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The impact of taxes and social spending on inequality and poverty in El Salvador

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Abstract

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Keywords: fiscal incidence, poverty, inequality, El Salvador
JEL codes: D31, H22, I14.

THE IMPACT OF TAXES AND SOCIAL SPENDING ON INEQUALITY AND POVERTY IN EL SALVADOR^{*}

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ABSTRACT

We conducted a fiscal impact study to estimate the effect of taxes, social spending, and subsidies on inequality and poverty in El Salvador, using the CEQ methodology. Taxes are progressive, but given their volume, their impact is limited. Direct transfers are concentrated on poor households, but their budget is small so their effect is limited; a significant portion of the subsidies goes to households in the upper income deciles, so although their budget is greater, their impact is low. The component that has the greatest effect on inequality is spending on education and health. Therefore, the impact of fiscal policy is limited and low when compared with other countries with a similar level of per capita income. There is room for improvement using current resources.

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1. Introduction

El Salvador is a middle-income country with a population of 6.2 million and an average per capita income of US\$7,441.70 in purchasing power parity (PPP) in 2012.¹ In that year, the Gini coefficient was 0.425 and the poverty rate, measured using the international poverty line of US\$2.50 a day PPP 2005, was 14.7 percent. With growing debt and a persistent fiscal deficit, El Salvador faces major fiscal policy challenges. In this context, it is essential to know the impact of fiscal policy on inequality and poverty to have a basis for evaluating alternative courses of action to achieve fiscal stability.

To this end, we present here a fiscal impact study to estimate the effect of taxes, social spending, and subsidies on inequality and poverty. To determine the distribution of the fiscal burden and the benefits of social spending, we developed concepts of income before and after fiscal interventions, by category and as a whole based on data from the 2011 Multi-Purpose Household Survey (EHPM), and administrative data from various sources. The study uses the methodology proposed by the Commitment to Equity (CEQ) Institute,² so that the results for El Salvador can be compared with countries that have similar income levels in Latin America and outside the region, where the same methodology has been applied.

Some fiscal incidence studies available for El Salvador analyze only a subset of fiscal policy components; for example, Acevedo and González³ analyzed the impact of taxes on inequality, but did not consider public spending. The Central American Institute for Fiscal Studies (ICEFI)⁴ analyzed the impact on inequality of taxes and public spending in the social area, but did not include the effect of subsidies. Barreix, Martín, and Roca⁵ and Cubero and Hollar⁶ dealt with progressivity and regressivity of taxes and spending for education and health for the Central American countries, including El Salvador; however, none of the above studies considered the effects on poverty.

In contrast to existing literature, this study analyzes the incidence of the various components of fiscal policy not only on inequality, but also on poverty. Social spending includes direct cash transfers, such as the Rural Solidarity Communities (RSC) or the Temporary Income Support Program (PATI), as well as transfers in kind. These include school lunches and the farm and school packages, subsidies for gas, water, electricity, and public transportation, education services (preschool, primary, secondary, and tertiary), and health services provided by the state. With respect to taxes paid by individuals, we considered direct and indirect taxes as well as contributions to health systems. We also analyzed contributory pensions.

The analysis shows that the direct transfer programs (sometimes also called social programs) are generally aimed at lower income households, but since the budget dedicated to them is small, their impact on inequality and poverty is limited. The analysis also shows that a large part of the resources used to subsidize liquid petroleum gas (LPG), electricity, water, and public transportation reach households in the upper deciles of income distribution, so although their budget is larger, their impact on poverty is small. These taxes are progressive as a whole, but their impact on equality is also limited. The analysis also shows that the

¹ Equivalent to US\$3,819 in current dollars.

² See, especially, Lustig and Higgins (2018), Higgins and Lustig (2018), and Higgins (2018). The methodology used here is based on an earlier edition of the CEQ Handbook (Lustig and Higgins, 2013).

³ Acevedo and González (2003).

⁴ ICEFI (2009).

⁵ Barreix, Martín, and Roca (2009).

⁶ Cubero and Hollar (2010).

component with the greatest effect on inequality is (the monetized value of) social spending for education and health services provided by the government.

Direct transfers reduce the incidence of poverty, measured at both national and international poverty lines. However, this effect is almost completely offset when we take into account indirect taxes net of subsidies. The state's net fiscal action—in terms of purchasing power—results in a higher percentage of individuals living under said poverty lines. In fact, starting with the second poorest decile, the population is a net payer; the population pays more in direct and indirect taxes than it receives in direct transfers and subsidies.

In summary, El Salvador's fiscal policy, has little, no, or even a negative effect on poverty reduction (depending on the line used). Using the international poverty line of US\$2.50 (PPP), El Salvador fares relatively well in comparison with other countries with similar per capita income, such as Armenia and Guatemala. El Salvador, however, redistributes relatively less in comparison to the general trend in countries both inside and outside of the region with similar per capita income.

The analysis makes it possible to identify areas in which fiscal policy could be changed to obtain better results. For example, since electricity subsidies to households that use more than 99 kWh represent a low percentage of the income that they receive, this resource could be redirected to strengthen coverage in preschool or middle school.

2. Taxes and Public Spending

The following is a detailed description of the taxes and fiscal spending used in this research. The government's total revenue was US\$5,126.8 million in 2011, or 18.2 percent of GDP; net fiscal revenue was 13.8 percent of GDP and gross was 15.1 percent. Direct taxes were 5.2 percent of GDP, 1.97 percent of which was individual income tax. Indirect taxes accounted for 10 percent, with 7.8 percent coming from the value added tax (VAT). Nontaxed income totaled 3.5 percent and external grants equaled 1 percent of GDP. In 2011, public expenditures⁷ in El Salvador represented 22.3 percent of GDP; primary spending was 19.9 percent, and social spending 8.6 percent of GDP, respectively (table 1).

It is important to clarify that the CEQ concepts and definitions standardize social spending and do not correspond exactly with the classification used in El Salvador's national budget. CEQ social spending is defined as the sum of direct transfers from the state to the population, plus the monetary value of education, health, and other services provided directly to the population (for example, Women's City [*Ciudad Mujer*]). Direct transfers include both those made in cash and those made in kind (for example, food, uniforms, et cetera) if they have a defined market value and are near substitutes for cash. Indirect subsidies to public services are not considered direct transfers, because they do not contribute to available household income.

⁷ Includes spending by the non-financial public sector (NFPS), for example the central government, city governments, and non-financial decentralized and autonomous institutions. It does not include the public financial sector (Central Reserve Bank [BCR], Mortgage Bank, the Development Bank of El Salvador [BANDESAL], the National Fund for Popular Housing [FONAVIPO], and the Social Fund for Housing [FSV]).

Table 1: El Salvador: Composition of Spending and Fiscal Revenue (2011)

Item	Amount	% of GDP	
	Millions of US\$	Total	In analysis /1
TOTAL REVENUE	4220.2	18.24	11.06
A. Net tax collection (A.1-A.2)	3206.5	13.86	9.40
A.1 Tax collection (gross)	3499.9	15.13	9.40
A.1.1 Direct taxes (income tax)	1192.8	5.15	1.11
A.1.1.1 Income tax - individuals	455.6	1.97	1.11
A.1.1.1.1 Personas naturales asalariadas	256.1	1.11	1.11
A.1.1.1.2 Non-salaried individuals	199.5	0.86	...
A.1.1.2 Income tax - corporations	630.5	2.72	...
A.1.1.3 Tax withholding (corporations and individuals)	106.7	0.46	...
A.1.2 Indirect taxes	2307.1	9.97	8.30
A.1.2.1 Value added tax	1801.3	7.78	7.80
A.1.2.2 Duties	167.3	0.72	...
A.1.2.3 Specific taxes on products	140.4	0.61	0.50
A.1.2.4 FEFE, FOVIAL and public transportation (gasoline)	116.4	0.50	0.50
A.1.2.5 Other indirect taxes and contributions	81.7	0.35	...
A.2. Refunds	293.4	1.27	...
B. Non-tax revenue	799.8	3.46	1.66
B.1. Contributions to social security (health)	385.2	1.66	1.66
B.2. Public corporations	169.0	0.73	...
B.3. Others (includes capital income, excludes FEFE)	245.6	1.06	...
C. Donations	213.9	0.92	0.00
TOTAL SPENDING OF THE NON-FINANCIAL PUBLIC SECTOR	5126.8	22.16	13.88
Interest on the debt	517.9	2.24	...
Primary spending (A + B + C + D)	4608.9	19.92	11.15
A. Social spending (A.1 + A.2)	1989.06	8.60	8.43
A.1. Direct transfers (in cash or goods)	317.16	1.37	1.36
A.1.1. Cash transfers	195.3	0.84	0.84
A.1.1.1 Rural Solidarity Partnership Communities	17.1	0.07	0.07
A.1.1.2 Temporary Income Support Program (PATI)	14.7	0.06	0.06
A.1.1.3 Direct subsidy to gas (in cash)	163.5	0.71	0.71
A.1.2. Non-contributory pensions (Universal Basic Pension)	7.1	0.03	0.03
A.1.3. Other direct transfers (in goods)	114.8	0.50	0.49
A.1.3.1 School package	71.0	0.31	0.31
A.1.3.2 School lunch	15.3	0.07	0.07
A.1.3.3 Glass of milk	1.9	0.01	...
A.1.3.4 Agricultural package	26.5	0.11	0.11
A.2. Social services	1671.9	7.23	7.08
A.2.1. Education	677.6	2.93	2.93
A.2.2. Health	991.7	4.29	4.15
A.2.2.1 Health- non-contributory (MINSAL)	532.70	2.30	2.30
A.2.2.2 Health - contributory (ISSS)	358.10	1.55	1.55
A.2.2.3 Health - contributory (Teachers' Well-being)	50.10	0.22	0.22
A.2.2.4 Health - contributory (Military Health Command, COSAM)	19.20	0.08	0.08
A.2.2.5 Health - others	31.60	0.14	...
A.2.3. Women's City	2.6	0.01	...
B. Indirect subsidies	224.3	0.97	0.97
B.1. Electricity	115.2	0.50	0.50
B.2. Water	56.5	0.24	0.24
B.3. Public transportation	52.6	0.23	0.23
C. Other spending	1989.94	8.60	...
C.1. Administrative direction	460.4	1.99	...
C.2. Administration of justice and citizen security	625.6	2.70	...
C.3. Others	903.9	3.91	...
D. Contributory pensions	405.6	1.75	1.75
Deficit	-906.6	-3.92	...

Source: Prepared by the authors with information from the Ministry of the Treasury, BCR, and administrative data from the respective institutions.

Note: /1 This column lists the categories that are included in the impact analysis.

... means the value is not applicable

2.1 Fiscal Revenue: Taxes and Contribution Fees

The two main taxes in El Salvador are the income tax and the VAT. Specific taxes applied to selected articles, such as automobiles (tax on the first registration), liquor and beer, cigarettes, firearms, and ammunition. In addition, there are special fees for special purposes, of which the most important are those applied to fuel. Here is a description of the taxes and contributions considered in this analysis.

2.1.1 Income Tax

El Salvador has a progressive tax on personal income. Corporations are subject to a 25 percent tax rate on declared earnings up to US\$150,000. Above that amount the rate is 30 percent.

In 2011, there were four levels for the personal income tax: exemption for income below US\$2,514.30 and three levels with progressive rates of 10, 20, and 30 percent. Taxable income excluded alimony payments, compensation for death or disability, payments received for services abroad, rental income from the house of residence, and interest on investment funds abroad. Individuals with an annual income of less than US\$5,714.29 could take a standard deduction of US\$1,371.43. Those with high incomes could only take this deduction with evidence of expenditures for health or education.

As of 2012, with the tax reform that took effect that year, the annual income exemption was increased to US\$4,064.00. Also, if an individual's income does not exceed US\$9,100 for the year, they can take a standard deduction of US\$1,600.00.

2.1.2 Value Added Tax

VAT is collected for each transaction at the various stages of production for a taxed good or service, generating a tax credit to the next stage, so that finally the end user pays the tax. The VAT rate is 13 percent. Exported goods are not exempt from the law, but they have a 0 percent rate. Taxes paid for the production of export goods are reimbursed, with a few exceptions.

Corporations or individual vendors whose sales are less than US\$5,714.29 per year, or US\$476.19 per month, and have assets less than US\$2,285.71, are not obliged to charge VAT to their clients. However, they are subject to the tax for the purchase of inputs. In other words, they are exempt from the VAT generated at the last link of the chain.

2.1.3 Special Fees – Gasoline

Three different fees for specific users are applied to fuel consumption. In total, US\$0.46 is collected for each gallon of gasoline and US\$0.30 for each gallon of diesel.

1. In 1981, the Economic Development Stabilization Fund (FEFE) was established. Currently, the earnings are used to pay part of the subsidy for LPG. This fund's budget comes from a fee of US\$0.16 collected for each gallon of gasoline purchased; diesel purchases are excluded. From July to December 2011, this fee was temporarily suspended to compensate for the high cost of gasoline. In 2011, the FEFE collected US\$13.6 million.

2. In 2001, a compulsory contribution was established to generate funds for highway maintenance and repairs through the Highway Conservation Fund (FOVIAL). The fee is US\$0.20 per gallon of gasoline or diesel. In 2011, the amount collected was US\$68.9 million.

3. In 2007, another fee was added to generate funds to pay the public transportation subsidy, the Special Contribution to Stabilize Public Bus Fares (COTRANS). The fee is US\$0.10 per gallon of gasoline or diesel. In 2011, the amount collected was US\$33.9 million.

2.1.4 Contributions to Social Security (Health)

Contributions to the Salvadoran Social Security Institute (ISSS) cover the general health system and professional risks. Workers contribute 3 percent of their wages while the employer contributes 7.5 percent. For both, the maximum taxable salary is US\$685.70 per month. Contributions are deducted directly from the employee's pay.

2.2 Social Spending

In El Salvador, social spending falls into two main categories: (1.) *direct transfers* to households, in cash or in kind, either through *social programs* for specific population groups, which are currently part of the Universal Social Protection System, or through cash transfers, such as the subsidy for cooking gas, and (2.) *social services* provided by the state, principally education and health services. In 2011, direct transfers represented 1.4 percent of GDP, and social services 7.2 percent of GDP. In that year, social spending was 8.6 percent of GDP.

Other public resource spent on household benefits includes ***indirect subsidies*** plus the cash transfer, related to Liquid petroleum gas (LPG) and **pensions**, which represented 1.7 percent and 1.75 percent of GDP, respectively.

2.2.1 Social Programs

Social programs in El Salvador include direct cash transfers and transfers of goods. Some programs provide different services within the same infrastructure to facilitate access. Table 2 lists these programs, the number of beneficiaries, and the corresponding expenditure.

Table 2: Social Programs

Program	Responsible Institution	Year implemented	Beneficiaries						Expenditure, % PIB					
			2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Cash transfers			83,654	112,311	110,030	120,822	141,370	133,998	0.05	0.09	0.11	0.17	0.17	0.19
Rural Solidarity partnership communities	FISDL	2005	83,654	105,824	98,378	90,997	83,128	75,385	0.05	0.09	0.09	0.07	0.06	0.06
Universal Basic Pension	FISDL	2009	0	6,487	8,019	15,300	25,477	28,200	0.0	0.00	0.02	0.03	0.04	0.08
PATI	FISDL	2010	0	0	3,633	14,525	27,992	23,456	0.0	0.00	0.00	0.06	0.06	0.04
Urban bonus	FISDL	2012	0	0	0	0	2,691	4,837	0.0	0.00	0.00	0.00	0.003	0.01
Veterans' pensions	FISDL	2012	0	0	0	0	2,082	2,120	0.0	0.00	0.00	0.00	0.003	0.01
Transfers of goods			1,314,039	1,860,289	3,231,903	3,386,480	3,701,173	4,109,649	0.19	0.21	0.58	0.50	0.49	0.51
School package	MINED	2010	0	0	1,377,113	1,386,767	1,386,767	1,299,358	0.0	0.00	0.36	0.31	0.30	0.30
School lunch programs	MINED	1992	877,041	1,310,286	1,316,779	1,334,044	1,339,726	1,453,118	0.08	0.06	0.10	0.07	0.06	0.08
Glass of milk	MINED/MAG	2011	0	0	0	246,072	499,819	821,036	0.0	0.00	0.00	0.01	0.01	0.02
Agricultural package	MAG	1997	436,998	550,003	538,011	419,597	474,861	536,137	0.11	0.15	0.12	0.11	0.11	0.10
Integrated services			0	0	0	35,614	82,874	315,000	0.0	0.00	0.00	0.01	0.09	0.05
Women's City	Secretariat for Inclusion	2011	0	0	0	35,614	82,874	315,000	0.0	0.00	0.00	0.01	0.09	0.05

Source: Technical Secretariat of the Office of the President (2013), "The Road of Change in El Salvador, Legacy of Four years of Government." Table 3, pp. 86 and 87, and (2014) "Social Report 2009-2013."

2.2.2 Cash Transfers

--**Rural Solidarity Communities (RSC)** is a program created in 2005 as the Solidarity Network that includes cash transfers based on public education and health services usage in households in the poorest 100 of the country's 262 municipalities, according to the Social Investment Fund for Local Development's (FISDL) 2004 Poverty Map. These municipalities account for about 12 percent of total of households nationwide.⁸ Households are eligible if they meet the following criteria when the program starts in their community. For the education transfer, they were eligible if they had children between the ages of 6 and 18 who had not completed primary school. For the health transfer, they were eligible if the household included a pregnant woman or any child aged 0 to 5. The education transfer is contingent upon enrollment and school attendance to complete primary school. The health transfer is contingent upon monitoring the children's development, their timely vaccination, and prenatal care for pregnant women. The amount of the transfer is US\$15 per month if the household is only eligible for either the education or health transfer and

⁸ According to the Census of Population and Housing of 2007.

US\$20 per month if it is eligible for both. The payments do not vary depending on the number of eligible children in the household and the amount has not changed since 2005.

In rural areas, all households in a municipality that met the eligibility requirements when the census was conducted by the implementing agency (FISDL) were registered in the program. In urban areas, all eligible households entered the program in municipalities with “severe” extreme poverty. However, in urban municipalities with “high” extreme poverty, a means test with proxy variables was applied to selected beneficiaries. It is important to note that the only way a household could get into the RSC program was to meet the requirements at the time the FISDL census was conducted in a given municipality. This means that if a household met the eligibility criteria *after* the program started in a community, for example due to the birth of their first baby, that household was not eligible. For that reason, new families have not been incorporated, and as a result, the number of beneficiaries has decreased as households leave the program (when the children complete primary school or reach the age of 18) or when they no longer meet the criteria.

In total there were 75,385 households benefiting from the program in 2013 (equal to about 5 percent of total households and about 14 percent of the poor households). These beneficiaries received approximately US\$14.6 million that year. In 2011, the year analyzed for this study, there were 90,997 total household beneficiaries and the average transfer per household was US\$15.65 per month.

--The non-contributory ***Universal Basic Pension*** was established in 2009 for older adults in municipalities with “severe” and “high” extreme poverty. This is an unconditional transfer of US\$50 per month given to anyone over the age of 70 who does not receive any other pension. There can be more than one beneficiary per household.

In 2013 there were 28,200 beneficiaries in the program (accounting for about 7 percent of all the senior adults in the country and 20 percent of those living in poverty). That year they received about US\$18.8 million. In 2011, the year analyzed in this study, the total number of beneficiaries was 15,300.

--***FMLN Veterans’ Pension*** is a program of non-contributory pensions that began in 2012 for ex-combatants consisting of a monthly pension of US\$50 paid to about 2,000 veterans.⁹

--***Temporary Income Support Program (PATI)*** was designed to protect the income of vulnerable households that face adverse situations of various kinds by means of a monetary transfer of US\$100 per month for six months, in exchange for their participation in community projects and their attendance at 80 hours of training (64 hours of technical training and 16 hours on job hunting and skills to start a business). The amount of the transfer is less than half the minimum urban wage, so it is not a disincentive for beneficiaries to participate in the labor market. Beneficiaries can participate in it only once and for a maximum of 6 months. There is no limit on the number of beneficiaries in the same household.

PATI is implemented in informal urban settlements (AUP) classified with levels of extreme or high poverty in the Urban Poverty Map¹⁰. It has been implemented in 37 municipalities: 11 that were ravaged by tropical storm Ida and 26 that have the highest number of persons living in AUP who are included in the Map of

⁹ Secretaría Técnica de la Presidencia (2013).

¹⁰ FLACSO, MINEC, UNDP (2010).

Violence and the Register of the Secretariat for Strategic Affairs. The program is designed for youth ages 16 to 24, as well as female heads of household. However, since it is a program of self-selection, any person at least 16-years-old who lacks a formal job and is not studying during the day is eligible and can participate. In 2011, there were 14,525 participants.¹¹

--The **Urban Bonus**, designed to increase the demand for secondary education, was implemented in 2012. The program consists of a cash transfer that covers part of transportation costs and is contingent upon the individual's continued class attendance. The program seeks to include vulnerable groups. Therefore, the amount of the transfer is higher for women, adolescent mothers, and disabled students. In addition, it provides an incentive to attend technical schools. To encourage students to complete secondary education, the amount of the transfer increases as the student's progress; when they graduate, they get an additional bonus. In 2012 there were 2,691 beneficiaries.

--**Liquid petroleum gas**, or cooking gas, has been subsidized for many years. Previously, to compensate for the difference between the market price and the fixed price, the government would transfer this difference in cost to distributors. All consumers, regardless of their income, could buy gas at the regulated price.

This system changed in 2011 when the subsidy began to be paid directly to the households. At that time, the price of a 25-pound canister, which was US\$5.10, increased to a market price calculated at US\$14.70, and households began to receive a cash transfer of US\$9.10, provided that they used less than 199 kWh of electricity per month. The transfer was given when the consumers paid their electric bill. Households without electric service had to register to receive a "subsidy card" that permitted them to receive the monthly cash transfer in offices located throughout the country. In December 2011 there were 1.2 million beneficiaries, 80 percent of the total households in the country.

A different mechanism was implemented in the middle of 2013. Households had to register as beneficiaries using the head of household's sole identity document (DUI). When consumers bought gas, they had to show their DUI and the vendor would then key in that information on a mobile device connected to the beneficiary system, resulting in a payment of US\$9.10 toward the bill. The beneficiary only had to pay the difference. However, the number of beneficiaries remained at 1.2 million.¹²

Starting in January 2014, registered consumers received a subsidy card called the *Solidarity Card*, which they had to present when making a purchase, instead of their DUI. In March 2014, the amount of the subsidy varied with the real cost of the gas, so that the amount paid by the consumer would remain constant. The total amount that a household received in 2014 could be less than in previous years, because the subsidy is no longer a fixed amount of cash per month, but it is applied at the time of purchase, which might not be made every month.

Part of the money used to fund this subsidy comes from the gasoline tax, though the amount collected is insufficient. For example, in 2011 the government transferred US\$163.0 million to consumers, while the gasoline tax only collected US\$18.6 million.

¹¹ Secretaría Técnica de la Presidencia (2014).

¹² Information from the Ministry of Economy.

2.2.3 Direct Transfers In-Kind

--**School package:** Since 2010 all students from preschool to ninth grade in the public schools receive two complete uniforms, a pair of shoes, and school supplies. The cost of the uniforms is about 60 percent of the total cost of the package. In 2011 there were 1,386,767 beneficiaries.

--**School lunch program:** This program, dating back more than 20 years, provides a meal to all students from preschool to sixth grade in rural public schools. The program was expanded to the ninth grade in 2008. Urban public schools have been included since the beginning of 2010.

--**“Glass of Milk” Program:** The Ministry of Agriculture and Livestock (MAG) buys milk from local producers, and the Ministry of Education (MINED) distributes a glass of milk twice a week to students from preschool to ninth grade in public schools in sixty-three municipalities in four departments: Ahuachapán, Santa Ana, Sonsonate, and La Libertad. In 2011, an estimated 250,000 students benefited. The program was expanded to other municipalities to benefit about 500,000 students in 2012 and more than 800,000 in 2013.

--**Agricultural packages:** This subsidy includes the distribution, without cost, of seeds and fertilizer to producers of corn and beans who have less than 2.25 hectares of land. Each package includes twenty-five pounds of corn seed and 100 pounds of fertilizer, enough to cultivate 0.7 hectares. In addition, some farmers receive twenty-five pounds of beans for seed, enough to cultivate 0.2 hectares. Those who receive beans generally also receive packages of corn. The content of the individual packages has been the same for the past five years.

Theoretically, all corn producers who cultivate small parcels are eligible to receive packages for this crop. For beans, the packages are given to the small producers in geographical areas selected as being best suited for bean production. In 2011, it is estimated that all producers of corn or beans received packages. The lists of eligible beneficiaries have historically been compiled by extension agents, producers’ organizations, and municipal authorities, although the farmers can also sign up directly. The number of recipients varies; in the case of corn, the number of beneficiaries doubled between 2007 and 2013, but prior to 2008, the number of bean producers that received the subsidy was insignificant.

2.3 Subsidies

In El Salvador, subsidies take the form of government assistance with consumer goods widely used by the population. The main goods include electricity, liquid petroleum gas, public transportation, and water service when it is provided by the public water supply agency (the National Administration of Aqueducts and Sewerage, [ANDA]). In total, these subsidies represent 1.7 percent of GDP and account for 19.8 percent of social spending.

2.3.1 Electricity

The state regulates the price of electricity to the consumer and electric companies receive transfers from the state to cover any difference. The subsidy has two levels: one for households with monthly consumption of up to 99 kWh and the other for consumption between 99 and 200 kWh, funds for which come from earnings generated by the public electric company CEL (Lempa River Executive Hydroelectric Commission). Between April and October 2011, up to 300 kWh was subsidized. During 2011, 80 percent of

households received the subsidy: 60 percent at the level of lower consumption, which in total represented US\$88.1 million, and 20 percent at the higher consumption level, which was US\$27.1 million.

2.3.2 Water

Residential water service has an indirect and implicit subsidy through regulation of the price when the service is provided by the public entity ANDA. The rates per cubic meter increase as more water is consumed. However, in general, the amount collected from the official tariffs does not cover the cost of operation and maintenance, so there is an implicit subsidy for the consumer. ANDA only serves about half of the population. In 2011 the subsidy was US\$56.2 million.

In rural areas and small urban zones, water service and sanitation are provided by local providers who receive a discount on their electric bill from the state electric company to subsidize the pumping and re-pumping of water. This way their consumers also receive a subsidy, indirectly. In 2011 this subsidy was US\$6.9 million.

2.3.3 Public Transportation

Public transportation is provided by private operators who receive permits from the Vice Ministry of Transportation for each of the established routes. The price of transportation is regulated. To compensate the operators, the government pays a fixed monthly amount for each vehicle that they operate regardless of the number of passengers served. This system was established in 2007 to compensate operators for the high prices of gasoline so they could continue to charge users the regulated fares. In 2007 the transfers were \$400 per bus and \$200 per minibus. In 2009, the amounts increased to \$500 and \$250, respectively. The amount was increased again in 2011, to \$750 and \$375, respectively. Finally, in 2013, the amounts reverted to the original \$400 and \$200.

2.4 Social Services: In-Kind Transfers

Transfers in kind considered are related to the services provided by the state in two particular areas: education and health.

2.4.1 Education

El Salvador has the following educational levels: initial education (0-3 years); preschool (4-6 years); basic education (7-15 years) divided into primary (grades 1 to 6, 7-12 years) and third cycle (lower secondary, grades 7 to 9, 13-15 years); middle education (16-18 years) divided into general (grades 10 and 11) or technical-vocational (grades 10 to 12); and higher education, which includes university and non-university. Basic education is compulsory; basic and middle education are free in public schools.

In 2011 there were 1.7 million students enrolled, excluding higher education. Of these, 87 percent were in the public sector. In basic education, nearly 90 percent of the students were in public schools. In preschool that percentage was about 84 percent and in middle education it was 75 percent.

According to statistics from MINED, the primary education net enrollment rate is higher than 92 percent. The other levels have greater problems with access. Net enrollment rates are 0.6 percent in initial education,

54 percent in preschool, 62 percent in lower secondary (third cycle), and 35.4 percent in upper secondary (middle education).

2.4.2 Health

El Salvador's public health system has a non-contributory component, with services provided by the Ministry of Health (MINSAL), and a contributory component with services provided by three institutions: ISSS, which provides services to workers in the formal sector and employers; the Salvadoran Institute for Teachers' Well-being (ISBM), which provides services to teachers in the public sector; and the Military Health Command (COSAM), which provides services to military personnel.

MINSAL covers all those not affiliated with public contributory programs or covered by private insurance, which is estimated to be 4.5 million persons or 73 percent of the population. ISSS, Teachers' Well-being, and Military Health Command cover 23 percent, 1.6 percent and 1.2 percent, respectively, which includes affiliated workers, spouses, and children to a certain age.

The distribution of the budget among the public health institutions is not equal. In 2011, according to the National Health Accounts, the per capita budget available for the MINSAL was US\$118, US\$242 for ISSS, US\$484 for ISBM, and US\$251 for COSAM.

2.4.3 Women's City

Women's City is a program that provides various public services for women such as health, services related to domestic violence, legal services, labor training, and more, all within the same facility. This program began in 2011 with a facility in the municipality of Colón. During that first year it provided assistance to 35,614 women, with services valuing a total of US\$2.6 million. In 2012 another facility was opened in Usulután and in 2013 three more were opened in San Miguel, Santa Ana, and San Martín. In 2013, the program benefitted 82,874 women, services valuing US\$22 million. This program does not include any type of transfer in cash or goods.

2.4.4 Contributory Pensions

Before 1998, there was a joint contributory pension system with withholding called the Public Pension System (SPP), which covered disability and old-age pensions. Starting in June of that year, there was a reform establishing a system of individual capitalization called the Pension Savings System (SAP) managed by private Pension Fund Administrators (AFP). At that time, all men between the ages of 36 and 55 and all women between 36 and 50, could opt to remain in the old system or change to the new one. These workers were given a guarantee that their pensions would be similar to those that they could have obtained in the public sector. All workers under age 36 were transferred to the SAP, while workers above the given age bracket had to remain in the SPP. With SAP, all contributions go directly to the individual's account.

Currently, pensions are for workers who remained in the SPP or opted for SAP. Public system pensions are fully funded by the government. Other workers' pensions come in part from their contributions to SAP and in part from government funds. Upon retirement, the government transfers a matching amount to an individual's AFP. In both systems, the pensions cannot be less than US\$207.60. The government may transfer an additional amount to the AFP to guarantee the minimum pension (known as a Complementary Transfer Certificate or CTC).

During 2011, about 101,000 people received pensions from SPP and 42,000 from SAP. That year the government issued bonds equivalent to US\$405.6 million to pay benefits, this includes pensions paid directly to beneficiaries of SPP and the transfer certificate (CT) and CTC transferred to SAP. Public spending for pensions was 1.75 percent of GDP.

3. Data

The analysis in this study uses the results of the 2011 EHPM, carried out by the Ministry of the Economy (MINEC). The EHPM was conducted from January to December, with a sample of 21,413 households. These households were representative at various levels: country-wide, urban, rural, within the Metropolitan Area of San Salvador (AMSS), the departmental level, as well as within the fifty largest municipalities. The survey compiles information on each member of the household, 85,291 individuals. For the 77,929 individuals 5 years of age or older, detailed information was collected on their workforce participation, consumption, and pensions. Additionally, data was collected regarding usage of education and health services and information from each household on income from a variety of sources, such as remittances. In addition, the survey includes a detailed module on household consumption. Before 2011, the survey did not take into direct account the value of cash transfers from the government such as the LPG subsidy, the payments of RSCs, and non-contributory pensions. Additional information comes from official budget reports of various agencies.

4. Methodology

The impact analysis is based on CEQ methodology presented in Lustig (2018). This method basically consists of generating concepts of income that include taxes and transfers to create a menu of indicators that measure the progressivity of the system of taxes and transfers and its impact on inequality and poverty in a quantifiable manner (without considering changes in the behavior of the stakeholders or the effects of general balance). Next we present an explanation of how each component was constructed for El Salvador.

4.1 Market Income

All necessary components to estimate market income can be calculated using ***direct identification methods*** using information included in the EHPM. The survey has sufficient detail to permit estimation of the individual components of income: pre-tax gross labor income (formal or informal), self-consumption, capital income, and imputed rent for owner-occupied housing. Private transfers (including remittances and others), gifts, and contributory pensions can be identified directly; the survey reports the dollar amount for each individual. In the sensitivity analysis, pensions from the contributory system are excluded from market income and are treated as government transfers.

4.2 Disposable Income

Disposable income is equal to market income **less** direct taxes on personal income from all taxable sources (including market income) and all contributions to social security, except for the portion earmarked for old-age pensions. Using information included in the EHPM, taxes and direct contributions can be estimated using ***imputation methods***.

Direct taxes paid are not reported directly to the EHPM. Given that income tax is paid mainly by formal workers,¹³ the amount of the tax was estimated taking into account the gross monthly salary reported by formal workers as a baseline and then applying the rules and rates determined by the income tax law. However, income taxes paid by non-salaried workers could not be identified using the EHPM, so they are not included in the analysis.

Contributions to health systems are also not reported directly in the EHPM. However, the survey does include information on the health system to which the worker belongs. Contributions were thus estimated by taking the gross monthly salary reported and applying the official rates.

Currently, since most contributions to pension funds in El Salvador go to individual workers' accounts¹⁴ they are considered savings, and therefore are not deducted in the sensitivity analysis.

Plus all direct government transfers in cash or kind. In the sensitivity analysis, contributory pensions are included. The EHPM has questions on the types of benefits received from social programs, so it is possible to estimate direct transfers using *imputation methods*.

Direct cash transfers:

--If the household reported receiving conditioned payments (RSCs), US\$15 or US\$20 per month was assigned to the household based on the rules of the program.

--If the household reported receiving non-contributory pensions, US\$50 per month was assigned to eligible adults.

--If the household reported receiving PATI benefits, US\$100 per month was assigned for a period of six months.

--If the household reported receiving LPG subsidies, US\$9.10 per month was assigned to the household.

Direct transfers of goods:

--The EHPM reports if each individual attends school, their level of education, and the type of institution attended (public or private). Each public school student from preschool to 9th grade receives a school package and a meal. The annual cost per capita of both programs for each student was assigned to the household: for uniforms and supplies they were assigned US\$50.77 for preschool and US\$53.26 for the rest, and for the lunches US\$11.40 was assigned for all.

--The EHPM asks questions about agricultural activities. If a household meets the eligibility requirements, the average cost of the corresponding package is added: US\$64.50 for corn and US\$48.50 for beans.¹⁵

The EHPM does not have enough information to determine whether the students in the household benefit from the Glass of Milk program, so this was not included in the analysis; its budget is very small.

¹³ The survey has a question that makes it possible to determine whether employees are formal or informal.

¹⁴ In 2011, the SAP covered 602,382 persons, while the SPP had only 14,788. Information gathered in the EHPM does not identify to which of the two systems the worker belongs.

¹⁵ Information from the Ministry of Agriculture and Livestock.

4.3 Consumable Income

Consumable income is disposable income plus the indirect subsidies received, less indirect taxes and contributions paid.

Indirect subsidies: The EHPM contains questions on the amount spent for each of the subsidized services, so indirect subsidies can be estimated using *imputation methods*.

--The **electricity subsidy** was imputed estimating the kWh used based on the expenditure reported, using the rates current at the time of the survey. The subsidy received is estimated as the difference between the real amount paid and the total of the non-subsidized amount.¹⁶

--The **water subsidy** was imputed using the household expenditure reported by households that receive service from ANDA, the public provider. Cubic meters used was estimated based on reported spending using the rate schedule and then the real cost per cubic meter was applied to estimate the non-subsidized cost. The estimated subsidy received is the difference between the actual amount paid and the non-subsidized amount.¹⁷

--The **public transportation subsidy** was imputed using the reported household spending for public transportation; the number of trips was estimated based on the expenditure reported. The subsidy was calculated multiplying the estimated number of trips by US\$0.09 outside the AMSS and by US\$0.092 inside it.¹⁸

Greater detail can be found in the appendix.

Indirect taxes and contributions are also estimated using imputation methods:

--VAT: The EHPM has detailed information on consumption, including place of purchase. Using this, total consumption subject to VAT was estimated (omitting exempt articles and food purchases in informal

¹⁶ The rules for the subsidy for 2011 are as follows: Each quarter a rate sheet is established that remains in force for three months. Households that use less than 99 kwh paid fixed tariffs for electricity, and the subsidy they received is the difference between the rate sheet in force (full rate) and the fixed rate. Households that used more than 99 kwh paid the full rate during the first quarter of the year, so they did not receive a subsidy. In the second and third quarters, households that used between 99 kwh and 300 kwh paid the rate in effect during the first quarter, receiving a subsidy for the difference between the full rate and the rate that they had during the previous quarter; in the fourth quarter, the maximum amount subsidized was reduced to 200 kwh. All these aspects were taken into account for the imputation, using the amount of the bill paid and the date when the household survey was conducted.

¹⁷ Similarly, the amount reported as paid in the survey was used to estimate the quantity of cubic meters consumed, based on the rate sheet in effect at the time of the survey. The subsidy was the difference between the amount paid and the cost per cubic meter of water reported by ANDA.

¹⁸ In 2011, the public transportation subsidy was US\$750 for each bus and US\$375 for each minibus. On average, each bus has 60 seats and each minibus has 25. On average, a seat on a bus has a daily subsidy of US\$0.5, and a seat on a minibus has a daily subsidy of US\$0.41. A study done by the Vice Ministry of Transportation (2010) has found that on average each bus makes 4.6 trips per day and each minibus 5.4 trips. As a result, the subsidy per bus seat is estimated at US\$0.0905 per trip, and the subsidy per minibus seat is US\$0.0925 per trip. The same study found that in the metropolitan area 60% of the public transportation units are minibuses. By contrast, outside the metropolitan area 80% are buses. Based on the foregoing, the weighted amount of the subsidy in the metropolitan area was estimated at US\$0.09178 and in other areas it was US\$0.0909.

establishments¹⁹). Then the amount of VAT was imputed multiplying the “effective rate” by disposable income, according to the CEQ manual.²⁰

- Special fees - fuel: Fees applied to fuel consumption were imputed estimating the number of gallons consumed based on the reported spending, using the average fuel price in the month of the survey. To calculate the taxes and contributions, the number of gallons was multiplied by US\$0.46.²¹

4.4 Final Income

Final income is consumable income plus the monetary value of social services provided by the state. With information included in the EHPM, these in-kind transfers can be estimated using *imputation methods*.

Public education: The EHPM reports whether an individual attends school, the level of education, and the type of institution (public or private). The amount of the benefit is estimated as an average annual cost per student if they attend public schools: US\$314.50 at the preschool level, US\$416.70 during basic education (first to ninth grade), US\$567.70 in middle education, and US\$788.60 in tertiary education.

Public health: The EHPM has information on the type of contributory health system to which the household has access (ISSS, ISBM, or COSAM). It is assumed that everybody without access to contributory health systems or private health insurance uses public health services. For each individual in the household, the average cost per patient per type of provider is imputed: US\$117 for public health, US\$242 for ISSS, US\$484 for Teachers’ Well-being, and US\$251 for COSAM.^{22,23}

Women’s City: The EHPM does not have sufficient information to determine if a woman in the household is a beneficiary in this program, so it is not included in the analysis. In 2011, this program’s budget was very small.

5. Impact of Fiscal Policy on Inequality and Poverty

As shown in table 3, direct taxes and transfers have an equalizing effect of 0.0156 Gini points. The combined effect of indirect taxes net of indirect subsidies is equalizing. Adding the impact of transfers in kind (public spending on education and health), the Gini coefficient is reduced by 0.0455 points. With respect to poverty reduction, fiscal policy has achieved very little, in both rural and urban areas. Table 3 shows that direct transfers reduce the incidence of poverty measured with disposable income (and compared with the incidence measured with market income plus pensions) using any of the national and international poverty lines. However, this effect is almost null when considering indirect taxes net of subsidies.²⁴ In other words, the incidence of poverty with consumable income is practically equal to the one that prevails with market income, at both national and international extreme poverty lines. In the case of

¹⁹ Informal establishments include: dining hall, chalet, itinerant cart, and informal store.

²⁰ Lustig and Higgins (2013).

²¹ Including the following contributions: FOVIAL (US\$0.20), FEFE (US\$0.16), COTRANS (US\$0.10). The FEFE does not apply to diesel consumption, but the EHPM does not specify the type of fuel used. In practice, most vehicles for domestic use are gasoline-powered.

²² National Health Accounts (2011).

²³ The imputation of average costs does not include in the analysis the differences in access to health services that may apply to individuals with different income levels, owing to factors such as aspects related to the institutional organization or personal decision. That analysis was not possible because the information reported by the survey was insufficient.

²⁴ All differences with respect to incidence measured with market income are statistically significant.

moderate poverty, measured with either the international or national poverty lines, the incidence of poverty for consumable income is higher than for market income. In other words, fiscal policy results in a greater proportion of individuals below the moderate poverty lines.²⁵ The poverty gap remains almost unchanged. However, the squared poverty gap declines, so at least the poorest individuals are less poor even after the effect of net indirect taxes. However, this last indicator can lead to unwarranted complacency because starting with the second poorest decile, the population is a net payer, meaning it pays more in direct and indirect taxes than it receives in direct transfers. Furthermore, using the fiscal impoverishment indicators developed by Higgins and Lustig²⁶, even with the ultra-poverty line of US\$1.25/day in 2005 PPP, close to 30 percent of the poor population was made poorer by taxes net of cash transfers and subsidies.

Table 3: Impact of Fiscal Policy on Inequality and Poverty (Contributory Pensions as Deferred Income) /1

	Level	Market plus Pensions	Disposable	Consumable	Final	Change (from market to disposable)	Change (from market to consumable)	Change (from market to final)
Gini	National	0.4396	0.424	0.4197	0.3941	-0.0156	-0.0199	-0.0455
	Rural	0.3991	0.382	0.3786	0.353	-0.0171	-0.0205	-0.0461
	Urban	0.4171	0.4042	0.3984	0.3773	-0.0129	-0.0187	-0.0398
Poverty Headcount Ratio		"In percent"				"Changes in percent"		
Poverty US\$2.5 PPP	National	19.2	17.3	19.1	...	-10.1	-0.8	...
	Rural	34.8	32.0	34.9	...	-8.2	0.3	...
	Urban	9.8	8.4	9.5	...	-14.3	-3.0	...
Poverty US\$4 PPP	National	39.3	38.3	40.8	...	-2.7	3.8	...
	Rural	60.1	58.7	62.0	...	-2.2	3.2	...
	Urban	26.8	25.9	28.0	...	-3.3	4.6	...
Extreme poverty National line2/	National	11.6	9.6	10.8	...	-17.4	-7.0	...
	Rural	16.9	13.7	15.8	...	-18.7	-6.3	...
	Urban	8.5	7.1	7.8	...	-16.0	-7.9	...
Moderate poverty National line 2/	National	40.5	39.3	42.6	...	-2.9	5.2	...
	Rural	49.0	46.6	50.9	...	-4.9	3.9	...
	Urban	35.3	34.9	37.5	...	-1.2	6.3	...
Poverty gap								
Poverty US\$2.5 PPP	National	6.2	5.0	5.7	...	-18.5	-7.3	...
	Rural	12.3	10.1	11.6	...	-17.9	-6.1	...
	Urban	2.4	1.9	2.2	...	-20.5	-11.1	...
Poverty US\$4 PPP	National	14.9	13.7	15.0	...	-8.5	0.2	...
	Rural	25.8	23.6	25.8	...	-8.5	0.2	...
	Urban	8.4	7.6	8.4	...	-8.7	0.1	...
Extreme poverty National line2/	National	3.2	2.3	2.7	...	-28.7	-16.2	...
	Rural	5.1	3.4	4.2	...	-32.8	-18.2	...
	Urban	2.1	1.6	1.8	...	-22.0	-12.7	...
Moderate poverty National line 2/	National	14.6	13.3	14.7	...	-8.9	0.3	...
	Rural	19.3	17.0	19.0	...	-11.8	-1.6	...
	Urban	11.8	11.1	12.1	...	-6.0	2.1	...
Poverty gap squared								
Poverty US\$2.5 PPP	National	2.9	2.1	2.5	...	-26.3	-13.7	...
	Rural	6.0	4.5	5.3	...	-26.0	-12.6	...
	Urban	0.9	0.7	0.8	...	-26.9	-17.2	...
Poverty US\$4 PPP	National	7.9	6.6	7.4	...	-15.8	-6.0	...
	Rural	14.3	12.3	13.8	...	-13.8	-3.4	...
	Urban	3.7	3.2	3.5	...	-13.6	-4.4	...
Extreme poverty National line2/	National	1.3	0.8	1.0	...	-38.2	-25.2	...
	Rural	2.2	1.3	1.6	...	-43.2	-28.2	...
	Urban	0.8	0.5	0.6	...	-29.9	-19.5	...
Moderate poverty National line 2/	National	7.2	6.2	6.9	...	-14.5	-4.1	...
	Rural	10.1	8.3	9.5	...	-18.3	-6.7	...
	Urban	5.5	4.9	5.4	...	-10.4	-1.6	...

²⁵ With the poverty gap or the poverty gap squared index this does not occur: both indicators decrease slightly. This means that although fiscal policy can increase the proportion of poor when taking into account the effect of net indirect taxes, at least the poorest in these groups experience some improvement (something already registered with the incidence measured with the extreme poverty lines).

²⁶ Higgins and Lustig (2016).

Source: CEQ Master Workbook for El Salvador July 10th, 2015 based on data from the Multi-Purpose Household Survey (2011) and National Accounts.

Notes: 1/ All changes with respect to market income are statistically significant. For inequality, changes are in Gini points while for poverty they are changes in percent. Cells in blank mean that the indicator was not calculated for that income concept because it is not applicable.

2/ The moderate poverty line is twice the amount of the extreme poverty line; the latter is equivalent to the market value of the basic food basket. In local currency, the extreme poverty line is equal to \$49 and \$33.9 per month for urban and rural areas, respectively and the moderate poverty line is equal to \$98.2 and \$67.9 for urban and rural areas, respectively. The local currency value of the PPP lines is \$51.1 per month for the US\$2.50 a day and \$83.1 per month for the US\$4 a day.

... means the value is not applicable

Table 4: Impact of Fiscal Policy on Inequality and Poverty (Contributory Pensions as Government Transfers) /1

	Level	Market	Disposable	Consumable	Final	Change (from market to disposable)	Change (from market to consumable)	Change (from market to final)
Gini	National	0.4369	0.424	0.4197	0.4002	-0.0129	-0.0172	-0.0367
	Rural	0.3992	0.382	0.3786	0.3511	-0.0172	-0.0206	-0.0481
	Urban	0.416	0.4042	0.3984	0.3845	-0.0118	-0.0176	-0.0315
Poverty Headcount Ratio		"In percent"				"Changes in percent"		
Poverty US\$2.5 PPP	Nacional	20.2	17.3	19.1	...	-14.3	-5.4	...
	Rural	35.3	32.0	34.9	...	-9.4	-1.0	...
	Urban	11.0	8.4	9.5	...	-23.9	-14.0	...
Poverty US\$4 PPP	Nacional	40.4	38.3	40.8	...	-5.2	1.1	...
	Rural	60.5	58.7	62.0	...	-2.9	2.5	...
	Urban	28.2	25.9	28.0	...	-8.1	-0.6	...
Extreme poverty National line	Nacional	12.5	9.6	10.8	...	-23.2	-13.6	...
	Rural	17.4	13.7	15.8	...	-20.9	-8.9	...
	Urban	9.6	7.1	7.8	...	-26.0	-18.9	...
Relative poverty National line 2/	Nacional	41.6	39.3	42.6	...	-5.5	2.4	...
	Rural	49.4	46.6	50.9	...	-5.6	3.1	...
	Urban	36.8	34.9	37.5	...	-5.3	1.8	...

Source: CEQ Master Workbook for El Salvador July 10th, 2015 based on data from the Multi-Purpose Household Survey (2011) and National Accounts.

Note: 1/ All changes with respect to market income are statistically significant. For inequality, changes are in Gini points while for poverty they are changes in percent. Cells in blank mean that the indicator was not calculated for that income concept because it is not applicable.

2/ The moderate poverty line is twice the amount of the extreme poverty line; the latter is equivalent to the market value of the basic food basket. In local currency, the extreme poverty line is equal to \$49 and \$33.9 per month for urban and rural areas, respectively and the moderate poverty line is equal to \$98.2 and \$67.9 for urban and rural areas, respectively. The local currency value of the ppp lines is \$51.1 per month for the US\$2.50 a day and \$83.1 per month for the US\$4 a day.

Note: ... means the value is not applicable

5.1 Coverage and Leakages

Why does fiscal policy have practically no effect on the incidence of poverty? To answer this question, it is important to analyze the targeting effectiveness of direct transfers. Table 5 presents several relevant indicators.²⁷ The vertical efficiency indicator measures the percentage of spending on direct transfers that goes to the poor population for different poverty lines. As seen in table 5, the percentage channeled toward

²⁷ Beckerman (1979).

the population in extreme poverty under international and national lines is between 25 and 16 percent, respectively. For the total poor population (extreme and moderate), the resources allocated are between 47 percent and 49 percent, respectively.

The spillover amount measures the percentage destined for the poor population in excess of what would be needed to bring it to the income of the corresponding poverty line. This number is quite small, which means that the average size of the benefits received is not excessive.

Table 5: Direct Transfers, Efficiency and Efficacy in Poverty Reduction, El Salvador 2011

	Headcount poverty Effectiveness Indicators	Vertical Expenditure Efficiency (VEE)	Spillover (s)	Poverty Reduction Efficiency (PRE)	Poverty Gap Efficiency (PGE)
Benchmark: Contributory pensions as part of Market Income					
US\$ 2.5 PP	1.784	0.252	0.084	0.231	0.204
US\$ 4 PP	1.248	0.473	0.030	0.459	0.105
Extreme National Poverty Line	1.733	0.165	0.146	0.141	0.303
Moderate national Poverty line	1.577	0.491	0.038	0.018	0.004
Sensitivity Analysis: Pensions are treated as government transfer					
US\$ 2.5 PP	1.082	0.218	0.423	0.126	0.256
US\$ 4 PP	0.877	0.361	0.277	0.261	0.141
Extreme National Poverty Line	1.063	0.175	0.510	0.086	0.374
Moderate national Poverty line	1.051	0.399	0.257	0.058	0.030

Source: CEQ Master Workbook for El Salvador May 12th, 2015, Prepared by the authors based on data from the Multi-Purpose Household Survey (2011) and National Accounts.

The efficiency indicator for the poverty gap shows the percentage of the total gap that is covered with direct transfers. As can be seen, the extreme poverty gap is closed by only roughly 20 percent. In part this is because resources are not concentrated on the poorest, as noted in the indicator on vertical efficiency. However, as table 6 shows, this is not because money is being spent on the middle or upper class. An important share of benefits from direct transfers goes to households with income of between US\$4 and US\$10 PPP, or what has come to be known as the “vulnerable groups”.²⁸ This is important because it means that improving the targeting of cash transfers to the poor could be at the expense of increasing the vulnerability of groups that are only slightly above the poverty line.

In addition, as can be seen in table 6, of the total number of people receiving direct transfers only 26.6 percent are individuals with income below the extreme poverty line of US\$2.50 PPP. For example, of the beneficiaries of RSCs and PATI, 50.9 percent have income below the international extreme poverty line of US\$2.50. The same holds true with beneficiaries of the rest of the programs, which cover 29.4 percent. Only 12.5 percent of the beneficiaries of indirect subsidies are among the extreme poor. Although they partially offset the effect of indirect taxes, their impact is limited for reducing consumable poverty (table 6).

²⁸ López-Calva and Ortiz-Juarez (2011); Ferreira and others (2012).

Table 6: Distribution of Benefits and Beneficiaries by Income Group

El Salvador (2011)	Share of benefits by income group							Share of beneficiaries by income group						
	y<2.5	2.5<y<4	y<4	4 <y<10	10<y<50	y > 50	Total	y<2.5	2.5<y<4	y<4	4<y<10	10<y<50	y>50	Total
Direct transfers	24.7%	22.0%	46.7%	40.0%	13.2%	0.1%	100%	26.6%	24.0%	50.6%	40.0%	9.4%	0.0%	100%
Rural Solidarity Partnership Communities and PATI	48.3%	23.2%	71.5%	25.2%	3.3%	0.0%	100%	50.9%	23.2%	74.1%	23.2%	2.7%	0.0%	100%
Non-contributory pensions (older adults)	42.4%	19.6%	62.0%	20.9%	17.1%	0.0%	100%	44.0%	21.2%	65.2%	19.6%	15.2%	0.0%	100%
Gas subsidy (cash)	12.1%	17.5%	29.5%	47.4%	22.8%	0.2%	100%	15.7%	20.6%	36.3%	46.8%	16.8%	0.1%	100%
Remaining direct transfers /1	30.3%	25.7%	56.1%	37.3%	6.7%	0.0%	100%	29.4%	25.4%	54.8%	38.3%	6.8%	0.0%	100%
Indirect subsidies (transportation, electricity and water)	8.2%	13.4%	21.7%	44.4%	32.6%	1.3%	100%	12.5%	18.3%	30.8%	47.5%	21.4%	0.3%	100%
Transportation	4.4%	10.1%	14.5%	46.4%	37.8%	1.3%	100%	9.2%	17.9%	27.0%	50.2%	22.4%	0.4%	100%
Electricity	13.7%	18.7%	32.5%	45.6%	21.6%	0.4%	100%	17.8%	20.9%	38.8%	44.8%	16.3%	0.1%	100%
Water	4.4%	10.1%	14.5%	46.4%	37.8%	1.3%	100%	6.6%	13.3%	19.9%	49.0%	30.5%	0.6%	100%
In-kind transfers	19.2%	20.4%	39.6%	42.7%	17.4%	0.2%	100%	19.1%	21.0%	40.1%	43.8%	16.0%	0.2%	100%
Education (total)	23.9%	23.7%	47.6%	41.8%	10.5%	0.0%	100%	24.4%	24.3%	48.7%	42.2%	9.0%	0.0%	100%
Preschool Education	26.7%	25.0%	51.8%	40.3%	8.0%	0.0%	100%	30.4%	25.3%	55.6%	37.9%	6.5%	0.0%	100%
Basic Education	28.1%	26.1%	54.2%	38.8%	7.0%	0.0%	100%	26.6%	25.8%	52.4%	40.4%	7.2%	0.0%	100%
Middle Education	14.5%	20.7%	35.2%	50.9%	13.9%	0.0%	100%	16.4%	22.3%	38.8%	49.6%	11.6%	0.0%	100%
Tertiary Education	1.5%	6.1%	7.7%	53.6%	38.7%	0.1%	100%	2.1%	7.7%	9.8%	57.1%	33.1%	0.0%	100%
Health (total)	15.8%	18.0%	33.8%	43.4%	22.4%	0.4%	100%	15.7%	18.9%	34.6%	44.7%	20.3%	0.3%	100%
Contributory pensions	1.0%	4.1%	5.1%	25.2%	62.1%	7.7%	100%	4.7%	11.0%	15.7%	42.1%	41.0%	1.2%	100%
Income	4.7%	9.4%	14.1%	38.8%	43.5%	3.6%	100%	4.7%	9.4%	14.1%	38.8%	43.5%	3.6%	100%
Population	19.2%	20.1%	39.3%	42.5%	17.8%	0.3%	100%	19.2%	20.1%	39.3%	42.5%	17.8%	0.3%	100%

Source: CEQ Master Workbook for El Salvador May, 12th, 2015 based on data from the Multi-Purpose Household Survey (2011).

Note: 1/ Includes the Agricultural Package, School Package, and School Lunch Program.

As shown in table 7, coverage for some of the programs is also rather low among the extreme and moderate poor.

Table 7: Percent of Beneficiaries in Each Income Group/1

El Salvador (2011)	Percent of beneficiaries in each income group					
	y<2.5	2.5<y<4	y<4	4 <y<10	10<y<50	y > 50
Rural Solidarity Partnership Communities and PATI	18.2%	7.9%	12.9%	3.7%	1.0%	0.0%
Non-contributory pensions (older adults)	1.0%	0.5%	0.7%	0.2%	0.4%	0.0%
Gas subsidy (cash)	42.3%	53.1%	47.9%	57.0%	48.7%	14.2%
Remaining direct transfers /2	85.2%	76.8%	80.9%	57.9%	25.8%	2.8%
Transportation	27.7%	51.6%	39.9%	68.5%	72.9%	64.7%
Electricity	73.7%	82.6%	78.2%	83.6%	72.7%	32.7%
Water	13.1%	25.3%	19.4%	44.1%	65.3%	70.6%
Preschool Education	74.2%	79.2%	76.4%	72.2%	52.5%	0.0%
Basic Education	95.6%	93.7%	94.6%	85.6%	54.4%	44.6%
Middle Education	27.6%	40.9%	34.0%	46.7%	38.1%	0.0%
Tertiary Education	1.3%	4.2%	2.8%	14.4%	26.0%	2.7%
Contributory pensions	1.4%	3.1%	2.2%	5.5%	12.8%	20.2%
Population	19.2%	20.1%	39.3%	42.5%	17.8%	0.3%

Source: CEQ Master Workbook for El Salvador May, 12th, 2015 based on data from the Multi-Purpose Household Survey (2011).

Notes: 1/ Except for education, coverage for each income group here is defined as the total number of individuals from that group who live in households where there is at least one beneficiary divided by the total population in that same group. In the case of education, refers to coverage here the total number of individuals in this income group, living in households where at least one is enrolled in school independently if have the appropriate age, divided by the population in that income group, living in households where at least one has the corresponding school age.

2/ Includes the Agricultural Package, School Package, and School Lunch Program.

6. Conclusions and Recommendations

Fiscal policy affects inequality and poverty, but its impact is limited. When compared with other countries inside and outside the region, El Salvador has a medium to small-sized government. However, in comparing the results with those of economies with a similar level of per capita income in purchasing power, the reduction in poverty and inequality is relatively small. There is room for greater influence and to increase the incidence with current resources. In this regard, the results on poverty and inequality could be stronger. This could be done by reorienting funds from other public spending items or from transfers and subsidies that go to higher income households and channeling them toward social spending. At the same time, the effectiveness and efficiency of the programs and direct transfers should be increased to ensure better focus.

El Salvador redistributes slightly less than the general trend in countries with the same purchasing power of per capita income. Together transfers and direct taxes reduce inequality by 1 percentage point. When the effect of indirect subsidies and taxes on consumption is added, the result is slightly more equalizing. Finally, factoring in the impact of public spending on education and health, the Gini coefficient is reduced by 3.6 percent. This means the country redistributes slightly less than the trend line predicts for a country with similar gross per capita income, measured in PPP.

In general, on the income side, direct taxes on individuals and contributions to social security for health are progressive. Indirect taxes as a whole are neutral from the distributive perspective. On the spending side, direct transfers, taking into consideration the social programs evaluated, such as RSCs, Universal Basic Pension, PATI, the School Package, the School Lunch Program, and the Agricultural Packet, are progressive in absolute terms. This means the amount per individual decreases with income. However, spending on these programs is small, 1.3 percent of primary spending and 0.3 percent of GDP.

Subsidies are progressive in relative terms, due in mainly to the electricity and gas subsidy. However, the water subsidy, up to the 5th decile or for the half of the population that has lower income, and the public transportation subsidy are regressive. However, the latter must be taken with caution due to the concentration of beneficiaries in urban areas where the cost of living is higher.

With respect to health, the amount assigned is progressive only in relative terms. Non-contributory public health spending is progressive in absolute terms. In regards to education, basic and preschool education are progressive in absolute terms, while middle education is neutral in absolute terms. In other words, all receive about the same amount per pupil. Tertiary education is neutral in relative terms and its percentage of incidence is low.

Fiscal policy has little impact on poverty reduction. Although the direct transfers are properly focused, their coverage among the poorest is low, and they represent only a small percentage of primary spending. In

this regard, including the effect of indirect taxes net of subsidies, extreme poverty is practically equal while total poverty is increasing, when compared with what is obtained from market income using both international and national poverty lines.

Despite the limited effect observed in the reduction of extreme poverty measured with after-tax income, the country comes out fairly well when comparing the results of other economies in the region that used the same methodology. For example, poverty increased in other countries, including one country with considerably more income per capita, Brazil, while remaining practically the same in El Salvador.

A significant part of the benefits of direct transfers reaches households with income between US\$4 and US\$10 per day in PPP, the so-called “vulnerable groups.” However, the main cause of the low impact of direct transfers on poverty reduction is the relatively low coverage. This is due to the limited percentage of beneficiaries with income below the international poverty line of US\$2.5 per day in PPP; only 26.6 percent receive some direct transfer.

6.1 Recommendations

Expand the beneficiaries and coverage of targeted social programs that have proved effective. As has been noted, the weak impact on poverty reduction is due to the nature of direct transfers which, although concentrated, do not have wide coverage among the poorest.

Improve subsidy targeting to reorient resources to the poorest. Although subsidies are progressive in relative terms, they have limited impact on the reduction of poverty and inequality owing to the fact that a major portion of the subsidies goes to people who are not poor. Therefore, it is possible to improve the outcome by reorienting resources to programs that reach lower-income households. For example, since the electricity subsidies for households using more than 99 kWh represent a low percentage of the income they receive, meaning their relative incidence is low, consideration could be given to eliminating this subsidy to those consumers and diverting it to social spending, such as expanding education coverage.

Improve the coverage and quality of health services provided by the Ministry of Health, as well as education coverage for preschool and middle education levels, especially for the poorest. Due to the large public social spending budget for health and education services, these services have a strong effect on reducing inequality. Therefore, improving their coverage and quality, especially amongst the poorest, would improve the impact of fiscal policy on this population. For example, increasing the supply of preschool and middle education, which are the levels with the lowest net enrollment rates, and increasing resources for non-contributory health services, would have a greater impact on the reduction of inequality.

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Appendix: Estimating the Incidence of Consumption Subsidies

Electricity Subsidy

The subsidy for electricity consumption in El Salvador is indirect. A significant portion of households pay less than market value for electricity, so this subsidy was incorporated in this exercise to calculate consumable income.

To estimate the value of the electricity subsidy for households, the database of the Household Multi-Purpose Survey (EHPM, from its acronym in Spanish) was used. The EHPM reports monthly electricity expenditure in US dollars, which includes any discount for the subsidy in eligible households plus the value added tax (VAT). The monthly expenditure was adjusted using institutional rules for the subsidy, as given by the laws and regulations applied to the sector.

The elements that affect the amount of the subsidy are: electricity consumption of households, expressed in kilowatt hours (kWh), the level of rates in force as established in the tariff schedule dictated by the General Superintendency of Electricity and Telecommunications (SIGET, from its acronym in Spanish), and the kWh threshold set by policy to qualify for the subsidy.

Because the survey does not contain the amount of kWh consumed and this is an important parameter, the first step was to estimate the kWh consumed from the bill paid with subsidy and VAT. The tariff schedule corresponded to the month in which the household was surveyed. In the exercise conducted for 2011, the tariff schedule changed every quarter, or four times during the year, and corresponded to the month in which the interview of the survey was taken.

The electricity tariff schedule was divided into four ranges: from 0-50 kWh, from 51 to 99 kWh, from 100 up to 200 kWh, and over 200 kWh. With the data from the tariff schedule, 16 regressions (four calendar quarters multiplied by four tariff ranges) were performed, using as explanatory variable the amount payable including subsidy and VAT, and as an outcome variable the number of kWh consumed, and the slope or subsidized price per kWh was calculated. The regressions based on the tariff schedule are accurate ($R^2 = 99$ or with a total sum of squared errors of zero). The amount of kWh charged was obtained by substituting these equations into the monthly cost of electricity reported by the household survey.

The second step was to calculate the subsidy. In El Salvador the subsidy is granted in two tranches. The first, between 0 and 99 kWh, is where households pay a fixed price stipulated by regulations in the Law of the National Investment Fund in Electricity and Telephony, (FINET) adopted in May 1999, Article 16, which determines a rate of US\$0.067/kWh. In these cases, the subsidy is 89.5%, the difference between the price of US\$0.067 and the average market price or rate schedule set out in the corresponding month excluding VAT. The State delivered the subsidy via a transfer directly to the electric distribution company, and was

reflected in consumers' electricity bills. For the second tranche, above 99 kWh, the maximum threshold for subsidy is set by policy. For 2011, during the first quarter, consumers above 99 kWh paid the rate of January 2011. However, in April 2011, the rate was scheduled to increase an average of 16.4%, so the maximum threshold to receive the subsidy was increased to 300 kWh. With the price change in April, a legislative decree was approved to keep prices at their January 2011 level for part of their consumption. For the last quarter of 2011, the threshold was decreased to 200 kWh.

If the household was surveyed between April and July 2011, their consumption between 99 and 300 kWh received the subsidy (paying at the January 2011 price), while consumption over 300 kWh paid 100% of the new, higher rate. If the household was surveyed after October 2011, the consumption between 99 and 200 kWh reflected the subsidized rate, while excess was calculated as paying the higher, non-subsidized rate. Similarly, the amount of the subsidy value was made by means of a direct transfer from government to the electricity distribution companies.

In general, when analyzing the amount of kWh, it was observed that if a household paid US\$10 in the month for electricity, it was located below the 99 kWh threshold and was paying the fixed price from May 1999. After April 2011, if the household paid between US\$10 and US\$46, it consumes less than 200 kWh, and the price paid per kWh is that of January 2011. The subsidies covered 91% of residential users, of which 69.7% are up to 99 kWh consumption, 21.3% between 99 and 200 kWh, and 4.9% between 200 and 300 kWh.

Public Transportation Subsidy

The subsidy operates as an indirect transfer, since the users of public transport pay a fixed price. The service is subject to state regulation which establishes the rates to be charged by companies who offer the service and are licensed for specific bus routes.

The government has subsidized the system of public transportation since 1974. Due to the increase in oil prices in 2007, the "Transitional Law for the Stabilization of Tariffs for Public Transportation" was passed and has been extended to present day. The subsidy is granted to the supply side and operates by delivering a fixed amount of money per unit of transport.

According to the parameters of the law, the State transferred the following to entrepreneurs: US\$375 per month per full-sized bus and US\$750 per month for each smaller bus during 2011. In addition, according to a study by the Israeli Institute for Transport Planning and Research in 2000, full-size buses cover an average of 4.6 trips on their routes per day, while smaller buses cover 5.4 trips a day. Taking the daily average amount of monthly allowance commensurate with the amount of travel, each full size bus receives US\$5.43 and each smaller bus US\$2.31 per trip. Then, according to the number of seats of each unit (60 in full-size buses and 25 in smaller buses), each seat allowance amounts to US\$0.0905 in full-size buses and \$0.0925 in smaller buses.

The same study found that in the Metropolitan Area of San Salvador (AMSS, from its abbreviation in Spanish), 40 percent of public transportation units are full-size buses and 40 percent are smaller buses. Conversely, outside the AMSS, 80 percent are full-size and 20 percent are smaller. Taking this into account, and the per seat amounts on both size buses, the weighted average subsidy per seat on every trip was US\$0.09178 in AMSS and US\$0.0909 outside AMSS.

On the demand side, the price paid by the population is fixed. According to Agreement No. 292 from the Transportation Ministry, tariffs of service for passengers in public transportation are US\$0.25 for full-size buses and US\$0.28 for smaller buses. The EHPM collects the monthly amount allocated to public transport. This expenditure was divided by the weighted average rate of US\$0.261 to calculate the number of trips made in each household. To impute the subsidy, the number of trips was multiplied by the parameters indicated above, US\$0.09178 in AMSS and US\$0.0909 outside the AMSS.

Water Subsidy

The public sector is the principal potable water supplier, through the autonomous National Administration of Aqueducts and Sewers (ANDA, from its abbreviation in Spanish). The law gives ANDA the authority to propose tariffs to the Executive, which will be approved by the Ministry of Economy. The current tariff schedule was approved by the Ministry of Economy in June 2011. These rates are exempt from VAT.

Similar to the case of electricity subsidy, the tariff schedule throughout the year 2011 was approved on February 24, 2010 and was separated into 13 levels. Consistent with this rate schedule, thirteen regressions were performed, where the explanatory variable was the amount to pay including the subsidy and the result variable was the volume consumed in cubic meters, while the slope or price per cubic meter with subsidy was calculated. Similarly, regressions based on the tariff schedule are accurate ($R^2 = 99$ or with a total sum of squared errors of zero). Using these equations for the monthly spending per household on potable water reported in the survey, the number of cubic meters consumed was calculated.

The estimated volume consumed was calculated for each household based on the reported expense using information from households that answered the EHPM survey who received service directly from ANDA. Also, according to ANDA records, the cost of providing 1 cubic meter of potable water was US\$0.85, which was used to calculate the non-subsidized water bill by multiplying by the volume of water consumed by each household. Finally, the subsidy is the difference between the water cost without subsidy and the bill actually paid.

LP Gas Subsidy

Before 2011, the gas subsidy was transferred directly to the supply side, to companies who imported liquefied petroleum gas (LPG) into the country. Previously, the domestic price was fixed.

The price of a 25lb tank, which is widely used for cooking, stood at US\$5.10. This was the lowest price in Central America and all El Salvadorians paid the same price. On the other hand, the US\$0.16 per gallon tax on gasoline consumed was used to finance the LPG subsidy.

However, increases in the price of petroleum products pushed the difference between the market price and that facing consumers, which increased the amount that the government had to subsidize.

During 2011, several changes were made in how the gas subsidy is delivered. The government began a program known as the "Plan for Comprehensive Management and Market Transparency for LPG", with which changes in the regulation of gas prices were made. First, it allowed the price of tanks to rise to their market value, reaching US\$14.60 for 25lbs, and went on to deliver the subsidy directly to households, with a fixed monthly amount of US\$9.10 if the household consumed less than 99 kWh of electricity per month. Also, the Ministry of Economy engaged in efforts to reduce exclusion errors by granting the subsidy to other households in poverty without an electrical connection, to subsistence businesses, and to other non-governmental charities. To impute the subsidy, the EHPM identifies if a household is a subsidy recipient through a direct question. If awarded, the subsidy of US\$9.10 was linked to the household.