Mozambique	0.59	.	0.72	+		0.51	0.50	0.39	0.55	=
Niger		0.39	0.45	+		0.72		0.65	0.69	=
Nigeria	0.56	0.42	0.35	-			0.70	0.68	0.68	=
Republic of the Congo	0.94	.					0.61	0.65		+
Rwanda	0.89	0.93		+	0.81	0.67	0.68	0.67		-
Senegal	0.54	.	.				0.60	0.69	0.70	+
Sierra Leone		0.58	0.70	+				0.63	0.71	+
Tanzania	0.71	0.75		+		0.84	0.74	0.74		=
Togo			.			0.63			0.71	+
Uganda		0.80	0.88	+	0.60	0.56		0.62	0.65	+
Zambia		0.81	0.92	+		0.59		0.60	0.62	+
Zimbabwe	0.99	0.98		=	0.73	0.72	0.71	0.73		=
Improvements				14						13
No change				1						7
Worsening				3						5

Source: Author's elaboration on USAID DHS data. NPAR stands for net primary attendance rate; AYS for average years of schooling.

The results of Figure 8 are confirmed by Table 10, which shows that in 13 out of 25 countries, the interquintile ratio of the years of education of people aged 15 to 19 who might have attended secondary education improved in 13 countries, though in almost as many countries there was a deterioration or stagnation.

Figure 8. Shares of bottom (blue) and top (green) quintiles of people aged 15 to 19 who completed grade six
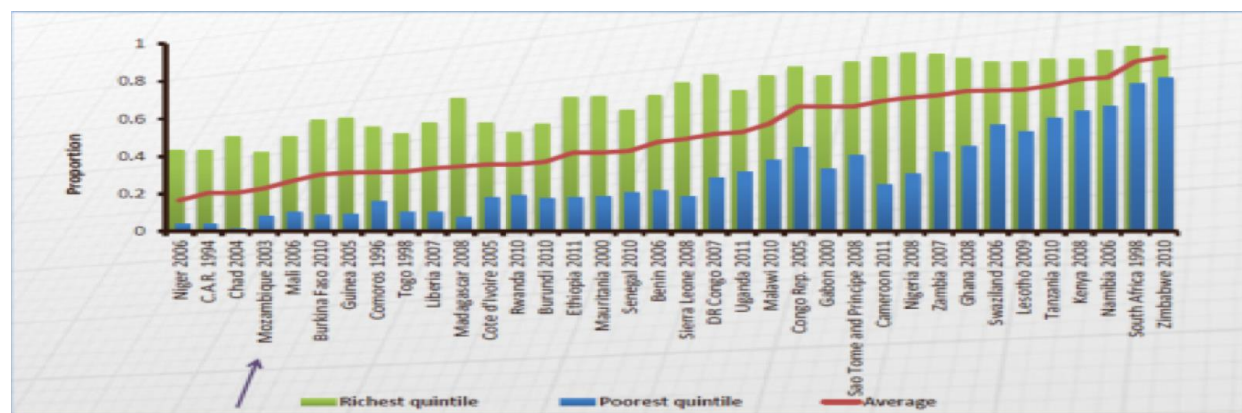
Source: Ferreira 2014.

Altogether, the evidence points to a further increase in primary education, but to a still moderate and only partially equitable rise in secondary education. Nevertheless, with an increase in enrolments and in the average number of years of education of the labour force, the Gini coefficient of the distribution of years of education declined, though it generally remains very high. Such results depend also on the inequality measure chosen. Different results would have likely been obtained had we used the mean logarithmic deviation.

TRENDS IN HEALTH INEQUALITY

Vital registration coverage in sub-Saharan Africa (and in South Asia and the poorest Latin American countries) is incomplete. For low-income countries, health outcomes (e.g., the under-five mortality rate) are computed based on DHS and similar surveys that use indirect methods of estimation (such as the Brass method). Steep health differentials have been observed for a long time in the region, and the need to reduce such differentials in an egalitarian way is particularly acute in low-income African countries. This is justified by several arguments. According to most theories of justice, an average improvement in the under-five mortality rate, characterized by high variation around the mean, deserves a lower social valuation than an equal average gain characterized by more egalitarian distribution. Second, targeting health interventions to deprived groups generally allows faster average gains and lower health inequality than targeting the general population or the highest income groups, for whom an improvement in health status generally requires more expensive interventions. Third, large health differentials such as those observed in sub-Saharan Africa and South Asia may exacerbate the perception of the unfairness of social relations, raise political tensions, and collide with the emphasis placed by the MDGs and SDGs on the well-being of every individual.

This said, Table 11 shows that between 1996 to 2000 and 2011 to 2015 (or the nearest period), the under-five mortality rate improved in 22 out of 25 countries with at least two DHS surveys. This important result explains to a considerable extent the large increase in life expectancy at birth in the region during the last 15 years. It has to be tempered, however, by two considerations. First, in 2011 to 2015 (or the closest period) in eight West African countries (and two South-Eastern African ones), the under-five mortality rate was still above 100 per 1,000. Second, and unlike what occurred in Latin America, such average improvements were accompanied in only 9 cases out of 26 by a reduction in health disparities among children under five, a result that negatively affects improvement in the inequality-adjusted human development index.

Table 11. Average under-five mortality rate (per 1,000) and related Q1/Q5 ratio

	1996-2000		2001-2006		2006-2010		2011-2015		∆ average under-five mortality rate	∆ ⬚ Q1/Q5 ratio
	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total		
Benin	**1.89**	166	**2.12**	160	**1.81**	125	**2.00**	70	-	=
Burkina Faso	**1.65**	219	**1.43**	184	**1.80**	129			-	+
Cameroon	**2.28**	151	**2.14**	144			**2.55**	122	+	+
Chad	**0.99**	194	**0.94**	191					=	=
Comoros	**1.48**	104					**1.30**	50	-	-
Côte d'Ivoire	**2.75**	181	**1.50**	125			**1.50**	108	-	-
Ethiopia	**1.08**	166	**1.41**	123			**1.59**	88	-	+
Gabon	**1.69**	89					**1.50**	65	-	-
Ghana	**2.97**	108	**1.45**	111	**1.71**	80	**1.43**	60	-	=
Guinea	**1.72**	177	**1.92**	163			**2.54**	123	-	+
Kenya	**2.23**	111	**1.63**	115	**1.44**	74	**1.21**	52	-	-
Lesotho			**1.37**	113	**1.33**	117			=	=
Malawi	**1.48**	189	**1.64**	133	**1.26**	112			-	-
Mali	**1.76**	238	**1.67**	229	**1.87**	191	**1.83**	95	-	+
Mozambique	**1.91**	201	**1.81**	152			**1.41**	97	-	-
Niger	**1.53**	274			**1.31**	198	**1.26**	127	-	-
Nigeria			**3.25**	201	**2.51**	157	**2.60**	128	-	-
Republic of the Congo			**1.58**	117			**1.64**	68	-	+
Rwanda	**1.59**	196	**1.73**	152	**1.58**	76	**2.10**	50	-	+
Senegal	**2.58**	139	**2.85**	121	**2.20**	72	**3.28**	54	-	+
Sierra Leone					**1.46**	140	**1.29**	156	+	-
Tanzania	**1.18**	147	**1.47**	112	**1.22**	81			-	+
Togo	**1.73**	146					**2.60**	88	-	+
Uganda	**1.81**	151			**1.50**	128	**1.70**	90	-	=
Zambia	**1.55**	197	**2.08**	168	**1.12**	119	**1.72**	75	-	+
Zimbabwe	**1.59**	102	**1.26**	82	**1.46**	84			-	=
Improvements	…	…	…	…	…	…	…	…	**22**	**9**
No change	…	…	…	…	…	…	…	…	**2**	**6**
Deteriorations	…	…	…	…	…	…	…	…	**2**	**11**

Source: Author's elaboration on USAID DHS data.

What explains these only partially satisfactory results? We examine, as done also for Latin America, the rate of average improvement and the interquintile ratio of two important determinants of under-five mortality, i.e., the vaccination rate and the proportion of women (mothers) with secondary or higher education. We recall also that in 12 of the 29 countries analysed above, consumption inequality rose, likely affecting the distribution of health outcomes.

As for the evolution over time of the vaccination rate, Table 12 shows that it improved in 17 countries out of 25 and deteriorated in five. The interquintile ratio improved in a smaller—but non-negligible—proportion of the cases. In many cases, changes in such a variable should have favourably affected the distribution of under-five mortality rate gains across most population quintiles.

Table 12. Percentage of children fully vaccinated and the related Q1/Q5 ratio

	1991-1995		1996-2000		2001-2005		2006-2010		2011-2015		Δ total	Δ Q1/Q5 ratio
	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total		
Benin			0.51	55.6	0.67	59.0	0.51	47.1	0.62	47.6	-	-
Burkina Faso	0.29	34.6	0.35	29.3	0.55	43.9	0.87	81.3			+	+
Cameroon	0.43	40.0	0.41	35.8	0.60	48.2			0.45	53.2	+	=
Chad			0.17	11.3	0.04	11.3					=	-
Comoros			0.48	54.5					0.56	61.9	+	+
Côte d'Ivoire	0.24	37.4	0.35	50.7					0.57	50.5	=	+
Eritrea	0.29	41.4			0.75	75.9					+	+
Ethiopia			0.20	14.3	0.39	20.0			0.33	24.3	+	-
Gabon			0.23	14.6					2.18	31.6	+	+
Ghana	0.473	54.8	0.60	62.0	0.67	69.4	0.88	79	1.02	77.3	+	+
Guinea			0.33	32.2	0.64	37.2			0.46	36.5	+	-
Kenya	0.75	78.2	0.80	59.5	0.64	51.8	0.87	68.30	0.84	71.1	+	=
Lesotho					0.95	67.8	0.72	61.70			-	-
Malawi	0.81	81.8	0.78	70.1	0.66	64.4	0.95	80.90			=	+
Mali			0.28	31.5	0.34	28.7	0.86	48.20	0.59	38.9	-	+
Mozambique			0.23	47.3	0.50	63.3			0.71	64.1	+	+
Niger	.	17.4	0.09	18.4			0.41	29.0	0.52	52.0	+	+
Nigeria			.	16.8	0.08	12.9	0.09	22.7	0.06	25.3	+	-
Republic of the Congo					0.39	52.1			0.78	45.5	-	+
Rwanda	0.95	86.3	0.90	76.0	1.00	75.2	0.90	90.1	0.91	92.6	=	=
Senegal	.	49.1			0.90	58.7	0.80	62.8	0.90	73.7	+	=
Sierra Leone							0.98	39.8	1.17	68.0	+	+
Tanzania	.	71.1	0.67	68.3	0.72	71.1	0.81	75.2			+	-
Togo			0.42	30.8					0.86	61.5	+	+
Uganda	0.54	47.4	0.62	36.7			0.86	46.2	0.92	51.6	+	+
Zambia	.	66.6	0.82	78.3	0.79	70.0	0.91	67.6	0.77	68.3	-	-
Zimbabwe	0.83	80.1	0.99	64.0	0.67	52.6	0.75	64.5			-	-
Improvements	…	…	…	…	…	…	…	…	…	…	**17**	**14**
No change	…	….	…	…	…	…	…	…	…	…	**4**	**4**
Deteriorations	…	…	…	…	…	…	…	…	…	…	**5**	**8**

Source: Author's elaboration on USAID DHS data.

Such a conclusion about the fairly efficient and egalitarian effect of vaccination is supported by the data in Table 13 on the share of public and private health expenditure/GDP. Table 13 indicates that in the vast majority of the countries, the sum of public and private health expenditure over GDP increased, at times substantially, over the last 20 years, or most recent period available. In three of the seven cases of deterioration, the decline in health expenditure was limited. Thus, health sector policies seem to have broadly supported the expansion of egalitarian public health programmes like vaccination, oral rehydration and so on. This hardly explains why average improvements in the under-five mortality rate were recorded in a very regressive way.

Table 13. Trend in total (public and private) health expenditure as a percentage of GDP

	1996-2000	2001-2005	2006-2010	2011-2015
Angola			4.54	3.38
Benin	4.58	4.68	4.75	4.85
Burkina Faso	5.26	5.61	7.17	4.96
Cameroon	4.42	4.73		3.96
Chad	5.55	5.72		
Comoros	4.48			7.10
Côte d'Ivoire	7.29	5.39		6.14
Democratic Republic of the Congo			3.61	3.88
Ethiopia	4.36	4.20		6.54
Gabon	2.88			3.13
Ghana	3.23	3.12	4.85	3.55
Guinea	3.41	2.82		5.39
Kenya	4.49	4.44	3.90	5.72
Lesotho		6.96	9.79	
Malawi	6.07	7.81	10.0	11.38
Mali	7.56	6.39	6.55	6.46
Mozambique	4.63	6.39	5.43	6.23
Niger	6.79		7.39	6.10
Nigeria	3.37	4.04	3.99	3.70
Republic of the Congo		2.42	2.26	2.79
Rwanda	4.22	6.83	7.91	
Senegal	3.94	5.35	4.62	4.66
Sierra Leone			10.2	11.5
Tanzania	2.67	4.09	5.29	5.72
Togo	3.91			5.11
Uganda	6.77	8.89	9.86	9.09
Zambia	6.00	6.92	4.36	4.99
Zimbabwe		6.43	5.37	
Improvements 1996-2000 to 2011-2014				**19**
No change				**1**
Deteriorations				**7**

Source: World Development Indicators, World Bank. Note: A green highlight indicates a rise, while a purple one shows a decline, in relation to the initial period. No highlighting means no relevant change.

We look now at the changes in the level of and distribution in the percentage of women (mothers) with secondary or higher education. Table 14 shows that such a variable improved on average in 23 countries out of 25, but that the distribution of such gains was extremely unequal, as

improvements in the Q5/Q1 ratio were recorded only in 6 cases out of 25. All this suggests that, as already noted when discussing educational inequality, a skewed increase in higher education has negatively affected not only the distribution of human capital, but also the distribution of improvements in health status. Such results are confirmed by the data in Annex Tables 2 and 3 about the trend in the proportion of men and women with tertiary education, and about the equity of such a human capital increase. In fact, for both men and women, there was a quasi-universal increase over the period considered, though in most cases, such an increase benefitted low-income and high-income groups unequally.

Table 14. Percentage of women with secondary or higher education and related Q5/Q1 ratio

	1991-1995		1996-2000		2001-2005		2006-2010		2011-2015		Δ average	Δ Q5/Q1 ratio
	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total		
Benin			0.96	9.4	2.42	13.9	4.11	16.4	8.59	23.0	+	+
Burkina Faso	1.56	6.6	0.80	5.8	1.57	8.7	3.90	12.4	9.40	18.2	+	+
Cameroon	9.17	26.5	10.5	33.3	8.85	39.1			4.8	46.2	+	-
Comoros			8.96	20.6					25.7	49.1	+	+
Côte d'Ivoire	8.83	14.0	3.48	15.3	8.9	19.6			6.6	21.4	+	-
Ethiopia			1.49	9.1	3.05	11.9			2.26	11.2	=	=
Gabon			30.3	58.7					47.0	74.4	+	+
Ghana	6.98	10.3	27.8	52.8	21.8	51.8	21.5	58.70	29.1	63.1	+	+
Guinea			2.6	9.4	3.3	11.1			4.3	19.1	+	+
Kenya	13.0	24.5	14.2	29.2	12.1	29.3	12.8	34.3	14.5	42.7	=	+
Lesotho					19.2	38.7	23.5	52.2			+	+
Malawi	1.1	4.4	4.1	11.1	9.9	15.5	7.6	20.0	6.4	23.0	+	-
Mali			0.8	7.1	1.9	8.7	6.2	10.3	5.1	14.9	+	+
Mozambique			1.1	4.4	0.3	7.8	2.7	13.0	2.1	17.1	+	=
Niger	.		2.2	5.3			2.1	6.1	3.8	8.5	+	+
Nigeria			.		13.2	37.0	10.0	44.6	4.1	44.9	+	-
Republic of the Congo					37.9	62.4	41.5	66.2	38.7	70.4	+	=
Rwanda	9.8	7.9	7.0	10.6	6.2	9.6	8.6	16.2	13.5	23.4	+	+
Senegal	.		1.7	12.5	3.0	15.2	11.2	20.4	18.0	25.7	+	+
Sierra Leone							6.4	21.1	17.5	30.2	+	+
Tanzania	.		5.7	5.3	2.2	8.6	6.4	16.2	7.8	17.5	+	+
Togo			4.2	17.0					2.2	34.8	+	-
Uganda	6.1	13.5	4.7	18.4	10.6	19.7	6.2	21.3	7.8	27.7	+	-
Zambia	.	23.9	8.5	27.8	11.6	30.0	11.7	35.1	16.0	44.8	+	+
Zimbabwe	28.3	41.6	30.1	53.0	33.7	63.1	45.9	69.7			+	+
Improvements	…	…	…	…	…	…	…	…	…	…	23	6
No change	…	….	…	…	…	…	…	…	…	…	2	3
Deteriorations	…	…	…	…	…	…	…	…	…	…	0	16

Source: Author's elaboration on USAID DHS data.

Rapid income, educational and health inequality rises in South Asia

RISING INCOME INEQUALITY AMID RAPID ECONOMIC GROWTH

During the last two decades, South and South-East Asia recorded an unprecedented acceleration of economic growth that contributed massively to a very rapid reduction in the incidence of poverty. Yet, in South Asia, income inequality rose in most cases, while it stagnated or declined in South-East Asia with the major exception of Indonesia (Table 15). The largest increase in inequality was observed in China in parallel with an extremely fast rate of growth. For an analysis of the factors behind the Chinese inequality surge, see Li et al. (2013).

Table 15. Trend in the Gini coefficient of selected South Asian and South-East Asian countries

Country (and years of reference)	First year	Second year
Bangladesh (1991-2010)	27.6	32.1
India (1993-2010)	32.5	37.0
Nepal (1995-2010)	35.2	32.8
Pakistan (1990-2011)	33.2	30.6
Sri Lanka (1990-2006)	32.5	40.3
China (1990-2008)	32.4	43.4
Cambodia (1994-2008)	38.3	37.9
Indonesia (1990-2011)	29.2	38.9
Malaysia (1992-2009)	47.7	46.2
Philippines (1991-2009)	43.8	43.0
Thailand (1990-2009)	45.3	40.0
Viet Nam (1992-2008)	35.7	35.0

Source: Excerpted from Kanbur et al. (2014), Table 2.2. Note: Green highlighting indicates a distributive improvement, purple highlights a deterioration.

In India, the Gini rose between 1993 to 1994 and 2008 to 2009 in the rural sector (from 25.8 to 28.3) and urban sector (from 31.8 to 38.2), while interstate inequality nearly doubled (Himanshu and Lanjouw 2015). As a result, the overall Gini rose by (an underestimated) 4.5 points (Table 15). One factor behind this surge was that the gap between wages in the organized and unorganized sectors has diverged since 1990. At the same time, the relative remunerations of managers and capital owners grew rapidly, especially in the 'rent sectors' heavily reliant on government licenses (mining, metals, construction, land, real estate, telecoms), as well as in 'knowledge-intensive' sectors such as IT and pharmaceuticals. The wages of unskilled workers belonging to minorities were further penalized by social norms that have for centuries segmented the labour market and discriminated against workers belonging to scheduled castes and tribes and religious minorities. Because of lower

education and 'pure segregation', these workers can offer their work only in poorly paid sectors (Ghosh 2015).

As for the other South Asian countries and Indonesia, Kanbur et al. (2014) argue that the inequality rise observed during the last two decades was caused by several factors.

First, the skills-biased technical changes of the 1990s and 2000s, caused by the liberalization of international trade. The importation of new capital- and skilled labour-intensive technologies raised the demand for skilled workers and pushed upward the 'skill premium'. Such an increase resulted from the disconnect between a rapidly rising demand for skilled workers and an often lagging supply, due to the inability of low-income households to finance the secondary and university schooling of their children, and to inadequate public expenditure on education, as observed in India and other South Asian countries. Decompositions presented in Kanbur et al. (2014) suggest that growing educational inequality explains up to 45 percent of rising income inequality in the region. In addition, as the new technologies are capital-intensive, there was an increase in the 'capital share' in total income, a fact that further increased income inequality, given the high concentration of capital ownership in South Asia. These authors note that the rise in the capital share was due also to a fall in the bargaining power of organized labour and increasing job informalization (the opposite of what happened in Latin America during the 2000s).

While this explanation captures a substantial part of the observed inequality rise, other factors contributed to the rise in the skill premium, including changes in remuneration norms (of the 'the winner takes all' type), weak labour institutions (such as minimum wages and collective bargaining), and limited public expenditure on health and education. A rise in the skill premium following a technological shock can be controlled by appropriate public policies. For instance, Murphy et al. (1998) compare the United States, where the skill premium rose by 20 percent over 1980 to 1995, and Canada, where it remained constant thanks to a steady supply of state-subsidized high school graduates. They conclude that, while new technology raises the demand for educated workers, an increase in the skill premium mainly depends on the lack of public support to post-secondary education.

Second, increased migration. The literature emphasizes the rapid growth of the effective world labour supply (IMF 2007), global integration of labour markets, increased offshoring of production by domestic firms, and growing migration of semi-skilled workers that broadens the labour pool in some countries of destination. This has depressed the unskilled wage rate in both countries of origin and destination.

Third, the unfettered adoption of market-oriented reforms focusing on domestic liberalization, free trade, financial integration and the attraction of FDI. Trade liberalization was unequalizing in

most cases, as it increased the demand for skilled workers (Koujanou-Goldberg and Pavcnik 2007). Similar effects were observed for FDI allocated to capital- and skill-intensive industries (Te Velde and Morrissey 2002), consisting of mergers and acquisitions, or replacing the output of labour-intensive local firms. An even stronger impact was due to capital account opening (Prasad et al. 2003).

Fourth, spatial and regional inequality. The distribution of production activities is generally concentrated in a few areas with a long tradition of producing manufactured goods and modern services, so as to benefit from economies of scope and agglomeration, leaving behind the most remote regions, and causing in this way an increase in regional and total inequality.

Fifth, the low employment elasticity of increasingly capital-intensive GDP growth. This entailed slow job creation, better economic opportunities for a minority of the labour force, and a rise in the capital share and skill premium. Rising spatial inequality and weak social policy contributed to mediocre or rather bad distributive outcomes in most of South Asia and Indonesia.

Sixth, limited redistribution via fiscal policy. As noted, the increase in the skill premium was in part due to the high inequality of opportunities (i.e., access to state-financed basic services). Claus et al. (2014) show that fiscal policy hardly modified the inequality of market incomes. Corporate income tax, social security payments, sale taxes, excises and custom duties were, on average, regressive. Only the personal income tax was progressive, though in many countries, high exemption thresholds and generous deductions characterized it. As a result, corporate income tax raised a lower percentage of GDP (2 percent to 3 percent) than in other regions (ibid.). In turn, public expenditure on social protection and housing was also regressive, while it was progressive in many other regions. Only expenditure on health and education was progressive. In the absence of explicit social policies targeting unskilled labour and the poor, the inequality of market income was hardly reduced by the tax-and-transfer system.

TRENDS IN EDUCATIONAL INEQUALITY

Echoing data limitations for sub-Saharan Africa, Table 16 provides only a few data on the Barro-Lee average years of education of the workforce (i.e., the population aged 15 and above) for only a few countries of both South and South-East Asia. Nevertheless, it consistently shows that the Gini coefficient of the distribution of this variable declined steadily in all countries of the region, though it remained in the 40 to 60 range, with the exception of the Philippines. As noted above, this improvement in the distribution of human capital depends on the specific measure chosen (the Gini index). Less favourable results would be obtained if using other inequality indexes (e.g., the mean logarithmic deviation).

Table 16. Average years of education and Gini index of years of education for people aged 15 and above

	1991-1995		1996-2000		2001-2005		2006-2010		Δ years of education	Δ Gini years education
	Average year of education 15+	Gini year of education 15+	Average year of education 15+	Gini year of education 15+	Average year of education 15+	Gini year of education 15+	Average year of education 15+	Gini year of education 15+		
Bangladesh					.	57.8	.	54.6		-
Cambodia			3.5	48.4	4.1	44.2	4.7	42.1	+	-
Indonesia			.	37.1			.	31.2		-
Nepal			.	75.0	.	70.6	.	64.2		-
Philippines	.	24.6	.	23.6	.	23.9	.	22.4		-
Viet Nam			.	33.4	.	32.3				-
Improvements									1	6
No change									0	0
Deteriorations									0	0

Source: Barro-Lee database (years of education) and USAID DHS data (Gini education).

Progress in current educational equality is better assessed on the basis of the interquintile ratio of the distribution of net primary enrolment and average years of schooling of 15 to 19 year olds (Table 17). These data show that the net primary enrolment Q1/Q5 ratio fell over time in four countries, and stagnated in three.

Table 17. Interquintile ratio of the net primary attendance rate, 2001-2015, and interquintile ratio of average years of schooling of the population 15 to 19 years old, 1991-2015

	NPAR Q1/Q5 ratio 2001-5	NPAR Q1/Q5 ratio 2006-10	NPAR Q1/Q5 ratio 2011-15	AYS Q1/Q5 ratio 1991-5	AYS Q1/Q5 ratio 1996-00	AYS Q1/Q5 ratio 2001-5	AYS Q1/Q5 ratio 2005-10	AYS Q1/Q5 ratio 2010-15	Δ NPAR Q1/Q5 ratio	Δ AYS Q1/Q5 ratio
Bangladesh	.	.	0.93			0.53	0.60	0.55		=
Cambodia	0.81	0.97	0.97		0.47	0.56	0.61	0.62	+	+
Indonesia	1.00	.	.		0.67	.	0.70	0.75		+
Nepal	.	.	0.87		0.65	0.65	0.65	0.66		=
Pakistan		.	0.45				0.58	0.57		=
Philippines	.	.	.	0.64	0.65	0.67	0.65	0.68		+
Viet Nam	.				0.46	0.62				+
Improvements									1	4
No change									0	3
Deteriorations									0	0

Source: USAID DHS data and UNESCO (United Nations Educational, Scientific and Cultural Organization) Institute for Statistics.

Except for Pakistan, net primary enrolment by 2011 to 2015 came close to one, because of the nearly complete achievement of the universal primary education target set by the MDGs. Some improvements were recorded also for the net secondary enrolment rate. For higher secondary

education (youth 15 to 19 years old) the changes in the Q1/Q5 ratio of the average years of schooling are more heterogeneous and show that progress in achieving egalitarian access to secondary education was uneven. Indeed, the last column of Table 17 shows that changes between 1990 to 1995 and 2010 to 2015 are half gains and half stagnation. Over this very long period there were four improvements in Q1/Q5, and three stagnations. By 2010 to 2015, the Q1/Q5 ratio ranged in the not too negative 0.55 to 0.75 range.

TRENDS IN HEALTH INEQUALITY

Also in the seven Asian countries analysed in this paper, there was a rapid but unequal decline of the under-five mortality rate. As shown in Table 18, the rate fell very rapidly especially in low-income Bangladesh, Cambodia and Nepal—less so in Pakistan. Yet as in sub-Saharan Africa (but unlike in Latin America), such improvements were unevenly distributed as, except in Indonesia, the decline was accompanied by a rise in the Q1/Q5 ratio, signaling that the poor benefitted less from the overall mortality decline among children under age five.

Table 18. Average under-five mortality rate (per 1,000) and related Q1/Q5 ratio

	1991-95		1996-2000		2001-2005		2006-10		2011-2015		∆ average under-five mortality rate	∆ Q1/Q5 ratio
	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total	Q1/Q5 ratio	Total		
Bangladesh	1.91	134	1.85	116	1.70	88	2.00	65	2.05	53	-	+
Cambodia			2.42	124	2.95	83	3.00	54	4.00	35	-	+
Indonesia			3.75	58	3.50	46	2.40	44	3.04	40	-	-
Nepal			1.88	118	1.91	91	2.08	61	2.08	54	-	+
Pakistan	1.68	112					2.01	94	2.47	89	-	+
Philippines	2.84	54	2.75	48	3.14	40	3.47	34	3.05	31	-	+
Viet Nam			2.73	37	3.31	24					-	+
Improvements											7	1
No change											0	0
Deteriorations											0	6

Source: USAID DHS data.

The unequal decline in the under-five mortality rate can be explained by the following factors: (i) a rise in income inequality in some countries (e.g., Bangladesh and Indonesia, see Table 15); (ii) an uneven improvement in vaccination coverage across income groups despite a general increase in public and private health expenditure as a percentage of GDP (Table 20); and iii) an unequalizing increase in the proportion of women with secondary or higher education. This is thus a good example of how even a widespread increase in vaccination rates until 60 percent to 80 percent did not improve health inequality because of rises in other factors affecting child mortality, such as income

inequality in some countries and a generalized worsening of the distribution of human capital among women (mothers) (Table 19).

Table 19. The percentage of children fully vaccinated and the Q1/Q5 ratio, and the percentage of women with secondary/higher education and the Q5/Q1 ratio

	Percentage of children fully vaccinated and the Q1/Q5 ratio										⬚	⬚
	1991-1995		1996-2000		2001-2005		2006-2010		2011-2015		Δ average	Δ Q1/Q5
	Q1/Q5	Av.	Q1/Q5	Av.	Q1/Q5	Av.	Q1/Q5	Av.	Q1/Q5	Av.		
Bangladesh	0.66	58.9	0.71	54.2	0.66	73.1	0.90	81.9	0.82	86.0	+	+
Cambodia			0.42	39.9	0.73	66.6	0.74	78.8	0.67	73.4	+	-
Indonesia	.	50.4	0.59	54.8	0.57	51.4	0.52	58.6	0.59	65.6	+	=
Nepal			0.45	43.3	0.66	65.6	0.72	82.8	0.88	87.0	+	+
Pakistan	0.41	35.1					0.40	47.3	0.31	53.8	+	-
Philippines	0.80	71.5	0.69	72.8	0.66	69.8	0.73	79.5	0.79	76.5	+	=
Viet Nam			0.70	50.2	0.48	66.7					+	-
Improvements											7	2
No change											0	2
Deteriorations											0	3
	Percentage of women with secondary or higher education and the Q5/Q1 ratio										Δ⬚	Δ⬚
	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	Q5/Q1 ratio %	Total	average	Q5/Q1
Bangladesh	1.6	15.0	5.4	18.2	10.3	29.2	18.9	36.2	18.9	42.3	+	-
Cambodia			6.5	17.2	9.4	24.8	16.2	34.7	21.8	40.1	+	-
Indonesia	.		15.8	28.1	22.1	38.2	25.9	45.5	42.6	63.5	+	-
Nepal			4.6	9.0	9.7	13.2	21.0	29.3	22.0	42.8	+	-
Pakistan	0.0	11.7					1.1	20.8	2.1	27.0	+	-
Philippines	34.3	66.6	39.5	72.2	43.8	75.6	46.5	79.3	54.2	82.8	+	-
Viet Nam			33.0	65.9	32.4	66.9					=	=
Improvements											6	0
No change											1	1
Deteriorations											0	6

Source: USAID DHS data.

Table 20. Trend in total public and private health expenditure/GDP as a percentage of total government expenditure

	1996-2000	2001-2005	2006-2010	2011-2014
Bangladesh	2.25	2.61	2.79	<mark style="background:#00ff00">3.15</mark>
Cambodia	5.86	5.84	5.95	5.67
Indonesia	1.92	2.53	3.09	<mark style="background:#00ff00">2.89</mark>
Nepal	5.41	5.36	5.69	<mark style="background:#00ff00">6.72</mark>
Pakistan			3.40	<mark style="background:#ff00ff">2.76</mark>
Philippines	3.19	3.24	4.04	<mark style="background:#00ff00">4.55</mark>
Viet Nam	4.87	4.69		

Source: World Development Indicators, World Bank. Note: green highlighting indicates a rise, while purple defines a decline, in relation to the initial period or the oldest available period.

Summing up and policies to reduce human development inequality

The discussion above highlights a variety of experiences in relation to reducing human development inequality. On one side, such inequality declined in Latin America during the 2000s. This was due to a simultaneous improvement in the main determinants of human well-being, i.e., the level of income and its distribution, the level and distribution of human capital, and the level and targeting of public and private health expenditure, including on very efficient and equitable public health interventions such as child immunization.

Performance in sub-Saharan Africa was mixed in all areas affecting human development. While income per capita rose throughout the region, its distribution improved in 17 countries but deteriorated in 12 relying mainly on the exports of oil and metals. Improvements in the average level of education and health were positive, but the distribution of such gains across income quintiles was uneven, especially in the case of under-five mortality and tertiary education, possibly because of the heterogeneous performance in the distribution of consumption inequality. For instance, the distribution across quintiles of years of education among adolescents aged 15 to 19 improved over time in about half of the countries but deteriorated in the other half. Likewise, while the under-five mortality rate declined sharply in practically all 26 countries analysed, its Q1/Q5 ratio improved in only 14 countries, while it stagnated or worsened in the remaining 12. This was not due to unequal coverage of vaccination across quintiles, but to skewed distribution of the increase in the percentage of women (mothers) with secondary or higher education.

Finally, the changes observed in the seven Asian countries analysed have been less favourable from the perspective of human development inequality, despite a rapid acceleration in GDP growth over the last 15 years. Indeed, until the mid- to late 2000s, the distribution of income deteriorated in three of these countries, stagnated in two and improved in Nepal and Pakistan. Likewise, the distribution across quintiles of the increase in years of education among 15 to 19 year olds was uneven, as four countries recorded an improvement and three stagnation, despite the increased volume of public expenditure due to rising GDP. Finally, while average health conditions (proxied by the under-five mortality rate) improved in all seven countries, the interquintile distribution of such gains deteriorated in six of them. This was due to a skewed distribution of vaccination coverage across income quintiles, despite an increase in public and private expenditure on health/GDP, pointing to the possible effect of discriminating social norms. It was due also to very uneven distribution across quintiles of the increase of the proportion of women with secondary or higher education. Despite rapid growth during the last 15 years, South Asia has seen a slow rate of improvement (if not a deterioration) in the distribution of human development.

Given all this, can public policy improve the level and distribution of human development in developing countries? Obviously, the most suitable policy package will vary from place to place, depending on local conditions and political-economy factors. Yet a common set of policies applies largely to most low-income countries. These policies are discussed below, starting from those that most directly affect human development, but including also those structural and macro policies that influence a country's ability to finance and implement redistributive social programmes.

SOCIAL SPENDING, SOCIAL ASSISTANCE AND LABOUR POLICIES

These measures may be introduced because of their positive effect on inequality or to offset the adverse distributive effects of macro measures, which may be desirable from a growth but not from a distributive perspective.

Increase public and private expenditure on education and health. As noted, several countries of Latin America and South Asia increased public expenditure on secondary education in recent times, sharply reducing educational inequality. An improvement in the distribution of education among the members of the workforce is desirable in itself, but also has a strong impact on the distribution of wages and the skill premium. Rising secondary female education also has a large impact on the under-five mortality and fertility rates. In many developing countries, this means expanding enrolment and completion rates in secondary education, and broadening access to subsidized tertiary education. The effects on inequality lag by 5 to 10 years, but are powerful and long lasting. Of course, the inequality impact of an increased supply of skilled labour is not automatic, as it requires additional jobs creation. Overall, public health expenditure has been behind education expenditure. This is a factor that likely accounts for the unequal reduction in the under-five mortality rate, except where a strong emphasis was placed on efficient and egalitarian public health programmes, such as immunization, oral rehydration, control of upper respiratory tract infections and endemic disease (malaria, tuberculosis and HIV/AIDS), communal water supplies, and so on. At the moment, the distribution of public spending—and especially health spending—in many countries is not yet conducive to lower health inequality.

Social assistance and income transfers. The last decade has seen a massive diffusion of strongly equalizing targeted cash transfers and non-contributory social pensions. Such programmes are now in operation in at least 18 countries in Latin America, 20 in sub-Saharan Africa, 6 in South Asia and 5 in South-East Asia, covering 860 million people (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1672090). These programmes can generate strong effects on the distribution of income, health and education. While steadily expanding in some countries (as in Brazil, Malaysia, Mexico and Thailand), such programmes are still smaller than desirable in many other countries, where they are often still at the pilot stage. These programmes can be expanded

through social insurance and social assistance schemes. In this regard, recent evidence suggests that the best approach consists of 'walking on two legs'. In a country with a limited formal sector (as in South Asia and Africa), social insurance expenditure is generally regressive, as it mainly covers the comparatively well-off formal sector workers. Focusing only on its expansion would thus be regressive for many years. This suggests that while actively extending formal sector social insurance, the government should set up solidarity-based, non-contributory, universal or targeted funds providing basic benefits to informal sector workers and their families by means of conditional and non-conditional cash transfers.

Labour market policies. Econometric evidence for Latin America shows that efforts aiming at strengthening labour institutions—which regulate the distribution of earnings by addressing the problems of unemployment, informalization, low minimum wages and wage negotiations, and dispute settlements—reduced wage inequality. Programmes in this area include passive and active labour market policies, such as unemployment insurance, retraining programmes and self-targeted public works schemes. In middle-income economies, minimum wages, which reduce earnings inequality in most cases, can also be raised moderately, without efficiency costs. Finally, wage bargaining institutions, which have been weakened substantially in most countries during the last three decades, need to be strengthened. Efforts at gradually formalizing employment, if at the cost of greater employment flexibility, may also be needed.

Progressive taxation. A reduction of inequality in all dimensions requires an increase in public expenditure in the areas mentioned above. In addition to strengthening the budgetary balance and reducing inflation (which most affects the poor), tax reform should aim at improving after-tax income distribution (Cornia, Gomez-Sabaini and Martorano 2011). In Latin America, about half of the 3.5-point average increase in the tax/GDP ratio (Figure 3) was achieved by increasing the revenue generated by income tax, wealth taxes, presumptive taxation, financial transaction taxes, consumption taxes on luxury items, and a reduction of disequalizing excises on oil, alcoholic beverages and tobacco. Such changes have not taken place yet in South Asia (Claus et al. 2014). In Latin America, the redistributive effect of taxation reduced Gini by between 0.6 and 3.8 Gini points in 10 countries out of the 11 with available data. Though tax/GDP ratios have increased in many developing regions during the last decade, there still is considerable room to increase the vertical and horizontal equity of taxation, and its capacity to increase progressive social spending.

POLICIES TO TACKLE THE STRUCTURAL CAUSES OF HIGH INEQUALITY

These policies focus on the path-dependent distribution of assets and social norms. Though not part of the focus of this paper, such measures are briefly mentioned hereafter for the sake of completeness.

Reducing asset inequality. The introduction of such reforms depends on the political climate prevailing in a country. For instance, the redistribution of Chinese and Vietnamese communes and of state land in Malaysia had a very positive distributive and growth effect. In contrast, despite its prominent place on their electoral manifestos, no agrarian reforms were carried out in the rest of Asia, Latin America and Africa, despite demonstrated positive effects on equity and efficiency in labour surplus countries with equitable factors markets. Meanwhile, the number of potentially disequalizing 'land grabs' increased, including in countries with low land/person ratios. In recent years, the introduction of politically less costly social assistance transfers likely reduced the pressure to redistribute land. Progressive land taxes (at present low or non-existent in much of the developing world) can help reduce land concentration, as land sold due to rising taxation can be purchased with community/aid funds for the benefit of the poor.

Correct market failures, in particular in the credit and insurance markets. This can be done by developing a capillary network of financial institutions accessible to the poor. It entails facilitating the establishment of easy to set up and capitalize microcredit schemes, savings associations, cooperative banks, credit unions and branches of commercial banks in marginal areas, as happened in the 19th century in Germany and Italy, and more recently in Bangladesh. The parallel development of insurance markets for smallholders and microentrepreneurs would enable them to insure against household-specific and covariant shocks to prevent distressed asset sales and increased inequality.

Tackle discriminatory social norms. Particularly in South Asia and parts of sub-Saharan Africa, traditional social norms discriminate against women, people from lower castes, scheduled tribes, religious minorities, ethnic groups and other marginal groups. Such norms have a large negative impact on the distribution of jobs and earning, access to assets, schooling and health care. While constitutions have generally abolished these norms, in practice these still discriminate against marginal groups. Affirmative action measures, education, social organization and empowerment of these groups can help reduce such discrimination.

DISTRIBUTION-SENSITIVE MACROECONOMIC POLICIES

The experience of the last 10 years points to the emergence of a 'new macroeconomic approach' compatible with the reduction of inequality. It includes the following measures:

Limiting foreign indebtedness and mobilizing domestic savings. The liberalization of the current account has been presented as a golden opportunity to access a global pool of savings and speed up capital accumulation and job creation. Yet the literature suggests that excessive reliance on foreign finance often results in 'financial traps' characterized by currency mismatches, high risk premiums, exposure to sudden stops, rising spreads and the allocation of funds to non-priority

sectors. These phenomena affect both growth and inequality. Such risks decline but do not disappear if the capital inflows take the form of FDI. In contrast, economies with larger domestic banking systems and high saving ratios have smaller relative portfolio inflows (China and Malaysia are good examples in this regard). Thus, the recourse to foreign resources should be selective and sustainable, and countries with large foreign debt should reduce it, as done successfully in recent times in several developing regions. This means that capital accumulation should be funded more than before by mobilizing domestic savings through the development of a regulated banking network, harnessing the resources of pension funds, tightening consumption credit and ensuring there are adequate incentives to invest.

Countercyclical fiscal and monetary policy. In many countries, government revenue and budget deficits swing widely because of fluctuations in the demand and prices of their exports. All this has traditionally led to public expenditure cuts recommended by the International Monetary Fund that exacerbate the shocks, and worsen growth and inequality by imposing fiscal cuts that may penalize social spending and human development. As the recent experience of a few Latin American and some South-East Asian countries shows, however, these problems can be tackled by countercyclical policies that expand public expenditure in crisis years and realize budget surpluses, reduce public debt and accumulate reserves during boom years. The allocation of public expenditure has a major impact on income inequality. Unlike in the 1980s and 1990s, the design of fiscal policy now shows greater concern for protecting spending on health, education, public works, income support, infrastructure and key public investments. The closure of the budget deficit also needs to rely more on raising taxes than cutting essential expenditures. As argued by Singh (2006), the past macroeconomic fragility of several developing countries was due to their low tax collection. Tax/GDP ratios rose in Latin America and in parts of sub-Saharan Africa with positive effects on the distribution of after-tax income. Monetary policy should also be countercyclical and aim at a more gradual decline of inflation that, since the 2000s, is in any case lower than in the 1990s. This means that while real interest rates may aim at the 1 percent to 3 percent range, nominal rates ought to increase less markedly than in the standard approach. At the same time, the experience of the last decade suggests that the money supply should expand in a countercyclical way to contain the impact of crises, while public banks should expand credit in periods of reduced private lending.

Choosing an intermediate exchange rate regime. Such a regime should minimize the risk of currency crises and provide incentives for the expansion of the traded sector where the majority of the poor often work. It is obviously difficult to generalize, but in small or medium developing countries exporting a large share of their output, an intermediate regime aimed at credibly stabilizing their real competitive exchange rate seems to be the best option. An example of such an exchange rate regime is the 'basket, band and crawl' regime adopted in Chile in the 1990s and in Argentina during the 2000s. Rodrik (2008) confirms that a stable and competitive real exchange

rate is a key factor to kick-start growth, improve long-term growth and keep income inequality within a reasonable range.

Banking and financial sector regulation. Inequality can also be reduced by a stricter regulation of the domestic financial sector, to avoid the disequalizing effects of financial crises. For instance, in the 2000s, most Latin American governments reduced currency mismatches, and enhanced the capitalization, funding and supervision of their banks. They also developed local capital markets, introduced a stricter prudential regulation of the domestic financial system, enhanced risk assessment mechanisms in large banks, created appropriate accounting frameworks, and assigned a greater role to state banks in mobilizing domestic savings and the financing of economic activity (Rojas Suarez 2010).

Trade policy. The trade liberalization of the 1980s and 1990s has often led to de-industrialization and loss of semi-skilled manufacturing jobs (Figure 6) that worsened income distribution. Despite this, free trade policies were not overturned during the 2000s. Countries may thus consider adopting 'open economy industrial policies' to re-industrialize and diversify trade flows by sector and origin/destination, while quickly removing any remaining anti-export bias, and promoting regional trade integration in manufacturing. During the last decade, Australia, Chile, China, Malaysia, the Republic of Korea and Viet Nam showed it is possible to develop such trade policy. A first powerful way to diversify output is to adopt a competitive real exchange rate that has stronger protective effects of import-competing domestic manufacturing than tariff rates of 30 percent (Helleiner 2014). In turn, small developing countries may choose to rely on selective FDI in labour-intensive sectors as a vehicle to industrialize and crowd-in domestic investments. A third approach focuses on the diversification of the export basket within the resource sector. Chile followed this policy by producing new items such as wood, fresh fruit, wine and salmon, thanks to a long-term alliance between the public and private sectors. Finally, whenever trade liberalization promotes fast growth and technological modernization, but raises inequality, countries may consider introducing special programmes and active labour market policies to compensate for its negative effects.

Annexes

Table 1. Trends in government expenditure per level of education as a percentage of GDP

	1996-2000				2001-2005				2006-2010				2011-2015			
	Pre-primary	Primary	Secondary	Tertiary	Pre-primary	Primary	Secondary	Tertiary	Pre-primary	Primary	Secondary	Tertiary	Pre-primary	Primary	Secondary	Tertiary
Angola									0.38	0.90	1.21	0.24				
Benin					0.04	1.919	0.87	0.63	0.05	2.03	0.94	0.79	0.11	2.69	1.15	1.30
Côte d'Ivoire	0.01	1.63	1.26	0.89	.	.	.	0.82					0.11	2.07	.	.
Guinea					.	.	.	0.56					0.01	1.07	0.56	0.82
Kenya					0.14	4.08	1.35	0.78								
Malawi	.	2.77	1.12	0.82					0.01	1.51	1.05	1.29	.	3.40	1.69	1.48
Niger									.	2.32	0.71	0.30	0.27	2.24	1.03	0.76
Rwanda	0.02	1.97	0.68	1.41	0.03	1.77	.	0.98	0.01	1.82	1.51	1.12				
Senegal					0.04	2.14	1.15	1.12	0.02	2.22	1.62	1.37				
Sierra Leone									.	1.21	0.60	0.50	.	1.16	0.52	0.61
Togo	.	1.77	1.14	0.86									0.13	2.58	0.69	0.98
Uganda					.	3.03	0.85	0.58					.	1.60	0.66	0.26
Bangladesh					.	0.77	0.94	0.22	.	1.02	0.89	0.25	.	.	0.92	0.22
Cambodia	0.04	1.04	.	.					0.05	1.09	0.45	0.37				
Indonesia									0.02	1.47	0.76	0.38	0.07	1.41	0.88	0.58
Nepal					.	2.05	0.84	0.44								
Philippines					0.01	1.79	0.74	0.40	0.04	1.36	0.68	0.28				

Source: Education Statistics, World Bank. Note: Green highlighting indicates a distributive improvement, purple highlights a deterioration.

Table 2. Men with some tertiary education as a percentage of the population and the interquintile ratio

	Tertiary 1996-2000	Tertiary 2001-2005	Tertiary 2006-2010	Tertiary 2011-2015	Q1/Q5 1996-2000	Q1/Q5 2001-2005	Q1/Q5 2006-2010	Q1/Q5 2011-2015
Benin	3.5	3.5	4.2	7.4				
Burkina Faso	1.4	2.6	2.7			1.0	1.0	
Cameroon	4.9	6.1		9.3				0.3
Chad	1.5	2.5						
Comoros	3.8			12.5				4.8
Côte d'Ivoire	5.7			6.4				
Democratic Republic of the Congo			6.5	9.0			1.3	1.5
Ethiopia	2.1	2.4		7.0				1.5
Gabon	10.3			15.2	7.1			3.6
Ghana	6.0	6.3	9.0	11.8	4.8	8.9	2.2	2.4
Guinea	6.0	4.5		9.5	6.6	11.0		3.7
Kenya	4.2	10.2	9.8	13.8	.	9.0	5.9	3.9
Lesotho		2.7	5.9			4.6	2.2	
Malawi	0.5	2.2	3.2		.	.	.	
Mali	1.6	3.1	2.4	4.0	.	.	1.2	0.7
Mozambique	0.6			2.1	.			.
Niger	1.5		2.1	2.6	.		.	.
Nigeria	12.0	11.8	14.2	14.3	.	2.6	3.8	3.5
Republic of the Congo		10.1		13.0		9.5		4.0
Rwanda		1.4	2.1	4.2	.	.	.	.
Senegal	4.4	4.3	3.9	6.4	.	.	2.9	3.0
Sierra Leone			5.1	6.3			.	1.1
Tanzania	0.1	3.2	1.1		.	.	.	
Togo	3.0			8.7	.			3.6
Uganda	6.3		6.1	8.4	.		10.6	8.1
Zambia	5.3	6.0	8.1	8.0	.	.	.	0.4
Zimbabwe	6.0	5.9	7.2		3.6	0.7	0.9	
Improvements				25				2
No change				2				0
Deteriorations				0				10
Lack of data				0				12
Bangladesh	10.2		12.2	12.8	3.1		5.6	1.3
Cambodia		3.3	6.4	7.6		.	0.4	2.8
Indonesia		7.4	9.1	12.0		2.3	3.1	5.1
Nepal		5.6	11.3	15.3		4.6	3.0	5.4
Improvements				4				3
No change				0				0
Deteriorations				1				1

Source: USAID DHS data and UNESCO Institute for Statistics. Note: Green highlighting indicates a distributive improvement, purple highlights a deterioration.

Table 3. Women with tertiary education as a percentage of the population and the interquintile ratio

	Average tertiary enrolment rate				Q1/Q5 (%)			
	1996-2000	2001-2005	2006-2010	2011-2015	1996-2000	2001-2005	2006-2010	2011-2015
Angola			1.2	3.3				
Benin	0.5	0.9	1.0	1.9				
Burkina Faso	0.2	0.6	1.0	1.3				
Cameroon	1.6	2.2		5.5				
Chad	0.1	0.4						
Comoros	0.9			9.4				2.6
Côte d'Ivoire	1.5	2.6		2.7				
Democratic Republic of the Congo			2.6	3.7				
Ethiopia	0.6	1.4		4.4				
Gabon	4.0			9.8	0.8			1.0
Ghana	2.2	2.6	3.9	6.3	1,4	3.6	0.7	0.5
Guinea	1.9	0.6		3.2				
Kenya	2.3	5.9	7.3	11.2	1.2	0.6	4.0	1.3
Lesotho		1.3	5.8					0.6
Malawi	0.1	0.7	1.8	2.4				
Mali	0.3	0.8	0.7	1.3				
Mozambique	0.1	0.2	0.8	1.2				
Niger	0.2		0.4	0.6				
Nigeria	6.2	5.9	8.9	9.1		0.5	0.3	0.3
Republic of the Congo		2.6	3.7	5.2			0.7	0.7
Rwanda	0.3	0.6	1.5	2.7				
Senegal	1.5	1.0	2.1	2.7				
Sierra Leone			2.5	3.0				
Tanzania	0.0	1.9	0.4	0.4				
Togo	0.6			3.4				
Uganda	3.0	2.9	3.9	5.2			1.0	4.1	0.5
Zambia	2.8	3.1	5.2	5.1		0.9	0.5	0.5
Zimbabwe	2.8	3.0	4.6		1.4	1.1	0.7	
Improvements				26				1
No change				0				1
Deteriorations				1				6
No data				1				20
Bangladesh	3.1	5.1	5.9	7.3		0.5	1.0	0.8
Cambodia	0.4	1.1	3.1	4.6				0.7
Indonesia	3.0	4.9	6.8	12.2	0.8	2.2	2.1	6.4
Nepal	1.1	1.2	4.1	7.8			0.5	2.8
Pakistan			6.4	9.3				0.9
Philippines	29.9	30.7	32.5	33.8	7.9	8.9	8.0	8.8
Viet Nam	1.8	4.0						
Improvements				7				2
No change				0				1
Deteriorations				0				1
No data				0				3

Source: USAID DHS data and UNESCO Institute for Statistics. Note: Green highlighting indicates a distributive improvement, purple highlights a deterioration.

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