

# The Incidence of Social Spending and Taxes in Peru, 2005 – 2011

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# Motivation: Peru, 2005 - 2011

- In the last decade, Peru has experienced sustained growth.
  - Annual growth rate of the last fourteen years: 5.2 %.
- Between 2005 and 2011:
  - Public expenditure grew 60% and social spending increased in 42% in real terms.
  - Poverty dropped significantly: 55.6% to 27.8%.
- **However**, recent research suggests public transfers and donations are only responsible for a small part of the poverty reduction achieved: one-tenth, 2004 - 2010 (Inchauste et al., 2012); 28.4%, 2000-2011 (UNDP, 2013).

# Motivation

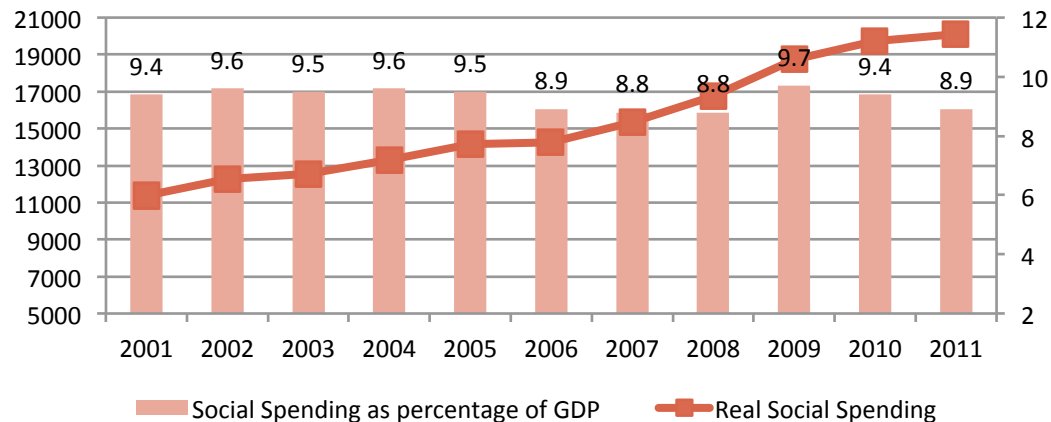
- Findings in Jaramillo (forthcoming in *PFR*):
  - The impact of taxes and transfers on poverty and income distribution is rather small.
  - This is associated with little spending rather than inefficient spending. Social spending is quite efficient.
- A case of dramatic poverty reduction with a rather small social spending.
- In this study:
  - Examine if the expansion in social assistance spending changes this assessment.
    - ¿Did this expansion result in less effectiveness of spending?

# Objective and Methodology

- Objective:
  - Estimate the effects of a full range of fiscal interventions on poverty and distribution of income in Peru in the period 2005-2011.
- A standard tax benefit analysis is used (*CEQ* methodology)
  - The analysis starts with each household's market income and then sequentially estimates the incidence of: (i) direct taxes, (ii) direct cash and in-kind transfers, (iii) indirect taxes and (iv) in-kind transfers in the form of free or quasi-free health and educational services.
  - The assessment uses data from the Updated National Household Survey series (2005, 2009 and 2011) and budgetary accounts.

# Evolution of Social Spending: 2005-2011

Real Social Spending and Social Spending as % of GDP  
(2001-2011)



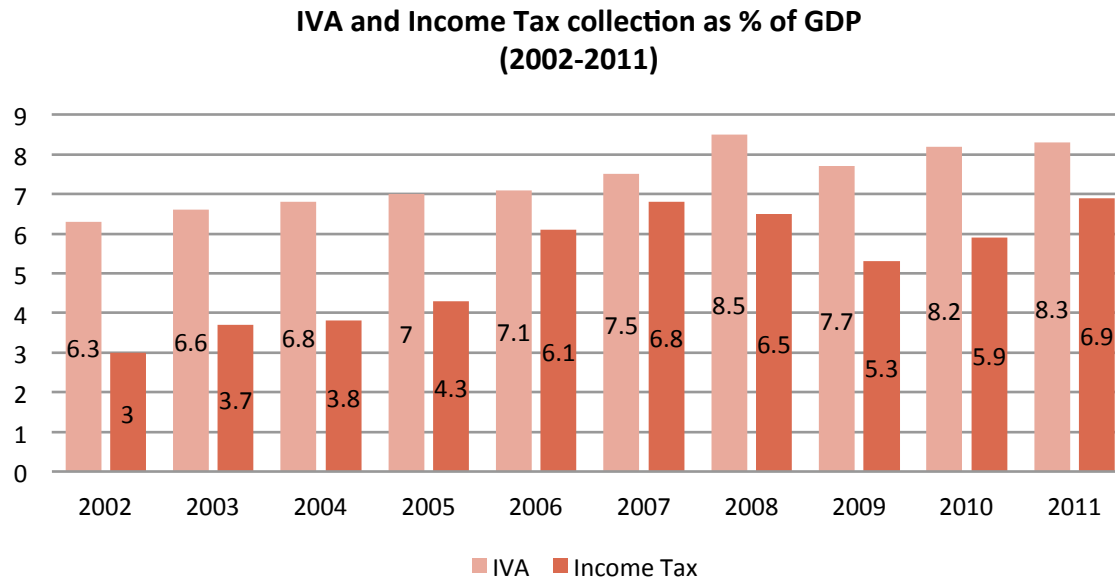
- Social spending grew consistently between 2005-2011 (in real terms) but GDP grew faster.
  - Social spending expanded in more than 40 percent.
  - Social spending decreased as a percentage of GDP because of a decline in public sector pension liabilities. Excluding them, it increased half a point of GDP.
- Financial crisis: fiscal boost expanded social spending in 2009.

# Composition of Social Spending: 2005-2011

	2005	2009	2011
<b>GDP (in millions LCU)</b>	261,653	382,318	486,232
<b>Total Government Spending</b>	24.8%	25.5%	24.4%
Primary Government Spending	23.0%	24.2%	23.4%
Social Spending (Official) <sup>a</sup>	9.5%	9.7%	8.9%
Social Spending (Alternative definition) <sup>b</sup>	7.2%	8.4%	7.7%
Social Assistance Spending	1.0%	1.6%	1.4%
Cash Transfers	0.04%	0.15%	0.13%
Food Transfers	0.34%	0.26%	0.21%
Other Social Assistance Spending	0.64%	1.15%	1.06%
Education	2.9%	2.8%	2.5%
Health	2.7%	3.2%	3.0%
Contributory	1.3%	1.3%	1.1%
Non Contributory	1.4%	1.9%	1.9%
SIS	0.1%	0.1%	0.1%
Other Social Spending	0.7%	0.9%	0.8%

- Most of the change in social spending is explained by expansion of social assistance spending.

# Evolution of Taxes, 2005-2011



- Revenue rises through the period except for 2009 (financial crisis).
- Most of revenue comes from the IVA collection.
- Personal income tax collection is low even for Latin American standards.

# Data and assumptions

- The main data source used throughout this analysis is the Updated National Household Survey for the years 2005, 2009 and 2011.
- Budgetary data was used to assign the amounts to in-kind health and education benefits as well as for scaling up household data.
- IVA tax collections could not be directly identified from the survey. It was simulated by applying the active tax rule to the amount of expenses on each taxed item that the household reported in the survey.
  - Informality was considered through the next assumptions: (1) All purchases made from street vendors or other informal conditions do not pay indirect taxes, and (2) purchases by households in rural villages with 100 households or less do not pay indirect taxes.



# RESULTS

# Impacts on inequality and poverty

	Market Income	Net Mkt Income	Disposable Income	Post-Fiscal Income	Final Income
<b>2005</b>					
<b>Gini – Benchmark</b>	0.544	0.540	0.537	0.536	0.509
% change wrt net mkt income			-0.6%	-0.8%	-5.8%
<b>Poverty Rate at \$2.5 PPP</b>	29.3%	29.3%	29.1%	30.1%	
<b>Poverty Rate at \$4 PPP</b>	46.7%	46.7%	46.6%	47.8%	
<b>2009</b>					
<b>Gini – Benchmark</b>	0.506	0.501	0.496	0.497	0.464
% change wrt to net mkt income			-0.88%	-0.76%	-7.24%
<b>Poverty Rate at \$2.5 PPP</b>	15.6%	15.6%	14.8%	15.5%	
<b>Poverty Rate at \$4 PPP</b>	27.6%	27.6%	27.3%	28.4%	
<b>2011</b>					
<b>Gini – Benchmark</b>	0.476	0.469	0.465	0.468	0.433
% change wrt to net mkt income			-0.9%	-0.1%	-7.8%
<b>Poverty Rate at \$2.5 PPP</b>	11.4%	11.4%	10.5%	10.9%	
<b>Poverty Rate at \$4 PPP</b>	21.4%	21.4%	21.0%	22.0%	

- Inequality and poverty declined significantly, even before including the effect of taxes and transfers.
- The poverty and inequality reduction effects of fiscal policy have also increased through the period.

# Effectiveness of government transfers

	<i>Disposable Income</i>				<i>Final Income*</i>	
	Gini		Poverty \$2.5 PPP		Gini	
	% Change	Effectiveness	% Change	Effectiveness	% Change	Effectiveness
<b>2005</b>	-0.6%	1.78	-1.1%	3.54	-5.8%	1.05
<b>2009</b>	-0.9%	2.4	-12.0%	32.8	-7.2%	1.2
<b>2011</b>	-0.9%	2.5	-16.0%	44.0	-7.7%	1.4

- The effectiveness of direct transfers substantially increased between 2005 and 2011, especially its poverty reduction effects → *Juntos*.
- In-kind transfers have also increased their effectiveness.
- In-kind transfers have a considerably larger effect on inequality although direct transfers are more efficient in reducing inequality in the short run.

# Progressivity of taxes and transfers

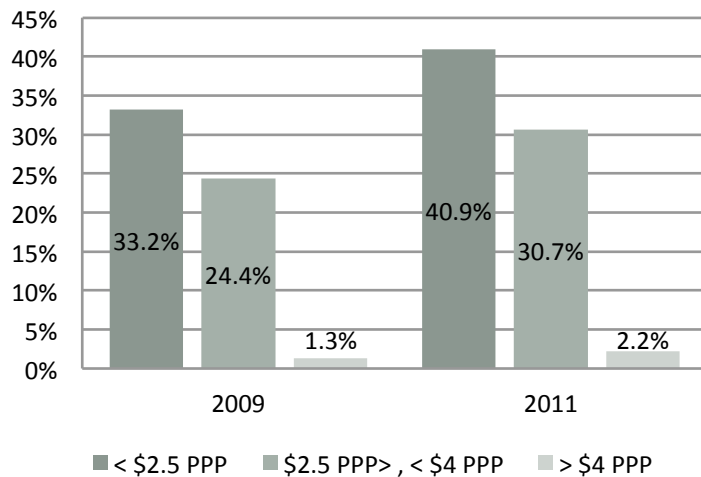
		2005	2009	2011
<b>Gini Market Income</b>		0.54	0.51	0.48
<b>Kakwani Coefficients</b>				
Taxes	Direct Taxes	0.40	0.42	0.45
	Indirect Taxes	0.01	-0.02	-0.03
	All taxes	0.05	0.05	0.04
<b>Concentration Coefficients</b>				
Direct Transfers	Food Transfers	-0.32	-0.31	-0.40
	Flagship CCT	--	-0.70	-0.71
Education Spending	Pre-school	-0.19	-0.24	-0.25
	Primary	-0.29	-0.34	-0.35
	Secondary	-0.13	-0.21	-0.25
	Technical	0.09	0.01	-0.13
	University	0.34	0.28	0.23
	All Education	-0.12	-0.18	-0.19
Health Spending	EsSalud	0.47	0.43	0.39
	SIS	-0.40	-0.40	-0.39
	Non Contributory	-0.02	-0.07	-0.13
	All Health	0.22	0.16	0.06
Social Spending		0.04	-0.04	-0.08

- The progressivity of all transfers increased in the period.
- The CCT *Juntos* is the most progressive transfer analyzed.
- The progressivity level of direct taxes also increases.
- Indirect taxes are neutral through the period.
- The sum of both direct and indirect taxes is also neutral.

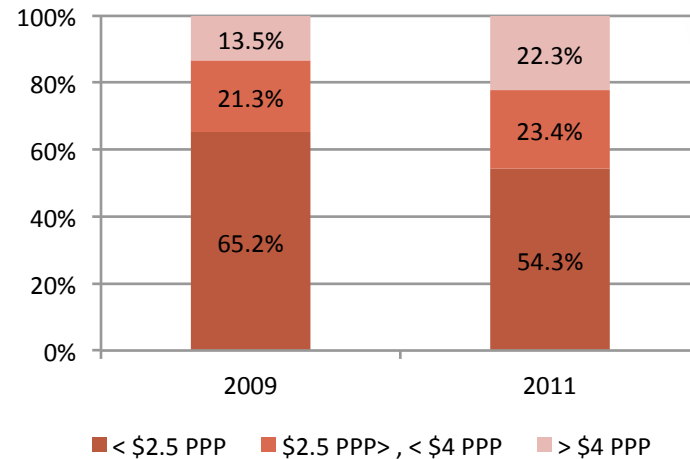
# Coverage and leakages of *Juntos*

- *Juntos* coverage increased between 2009-2011 ...

Percentage of individuals in each income group who are beneficiaries – *Juntos* (2009 and 2011)



Share of CCT benefits' received by income group (2009 and 2011)



- ... but the program's leakages increased as well.

# Incidence of taxes and transfers (i)

	2005	2009	2011
<b>Net Mkt Income</b>			
1	0.0%	0.0%	0.0%
2	0.0%	0.0%	0.0%
3	0.0%	0.0%	0.0%
4	0.0%	0.0%	0.0%
5	0.0%	0.0%	-0.1%
6	0.0%	-0.1%	0.0%
7	0.0%	-0.2%	-0.2%
8	-0.2%	-0.2%	-0.2%
9	-0.3%	-0.5%	-0.7%
10	-2.2%	-3.5%	-4.2%
Total	-1.0%	-1.5%	-1.7%
<b>Disposable Income</b>			
1	5.9%	12.3%	11.8%
2	3.0%	4.3%	4.2%
3	2.1%	2.3%	1.8%
4	1.5%	1.3%	0.7%
5	0.8%	0.6%	0.6%
6	0.4%	0.2%	0.2%
7	0.3%	0.1%	0.0%
8	0.0%	0.1%	-0.2%
9	-0.2%	-0.4%	-0.7%
10	-2.2%	-3.5%	-4.1%
Total	-0.6%	-1.0%	-1.2%

- The incidence analysis allows us to observe how fiscal interventions affect the income of each market income decile.
- Direct transfers only affect households in the upper deciles.
- The effect of direct transfers on the first deciles of market income increases significantly between 2005 and 2011. The effect is no doubt the result of *Juntos*.

## Incidence of taxes and transfers (ii)

	2005	2009	2011
<b>Post Fiscal Income</b>			
1	-0.9%	6.0%	4.9%
2	-1.2%	-2.2%	-3.5%
3	-3.9%	-5.4%	-7.8%
4	-5.6%	-6.8%	-9.3%
5	-6.7%	-8.4%	-10.4%
6	-8.2%	-8.7%	-10.2%
7	-7.6%	-8.4%	-10.4%
8	-8.7%	-8.2%	-10.5%
9	-8.8%	-8.8%	-10.5%
10	-9.3%	-10.8%	-12.0%
Total	-8.2%	-8.9%	-10.5%
<b>Final Income</b>			
1	37.3%	66.6%	70.7%
2	24.2%	27.3%	26.9%
3	13.7%	14.8%	12.1%
4	8.6%	8.7%	5.6%
5	4.5%	3.4%	1.2%
6	0.9%	0.1%	-0.8%
7	-0.4%	-1.1%	-3.4%
8	-3.0%	-2.5%	-4.8%
9	-4.3%	-4.6%	-6.5%
10	-7.9%	-9.2%	-10.4%
Total	-2.4%	-2.2%	-3.4%

- Incidence for post-fiscal income shows which households are net payers of taxes after direct transfers (taxes and transfers that have direct effects over income).
- In 2005, all deciles were net payers of taxes (direct transfers were small). Since *Juntos*, the situation has improved.
- The effect of health and education in-kind transfers on income is considerably larger than the effect of the other fiscal interventions.

# Mobility

- The effect of fiscal policy over mobility has increased significantly over time. The increase has been bigger when analyzing the change between market income and disposable income (direct transfers).
- Although the first matrix shows a significant improvement in the effectiveness of direct transfers to move households up the social ladder, it should also be noted that the percentage of the population that escalates income groups is still small.
- The most noticeable effect of indirect taxes is in the middle income deciles, and it does not change significantly between 2005 and 2011.



# Mobility – Mkt Income vs. Disposable Income

2005							
	Disposable Income groups						
Market Income groups	$y < 1.25$	$1.25 \leq y < 2.50$	$2.50 \leq y < 4.00$	$4.00 \leq y < 10.00$	$10.00 \leq y < 50.00$	$50.00 \leq y$	Horizontal sum
$y < 1.25$	98.38%	1.62%	0.00%	0.00%	0.00%	0.00%	100%
$1.25 \leq y < 2.5$	0.00%	98.77%	1.23%	0.00%	0.00%	0.00%	100%
$2.50 \leq y < 4$	0.00%	0.00%	99.37%	0.63%	0.00%	0.00%	100%
$4.00 \leq y < 10$	0.00%	0.00%	0.01%	99.96%	0.03%	0.00%	100%
$10.00 \leq y < 50$	0.01%	0.00%	0.00%	0.28%	99.71%	0.00%	100%
$50.00 \leq y$	0.00%	0.00%	0.00%	0.00%	0.63%	99.37%	100%
<b>Perc of Pop</b>	10.55%	18.51%	17.51%	35.21%	17.15%	1.07%	100%
2011							
	Disposable Income groups						
Market Income groups	$y < 1.25$	$1.25 \leq y < 2.50$	$2.50 \leq y < 4.00$	$4.00 \leq y < 10.00$	$10.00 \leq y < 50.00$	$50.00 \leq y$	Horizontal sum
$y < 1.25$	71.78%	28.22%	0.00%	0.00%	0.00%	0.00%	100%
$1.25 \leq y < 2.5$	0.00%	89.37%	10.63%	0.00%	0.00%	0.00%	100%
$2.50 \leq y < 4$	0.00%	0.00%	95.80%	4.20%	0.00%	0.00%	100%
$4.00 \leq y < 10$	0.00%	0.00%	0.00%	99.79%	0.21%	0.00%	100%
$10.00 \leq y < 50$	0.00%	0.00%	0.00%	0.03%	99.97%	0.00%	100%
$50.00 \leq y$	0.00%	0.00%	0.00%	0.00%	2.52%	97.48%	100%
<b>Perc of Pop</b>	2.45%	8.07%	10.48%	36.28%	40.47%	2.24%	100%

# Mobility – Mkt income vs. Post-fiscal income

2005							
	Post-Fiscal Income groups						
Market Income groups	$y < 1.25$	$1.25 \leq y < 2.50$	$2.50 \leq y < 4.00$	$4.00 \leq y < 10.00$	$10.00 \leq y < 50.00$	$50.00 \leq y$	Horizontal sum
$y < 1.25$	98.48%	1.52%	0.00%	0.00%	0.00%	0.00%	100%
$1.25 \leq y < 2.5$	1.36%	98.04%	0.60%	0.00%	0.00%	0.00%	100%
$2.50 \leq y < 4$	0.00%	5.59%	94.13%	0.29%	0.00%	0.00%	100%
$4.00 \leq y < 10$	0.00%	0.00%	3.70%	96.27%	0.03%	0.00%	100%
$10.00 \leq y < 50$	0.00%	0.00%	0.00%	6.61%	93.39%	0.00%	100%
$50.00 \leq y$	0.00%	0.00%	0.00%	0.00%	2.49%	97.51%	100%
<b>Perc Pop</b>	10.74%	19.35%	17.79%	34.97%	16.10%	1.05%	100%
2011							
	Post-Fiscal Income groups						
Market Income groups	$y < 1.25$	$1.25 \leq y < 2.50$	$2.50 \leq y < 4.00$	$4.00 \leq y < 10.00$	$10.00 \leq y < 50.00$	$50.00 \leq y$	Horizontal sum
$y < 1.25$	72.63%	27.37%	0.00%	0.00%	0.00%	0.00%	100%
$1.25 \leq y < 2.5$	1.98%	87.91%	10.12%	0.00%	0.00%	0.00%	100%
$2.50 \leq y < 4$	0.00%	3.35%	92.73%	3.92%	0.00%	0.00%	100%
$4.00 \leq y < 10$	0.00%	0.00%	2.72%	97.19%	0.08%	0.00%	100%
$10.00 \leq y < 50$	0.00%	0.00%	0.00%	4.76%	95.24%	0.00%	100%
$50.00 \leq y$	0.00%	0.00%	0.00%	0.00%	10.25%	89.75%	100%
<b>Perc Pop</b>	2.64%	8.26%	11.11%	37.23%	38.70%	2.06%	100%

# Conclusions

- The expansion of social spending has concurred with improvements in effectiveness indicators of social policy.
- The effectiveness of direct transfers to reduce poverty and inequality increased considerably in the period of analysis.
- The progressivity of both direct and in-kind transfers also improved between 2005 and 2011.
- Incidence analysis indicates that the effect of direct transfers on the income of poorer households has increased.
  - *Juntos'* coverage has increased considerably.
  - Still → households that pay more taxes than what they receive on direct transfers start at the second decile of the income distribution. Should direct transfers fully compensate for this?

# Conclusions

- Although there have been significant improvements in the ability of transfers to induce social mobility, this is still quite limited. The portion of poor households that escape poverty due to direct transfers is still small in 2011.
- Peru is an interesting case of substantial reduction in poverty and inequality achieved with a limited role for social policy even as the role of social policy has strengthened.
- The analysis presented here suggests that the expansion of social spending need not come at the expense of less effectiveness, but rather the opposite.
- The challenge is sustaining growth while strengthening social policy.