

Fiscal policy in Colombia: Tapping its Potential for a more Equitable Society

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ABSTRACT

Colombia has the seventh highest Gini coefficient of income inequality in the world. The Santos Administration is aware of this challenge and has taken important steps to reduce disparities. The Government is also aspiring to join the OECD, which exhibits much lower income disparities, mainly as a result of effective policies of fiscal redistribution. In Colombia, meanwhile, direct taxes, indirect taxes, and monetary transfers hardly dent the high Gini coefficient. To reduce income inequality, Colombian policy makers could consider introducing a more progressive tax-transfer system. This paper ranks alternative inequality-reducing fiscal policy options based on their effectiveness. It argues that there are potentially important redistributive potential gains available from tax reforms if combined with good spending decisions. It presents an illustrative reform package that would be sufficient for Colombia to reach levels of inequality similar to Chile or Costa Rica in a fiscally neutral manner. Nonetheless, further analysis is needed to explore all available policy options and identify those that are best suited for Colombia.

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1. Introduction

1. **Colombia has one of the most unequal income distributions in the world.** The country has the 2nd highest Gini coefficient in Latin America (0.554 in 2010)² and the 7th highest worldwide with inequality levels comparable to countries such as Haiti and Angola (Figure 1). Colombia is also the most unequal among the CIVETS group of emerging market economies with a Gini coefficient higher than South Africa.³ Among the upper-middle income group, only Namibia (the most unequal in the World) has a Gini coefficient higher than Colombia. The Gini coefficient of the group of OECD countries, which Colombia aspires to join, is substantially lower (0.307).⁴

2. **While Latin American and upper-middle income countries have become less unequal over the past two decades, inequality in Colombia has tended to remain high.** The Gini coefficients in upper-middle income countries and in Latin America have declined since the 1980s. Brazil is a good example of this trend, but it is not the only one. As Colombia's Gini coefficient rose over this period, it moved from a position above average towards the most unequal part of the upper-middle income and regional groups. Colombia has had a higher level of inequality than Brazil since 2008.

3. **Inequality in labor incomes has fallen throughout the region, as a result of reduced educational inequality, though Colombia has not experienced this trend.** Given their high share of total income (averaging 73 percent in the LCR region), labor incomes are the main drivers of income inequality (World Bank, 2011). Reduced regional labor income inequality can be explained by a reduction in skill premiums. In Colombia, however, educational inequality has increased owing to an inadequate expansion of education across the population (Azevedo et al, 2012).

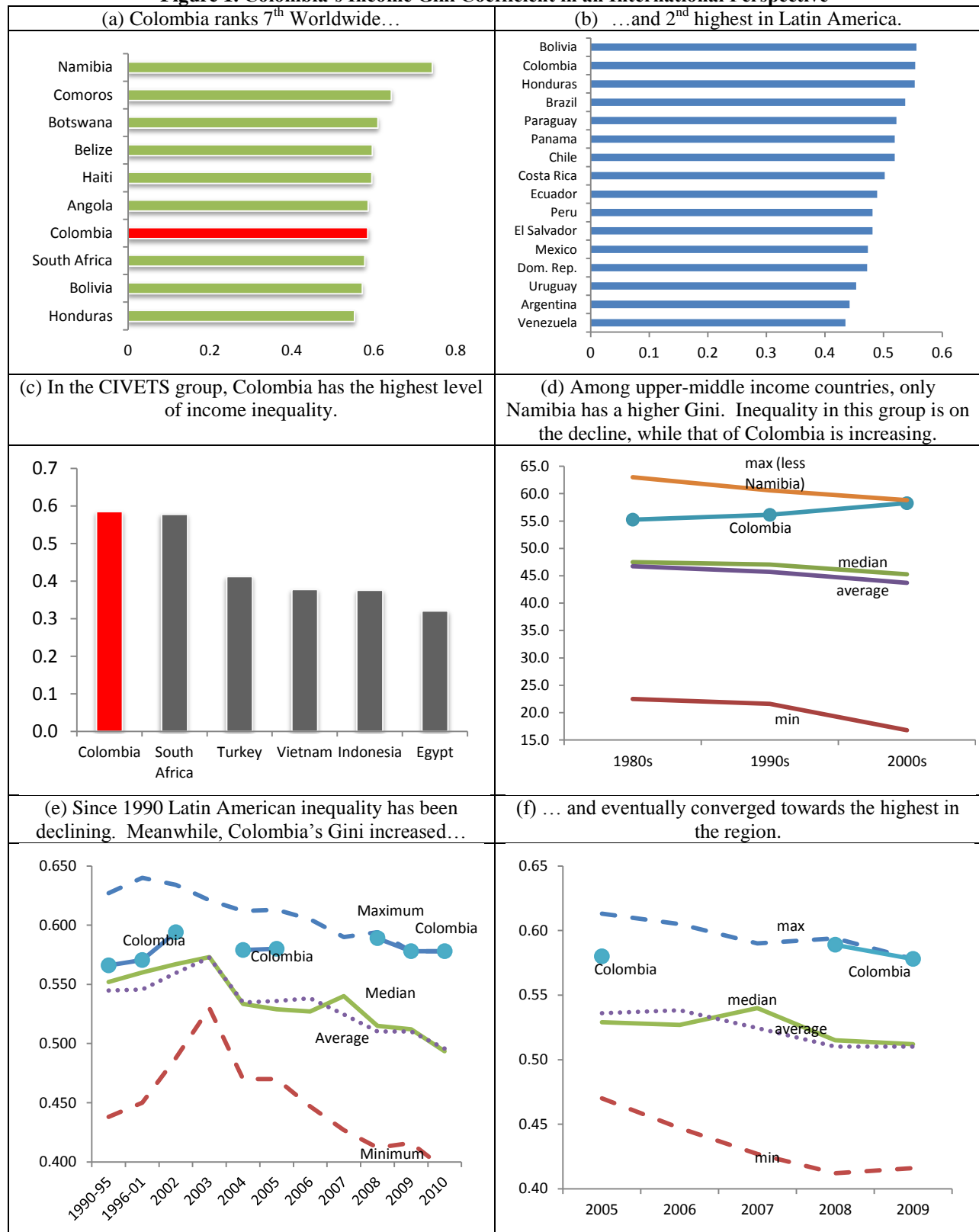
4. **There is some evidence to suggest that fiscal redistributive policies have played a positive role in reducing inequality in Latin America over the past decade.** Cornia (2010) finds statistical evidence of the importance of progressive taxation and social spending, in addition to improvements in educational inequality and favorable terms of trade. Similarly, Lopez-Calva and Lustig (2010) emphasizes the importance of larger and better targeted conditional cash transfer programs, in addition to a shrinking wage gap between skilled and low-skilled workers owing to expanded access to education. Soares et al (2009) find that conditional cash transfer programs explain about 21 percent of the fall in inequality in Brazil and Mexico, and 15 percent in the case of Chile.

² Source: World Bank (2011). The Gini coefficient of inequality takes values between 0 and 1 (or 100 percent), where a high value indicates a high level of inequality. Throughout the paper income inequality is measured using the Gini coefficient.

³ The CIVETS consist of Colombia, Indonesia, Vietnam, Egypt, Turkey, and South Africa.

⁴ Source: OECD (2011).

Figure 1. Colombia's Income Gini Coefficient in an International Perspective



Source: UNDP (2010): (a) and (c). World Bank (2011): (b). WDI: (d). ECLAC database: (e) and (f).

Note: The relative ranking of Colombia and Bolivia depend on the data source.

5. **Colombian citizens express concern about high inequality and believe that it is the role of the state to address it.** According to the 2010 Latinobarametro survey, 32.2 percent of Colombians finds that the distribution of income is ‘very unfair’, while 52.5 percent finds it ‘unfair’. In the 2010 LAPOP survey, 45.5 percent of respondents agreed ‘very much’ with the statement that ‘the Colombian state should implement firm policies to reduce inequality’, while 25.9 percent ‘agreed’. The latter survey also reveals that there is willingness to pay more taxes to give more to those who have less (42 percent)⁵. Interestingly, this percentage increases among the better-off, reaching 79 percent in highest stratum (6).

6. **The Santos Administration is aware of the country’s high level of income inequality and has set targets and introduced policy measures to address it.** Colombia’s National Development Plan 2010-14 targets a reduction of one percentage point in the Gini coefficient per year (from 0.58 to 0.54). The Plan does not explicitly explain how to reach this goal aside from highlighting the importance of necessary conditions such as economic growth and improving the equality of opportunities. Nonetheless, the Santos Administration has taken several steps which may well have a positive impact on inequality in the medium term. The recently approved Victim’s Law is likely to improve land distribution. A tax reform, approved in 2010, enhanced the rate and base of the wealth tax paid by corporations and individuals. The Government is committed to providing universal and equal access to health while maintaining fiscal sustainability. Finally, a recent reform of the system for royalties from natural resource production has improved the distribution of these resources across subnational entities.

7. **This paper highlights the role of Colombia’s tax-transfer system as a policy tool for reducing income inequality.** While the policy measures already approved by Congress go in the right direction, further measures must be adopted if Colombia is to meet the National Development Plan target. Fiscal redistribution, i.e. the way in which citizens are taxed and how they benefit from public spending, offers the most direct way through which a country can affect the distribution of personal income through public policy. Alternative ways to reduce inequality of labor market incomes, such as through education or labor market policies can also be effective, but are not analyzed in further detail in this paper (see OECD, 2012, for a discussion).

8. **The paper illustrates the unexploited potential of fiscal redistribution in Colombia by simulating the effects of a specific policy package.** Our calculations suggest that the proposed measure would be sufficient to achieve for Colombia to reach a level of inequality similar to Chile and Costa Rica. The proposal includes a reduction of tax incentives and benefits (tax expenditures) in the personal income and the value added taxes, initially yielding substantial additional tax revenues (2.4 percent of GDP). When put to their most effective use, this additional revenue could be used to finance the introduction of a tax declaration for independent workers and an expansion of the conditional cash transfer program.⁶ This proposal would be fiscally neutral and would reduce the Gini coefficient by about 4.5 percentage points. This result

⁵ In the LAPOP survey, respondents are asked how much they agree with a particular statement on a scale from 1 (very much in disagreement) to 7 (very much in agreement). The percentage quoted is the sum of answers in the values 5-7. See www.vanderbilt.edu/lapop for details.

⁶ A substantial increase in the budget for the CCT program may seem exaggerated. Nonetheless, this example is illustrative. The key point is that the additional tax revenues are spent through public programs that are progressive and cost-effective. The CCT program has these characteristics, but is by far the only option available.

is indicative of the unexploited potential of fiscal redistribution in Colombia, but further analysis would be needed to verify them with precision and to identify specific policy recommendations.

9. **Finally, it should be emphasized, that the paper does not engage in a political economy analysis.** Rather, it takes a ‘social engineering’ approach to the topic of fiscal redistribution deliberately avoiding the important issue of how to implement the proposed reforms in the Colombian political economy context. The main objective of the paper is to illustrate to Colombian decision makers the unexploited potential of a policy tool, which has proven effective in reducing inequality elsewhere, particularly in the OECD. While illustrative examples are given on how inequality can be reduced using fiscal redistribution, the paper does not aim to be prescriptive.⁷

10. **The remainder of the paper is structured as follows.** Section 2 compares fiscal redistribution in Colombia with that in other countries in the region and elsewhere. Section 3 takes a more detailed look at Colombia’s tax system, highlighting its low degree of progressivity. Section 4 examines the structure of public spending, including its cash and non-cash components, to shed light on the beneficiaries of public outlays. Section 5 presents a methodological approach for identifying effective and fiscally neutral policy options. Section 6 concludes.

2. Fiscal Redistribution⁸

11. **The potential of fiscal redistribution remains largely unexploited in Colombia, in line with the experience elsewhere in the region.** While taxes and transfers reduce inequality by about 12 Gini points in European OECD countries, fiscal policy in Colombia does not appear to have a significant redistributive impact. The fiscal neutrality in Colombia is similar to that found in other Latin American countries, where such policies result in an average reduction of inequality by just one Gini point, as illustrated in Figure 2.

12. **The redistributive effects of direct and indirect taxes cancel each other out in Colombia, and monetary transfers have no impact on the Gini coefficient.** A more detailed inspection of Figure 2 reveals that direct taxes reduce the Gini coefficient by one percentage point, while indirect taxes increase it by the same proportion, resulting in an overall neutral impact of the tax system. Monetary transfers, meanwhile, leave the Gini coefficient unchanged, according to Figure 2, though some authors find a small regressive impact, as discussed in Section 4.

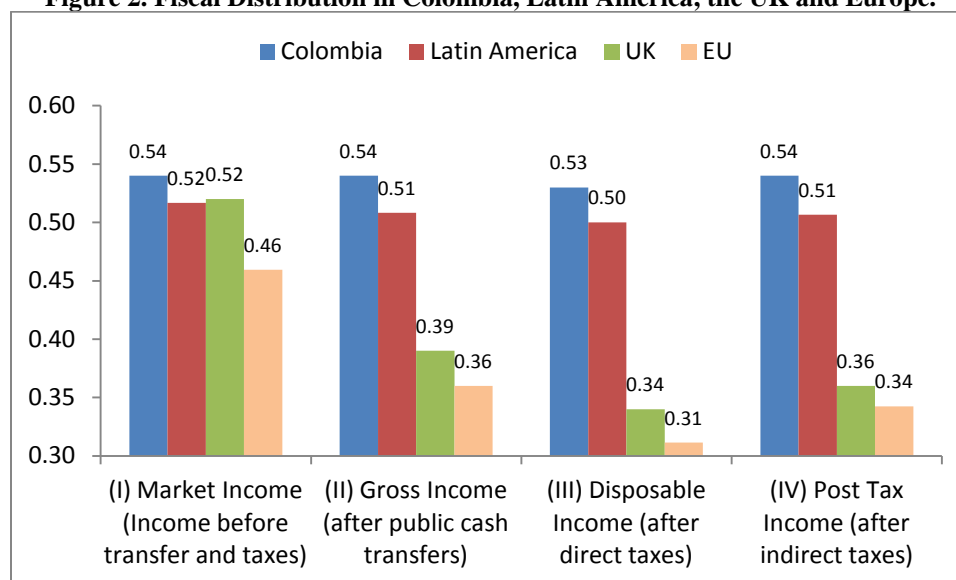
13. **Even if other Latin American countries only make limited use of fiscal redistribution, this should not preclude Colombia from using it, particularly given its high inequality.** Limited fiscal redistribution in Latin America should not be an excuse for inaction in Colombia. Instead, Colombia could beneficially link its targets of reducing inequality to its

⁷ The political economy of tax reform is discussed extensively in the literature. See for instance: Mirrlees (2010) or John (2006).

⁸ This section draws upon the work of Goñi et al (2011), which is the source of all statistics quoted in the section, unless otherwise mentioned.

aspirations of joining the OECD, where fiscal redistribution is actively used.⁹ Also, given that Colombia's level of income inequality is among the highest in the world, there is an argument for taking additional steps, even if this policy is not commonly used in neighboring countries.

Figure 2. Fiscal Distribution in Colombia, Latin America, the UK and Europe.



Source: Goñi et al (2011) using (ECV 2003). Note: The Graph shows the gradual development in the Gini coefficient as market incomes are augmented with public cash transfers, reduced by direct taxes and, finally, by indirect taxes. See Annex 1 for details regarding the definition of income concepts.

14. **Inequality of market incomes in Colombia is similar to that observed in the United Kingdom, but the UK actively uses fiscal redistribution.** Figure 2 illustrates one of several ways to decompose inequality statistics. Accordingly, income inequality arises from a combination of market outcomes, public monetary transfers, direct and indirect taxation. In addition to fiscal redistribution, one of the reasons why EU countries have a much lower Gini coefficients is that their starting point, i.e. the result of market transactions, is less unequal (0.46 in the EU vs. 0.54 in Colombia). To show that this is not always the case, Figure 2 illustrates the case of the United Kingdom (a relatively unequal country within the EU). The inequality generated by market transactions is quite similar in both countries, but the United Kingdom uses its tax-transfer system much more actively to bring down its Gini coefficient 16 points lower than in Colombia.

15. **Finally, it should be emphasized that the very favorable macroeconomic situation that Colombia is experiencing is potentially conducive for a more deliberate redistributive policy.** In the context of relatively high economic growth rates of 4-6 percent in recent years, low inflation, declining debt and fiscal discipline, Colombia has an opportunity to advance on reducing inequality.

⁹ Three quarters of inequality reduction in the OECD countries is due to transfers, while the remaining is explained by progressive taxation. Source OECD (2012).

3. Taxation

16. **Colombia's tax system does not redistribute incomes in any significant way.** As argued in the literature¹⁰, this may not necessarily be a problem by itself as long as public monetary transfers are sufficiently progressive. In the case of Colombia, there are nonetheless two reasons to be concerned. First, public monetary transfers are not sufficiently progressive, as explored in more detail in Section 4. Second, given the very high level of income inequality by global standards, strengthening the redistributive role of the tax system also seems worthwhile.

3.1 Direct Income Taxation

17. **The system of direct income taxation in Colombia does not exploit its redistributive potential.** Direct taxes hardly have an impact on the Gini coefficient. This is explained by a number of factors: First, direct personal income taxation raise a relatively low amount, implying a low redistributive potential. Second, the system is characterized by a high income threshold, implying that less than two percent of adult Colombians actually file and pay personal income tax. Third, a range of income tax exemptions, benefitting mainly high-income earners, further undermine the tax base. Finally, independent low-income workers are penalized as they are taxed presumptively at the source, without the right to reimbursements through the filing of annual income declarations. These factors are analyzed in further detail below.

Table 1. Direct Personal Income Taxation: Incidence Analysis

Household per capita income decile	Taxation of income	
	Percent of tax revenues	Taxes paid / income (percent)
1	0.53	1.75
2	2.33	2.38
3	3.22	2.15
4	3.43	1.73
5	4.22	1.69
6	4.98	1.60
7	5.69	1.45
8	6.78	1.36
9	8.56	1.27
10	60.25	3.97
Total	100.00	2.43
Redistributive effects of taxation		
Gini coefficient before taxes		0.5931
Gini coefficient after taxes		0.5902

Source: Jorratt (2010) using *Encuesta Nacional de Ingresos y Gastos, 2006-07*.

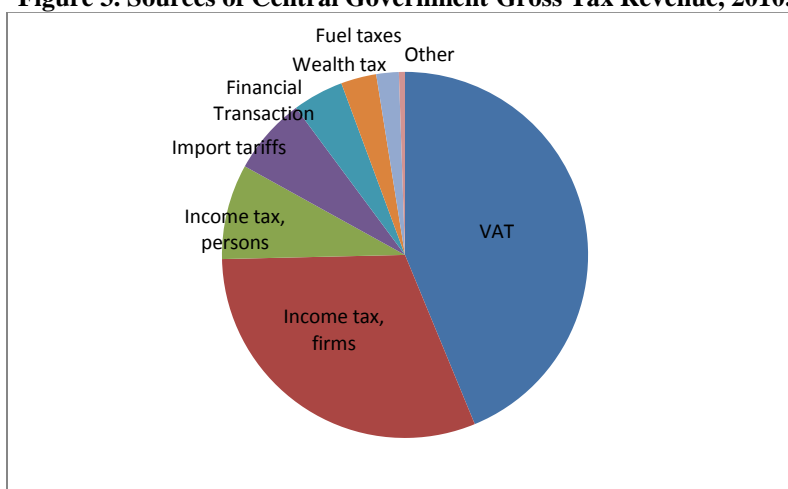
18. **The impact on the Gini coefficient of direct taxation is very low.** Section 2 presented estimates that direct income taxation reduces the Gini coefficient by 1 percentage points, according to Goñi et al (2011) using the 2003 ECV household survey. Table 1 presents alternative computations provided by Jorratt (2010) using an alternative data source. According to these estimates, direct taxation reduces the Gini coefficient by no more than 0.3 percentage

¹⁰ The IMF (2011b), for instance, argues that a regressive tax may be the only way to finance strongly progressive spending. See also Bird and Zolt (2005), G20 (2011), Heady (1993), and Mirrlees (2010).

points. The richest quintile of the population account for about 70 percent of total income tax payments, according to Table 1. The share of income paid by different households does not differ much by income, suggesting very low progressivity. The three poorest deciles, for instance, each pay a higher proportion of income tax relative to household incomes compared to any of the deciles between the fourth and the ninth.¹¹

19. **The tax burden on personal income in Colombia is very low.** Colombia ranks 3rd lowest in the region raising only 1.1 percent of GDP in personal income taxes compared to the regional average of 1.8 percent of GDP. In comparison, OECD countries raise 9.0 percent of GDP on personal income. As shown in Figure 3, personal income taxes correspond to just 8 percent of total central government tax revenue in Colombia. The redistributive potential is naturally limited by the low amounts raised.

Figure 3. Sources of Central Government Gross Tax Revenue, 2010.



Note: Gross Tax Revenue totals 13.1 percent of GDP in 2010. Source: IMF (2011a).

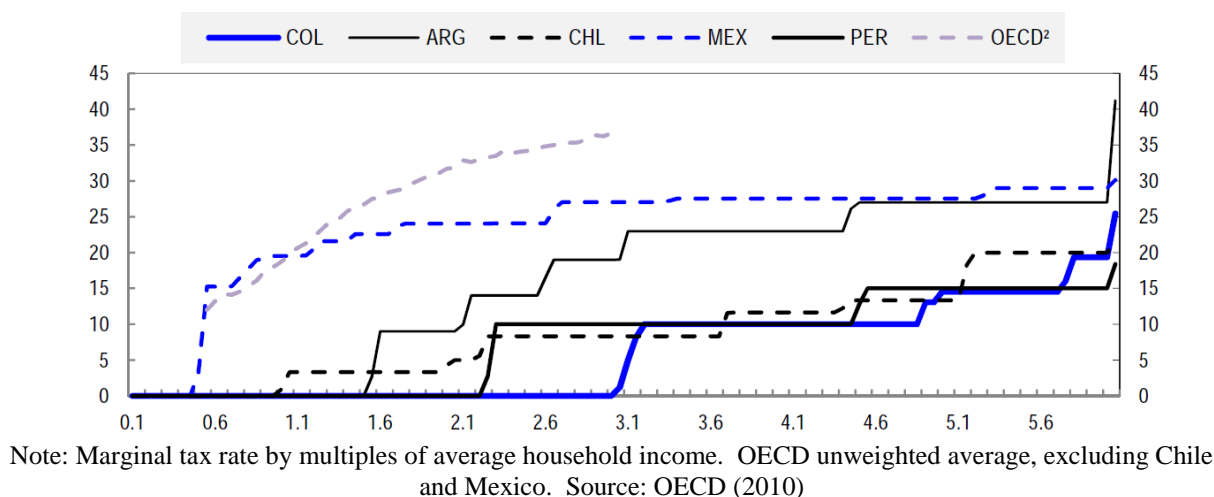
20. **Less than two percent of Colombia's adult population pay income taxes, in part, because of a very high threshold for personal income taxation.**¹² Among the 1.1 million Colombians who submitted a tax declaration in 2010, only 640,000 people paid income tax in a adult population of about 37 million, according to the Colombian Tax Authority (DIAN). This is partly explained by the fact that Colombia has the highest threshold in the region at US\$26,020 per year compared to the regional average of US\$10,413, and far ahead of Chile and Peru in the second and third places with thresholds of about US\$15,000 (using purchasing power parity). Individuals have to earn three times the average household income before being liable to income taxes in Colombia (Figure 4). Furthermore, tax progressivity sets in only at comparatively high

¹¹ Missing data for top earners in household surveys imply that the reported Gini coefficient is artificially low. Top incomes represent a small share of the population, but a very significant share of total income and total taxes paid, as discussed by Atkinson *et al* (2011). Household survey data, such as that used in Table 1, generally does not capture the top earning individuals owing to the way in which surveys are designed (often with a view to understanding the lower end of the income distribution) and the difficulties of sampling top earners. Future analysis could focus on combining income tax data with household survey data to understand this effect better in the case of Colombia.

¹² This number would be somewhat higher if including the presumptive taxation of independent workers (no data was available). The number of tax payers is compared with the adult population, reflecting the fact that pensioners also form part of the universe of potential tax payers.

levels of income, both compared regional peers and particularly relative to OECD countries. Finally, Colombia's high level of labor informality (about 60 percent of workers) also plays a role in explaining the low number of tax payers.

Figure 4. Marginal personal income tax by income levels



21. **A series of income tax exemptions reduce the tax base further.** Three important exemptions stand out, in terms of the size of the tax revenue forgone (also known as tax expenditure). First, in addition to the high threshold explained above tax payers can exclude 25 percent of personal income from their taxable income. The fact that this rule applies as a percentage rather than a fixed nominal value limits the redistributive potential of the tax system, thereby favoring higher-income individuals until the nominal limit of about US\$36,000 per year is reached. Second, there is an exemption for voluntary pension contributions as well as a special savings account for housing construction (AFC). These benefit mainly high-income families who have enough income to save. Not only can the taxable income in AFCs be reduced by the amount saved, but when the savings are used to pay the mortgage of a dwelling these payments can also be deducted from taxable income for a second time. Colombia also stands out in terms of the tax treatment of pensions, since contributions, investment returns and pension income are all tax exempt.¹³ In 1998, Brazil introduced taxation of pensions as a part of a wider pension reform package. Colombia may consider a similar step, as explained later.

22. **Income tax exemptions raise the Gini coefficient by 0.7 percentage point and cost the treasury close to one percent of GDP in revenue forgone.**¹⁴ The fiscal cost, in terms of revenue forgone, of the specific exemptions include: exemption of 25 percent of income (0.42 percent of GDP), voluntary savings and pension accounts (0.25 percent of GDP), and non-taxation of pension income (0.18 percent of GDP). Together with other minor exemptions (credits for mortgage interest payments, and health/education spending), the estimated tax expenditure for personal income totals 0.89 percent of GDP, or about eighty percent of total

¹³ This contrasts with good practice which taxes at least one of the three sources.

¹⁴ The fiscal cost of tax expenditures reported in this paper are estimated using the 'revenue forgone' approach, which does not account for behavioral responses to changes in taxation.

personal income tax revenues. Household data simulations by Jorratt (2010) suggest that these five income tax exemptions raise the Gini coefficient by about 0.7 percentage point.

23. Tax retentions at the source of income penalize independent workers, who are not entitled to reimbursements through the submission of an income declaration. Colombia's tax system facilitates the retention of income at the source (e.g. wage income, commissions, interest income), which is good practice. Unfortunately, the system of retention is not fully integrated with the annual tax declaration. In effect, not all persons have to present an annual income declaration, which implies that the original tax retention remains definitive. This is the case for independent workers who are subject to a retention of 10 percent of their income, but do not have to present a declaration if their income is lower than US\$43,000 per year. This legislation, undoubtedly, does not encourage formal job generation.¹⁵ The resulting 'over-taxation' is equivalent to 0.5 percent of GDP.

24. The introduction of a compulsory income tax declaration combined with a reduction of the income tax could reduce the Gini coefficient by 1.9 points at a fiscal cost (in terms of lost revenues) of 0.4 percent of GDP. One difficulty in changing current legislation related to retention of income taxation at the source would be the associated loss in tax revenue. To compensate for this effect, the income tax threshold could be reduced to 75 percent of its current value to US\$19,515 (which would still make it the highest in the region), yielding a saving of 0.1 percent of GDP. Under the assumption that all independent workers would now voluntarily declare annual income, most income tax would be paid by the richest quintile, while the poorest three quintiles would not contribute.

3.2 Indirect Taxation

25. The Value Added Tax (VAT) in Colombia is regressive as it increases income inequality by 1.2 Gini points. VAT is the single most important source of revenue in Colombia, raising 5.4 percent of GDP in 2010. More than half of the revenues are collected from the richest 30 percent of the population given that this group accounts for the bulk of total consumption (Table 2). The tax is highly regressive when the tax amount paid is compared with income. Value added taxes are equivalent about half of household income of the poorest decile (which have very low monetary incomes), but accounts for only 5.6 percent of the incomes of the richest decile.

26. The regressive nature of the Colombian value added tax may be surprising given tax exemptions of many basic goods consumed by the poor. The value added tax is regressive, by design, if a single tariff is applied, as the amount paid in taxes is relatively higher for low-income individuals compared to high-income individuals. Colombia, meanwhile, operates a system of multiple tariffs. In addition to the general rate of 16 percent there are six additional rates of 0, 1.6, 10, 20, 25 and 35 percent, as well as exemptions and exclusions. Examples of basic commodities which have a zero rate include: maize, rice, potatoes, legumes, tomatoes, yucca, bananas, most fruits, milk, eggs, some breads, salt, beef, fish and pork.

¹⁵ A number of changes to the rules regarding retention of income were recently introduced through Law 1430 of 2010, Decree 3590 of 2011 and the National Planning Law of 2011, but the effects of these changes are unclear.

Table 2. Value Added Taxation: Incidence Analysis

Household per capita income decile	Percent of tax revenues		Revenues/income (percent)	
	Actual VAT	VAT w/o tax expenditures	Actual VAT	VAT w/o tax expenditures
1	4,64	4,86	59,50	82,65
2	4,53	4,78	14,65	20,46
3	5,32	5,48	10,78	14,70
4	6,06	6,08	9,40	12,48
5	7,30	7,23	8,92	11,69
6	8,25	8,05	7,96	10,28
7	10,15	9,74	7,87	10,01
8	12,12	11,89	7,41	9,63
9	15,63	15,05	7,12	9,07
10	26,01	26,85	5,24	7,17
Total	100,00	100,00	7,43	9,84
Gini coefficient before taxes			0,5931	0,5931
Gini coefficient after taxes			0,6049	0,6109
Effect of tax expenditures on Gini coefficient			0,0060	

Source: Jorratt (2010) using *Encuesta Nacional de Ingresos y Gastos, 2006-07*.

27. **A policy to reduce the price of food may seem sensible given that the cost of food is relatively high in Colombia.** Food prices in Colombia are higher than the regional average in 23 out of 29 categories, according to the International Comparison Program. Prices of basic commodities, such as rice or flour, are relatively high in Colombia (FAO, 2010). This may be related to the high cost of logistics (Colombia ranks 82 in the WDI Logistic Cost Index). For instance in some remote areas in Colombia, the transport cost represents half of the price of food. Protectionism in the agricultural sector also contributes to higher food prices (Anderson and Valdes, 2008). An important justification for VAT exemptions is to exclude the poorest segments of the population from paying this tax in their consumption of basic commodities. The problem is that VAT exemptions benefit all consumers, and not only the poor, making it an unsuitable targeting mechanism to reach the poor.

28. **The VAT policy of exemptions and exclusions has unintended consequences, as the rich benefit disproportionately.**¹⁶ Because they account for such a large proportion of total consumption, the rich also account for the largest proportion of total VAT excluded/ exempted consumption. In fact, half of the value of excluded/exempted goods is consumed by the richest quintile of the population while the poorest quintile consumes approximately 5 percent. While the poor benefit more in relative terms compared to their low incomes, this does not change the fact that the richest 20 percent of the population capture half of the monetary value of this indirect subsidy.

¹⁶ The distinction between exemptions and exclusions in Colombia is the following: VAT exempt goods (or services) effectively have a zero rate. The producer of VAT exempted goods can claim VAT reimbursements for the inputs used to produce the good. A producer of VAT excluded goods, by contrast, cannot claim such reimbursement, implying that the VAT of inputs becomes a cost of production.

Table 3. Impact by Decile of VAT Excluded/Exempt Products

Deciles	Expenditure on VAT Excluded/Exempt Products		Average income per decile COP (1,000)	Subsidy relative to household income (%)
	COP (1,000)	Percent of total		
1	18.9	2.3	118.1	16.0
2	27.0	3.3	282.5	9.6
3	34.7	4.2	437.3	7.9
4	41.4	5.0	644.6	6.4
5	52.7	6.4	905.1	5.8
6	56.7	6.9	1,266.6	4.4
7	74.3	9.0	1,767.8	4.2
8	99.0	12.0	2,618.8	3.7
9	141.4	17.1	4,295.2	3.3
10	278.6	33.8	15,156.1	1.8
Total	824.5	100.0		

Source: IMF (2011a) using 2003 ECV household survey data and DIAN data.

29. **While the system of VAT exemptions reduces income inequality by 0.6 Gini points it does so at a cost of 1.54 percent of GDP.** To reach this conclusion, a household data simulation exercise was undertaken of the following possible reform package: (1) Elimination of most VAT exemptions except education, health, transport and financial services. (2) Conversion of VAT exclusions to VAT exemptions to insure that producers are reimbursed for VAT of the inputs that they use. (3) Taxation of real estate transactions. (4) Conversion of reduced VAT rates (0, 1.6 and 10 percent) to the general rate of 16 percent.

30. **Modifications of the VAT system could thus yield substantial revenue gains, part of which could be used to compensate the poor.**¹⁷ Given that the VAT exemptions help reduce inequality by 0.6 Gini points, dismantling them would obviously increase inequality. However, the additional tax revenue of 1.54 percent of GDP can be used to compensate the poorest. To illustrate, the fiscal cost (in terms of higher public transfers) of ensuring a neutral impact for the poorest 30 percent is relatively modest at 0.33 percent of GDP, yielding a net revenue gain of 1.21 percent of GDP. Similarly, keeping the poorest half of the population is also comparatively inexpensive. There are several ways in which the poor could be held harmless, such as through an expansion of the conditional cash transfer program, which is particularly well targeted to the poor, as discussed in Section 4.

3.3 Other Taxes

31. **The distributional impact of other taxes is largely unknown.** The discussion thus far, has covered about 50 percent of all central government tax revenues (VAT and personal income tax). The remaining taxes consist largely of income taxes for firms (about 30 percent of revenues), import tariffs, financial transaction taxes, wealth taxes and fuel taxes (see Figure 3). Unfortunately, detailed analysis is not available to shed light on the distributional impact of these taxes. The wealth tax is primarily levied on firms, with few private individuals paying it (IMF, 2011a)¹⁸. The fuel tax (about 28 percent of the pump price, excluding VAT) is primarily paid by

¹⁷ See also IMF (2011a,b), which conclude that VAT exemptions may be an inferior instrument to target the poor.

¹⁸ About 30,000 private individuals account for approximately 6 percent of wealth tax contributions.

non-poor individuals owning a vehicle, implying that it is likely to have a positive distributive impact. Finally, there is also the impact of payroll taxes to consider as discussed in Box 1.

Box 1. Payroll taxation of formal workers: A missing piece of the puzzle

The taxation analysis in Section 3 focuses exclusively on personal income taxation, without any mention of payroll taxation of formal workers, and the redistributive impact of such taxation. Formal workers constitute about 40 percent of total employment in Colombia and are subject to nonwage labor costs averaging 62.5 percent, as illustrated in the table of this text box.

There are two different approaches to considering the impact of payroll taxation on inequality. First, there is the fundamental and structural question about the financing model itself, i.e. the fact that close-to-universal health care coverage and special funds (see box) are financed by a tax on formal workers, while informal workers still have some access to their benefits, which reduces their incentives to become formal. A range of studies on Colombia have pointed to the impacts of financing social security through taxation of formal employment as opposed to general taxation (such as VAT).¹⁹ This literature generally finds a negative impact on informality, unemployment and poverty of the current financing model. A transition to general taxation may reduce these negative impacts, as some informal workers gain formal employment and earns a higher labor income. This effect, however, has to be counterbalanced with the regressiveness of a higher VAT rate. The exact impact on the Gini coefficient of a different financing model has not yet been estimated in the case of Colombia. (See paper by Anton, Hernandez and Levy, 2011 for a case study of Mexico). Further analysis of the distributional and efficiency impact of a payroll tax reform in Colombia could be useful.

A second approach accepts the existing financing model as it currently is, and consider the marginal impact that this type of taxation has on workers, i.e. it considers smaller adjustments to essentially the same system. Given that any additional increase in household income up to the 75th percentile of the income distribution would reduce the Gini coefficient in Colombia, it is clear that payroll taxation has an impact on the income distribution from this perspective.

Finally, it is instructive to examine the individual components of the non-wage labor costs to consider where a redistributive impact may or may not be present. Non-wage labor costs can be divided into two groups: (1) those where the benefits accrue to the individual workers themselves (marked with * in the table), and (2) those that do not. The first group of contributions *does not* have any impact on inequality, and includes pension savings (private regime), paid vacation, and mandatory bonuses. It would also include ‘insurance type’ contributions such as severance payments. The second group *does* have an impact on the income distribution as contributions and benefits may not correspond, as in the case of the so-called *parafiscales* or special funds (SENA, ICBF and CCF). Section 4 examines the public spending side of some of these payroll contributions, including: the contributive health regime, the public (pay-as-you-go) pension regime, and CCF.

Non-Wage Labor Costs in Colombia	
Earmarked Programs	Percent of Wage
* Pensions	16.0
Contributory Health Regime	12.5
* Severance Fund	8.3
* Paid Vacation	4.2
* Mandatory Bonuses	8.3
* Severance payment for Unjust Dismissals 1/	4.2
Special Funds	
SENA (Training)	2.0
ICBF (Family and Child Welfare)	3.0
CCF (Family Compensation)	4.0
Total	62.5
1/ Varies according to the type of contract and time employed with a minimum value of around 4.23 percent in the case of defined contract (after labor reform of 2002).	

¹⁹ Cuesta and Oliviera (2010), Gaviria et al (2006), Kugler and Kugler (2009), Mondragon-Velez et al (2009), Nunez and Cuestas (2006), Sanchez et al (2009), Santamaria et al (2009).

4. Benefit Incidence of Public Social Expenditure²⁰

32. **Who benefits from public social spending in Colombia?** In addressing this question, it is important to make a few distinctions. First, between monetary transfers (e.g. conditional cash transfers) and non-monetary public spending (e.g. on education). Monetary public transfers directly increase gross household incomes. Non-monetary public spending, on the other hand, affects households indirectly by reducing expenditures. Government provided education, for instance, frees up household spending for other purposes to the extent that households would have spent private resources on education in the absence of government intervention. A second relevant distinction relates to the financing side. Most publically provided services are financed over the national budget through general taxation. Some services, however, are financed through contributions or payroll taxes from formal workers and do not enter the national budget (see Text Box 1). Examples include ICBF (childhood support) and CCF (family subsidies), as well as the contributive health insurance regime. In the latter cases, one may naturally expect that the benefits are received by the contributors (often concentrated in the 2-3 richest quintiles) rather than the general population. On the other hand, there is nothing to prevent such programs from serving re-distributive purposes, which some indeed do.

33. **In Colombia, total monetary transfers are regressive while non-monetary public spending is generally progressive.** Sizeable pension transfers, mainly benefitting the rich, result in a highly regressive distribution of public monetary transfers, with some compensation provided by the relatively small (in fiscal terms), but well-targeted conditional cash transfers to the poor. Public, nonmonetary spending programs, such as pre-school and primary education, the subsidized health insurance regime, and early childhood programs are generally progressive.

4.1 Public Monetary Transfers

34. **Publically financed monetary transfers from the central Government to the Colombian population increase income inequality by one Gini point.²¹** This is because the rich receive the bulk of public monetary transfers: 90 percent of cash transfers are received by the richest 40 percent of the population. The richest quintile receives 79.0 percent of the total, while the poorest quintile receives only 3.1 percent of the total. The second and third poorest quintiles receive 2.6 and 3.8 percent, respectively (Table 4).

35. **The concentration of monetary transfers among the rich is explained by sizeable and highly regressive pension transfers.** Close to all pension payments (97.4 percent) are received by the richest 40 percent of Colombians. Even within this group, there is a strong concentration in the top quintile, which receives 86.3 percent of pension transfers. Pension transfers have the effect of increasing the Gini coefficient by 1.63 percentage points. This contrasts strongly with the experience of other countries in the region, where pensions typically reduces income inequality.

²⁰ This section draws upon the work of Nuñez (2009), which is the source of all statistics quoted in the section, unless otherwise mentioned.

²¹ According to Nuñez (2009) using 2008 ECV data. Goñi et al (2011), using 2003 ECV data, concludes that monetary transfers do not have any impact on the Gini coefficient, as mentioned in Section 2.

Table 4. Incidence of Social Transfer Programs

	Distribution of Subsidy					Relative increase in household income				
	Poorest	← Quintile →			Richest	Poorest	← Quintile →			Richest
	1.	2.	3.	4.	5.	1.	2.	3.	4.	5.
Familias en Acción (CCT)	44.9	29.5	16.1	8.2	1.3	7.6	1.9	0.6	0.2	0.0
PPSAM	37.2	24.6	20.2	12.3	5.6	1.7	0.4	0.2	0.1	0.0
Pensiones	0.1	0.2	2.3	11.1	86.3	0.2	0.3	1.9	5.2	11.0
Familias Guardabosques	42.3	30.8	11.4	10.2	5.2	0.8	0.2	0.0	0.0	0.0
Subsidio Familiar CCF	1.9	12.8	21.7	31.7	31.9	0.2	0.4	0.4	0.3	0.1
Total Monetary Transfers	3.1	2.6	3.8	11.5	79.0	12.9	4.0	3.5	6.0	11.1

Source: Nuñez (2009) using 2008 ECV data.

36. **Transfers to the pension system represent one of the largest expenditure items in the national budget.** In 2010, the Central Government spent COP 18,232 billion (about US\$10 billion) or 3.4 percent of GDP on such transfers. This represents one fifth of total Central Government spending or about 65 percent of the revenue that is collected by Colombia's most important revenue source – the value added tax. The amount is also equivalent to the record high net foreign direct investment that Colombia received in 2011.

37. **Despite substantial fiscal outlays pension coverage is remarkably low in Colombia.** By 2010, only 26 percent of the pension age population received a pension (about 1.4 million people). This compares to coverage rates of 80-90 percent in countries such as Argentina, Brazil, Chile, and Uruguay. As a result, pensions play a much smaller role in reducing poverty in Colombia compared to these countries. Meanwhile, about 30 percent of the labor force contributes towards a pension, but in order to earn one workers must contribute for sufficiently long periods or else their pension contributions will be returned without interest.

38. **The Conditional Cash Transfer program (CCT), and other social programs, have a compensatory impact on income inequality.** The combined impact of social transfer program is to reduce the Gini coefficient by 0.57 percentage points with the *Familias en Accion* CCT program accounting for 0.39 points. Transfers are largely progressive in all programs, and poor families benefit the most. The CCF family subsidy, financed by formal labor payroll taxes, is an important exception as the rich receive most of the transfers.

39. **Well-targeted cash transfers to the poor demonstrate that inequality reduction can be achieved with a relatively small fiscal outlay.** In 2010, there were about 2.6 million beneficiaries of the CCT program (about 5 percent of the population).²² The fiscal cost of the transfer program is equivalent to 0.3 percent of GDP – about a tenth the size of pension transfers (Nuñez, 2011). The CCT program is very well targeted towards the poorest 40 percent of the population, which receive about three quarters of money. The poorest quintile, in particular, receives about half (45 percent) the transfers.

40. **Public monetary transfers have an important impact on the incomes of the richest and poorest quintiles of the population, but less on the middle of the income distribution.** An alternative way to look at monetary transfers is to analyze their relative impact on household incomes (Table 4, right panel). Given the low incomes of the poor, small monetary transfers can

²² Source: Espinosa (2011).

make an important difference in living standards. Conversely, substantial changes in the relative incomes of the rich would require comparatively larger transfers. What stands out in this respect is that public monetary transfers mainly have an impact on the relative household incomes of the very rich and very poor. Broadly speaking, gross income of the richest quintile is boosted by 11.1 percent largely as a result of pension transfers. Meanwhile, gross incomes of the poorest quintiles rise by 12.0 percent mainly because of conditional cash transfers. The income boost from public monetary transfers on the intermediary quintiles is less pronounced at about 3.5-6.0 percent.

4.2 Public non-Monetary Spending

41. **Social public spending on education, health, early childhood and other public services have important benefits for poor and non-poor households.** The monetary value of these benefits can be imputed and the incidence across the income distribution analyzed. These benefits will not be captured in the official summary statistic of the Gini coefficient, which measures the distribution of post tax incomes, which includes public monetary transfers and direct/indirect taxes, but excludes non-monetary transfers.

Education

42. **Public spending on education is progressive and the implicit subsidy is substantial relative to the incomes of poor households.** The poorest quintile receives 26.8 percent of the subsidy, which arises because the cost of education is covered by the Government rather than paid by the households. The richest quintile, in comparison, receives 11.8 percent of the total subsidy. Although these benefits are non-monetary, it is possible to estimate the hypothetical Gini coefficient that would arise if they were monetary. Such estimations suggest that the equivalent subsidy, if converted to cash, would lower the Gini coefficient by 3.8 points. When compared to household incomes, the education subsidy is equivalent to 66.6 percent of incomes of the poorest quintile, while the subsidy corresponds to only 1.0 percent of the incomes of the richest quintile.

Table 5. Incidence of Education Programs (non-monetary)

	Distribution of Subsidy					Relative increase in household income				
	Poorest	← Quintile →			Richest	Poorest	← Quintile →			Richest
	1.	2.	3.	4.	5.	1.	2.	3.	4.	5.
Preschool	35.3	28.0	22.2	11.7	2.8	5.5	1.7	0.8	0.2	0.0
Primary	34.8	28.4	19.8	12.4	4.5	36.1	11.2	4.5	1.6	0.2
Secondary	24.7	24.3	23.2	17.7	10.0	23.5	8.8	4.9	2.1	0.3
Technical	9.6	16.5	22.1	33.1	18.6	0.2	0.1	0.1	0.1	0.0
Technological	11.3	5.3	27.3	33.2	22.9	0.2	0.0	0.1	0.1	0.0
University	3.7	6.7	15.4	28.4	45.8	1.1	0.8	1.0	1.1	0.5
Total education	26.8	23.9	20.8	16.7	11.8	66.6	22.7	11.4	5.3	1.0

Source: Nuñez (2009) using 2008 ECV data.

43. **Pre-school and primary education expenditure is particularly well targeted to the poor, while the rich benefit from higher level education spending.** About 35 percent of the education subsidy in pre-school and primary education is received by the poorest quintile compared to rates of less than 5 percent for the richest quintile. Conversely, almost half (45.8

percent) of public spending on university education is received by the richest households. In sum, the higher the level of education, the more rich households benefit.

Health and Early Childhood

44. **Public spending on health benefit rich and poor alike, and the support to the poor is substantial relative to their incomes.** At first sight, public spending on health appears somewhat regressive, as the richest quintile receive a larger share (22.0 percent) of the subsidy than the poorest (17.4 percent). Meanwhile, the monetary value of the subsidy received by the poor is substantial and equivalent to 38.6 percent of the incomes of the poorest quintile. If converted to cash, the health subsidy would reduce the Gini coefficient by 2.5 percentage points, implying that health benefits are progressive.

45. **The poor benefit mainly from the subsidized regime and from public spending outside the two main regimes.** Almost all Colombians (94 percent) are covered by health insurance either through the contributive or the subsidized regime. 39 percent of the population form part of the contributive regime financed mainly through payroll taxation of formal workers. 55 percent of the population belong to the subsidized regime financed through national and subnational budgets and transfers from the contributory regime. The poorest quintile receives 32.7 percent of the spending of the subsidized regime, whereas the richest quintile receives 34.8 percent of the contributive regime benefits. Given that the poorest parts of the population are unlikely to be formal workers, it is reasonable to expect that the benefits in the contributive regime are derived mainly by the better-off households. Transfers from the contributive to the subsidized regime, nonetheless, serve an important redistributive purpose.

Table 6. Incidence of Health Programs (non-monetary)

	Distribution of Subsidy					Relative increase in household income				
	Poorest	← Quintile →			Richest	Poorest	← Quintile →			Richest
	1.	2.	3.	4.	5.	1.	2.	3.	4.	5.
Outside regime	27.2	25.5	22.7	14.9	9.7	2.3	0.8	0.4	0.2	0.0
Subsidized regime	32.7	29.7	20.1	12.2	5.3	29.0	10.0	3.9	1.4	0.2
Contributive regime	5.9	11.8	19.6	27.9	34.8	7.4	5.6	5.4	4.4	1.5
Total health	17.4	19.4	19.9	21.1	22.0	38.6	16.5	9.7	5.9	1.7

Note: Gross benefits, excluding incidence of contributions. Source: Nuñez (2009) using 2008 ECV data.

46. **Early childhood programs are well-targeted to the poor, even if small in fiscal terms.** The benefit is progressive with 32.4 percent received by the poorest quintile and only 3.1 percent of the subsidy received by the richest quintile. The cash equivalent of the three main programs, *Primera Infancia*, ICBF (financed through payroll taxes of formal workers), and a school feeding program, would hypothetically reduce the Gini coefficient by 0.41 and poverty by 0.58 points. The subsidy represents 7.0 percent of the household incomes of the poorest quintile.²³

²³ Other relevant social protection initiatives in recent years include the expansion of *Red Juntos* which tries to integrate more effectively programs targeted to the extreme poor. Unfortunately, an incidence analysis of this program is not available.

5. The Effectiveness of Alternative Policy Options

47. **In our view, the comparison of alternative fiscal redistribution options should be guided by the following questions:**

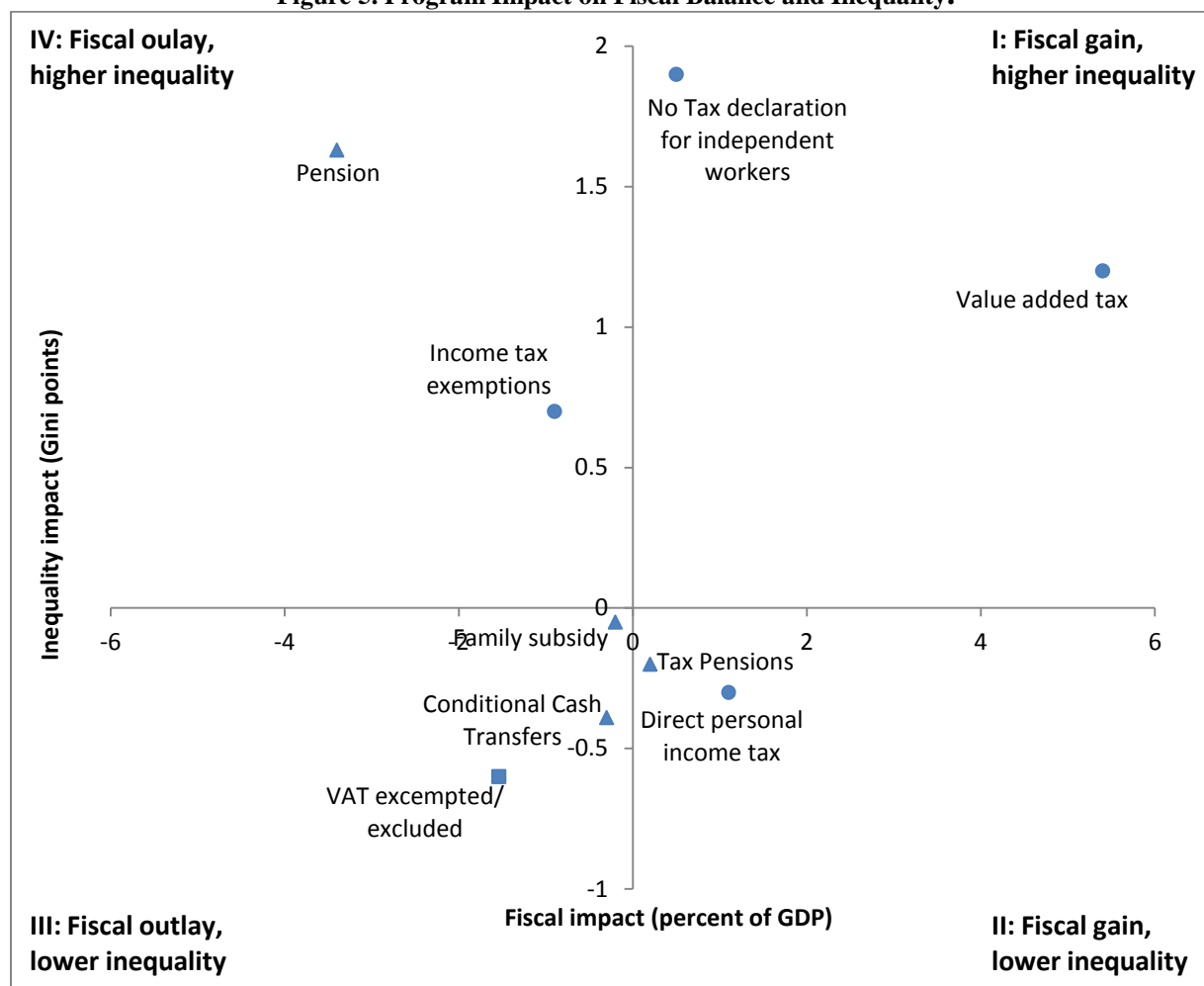
- (1) Is the expected fiscal impact positive or negative?*
- (2) How effective is the program in reducing inequality?*
- (3) Can proposals be combined to maximize the inequality reducing impact?*

(1) Negative or Positive Fiscal Impact?

48. **Fiscal redistribution does not necessarily imply a fiscal cost or loss in tax revenues, and some options even generate fiscal savings.** Economists are trained to expect a trade-off between equity and efficiency, or in this case equity and fiscal costs; in other words, a program that reduces inequality would typically be associated with a higher fiscal cost. However, this is not necessarily the case given the current structure of tax and spending programs in Colombia. Figure 5 illustrates this point by plotting each program in terms of their impact on the fiscal balance (horizontal axis) and inequality (vertical axis). Each quadrant represents an alternative combination of the fiscal and inequality impact. A reduction in government spending on the pension system or a reduction in income tax exemptions, for instance, would create fiscal savings (through reduced spending and increased tax revenues, respectively), while also reducing inequality. These programs therefore appear in the top left corner of the chart, as they involve a fiscal outlay resulting in higher inequality. Social spending programs, located in the bottom left corner of Figure 5, are examples of policies where lower inequality has a fiscal cost, involving the expected trade-off. On the tax side, direct personal income tax (bottom right) is associated with the attractive combination of a fiscal gain and lower inequality (though the latter effect is modest). The VAT system, meanwhile, has the benefit of raising tax revenues, but at the cost of increasing inequality (top right).

49. **Policy options with a positive fiscal impact have a strong appeal.** If additional revenues can be raised through fiscal redistribution policies (higher tax revenues or reduced spending) then this leaves policy makers with additional fiscal space. Fiscal savings could then be used to reduce the fiscal deficit and in this case one single policy instrument would serve two policy objectives: redistribution and fiscal sustainability. Alternatively, the additional revenue or cost saving could be used to offset the fiscal costs of certain redistributive measures, such as a progressive public spending program. In doing so, policy makers would need to consider the relative effectiveness of alternative programs, as discussed in the next section.

Figure 5. Program Impact on Fiscal Balance and Inequality.



Legend: ● Tax program. ■ Tax expenditure. ▲ Spending program. Source: Summary Table (Annex 1).

(2) Program Effectiveness

50. **Program effectiveness can be approximated by comparing the inequality reducing impact with its fiscal effects.** Table 7 identifies five policy options with a positive fiscal impact and four with a negative impact. As per the previous discussion, note that programs with a positive fiscal impact are found both on the tax and spending side, and vice versa. The policy options, in turn, are ranked by their average effectiveness of fiscal redistribution, calculated as the ratio of the change in the Gini coefficient over the change in fiscal impact, expressed in units of 0.1 percent of GDP. To facilitate comparisons, effectiveness is expressed using numerical values (i.e. without a positive or negative sign).

51. **The intuition of the program effectiveness measure is most straightforward for programs with a fiscal cost, as it corresponds to cost effectiveness.** For every 0.1 percent of GDP spent on the conditional cash transfer program, the Gini coefficient is reduced by 0.13 percentage points. This program is therefore more cost-effective than, say, the family subsidy, which only reduces the Gini coefficient by 0.02 percentage points for a similar fiscal cost.

52. **The effectiveness measure can also be useful when comparing options with a positive fiscal impact.** This is so, because it helps identify the options which involve the least fiscal changes for a maximum inequality impact. To illustrate, a reduction in tax exemptions is, on average, twice as effective in reducing inequality compared to raising the personal income tax, per unit of tax revenue redistributed.

Table 7. Effectiveness of Fiscal Redistribution*

Inequality reducing policy option	(A) Fiscal Impact (% of GDP)	(B) Impact on Gini coefficient (percentage points)	(C) Average effectiveness of fiscal redistribution*	(D) Type of Program
<u>Policy options with positive fiscal impact</u>				
Introduce a tax on pensions	+0.2	-0.20	0.100	Taxation
Reduce income tax exemptions	+0.9	-0.70	0.078	Tax Expenditure+
Reduce pension transfers	+3.4	-1.63	0.048	Public Spending
Eliminate VAT exemptions/exclusions**	+1.5	+0.60	0.039	Tax Expenditure+
Increase direct personal income tax	+1.1	-0.30	0.027	Taxation
<u>Policy options with negative fiscal impact</u>				
Introduce tax declaration for independent workers	-0.5	-1.90	0.380	Taxation
Scale-up Conditional Cash Transfers	-0.3	-0.39	0.130	Public Spending
Scale-up family subsidy	-0.2	-0.05	0.025	Public Spending
Reduce the value added tax	-5.4	-1.20	0.022	Taxation

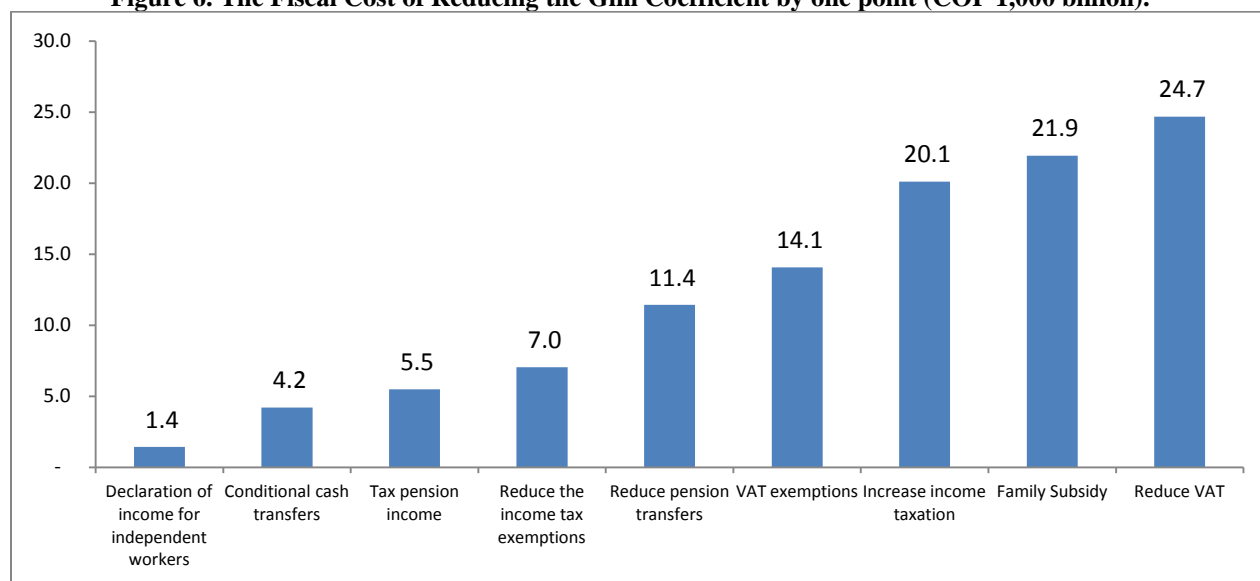
Note: *The numerical impact on the Gini coefficient per 0.1 percent of GDP fiscal change: (C) = (B)/[(A)*10].

**Note that this measure increases inequality. +Tax expenditures refer to the fiscal cost of tax breaks. Source: Summary Table (Annex 1).

53. **The analysis of effectiveness is indicative of which policy options may be attractive. Taxation of pension income appears to be highly effective, but is limited by the low fiscal revenue this would raise.** A reduction of income tax exemptions is less effective, but could raise more tax revenue. A reduction of pension transfers holds substantial expenditure saving potential, but at a lower rate of effectiveness. The table also reveals the very low cost effectiveness of existing VAT exemptions. The introduction of a tax declaration for independent workers has great inequality reducing potential, but at a moderate fiscal cost. Finally, in the cases of direct and indirect taxation, the effectiveness indicator reveals the very modest fiscal redistribution embedded in the existing tax system, particularly in light of the substantial amounts of revenues collected.

54. **In a similar vein Figure 6 shows the fiscal cost of reducing income inequality by one Gini point using alternative fiscal programs.** The programs with the lowest fiscal cost are those with the highest rate of effectiveness.

Figure 6. The Fiscal Cost of Reducing the Gini Coefficient by one point (COP 1,000 billion).



Source: Table 7. Note: The graph is illustrative, in some case the fiscal program reduces the Gini coefficient by less than one point. For instance, taxation of pension income reduces the Gini coefficient by only 0.2 points.

(3) Exploiting the Synergies: Combining Proposals

55. **Considerations of fiscal impact and effectiveness can be used to identify attractive policy proposals.** The approach is straightforward: policy options that generate fiscal savings can be combined with those programs which are the most effective in reducing inequality, thus maximize their combined impact.

56. **To illustrate this approach and the potential of fiscal redistribution in Colombia, a package of measures is proposed, but not necessarily recommended.** Before presenting the proposal, it is important to introduce a few methodological caveats (see Annex 2 for details). First, as an approximation of marginal program effectiveness, average rates of effectiveness reported in Table 7 are used, to some extent. This may result in some lack of precision, which can be resolved through a more detailed analysis using the underlying household data. Second, the analysis is static as it does not account for possible behavioral responses of individuals to changes in taxes or public transfers. Third, the structure of existing programs is taken as given when computing the rates of effectiveness. In other words, the degree of progressivity, or the opposite, embedded in the existing tax and spending system is assumed unchanged. Finally, the approach is limited by the data available. No attempt was made to estimate the potential inequality reducing impacts of non-existing programs. As a consequence, there is no pretense that the policy package proposed is necessarily the optimal one.

57. **The static simulations presented here are intended to complement existing modeling efforts.** The objective of the simulations is to give a snapshot view of the relationship between the fiscal and income inequality reducing impacts. In this sense, the results are intended to complement other types of exercises, possibly based on CGE modeling, rather than a substitute for these. Data on fiscal spending by program type was derived from an inventory of social protection programs, prepared by Espinosa (2011) as well as Nuñez (2009, 2011).

58. On the basis of the caveats stated above, the following package of policy measures appears attractive and merit further analysis. The proposal includes a reduction of tax incentives and benefits (tax expenditures) in the personal income and the value added taxes which would yield substantial additional tax revenues (2.4 percent of GDP). When put to their most effective use, the additional revenue could be used to finance the introduction of a tax declaration for independent workers and an expansion of the conditional cash transfer program. This proposal would be fiscally neutral and would reduce the Gini coefficient by about 4.5 percentage points, which would bring Colombia's Gini coefficient lower than Chile and close to Costa Rica.

59. A reform of personal income tax exemptions could reduce the Gini coefficient by up to 3.1 percentage points, if additional tax revenues are spent effectively. The reform proposal contains the following elements: (1) elimination of the exemption of tax of the first 25 percent of income; (2) elimination of deduction for voluntary savings and pensions accounts; (3) introduction of a tax on pension income.²⁴ These measures would initially lower the Gini coefficient by 0.7 points and increase tax revenues by 0.9 percent of GDP, as illustrated in example A.1 of Table 8. The most effective identified use of the additional tax revenue would be through a combination of two measures. First, the introduction of an income declaration for independent workers, which would cost 0.5 percent of GDP and reduce the Gini coefficient by a further 1.9 points. Second, by channeling the remaining resources (0.4 percent of GDP) into the conditional cash transfer program to reduce the Gini coefficient by a further 0.52 points (using the average effectiveness ratios reported in Table 7), totaling a 3.12 percentage points reduction (example A.1). If instead all additional tax revenues were used to expand the CCT program, a reduction of 1.87 Gini points would be expected (example A.2).

60. A reform of the VAT system would reduce inequality by up to 2.6 Gini points through effective use of additional tax revenue. As illustrated in Table 7, VAT exemptions/exclusions are not a cost-effective policy tool of reducing inequality. For every 0.1 percent of GDP lost in revenues, the Gini coefficient is only reduced by 0.039 percentage points. The proposed VAT reform would consist of the following elements: (1) elimination of all VAT exemptions (except education, health, transport and leasing); (2) elimination of exemptions on real estate transactions; (3) convert all VAT exemptions to exclusions; (4) convert all VAT rates below the general rate to 16 percent.²⁵ This package would initially raise 1.54 percent of GDP in additional tax revenues, but would also raise the Gini coefficient by 0.6 percentage points, as the poor would now pay VAT on previously exempt/excluded goods. Further reductions in inequality could be achieved by channeling the fiscal savings into two programs: financing the income declaration of independent workers and expanding the CCT program. If a combination of measures is used, the Gini coefficient can be reduced by 2.65 points (B.1). If only the CCT program is used the combined effect would be a 1.40 Gini points reduction (B.2).

²⁴ There is a possibility that the Constitutional Court may subsequently rule such taxation only to apply to new beneficiaries, i.e. those retiring after the legislation has been approved. The Court may in this case use the recurrent argument of 'expected net benefits' as occurred with reductions in replacement rates under Law 797 of 2007.

²⁵ There are important legal aspects related to this proposal in light of a previous Constitutional Court ruling (C-776 of 2003) that limits the extent to which VAT can be increased (see Clavijo, 2004).

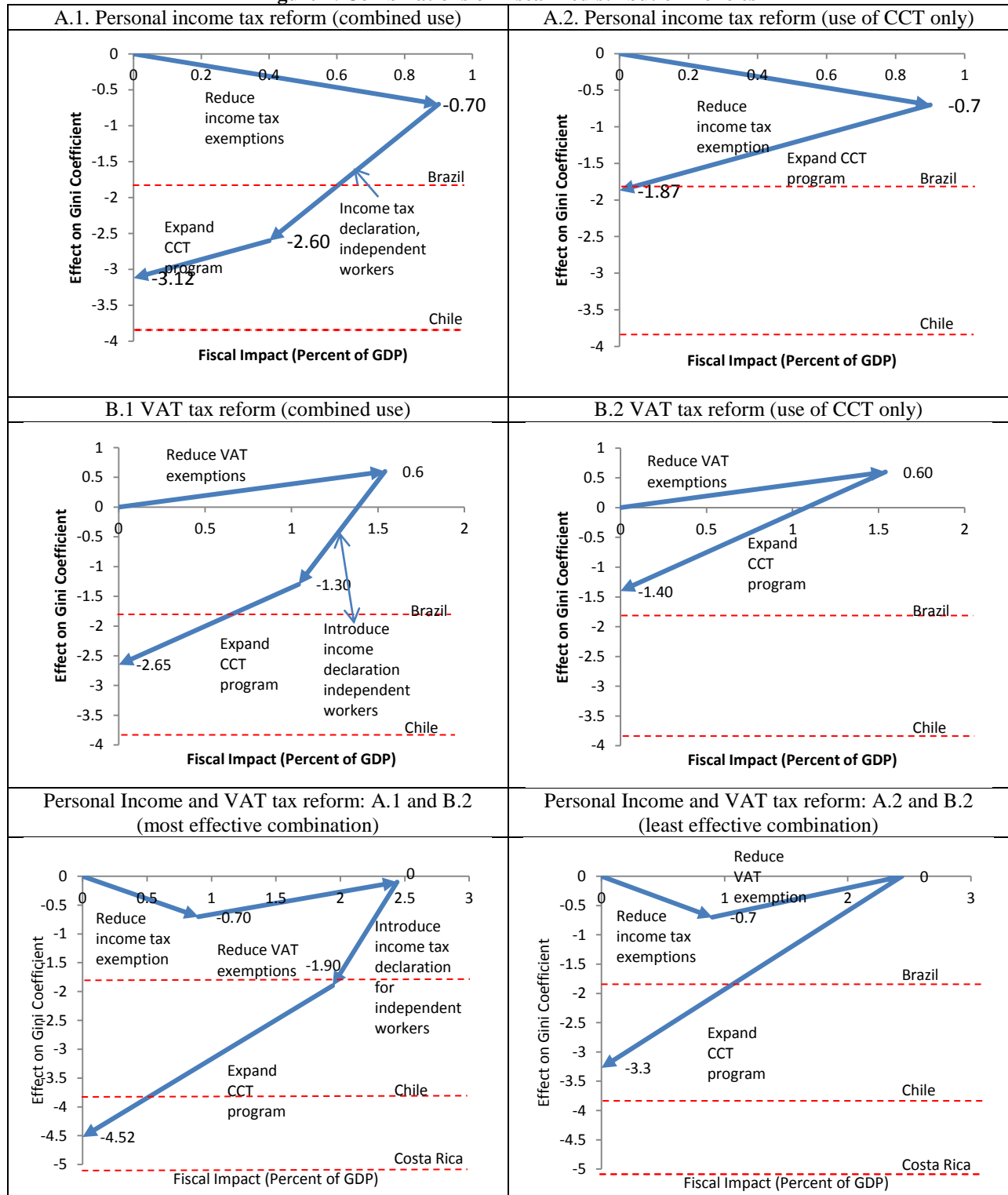
61. **A combination of personal income tax and VAT reform could yield a reduction in the Gini coefficient of between 3.3 and 4.5 percentage points.** As illustrated in Table 8, the different proposals can be combined. The most effective proposal combines the use of the additional tax revenues into the two uses discussed previously: financing an income declaration for independent workers and expanding the CCT program. The least effective combined option relies solely on the CCT program.

Table 8. Illustrative Policy Alternatives

Policy Reform	Source of additional tax revenues	Initial impact	Use of additional tax revenues	Revenue neutral impact on Gini coefficient
A.1. Personal income tax	(1) eliminate the exemption of tax of the first 25 percent of income; (2) eliminate deduction for voluntary savings accounts; (3) introduce taxation of pension income.	Tax revenues: +0.9% of GDP Gini coefficient: -0.7	(1) Income declaration independent workers (IW) (2) Expand CCT program	-0.70 (initial) -1.90 (IW) -0.52 (CCT) = -3.12 (total)
A.2. Personal income tax	(1) eliminate the exemption of tax of the first 25 percent of income; (2) eliminate deduction for voluntary savings accounts; (3) introduce taxation of pension income.	Tax revenues: +0.9% of GDP Gini coefficient: -0.7	(1) Expand CCT program only	-0.70 (initial) -1.17 (CCT) = -1.87 (total)
B.1 VAT	(1) eliminate all VAT exemptions (except education, health, transport and leasing); (2) eliminate exemptions on real estate transactions; (3) convert all VAT exemptions to exclusions; (4) convert all VAT rates below the general rate to 16 percent.	Tax revenues: +1.5% of GDP Gini coefficient: +0.6	(1) Income declaration independent workers (IW) (2) Expand CCT program	+0.60 (initial) -1.90 (IW) -1.35 (CCT) = -2.65 (total)
B.2 VAT	(1) eliminate all VAT exemptions (except education, health, transport and leasing); (2) eliminate exemptions on real estate transactions; (3) convert all VAT exemptions to exclusions; (4) convert all VAT rates below the general rate to 16 percent.	Tax revenues: +1.5% of GDP Gini coefficient: +0.6	(1) Expand CCT program only	+0.60 (initial) -2.00 (CCT) = -1.40 (total)
Most effective Combined proposal	Personal income tax (A.1) and VAT (B.2)	Tax revenues: +2.3% of GDP Gini coefficient: 0.0	(1) Income declaration independent workers (2) Expand CCT program	-3.12 -1.40 = -4.52
Least effective Combined proposal	Personal income (A.2) and VAT (B.2).	Tax revenues: +2.3% of GDP Gini coefficient: 0.0	(1) Expand CCT program only	-1.87 -1.40 = -3.27

Note: IW: Introduce tax declaration for independent workers. CCT: Conditional Cash Transfer program (*Familias en Accion*). Most effective combined proposal takes into account that the IW spending option is only available for the first 0.5 percent of GDP of fiscal expenditure.

Figure 7. Combinations of Fiscal Redistribution Policies



Source: Table 8. Note: Numbers in graph illustrate the impact on the Gini coefficient only.

7. Conclusions

62. **Colombia has the seventh highest Gini coefficient of income inequality in the world.** The Santos Administration is aware of this challenge and has already taken important steps to reduce disparities. It is targeting a reduction of one Gini point per year while in office. The Administration is also aspiring to join the OECD group of countries, which exhibit much lower income disparities, mainly as a result of effective policies of fiscal redistribution.

63. **The potential of fiscal redistribution remains largely unexploited in Colombia.** The redistributive effects of direct and indirect taxes cancel each other out, and monetary transfers have a negligible (and possibly negative) impact on inequality.

64. **Direct taxation hardly has an impact on the Gini coefficient.** Direct personal income taxation raise a relatively low amount of revenue and therefore has a low redistributive potential. The system is characterized by a high income threshold, implying that less than two percent of adult Colombians actually file and pay personal income tax. A range of income tax exemptions, benefitting mainly high-income earners, further undermine the tax base. Finally, low-income independent workers are penalized as they are taxed presumptively at the source, without the right to reimbursements through the filing of annual income declarations.

65. **The Value Added Tax (VAT) in Colombia is regressive.** This may be surprising given the tax exemptions of many basic goods consumed by the poor. However, these products are also consumed by the rich, and to a much larger extent, implying that rich households benefit disproportionately from VAT exemptions and exclusions. While exemptions/exclusions make the VAT tax less regressive than it would otherwise have been, it does so in a cost-ineffective way.

66. **Public monetary transfers are regressive while non-monetary public spending is generally progressive.** Sizeable pension transfers, mainly benefitting the rich, result in a highly regressive distribution of monetary public transfers, with some compensation provided by the relatively small (in fiscal terms), but well-targeted conditional cash transfers to the poor. Public, nonmonetary programs, such as pre-school and primary education, the subsidized health insurance regime and early childhood programs are generally progressive.

67. **When considering policy options to reduce income inequality, policy makers could consider combining policy packages that optimize fiscal impact and effectiveness.** The fact that several redistributive policies could lead to substantial fiscal savings opens important potential to maximize the inequality reducing impact through effective use of these resources. That said, it is important to emphasize that improving the progressivity of public transfers can also go far in reducing income inequality.

68. **An illustrative policy package combining three policy options could be sufficient to achieve levels of inequality similar to Chile and Costa Rica.** The proposal includes: (1) reductions of personal income tax exemptions, (2) reductions in most exemptions/exclusions of the value added tax, and (3) taxation of pension income. The initial impact of this proposal would yield a substantial fiscal saving (2.4 percent of GDP), which could be used to finance the introduction of a tax declaration of independent workers (0.5 percent of GDP) and an expansion

of the conditional cash transfer program, yielding an estimated reduction in the Gini coefficient of 4.5 points. In that case, Colombia's Gini coefficient would be lower than Chile and close to that of Costa Rica.

69. **The proposed reform package is illustrative of the substantial unexploited potential of fiscal redistribution in Colombia, but should not be interpreted as a specific policy recommendation.** Further analytical work would be necessary to identify all available policy options, including new programs and improved progressivity of existing ones, and select the optimal ones. Additional household survey simulations would be needed to confirm the accuracy of these estimates.

70. **Further analytical work is recommended to derive specific policy recommendations.** On the taxation side, the most obvious missing information relates to the redistributive impact of payroll taxation, including the effects of a social security financing reform. A better understanding of the behavioral responses to changes in taxation or spending is also warranted. The World Bank has previously worked with the UK Institute of Fiscal Studies (IFS) to design a model (MEXTEX) which examines the impacts of fiscal reforms on efficiency and equity in the case of Mexico, and this approach could usefully be adopted to Colombia. Improved access to anonymous tax payer data would also go a long way in improving our understanding of the dynamics of top earners and the implications for the distribution of income. In addition, little is known about taxes different from personal income and value added taxation, such as financial transaction, wealth and fuel taxes. On the expenditure side, there is a need for further information about a few specific programs, including agriculture.

71. **Finally, a political economy analysis to examine the feasibility of the proposed fiscal redistribution package would also be useful.** This paper has deliberately avoided the critical issue of the degree to which the proposed policy measures can be implemented given existing political economy and legal constraints that Colombia is facing. An evidence-based analysis such as the one presented here, however, would be a useful starting point for such an analysis.

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Annex 1: Summary of the Impact on the Gini coefficient of selected taxes and transfers

		Impact on Gini coefficient (points)	Benefits received by poorest 20%	Benefits received by richest 20%	Fiscal impact (% of GDP)	Source
A	Market income (before public monetary transfers and taxes)					(a)
B	+Cash transfers	0.00				(a)
C=A+C	Gross income (income after cash transfers)					(a)
D	-Direct taxes	-1.00				(a)
E=C+D	Disposable income (income after cash transfers and direct taxes)					(a)
F	- Indirect taxes	+1.00				(a)
G=E+F	Post Tax income (income after cash transfers and all taxes)					(a)
H=D+F	Direct and Indirect taxes	0.00				(a)
B	Public monetary benefits	+0.97	3.1	79.0	4.0	(c)
	Pensions	+1.63	0.1	86.3	3.4	(c)
	conditional cash transfers	-0.39	44.9	1.3	0.3	(c)
	PPSAM	-0.09	37.2	5.6	0.1	(c)
	Familias Guardabosques	-0.04	42.3	5.2	0.0	(c)
	Family subsidy (CCF)	-0.05	1.9	31.9	0.2	(c)
	Public non-monetary benefits					
	Education	-3.85	26.8	11.8	4.7	(c)
	Pre-school	-0.31	35.3	2.8	3.7	(c)
	Primary	-2.01	34.8	4.5		(c)
	Secondary	-1.51	24.7	10.0		(c)
	Technical	-0.02	9.6	18.6	1.0	(c)
	Technological	-0.02	11.3	22.9		(c)
	Superior	-0.11	3.7	45.8		(c)
	Health	-2.54	38.6	22.0	5.6	(c)
	Subsidized regime	-1.70	32.7	5.3	1.5	(c)
	Contributive regime	-0.76	5.9	34.8	3.3	(c), (e)
	Outside regime	-0.15	27.2	9.7	0.8	(c)
	Early childhood	-0.41	32.4	3.1	0.3	(c)
	Primera Infancia	-0.09	35.8	-0.3	0.1	(c)
	ICBF	-0.19	29.7	3.9	0.1	(c)
	School feeding	-0.14	34.5	4.1	0.1	(c)
			Taxes paid relative to income for poorest 10%	Taxes paid relative to income for richest 10%		
D	Direct taxes on personal income	-0.30	1.75	3.97	1.1	(b),(d)
	Income tax exemptions (selected only)	+0.70			0.92	(b)
	Exemption of 25 percent of income				0.42	(b)
	Voluntary savings accounts (AFC)				0.25	(b)
	Non-taxation of pension income	+0.2			0.18	(b)
	Mortgage interest				0.01	(b)
	Health/education expense				0.03	(b)
	Lack of income declaration for independent workers	+1.9			0.50	(b)
F	Indirect taxes	+1.18	50.9	5.7	5.4	(b),(d)
	Reform proposal:	+0.60*			1.54	(f)
	VAT exemptions (except education, health, transport and leasing)				0.89	(f)
	VAT exemptions on real estate transactions				0.45	(f)
	VAT zero rates instead of exemptions				0.11	(f)
	VAT rates lower than general rate of 16%				0.09	(f)

Sources: (a) Goñi et al (2011) based on ECV (2003) with new data provided by authors. (b) Jorratt (2010) based on ENIG (2006-07). (c) Nuñez (2009) based on ECV (2008). (d) IMF (2011a). (e) Melo and Ramos (2010). (f) World Bank (2012). Note: *The fiscal cost of holding the poor harmless in the VAT reform proposal is 0.33 percent. These resources could be channeled back to the poor through a well-targeted poverty program. The VAT reform generates a net revenue gain of 1.57 percent of GDP, which could potentially be used to reduce the Gini coefficient further.

Annex 2: Fiscal Redistribution Framework

This Annex offers a framework for analyzing the effectiveness of fiscal redistribution.

Let T be taxes (direct or indirect), TE are tax expenditures (the revenue lost due to tax breaks), E is public transfers and G^* denotes the Gini coefficient of market incomes (before taxes and transfers). The Gini coefficient after taxes and transfers, G , can then be written using the following implicit functional form:

$$G = F(T, TE, E, G^*) \quad (1)$$

The functional form of equation (1), including the signs of the first and second derivatives, is an empirical question, which depends on the country and data in question. Even so, a few conceptual considerations and examples illustrate the usefulness of writing down this basic relationship.

To illustrate, what would happen to income inequality, G , if taxes, T , increase? If the sign of the first derivative is positive, $\frac{\partial G}{\partial T} > 0$, then the tax is regressive, as in the case of the value added tax in Colombia. More generally, the sign of the first derivative leads to the following classification:

Table A.1 Classification of Progressive and Regressive Fiscal Impacts

Sign of first derivative	Interpretation	Example in Colombia
$\frac{\partial G}{\partial T} > 0$	Regressive taxation	Value added tax
$\frac{\partial G}{\partial T} < 0$	Progressive taxation	Personal income tax
$\frac{\partial G}{\partial TE} > 0$	Regressive tax expenditure	Income tax exemptions
$\frac{\partial G}{\partial TE} < 0$	Progressive tax expenditure	No examples
$\frac{\partial G}{\partial E} > 0$	Regressive public transfers	Pension transfers
$\frac{\partial G}{\partial E} < 0$	Progressive public transfers	Conditional cash transfers

As Table A.1 shows, the sign of the first derivative can vary for conceptual as well as empirical reasons. For example, while public pension transfers are regressive in Colombia, they may be progressive in other countries. Irrespectively, the policy goal of reducing income inequality can be achieved with any fiscal program by scaling-up progressive programs or reducing regressive programs.

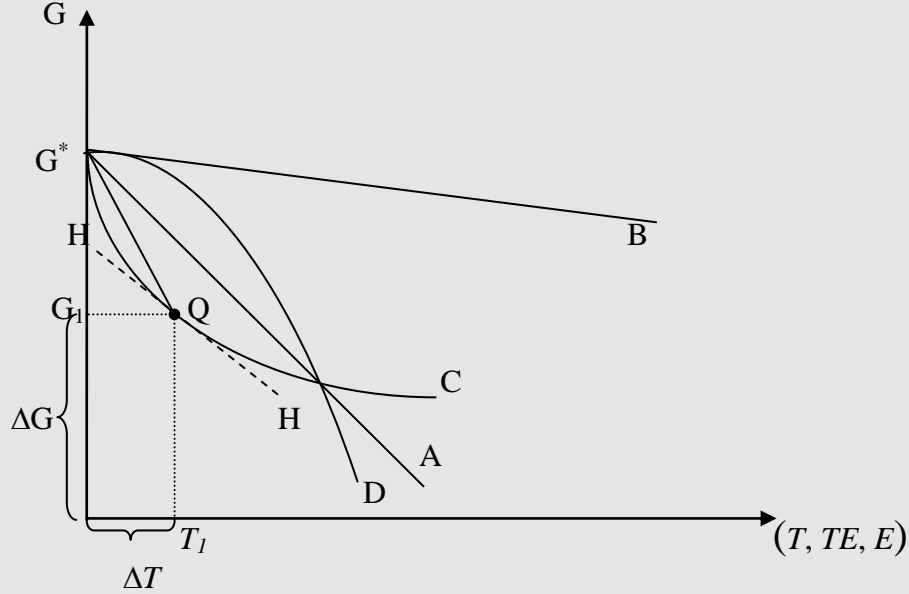
The numerical value of the first derivative, which measure the *marginal effectiveness of fiscal redistribution* (*METR*), is of special interest:

$$\left| \frac{\partial G}{\partial (\cdot)} \right| \quad (2)$$

For every dollar or Peso of fiscal redistribution, through taxes or transfers, expression (2) measures the marginal impact on the Gini coefficient.

Equation 1 is illustrated in Figure A.1 with the fiscal program (T , TE , or E) on the horizontal axis and the Gini coefficient on the vertical axis. The intersection with the vertical axis is given by G^* - the level of income inequality in the absence of taxes and transfers.

Figure A.1. The Fiscal Redistribution Function



The functional form of the fiscal redistribution function F is unknown. In the simple case where the second derivative is zero, $\partial^2 G / \partial (T)^2 = 0$, the Fiscal Redistribution Function, F , is linear. In comparing the line segment AG^* with BG^* , we note that $\left| \frac{\partial G}{\partial (T)} \right|_A > \left| \frac{\partial G}{\partial (T)} \right|_B$, implying that fiscal program A is more effective in reducing G than program B. In non-linear cases, where $\partial^2 G / \partial (T)^2 \neq 0$, two possibilities are depicted: program C, where the inequality reducing effect is declining in T (the second derivative is positive), and, program D where the effect on G is increasing (the second derivative is negative).

Ideally, fiscal programs should be ranked by the marginal effectiveness of fiscal redistribution at the relevant point of the fiscal redistribution function, F , such as point Q in Program C $\left| \frac{\partial G(T_1, G_1)}{\partial (T)} \right|$. However, given the available data, this paper (Table 7) uses instead the *average effectiveness of fiscal redistribution*, using numerical values, defined as:

$$\left[\frac{\Delta G}{\Delta T} \right] \quad (2)$$

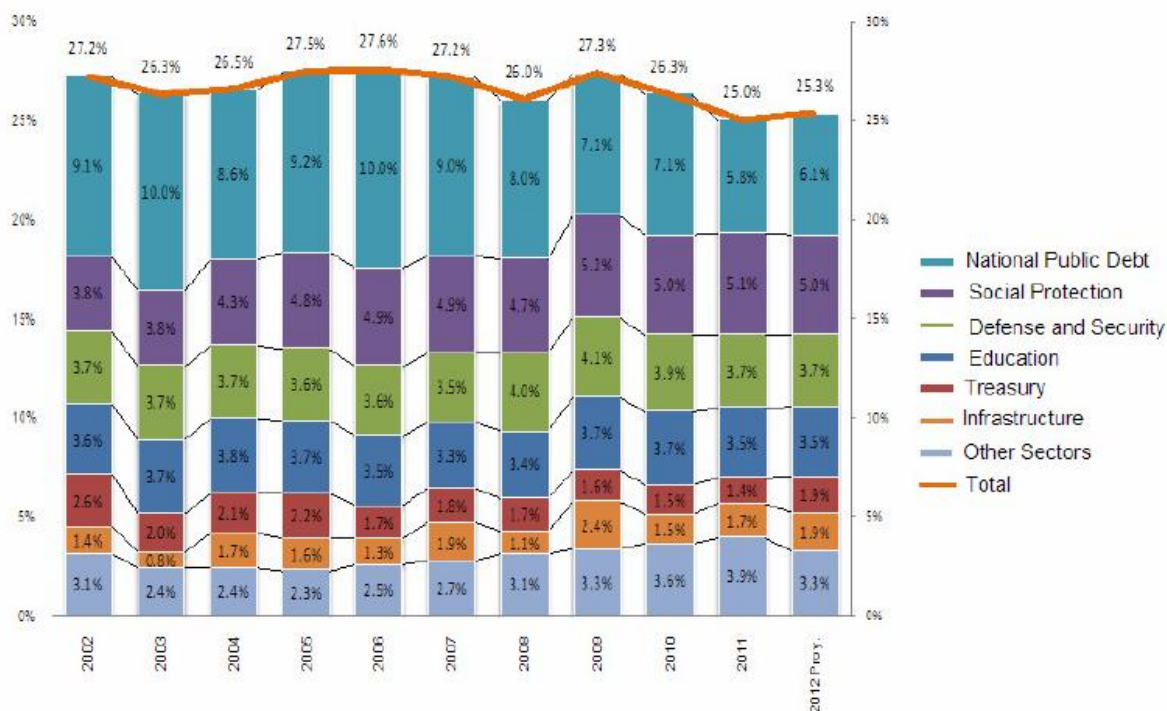
As illustrated in Figure A.1, there is a difference between the marginal and average measures, depicted by the differences in slope of line segments HH' (marginal effectiveness) and QG* (average effectiveness). This difference is small for small values of fiscal redistribution. Finally, note that the analytical framework is sufficiently flexible to allow for changes in fiscal program structure or degree of progressivity. Increased progression of a program, for instance, can be illustrated in a shift from line segment BG^* to AG^* .

Colombia: Gross Tax Revenue, 2005-2010.

	2005	2006	2007	2008	2009	2010	2010-2005
Ingresos Tributarios Totales	17.4	18.4	18.2	18.3	18.3	17.7	0.3
Nivel Nacional	13.2	14.1	14.3	14.2	13.8	13.1	-0.1
Impuesto sobre las ventas	5.4	5.9	6.1	5.9	5.5	5.7	0.3
Impuesto sobre la renta	5.5	5.8	5.7	5.5	6.0	5.1	-0.3
Gravámenes Arancelarios	0.9	1.0	1.0	0.9	0.8	0.9	0.0
Gravámenes Movimientos Financieros	0.7	0.7	0.7	0.7	0.6	0.6	-0.1
Impuesto al patrimonio	0.1	0.1	0.3	0.7	0.4	0.4	0.3
Impuesto global a la gasolina	0.3	0.3	0.3	0.3	0.3	0.3	-0.1
Otros	0.2	0.2	0.2	0.2	0.1	0.1	-0.1
Departamentos	0.9	0.9	0.9	0.9	0.9	0.9	0.0
Impuesto consumo de cerveza	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Impuesto consumo de licores	0.2	0.2	0.2	0.2	0.2	0.2	-0.1
Impuesto consumo de cigarrillos	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Sobretasa a gasolina	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Otros	0.3	0.3	0.3	0.3	0.3	0.3	0.1
Municipalidades	1.8	1.9	1.9	1.9	2.0	2.1	0.3
Impuesto predial unificado	0.6	0.6	0.5	0.5	0.6	0.7	0.1
Impuesto de industria y comercio	0.7	0.8	0.8	0.8	0.8	0.8	0.1
Sobretasa a gasolina	0.3	0.3	0.2	0.2	0.2	0.2	-0.1
Otros	0.2	0.3	0.3	0.3	0.4	0.4	0.3
Sistema de Pensiones	1.5	1.5	1.2	1.4	1.6	1.6	0.1
PBI Nominal (COL\$ miles de millones)	340,156	383,898	431,072	481,037	508,532	546,951	

Source: IMF (2011a).

Colombia: Sectoral Composition of Public Spending



Source: Ministry of Finance and Public Credit