THE INCIDENCE OF SOCIAL SPENDING AND TAXES IN PERU

Miguel Jaramillo Baanante

COMMITMENT TO EQUITY

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ABSTRACT

Standard tax and benefit incidence analysis is used to estimate the effects of fiscal policy on poverty and inequality in Peru. Results suggest that the extent of inequality and poverty reduction induced by Peru's fiscal policy is small. Results also suggest that the small impact is associated with low social spending rather than with inefficient spending. Most social spending components are progressive and overall social spending is also progressive. We find that direct cash transfers are well targeted and are especially effective in reducing extreme poverty. We also find that in-kind transfers are effective in reducing inequality. Finally, direct and indirect taxes have a positive, though small, effect on inequality.

Keywords: social spending, inequality, poverty, taxes, Peru.

JEL codes: I3, H2, H5.

[*] Miguel Jaramillo is a Senior Researcher at the Group for the Analysis of Development – GRADE in Lima, Peru. Barbara Sparrow provided outstanding research assistance throughout the research that lead to this article. I am also grateful to Nora

1. INTRODUCTION

In the last few decades Peru has gone from a financially broke state in the late 1980s to an example of fiscally responsible management, in a world where such an attribute has become quite scarce. In effect, tax collections declined through the second half of the eighties, reaching a nadir of 4.9 percent of GDP in the first half of 1990, whereas only a decade earlier tax collections amounted to about 15 percent of GDP. In the late 1980s money printing became the main source of state financing with hyperinflationary consequences. In this context social services collapsed. After the reconstruction of the tax system in the early nineties, Peru started expanding social expenditures, mostly through targeted infrastructure investments, but also through not so well targeted food programs, and a number of rather small-scale programs, such as pre-school care centers (*wawa-wasis*) and immunization campaigns. During the last decade, as the fiscal situation of the country improved, larger scale social protection programs, such as the Comprehensive Health Insurance (*Seguro Integral de Salud - SIS*) were implemented. Spending by the social sectors also increased, more than doubling social spending in the course of the decade. Only in the second half of the last decade was a cash-transfer program introduced.

High inequality in Peru is a long-standing and well-known condition. Although there have been considerable advances in the last decades in the reduction of both poverty and inequality, poverty still affects about a third of the population, while inequality levels are quite high by international standards (López-Calva and Lustig 2010; Jaramillo and Saavedra 2010). Improving the redistribution and poverty mitigation effects of fiscal policy is important for Peru's development, as recent estimates suggest that public transfers and donations are responsible for only one-tenth of the poverty reduction achieved during the last decade (Inchauste et al. 2012).

In this article standard tax and benefit incidence analysis is used to estimate the effects of fiscal policy on poverty and inequality in Peru. Data to assess the incidence and progressivity of social spending and taxes come from the National Household Survey (ENAHO, 2009) and from government budget accounts. Different income definitions are used in order to observe the effects of different taxes and social expenditure items across the income distribution.[1] In the benchmark scenario contributory pensions are included in the households' market income and in a sensitivity analysis they are treated as a government transfer. The analysis does not include behavioral or general equilibrium effects.

Results indicate that the extent of inequality reduction induced by fiscal policy in Peru is small. Although in-kind transfers have the largest impact, direct transfers are the most effective per dollar spent. Results also suggest that the small impact is associated with low social spending rather than with inefficient spending. Most of the social spending components are progressive and overall social spending is progressive as well. However, social benefits tied to the formal labor market (health and pensions) are either relatively progressive or regressive. Taxes, on the other hand, have positive though small effects on inequality. Countering intuition, indirect taxes are progressive due to extensive informality. A policy implication deriving from these results is that targeted transfers are the most effective way to reduce poverty. In contrast, linking benefits to formal employment relationships tends to exclude the poor. Also, results call attention to the role of informality in the relative progressivity of indirect taxes.

[1] The following definitions of income are used in the analysis. Market income is defined as earned plus unearned market income before government taxes and transfers. Net market income equals market income minus direct taxes and employee contributions to social security. Disposable income equals net market income plus direct monetary transfers. Post-fiscal income equals disposable income plus implicit subsidies minus indirect taxes. Final income equals post-fiscal income plus in-kind transfers. Final income* is defined as disposable income plus in-kind transfers. For more detail see the methodological article in this volume.

The article is organized as follows. Section 2 describes the structure of social spending and taxes in Peru. Section 3 presents the data and the specific assumptions made in the analysis. Section 4 presents the main results. Section 5 concludes.

2. SOCIAL SPENDING AND TAXES IN PERU: A BIRD'S EYE VIEW

According to CEPAL (2010), Peru's social spending is below the Latin American average.[2] National social spending in 2009 was 7.25 percent of the GDP while spending for Latin America on average was over 14 percent. Also, Peru's per capita social spending represented only 30 percent of the average per capita social spending in the region. Tax revenue is also below the region's average: while the average tax revenue in the region in 2009 was 19 percent of GDP, in Peru revenue was 15.6 percent including social security contributions.[3] In contrast, VAT revenue in the region adds up to almost 7 percent of GDP, while in Peru it reaches 7.52 percent.

This section provides a description of the structure of benefits and taxes in Peru. The benefits description is limited to the spending categories included in a comparable social spending definition called CEQ social spending. The tax description includes government tax revenue as well as the main social contributions collected by the government. The social spending subsection also includes a brief description of the national pension system.

TABLE 1: GOVERNMENT SPENDING AND REVENUE BY CATEGORY (AS A % OF GDP): 2009.

	2009
Gross Nat Inc/ capita (PPP US$)	**8390**
Total Government Spending	**19.98%**
Primary Government Spending	**18.71%**
Social Spending	**7.25%**
Social Spending (In Incidence Analysis Benchmark)	**4.14%**
Direct Transfers	0.40%
Cash Transfers	0.15%
Food Transfers	0.25%
In-Kind Transfers	3.74%
Health	1.41%
Education	2.32%
Other Social Spending (Not in Incidence Analysis)	**3.11%**
Other Social Assistance Programs	1.06%
Health Spending: Collective	0.14%
Other Social Spending	1.91%
Non-Social Spending	**9.33%**
Contributory Health Insurance (In Incidence Analysis Benchmark)	**1.22%**
Contributory Pensions (In Sensitivity Analysis)	**0.91%**
Debt Service	**1.28%**

[2] The comparability of these data across countries is problematic, as the source acknowledges, due to different institutional coverage and classification practices. Thus, they should be taken with caution.
[3] In order to make VAT revenue comparable to that reported in CEPAL (2010), we use gross VAT collection including refunds. In Table 1 we report the net VAT collection, which does not include refunds.

Total Revenue	**18.71%**
Taxes	**13.72%**
Benchmark Taxes (In Incidence Analysis Benchmark)	**9.52%**
Direct Taxes (Individual contributions)	1.43%
VAT	7.52%
Fuel Tax	0.57%
Other Taxes (Not in Incidence Analysis)	**4.19%**
Non-Tax Revenues	**4.99%**
Social Security Contributions	**1.85%**
Pensions (In Sensitivity Analysis)	0.38%
Health	1.32%
Other Social Contributions	0.15%
Other Non-Tax Revenues	3.15%
Deficit	-1.27%

Sources: Social Spending from Sistema Integrado de Información Financiera (SIAF) and Unidad de Estadística Educativa (ESCALE). Taxes from Superintendencia Nacional de Aduanas y Administración Tributaria (SUNAT). Government Spending from Banco Central de Reserva del Peru (BCRP).

i Social Benefits

Social benefits considered here are those included in the definition of CEQ social spending.[4] CEQ social spending is the result of adding social assistance spending, education spending, and health spending.

Social Assistance Spending

In 2009, 53 percent of social assistance spending was concentrated on social infrastructure programs. The remainder was distributed among social programs that target poor households. Historically, most of these programs have been related to food transfers. In 2005, a means-tested CCT program, *Juntos*, was introduced in Peru's rural areas. Through this program each qualifying family receives a transfer of 100 soles per month.[5] *Juntos* has expanded significantly since its introduction. In 2009, it represented 20 percent of assistance spending other than social infrastructure. Between 2009 and 2012, the program's budget has increased 45 percent.

Education Spending

Education spending is the sum of basic (primary and secondary) education spending and tertiary education spending. In Peru, basic education is mandatory and free in public schools. Basic education represents nearly three quarters (74.6 percent) of education spending. Primary education is almost half (48.6 percent) of basic education spending. Tertiary education is the sum of university spending and technical tertiary spending. Technical tertiary education spending is almost non-existent while university spending represents 23.6 percent of total education spending.

Health Spending

Public health services in Peru, which cover 96 percent of the population, are divided into a subsidized regime and a contributory regime. In the subsidized regime, the government provides health services to

[4] CEQ social spending is a definition put forth by the CEQ initiative. Led by Nora Lustig and Peter Hakim, the "Commitment to Equity" (CEQ) initiative is a joint project of the Inter-American Dialogue (IAD) and Tulane University's Center for Inter-American Policy and Research (CIPR) and Department of Economics. CEQ is designed to assess the progressivity of social spending and taxes, their impact on poverty reduction, and their redistributive effects.
[5] About US$38 at the current (September 2012) exchange rate.

the uninsured population in return for either out-of-pocket payments that cover variable costs established by the health facility or reimbursements through a means-tested free health insurance called *Seguro Integral de Salud* (SIS). This subsidized regime covers 75 percent of the population, about one half of them through SIS. Health service provision in the subsidized regime comes from the Health Ministry's hospitals and other facilities. The contributory regime, on the other hand, is part of the old social security system and focuses on formal sector workers and their families, which add up to 21 percent of the population. The contributory health insurance is called *EsSalud* and provides health services through its own facilities.[6]

The subsidized regime includes public spending on hospitals and other health facilities (individual health spending), as well as the public spending on the SIS. A third category, called collective health spending, includes spending on health-related activities that have communities or specific population groups as beneficiaries. The contributory spending category includes the spending on the *EsSalud* system.

Pensions

Two pension systems coexist in Peru: the national pension system (ONP) and the private system for administration of pension funds (AFP). Enrollment in one of the two schemes is mandatory for dependent workers in firms with more than ten employees and optional for independent workers and workers in firms with fewer than ten employees. The national pension system, managed by the government, operates under a common-pool, pay-as-you-go financial scheme while the private system works under an individual retirement accounts scheme. The ONP is in deficit and therefore public transfers have been necessary over the last few years in order to fund its liabilities. As shown in table 1, the national pension system represented less than 1 percent of GDP in 2009.

ii Taxes and social contributions

The main taxable items in Peru are income, consumption and imports. Property taxes are collected at the local level and the tax authority reports them within the 'other taxes' category. As table 1 shows, most of tax revenue comes from VAT collection and income taxes. Only a third of income tax revenue comes from personal income. The third tax in importance is the excise tax (ISC), with a tax on fuels as its main component. The 'other taxes' category includes mainly import tariffs and property taxes.

Income Tax

Income tax in Peru applies a progressive rate on personal income and a flat rate on corporate profits. Corporations residing in Peru are subject to a 30 percent tax rate on reported profits. In the case of dividend distributions, an additional rate of 4.1 percent is levied. Personal income tax brackets are calculated on the basis of a tax unit (UIT, worth approximately US$1,241 in 2009). The personal income tax has four brackets: an exempted bracket for taxable income up to 7 UITs, 15 percent for taxable income between 7 UITs and 27 UITs, 21 percent from 27 to 57 UITs and 30 percent for income marginally above this amount.

Value Added Tax (VAT)

In Peru, the VAT is called the General Sales Tax (IGV). It is levied on each transaction at the different stages in the production of a taxed final good or service, generating a tax credit towards the following stage, so that ultimately it is the consumer who pays the tax. Following international trade practice, the

[6] It must be noted that *EsSalud* is not usually considered social spending as it is financed solely through labor market contributions. It is included here since a considerable share of the population access health care through the social security system.

IGV is not applicable to exported goods. IGV taxes paid to produce export goods are refunded. In 2009, the applicable IGV tax rate was 19 percent. The IGV tax is generally applicable to every transaction, but a few exemptions are in place for either specific goods or goods exchanged in the Amazonian region. The largest and most important exemptions are those associated with unprocessed foodstuffs.

Excise Tax (ISC)

This tax is applied to alleged luxury goods, including cars, liquor, jewelry, soft drinks, among others, and to fuels. The largest portion of total revenue from this tax is obtained from the ISC on fuels. ISC rates vary with the product. In the case of certain goods, such as beer and fuels, the ISC is calculated on a specific basis depending on the amount sold or imported.

Contributions to social security

The two main contributions are those made towards health insurance (*EsSalud*) and to the national pension system (ONP). The contribution rate for *EsSalud* is 9 percent and the contribution rate for the ONP is 13 percent. Employers are liable for the *EsSalud* contributions while the ONP contributions are deducted from the employee's paycheck.

3. DATA AND ASSUMPTIONS

The main data source used throughout this analysis is the National Household Survey (ENAHO), produced annually by the National Institute of Statistics (*INEI*), in its version for 2009. The survey has national coverage and collects data on all household members. Household members fourteen-years-old or older report in the survey whether they pay direct taxes, receive cash or food transfers, are attending school, are affiliated with public health insurance programs and whether they attended public health facilities when they had health related issues. Households also report detailed consumption and income data.

The data available allows us to estimate the incidence of personal income tax, cash transfers, food transfers, indirect taxes, education services, health insurance programs, and public health services utilization. It also allows us to estimate the value of pensions funded through the public system as well as contributions to this system.

Fortunately, we have been able to produce estimates for most of the social spending and tax items identified above. Most of the estimated taxes and benefits were directly identified from the survey. However, we use data from other public sources, such as the Finance Ministry's National Financial Information System (SIAF) and the Education Ministry's Statistics Unit (ESCALE), to assign the amounts to in-kind health and education benefits. To estimate indirect taxes, we use the detailed consumption data from the household survey as well as data from the National Superintendence of Tax Administration (SUNAT) for scaling-up.

The indirect taxes identified are the VAT and the excise tax on fuels. VAT-exempted foodstuffs are classified as implicit subsidies. The amount each household pays on taxes was simulated by applying the active tax rule to the amount of expenses of each taxed item that the household reported in the survey. In order to incorporate informality in the analysis, two assumptions are made: (1) consumption in rural villages with 400 households or fewer does not pay indirect taxes, and (2) all spending made on street vendors, "farmers markets," or other informal conditions do not pay indirect taxes.

Because there is no reliable way of linking them to the household income, the main spending categories left out of the analysis are infrastructure related social assistance spending and collective health programs. Some minor social assistance programs are also left out due to data limitations. Not included taxes are: corporate income tax, excise taxes applicable to goods other than fuels, and other minor taxes such as import and property taxes. In the case of contributions to *EsSalud* (contributory health insurance) the assumption is that they are paid by the employer.[7]

4. SOCIAL SPENDING, TAXES AND INCOME REDISTRIBUTION IN PERU: MAIN RESULTS

i Impact on Inequality and Poverty

Table 2 presents the Gini coefficient and the poverty headcount ratio (using international poverty lines and national poverty lines) for both the benchmark case and the sensitivity analysis. Estimation results show that direct taxes, direct transfers, indirect taxes and in-kind transfers all have equalizing effects. Health and education in-kind transfers have the most equalizing effects among taxes and transfers. The effects of direct taxes, direct transfers and indirect taxes are quite small.

TABLE 2: TAXES, TRANSFERS, INEQUALITY AND POVERTY IN PERU. BENCHMARK AND SENSITIVITY ANALYSIS

Benchmark: Contributory pensions as part of Market Income						
Indicator	**Market Income**	**Net Market Income**	**Disposable Income**	**Post-fiscal Income**	**Final Income***	**Final Income**
Gini	0.504	0.498	0.494	0.489	0.469	0.463
Effectiveness indicator (wrt to net market income)			2.423		1.214	
Headcount index ($2.5 PPP)	15.2%	15.2%	14.0%	14.3%		
Headcount index ($4 PPP)	28.6%	28.6%	27.8%	28.4%		
Headcount index (Extreme Poverty Line, National)	16.6%	16.6%	15.5%	15.9%		
Headcount index (Poverty Line, National)	34.7%	34.7%	34.0%	35.1%		
Sensitivity Analysis 1: Pensions are treated as government transfer						
Indicator	**Market Income**	**Net Market Income**	**Disposable Income**	**Post-fiscal Income**	**Final Income***	**Final Income**
Gini	0.503	0.496	0.493	0.488	0.468	0.462
Effectiveness indicator (wrt to net market income)			0.660		1.049	
Headcount index ($2.5 PPP)	15.5%	15.5%	14.1%	14.4%		
Headcount index ($4 PPP)	29.3%	29.3%	27.8%	28.4%		
Headcount index (Extreme Poverty Line, National)	16.9%	16.9%	15.5%	15.9%		
Headcount index (Poverty Line, National)	35.5%	35.7%	34.2%	35.2%		

Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

[7] Of course, this is most likely unrealistic. However, no evidence is available to support an alternative assumption.

Although in-kind transfers have a larger effect on inequality than do direct transfers, direct transfers are more effective in reducing inequality. Effectiveness can be measured as the redistributive effect of the transfer divided by its relative size as a portion of GDP. Using this metrics, the indicator for direct transfers is 2.42 while it is 1.21 for direct and in-kind transfers in the benchmark case. Thus, direct transfers show greater effectiveness than in-kind transfers. In table 2 we can also observe that the market income Gini coefficient for the sensitivity analysis is marginally lower than that for the benchmark case. As market income in the benchmark case includes contributory pensions while it does not in the sensitivity analysis, one can conclude that contributory public pensions have a small negative effect on equity. More significantly, the effectiveness indicator for direct transfers is considerably lower once pensions are included among transfers.

Direct transfers also have a positive effect on poverty reduction. This effect is most important among the extreme poor. Indirect taxes have only slight effects on extreme poverty and more significant effects on total poverty. Note that poverty reduction is larger in the sensitivity analysis. This is because of two effects: initial incomes are lower and direct transfers are higher.

Table 3 shows the poverty and inequality effects of taxes and transfers for urban and rural areas. Three important results come out. First, direct transfers are significantly more effective in reducing inequality and poverty in rural areas than in urban areas. This is consistent with the fact that the most progressive programs (means-tested transfers) are concentrated in rural areas while the less progressive ones (those attached to formal labor relations) are concentrated in the urban areas. Second, as expected, direct taxes have no effect on poverty in either area. However, they have a much larger progressive effect on inequality in urban areas than in rural areas. Third, indirect taxes have an impact on poverty and inequality in urban areas but no effect in rural areas.[8]

TABLE 3: TAXES, TRANSFERS, INEQUALITY AND POVERTY IN URBAN AND RURAL AREAS (BENCHMARK CASE)

Urban Area						
Indicator	**Market Income**	**Net Market Income**	**Disposable Income**	**Post-fiscal Income**	**Final Income***	**Final Income**
Gini	0.452	0.445	0.443	0.448	0.425	0.427
Headcount index ($2.5 PPP)	4.0%	4.0%	3.8%	4.3%		
Headcount index ($4 PPP)	11.9%	11.9%	11.7%	12.6%		
Headcount index (Extreme Poverty Line, National)	5.5%	5.5%	5.4%	6.0%		
Headcount index (Poverty Line, National)	22.0%	22.0%	21.9%	23.5%		
Rural Area						
Indicator	**Market Income**	**Net Market Income**	**Disposable Income**	**Post-fiscal Income**	**Final Income***	**Final Income**
Gini	0.440	0.438	0.424	0.424	0.386	0.386
Headcount index ($2.5 PPP)	36.4%	36.4%	33.5%	33.5%		
Headcount index ($4 PPP)	60.3%	60.3%	58.4%	58.4%		
Headcount index (Extreme Poverty Line, National)	37.6%	37.6%	34.7%	34.7%		
Headcount index (Poverty Line, National)	58.9%	58.9%	57.1%	57.1%		

Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

[8] For these results the assumption is that there is no tax informality.

ii Coverage and Effectiveness of Direct Transfers

Table 4 presents indicators that measure the extent to which direct transfers are effective and efficient in reducing poverty (using both international and national poverty lines). The first column presents estimates of the headcount poverty effectiveness indicator, which is the same indicator used in the previous section only now applied to the effects of direct transfers on poverty. From these indicators one can conclude that direct transfers are more effective in reducing extreme poverty than in reducing total poverty.

TABLE 4: DIRECT TRANSFERS POVERTY REDUCTION EFFICIENCY AND EFFECTIVENESS INDICATORS (BENCHMARK CASE)

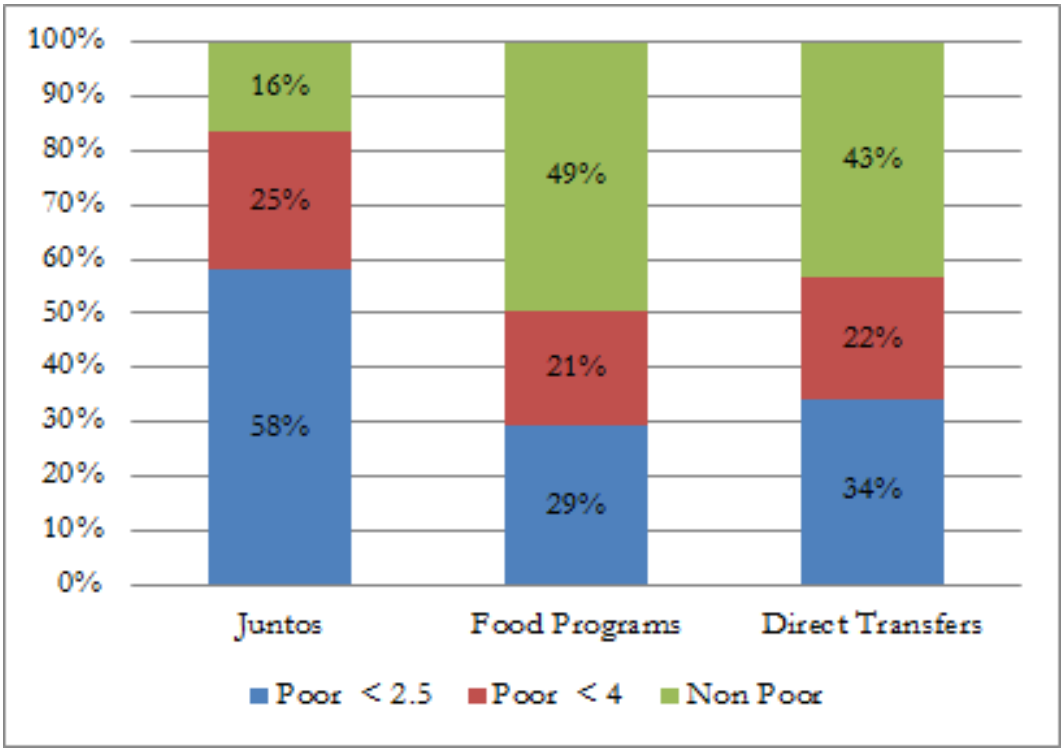
	Headcount Poverty Effectiveness Indicators	Vertical Expenditure Efficiency (VEE)	Spillover (S)	Poverty Reduction Efficiency (PRE)	Poverty Gap Efficiency (PGE)
$2.5 PPP	20.09	0.47	0.09	0.43	0.16
$4 PPP Poverty Line	7.39	0.71	0.05	0.68	0.08
Extreme National Poverty Line	18.35	0.49	0.08	0.45	0.15
National Poverty Line	5.53	0.72	0.04	0.70	0.06

Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

The Vertical Expenditure Efficiency (VEE) indicator measures the amount of direct transfers that go to the poor. This indicator shows that 47 percent of direct transfers reach the extreme poor while 71 percent of direct transfers reach the total poor population (using international poverty lines). The spillover index (S) indicates how much of the spending that reached the poor was in excess of the strictly necessary amount required for the beneficiaries to reach the poverty line. As can be observed, the spillovers are rather small, which suggests that the level of the transfer is well designed. The Poverty Reduction Efficiency (PRE) indicator is the product of VEE times S. This indicator fares quite well when compared to those obtained for Brazil's targeted programs (Immervoll et al. 2006). Finally, the Poverty Gap Efficiency (PGE) measures the transfers' effectiveness in reducing the poverty gap. PGE estimates indicate that direct transfers are more efficient in reducing extreme poverty gaps than in reducing total poverty gaps.

Figures 1 and 2, respectively, show leakage and coverage levels of the direct transfer programs, both separately and jointly. Figure 1 quite clearly shows that *Juntos* (the CCT program) is a much better targeted program. Only 16 percent of *Juntos* beneficiaries are non-poor while almost half of food programs beneficiaries live above the poverty line. Results for both programs jointly reflect the fact that food programs have a larger pool of beneficiaries.

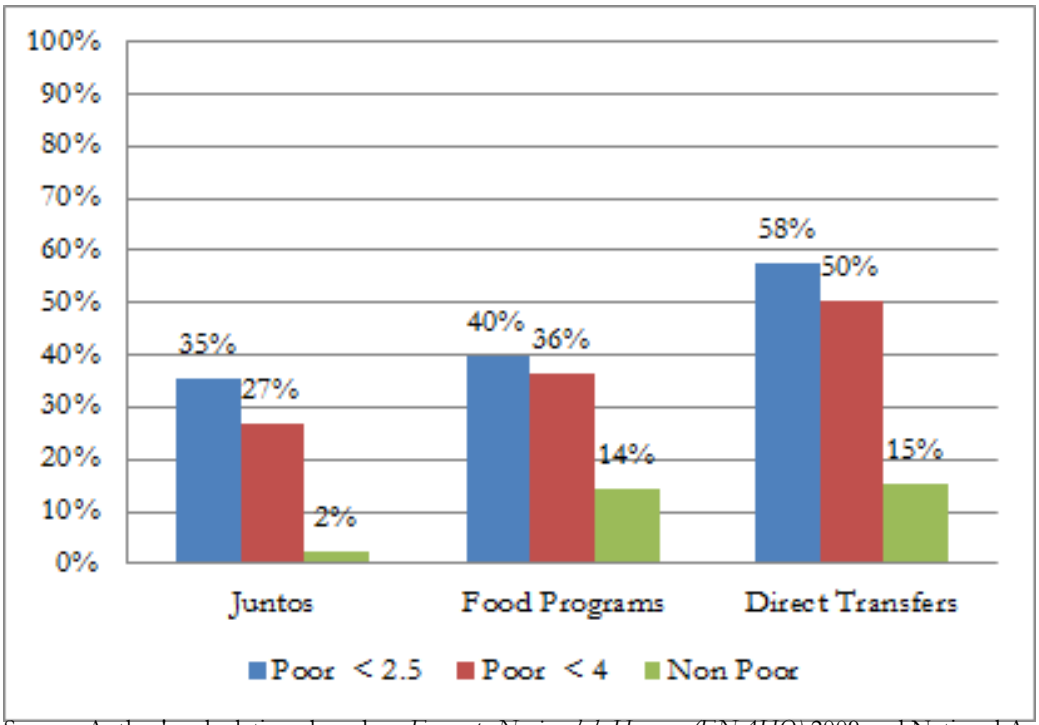
FIGURE 1: DIRECT TRANSFERS' BENEFICIARIES BY INCOME GROUP



Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

Figure 2 shows that coverage of food transfer programs is greater than *Juntos* coverage among both the moderate poor and the extreme poor. This difference does not seem so large when one considers that the *Juntos* budget is half the budget of food transfer programs and that the *Juntos* per capita transfer is considerably larger (three times as much) than average food programs transfers. Direct transfers jointly cover almost 60 percent of the extreme poor and 50 percent of the moderate poor.

FIGURE 2: DIRECT TRANSFERS' COVERAGE BY INCOME GROUP



Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

iii Incidence Analysis

Table 5 presents the results of the incidence analysis corresponding to the benchmark scenario. As expected, direct taxes impact only the income of the richest deciles, reflecting the progressive tax rate structure. The effects of direct transfers are consistent with our previous results: both food programs' transfers and *Juntos'* transfers in particular are highly concentrated among the poor. Direct transfers change the first decile income by over 11 percent, while their effects on the second and third decile are considerably lower. *Juntos'* effects on deciles above the third are almost non-existent, while food programs impact households as high as the eighth decile.

Indirect taxes have a significant effect on incomes across the distribution. Counterintuitively, their effects are higher among those with higher incomes, an effect that may be a result of high informality levels, as richer households are more likely to buy from formal establishments, while poorer households are more likely to buy products in informal conditions, such as from street vendors or in informal markets. Informality assumptions used throughout the analysis are based on both the place where the good is purchased and the area where the household is located. We assume that households located in areas with 400 households or fewer (rural areas) do not pay indirect taxes. It must be noted that 85 percent of the population in rural areas are located in villages with fewer than 100 households.[9] Most of the households excluded using this criterion are low-income households. VAT collection estimates under these assumptions about informality are 28 percent smaller than those estimated with no informality. These numbers are fairly consistent with the tax authority estimates of IVA evasion (33 percent).

TABLE 5: INCIDENCE OF TAXES AND TRANSFERS BY DECILE (BENCHMARK CASE)

	Share of Market Income	Incidence by Market Income Deciles									
		1	2	3	4	5	6	7	8	9	10
Market Income	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Direct Taxes	-1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.5%	-3.3%
Net Market Income	**98.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-0.1%**	**-0.1%**	**-0.2%**	**-0.5%**	**-3.3%**
Benefits	0.5%	11.4%	3.9%	2.2%	1.2%	0.6%	0.3%	0.2%	0.2%	0.0%	0.0%
CCT	0.2%	5.6%	1.7%	0.8%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Food Programs	0.3%	5.8%	2.2%	1.5%	0.9%	0.5%	0.3%	0.2%	0.1%	0.0%	0.0%
Disposable Income	**99.1%**	**11.4%**	**3.9%**	**2.2%**	**1.2%**	**0.6%**	**0.3%**	**0.0%**	**0.0%**	**-0.4%**	**-3.3%**
Net Indirect Taxes	-7.6%	-3.7%	-3.7%	-4.9%	-5.9%	-6.7%	-7.9%	-8.2%	-8.1%	-8.6%	-7.8%
Implicit Subsidies	2.8%	2.9%	2.7%	3.5%	3.7%	3.3%	3.5%	3.2%	2.8%	2.7%	2.3%
Indirect Taxes	-10.4%	-6.6%	-6.4%	-8.4%	-9.6%	-10.0%	-11.4%	-11.4%	-10.8%	-11.3%	-10.1%
Post-Fiscal Income	**91.5%**	**7.8%**	**0.2%**	**-2.6%**	**-4.8%**	**-6.0%**	**-7.6%**	**-8.2%**	**-8.1%**	**-9.1%**	**-11.1%**
In-kind Education	2.7%	31.2%	14.9%	10.2%	7.2%	5.3%	3.6%	2.4%	1.9%	1.1%	0.3%
In-kind Health	1.4%	11.8%	6.4%	4.5%	3.6%	2.6%	2.0%	1.6%	1.0%	0.8%	0.3%
Public Health Insurance	0.1%	2.1%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
Contributory Health Insurance	1.4%	0.3%	0.5%	0.9%	1.4%	2.0%	1.9%	2.0%	2.0%	1.8%	0.9%
Final Income	**97.1%**	**53.0%**	**23.0%**	**13.6%**	**7.8%**	**4.0%**	**0.1%**	**-2.1%**	**-3.1%**	**-5.4%**	**-9.7%**

Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts.

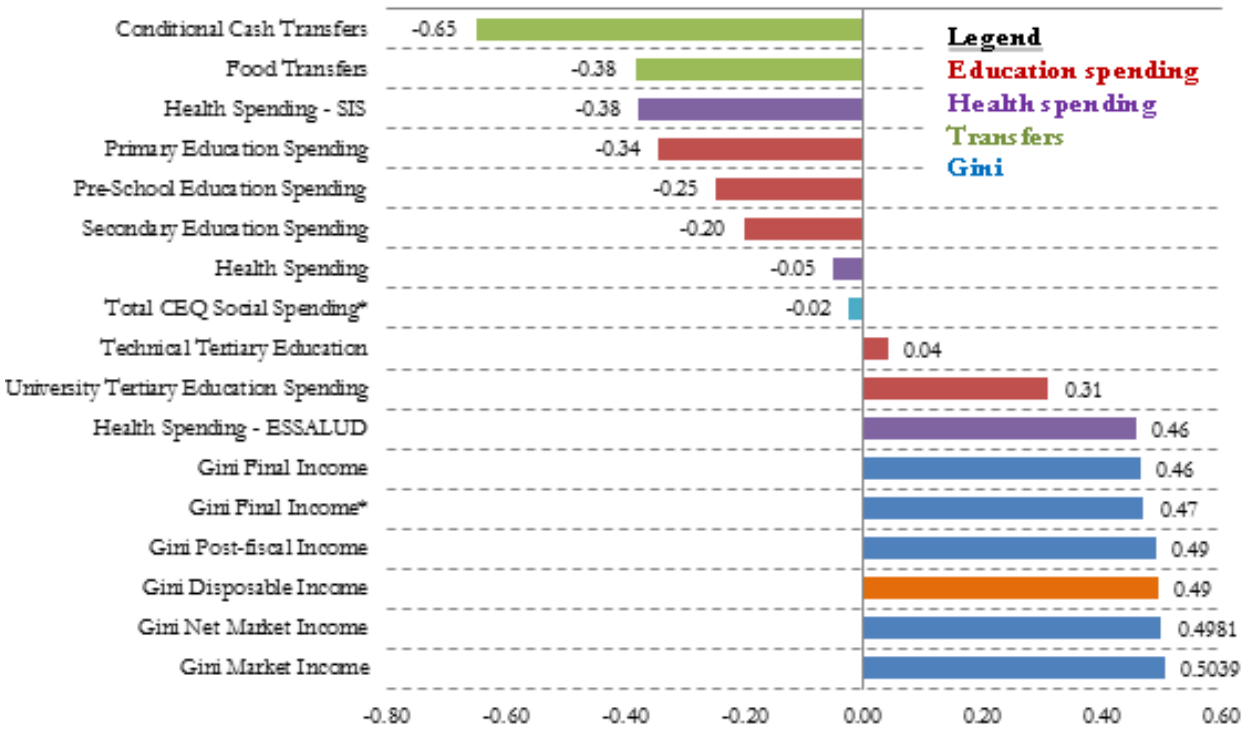
[9] Estimates were also produced restricting the definition of rural to towns with no more than 100 households. Results do not change significantly.

Note that implicit subsidies (tax exemptions) have greater incidence among deciles around the middle of the distribution. Finally, after direct taxes, direct transfers and indirect taxes, households in the first two deciles are net transfer receivers, while households from the third decile on are net tax payers. The analysis changes significantly when health and education transfers are included. In-kind education and health transfer receivers, as well as public health insurance beneficiaries are concentrated among the poorest deciles. The public health contributory system is the only transfer with a higher impact on the income of richer deciles.

iv Progressivity analysis

Figure 3 shows the concentration coefficients for the social spending categories identified in this study. The CCT program *Juntos* is the most progressive program in Peru, followed by food programs. The public health insurance system is also progressive, as are all basic education transfers. Tertiary education is only relatively progressive, while the *EsSalud* transfer (contributory health insurance) is almost regressive. Overall identified CEQ spending is also mildly progressive. Public pensions, not included in CEQ social spending, are the only identified regressive transfer, their concentration coefficient being 0.67.

FIGURE 3: CONCENTRATION COEFFICIENTS FOR TOTAL CEQ SOCIAL SPENDING AND BY CATEGORIES



Source: Author's calculations based on *Encuesta Nacional de Hogares (ENAHO)* 2009 and National Accounts. Note: CEQ (from Commitment to Equity, the name of the multi-country project) Social Spending includes all cash transfers (Except for contributory pensions) and other direct transfers plus public spending on education and health.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Our findings indicate that the extent of inequality and poverty reduction induced by Peru's fiscal policy is small. The Gini coefficient falls from 0.504 to 0.463 after all benefits and taxes are considered, while direct and indirect benefits and taxes (education and health transfers not included) barely reduce the Gini coefficient to 0.489. Direct transfers reduce extreme and total poverty by 1.2 and 0.8 percentage points, respectively. Overall social spending is progressive, although some of its components are only relatively progressive. The less progressive programs are contributory pensions and contributory health insurance, both corresponding to entitlements linked to formal employment relationships. In contrast, the most progressive programs are means-tested. The conditional cash transfer program, *Juntos*, is especially well targeted and effective in reducing extreme and moderate poverty. As for taxes, we found that direct taxes are progressive, but have little effect on inequality. We also found that once informality is introduced in the analysis indirect taxes are relatively progressive. This result is associated with the high levels of informality in Peru's economy.

One policy implication deriving from these results is that targeted transfers are the most effective way to reduce poverty. In contrast, linking benefits to formal employment relationships tends to exclude the poor. However, targeted transfers are significantly more effective in rural areas. This is associated with the fact that *Juntos* focuses on the rural areas, while the food transfer programs, which are not as effectively targeted towards the poor, are in both urban and rural areas. Thus, one challenge for social policy in Peru is how to effectively introduce targeted cash transfer programs in the urban area. One possibility that should be evaluated, as Peru tries to reform her poorly targeted and corruption prone food programs, is to turn them into cash transfer programs, starting a new register of beneficiaries with a more rigorous targeting mechanism.

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COMMITMENT TO EQUITY

The CEQ logo is a stylized graphical representation of a Lorenz curve for a fairly unequal distribution of income (the bottom part of the C, below the diagonal) and a concentration curve for a very progressive transfer (the top part of the C).