DISTRIBUTIONAL IMPACT OF FISCAL POLICY AND TAX REFORM[1]

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This note examines the distributional impact of fiscal policy in Guatemala, both under the current system and a tax reform scenario. We find that fiscal policy in Guatemala reduces inequality mainly on account of direct taxes and in-kind education and health transfers, but slightly increases poverty as social spending is not sufficient to offset the poverty increasing effect of taxation. The government's 2016 tax reform proposal would likely have raised revenues of 1½ percent of GDP (per official estimates) without materially affecting inequality and poverty compared to the baseline. A progressive spending of the additional revenues could have improved the redistributive outcome of the reform and its impact on inequality and poverty.
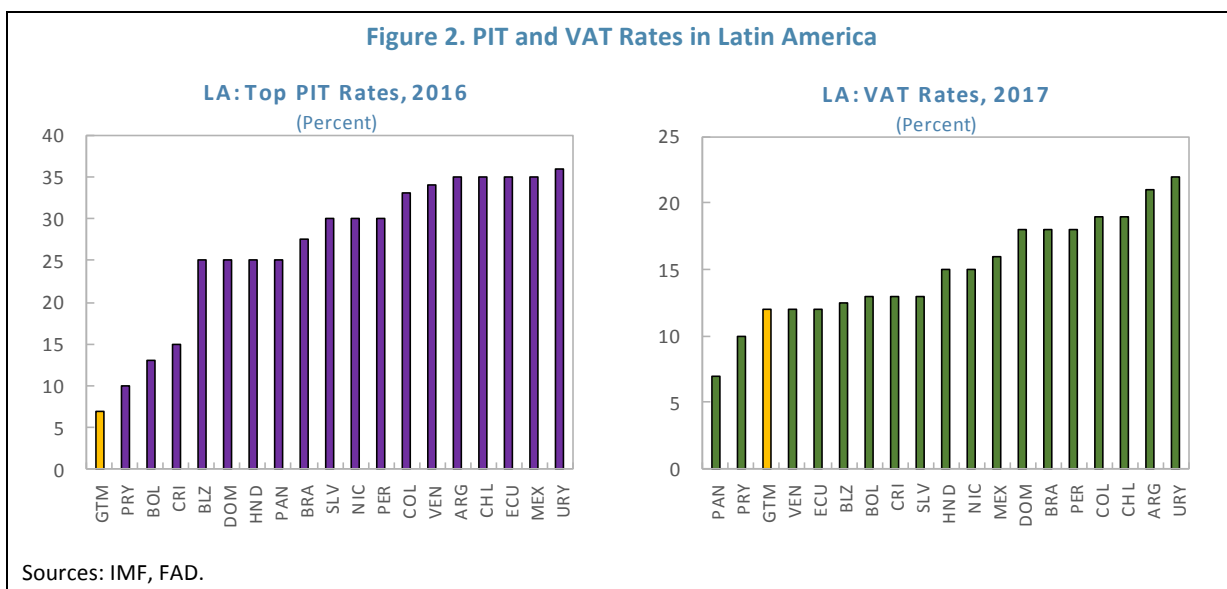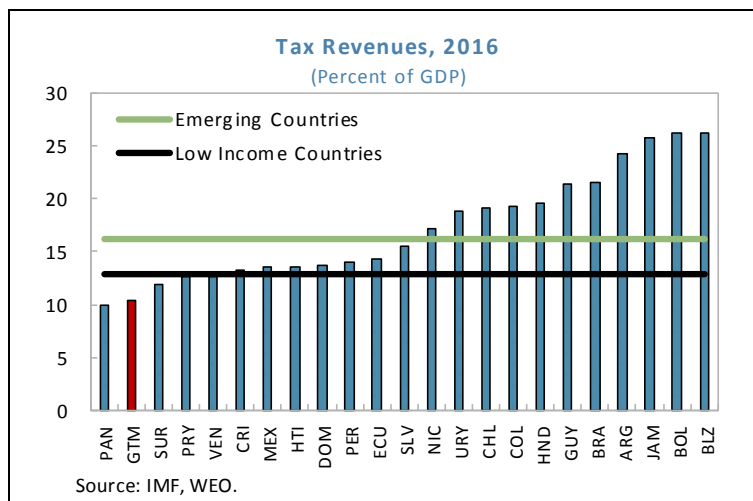
A. INTRODUCTION

1.   Guatemala's tax revenues are one of the lowest in Latin America and the world. In 2016, tax revenues amounted to 10.4 percent of GDP, compared to an average of 17 percent of GDP in Latin America and 16 percent in other Emerging Economies, and even below the average in low income countries (Figure 1). Current tax revenues are only about half the Guatemala's collection potential (tax frontier) which is estimated to be close to 20 percent of GDP based on the country's level of development, openness to trade, inflation, income distribution, corruption, and ease of tax collection (Fenochietto and Pessino, 2013).

2.   Low tax rates, tax evasion, and to a lesser extent exemptions are at the root of the low level of tax collection. The maximum marginal rate of personal income tax (PIT, 7 percent) is the lowest in the world (Figure 2), and its threshold (equal to 5.3 times the GDP per capita) is the highest in the region. The value added tax (VAT) rate of 12 percent is also low compared to 13.5 and 15.3 percent in Central and Latin America respectively, although to a lesser extent (Figure 2), while the excise rate on fuel products has not been adjusted for inflation for 10 years. The VAT tax efficiency, which measures VAT collection in relation to private consumption, is one of the lowest in the region on account of exemptions, tax evasion, and the high level of consumption of own production goods. Tax evasion is high even by regional standards, and while tax expenditure is comparatively low when measured in relation to GDP (2.5 percent), it is high when measured in relation to collection (23 percent).
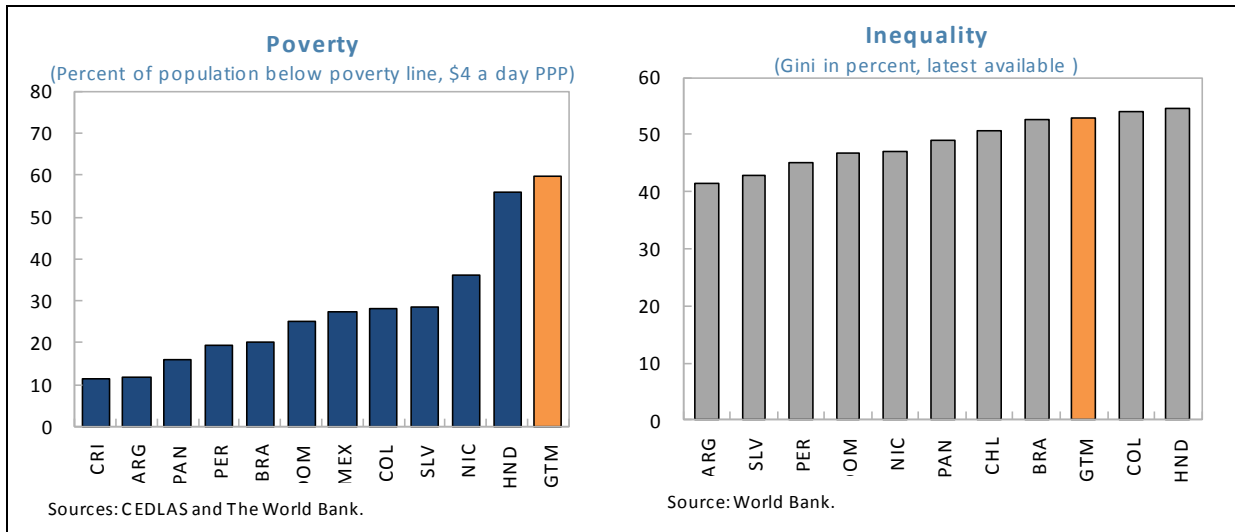

Figure 1. Tax Revenues in Latin America

Tax Revenues, 2016
(Percent of GDP)

Emerging Countries
Low Income Countries

Source: IMF, WEO.

Figure 2. PIT and VAT Rates in Latin America

LA: Top PIT Rates, 2016
(Percent)

LA: VAT Rates, 2017
(Percent)

Sources: IMF, FAD.

3.   Low tax collection reduces the progressivity of the tax regime and the redistributive capacity of public spending. The current structure of PIT, with only two brackets and a very low top marginal rate, dramatically reduces the progressivity of the PIT, and so does its low collection. Low tax revenues constrain the size of the government and its capacity to provide essential public goods. Besides limiting the potential to finance the social and infrastructure spending that the country needs, low revenues also limit the redistributive capacity of public spending, necessary to lift its people out of the pervasive levels of poverty and inequality. As a consequence, compared with other Latin American countries, Guatemala is the poorest and one of the countries with the highest income inequality (Figure 3).

Figure 3. Poverty and Income Inequality in Latin America

Poverty
(Percent of population below poverty line, $4 a day PPP)

Inequality
(Gini in percent, latest available)

Sources: CEDLAS and The World Bank.

Source: World Bank.

4.   In August 2016, the government proposed a tax reform aimed at increasing tax revenues. The main objectives of the reform proposals were to: (i) widen the tax base; (ii) raise revenues from income taxes; (iii) update excises on fuel products and cement; and (iv) increase royalties on the mining sector. The tax reform proposal had strong technical underpinning and was consistent with Fund advice, but had to be withdrawn due to lack of political support.

5.   This paper estimates the distributional impact of the Guatemalan fiscal policy under the current system and the tax reform proposed in August 2016. By using standard incidence analysis and microdata from the 2014 Nation Household Survey of Living Conditions (ENCOVI by its acronym in Spanish), we estimate the income redistribution and poverty impact of fiscal policy (taxes, social spending and subsidies) under the current system (baseline) as well as in a reform scenario simulating the implementation of the August 2016 tax reform proposal. We also estimate how individual fiscal measures affect the redistribution capacity of the system and its poverty outcomes to better interpret our aggregate results and provide more granular guidance for the design of a more progressive system.

B.   THE AUGUST 2016 TAX REFORM

6.   Official estimates indicate that the reform proposal would have raised tax revenues by 1½ percent of GDP. Its main components were:

•   An increase in *corporate income tax (CIT)* rates both under the net income and gross sales regimes (Table 1):

Table 1. Guatemala: CIT Reform Proposal

Profits Regime		Actual		Reform
		25%		29%

Gross Sales Regime	Actual		Reform	
Brackets	Fixed amount	Rates	Fixed amount	Rates
Q1 - Q30,000	0	5%	0	5%
Q30,000 - Q250,000	Q1,500	7%	Q1,500	7%
Q250,000 -	Q1,500	7%	Q17,500	12%

Source: Authors' elaboration based on Iniciativa de Ley para la Recuperacion de la Capacidad Fiscal (Decree 10-2012). Retrieved from

- An increase in *personal income tax (PIT)* rates and the introduction of two additional brackets to the scale (Table 2), while re-establishing the tax credit for VAT on personal purchases for wage earners (which had been eliminated with the 2012 tax reform). The proposal also introduced new deductible expenses for medical, private education, and contributions to private pension plans payments. These deductibles, along with the VAT tax credit, would have partially offset the increase in tax revenues from higher rates and a more progressive scale.

Table 2. Guatemala: PIT Reform Proposal

Actual		
Brackets	Fixed amout	Rates
Q 1- 300,000	0	5%
Q300,000 -	Q15,000	7%
Reform		
Brackets	Fixed amout	Rates
Q1 – Q65,000	0	15%
Q65,000 – Q180,000	Q9,750	20%
Q180,000 – Q295,00	Q32,750	25%
Q295,000-	Q61,500	29%

Source: : Authors' elaboration based on Iniciativa de Ley para la Recuperacion de la Capacidad Fiscal (Decree 10-2012). Retrieved from http://www.minfin.gob.gt/images/archivos/prensa/comunicados/compre79_110816.pdf

- Higher *excise taxes on fuel products* by 3 quetzales (USD 40 cents) per gallon of gasoline, diesel, jet fuel and kerosene. The additional revenues would have been earmarked to finance the road maintenance fund (*Unidad Ejecutora de Conservación Vial*, COVIAL).

- Higher *excise tax on cement* from 1.50 quetzales (USD 20 cents) to 5 quetzales (USD 70 cents) per bag of cement.
- Higher *royalties* from 1 to 10 percent for gold, silver and platinum, and to 3 percent for other metallic minerals. Part of the of royalties would have been distributed to the municipal governments in which the mining operations are located.

- Other tax administration measures aimed at widening the tax base.

7.   Given the nature of the analysis, based on household microdata, this study examines the redistributive impact of the PIT and excise taxes (fuel and cement) components of the reform. The proposed reforms to the corporate income tax and royalties cannot be analyzed as they do not directly affect households' income and consumption.
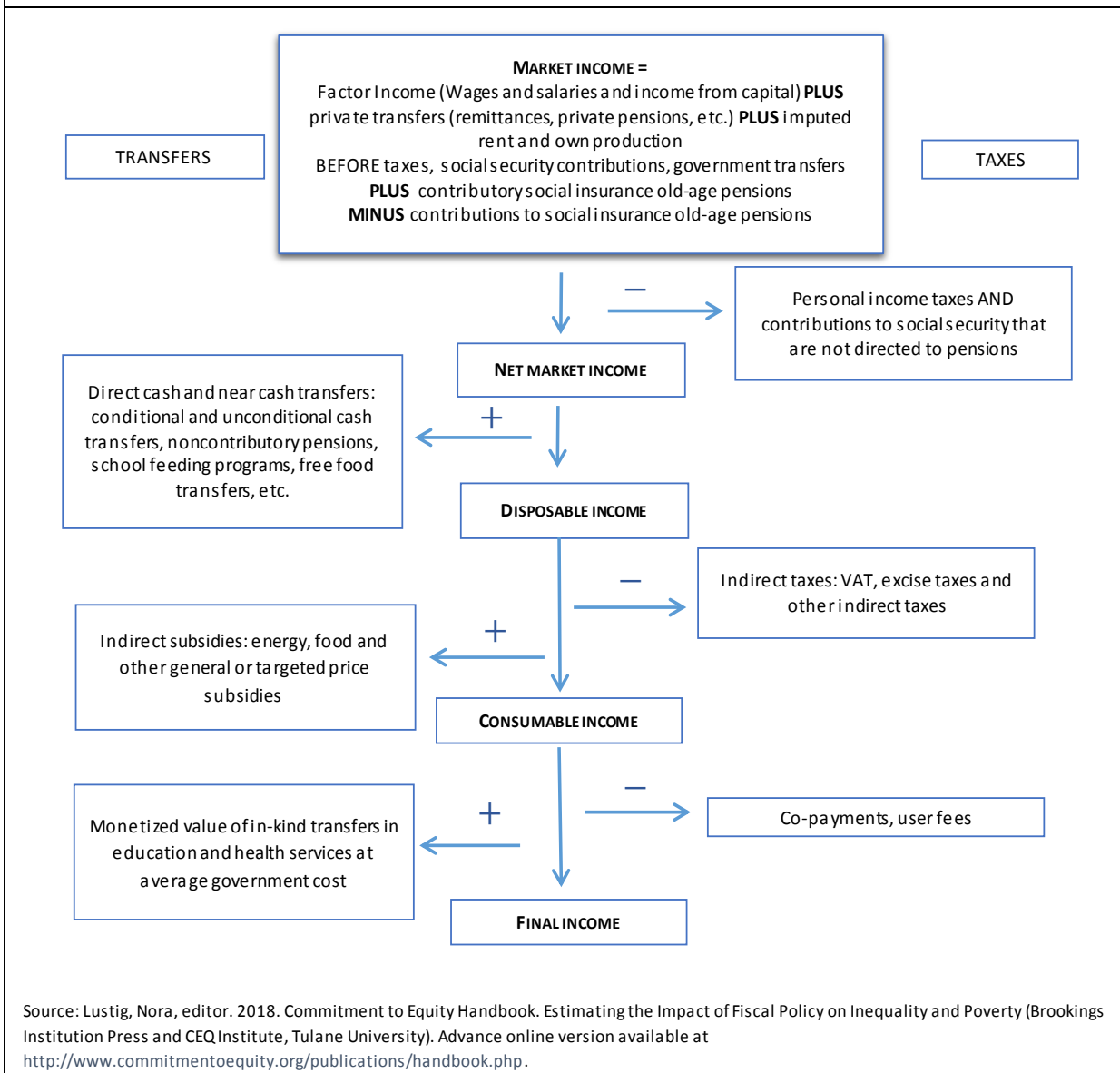
C. DATA AND METHODOLOGY

8.   We apply standard incidence analysis to household microdata based on five core income concepts. Households microdata are from the 2014 ENCOVI (latest available). The analysis is static, reflecting the estimated impact of policy amendments without any feedback effects from possible dynamic adjustments in taxpayers' behavior in response to the reforms. The key measure is the difference between the Gini coefficients for relevant income definitions before and after the reforms. Following Lustig (2018), the five core income concepts used for the incidence analysis are (Figure 4):

- *Market income.* Includes factor income (wages and salaries and income from capital), private transfers (remittances, private pensions, etc.), imputed rent, and self-consumption.

- *Net market income.* Subtracts from market income direct personal income taxes (obtained by simulation) on the income sources subject to taxation, and contributions to social security.

- *Disposable income.* Adds direct government transfers to the net market income.

- *Consumable income.* Adds indirect subsidies and subtracts indirect taxes (e.g., value added tax, excise tax, etc.) from disposable income. Indirect taxes are obtained through simulation based on household consumption, current rates and tax exemptions. For taxes on fuel products, in addition to the direct effect of consuming them, we estimate the indirect effect resulting from the price increase of other consumption goods that use fuels in their production/transportation. [2]

- *Final income.* Adds to consumable income the monetized value of in-kind government transfers in the form of free or subsidized education and health services. For the former, the national average value of per-level expenditure was imputed to those individuals who reported attending a public education school in the ENCOVI. For the latter, the average value was imputed to those who reported using health centers and public hospitals and those being affiliated to the Guatemalan Social Security Institute (IGSS). These average values were estimated using the functional classification reported by the Ministry of Public Finance and the program spending reported by the IGSS.

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[2] The indirect effect was estimated by matching the consumption product categories of ENCOVI 2014 with the disaggregation of the Social Accounting Matrix (SAM) and multipliers corresponding to the cost-push model by Jellema and Inchauste, 2018. The SAM was estimated by Escobar (2015) using as inputs the National Accounts published by the Bank of Guatemala and the ENCOVI 2011.
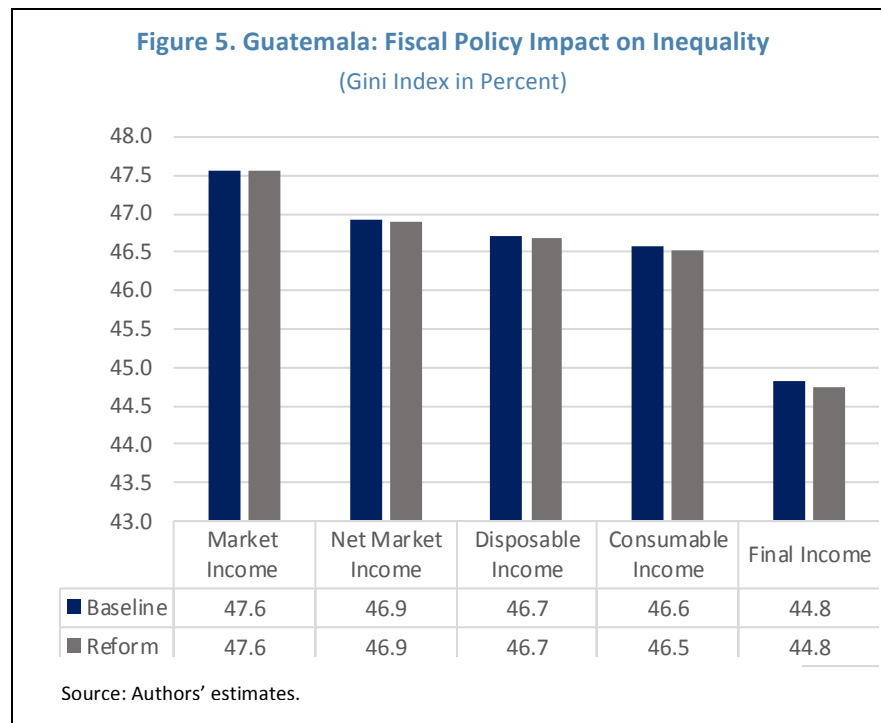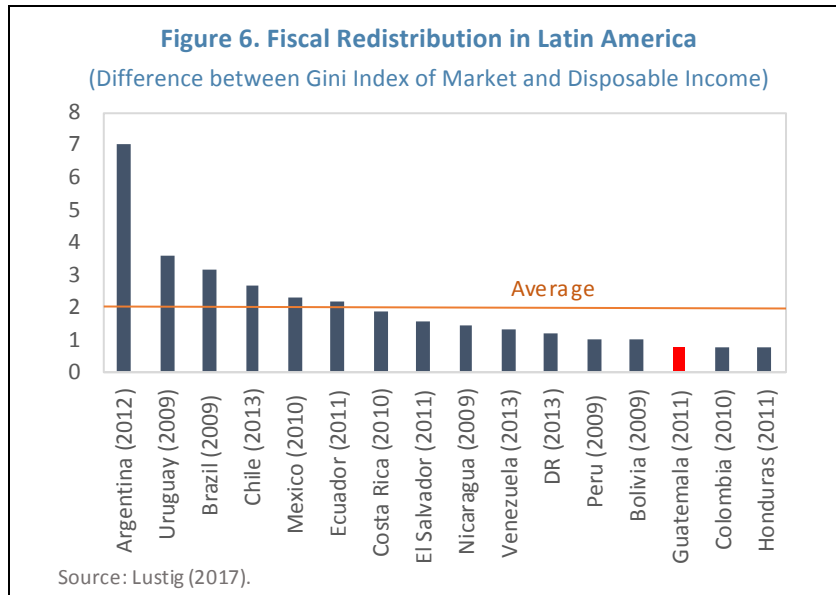
Figure 4. Guatemala: Core Income Concepts

TRANSFERS

TAXES

MARKET INCOME =
Factor Income (Wages and salaries and income from capital) **PLUS** private transfers (remittances, private pensions, etc.) **PLUS** imputed rent and own production
BEFORE taxes, social security contributions, government transfers
PLUS contributory social insurance old-age pensions
MINUS contributions to social insurance old-age pensions

− Personal income taxes AND contributions to social security that are not directed to pensions

NET MARKET INCOME

+ Direct cash and near cash transfers: conditional and unconditional cash transfers, noncontributory pensions, school feeding programs, free food transfers, etc.

DISPOSABLE INCOME

− Indirect taxes: VAT, excise taxes and other indirect taxes

+ Indirect subsidies: energy, food and other general or targeted price subsidies

CONSUMABLE INCOME

− Co-payments, user fees

+ Monetized value of in-kind transfers in education and health services at average government cost

FINAL INCOME

Source: Lustig, Nora, editor. 2018. Commitment to Equity Handbook. Estimating the Impact of Fiscal Policy on Inequality and Poverty (Brookings Institution Press and CEQ Institute, Tulane University). Advance online version available at http://www.commitmentoequity.org/publications/handbook.php.

D.   MAIN RESULTS

Fiscal Policy Impact on Income Inequality

9.   Fiscal policy only moderately reduces income inequality, mainly because of direct taxes and in-kind transfers. At 47.6 percent, the market income Gini coefficient is one of the highest in Latin America. The Gini coefficient for net income decreases by 0.7 percentage points, as a consequence of direct taxation (Figure 5). Government transfers and indirect taxes have a comparatively smaller reduction effect on inequality, lowering the index by only 0.2 and 0.1 percentage points respectively. The Gini coefficient falls by 1.7 percentage points—to just below 44.8 percent—once the monetized value of education and health services is considered, pointing to a substantial inequality reducing impact of in-kind government transfers. However, at merely 2.8 percentage points, the overall effect of fiscal policy on income inequality is very small, making Guatemala one of the least redistributive countries in Latin America (Figure 6).

Figure 5. Guatemala: Fiscal Policy Impact on Inequality
(Gini Index in Percent)

	Market Income	Net Market Income	Disposable Income	Consumable Income	Final Income
Baseline	47.6	46.9	46.7	46.6	44.8
Reform	47.6	46.9	46.7	46.5	44.8

Source: Authors' estimates.

10.   The reform would have not materially affected income inequality compared to the current system. The Gini coefficients under the reform scenario are broadly the same compared to the baseline (Figure 5). The proposed reform to indirect taxes on fuel products and cement would have slightly improved income redistribution but this effect would have been marginal (a reduction of about 0.1 percentage points in the Gini index for consumable income).

Figure 6. Fiscal Redistribution in Latin America
(Difference between Gini Index of Market and Disposable Income)

Source: Lustig (2017).

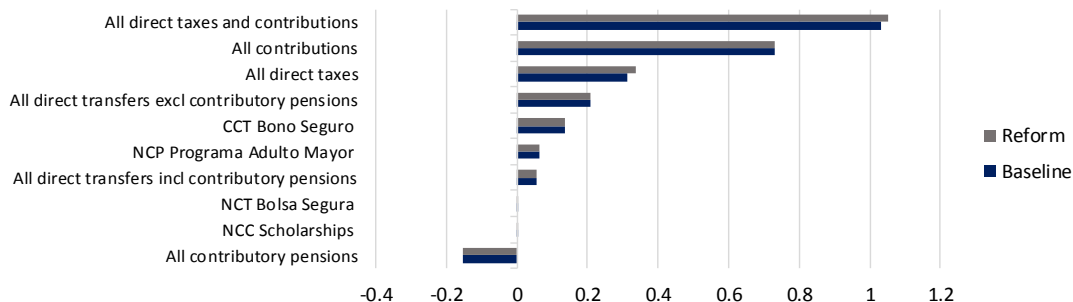**11.   Direct taxes and government transfers, particularly in-kind, have the most equalizing effect.**
Marginal contributions single out the redistributive effect of specific policies, they are calculated as the difference between Gini coefficients with and without the relevant measure all other policies being equal. Taxes and transfers are defined as equalizing, neutral, or non-equalizing if their marginal contribution is positive, nil, or negative, respectively. The marginal contributions to each income definitions displayed in Figure 7 shows that direct taxes and government transfers are equalizing, but contributory pensions increase inequality as low-income workers are often not eligible for contributory pensions having short contribution histories mainly because of work in the informal sector. The conditional cash transfer program *Mi Bono Seguro* is more equalizing than the non-contributive pension *Aporte al Adulto Mayor,* while other conditional transfers programs are neutral. Indirect subsidies are also neutral, while indirect taxes are slightly more equalizing under the reform than in the baseline because of the higher excises on fuel products. Spending on education and health are also equalizing, and the marginal contributions of primary education far exceed those of other social spending items, while in-kind university education and social security health services worsen inequality as they tend to be accessed by higher income population.
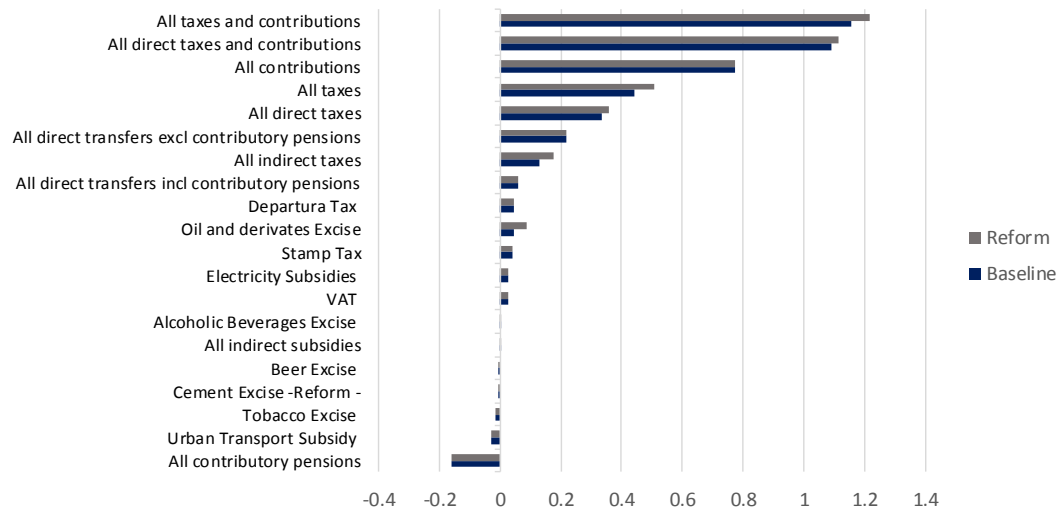
Figure 7. Guatemala: Marginal Contribution of Selected Individual Measures by Income Definition

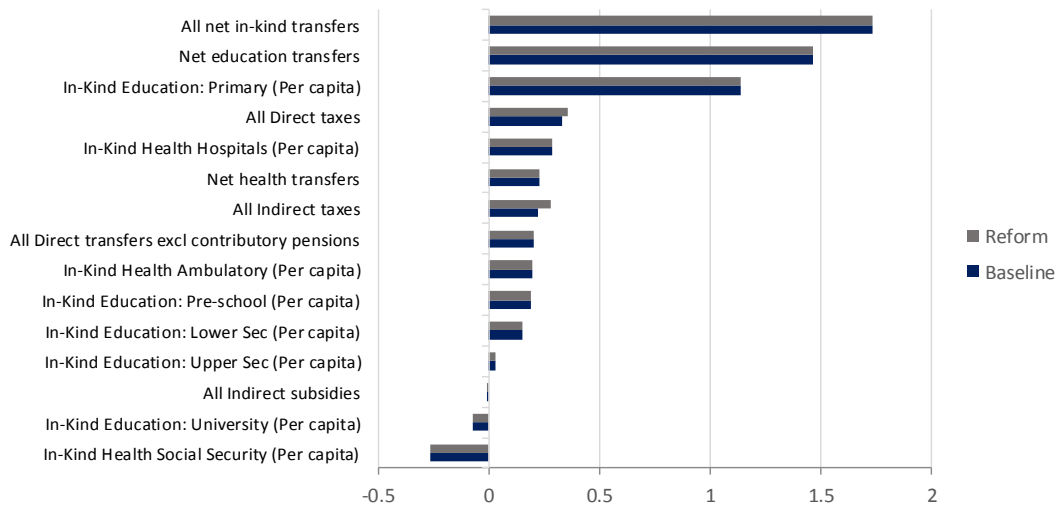(Difference in Gini Index with and w/o Measure, Percentage Points)

Source: Authors' estimates.
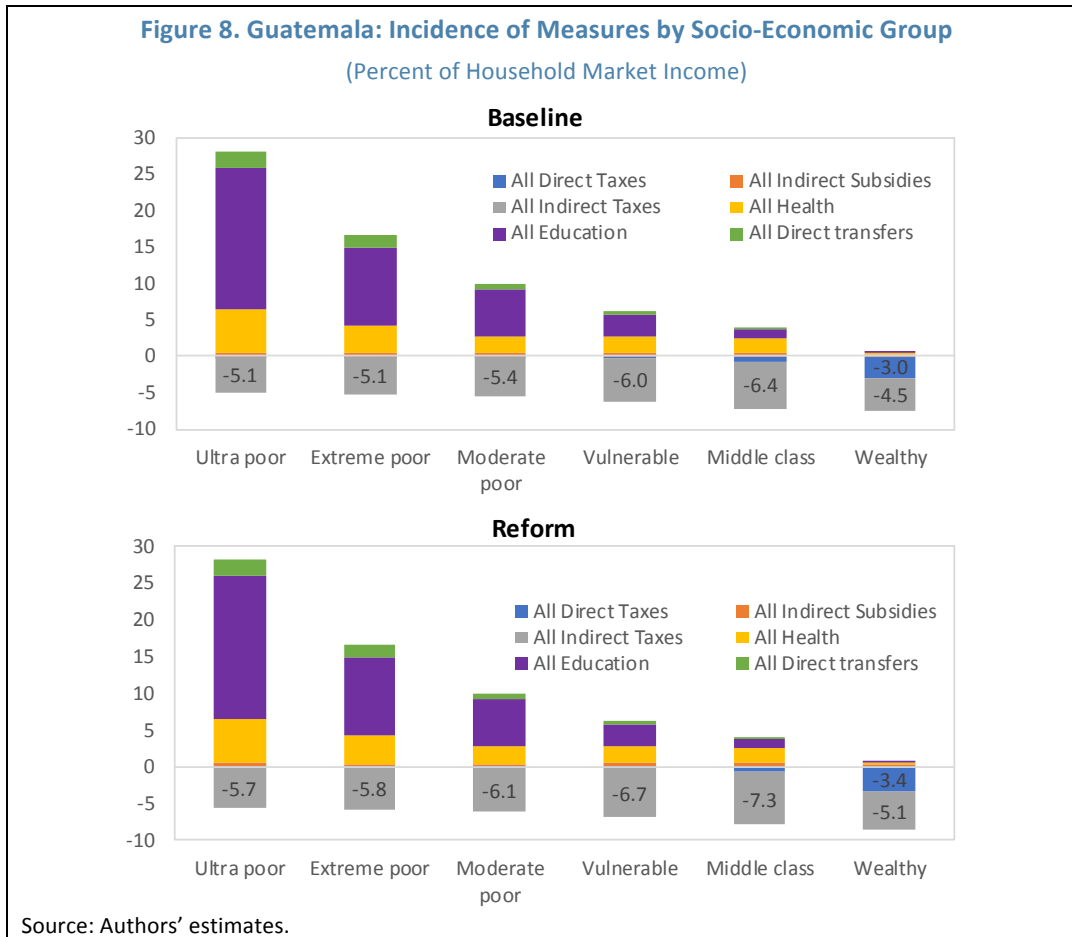
Figure 8. Guatemala: Incidence of Measures by Socio-Economic Group

(Percent of Household Market Income)

Baseline

Legend:
- All Direct Taxes
- All Indirect Subsidies
- All Indirect Taxes
- All Health
- All Education
- All Direct transfers

Ultra poor: -5.1
Extreme poor: -5.1
Moderate poor: -5.4
Vulnerable: -6.0
Middle class: -6.4
Wealthy: -3.0, -4.5

Reform

Legend:
- All Direct Taxes
- All Indirect Subsidies
- All Indirect Taxes
- All Health
- All Education
- All Direct transfers

Ultra poor: -5.7
Extreme poor: -5.8
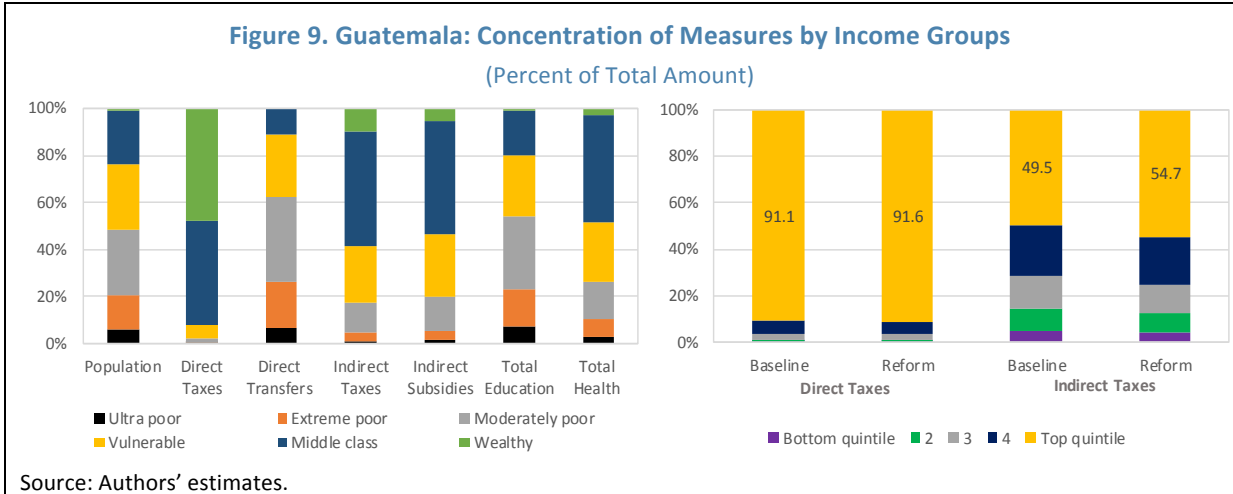Moderate poor: -6.1
Vulnerable: -6.7
Middle class: -7.3
Wealthy: -3.4, -5.1

Source: Authors' estimates.

**12.** **The tax reform would have increased the share of total direct and indirect taxes contributed by the rich.** Under the current system, approximately 93 and 60 percent of total direct and indirect taxes respectively is paid by the wealthy and the middle class (Figure 9, left panel). Almost 90 percent of total direct transfers is received by the poor and the vulnerable, although more than 50 percent of indirect subsidies are received by the middle class and wealthy population due to their higher consumption levels compared to poor households. Education is more pro-poor than health: while 80 percent of education benefits are received by poor and vulnerable population groups, almost 50 percent of health benefits are received by the middle class and the wealthy due to the incidence of contributory health coverage. The tax reform would have increased the direct and indirect tax burden on the top quintile by 0.5 and 5.1 percent of total payments respectively, proportionally reducing the burden on lower quintiles (Figure 9, right panel).

Figure 9. Guatemala: Concentration of Measures by Income Groups
(Percent of Total Amount)

Source: Authors' estimates.

Fiscal Policy Impact on Poverty

13.   Direct transfers effectively reduce poverty but their impact is not sufficient to offset the poverty increasing effect of taxation. Under the current system, net market income poverty is marginally higher than for market income, suggesting that direct taxation increases the share of the population leaving below the poverty line (Figure 10). Direct transfers lowers of disposable income poverty but this effect is not sufficient to entirely offset the poverty-increasing effect of direct taxation. Moreover, indirect taxes increase consumable income poverty to about 61 percent of total population, compared to 58 for market income.[3]

Figure 10. Guatemala: Fiscal Policy Impact on Poverty
(Percent of Total Population)

Source: Authors' estimates.

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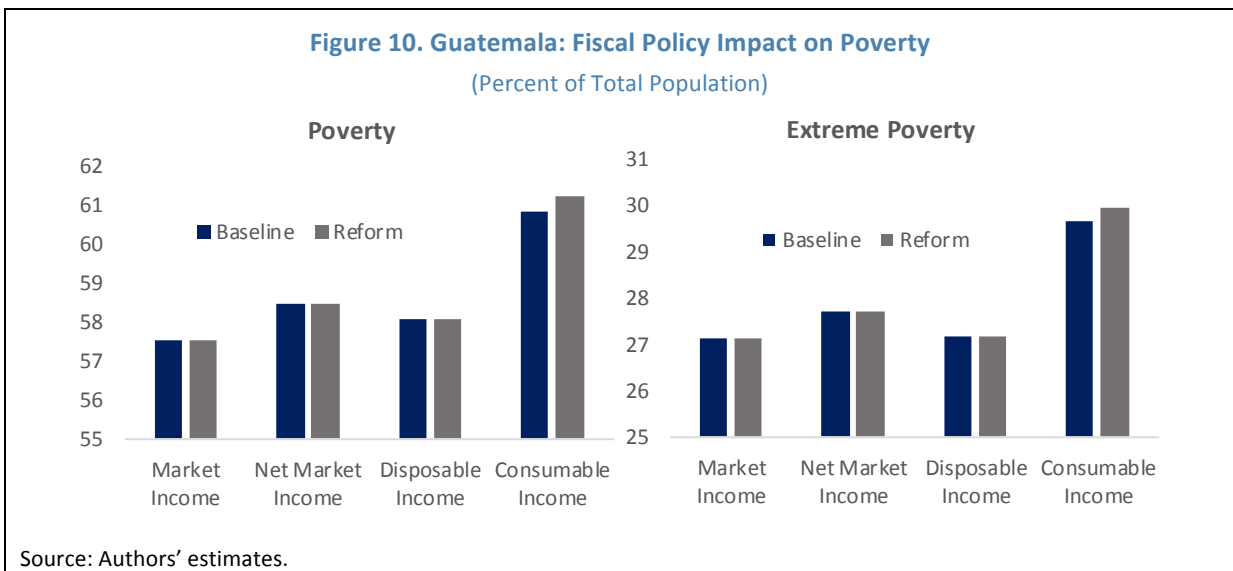
[3] Poverty of final income cannot be evaluated due to the difficulty of quantifying the minimum income necessary to acquire basic levels of health and education services provided by governments.

14. **The reform would have not materially altered the effect of fiscal policy on poverty.** Net market and disposable income poverty under the reform is the same as under the current system. This is because the tax reform did not contemplate changes to the system of direct transfers while the reform of PIT would have only impacted the top 20 percent of the Guatemalan population (Figure 9), which are not poor. However, consumable income poverty would have marginally but not significantly increased under the reform due to higher indirect taxes that lower the purchasing power of all social economic groups, including the poor (Figure 8).
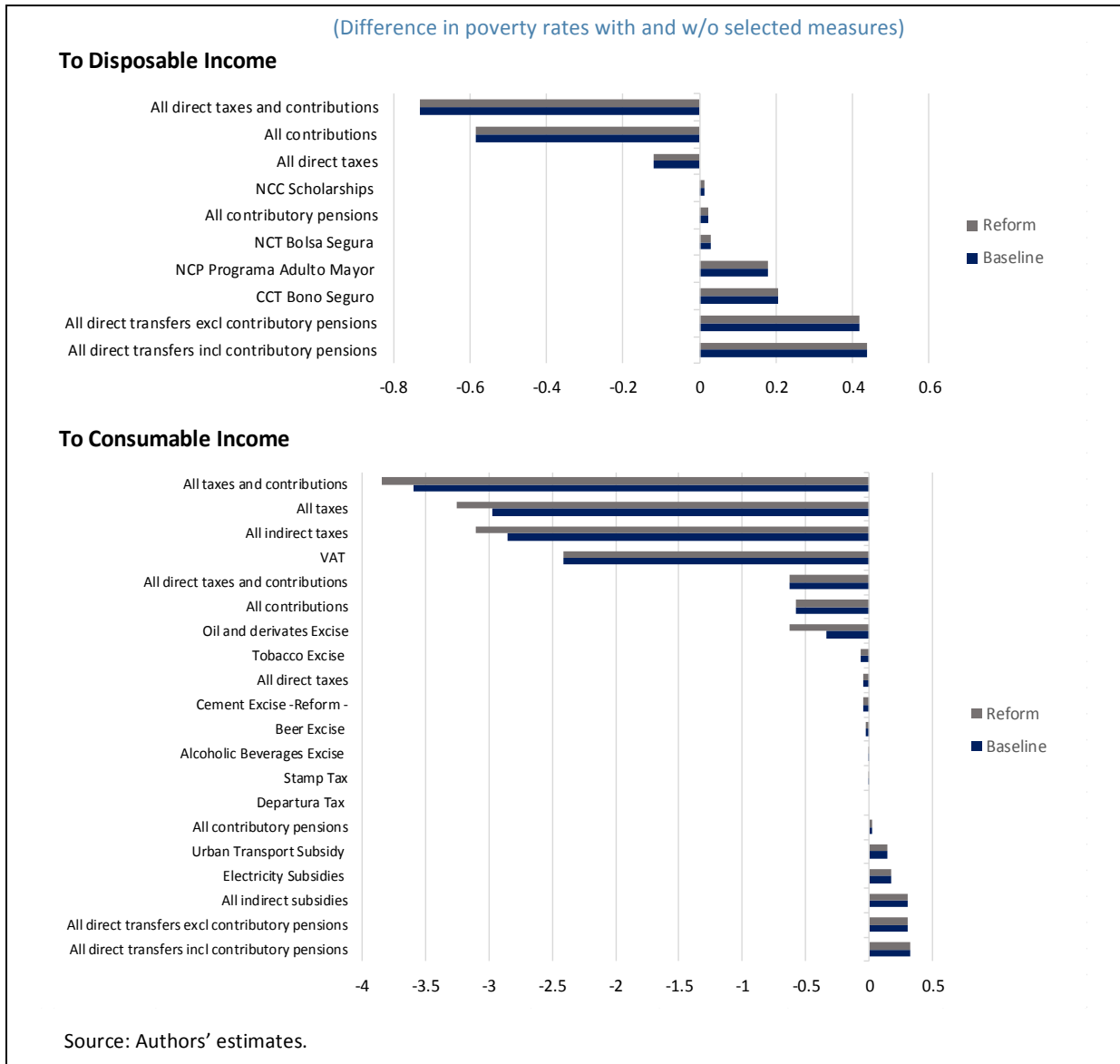
15. **Expanding the current system of cash transfers would help mitigate the poverty increasing effect of fiscal policy in Guatemala.** Figure 11 shows that the poverty-increasing effect of direct taxation mainly stems from social security contributions, which are also paid by low income workers, and to a less extent to PIT. On the other hand, the non-contributory pension program *Mi Adulto Mayor* and the conditional cash transfers program *Mi Bono Seguro* effectively reduce poverty but their small budget dramatically limits their potential to lift the incomes of Guatemala's poor people. For example, the coverage and budget of the *Mi Bono Seguro* program, which is the most important of the two, has been shrinking since 2012: the program's budget only amounted to 0.06 percent of GDP in 2015, and it only covered less than 20 and 30 percent of poor and extremely poor population respectively. Figure 11 also shows the negative effect of indirect taxation and its marginally higher impact under the reform due to higher fuel and cement excises.

E. CONCLUSIONS AND POLICY RECOMMENDATIONS

16. **The fiscal reform would have not materially impacted poverty and inequality, but would have mobilized revenues that could have been used to improve the progressivity of the system.** Our analysis suggests that poverty and income inequality under the reform would have not been materially different than under the current system. However, the revenue potential of the reform (1½ percent of GDP per official estimates) could have been used to lift the income of poor households or step up investment. In the former case, poverty and inequality could have been directly decreased through direct income assistance to poor households. In the latter case, both would have decreased through the indirect effect of higher growth and potential, which would have boosted labor demand and productivity, and plausibly lowered food prices and their deleterious effect on extreme poverty (IMF cr16282).

17. **A well-designed tax reform should maximize income potential while mitigating the negative incidence of higher taxes on poor households.** Our disaggregated results show that direct taxation has a milder negative effect on lower income households compared to indirect taxation. Given very low PIT rates in Guatemala, PIT represent a privileged candidate to be reformed. However, the revenue potential of direct taxation tends to be lower than that of indirect taxation suggesting that a tax reform may need to involve indirect taxes as well, given Guatemala's significant tax revenue gap. As noted above, the ultimate redistributive effect of a tax increase depends on the way the revenues mobilized are spent: if the yield from higher indirect taxes are used to finance an expansion of well targeted social spending, the negative incidence on the income of the poor could be mitigated and possibly entirely offset.

Figure 11. Guatemala: Poverty Reduction Effect of Individual Measures

(Difference in poverty rates with and w/o selected measures)

To Disposable Income

To Consumable Income

Source: Authors' estimates.

18.   The results presented above provide a granular assessment of individual policies that could guide the design of a more progressive fiscal policy in Guatemala. The incidence and concentration of individual policies estimated above could be used to design a fiscal system that maximizes revenues and progressivity while minimizing the negative effect on poor households. Given endemic poverty levels in Guatemala, an initial expansion of social assistance programs—particularly in conditional cash transfers that tend to enhance human capital through better education and health care—should be prioritized. However, boosting infrastructure investment (and with it potential growth and productivity) and expanding formality would also be crucial to initiate a virtuous cycle of growth and poverty reduction in which better labor and higher equality of opportunities would help poor household lift themselves out of their condition.

F.   REFERENCES

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