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The Impact of Taxes and Expenditures on Poverty and Income Distribution in Argentina and Some Policy Simulations

El impacto de los impuestos y gastos sobre la pobreza y la distribución de ingresos en Argentina y algunas simulaciones de políticas

Darío Rossignolo
Associate Professor, Universidad de Buenos Aires.
darossignolo@gmail.com.

Abstract

Using standard fiscal incidence analysis, this paper estimates the impact of tax and expenditure policies on income distribution and poverty in Argentina with data from the National Household Survey on Incomes and Expenditures 2012-2013. The results show that fiscal policy has been a powerful tool in reducing inequality and poverty but that the unusually high levels of public spending may make the programs unsustainable. The impact of several policy measures carried out by the government have also been simulated.

Keywords: Taxes, public expenditures, inequality, poverty.

JEL codes: H2; I3; D3.

Resumen

Utilizando un análisis de incidencia fiscal estándar, este trabajo estima el impacto de las políticas tributarias y de gasto público en la distribución del ingreso y la pobreza en Argentina con datos de la Encuesta Nacional de Gastos de los Hogares 2012-2013. Los resultados muestran que la políticas fiscal ha sido una poderosa herramienta en la reducción de la desigualdad y la pobreza pero los inusualmente elevados niveles de gasto público podrían hacer que los programas resulten no sustentables. Se ha simulado también el impacto de algunas medidas de política fiscal llevadas a cabo por el gobierno.

Palabras clave: impuestos, gastos públicos, desigualdad, pobreza.

Código JEL: H2; I3; D3.

I. Introduction

Public policy design requires knowledge of how benefits and taxes are distributed across different welfare levels. This study evaluates the impact of taxes and public expenditures on income distribution and poverty to determine whether they reduce income inequality and poverty or, conversely, if they indirectly exacerbate income inequality.

This paper estimates the impact of tax and expenditure policies on income distribution and poverty amelioration in Argentina using the CEQ methodology with data from the National Household Survey on Incomes and Expenditures (ENGHo), which was conducted by the National Bureau of Statistics in Argentina from March 2012 to February 2013. Consequently, the paper uses the codes for taxes and public expenditures from 2012.

The project Commitment to Equity (Commitment to Equity Institute, Tulane University, New Orleans, USA) has advanced in the harmonization and coordination of the effects of the different dimensions in which public sector intervenes in the economy with the aim of reducing poverty and inequalities on income distribution.

The results show an important incidence of fiscal policy in Argentina for the reduction of inequalities and poverty levels. However, several issues should be taken into account when considering their sustainability; consequently, three different policy simulations (similar to the ones already carried out by the government) have been performed and their results were compared with the benchmark case

The study is organized as follows: section 2 briefly reviews the results of previous studies on the impact of taxes and expenditures on income distribution. Section 3 outlines Argentina's tax structure and the quantitative evolution of its taxes and expenditures. Section 4 introduces the data source and incidence assumptions for the CEQ analysis of the impact of taxes and expenditures; section 5 presents the regulatory framework for the taxes and expenditures included in the incidence analysis. Section 6 summarizes the results of the incidence analysis on income distribution and poverty, while Section 7 delivers the results of the policy simulations. Section 8 offers concluding remarks.

II. Results of Previous Studies on the Argentina Case

Several studies on Argentina have analyzed the impact of taxes and expenditures, together or separately, on income distribution. However, very few have analyzed their impact on poverty (some have tried to capture the impact of specific social programs) and no one has estimated the impact of taxes on poverty. This is the first study to use CEQ methodology (Lustig and Higgins, 2013 a, b) to examine the effects of taxes and expenditures on income inequality and poverty reduction in Argentina.

Some research on tax incidence analysis in Argentina is available. Gasparini (1998) performs an analysis of the distributional impact of the tax system for 1996, taking per capita income and per capita consumption expenditures as welfare indicators. In the first case, taxes are highly regressive; meanwhile, when per capita consumption is considered, the incidence is moderately progressive. Gómez Sabaini, Santiere, and Rossignolo (2002) analyze the impact of taxes on income distribution for 1997, considering per capita income adjusted for underreporting as a welfare measure. The incidence is regressive in this case, chiefly because of VAT and indirect taxes.

Gómez Sabaini and Rossignolo (2009) consider the incidence of taxes for 2006, considering again per capita income adjusted for underreporting. Here, the impact of taxes is moderately progressive, mainly due to export taxes and the increase in the importance of Income Tax and Payroll taxes, measured by the Gini coefficient. However, since differences in extremes (that is, decile 10 versus decile 1) increase, the authors determine that the system continues to have a regressive impact. Gómez Sabaini, Harriague, and Rossignolo (2013) arrive at similar conclusions with information on taxes for 2008.

SPE (2002) and SPER (1999) perform different estimations on public expenditures for Argentina; their results show an unequivocal reduction in inequality. Gasparini (1999) arrives at similar results; benefits of public expenditures are received more strongly by lower income brackets.

In the case of poverty, several studies have analyzed the impact of specific programs on poverty reduction, such as Maurizio (2009), who explores the impact of different monetary transfers, and Marchionni et al. (2008), who examine the impact of simulated tariff schemes.

The net effect of taxes and public expenditures on income distribution has been calculated in Gasparini (1999), SPE (2002), Gaggero and Rossignolo (2011), and Gómez Sabaini, Harriague and Rossignolo (2013), among others. Although the methodologies differ to a certain extent (one study considers a balanced budget; another effective tax collection), all the studies find that the two highest income quintiles transfer resources to the lowest ones. Although the studies find that the magnitude of the redistributional impact varies, all of them note a significant equalizing effect.

Following CEQ methodology, Lustig and Pessino (2013) assess the growing importance of noncontributory pensions in Argentina in the last decade, emphasizing the effect of government policies, such as the Asignación Universal por Hijo or the Moratoria Previsional through the Encuesta Permanente de Hogares. This analysis used data from ENGHo 2012-2013and from the tax side of the budget.

CEQ methodology calculates separately every fiscal intervention. Calculation of the effects of the different participations of public sector starts from considering Market Income as income from productive factors as the baseline income from which these policies operate. Two alternatives are considered; the Benchmark Case, in which pensions are considered as a part of Market Income, and a Sensitivity Analysis, in which said pensions are considered as a public transfer. Net Market Income is obtained by subtracting direct taxes and social security contributions, and by adding up monetary transfers Disposable Income is obtained. Detracting indirect taxes and adding economic subsidies we arrive at Consumable Income; while by adding up health and education Final Income is obtained.

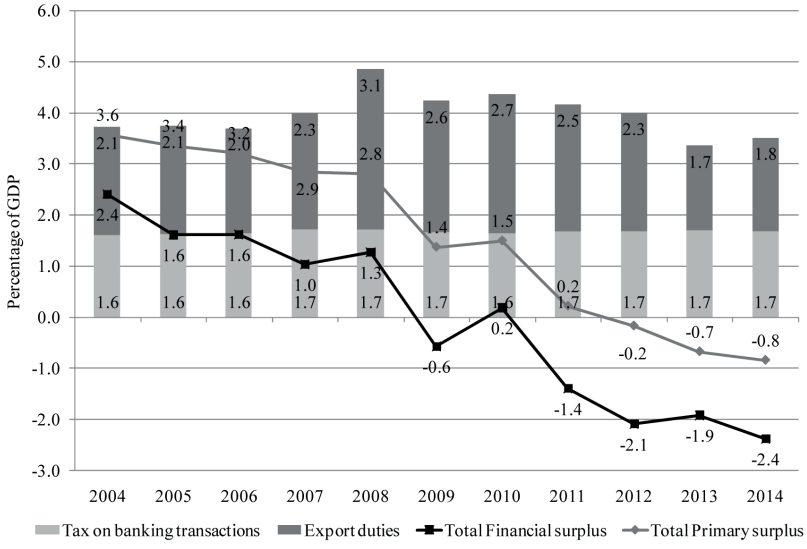
The analysis presented here differs from the above studies in that it measures the impact of taxes and spending combined not only on inequality but also poverty. In addition, except in one case, the existing studies rely on information by decile rather than the entire distribution and except in one case, they do not include the analysis of price subsidies. Another important difference is that existing studies which look at both taxes and expenditures assume a balanced budget and scale up the totals by decile to equal totals for the same items from budgetary data. In contrast, following CEQ, in this study, totals were neither scaled up nor a balanced budget was assumed.

III. Behavior of Tax Structure and Expenditures in Argentina

In economic terms, Argentina's history has involved many crises and subsequent recoveries. The crisis that resulted from the termination of the currency board regime ended with a devaluation of the Argentine peso and a slump in economic activity (real GDP fell by 15.5% in 2001-2002) and with unemployment and poverty figures reaching high levels (unemployment climbed to 18.4% of the labor force, and 24.7% of the population suffered from extreme poverty in 2001).The process of economic recovery began in 2003: production, investment, consumption and employment all rose. Between 2004 and 2008, the GDP grew 8.4% annually. Between 2009 and 2014, there have been periods of economic growth combined with decreases in GDP, such as in 2009, 2012 and 2014.

The Argentinean public sector is marked by a long history of structural imbalances. Figure 1 shows the progression of the primary and total surplus beginning in 2004. The public sector surplus declined from an average 2.8% of GDP between 2004 and 2008 to 0.4% between 2009 and 2013,

Figure 1: Taxes on Banking Transactions, Export Duties, Primary and Total Surplus in Argentina (2004-2014)



Source: Ministry of Economy and Public Finance.

while the primary surplus represented a 1.4% average and a 1.1% average deficit for the same periods. From 2009 on, budget surplus has been declining, with deficits for both cases from 2012 on.

The features of the tax policy implemented until the 2001 crisis were different from those of the past few years, when exceptional growth was achieved owing to the foreign sector and tax income. The fiscal surplus of the first part of the decade was mainly due to tax revenues increasing at a greater rate than expenditures, which was not the case after 2011.

Argentina has experienced exceptional growth in tax burden in the last decade, reaching 32.5% of GDP in 2014.[1] During these years, the country saw increasing tax-burden levels. This was partially due to the major impact of "extraordinary taxes"[2] which represented 4.3% of GDP in 2008 (more than half of which resulted from export duties) and which, in 2010, decreased slightly but reached 4% of the GDP; elimination of the private-funded pension system also partially explains the rise in tax burden.

Additionally, sustained growth in tax collection from traditional taxation (VAT, income tax and payroll taxes) confirms the usual assumption that tax administration achievements are more effective during economy-recovery periods.

The increase in tax burden in the last decade is related to the addition of taxes that were sporadically used in previous periods, such as export duties (withholdings) and current account debits and credits, and to other provisions that impacted Corporate and Personal Income Tax (no inflation adjustments of financial statements and thresholds).

The lack of immediate adjustment of thresholds and tax brackets helped increase tax revenues from Personal Income Tax. This process, known as fiscal drag or "bracket creeping," is illustrated by the fact that in 1997, almost 12.5% of taxable income was concentrated in the highest tax bracket, subject to the highest marginal tax rate; in 2011, that percentage was 58% (Gómez Sabaini and Rossignolo, 2014).

1. Gross Tax Burden, excluding reimbursements.

2. "Extraordinary taxes" comprise Current Account Credits and Debits and Export Duties.

In 2008, Social Security contribution revenues gained importance, constituting the highest direct tax revenue source; resources from the eliminated capitalization system (implemented in the 1990s) were used by the government to establish the pay-as-you-go system.

On the expenditures side, public expenditures at all government levels have increased from 26% of GDP in 2004 to around 45% in 2013. The evolution of social expenditures in Argentina in the last decade can be divided in three stages (Gómez Sabaini, *et al*., 2013).

The first stage stems from the socioeconomic crisis that the country experienced at the beginning of the last decade, which led to the creation of several emergency programs to ameliorate the impact of the crisis, including Plan Jefes y Jefas de Hogar Desocupados (PJyJHD); Programa Ingreso para el Desarrollo Humano (IDH), Programa Remediar in the health arena, and Programa de Emergencia Alimentaria (PEA) in the nutritional arena.

In the second stage, between the economic recovery and the economic crisis in 2008, more structural solutions were implemented, such as the Moratoria Previsional (a sort of "early retirement program" with a moratorium for those who do not complete the 30-year requirement),and the Ley de Financiamiento Educativo to increase education spending to 6% of GDP. Additionally, the Plan Jefes y Jefas de Hogar Desocupados (PJyJHD) was divided in two components: Plan Familias por la Inclusión Social (PFIS) and Seguro de Capacitación y Empleo (SCE).

In the third stage, which started in 2008, the government's main goal is to maintain income and employment at pre-crisis levels. To that end, the previously-mentioned elimination of the capitalization system led to the creation of the Sistema Integrado Previsional Argentino y Movilidad Jubilatoria (SIPA) and a mandated periodic increase in pensions. Additionally, the creation of a universal program, Asignación Universal por Hijo (AUH), extended the benefits that formal workers receive related to the number of children they have to those in the informal sector and the unemployed.

Aside from the increase in social expenditures, expenditures on economic services, i.e. subsidies to tariffs, have increased greatly, averaging 5% to 6% of GDP from 2012 to 2013. These expenditures were primarily

designed to prevent tariffs to services (mainly transportation and energy) from increasing in the area around greater Buenos Aires.

IV. Incidence Analysis: Methodological Notes

The main source of information for this report was the National Household Expenditure Survey (Encuesta Nacional de Gastos de los Hogares – ENGHo), conducted by the Instituto Nacional de Estadística y Censos – INDEC between March 2012 and February 2013. The ENGHo is a large-scale survey that obtains detailed answers from about 20,960 households across the country (around 36.1 million total inhabitants). The ENGHo is a representative sample of 86.8% of the population. A percentage of the urban population and rural towns with fewer than 5000 inhabitants were excluded from the sample due to high administrative costs (INDEC, 2012).

The main survey variables used in this study are household expenditure and income. In order to define and analyze different domains and depict the households they include, the survey also contains information on demographic, occupational and educational variables, as well as housing characteristics, transfers in kind received and household goods.

The incidence analysis to which most studies refer is the so called "differential incidence", which is carried out utilizing methodology applied in the equilibrium economic analysis. Two approaches can be mentioned here: on one hand, partial equilibrium analysis, in which a particular market is considered separately and the effects of changes in taxes or public expenditures are analyzed within that market.

On the other hand, incidence in a general equilibrium framework, in which all effects, direct and indirect, are taken into account. Here, second round effects are calculated for a general equilibrium framework but are disregarded in a partial equilibrium analysis. these indirect effects may introduce differences between equity effects resulting from both methodologies. Partial equilibrium analysis is however more useful when evaluating the effect of specific policy measures because the disaggregation used in the required data is much higher.

4. Lustig and Pessino (2013) analyze the sustainability of redistributional policies applied in Argentina.

The incidence analysis performed in this paper, consistent with the partial equilibrium literature, is the accounting approach, which tries to account for who pays the taxes to the state. In some cases, that information may be obtained directly from sample surveys, although some inference may be necessary; taxes may not be directly observed in surveys and may have to be figured out indirectly. According to Bourguignon and da Silva (2003), indirect methods involve applying official income tax schedules or imputing indirect taxes paid through observed spending.

Accounting approaches, however, ignore possible behavioral responses by agents that may modify the amounts they actually pay or receive; an accounting approach would not detect tax evasion, for example, resulting from an increase in income tax rates. These approaches are limited to first-round effects and do not consider second-round effects attributable to behavioral responses, which behavioral approaches try to take into account.

The methodology used here to estimate the incidence of taxes and expenditures adopts different assumptions about the shifting of the tax burden because, in most cases, the person liable for the tax or the person entitled to receiving the benefit is not the person who ultimately bears the tax burden or effectively gets an increase in their income. Both sellers and buyers may adapt to the tax by shifting it in accordance with its different elasticities: the smaller the (offer or demand) elasticity, the smaller the possibility of shifting the tax and the higher the impact on the person bearing the burden.

Therefore, there are various alternatives for measuring the impact of taxes and estimating their incidence. In this study, as in the majority of studies based on a partial equilibrium framework, it is assumed that the burden generated by taxes on goods and services is fully shifted to consumers via a higher price. Even though this seems to be the most widely used method for approximating the compensating variation, there are some inherent difficulties in establishing these kinds of hypotheses and, more importantly, some defects in other assignment mechanisms that should not be ignored (Sahn and Younger, 2003).

This study assumes no tax evasion in general, which means that all the people due to pay taxes, according to their incomes or consumption expenditure behavior, bear the tax burden. However, if purchases have been made in the informal market, it is assumed that no taxes have been paid.

In order to account for the incidence of direct taxes, it is commonly assumed that the burden of PIT and other taxes related to income falls on the person required to pay them (income earner), i.e. the economic incidence is the same as the statutory incidence. For Corporate Income Tax and Social Security contributions, the incidence assumption is not so straightforward. A general equilibrium model is necessary to account for the final incidence; specifically, for Social Security, how much of the burden is borne by employers and employees, and for CIT, how much is borne by capital owners or employers and how much is transferred on to consumers via a higher price. The latter is difficult to account for in a household survey, but the former can be calculated if it is assumed that the tax is completely borne by employees through a reduced salary. Consequently, CIT has been left aside.[4]

Due not only to the absence of relevant information (mainly data related to the decrease in disposable income of the producers once export taxes have been collected) but also to the different economic effects outside the scope of a standard, exclusively fiscal incidence analysis, export duties, which represented 2.3% of GDP in 2012, have been excluded from this analysis. Gómez Sabaini and Rossignolo (2009), and Gómez Sabaini, Harriague, and Rossignolo (2014), following a different methodology than the one used here, conclude that these taxes are progressive following the standard Gini and concentration coefficients.[5]

Information on direct taxes is rarely gathered directly by surveys; instead, surveys report earnings. Depending on the source of income, the amount reported is usually, though not always, after taxes. Salaried workers in the formal sector report income after taxes. For informal salaried workers, employers, independent workers, capital income earners, social security beneficiaries and people receiving pensions and transfers, reported income reflects earnings before taxes. To get at the tax burden, tax revenues should be computed from all these income sources, assuming that they are taxable income.

4. These criteria are usual in the literature. However, if, for instance, CIT incidence were calculated, it could be the case that its incidence were borne by company owners (shifted backwards) or passed though to consumers via a higher price. Tax incidence would be progressive in the first case and regressive in the second.

5. Other taxes that were excluded from the analysis were taxes on banking transactions (1.7% of GDP) and taxes on property (1.3% of GDP) due to lack of relevant information in the survey. Gómez Sabaini and Rossignolo (2009) estimates show that the first are regressive while the second are progressive.

On the expenditure side, it is assumed that the beneficiaries of a program are the users and their families who receive free or subsidized public provisions. This assumption means that the potential benefits that could accrue to production factors are ignored, as are the externalities that may arise from the consumption of publicly provided goods (ideally, the equivalent variation for every individual would be calculated to assess the complete incidence).

V. Regulatory and Methodological Considerations of Taxes and Expenditures in the Incidence Analysis

This section explains the characteristics of the taxes and expenditures analyzed in this study. The indirect taxes considered were the Value Added Tax, excise taxes, fuel taxes and the provincial turnover tax; the direct taxes analyzed were Personal Income Tax, payroll taxes and other minimum taxes on income ("Monotributo"). These taxes represent about 71% of total tax revenues (national and provincial) for 2012; of that 71%, 80% could be simulated with the estimations provided here.

On the expenditure side, we have classified the Asignación Universal por Hijo as the flagship cash program. The Plan de Inclusión Previsional y Moratoria Previsional has been included in the Noncontributory Pensions category. In Other Cash and Near Cash Transfers, the programs Asignaciones Familiares, Seguro de Capacitación y Empleo, Programa Familias por la Inclusión Social, Becas Universitarias, Programa Jóvenes con Más y Mejor Trabajo, Seguro de Desempleo and Comedores Escolares y Comunitarios are included. Total public expenditures on education and health represent about 76% of total social expenditures, rising to 83% when Contributory Pensions are counted as a public transfer in 2012; these estimations account for about 62% of social expenditures estimated in this study. Economic subsidies to transportation, electricity and gas services have also been calculated. Table 1 presents the aggregate figures for taxes and public expenditures as percentage of GDP (2012).

Due to discrepancies in the official Argentine statistics for the calculation of GDP, all calculations that involved the association of nominal values with values in the survey were "scaled down" by 22% to attempt to account for the difference in GDP calculated with year base 1993 and GDP with year base 2004.

Table 1: Government Spending and Revenue Structure in % of GDP 2012

Government Spending and Revenue	Percentage of GDP
Total Government Spending	44,1
Social Spending (excludes contrib pensions)	20,9
Direct Transfers (Total Cash & Near Cash Transfers)	5,8
Flagship Cash or Near Cash Transfer program	0,5
Noncontributory Pensions	2,9
Other Cash and Near Cash Transfers	2,4
Total In-kind Transfers	**13,1**
Education	7,4
Basic (primary and secondary)	7,5
Tertiary and University	4,6
Science, culture and education non discriminated	1,5
Health	5,6
Contributory	3,2
Noncontributory	2,5
Housing and Urban	0,6
Other Social Spending	**1,3**
Contributory Pensions	**7,1**
Non-Social Spending	14,1
Indirect Subsidies	5,9
Agriculture	0,3
Energy, fuel and mining	2,6
Industry	0,1
Transportation	2,4
Communication	0,2
Other indirect subsidies	0,3
Other Non-Social Spending	8,2
Debt Servicing	
Interest payments	2,1
Total Tax Revenue	32,7
Direct Taxes	2,2
Personal Income Tax	2,1
Simplified Tax Regime (Monotributo)	0,1
VAT and Other Indirect Taxes	12,3
Other Taxes	18,1
of which Social Security Contributions with Pensions	8,8

Source: Author´s calculations based on information from the Ministry of Economy and Public Finance.

5.1. Indirect Taxes

Value Added Tax (VAT): VAT is a consumption tax on all stages of the production and distribution of goods and services. It is not cumulative and uses the "tax against tax" system, where the balance between tax credits (charged to sales) and tax debits (charged to purchases) is paid to the seller every month. This procedure is equivalent to applying the tax on the value added at every elaboration stage. It is levied on imports in a similar way to domestic production, but exports are zero rated.

The general tax rate is 21%. There are few exemptions because most have been eliminated in successive reforms.[6] There are also differential rates: the highest is 27% on the invoices of public services provided to companies that are liable for the tax; the lowest is 10.5% on new home sales and a very limited list of goods and services.[7,8]

Excise taxes (Impuestos internos): These taxes apply to the domestic sale and import of a specific list of goods and transactions: alcoholic beverages (20%), beer (8%), soft drinks and other nonalcoholic beverages (4% to 8%), automobiles and diesel engines (10%), and insurance (2.5%).

For all taxes on goods, the taxable basis includes the tax itself. The taxable basis is the net price billed by the responsible party, defined as the remainder after deduction of discounts and bonuses, financing interest, and the VAT generated by the operation. In the case of cigarettes, the taxable basis is the sale price to the end user, excluding the VAT; in the case of insurance, the taxable basis does not include the tax itself, which is the only case in domestic taxes where the legal or nominal rate is applied to the taxable basis.

6. Among exemptions with considerable tax collection importance in 2012 were books, brochures and similar printed material, natural ordinary water, milk without additives, buyers who are end consumers or tax-exempt individuals, medicines, goods at the resale stage and for which the tax has been paid at the import or manufacturer's stage, theater performances, international passenger and cargo transportation, and life insurance.

7. The lowest tax rate includes some basic foods (meat, fruit, vegetables, bread), newspapers, magazines and periodical publications, goods at the selling stage to the general public, and domestic transportation services for passengers by land, water, or air, except for taxis and rental car services on routes less than 100 km.

8. In the case of exempt goods, the 1997 Input / Output table was used, with data from 1993. The taxable input proportion was estimated for each exempt good: the incidence of taxable inputs was estimated for the sales amount of exempt goods, and the same structure was applied to the total of VAT purchases deriving from the consumption of exempt goods.

Fuel tax: In 2012, liquid fuel and natural compressed gas were taxed (62% to 70%). Among fuels, the tax is applied to all forms of gasoline: solvent, turpentine, gas oil, diesel oil and kerosene. For gas, the tax falls on compressed natural gas for motor vehicles, distributed through pipelines. The tax must be applied in a single circulation stage for the sale of national or imported products. Importers of liquid fuel and companies that refine or market it are subject to the fuel tax, as are distributors of gas before it enters the pipeline.

The tax is calculated by applying the corresponding rate to the net sales price listed on the invoice or similar document for resellers at the dispatching plant, issued by the persons liable for its payment.[9]

Provincial Turnover Tax: This tax is an important source of revenue for the sub national governments and is applied by all provinces. It is a cascade tax because it falls on all stages of production and distribution of goods and services. It taxes gross income without deducting the tax already paid and cumulated through previous purchases in the production process. Because it forces vertical integration of firms and discriminates in favor of imports which do not contain taxes paid on every production stage, the provincial turnover tax alters neutrality.

Tax rates follow similar patterns across the country; however, rates vary highly due to differences in economic activities and corresponding jurisdictions. In general, the highest rates appear in Commerce and Services; intermediate rates are applied to Industrial activities, and the lowest rates occur in the Primary sector.

In order to calculate tax incidence, the aforementioned tax rates were applied to the data on consumption reported in the household survey. According to several authors including Rossignolo(2015)[10], effective tax rates are at least twice as high as rates on final consumption; consequently, rates on retail consumption have increased 150% in order to account for the taxes included at every production stage for every province. The methodology

9. Alternatively, although there is no reliable study in Argentina determining the percentage of fuel cost that is part of the transportation cost transferred to the consumer, at present, and basically due to the existence of transportation and fuel subsidies distorting relative values, we assumed that 30% of the tax is transferred.

10. Rossignolo (2015) presents a calculation of the effective rate of this tax.

applied is the same as that for VAT and excise taxes; since the tax base excludes VAT, excises and fuel tax, this tax is the closest to input costs and should be included in the tax base of the previously mentioned taxes.

V.2. Direct Taxes

Personal Income Tax: PIT is a global type tax, structured with progressive rates; its taxable base has been expanded by several pieces of legislation. The Income Tax Act delineates four categories of income based on their source (land rent, capital gains, company and certain business brokers' income, and personal income). A single taxpayer may generate income corresponding to one or more income categories at the same time. The calculation of the taxable income is based on the income and expenses corresponding to the four categories and on the participating interests in companies or activities.[11]

The tax is determined by taxable net income bracket, based on a sliding scale consisting of a fixed amount plus a rate increasing from 9% to 35% on the excess of each income bracket bottom level. Individuals paying income tax fall into one of the two following categories: self-employed taxpayers or salaried workers. Self-employed taxpayers (that is, independent workers registered as income tax payers) must pay income tax each fiscal year in five bi-monthly advance payments.

Other income taxes ("Monotributo"): One group of taxpayers, referred to here as small taxpayers, is subject to a simplified tax regime called Monotributo. This regime replaces the Income Tax and Value Added Tax with a single fixed-amount monthly tax plus contributions for Social Security and Health Insurance. Under this regime, the single tax payment is based on an income bracket and no further rules related to the assessment of income, deductions for dependents or special deductions are applied.

The tax levied is a fixed amount established according to the Monotributo category into which taxpayers fall. These categories are deter-

11. There are numerous subjective and objective exemptions. The most important among the latter are those on interest accrued on saving accounts deposits, special saving accounts and term deposits, income derived from securities, shares, bonds, bills of exchange, notes and other securities issued or to be issued in the future by a governmental authority, the rental value of the residence when occupied by its owners, etc. The following items are not exempt: pensions, retirement payments, subsidies, and salaries received during medical leave.

mined based on invoicing and/or the surface area of the facilities and/or the use of power during production.

Payroll taxes: As a part of the tax system, taxes on wages were analyzed, including contributions made by both the employee and the employer. In both cases, the amount collected is deposited into the Federal Tax Administration and that revenue is distributed according to the corresponding legal provisions.

For formal sector employees, the items considered are contributions to the social security system (11%), health insurance (3%), and the national pensions fund (3%), up to a ceiling of AR$ 21,248 monthly (maximum taxable base). This amounts to a total rate of 17%.

In the case of employers, the items considered are contributions to the social security system (12.71%), health insurance (6%), the national pension fund (1.62%), the fund for family allowances (5.56%) and the national employment fund (1.11%), which amounts to 27% of earnings in the formal sector. This rate pertains to employers whose activity is concentrated in the services sector; for other employers, the rate is 23%.

In the case of independent workers, the items considered are their contributions to the social security system (27%) and the national pensions fund (5%). These rates are applied to a scaled tax base that is progressive and differs between professionals and traders. These workers have been identified in the household survey by years of education.

V.3. Flagship Cash or Near Cash Transfer programs

Asignación Universal por Hijo

Target population: Parents with dependent children under the age of 18 who are informal workers with an income lower than the minimum salary of the formal sector, unemployed people without unemployment benefits, or domestic service workers.

Targeting mechanism: A monthly monetary transfer of AR$ 270 per child in 2012, raised to AR$ 340 in September 2012. Benefits are received

for each of up to five children. The first 80% of the benefit is received by direct deposit into a bank account; the remaining 20% is transferred with proof that the children are attending school and have received the compulsory vaccines. This benefit includes a means testing mechanism in the sense that beneficiaries cannot receive other social benefits while receiving Asignación Universal por Hijo.

V.4. Non-contributory Pensions

Pension Moratorium (Moratoria Previsional) and the Early Retirement Program (Jubilacion Anticipada)

Target population: In 2005, the government instituted an early retirement program through a moratorium for those who had not completed 30years of service (Pension Moratorium (Moratoria Previsional). In 2007, a program that allowed workers who had completed the required 30years of service but who were at least five years younger than the official retirement age(65 for men, 60 for women) to receive the pension (Jubilación Anticipada) was also instituted.

Targeting mechanism: For the Jubilación Anticipada, the transfer is equivalent to 50% of the corresponding benefit that the person would be entitled to receive at full retirement age, although it cannot be lower than the minimum pension. For the Prestación por Moratoria, the beneficiaries receive their transfer net of a reduction that corresponds to the number of years the person has not contributed to the system. As years of contribution cannot be established in this paper, the program simulated here compensates the pensioners who are receiving a lower-than-minimum pension in order to reach the minimum threshold.

V.5. Other Cash and Near Cash Transfers

Asignaciones Familiares

Target population: Salaried workers in the formal sector who have children up to 18 years of age and salaries under the limit as well as pensioners and unemployment compensation beneficiaries with children under 18. The program covers marriage, children, adoption, disabled children,

among other monthly transfers, and school attendance for children, paid once a year.

Targeting mechanism: Formal salaried workers receive their benefits according to their income level and to the number of beneficiaries they declare. For instance, the fixed amount for every child in June 2012 was AR$ 270 if the worker's salary was between AR$100 and AR$ 2.800; the amount decreased to AR$ 204 for a salary between AR$ 2.800 and AR$ 4.000, and to AR$ 136 for a salary between AR$ 4.000 and AR$ 5.200. These amounts varied by geographical zone, being higher in the southern region of the country. A household might be excluded from this benefit in the absence of either children or a head of household working in the formal sector, if the head of household is retired or unemployed and receiving unemployment benefits, or if the head of household is earning an income higher than the maximum allowed for the benefit (AR$ 5.200 per month in 2012).

Seguro de Capacitación y Empleo

Target population: Beneficiaries of the previous Programa Jefes y Jefas de Hogar, including those with greater employment prospects.

Targeting mechanism: The beneficiaries of the Jefes y Jefas de Hogar Program, which was created in 2002 to ameliorate effects of rising unemployment through an initial monthly transfer of AR$ 150, were divided in two groups according to their employment potential. Those considered more "employable" were assigned to the Seguro de Capacitación y Empleo, a 24-month monetary transfer of AR$ 225 for the first 18 months and AR$ 200 for the remaining six months. The beneficiaries must comply with regulations such as attending courses to increase their employment skills

Programa Familias por la Inclusión Social

Target population: The beneficiaries of the previous Programa Jefes y Jefas de Hogar, including those with fewer employment prospects.

Targeting mechanism: The beneficiaries of the Jefes y Jefas de Hogar Program, which was created in 2002 to ameliorate effects of rising unemployment through an initial monthly transfer of AR$ 150, were divided in

two groups according to their employment potential. Those considered less "employable" were assigned to the Programa Familias por la Inclusión Social, which is received according to the number of dependent children under age 18, from two to six children. The benefit starts at AR$ 155 per child and increases to AR$ 380 for six children or more for families below the poverty line. The program is not compatible with other transfers.

Becas Universitarias

Target population: PNBU (Programa Nacional de Becas Universitarias) is for university students attending an officially recognized program of any national university; it excludes students in their last year of study and those planning to start their careers.

Targeting mechanism: Beginning in 2009, students have received AR$ 3000 in 10 installments throughout the year. There are other two compensation programs, Programa de Becas Bicentenario, for students preparing for scientific careers, and Programa Nacional de Becas de Grado, for students of information technology. This study might overestimate the amount received because it cannot establish which program the beneficiaries are studying.

Programa Jóvenes con Más y Mejor Trabajo

Target population: People between 18 and 24 years of age who neither work nor study.

Targeting mechanism: The beneficiaries must be unemployed, with incomplete primary or secondary education, and between 18 and 24 years of age. The amount of the transfer is AR$ 150 a month for 2 to18 months; in addition, transfers are made against the presentation of a project for which the beneficiary receives AR$ 4,000 per project.

Seguro de Desempleo

Target population: Workers who have lost their jobs through no fault of their own and have been unemployed for at least 36 months.

Targeting mechanism: A transfer of between AR$ 250 and AR$ 400, calculated as a percentage of the highest previous salary. Maximum coverage lasts one year.

Comedores Escolares y Comunitarios

Target population: Schools, clubs, etc., that serve meals to children or the unemployed.

Targeting mechanism: Monetary transfer related to the cost of milk or a basic food basket provided to feed children or adults below the poverty line.

V.6. Economic Subsidies

Subsidies to economic sectors are directed to transportation, communications, energy and fuel, industry and agriculture, and other sectors. The most important subsidies are those for transportation, energy and fuel; transportation subsidies are mainly oriented to supply, whereas energy and fuel are oriented to both supply and demand. Subsidies to energy include fuel, gas and electricity; subsidies to transportation comprise tariffs for trains, subways, airplanes and buses.

After having been a net exporter of fuel in the 1990s and at the beginning of the 2000s, Argentina has become a net importer of fuel. The price of the imported gas oil is subsidized through a fiduciary fund, and the consumer receives the difference between the price of fuel within the internal market and the same product at international prices.

For gas, there are two kinds of subsidy: for those who receive gas through a pipeline, the subsidy is included in the reduced cost of imported gas, which is included in the tariff. Those who buy bottled gas pay a subsidized price in which the government gives the producers the difference between the market price and the subsidized price. The total amount paid varies depending on the volume of the previous year's gas consumption.

For electricity, a fiduciary fund has been created to subsidize tariffs for households. The subsidy depends on the volume of the previous year's electricity consumption.

V.7. Education and Health

In 2006,the National Education Law was passed following the Education Financing Law, which extended compulsory education to the end of secondary school. Data show that when compulsory education is extended, attendance increases but that students also continue to drop out at the same ages as before the law was passed (Gómez Sabaini, Harriague and Rossignolo, 2013).

There are two educational systems at every level: a free, public education system, and a private system, which is subsidized. Primary education is managed by the municipalities, secondary education is the responsibility of the provinces, and university is administered at a national level (with several exceptions at all levels). The public education system serves the majority of students, accounting for 73% of total students in 2012, of which 28.2% are enrolled in primary public schools. Public universities enroll 79% of university students. The results for the distributional impact of education aggregate expenditures for Basic Education, including initial, primary and secondary school, and Superior (universities and tertiary).[12]

The Argentine health system is split into several parts because different population groups access different providers. One component of health insurance provides coverage for the population dependent on formal wage earners or retired pensioners. Populations that are not covered have access to the public health system; high income population has access to the private system.

For formal workers, health benefits are delivered mainly through health insurance systems of trade unions, for both the private and public sectors as well at national and provincial levels. These workers comprise the greatest share of the beneficiaries. Pensioners are covered by the health insurance system known as INSSJyP (PAMI), a subsystem that finances private health service providers. The public health system covers those who do not have health insurance.

It is worth noting that the population covered by the private system can also receive public system benefits. Public expenditures for health have risen to 5.4% of GDP, 2.4% of which belong to health insurance systems.

12. For each educational level, the results for public and private subsidized education can be shown and are available from the author upon request.

Low complexity hospitals were decentralized to the provinces and municipalities in the 1990s, while the high complexity ones still remain under federal administration.

VI. EXPENDITURES, TAXES, INEQUALITY AND POVERTY REDUCTION IN ARGENTINA: MAIN RESULTS

This section presents several results of the CEQ analysis of the impact of taxes and public spending on poverty and inequality in Argentina. The main results will focus on the "benchmark case", in which pensions are a part of market income, while results from the "sensitivity analysis", where pensions are treated as a government transfer, are available from the author upon request . It can be seen, however, that when pensions are considered a government transfer, the impact in the reduction of inequality and poverty is markedly higher.

VI.1. Impact on Inequality and Poverty

The evolution of the Gini coefficient, headcount ratio and poverty gap (using the international poverty lines of US$2.50 PPP and US$4 PPP per day and the national moderate poverty lines) are presented in Table 2.

Table 2: Gini and Headcount Index for Different Income Concepts

	Market Income	Net Market Income	Disposable Income	Consumable Income	Final Income
Gini	0,481	0,435	0,403	0,401	0,303
Headcount index					
$2.5 PPP	4,7%	5,1%	1,8%	3,0%	
$4 PPP	12,3%	13,9%	7,3%	12,5%	
National Moderate PL (INDEC)	10,3%	12,0%	5,6%	9,7%	
Other Moderate PL (FIEL)	28,8%	33,1%	28,4%	37,8%	
Poverty Gap					
$2.5 PPP	1,8%	1,9%	0,5%	0,8%	
$4 PPP	4,2%	4,7%	1,8%	3,3%	
National Moderate PL (INDEC)	3,6%	4,0%	1,4%	2,5%	
Other Moderate PL (FIEL)	11,6%	13,1%	8,6%	13,0%	

Source: Author´s calculations based on ENGHo.

Market income Gini is higher than the net market income Gini, indicating that direct taxes (Personal Income Tax, Social Security Contributions and Monotributo) reduce inequality. Regarding poverty, however, the effect is the inverse, because a reduction in income due to direct taxes (mainly, in this case, Monotributo), results in a higher number of households lying below the poverty line. When direct transfers are included in disposable income, reductions in both inequality and poverty are evident; disposable income Gini declines around 16% and extreme poverty falls by 61% (Figures 2 and 3).

Figure 2a: Evolution of inequality through different income concepts. Gini coefficient.

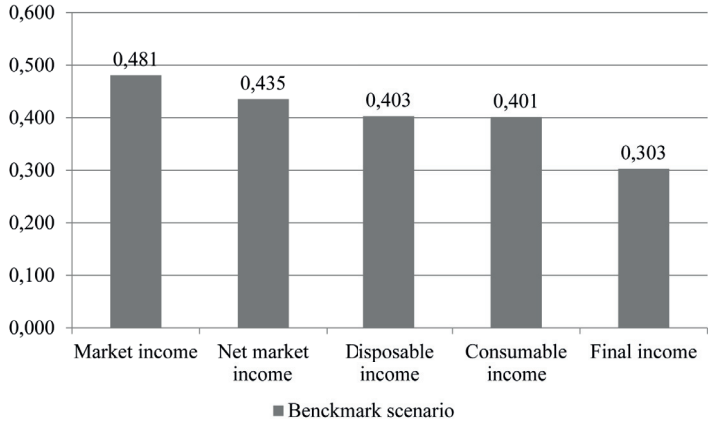
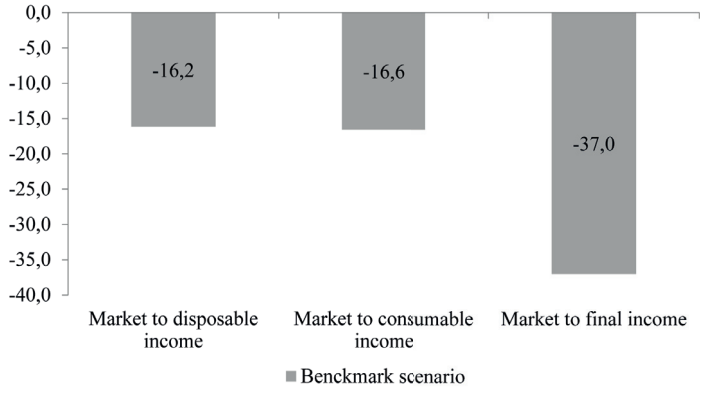
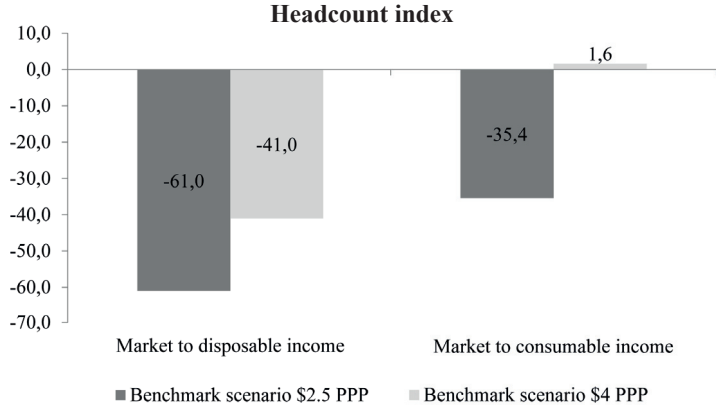


Figure 2b: Evolution of inequality through different income concepts. Percent change in Gini



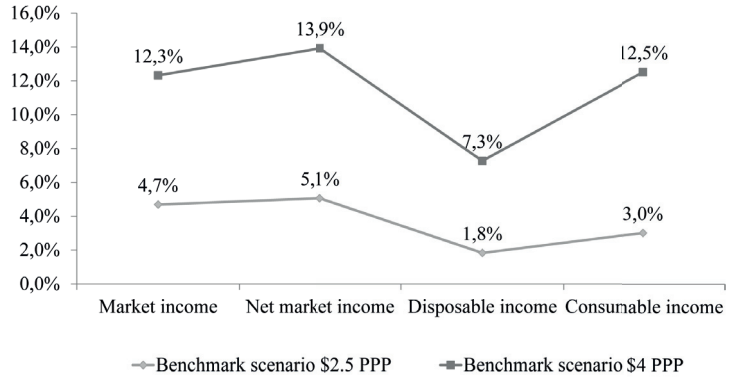
Source: Author´s calculations based on ENGHo.

Figure 3a: Evolution of poverty through different income concepts. Headcount index



Source: Author´s calculations based on ENGHo.

Figure 3b: Evolution of poverty through different income concepts. Percent change in Headcount index



Source: Author´s calculations based on ENGHo.

Consumable income includes the net effect of indirect taxes and economic subsidies. The high impact of the latter reduces poverty and more than compensates for the inequalizing effect of taxes; poverty increases because indirect taxes lie more heavily on low income consumers. The reduction in poverty and inequality is further propelled by in-kind transfers in education and health, as shown when calculating the Gini index with final income: the final income Gini (compared to the market income Gini) declines by 37%.

VI.2. Coverage and Effectiveness of Direct, In-kind Transfers and Indirect Subsidies

Table 3 presents indicators that measure the extent to which direct transfers are effective and efficient in reducing poverty using both international and national poverty lines. These indicators express a measure of "productivity" of direct transfers and public expenditure. The effectiveness

Table 3: Poverty Reduction Efficiency and Effectiveness Indicators of Direct Transfers

	Benchmark Case (national accounts)
Inequality	
Change in Gini (direct transfers)	0,58
Poverty	
Change in Headcount Index ($1.25 PPP per day)	0,20
Change in Poverty Gap ($1.25 PPP per day)	0,11
Change in Squared Poverty Gap ($1.25 PPP per day)	0,08
Change in Headcount Index ($2.50 PPP per day)	0,58
Change in Headcount Index ($4 PPP per day)	1,20
$2.50 PPP per day	
Vertical Expenditure Efficiency	0,11
Poverty Reduction Efficiency	0,04
Spillover Index	0,62
Poverty Gap Efficiency	0,71
$4.00 PPP per day	
Vertical Expenditure Efficiency	0,31
Poverty Reduction Efficiency	0,14
Spillover Index	0,55
Poverty Gap Efficiency	0,62
National Extreme PL	
Vertical Expenditure Efficiency	0,05
Poverty Reduction Efficiency	0,02
Spillover Index	0,67
Poverty Gap Efficiency	0,78
National Moderate PL	
Vertical Expenditure Efficiency	0,28
Poverty Reduction Efficiency	0,11
Spillover Index	0,60
Poverty Gap Efficiency	0,64

Source: Author´s calculations based on ENGHo.

indicator is defined as the effect on inequality (or on poverty) of the transfers being analyzed divided by their relative size (as a percent of GDP); i.e., how much Gini or poverty indicators are reduced due to direct transfers as a percent of GDP. As shown, Gini falls significantly (0.58 percentage points); moderate poverty ($4 PPP per day) falls by 1.20 percentage points due to Direct transfers.

The Vertical Expenditure Efficiency (VEE) indicator measures the amount of direct transfers that go to the poor. This indicator shows that 11% of direct transfers reach the extreme poor while 31% of direct transfers reach the total poor population (using international poverty lines). The spillover index (S) indicates how much of the spending that reached the poor was in excess of the strictly necessary amount required for the beneficiaries to reach the poverty line. As shown, the spillovers are high (62% for the extreme poor and 55% for total poor population).

The Poverty Reduction Efficiency (PRE) indicator is the product of VEE times S. Finally, the Poverty Gap Efficiency (PGE) measures the transfers' effectiveness in reducing the poverty gap. PGE estimates indicate that direct transfers are more efficient in reducing extreme poverty gaps than in reducing total poverty gaps (71% for extreme poor and 62% for total poor population).

Table 4 shows coverage levels and distribution of benefits for every disaggregated area of public spending. The table shows that Asignación Universal por Hijo, Programa Familias and Moratoria Previsional (and hospitals, among in-kind transfers) are the programs most targeted to reducing extreme poverty. Meanwhile, superior education and indirect subsidies concentrate their benefits more heavily on the non-poor (that is, those who exceed the $4 PPP per day line).

VI.3. Incidence Analysis

Incidence analysis has been calculated through the ratio of benefits to market income by market income deciles. The effect of direct taxes and direct transfers leads to a reduction in inequality; the highest decile by market income ranking is the one that bears the highest proportion of direct taxes. Meanwhile, in the case of direct transfers, the effect is the inverse,

Table 4: Coverage and Distribution of Benefits and Beneficiaries by Program

	Benchmark scenario Groups:		
	y < 2.5	**2.5 < y < 4**	**y > 4**
Health-Hospitals	14,7%	15,5%	69,8%
Health-Contributory	1,0%	3,8%	95,2%
Health-Contributory - elderly -INSSJyP	2,3%	4,8%	93,0%
Education-Basic	5,6%	8,6%	85,8%
Education-Tertiary and Universitary	0,4%	1,3%	98,2%
Transportation	1,1%	2,6%	96,2%
Subsidies on bus tariffs	1,5%	3,0%	95,5%
Subsidies on train tariffs	1,0%	2,8%	96,2%
Subsidies on subway tariffs	0,0%	1,8%	98,2%
Subsidies on airplane tariffs	0,0%	0,0%	100,0%
Electricity	2,3%	3,2%	94,5%
Gas red	0,8%	1,1%	98,1%
Gas "Garrafa social"	3,5%	8,1%	88,4%
Gas total	1,1%	1,9%	97,0%
Combustibles directo	0,1%	0,2%	99,7%
Combustibles indirecto	2,0%	3,0%	95,0%
Asignaciones Familiares	2,9%	6,6%	90,5%
Asignación Universal por Hijo	16,2%	21,7%	62,1%
Plan de Inclusión Previsional y Moratoria Previsional	12,2%	22,5%	65,2%
Seguro de capacitación y empleo	4,1%	2,8%	93,1%
Programa Familias por la Inclusión Social	20,1%	36,7%	43,1%
Becas universitarias	0,0%	0,0%	100,0%
Programa jóvenes con más y mejor trabajo	3,3%	4,0%	92,7%
Seguro de desempleo	7,4%	15,6%	77,1%
Comedores escolares y comunitarios	7,2%	14,6%	78,2%
Direct Cash Transfers	10,6%	18,4%	71,0%
Total Non-contributory pensions	12,2%	22,5%	65,2%
Total Contributory Pensions	0,5%	1,2%	98,3%
Total Education Spending	4,3%	6,9%	88,8%
Total Health Spending	6,8%	8,7%	84,5%
Total CEQ Social Spending	6,4%	9,6%	84,0%
Income shares	0,3%	0,9%	98,8%
Population shares	4,1%	6,0%	89,9%

Source: Author´s calculations based on ENGHo.

Table 5: Incidence of Taxes and Transfers on Income Distribution in Percentages

Deciles	Direct Taxes	Contributions (excluding contributions to pensions)	Non-contributory Pensions	Flagship CCT	Other Direct Transfers (Targeted or Not)	All Direct Transfers	Indirect Subsidies	Indirect Taxes	Net Indirect Taxes	In-kind Education	In-kind Health	In-kind Transfers
1	-0,4	-3,1	40,1	18,6	20,4	79,1	15,1	-41,1	-26,0	76,9	94,2	171,1
2	-0,3	-5,5	5,4	6,8	9,1	21,3	9,3	-28,4	-19,2	40,2	46,6	86,7
3	-0,3	-9,0	3,4	2,7	4,4	10,5	7,5	-24,1	-16,5	25,4	25,0	50,4
4	-0,2	-11,8	2,9	1,0	2,9	6,8	7,8	-23,0	-15,3	18,3	16,7	35,0
5	-0,3	-12,3	1,8	0,7	2,3	4,8	6,5	-22,1	-15,7	14,4	13,0	27,4
6	-0,2	-13,6	2,0	0,1	1,8	3,9	6,5	-21,8	-15,3	11,0	9,8	20,8
7	-0,2	-15,2	0,9	0,1	1,0	2,0	5,3	-21,0	-15,7	8,5	6,7	15,2
8	-0,4	-15,9	0,6	0,0	0,7	1,3	7,2	-19,9	-12,6	6,5	4,4	11,0
9	-1,9	-17,0	0,3	0,0	0,3	0,7	4,5	-18,9	-14,4	4,1	2,7	6,8
10	-10,9	-19,6	0,2	0,0	0,2	0,3	3,0	-15,0	-12,0	2,2	0,9	3,2
Total Population	-4,4	-16,1	1,4	0,6	1,3	3,4	5,2	-19,1	-14,0	8,5	7,5	16,0

Source: Author´s calculations based on ENGHo.

since the lowest market income deciles receive the highest proportion of transfers.

Indirect taxes show that the lowest market income deciles pay a higher proportion of their market income in taxes; this effect is partially mitigated by the indirect subsidies. In-kind transfers (health and education) fall heavily on the lowest market income deciles (Table 5).

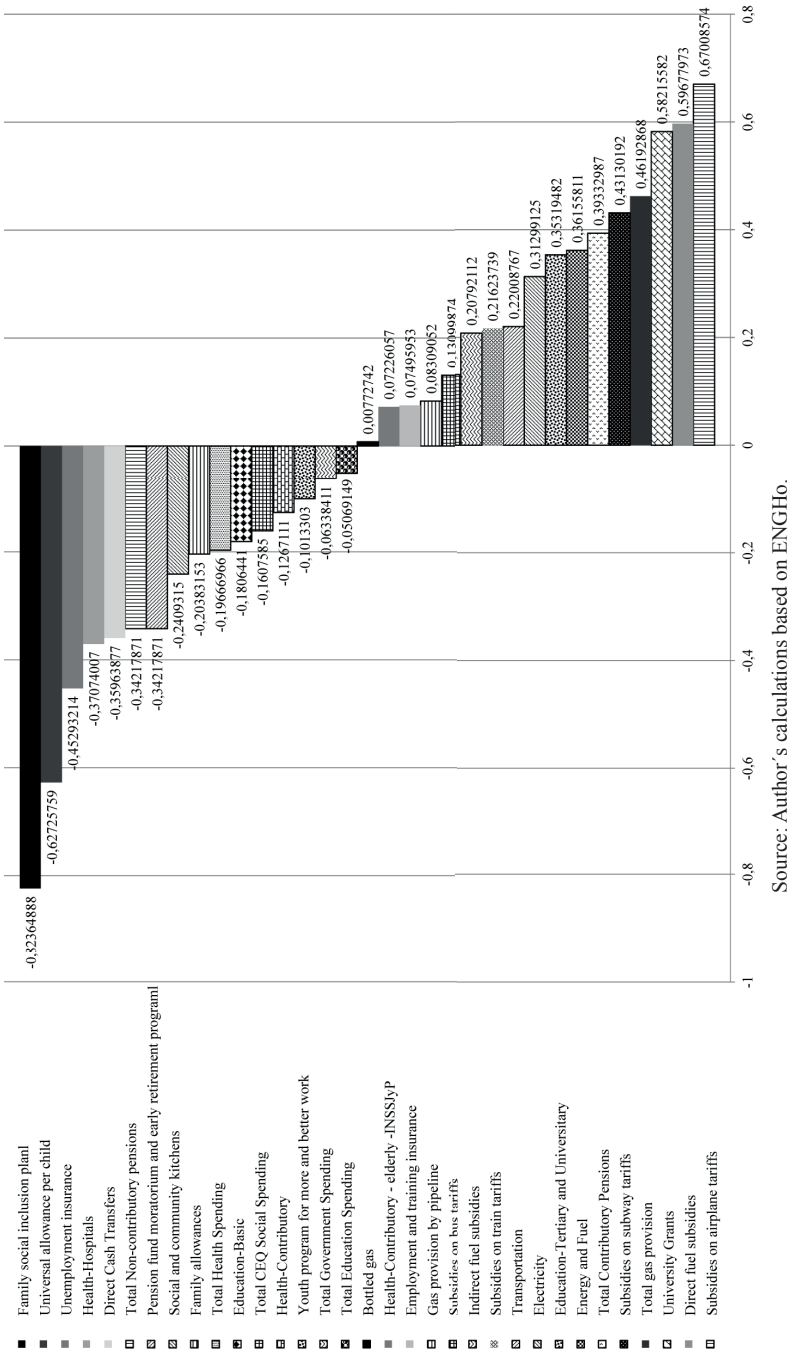
VI.4. Progressivity

Figure 4 presents social spending by program analyzed, total social spending, and indirect expenditures, sorted by their degree of progressivity, measured by the concentration coefficient.

The idea here is to show how concentrated are the benefits among the beneficiaries, based on the initial ranking of individuals. It is computationally equivalent to a Gini coefficient but without reranking of individuals (it is also called "Quasi-Gini"). Consequently, their results should be compared with initial Gini coefficient in order to determine whether expenditures are progressive in absolute, relative terms, or regressive. Those expenditures that show a negative concentration coefficient are progressive in absolute terms (pro-poor), while those with a positive sign are progressive in relative terms but not in absolute terms (pro-rich). The concentration coefficient for social spending shows progressivity in absolute terms (a pro-poor characteristic).

Most direct cash transfers, education expenditures, and health benefits are progressive in absolute terms; it is worth noting that spending in tertiary and university education is pro-rich as it benefits more, in absolute terms, households that are wealthier than those that are poorer. This result coincides with other studies (Gómez Sabaini, Harriague, and Rossignolo, 2013). However, expenditures that are regressive in absolute terms (pro-rich) are dominated by indirect subsidies, i.e., public transfers designed to keep tariffs low. Transportation, electricity and gas are among these expenditures, because richer households receive a higher benefit in absolute terms than low income individuals do (Figure 4).

Figure 4: Concentration Coefficient by Spending Category



Source: Author´s calculations based on ENGHo.

Income distribution by decile is presented in Table 6. For instance, the first decile concentrates 1.2% of market income. After government intervention, the first decile concentrates 3.9% of final income. The richest decile concentrates 35.7% of market income; taxes and public expenditures reduce its share to 27.3% of final income.

Table 6: Income distribution by Decile

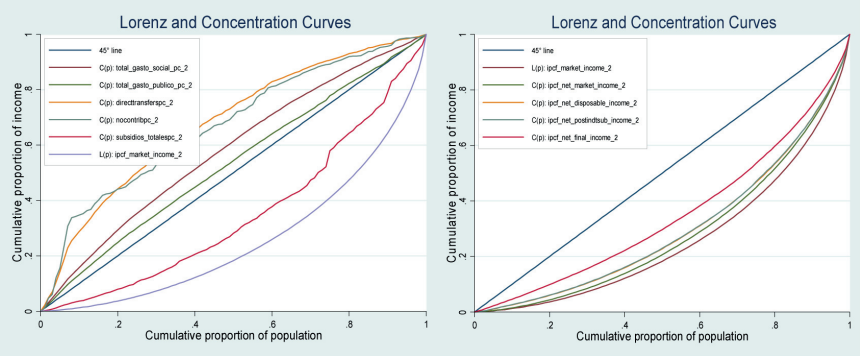
Decile	Benchmark case				
	Market Income	**Net Market Income**	**Disposable Income**	**Consumable Income**	**Final Income**
1	1,2%	1,5%	2,1%	2,1%	3,9%
2	2,4%	2,8%	3,4%	3,3%	5,0%
3	3,6%	4,0%	4,4%	4,4%	5,8%
4	4,8%	5,3%	5,5%	5,5%	6,5%
5	6,2%	6,7%	6,9%	6,7%	7,4%
6	7,6%	8,2%	8,2%	8,0%	8,4%
7	9,4%	10,0%	9,9%	9,7%	9,6%
8	12,1%	12,6%	12,4%	12,2%	11,5%
9	17,0%	17,0%	16,5%	16,2%	14,7%
10	35,7%	31,9%	30,8%	31,9%	27,3%

Source: Author´s calculations based on ENGHo.

Figure 5 presents Lorenz and concentration curves for aggregate public expenditures and market income and also these curves for every income concept that express the redistribution through taxes and public expenditures. Social expenditures, direct transfers and non-contributory expenditures are progressive in absolute and relative terms, while indirect subsidies benefit the rich in absolute terms. Lorenz curve corresponding to final income lies above that of market income, showing that public intervention improves income distribution.

Figure 5: Lorenz and Concentration Curves

(a)Aggregate Public Expenditures **(b) Redistributional Effect**



Source: Author´s calculations based on ENGHo.

VI.5 Poverty

Table 7 shows the results on poverty. The picture is roughly similar than that of inequality; most impoverished households benefit strongly from direct and in-kind transfers (health and education); the richest receive a greatly reduced proportion of these benefits. the impact on lowest deciles is much higher when considering pensions as a public transfer.

As an analogous to the income distribution analysis by decile, Table 8 presents the distribution by socioeconomic group based on poverty analysis. For instance, 0.9% of income concentrated by population lies between $2.50 and $4 per day before public policies. After direct taxes, this proportion rises to 1.4%; direct transfers reduces this proportion to 0.8% and indirect taxes and transfers increases the share to 1.6%.

The greater proportion of income concentrated by population lies in the fifth bracket (10 to 50), meanwhile fiscal system reduces the population below poverty lines, even in the highest bracket. Consequently, 30.9% of income concentrated by population was over $50 PPP when considering market income, while when considering consumable income that percentage reduces to 13% in the consumable income. This feature reflects the redistributional impact of public policies, because the richest two brackets reduce their share while the remaining four increase the amount of income

Table 7: Incidence of Taxes and Transfers on Poverty in Percentages

Deciles	Direct Taxes	Contributions (excluding contributions to pensions)	Non-contributory Pensions	Flagship CCT	Other Direct Transfers (Targeted or Not)	All Direct Transfers	Indirect Subsidies	Indirect Taxes	Net Indirect Taxes	In-kind Education	In-kind Health	In-kind Transfers
y < 1.25	-0,9	-1,1	60,8	98,9	86,5	246,2	36,6	-81,3	-44,7	321,3	437,1	758,3
1.25 < = y < 2.50	-0,4	-1,6	57,4	24,4	20,8	102,6	18,5	-47,3	-28,8	98,3	136,5	234,8
2.50 <= y < 4.00	-0,3	-3,5	33,7	13,9	17,9	65,5	13,3	-37,7	-24,4	61,9	69,1	131,0
4.00 <= y < 10.00	-0,3	-8,3	4,1	3,5	5,6	13,2	8,1	-25,3	-17,2	28,3	29,6	57,9
10.00 <= y < 50.00	-1,2	-15,5	0,9	0,2	1,0	2,1	5,9	-20,2	-14,3	7,8	6,2	13,9
50.00 <= y	-11,7	-19,8	0,1	0,0	0,2	0,3	2,6	-14,6	-12,0	2,1	0,8	2,9
Total Population	-4,4	-16,1	1,4	0,6	1,3	3,4	5,2	-19,1	-14,0	8,5	7,5	16,0

Source: Author´s calculations based on ENGHo.

they concentrate. However, these features are slightly reversed when looking at the final income distribution, because although the lowest brackets increase their share as well as the highest bracket, at the expense of the middle income brackets.

Table 8: Poverty distribution by Socioeconomic Group

Group	Benchmark case				
	Market Income	**Net Market Income**	**Disposable Income**	**Consumable Income**	**Final income**
y < 1.25	0,03%	0,05%	0,02%	0,03%	0,35%
1.25 < = y < 2.50	0,27%	0,36%	0,13%	0,27%	1,05%
2.50 <= y < 4.00	0,95%	1,36%	0,80%	1,61%	2,47%
4.00 <= y < 10.00	8,12%	12,22%	12,46%	17,91%	11,94%
10.00 <= y < 50.00	59,77%	69,24%	70,11%	67,15%	57,23%
50.00 <= y	30,87%	16,77%	16,47%	13,03%	26,96%
Total	100,00%	100,00%	100,00%	100,00%	100,00%

Source: Author´s calculations based on ENGHo.

VI.6. Fiscal mobility

Tables 9 to 11 expose the fiscal mobility matrices, which have been presented with the same disaggregation as the tables presented previously. These tables display mobility through different income groups; that is: extreme poverty (y<$1.25); moderate poverty ($1.25<=y<$2.50 and $2.50<=y<4) ; middle class ($4<=y<$10 and $10<=y<$50); and high incomes ($50<=y). The rows display the initial income (100% horizontally) and the columns mean income that accrue to poverty brackets after taxes and transfers.

Considering the impact of direct taxes and transfers, around 27% of population under extreme poverty in the market income group remain in that condition in the disposable income classification. That means that around 73% can get out of that condition after direct taxes and transfers and are between $1.25 and $10 PPP when considering disposable income; 41,6% remain in the second bracket ($1.25 to $2.50) and 17% climb to the third bracket.

Table 9: Fiscal Mobility Matrices - Market to Disposable Income

	Disposable Income groups						
Market Income groups	y < 1.25	1.25 <= y < 2.50	2.50 <= y < 4.00	4.00 <= y < 10.00	10.00 <= y < 50.00	50.00 <= y	Percent of Population
y < 1.25	27,4%	41,7%	17,1%	13,9%	0,0%	0,0%	1,2%
1.25 <= y < 2.50	0,1%	24,4%	48,4%	25,1%	2,0%	0,0%	2,9%
2.50 <= y < 4.00	0,0%	0,3%	37,5%	51,2%	11,0%	0,0%	6,0%
4.00 <= y < 10.00	0,0%	0,0%	1,0%	91,1%	7,9%	0,0%	24,5%
10.00 <= y < 50.00	0,0%	0,0%	0,0%	8,1%	91,8%	0,1%	57,5%
50.00 <= y	0,0%	0,0%	0,0%	0,0%	51,2%	48,8%	7,9%

Source: Author´s calculations based on ENGHo.

Table 10: Fiscal Mobility Matrices - Market to Consumable Income

	Consumable Income groups						
Market Income groups	y < 1.25	1.25 <= y < 2.50	2.50 <= y < 4.00	4.00 <= y < 10.00	10.00 <= y < 50.00	50.00 <= y	Percent of Population
y < 1.25	38,2%	38,1%	19,6%	4,2%	0,0%	0,0%	1,2%
1.25 <= y < 2.50	2,4%	40,4%	32,9%	23,5%	0,8%	0,0%	2,9%
2.50 <= y < 4.00	0,0%	6,1%	53,6%	34,9%	5,4%	0,0%	6,0%
4.00 <= y < 10.00	0,0%	0,0%	10,4%	86,0%	3,6%	0,0%	24,5%
10.00 <= y < 50.00	0,0%	0,0%	0,0%	23,7%	76,1%	0,2%	57,5%
50.00 <= y	0,0%	0,0%	0,0%	0,0%	70,5%	29,5%	7,9%

Source: Author´s calculations based on ENGHo.

Table 11: Fiscal Mobility Matrices - Market to Final Income

	Final Income groups						
Market Income groups	y < 1.25	1.25 <= y < 2.50	2.50 <= y < 4.00	4.00 <= y < 10.00	10.00 <= y < 50.00	50.00 <= y	Percent of Population
y < 1.25	0,0%	0,0%	13,1%	80,5%	6,4%	0,0%	1,2%
1.25 <= y < 2.50	0,0%	0,0%	1,8%	84,2%	14,0%	0,0%	2,9%
2.50 <= y < 4.00	0,0%	0,0%	0,6%	72,4%	27,0%	0,0%	6,0%
4.00 <= y < 10.00	0,0%	0,0%	0,0%	53,4%	46,6%	0,0%	24,5%
10.00 <= y < 50.00	0,0%	0,0%	0,0%	3,5%	96,2%	0,3%	57,5%
50.00 <= y	0,0%	0,0%	0,0%	0,0%	66,1%	33,9%	7,9%

Source: Author´s calculations based on ENGHo.

When comparing market to consumable income, 38.1% of population are below $1.25 PPP, which means an increase from disposable income through the effect of indirect taxes and transfers because they pay indirect taxes to a higher extent that the indirect subsidies they receive, meanwhile 19.6% remain in the $2.50-$4 bracket.

When analyzing market income and final income groups, about 80% of population that were below extreme poverty threshold considering market income are between $4 to $10 PPP when considering final income due to the effect of in-kind taxes and transfers. As can be seen, when considering the highest bracket, due to the redistributional feature of taxes and transfers, only 34% of population that started with an income that was higher than $50 stays in the same poverty bracket, while the remaining 66% lies in the $10-$50 bracket.

VII. Policy simulations

Along the last decade, Argentina has been carrying out expansionary fiscal policies whose main effect has been the reduction in existing inequality levels regarding market incomes. Among these policies, Sistema Integrado Previsional Argentino y Movilidad Jubilatoria (SIPA), a periodical increase in pensions defined by law, and "pension moratorium" (an anticipated retirement program combined with a moratorium for those who would have not fulfilled the mandatory 30 years of contributions to the pension system have been implemented. Additionally, the creation of a universal program, Asignación Universal por Hijo (AUH), extended the benefits that formal workers receive based on the amount of dependants to the ones that work in the informal sector and to the unemployed people.

On the tax side, the increase in the participation of Personal Income Tax, mainly due to the lack of adjustment in thresholds and brackets related to inflation; Corporate Income Tax, due to the lack of adjustment in corporations´ balance sheets; the introduction of Export Duties, with the aim of capturing windfall gains arising from the increase in international commodity prices, and the renationalization of the pension system have been the factors that have allowed to finance, especially in the first part of the decade, the aforementioned expansionary policies. In the second half of the decade, however, inflation tax has significantly substituted that revenue from taxes.

Public expenditure has risen to around 45% of GDP in 2014 considering the national and provincial governments, while tax burden has rides to around 32% of GDP in 2014, one of the highest historical levels. This implies that fiscal deficit has increased to unprecedented levels in recent history (2.5% of GDP in 2014 at the national level, while for 2015 the most conservative estimations place it in the surroundings of around twice as high). Additionally, GDP growth has stagnated (-2.6% in 2014; statistics for 2015 considered a 2.3% growth).

Table 2 showed that the impact of public policies regarding the reduction in disparities has been significant. However, several issues should be considered. On the expenditure side, although the incorporation of a higher portion of monetary transfers has produced an important change the composition of expenditures, economic subsidies have increased, from 2.2% in 2003 to 6.4% of PBI in 2014 and have generated important differences with production costs, which do not comply with efficiency criteria and originated distortions in relative prices.

Not only economic subsidies have constituted a significant explanation of fiscal deficit, but also they have not fulfilled the aims for which they had been introduced, according to the authorities, because energy production has stagnated (see Rossignolo, 2016).

The aforementioned distortion in relative prices has generated in family budgets a reassignment in the composition of expenditures, given the fact that low tariffs have allowed the increase in consumption of these goods (electricity, gas, transportation, etc.) . If it were assumed, for instance, that the prices of the other demanded goods were near marginal costs, while energy and transportation have tariffs that are far lower than marginal costs, this impulses its excessive and inefficient use when compared with its optimal level.

But additionally, these subsidies convey inclusion errors when covering sectors that do not need them. Expenditure in these sectors, although progressive, is quantitatively more concentrated in highest income sectors rather than lowest ones (poorest 20% receives around 12% of these expenditures, while the richest 20% gets around 35% of these benefits). Figure 5 showed concentration coefficients of these subsidies and, as it can be seen, positive values show that these are progressive in relative but not in absolute terms. Consequently, concerning public expenditures, the emphasis on

equity should include a reduction in subsidies, focalizing its reach within the sectors that really need them.

Starting from the previous analysis, a simulation was carried out (Simulation I) in a partial equilibrium context, that consisted in maintaining the subsidies for the tariff brackets of lowest electricity consumption, whereas for gas, subsidies were cut in half. In both cases, subsidies were focalized in the beneficiaries of AUH, as an example of a targeting mechanism ("social tariffs"). Total subsidies (electricity, gas and airfare tickets) were reduced in 66%.

The result of this simulation determines that these subsidies turn to be more progressive; starting from a concentration coefficient of 0.3130 in the benchmark case, focalization turns these expenditures into progressive in absolute terms, with a coefficient of -0.5053. Inequality reduces, given the fact that Gini from Final Income is lower that of the benchmark case (Tables 2 and 12), meanwhile poverty increases slightly regarding the strong relative weight of the reduction in the amount of subsidies (1.9% of GDP).

Table 12: Gini and Headcount Index for Different Income Concepts Simulation I

Group	Benchmark case				
	Market Income	**Net Market Income**	**Disposable Income**	**Consumable Income**	**Final income**
Gini	0,481	0,435	0,403	0,391	0,293
Headcount index					
$2.5 PPP	4,7%	5,1%	1,8%	3,3%	
$4 PPP	12,3%	13,9%	7,3%	13,3%	
National Moderate PL (INDEC)	10,9%	12,5%	3,6%	6,6%	
Other Moderate PL (FIEL)	29,0%	33,3%	24,9%	36,3%	

Source: Author´s calculations based on ENGHo.

Given the fact that poverty increases slightly, it interesting to analyze income mobility. Table 13 shows income mobility matrix, which was built by comparing proportions of population that, through the action of public sector by means of paying taxes and receiving the benefits of public expenditures, go up in poverty brackets. this table shows the difference (%) between population percentages in each bracket for the benchmark case and the case with the removal of subsidies.

The table should be read horizontally, For instance, considering the richest population bracket according to market income, the reduction in subsidies makes 1.8% of that population fall into the less rich category. Taking into account the poorest bracket, around 1.5% of population that had been able to climb up to the second and third bracket now fall again to the first one.[15]

Table 13: Fiscal Mobility Matrices
Differences in % between the benchmark case and the case with reform in subsidies

	Consumable Income groups					
Market Income groups	**y < 1.25**	**1.25 <= y < 2.50**	**2.50 <= y < 4.00**	**4.00 <= y < 10.00**	**10.00 <= y < 50.00**	**50.00 <= y**
y < 1.25	1,06%	-0,51%	-1,01%	0,11%	0,31%	0,04%
1.25 <= y < 2.50	0,34%	1,60%	-2,80%	0,37%	0,49%	0,00%
2.50 <= y < 4.00	0,00%	0,78%	1,28%	-2,32%	0,11%	0,15%
4.00 <= y < 10.00	0,00%	0,00%	1,33%	-1,91%	0,31%	0,27%
10.00 <= y < 50.00	0,00%	0,00%	0,00%	1,69%	-1,63%	-0,03%
50.00 <= y	0,00%	0,00%	0,00%	0,00%	1,81%	-1,81%

Source: Author´s calculations based on ENGHo.

Could there be a compensatory policy? There are many ways of protecting affected sectors with monetary transfers, reduction in VAT, social tariffs, etc. Use of monetary emission has caused inflation to stabilize around 30 to 35% annually with the consequent effect in poverty levels. Inflation moderates the effect of the said transfers in terms of their impact on poverty and inequality, and also in its macroeconomic expansionary effect in consumption.

On the tax side, VAT generates the highest revenue (around 7% GDP) although its effects on income distribution are well known: as it affects more importantly those who spend a higher proportion of their incomes on consumption, its affects regressively income distribution.

Consequently, the aim is to perform public policies that would reduce fiscal deficit without affecting, or if possible improving income distribution

15. But as it can also be noted, focalization of subsidies can also reduce inequality and increase the proportion of lowest income people that stay in the same poverty levels.

while reducing poverty considering a partial equilibrium context. Strengthening of monetary transfers appears as essential, meanwhile, regarding taxes, a reduction or elimination of VAT in the basic food basket restricting its scope to the beneficiaries of monetary transfers would diminish its regressive feature.

Two additional simulations were produced. The second simulation (Simulation II) consisted in increasing monetary transfers, in particular, AUH was increased in 100% compared to 2012 values and its scope was expanded in order to include Monotributo taxpayers (originally excluded by law), which entails a fiscal cost of 0.7% of GDP. Results are shown in Table 14. It can be seen that poverty reduces strongly considering Consumable Income, and its reduction is higher than the benchmark case.[16]

Table 14: Gini and Headcount Index for Different Income Concepts Simulation II

	Market Income	Net Market Income	Disposable Income	Consumable Income	Final income
Gini	0,483	0,438	0,393	0,391	0,295
Headcount index					
$2.5 PPP	5,5%	5,8%	1,0%	1,8%	
$4 PPP	13,1%	14,7%	4,8%	9,4%	
National Moderate PL (INDEC)	10,9%	12,5%	3,6%	6,6%	
Other Moderate PL (FIEL)	29,0%	33,3%	24,9%	36,3%	

Source: Author´s calculations based on ENGHo.

The third alternative consisted in eliminating VAT from the components of the basic food basket (discriminating by product) for the beneficiaries of AUH. Results are shown in Table 15. Focalization of VAT makes this tax to be more concentrated (concentration coefficient increases from 0.3147 to 0.3260), and consequently less regressive, with a fiscal cost of around 0.1% of GDP; this alternative reduces poverty measured in terms of consumable income compared with the benchmark case (Table 2).

Consequently, although the results are slightly different, these alternatives could be effective in reducing poverty and inequality. Figure 6 compares the results in terms of inequality and poverty variation ($2.5 PPP).

16. Poverty and inequality are higher than the initial case because when building different income concepts, and due to the existing information in the household survey, private transfers get reduced when public transfers increase.

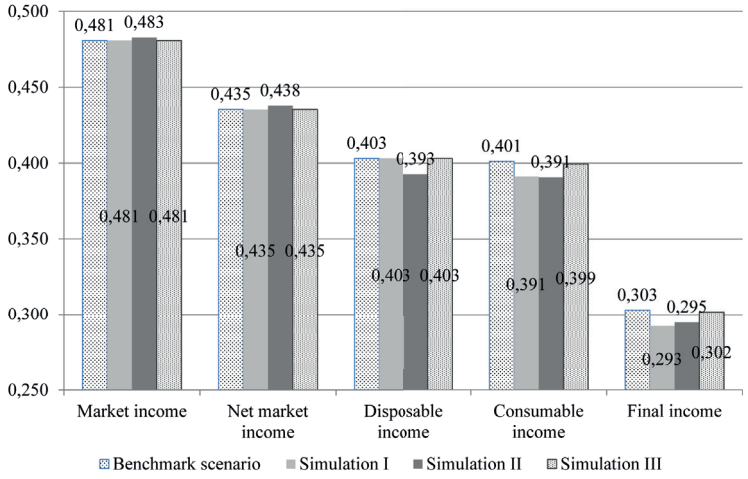
Table 15: Gini and Headcount Index for Different Income Concepts Simulation III

	Ingreso de mercado	Ingreso neto de mercado	Ingreso disponible	Ingreso consumible	Ingreso final
Gini	0,481	0,435	0,403	0,399	0,302
Headcount index					
$2.5 PPP	4,7%	5,1%	1,8%	3,0%	
$4 PPP	12,3%	13,9%	7,3%	11,9%	
National Moderate PL (INDEC)	10,3%	12,0%	5,6%	9,4%	
Other Moderate PL (FIEL)	28,8%	33,1%	28,4%	37,5%	

Source: Author´s calculations based on ENGHo.

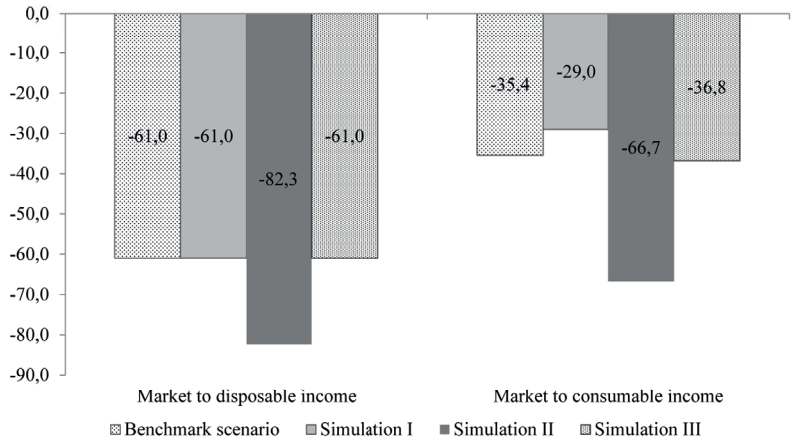
The highest poverty reduction is generated with the increase and expansion of AUH, while reduction in VAT reduces poverty more than focalization of subsidies. Regarding inequality, the reduced budgetary impact of VAT reduction reduces its impact in inequality decrease, but Gini coefficient is however lower than the initial case. Therefore, considering the three impacts together, both inequality and poverty could get reduced, even with a reduction in fiscal deficit.

Figure 6a: Changes in inequality and poverty under different alternatives Gini coefficient



Source: Author´s calculations based on ENGHo.

Figure 6b: Changes in inequality and poverty under different alternatives U$S2.5 PPP Poverty change (%)



Source: Author´s calculations based on ENGHo.

VIII. Conclusions

After the crisis in 2001, which generated an increase in poverty indicators and inequality, the government in Argentina instituted a series of policies intended to ameliorate inequality and reduce poverty. Among the policies introduced from 2002 to 2003 (Programa Jefes y Jefas de Hogar)and expanded from 2008 to 2009, programs such as Asignación Universal por Hijo and Moratoria Previsional have been the most effective. Additionally, in order to help expand aggregate demand, indirect (economic) subsidies were introduced to keep tariffs on electricity and transportation low for greater Buenos Aires residents.

On the tax side, an increase in revenues from direct taxes (income tax, social security contributions) through expansions in tax bases accompanied the nominal increase of traditional indirect tax revenues.

This study has introduced the CEQ methodology to analyze the impact of public expenditures and taxes on income distribution and poverty in Argentina using ENGHo survey data from 2012-2013. In this paper pensions have been considered as a part of market income. The results show a high degree of correction in welfare indicators: market inequality is strongly re-

duced and poverty is highly ameliorated. However, due to indirect subsidies and programs like Asignaciones Familiares, there is still a high spillover effect when targeting the poor.

Additionally, the increase in the public deficit raises the question of whether this level of public expenditure can be sustained, given the fact that tax revenues have already reached a historic peak. A reduction in spending, without greatly altering the impact on inequality and poverty, should necessarily consider diminishing economic subsidies.

A reduction in subsidies imply an increase in tariffs that would generate a reassignment in families expenditures, that should now derive more resources to these goods and adjusting consumption of other goods. Consequently, general equilibrium effects should be taken into account, Increase in tariffs, reflected in prices, imply reduction in real wages affecting aggregate demand and increase in poverty. But also a reduction in production would be generated, given the fact that costs for companies are also increased. The timing for the measures is essential, because compensating policies should have immediate effect in familiar expenditures in order to sustain aggregate demand and reduce increases in poverty and inequality.

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