

THE TRENDS AND THE REASONS BEHIND SUBSTANTIALLY REDUCED INEQUALITY: THE CASE OF BRAZIL

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Abstract. This article combines individual data from household surveys in the Latin American countries to obtain a regional income and analyse its distribution and recent changes. It concentrates upon whether distributive changes in the countries over the past decade have improved income distribution between individuals or widened gaps. The region's indicators of global inequality declined considerably during 1997-2014. This decline in global inequality is explained essentially by the reduction of inequality within Latin American countries, especially in Brazil. The incomes of the inhabitants of Latin America are now more equal in relative terms than a decade ago, although differences in the countries' average incomes have increased.

Keywords: LAC, inequality, Brazil, income, economic growth, finance.

JEL codes: J18, J24

Аңдатпа. Мақалада Латын Америка елдерінде үй шаруашылығын зерттеудің жеке деректері, аймақтық табыс, табысты бөлуді талдау және соңғы өзгерістері туралы мәліметтер біріктірілген. Соңғы онжылдықта елдерде адамдар арасында табыстарды бөлу бойынша өзгерістердің жақсаруы немесе алшақтықтың көбеюі мәселесіне баса назар аударылды. Аймақтағы жаһандық теңсіздік көрсеткіштері 1997-2014 жылдар аралығында айтарлықтай төмендеді. Жаһандық теңсіздіктің бұл төмендеуі негізінен Латын Америкасы елдерінде, әсіресе Бразилияда теңсіздіктің төмендеуімен түсіндіріледі. Қазіргі уақытта Латын Америкасы тұрғындарының табысы он жылдық көрсеткіштерге қарағанда салыстырмалы түрде тең, дегенмен елдердің орташа табыс айырмашылықтары өсті.

Түйін сөздер: Латын Америка елдері, теңсіздік, Бразилия, табыс, экономикалық өсу, қаржы.

JEL кодтар: J18, J24

Аннотация. В этой статье объединены индивидуальные данные исследований домашнего хозяйства в странах Латинской Америки, для получения регионального дохода, анализа распределений и последних изменений. Основное внимание уделено – улучшились ли изменения в странах за последнее десятилетие по распределению доходов между людьми или разрыв был увеличен. Показатели глобального неравенства в регионе значительно снизились в период 1997–2014 годов. Это снижение глобального неравенства объясняется главным образом сокращением неравенства в странах Латинской Америки, особенно в Бразилии. Доходы жителей Латинской Америки в настоящее время более равны в относительном выражении, чем десять лет назад, хотя различия в средних доходах стран выросли.

Ключевые слова: страны Латинской Америки, неравенство, Бразилия, доходы, экономический рост, финансы.

JEL коды: J18, J24

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Introduction

Latin America has been described as the most unequal region in the world, due to its high and persistent level of inequality. The vast discrepancy among the people of Latin American countries (LAC) in terms of socio-economic variables, such as income, opportunities in education, and access to basic services, has always been a distinctive feature. However, in recent decades, LAC have experienced unambiguous change in their degree of inequality. Following a rise in income inequality during the 1990s, the trend was reversed in the 2000s, alongside rapid economic growth, and poverty reduction. This downturn has continued since the 2000s, and the region has enjoyed a sizeable drop in inequality, while it has increased in other regions of the world. This paper will present an overview of, and trends in, inequality throughout LAC during recent decades. It will focus on the underlying causes, and on the two main determinants of inequality reduction, namely economic growth, and improvement in human capital, incorporating the related theoretical framework.

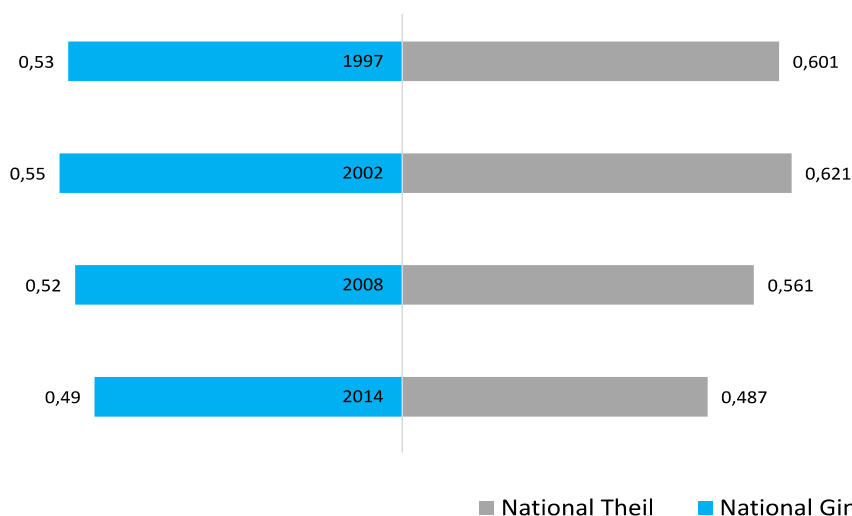
Materials and methods: Overview and Trends in Inequality

In this research, we collected data for LAC, 18 countries from 1997 to 2014. This time span were associated with significant drop in poverty and inequality. Gini coefficients for each country were

calculated and Kuznets curves were drawn according to World Bank source. The analytical points were provided by comparing data and investigating policies of LAC.

According to Kuznets (1955), the shift from a low-productive agricultural sector to a more productive industrial sector leads to a situation where income inequality increases initially, because of the uniformity of wages in manufacturing. This was evident in LAC during the era of globalisation and industrialisation.

In the 2000s, the Gini index of LAC was 0.53, showing 65% higher inequality than high-income countries, 36% and 18% more inequality than the East Asia and the Pacific region, and Sub-Saharan Africa, respectively (Lopez Calva and Lustig, 2010). A significant reversal has been experienced by the Latin American region in the last decade, in terms of economic, political and distributive tendency. Despite the fact that the region consists of countries with different types of economies, political regimes, and different population sizes, inequality reduced in all 18 countries analysed between the years of 2002 to 2014. The unweighted national Gini rose initially over the years 1997 to 2002, resulting in 0.55 at the end of this period; subsequently, from 2002 to 2014, the Gini index fell dramatically, even during the economic crisis, becoming 0.52 in 2008, and 0.49 in 2014.

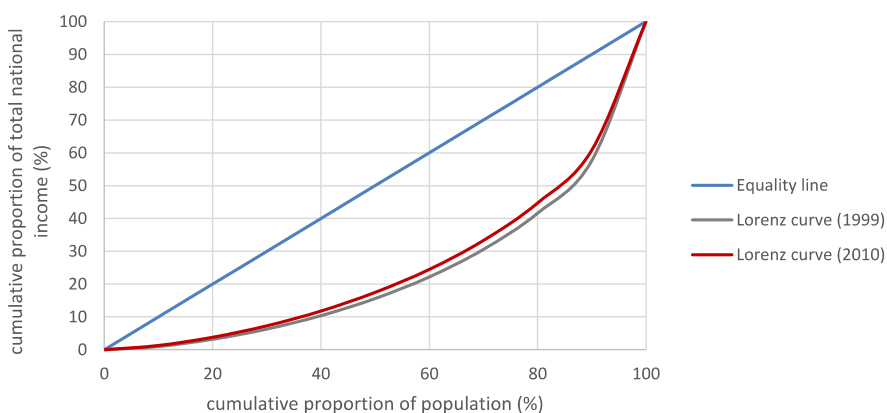


Source: CEPALSTAT

Figure 1 – Gini coefficient and Theil index for LAC (18 countries)

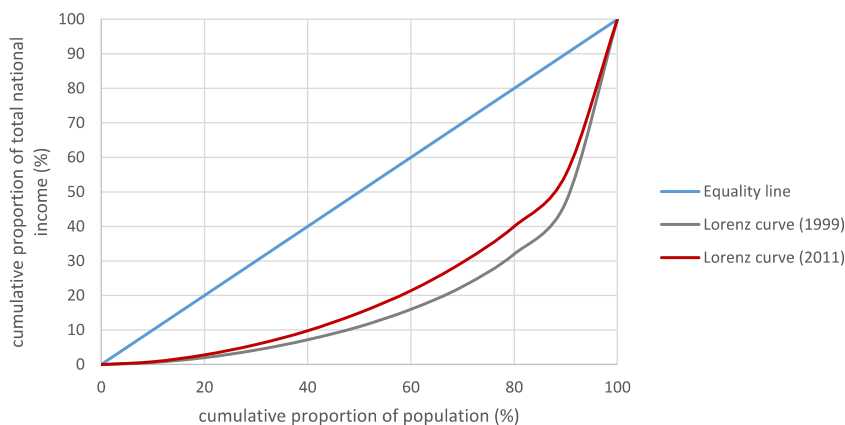
The same strong decreasing trend can be demonstrated using the Theil index. Interestingly, these downturn episodes were more sizeable than the increases of

previous decades, and in 2010, inequality in LAC recovered to the level of the pre-liberalisation period (Cornia, 2014).



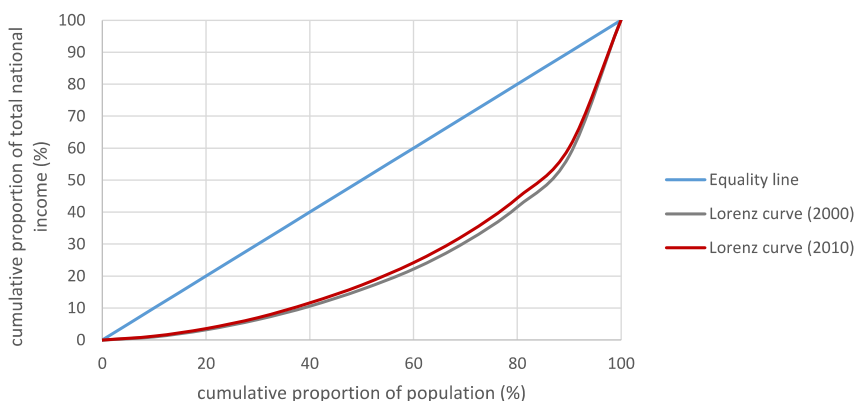
Source: SEDLAC (CEDLAS and The World Bank)

a) LAC



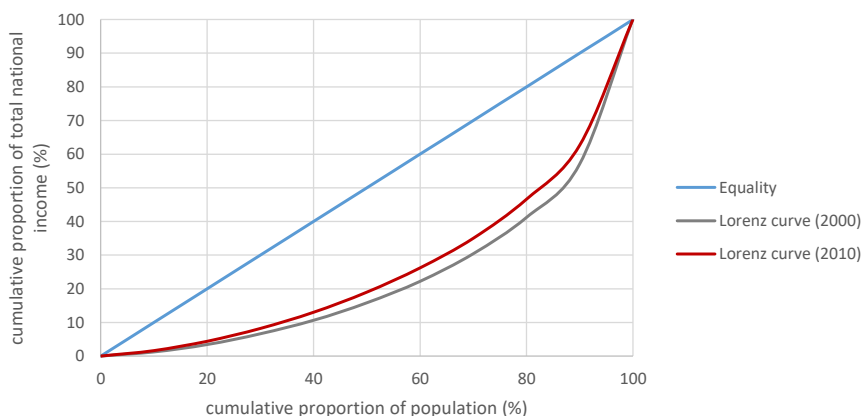
Source: SEDLAC (CEDLAS and The World Bank)

b) Brazil



Source: SEDLAC (CEDLAS and The World Bank)

c) Argentina



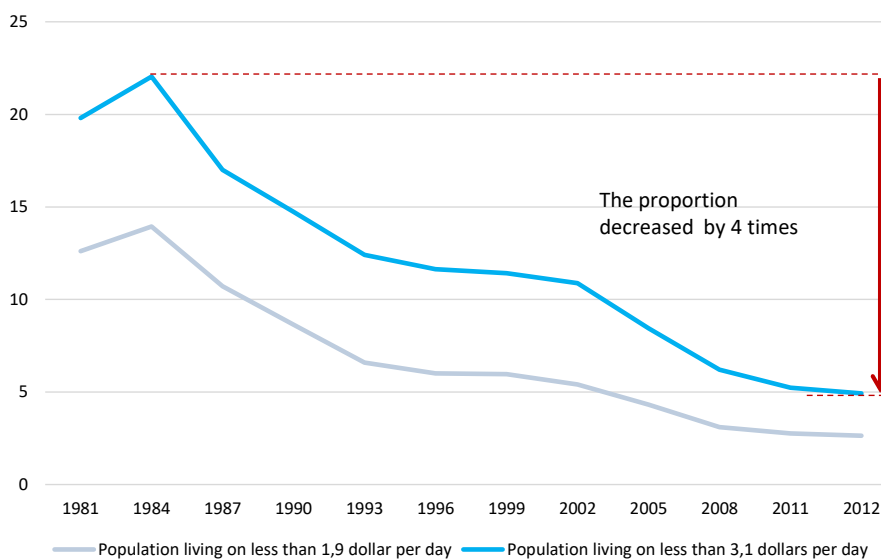
Source: SEDLAC (CEDLAS and The World Bank)

d) Mexico

Figure 2 – Lorenz curve for LAC, Brazil, Argentina and Mexico

After plotting the Lorenz curve (LC) for LAC as a whole, the Gini demonstrates that LC 2010 has lower inequality than LC 1999, but this is not clearly evident in the bottom and top 20%, due to the probability of

intersection. Therefore, in order to provide more precise results, the LC has been plotted for the three largest economies in the region: Brazil, Argentina, and Mexico.



Source: CEPALSTAT

Figure 3 – Population in LAC living on less than 1,9 and 3,1 dollars per day (% of population)

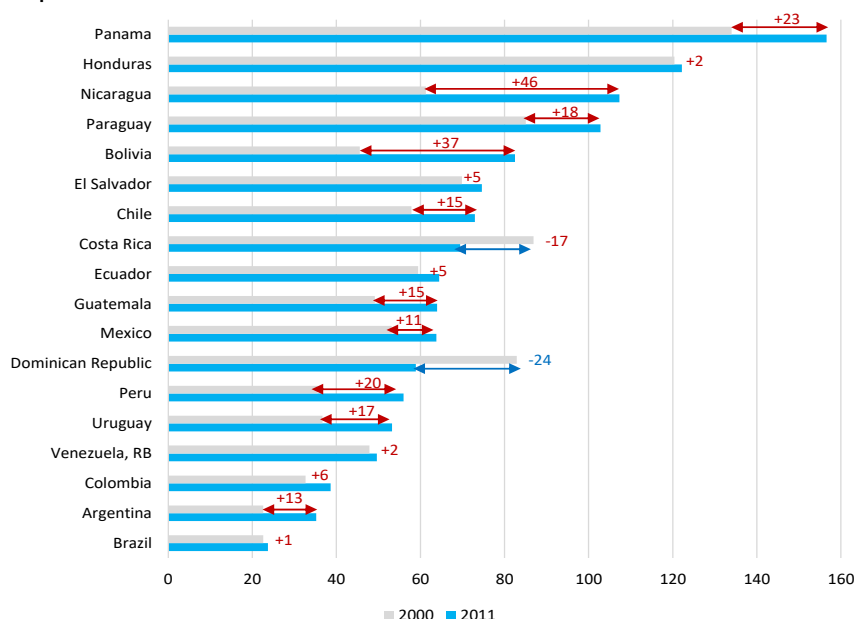
In these cases, and particularly in Brazil, it is clear that LC 1999 lies entirely to the right of LC 2010, thereby illustrating higher inequality in 1999 (*Lorenz consistency*).

Milanovic (2013) indicated that global inequality can be decomposed into two factors, one of which is the “class” component. This component calculates the inequality in income distribution between different “classes” within countries. Cornia

(2014) argued that, in most LAC, not only the poor, but also the middle class, benefit from this progress in the decline of inequality, since it leads to a strengthening of the middle class, which is usually considered to be the main driver in promoting economic growth, political stability, and low inequality.

In addition, it can clearly be seen that the proportion of the population living on less than 3.1 US dollars per day decreased

sharply by a multiple of four in the last three decades.



Source: World Bank

Figure 4 –Trade indicator, trade (% of GDP)

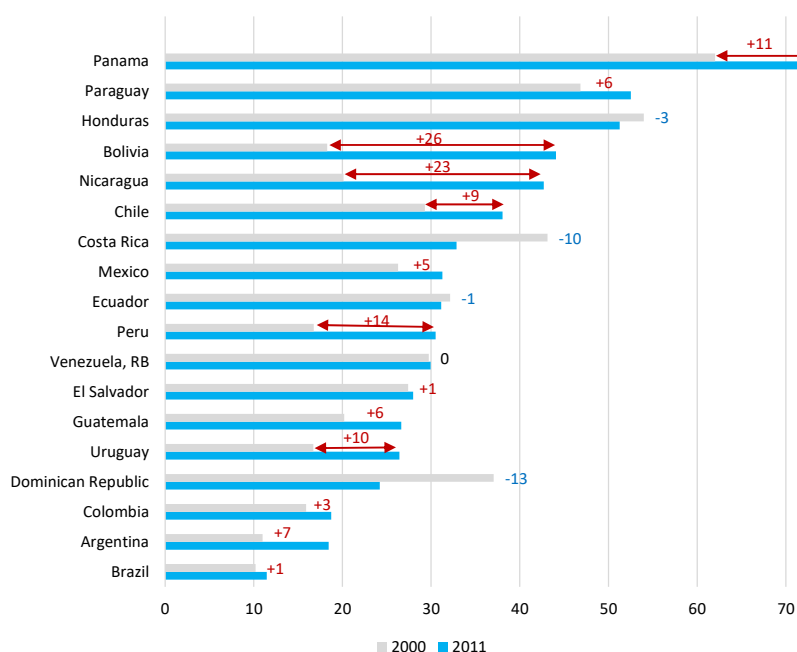
Thus, LAC are unique in the world in demonstrating a generalized improvement, and clear reduction, in inequality.

Results and discussion

Determinants of the Decline in Inequality

a) Growth acceleration and global economic conditions

During the last decade, South-South trade grew rapidly, and the intra-regional trade index increased from 100 in 2000, to 117 in 2008, as a result of trade between LAC and the fast- growing Asian economies (Cornia, 2012). Furthermore, Figure 4 demonstrates that the trade indicator (% of GDP) rose significantly in LAC, especially in Nicaragua, Bolivia, Panama, and Peru, since 2000.

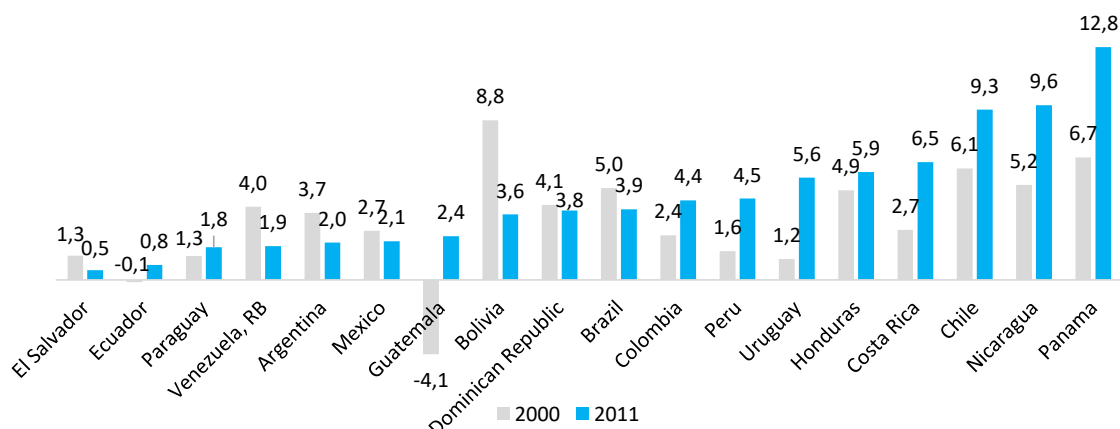


Source: World Bank

Figure 5 – Exports of goods and services (% of GDP)

Meanwhile, there was substantial growth in the export/GDP ratio in the region, from approximately 28% to 36% (Cornia, 2012). Figure 5 depicts a similarly increasing pattern in the export of goods

and services (% of GDP), with some exceptions, such as Costa Rica, the Dominican Republic, Honduras, and Ecuador.

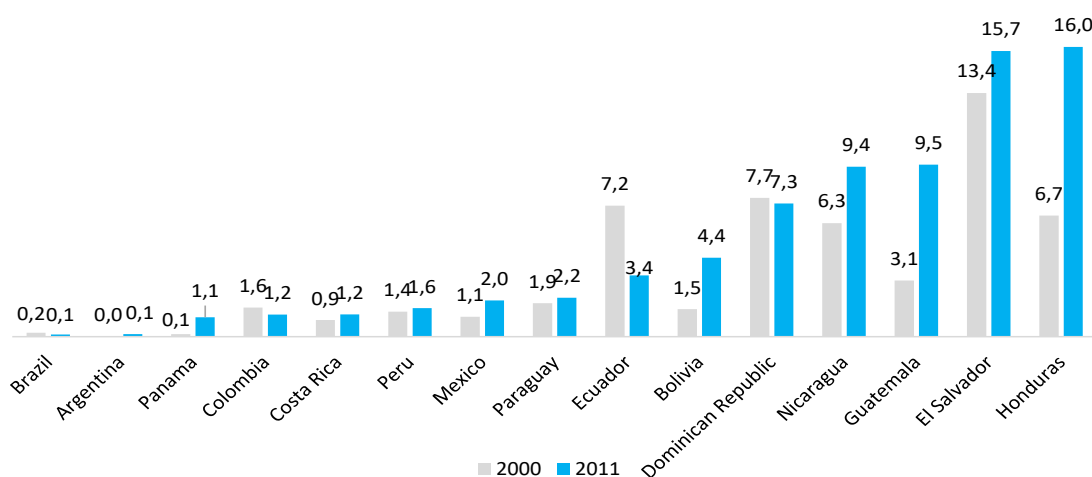


Source: World Bank

Figure 6 – Foreign Direct Investment, net inflows (% of GDP)

Gasparini et al. (2011), in their regression analysis of 16 LAC, in which the results were statistically significant in terms of various specifications, stated that enhancement in the trade sector lead to a reduction in the skill premium.

In turn, LAC witnessed a substantial surge of FDI in the years 2000 to 2011, as a result of the declining interest rate in the region.

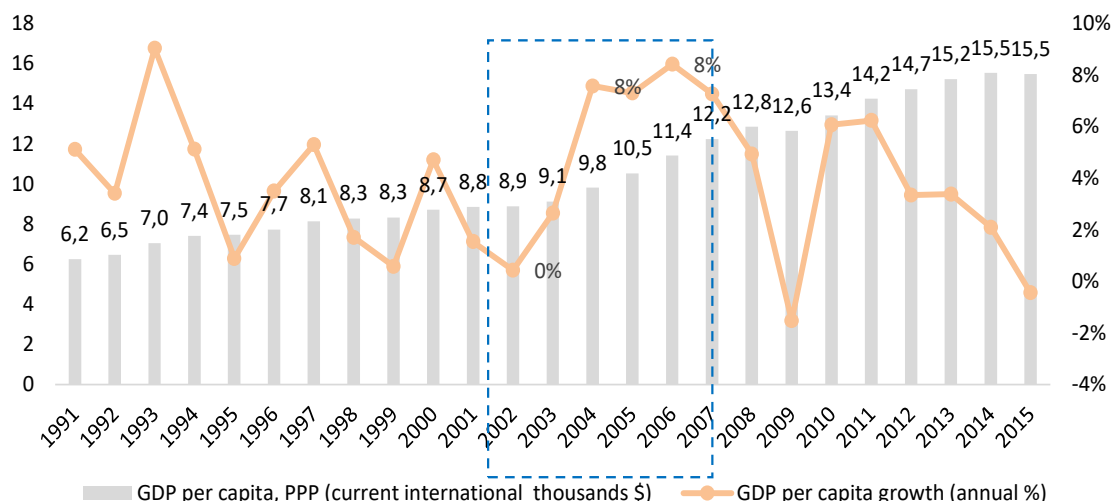


Source: The World Bank (data for Chile and Uruguay are not available)

Figure 7 – Personal remittances, received (% of GDP)

In this period, foreign capital inflows amounted to approximately 2.4% of the Latin American region's GDP (Ocampo, 2008). In addition, migrant remittances rose rapidly in more than half of LAC, between the years 1990 and 2008. Cornia (2014) noted that the regional ratio of remittances

to GDP, which is officially registered, increased by approximately three times, from 2.2% in 1990, to 5.4% in 2008. Nevertheless, the tendency in increasing remittances can be traced in only 11 LAC, excluding Brazil, Colombia, Ecuador, and the Dominican Republic.

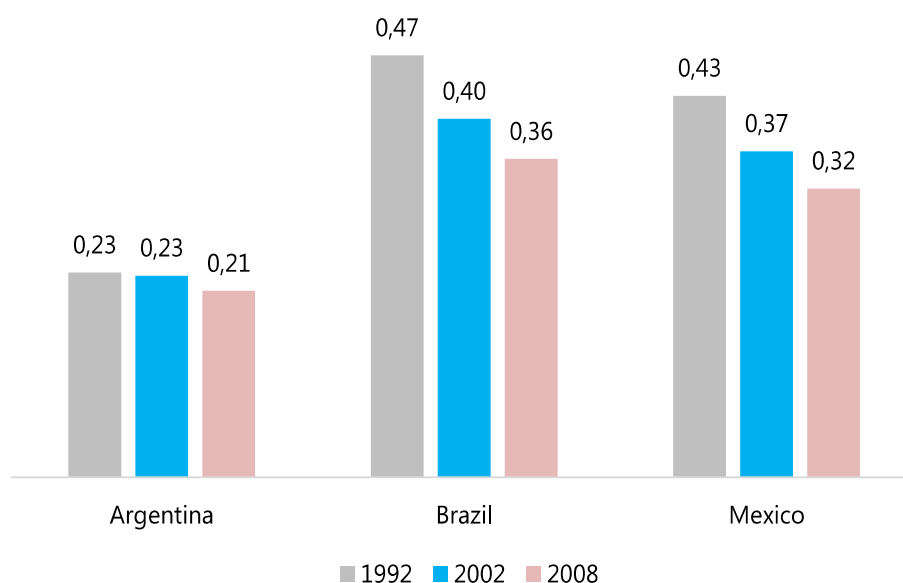


Source: The World Bank

Figure 8 – GDP per capita. Rapid annual growth rate in the years 2002-2007

All the external factors outlined above had a significant impact on the improvement in economic growth, which in turn played a key role in inequality reduction. Indeed, the average growth rate of GDP per capita tripled in LAC between 1990 and 2008. During the financial crisis of 2008 to 2009, it reduced by approximately 3%, and then revived again to 4.2% in subsequent years (Cornia, 2012). Using labour markets trends in LAC in the years 1990 to 2009, Lopez-Calva and Lustig (2016), provided evidence

that the rapid growth of GDP per capita generated a positive effect on unemployment, skill premium, activity rates, and job informality. They also argued that the employment created focused mainly on the low-income sector of society, leading to a reduction in wage difference. By comparing graphs with trends in GDP per capita growth, and inequality measurements, the negative relationship between these two variables is evident.



Source: SEDLAC (CEDLAS and The World Bank)

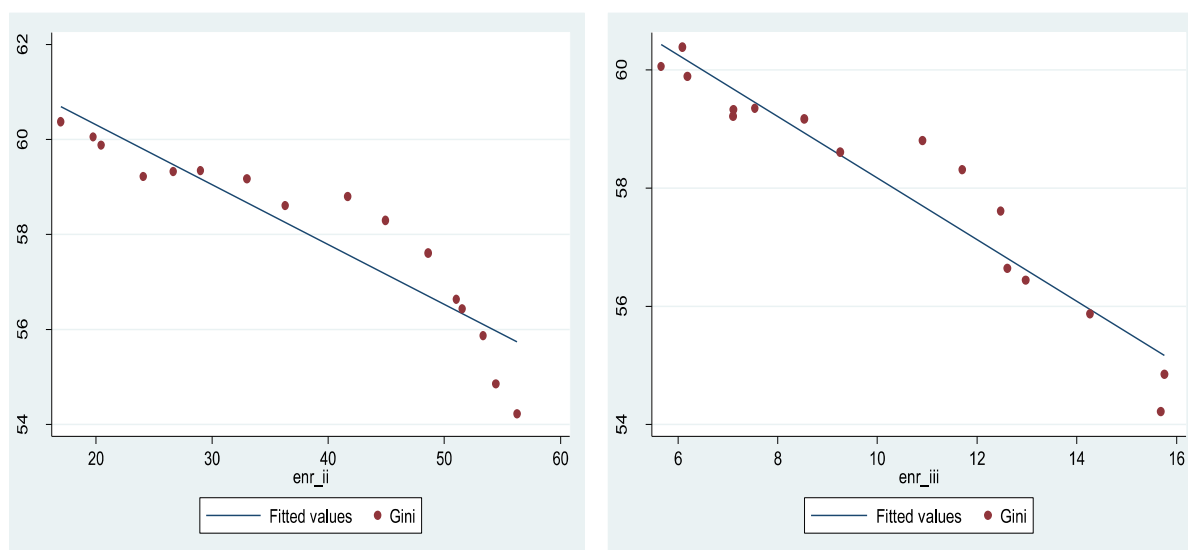
Figure 9 – Gini coefficient for educational attainment

In the period of rapid economic growth, inequality steadily reduced. The author's research, based on SEDLAC data sets, indicates the existence of Kuznets curve, which formulates that an increasing trend exists in inequality at the initial stage of development, and after reaching a turning point, further economic growth is associated with a fall in inequality.

However, some suggest that economic growth does not lead to a decline in inequality. Ahluwalia (1976), when generating research on cross-sectional data of 62 countries, stressed that the link between economic growth and inequality is not significant. Moreover, he emphasised the important role of education in inequality reduction, an aspect which will be explored in detail in the next section of this paper.

b) Improvement in Human Capital

Another important determinant behind the decline in inequality may be human capital accumulation, especially among poor households, due to a rise secondary, and tertiary completion rate. Investment in education is considered one of the major drivers in combating structural inequality, and vicious cycles of poverty (Peragine and Serlenga, 2008). Cornia (2012) stated that progress in improvement of human capital has two effects, namely "price effect" (a reduction in the wages difference of skilled workers versus unskilled workers), and "quantity effect" (equal distribution of education). The upgrading of human capital can be seen from Gini for educational attainment in the period 1992 to 2008 for three large economies in the region. This index has declined from 0.47 to 0.36 in Brazil; 0.43 to 0.32 in Mexico; and 0.23 to 0.21 in Argentina.



Source: Stata output based on data from SEDLAC (CEDLAS and The World Bank)

Figure 10 –Scatter plot and fitted values for Brazil

In their research concerning four LAC, Lustig and Lopez-Calva (2013) also supported the importance of education in inequality reduction, using the Gini index for average years of schooling for the population between 25 and 55 years of age. The Gini coefficient for education reduced by 7% in Mexico; 5% in Brazil; and 4% in Peru, in the last decade. There was also

negligible decline in Argentina (a better initial condition in years of schooling). By examining the scatter plot and fitted values between Gini coefficient and enrollment rate (secondary and tertiary education), it is possible to identify a comparatively strong negative association, which reveals the powerful influence of education on the decline in inequality.

Table 1 – Impact of CCTs on School Enrolment and Attendance (various years)

Country	Program	Age/Gender/Grade	Baseline enrollment (%)	Impact ^a	Transfer (% of PCE) ^b	Evaluation method	Reference
<i>Latin American and Caribbean countries</i>							
Chile	Chile Solidario	Ages 6–15	60.7	7.5*** (3.0)	7	RDD	Galasso (2006)
Colombia	Familias en Acción	Ages 8–13	91.7	2.1** (1.0)	17	PSM, DD	Attanasio, Fitzsimmons, and Gómez (2005)
		Ages 14–17	63.2	5.6*** (1.8)			
Ecuador	Bono de Desarrollo Humano	Ages 6–17	75.2	10.3** (4.8)	10	IV, randomized	Schady and Araujo (2008)
Honduras	Programa de Asignación Familiar	Ages 6–13	66.4	3.3*** (0.3)	9	Randomized	Glewwe and Olinto (2004)
Jamaica	Program of Advancement through Health and Education	Ages 7–17	18 days ^c	0.5** (0.2)	10	RDD	Levy and Ohls (2007)
Mexico	Oportunidades	Grades 0–5	94.0	1.9 (25.0)	20	Randomized	Schultz (2004)
		Grade 6	45.0	8.7*** (0.4)			
		Grades 7–9	42.5	0.6 (56.4)			
Nicaragua	Atención a Crisis	Ages 7–15	90.5	6.6*** (0.9)	18	Randomized	Macours and Vakis (2008)
Nicaragua	Red de Protección Social	Ages 7–13	72.0	12.8*** (4.3)	27	Randomized	Maluccio and Flores (2005)

Source: Fiszbein and Schady (2009)

LAC have experienced a sizeable improvement in access to education, mainly through conditional cash transfer (CCT) programmes, which ensure high attendance of children at school. Fiszbein and Schady (2009) analyzed in depth the different CCT

programmes in LAC, and demonstrated that almost all of these projects have had a positive effect on school enrolment, and thereafter lead to a significant decline in inequality.

Table 2 – Correlation coefficients for Brazil

	Gini coefficient
	Brazil
Exports of goods and services (% of GDP)	-0.6923
Foreign direct investment, net inflows (% of GDP)	-0.3633
GDP per capita (current US\$)	-0.7179
GDP per capita growth (annual %)	-0.6847
Personal remittances, received (% of GDP)	0.0250
Trade (% of GDP)	-0.7291
*enr_i	-0.7800
*enr_ii	-0.9196
*enr_iii	-0.9565

*enr - enrollment rate for primary, secondary and tertiary school

Source: Stata output based on data from SEDLAC, The World Bank

Soares et al. (2008) argued that the reduction in inequality amounted to between 15% and 21% in Brazil, Mexico, and Chile, as a result of CCTs.

Finally, all these analysed variables had positive effect in inequality reduction almost in the whole Latin America region, nevertheless the more vivid case of Brazil strengthened and emphasized the importance of them in combatting inequality. The correlation table well indicates that the variables are significant and have negative sign excluding remittances.

Conclusion

This paper states that, in the last decade, LAC with very few exceptions have experienced substantial downturns in income inequality, a situation unparalleled elsewhere in the world. It examines the possible determinants, such as rapid economic growth, and improvements in

human capital, which can reduce inequality in a region. Using various methods, and simple calculations, this paper provides precise results in order to identify the significance of these factors on decreasing trends in the last decade. However, it is important to take into account the fact that many variables exist which have a direct or indirect effect on inequality reduction in LAC, and further that more in depth research is necessary to investigate these components. Particularly, Brazil selected the policy which supported reduction in poverty because social payments for poor families directly given for mothers of children to fulfil necessities for school attendance. These small payments work effectively for accumulation of human capital in mothers hand because they spend resources in right purpose. However, this program can work out in another way for LAC.

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ТЕҢСІЗДІКТІҢ АЙТАРЛЫҚТАЙ ТӨМЕНДЕУ ТЕНДЕНЦИЯЛАРЫ МЕН СЕБЕПТЕРІ: БРАЗИЛИЯЛЫҚ КЕЙС

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ТЕНДЕНЦИИ И ПРИЧИНЫ СУЩЕСТВЕННОГО СОКРАЩЕНИЯ НЕРАВЕНСТВА: КЕЙС БРАЗИЛИИ

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