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Abstract: This paper studies the effect of consolidated –national and provincial– fiscal policy on personal income distribution in Argentina, building a novel panel data for 1995-2010. We find that fiscal policy reduces income inequality, summarized with the Gini coefficient, by 0.06 in 1995-2001 (out of an ex ante average value of 0.490), and 0.08 in 2003-2010 (out of 0.497). Expenditures (mainly social services) are the tool for redistribution because taxes are regressive. Provincial expenditures account for two-thirds of the reduction in the Gini coefficient, indicating that there is no incompatibility between decentralization and redistribution. The contribution in-kind expenditures to redistribution is more important than that of cash transfers; although the latter gain relevance in 2003-2010. The impact of social expenditures and income taxes on the Gini coefficient is similar to effects found in other Latin American countries, but significantly lower than results found for OECD and European Union countries. The case of Argentina may provide useful lessons for other federal countries, in particular, considering all the expenditures and taxes and the responsibility of the different levels of governments and their effect on income distribution.

Keywords: Government budgets; Inter-jurisdictional differentials; Redistributive effects

JEL Classifications: H77, H73, I38

1. Introduction

During the last 60 years there has been a spring of theoretical and empirical research papers studying the effect fiscal policy on income distribution, of which we concentrate on (i) the subject of redistribution (personal income, rather than other definitions of income, such as regional or functional), (ii) the fiscal policy under study (consolidated budget, rather than either taxes or expenditures, or even sub-sets of either of them individually), and (iii) the debate on the level of government which fits better to execute fiscal policy (central, provincial, or shared role in federal systems).

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An online Appendix explaining the allocation of expenditures and taxes among provinces and quintiles, and reporting annual values of Tables 2 to 5, is available at www.depeco.econo.unlp.edu.ar/Anexos-Publicaciones/ContPortoREF2016-OnlineAppendix.pdf
This paper studies the effect of consolidated national and provincial fiscal policy on income distribution in Argentina. This country is an interesting case study on the three issues considered above. Firstly, the study of the effect of fiscal policy on income distribution is important in itself, because it allows policy makers to detect whether seemingly redistributive policies improve income distribution across time, and sheds light on possible ways of correction. In addition, the selected period of study in Argentina covers two socio-economic regimes, one characterized by fixed exchange rate, macroeconomic stability and tight fiscal accounts (known as “Convertibility”, until year 2001), which ended up in a crisis at the beginning of year 2002, and another characterized by high real exchange rate, high inflation and slack fiscal accounts (known as “post-Convertibility”, since year 2002). Secondly, being a federal country, revenue collection is highly centralized (with the central government collecting about 79 percent of total revenues in 2010) while expenditures are shared between the central and provincial governments (with provinces representing 44 percent of total expenditures in 2010). Social expenditure led the decentralization trend, after a pact was reached between the nation and provinces that allocated responsibilities on basic education (including pre-school, elementary and high school) and health to the latter. Such policy changes in three decades had significant effects on society, and in particular, on taxpayers and expenditure beneficiaries, but the measurement of such effects have always been partial (see Porto, 2012, and Galiani et al. 2008, for example). Thirdly, the exercise allows us to identify the contribution of national and provincial expenditures and taxes to redistribution and to confront the centralization-decentralization views on fiscal policy. The case of Argentina may provide useful lessons for other federal countries, in particular, considering the responsibility of different levels of governments in the allocation of fiscal variables and their effect on income distribution.

We build a novel panel data for 1995-2010 considering the 24 jurisdictions (23 provinces and the City of Buenos Aires) and quintile groups within provinces. We allocate national and provincial expenditures and taxes among people within provinces, following benefit and incidence principles, and avoiding double accounting. Then we assess the distributive impact of taxes and expenditures at both national and provincial levels of governments in Argentina, by studying the evolution of three measures of personal income distribution: a) ex ante – which results from market forces; b) interim – which results from adding public cash transfers and subtracting direct taxes to a); and c) ex post – or extended– which results from adding in-kind public goods and subtracting indirect taxes to b).

We first discuss the evolution of income distribution: personal income inequality increased between 1995 and 2002 and then reverted the trend, in parallel with two different socioeconomic regimes captured in the sample (Convertibility between 1995 and 2001 and post Convertibility since 2002). Then we develop our main results: i) the effect of fiscal policy is a reduction in the Gini coefficient of 6 points in 1995-2001, and 8 points in 2003-2010; ii) the mix effect of instruments to redistribute income changed in time towards cash transfers and against in-kind expenditures; iii) provincial budgets contribute strongly to improve income distribution; iv) social expenditure is the most important redistribution tool, but economic services have grown in size between sub-periods, pushed by government subsidies in energy and transport; v) a partial effect of fiscal policy (social expenditure-income taxes) is similar to that in Latin American countries, but significantly lower than results found for OECD and European Union (EU) countries.

The paper is organized as follows. Section 2 situates the paper within the related literature. Section 3 presents the methodology and data. Section 4 summarizes the economic and social situation in Argentina, as well as the main public finance statistics. Section 5 shows the main results. Finally, Section 6 presents conclusions and recommendations.
2. Literature Context

In the traditional normative theory one main question of analysis concerns the relevant dimension of distribution: should the aim of public policy be the regional distribution of income, the personal distribution, or both? Considering that arguments included in the welfare function are individuals’ utilities, and the risks of hiding personal redistribution within regional redistribution (such as the possibility that rich people from poor regions being subsidized by poor people from rich regions; Oates, 1972), we concentrate on personal distribution.\(^2\)

A second important question concerns the level of government in charge of income redistribution within a federal country: should the national, provincial, or local, or all of them, be responsible for this task? In the latter case, how to share the redistribution responsibility among levels of government? The theoretical literature put this function on the head of the central government (Musgrave, 1959; Oates, 1972), in order to avoid the so-called competition and incompatibility problems (Tresch, 2002).\(^3\) In spite of these two problems, the experience from most countries shows that redistribution from sub-national fiscal budgets is important (see Sewell, 1996, and more recently Hoynes and Luttmer, 2012; Baicker, Clemens and Singhal, 2012; among others). Interestingly, the last two papers study the impact of (a subset of) sub-national taxes and expenditures on income distribution explicitly. In the case of Argentina, Cont and Porto (2014) highlight the relevance of provincial budgets as a redistributive tool.

The traditional empirical literature on the impact of fiscal policy on personal income distribution followed different, and mostly partial, approaches, but using standard incidence analysis. The problem with partial approaches is that they may hide the full effect of fiscal policy and lead to incorrect policy results and recommendations. Other papers study the impact of inter-governmental transfers on income distribution (in many cases, focusing on destination of transfers, i.e., disregarding the source of funds considering that transfers are *manna*, or in a few cases, correctly including the source of funds).\(^4\)

In the normative literature discussed so far and followed in this paper, fiscal policy is exogenous. More recent literature on political economy emphasizes the influence of different groups of interest in the design and implementation of fiscal policy. In this way, fiscal variables turn out to be endogenous results (see Person and Tabellini, 2000; Bénabou, 2000, Beramendi, 2012, among others, for studies that focus on the preferences of citizen-voters for redistribution, and Alesina and Rodrik, 1914, Alesina and Peroti, 1996, Dixit and Londregan, 1996, 1998, Bourguignon, 2004, López and Servén, 2006, Atkinson and Brandolini, 2006, Myles, 2009, Ramos and Roca-Sagalés, 2008, Roca-Sagalés and Sala, 2011, and Muinello-Gallo and Roca-Sagalés, 2013, for empirical work on endogenous relationships among fiscal policy, income distribution and income levels or growth).

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\(^2\) A more complete analysis should focus on the distribution of wealth or consumption. We do not pursue this path due to lack of consistent long-term data on such variables.

\(^3\) Pauly (1973) supported some decentralization of redistributive policies on the basis of altruism.

\(^4\) We omit a full literature review on the impact of fiscal variables on income distribution. The reader is referred to Cont and Porto (2014). In addition, see a comparison among Latin American and Western Europe countries by Gofti et al. (2008), a more recent comparison among Latin American countries by Hanni et al. (2014), or analysis concentrated on social expenditure for Argentina by Gasparini et al. (2001) or CEDLAS-DGSC (2004). In the case of transfers, we refer the reader to the pioneer papers of Bennett and Mayberry (1979), Holcombe and Zardkooohi (1981), Weingast, Shepsle and Johnsen (1981) and Inman and Ingerman (1988), and Porto and Sanguinetti (2001) for an application to Argentina.
3. Methodology and Data

3.1 Methodology

3.1.1 National budget, transfers and provincial budgets

Consider a province \( n \) with \( i \) households (labelled \( n=1,\ldots,N \) and \( i=1,\ldots,I \), respectively). The national government collects revenues from taxes subject to sharing regimes (VAT, income taxes, excise taxes, etc.), labelled \( t_{cn} \), of which retains a share \( \beta \), and other non-shared taxes (e.g., taxes on exports), indexed with the subscript \( t_{on} \), to finance national expenditure. The national government allocates expenditures \( (g_{Nkn}) \) across provinces by categories \( (k) \). Also, the national government allocates discretionary transfers among provinces \( (d_{dn}) \) with national funds. This way, the national budget is

\[
\sum_n \sum_k g_{Nkn} + \sum_n d_{dn} = \sum_n (\beta \sum_c t_{cn} + \sum_o t_{on}) \tag{1}
\]

Provincial governments receive transfers according to the revenue sharing regime \( (d_{rn}) \) such that \( \sum_n d_{rn} = (1-\beta) \sum_n \sum_c t_{cn} \) and other discretionary transfers \( (d_{dn}) \), which, together with provincial taxes \( (t_{sn}) \), finance provincial expenditures that are allocated in \( j \) categories, \( g_{Pjn} \). Province \( n \)’s budget is

\[
\sum_j g_{Pjn} = \sum_s t_{sn} + d_{rn} + d_{dn} \tag{2}
\]

Both (1) and (2) assume balanced budget; otherwise, a positive (negative) difference between expenditures and resources corresponds to fiscal surplus (deficit).

3.1.2 Impact of fiscal variables on personal distribution of income

Let \( m_{in} \) be the individual income before national and provincial fiscal policies (in this paper, we consider \( i \) as a quintile). The household benefits from the national (provincial) budget depending on the distributional patterns of taxes and expenditures. Let national expenditure \( g_{Nkn} \) be distributed according to weights \( \gamma_{ikn} \), provincial expenditure \( g_{Pjn} \) be distributed with weights \( \gamma_{ijn} \), national taxes \( t_{cn} \) and \( t_{on} \) be collected with weights \( \tau_{icn} \) and \( \tau_{ion} \), and provincial taxes with weights \( \tau_{isn} \).

Let \( c_{in} \) be the ex-post income of household \( i \) in province \( n \), which, by construction is,

\[
c_{in} = m_{in} + \sum_k \gamma_{ikn} \cdot g_{Nkn} + \sum_j \gamma_{ijn} \cdot g_{Pjn} - \sum_c \tau_{icn} \cdot t_{cn} - \sum_o \tau_{ion} \cdot t_{on} - \sum_s \tau_{isn} \cdot t_{sn} \tag{3}
\]

or put more simply,

\[
c_{in} = m_{in} + g_{iNn} + g_{iPn} - t_{iNn} - t_{iPn} \tag{4}
\]

that is, the ex-post (extended) income is the ex-ante income plus national and provincial expenditures minus national and provincial taxes. Another relevant definition is interim income \( (p_{in}) \), i.e., personal income after deducting direct taxes (mainly, labor and income taxes) and adding direct transfers (social security payments, social transfers in cash, and others) but before in-kind expenditures and subsidies, and indirect taxes. It is clear from the description and equation (3) that both national and provincial governments affect personal income through the levels and mix of taxes and expenditures, as long as \( c_{in} \neq p_{in} \neq m_{in} \). The measurement of the impact of fiscal policy on income distribution can be done as a standard comparative statics exercise between ex-ante, interim and ex-post income distributions.

\[\text{Matrix } T_{Nn} (i \times c+o) \text{ summarizes the national tax weights; matrix } B_{Nn} (i \times k) \text{ summarizes national expenditures weights; matrix } T_{Pn} (i \times s) \text{ summarizes provincial tax weights and matrix } B_{Pn} (i \times j) \text{ summarizes provincial expenditures weights. In all the cases, the sum of the weights adds one.}\]
3.1.3 Summary of the effects of fiscal variables on income distribution

The effects of national and provincial fiscal policies on personal income distribution are summarized through the allocation of national and provincial expenditures and taxes to quintile \( i \)'s households in province \( n \) \( \{g_{NNn}, t_{NNn}, g_{PPn}, t_{PPn}\} \) in equations (3) and (4). Once taxes and expenditures are allocated, we pool households into five quintiles at the national level. Therefore, household \( i \) benefits from fiscal policy if \( c_i > m_i \) (where we drop the subscript \( n \) when we refer to national quintiles), which results from the interaction of national and provincial expenditures and taxes, and the revenue sharing regime. Also, household \( i \) benefits from direct (indirect) fiscal policy if \( p_i > m_i \) (\( c_i > p_i \)), and vice versa.

3.1.4 Gini coefficient of income inequality

This paper uses the Gini coefficient of income inequality applied to the national distribution of income

\[
G = 1 + \frac{1}{I} - 2 \sum_{i=1}^{I} \frac{(l+1-l) y_i}{l^2 y^p} \tag{5}
\]

where households are ranked from lowest to highest income. The number of income groups is \( I = 5 \); \( y \) is the ex ante (\( m \)), interim (\( p \)) or the ex post (\( c \)) income; and \( y^p \) is the average income of the unit under analysis.\(^6\) Similar mathematical formulas apply to concentration curves (expenditures and taxes). To assess the impact of fiscal policy on income distribution, we use the indicator proposed by Reynolds and Smolensky (1977)

\[
RS = -\frac{\sum_j t_j k_t + \sum_j g_j k_g}{\sum_j t_j + \sum_j g_j} \tag{6}
\]

where \( \{j,l\} \) capture a selected partition of taxes and expenditures. For example, if the consolidated budget is decomposed into national (\( N \)) and provincial (\( P \)) taxes and expenditures, then \( j = l = N, P \); \( t_N \) (\( t_P \)) is the national (provincial) tax effort; \( g_N \) (\( g_P \)) is the national (provincial) expenditure, all relative to income; \( Kt_N \) (\( Kt_P \)) is the Kakwani index of progressivity of national (provincial) taxes (equal to the difference between the concentration of taxes and (5)); and \( Kg_N \) (\( Kg_P \)) is the Kakwani index of progressivity of national (provincial) expenditures (equal to the difference between (5) and the concentration of expenditures). If the consolidated budget is disaggregated into transfer and in-kind expenditures together with the corresponding taxes, a similar description follows for such decompositions (where \( j = l = T; IK \)). Alternatively, expenditures could be disaggregated into social, economic and administrative expenditures (\( l = SS, ES, A \)) and taxes could be disaggregated into production-consumption-transactions, income-assets and others (\( j = PCT, IA, O \)). Finally, we allow for government surplus or deficits, i.e., \( \Sigma_j t_j \neq \Sigma_l g_l \).

3.2 Data

The starting point is the level of provincial income, summarized in the Gross Geographic Product (GGP).\(^7\) Income distribution is reported in the Permanent Household Surveys (PHS, 2016).

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\(^6\) We may underestimate inequality when we pool quintiles-provinces into quintiles-country (i.e., there is a level of within-inequality), but we do not explore it in this paper.

\(^7\) An important issue arises with the concept of income vs. product. A share of the product in a province may correspond to income from people living in other provinces, while some personal income of a household living in a province may be computed as the product produced in another province. A major problem in Argentina has to do with the product and the income generated in the city of Buenos Aires vs. the province of Buenos Aires, and also in other provinces. Since we do not know a definite sign for possible bias, we use the product variable.
Encuesta Permanente de Hogares), published by the National Bureau of Statistics (INDEC, Instituto Nacional de Estadísticas y Censos). Given that income declared in PHS includes transfers from the government to people (cash transfers, benefits, social security payments, etc.) and excludes a subset of taxes (personal income taxes, social security contributions, etc.), it is an interim income. In order to arrive to the ex-ante income we subtract cash expenditures and add income taxes and contributions from interim income. On the other hand, starting from interim income, we add in-kind expenditures and subtract the remaining taxes—most of them, indirect taxes—to arrive to ex-post (or extended) income. Per capita figures are constructed as the ratio between the corresponding variable and population (source: INDEC).

We allocate taxes and expenditures among quintiles, by making assumptions on weights (\( \gamma_{i, bn}, \gamma_{i, m}, \tau_{i, cn}, \tau_{i, on}, \tau_{i, sn} \)) as detailed in the online appendix. The construction of weights is a challenge in itself, and we apply rules that are usual in the literature (see Reynolds and Smolensky, 1977, as general reference, and Ahumada et al., 1997, for an example of Argentina). Put it simply, direct taxes (on families’ income and wealth) are allocated based on income patterns, and indirect taxes (on goods and services) are allocated based on consumption, production or trade patterns. On the other hand, the allocation of cash expenditures among households is quite straightforward, but the allocation of public and quasi-public goods is complex, depending on assumptions on the use of services (whenever information is available), or in proportion of income or/and population. Finally, individual allocations must be consistent with national taxes collected from different provinces, national expenditures distributed among provinces (and groups of provinces), national transfers to provinces, provincial taxes and provincial expenditures.

4. The Case of Argentina

Argentina is a Latin American country with per capita income over US$ 9,000 (year 2010). Regional disparities are large, with provincial incomes ranging from US$ 27,508 in the city of Buenos Aires to US$ 3,781 in Santiago del Estero province. Such disparities also hold for social indicators such as Unsatisfied Basic Needs, although other indicators (such as Human Development Index) display less provincial heterogeneity (more details are available in the Online).

As stated in the introduction, income inequality has been a continuous concern of public policy in Argentina, having constitutional entity (National Constitution of 1994, Art. 75\textdegree inc. 2). The period 1995-2010 is very interesting in that the country moved from a stage of growth and increasing inequality, until 1998, to another of recession and increasing inequality, which ended up in a crisis at the beginning of year 2002, to later grow steadily, accompanied by reductions in inequality (see left panel of Figure 1). The first sub-period is part of the so-called Convertibility, which was a socio-economic regime characterized by fixed exchange rate, macroeconomic stability and tight fiscal accounts. The second sub-period is known as “post-Convertibility”, and is characterized by high real exchange rate, high inflation and slack fiscal accounts (for expenditure and fiscal deficit, see right panel of Figure 1).

\[^{8}\text{For criticisms on allocation rules, see Schwartz and Ter-Minassian (2000).}\]

\[^{9}\text{Transfers to provinces are currently conformed by resources from revenue-sharing regimes (“coparticipation”, education fund, services transfers, and a regional compensating fund); resources to fund social security systems (a percentage of VAT and personal assets); road, electricity infrastructure and housing funds (collected from taxes on liquid combustibles); a percentage of income tax destined to social works and the Conurbano Fund; specific funds (collected from taxes on personal assets and the monotributo); electricity fund; and non-automatic or discretionay transfers.}\]
The consolidated nation-provinces expenditure oscillated between 29 percent and 35 percent of GDP during 1995-2001, to later plummet to around 27 percent of GDP during a three-year period. Since then, it grew constantly to peak 40 percent in the last year of the sample (and 45 percent in 2014). Resources kept it up to a higher pace, from 28 percent of GDP in 1995-2001 to 34 percent of GDP in 2003-2010, turning the fiscal balance from an average 4-percent deficit to an average 1-percent surplus (see right panel of Figure 1).

Table 1 Argentina Composition of consolidated (nation-provinces) expenditures and taxes. Selected periods

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<tr>
<td>Percent of Total Expenditure</td>
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<tr>
<td>Administration, defense, safety</td>
<td>21%</td>
<td>22%</td>
<td>20%</td>
<td>50%</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>Social services</td>
<td>61%</td>
<td>60%</td>
<td>61%</td>
<td>- VAT 21%</td>
<td>23%</td>
<td>20%</td>
</tr>
<tr>
<td>- Education and health</td>
<td>26%</td>
<td>26%</td>
<td>25%</td>
<td>- Export taxes 5%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>- Social security</td>
<td>26%</td>
<td>27%</td>
<td>25%</td>
<td>- Other domestic taxes 22%</td>
<td>21%</td>
<td>22%</td>
</tr>
<tr>
<td>- Promotion, assistance, work</td>
<td>7%</td>
<td>6%</td>
<td>8%</td>
<td>- Other trade taxes 3%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>- Other social services</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>Income and assets 38%</td>
<td>38%</td>
<td>37%</td>
</tr>
<tr>
<td>Economic services</td>
<td>9%</td>
<td>7%</td>
<td>12%</td>
<td>- Income + asset taxes 15%</td>
<td>13%</td>
<td>17%</td>
</tr>
<tr>
<td>- Energy</td>
<td>2%</td>
<td>0%</td>
<td>3%</td>
<td>- Social security contributions 20%</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>- Other economic services</td>
<td>8%</td>
<td>6%</td>
<td>9%</td>
<td>- Other taxes on income 3%</td>
<td>4%</td>
<td>2%</td>
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<tr>
<td>Debt services</td>
<td>8%</td>
<td>10%</td>
<td>7%</td>
<td>Other taxes 12%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Cash expenditure</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td>Taxes x cash expenditure 25%</td>
<td>26%</td>
<td>24%</td>
</tr>
<tr>
<td>In-kind expenditure</td>
<td>67%</td>
<td>67%</td>
<td>67%</td>
<td>Taxes x in-kind expenditure 75%</td>
<td>74%</td>
<td>76%</td>
</tr>
<tr>
<td>National expenditure</td>
<td>54%</td>
<td>54%</td>
<td>53%</td>
<td>National taxes 76%</td>
<td>74%</td>
<td>77%</td>
</tr>
<tr>
<td>Provincial expenditure</td>
<td>46%</td>
<td>46%</td>
<td>47%</td>
<td>Provincial taxes 24%</td>
<td>26%</td>
<td>23%</td>
</tr>
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Source: own elaboration based on public national and provincial accounts.

Table 1 summarizes the evolution of expenditures and taxes through several decompositions (as shares of expenditures or taxes, respectively), comparing averages for the total sample and the municipal budget is excluded because detailed information is unavailable. They represent 8% of total expenditure in Argentina. Nonetheless, they are indirectly considered in the analysis through the transfers from provinces to municipalities (which represent about half of municipal expenditures).
two selected sub-periods. Some interesting observations emerge from this table. First, the mix of cash – in kind expenditures remained stable in 33-67 percent. Within in-kind expenditures, the sum of social spending on education and health remained stable (about 26 percent). Social security, which is mostly direct expenditure, lost 2 points of share from between 1995-2001 and 2003-2010, which was gained by direct (cash) transfers in social promotion and assistance, and work plans. Economic services increased 5 points of share in total expenditure, which is mostly subsidies on the consumption of energy (natural gas and electricity) and transport. Finally, provincial expenditure gained a 1 point of share between 1995-2001 and 2003-2010 (concentrated on social services).

On the revenue side, there is an increase in the share of taxes on production, consumption and transactions, from 47 percent of total taxes in 1995-2001 to 52 percent in 2003-2010, shifting away income and assets taxes (from 38 to 37 percent) and other taxes. Within production and transaction taxes, there is a shift from VAT (from 23 to 20 percent) to export taxes (from 0 to 8 percent). On the other hand, within direct income taxes there is a shift of social security contributions (from 21 to 18 percent), to –mostly personal– income and asset taxes (from 13 to 17 percent). Finally, taxation shifted away from provincial resources to national resources (from 74 to 77 percent).

Given this situation, we deem important to measure the distributional impact of fiscal policy given the socio-economic context of Argentina. How did it change among sub-periods? What is the effect of changes in the mix of expenditures (towards instruments that allocate cash to households) or taxes (towards direct income taxes or indirect export taxes)? What are the implications of such shifts? Are there differential contributions from the national budget vis-à-vis national budgets?

5. Results

5.1 Gini coefficients of inequality

Figure 2 and Table 2 present the evolution of the Gini coefficients of inequality in income distribution for Argentina, between 1995 and 2010. The first index –Gini ex ante– measures (a simulated) income inequality arising from market forces, without government intervention. This is a fictional starting point since it is widely known that market forces must coexist with a minimum provision of public goods. Also, since we started from the real situation to construct the ex-ante distribution of income, we omitted effects that would arise from removing taxes and government transfers (i.e., consumers finding other sources of income, adjusting consumption, etc.). The second index –Gini interim– measures income inequality after adding government cash expenditures (transfers and payments to households) to, and subtract corresponding taxes from, ex ante income. This is the income that households report in household surveys (like the Permanent Household Survey in Argentina). The third index –Gini ex post– adds to interim income a residuum coming from provision of in-kind public and quasi-public goods (education, health, etc.) and subtracts indirect taxes (and other direct taxes), which results in a measure of extended income.

As it was already shown in other papers, income inequality, as declared by surveyed households, increased between 1995 and 2002, then reverted the trend, although with a specific interruption in 2009 (see, for example, INDEC, 2015, and Gasparini and Cruces, 2009). For example, the Gini interim increased from 0.457 in 1995 to 0.508 in 2002 and decreased to 0.451 in 2010. The evolution of the other two Gini coefficients (ex ante and ex post) is qualitatively similar to that of the Gini interim.

11 There may be differences in levels of inequality among the references and the figures reported here, which derive from different universe of households, pooling of income groups, computation methodologies, etc., but trends do not differ.
Table 2 Gini ex ante (market forces); Gini interim (cash transfers and direct taxes), Gini ex post (public provision, indirect taxes)

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<tbody>
<tr>
<td>Gini ex ante</td>
<td>0.470</td>
<td>0.480</td>
<td>0.485</td>
<td>0.489</td>
<td>0.498</td>
<td>0.502</td>
<td>0.508</td>
<td>0.523</td>
<td>0.521</td>
<td>0.510</td>
<td>0.503</td>
<td>0.502</td>
<td>0.482</td>
<td>0.480</td>
<td>0.498</td>
<td>0.483</td>
</tr>
<tr>
<td>Gini interim</td>
<td>0.457</td>
<td>0.465</td>
<td>0.468</td>
<td>0.472</td>
<td>0.482</td>
<td>0.485</td>
<td>0.494</td>
<td>0.508</td>
<td>0.494</td>
<td>0.481</td>
<td>0.471</td>
<td>0.467</td>
<td>0.458</td>
<td>0.452</td>
<td>0.464</td>
<td>0.451</td>
</tr>
<tr>
<td>Gini ex post</td>
<td>0.409</td>
<td>0.419</td>
<td>0.423</td>
<td>0.426</td>
<td>0.434</td>
<td>0.439</td>
<td>0.439</td>
<td>0.456</td>
<td>0.436</td>
<td>0.420</td>
<td>0.416</td>
<td>0.402</td>
<td>0.392</td>
<td>0.400</td>
<td>0.386</td>
<td></td>
</tr>
</tbody>
</table>

5.2 Effect of fiscal policy on income distribution: Reynolds-Smolensky decomposition

Figure 2 and Table 2 also show that the effect of fiscal policy is a reduction of income inequality throughout the period of analysis. Specifically, the Gini coefficient decreases 6 points in 1995-2001, 5 points in 2002 (year of last macroeconomic crisis in Argentina), 8 points in 2003-2010, stretching to 10 points in 2010. Moreover, in year 2002, fiscal policy barely compensated the inequality in 1995 (i.e., the Gini ex post in 2002 –0.471– was almost the same as the Gini ex ante in 1995 –0.470–).

In order to interpret the effect of fiscal policy (in this case, the difference between Gini coefficients) we perform a Reynolds-Smolensky decomposition. Figure 3 and Table 3 show the evolution of \( R_{Stransfers} \) (which measures the change from Gini ex ante to Gini interim) and \( R_{Sinkind} \) (which measures the change from Gini interim to Gini ex post). Therefore, the difference between Gini ex ante and ex post income corresponds to the sum of \( R_{Stransfers} \) and \( R_{Sinkind} \).

---

12 Given the way we pool quintiles in provinces into national quintiles, the reordering effect from consolidate budget is almost null.
Several observations emerge from the Figure and Table. First, in-kind expenditure is the most redistributive tool, followed by cash expenditures (conformed by social security and cash transfers to households). The effect from the expenditure side is partially compensated by taxes that are collected after households earn their income (VAT, other sale taxes, trade taxes, etc.), while taxes collected before households earn their income (social security contributions, income taxes, etc.) are almost neutral. Second, evidence shows an increasing redistributive trend in expenditures and a decreasing trend in taxes. From Table 3, the redistributive effect of in kind expenditure (from 0.073 in 1995-2001 to 0.082 in 2003-2010) comes from expenditure size (from 0.184 to 0.208) rather than progressivity (from 0.399 to 0.396); but the redistributive effect of cash expenditure (from 0.019 to 0.034) comes from both size (0.090 to 0.101) and progressivity (0.211 to 0.337). In the case of taxes, there is a compensation of (decreasing) regression for (increasing) size.

13 Alejo, Bérgolo and Carbajal (2013) decompose income distribution by the contribution of different sources of income (private and public, and social security, government transfers and others within

---

Table 3 Reynolds-Smolensky coefficient and decomposition

| Source: own elaboration. Note: RStransfer, RSkind and RS are positive definite. |

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Kg(transfers)</td>
<td>0.274</td>
<td>0.211</td>
<td>0.337</td>
</tr>
<tr>
<td>g(transfers)</td>
<td>0.096</td>
<td>0.090</td>
<td>0.101</td>
</tr>
<tr>
<td>Transfers</td>
<td>0.026</td>
<td>0.019</td>
<td>0.034</td>
</tr>
<tr>
<td>Kg(in kind)</td>
<td>0.399</td>
<td>0.399</td>
<td>0.396</td>
</tr>
<tr>
<td>g(in kind)</td>
<td>0.194</td>
<td>0.184</td>
<td>0.208</td>
</tr>
<tr>
<td>G in kind</td>
<td>0.077</td>
<td>0.073</td>
<td>0.082</td>
</tr>
<tr>
<td>Kt(x transfers)</td>
<td>-0.048</td>
<td>-0.055</td>
<td>-0.038</td>
</tr>
<tr>
<td>t(x transfers)</td>
<td>0.068</td>
<td>0.061</td>
<td>0.075</td>
</tr>
<tr>
<td>T x transfers</td>
<td>-0.003</td>
<td>-0.003</td>
<td>-0.003</td>
</tr>
<tr>
<td>Kt(x in kind)</td>
<td>-0.133</td>
<td>-0.143</td>
<td>-0.119</td>
</tr>
<tr>
<td>t(x in kind)</td>
<td>0.210</td>
<td>0.178</td>
<td>0.242</td>
</tr>
<tr>
<td>T x in kind</td>
<td>-0.027</td>
<td>-0.025</td>
<td>-0.029</td>
</tr>
<tr>
<td>RStransfers(+) (I)</td>
<td>0.023</td>
<td>0.016</td>
<td>0.031</td>
</tr>
<tr>
<td>RSkind (+) (II)</td>
<td>0.050</td>
<td>0.048</td>
<td>0.053</td>
</tr>
<tr>
<td>(I) / (I)+(II)</td>
<td>31%</td>
<td>25%</td>
<td>37%</td>
</tr>
<tr>
<td>RS (+)</td>
<td>0.073</td>
<td>0.063</td>
<td>0.084</td>
</tr>
</tbody>
</table>
Third, the mix of instruments to redistribute income changed within the period of analysis: the ratio RStransfers / (RTransfers + RSinkind) averaged 31 percent in 1995-2010, 25 percent in 1995-2001 and increased to 37 percent in 2003-2010. From the description in Section 4, the (monetary) mix of cash and in-kind expenditures and taxes did not change significantly, but the composition of cash expenditures did (from social security and others to spending in promotion, assistance and work). It is worth to notice that during the period 2003-2010 a significant amount of payments were transfers conditioned on the recipient rendering some work services (Plan Jefes y Jefas de Hogar, Seguro de Capacitación y Empleo, Familiar por la Inclusión Social; see Alejo et al., 2013). This way, the distributive intensity of instruments tilted towards cash transfers and against in-kind expenditures. The mix effect has two important consequences. On the one hand, it creates dependence by cash-recipients, not only a financial dependence but also a political dependence, favoring clientelism. On the other hand, it is far from the most efficient tool to correct income distribution, because X pesos in transfers are spent in current consumption, while X pesos spent as in-kind public good (schools, transport infrastructure, hospitals, urban infrastructure, justice, water and sanitation, etc.) benefits large groups of recipients, during a long-time period. Of course, there may be exceptions (such as the years following the 2002 crisis) in which a temporary tool of monetary transfers may be justified.

5.3 Disentangling national and provincial contribution to the Reynolds-Smolensky

Given that provinces account for almost 50 percent of total expenditure, while the national government retains 76 percent of tax collection, it is worth to identify the relative contributions of their respective fiscal policies. Table 4 and Figure 4 summarize the contribution of national and provincial budgets to the RS coefficient. The average RS of 0.073 (-0.063 in 1995-2001 and -0.084 in 2003-2010) is the result of expenditure progressivity and size (0.104 in average, 0.092 in 1995-2001 and 0.116 in 2003-2010) and taxation regressivity and size (approximately -0.03 in average and in the corresponding sub-periods). Provincial expenditure accounts for 66 percent of the positive impact of expenditure on income distribution (68 percent in 1995-2001 and 65 percent in 2003-2010). On the other hand, national revenues explain the negative impact of taxation, while provincial taxes contribute very little. Also, provincial expenditures are more progressive than national expenditures: the Kakwani coefficient averaged 0.481 in the first case and 0.237 in the

public sources) in Argentina, Chile and Brazil during the decade of 2000s. The progressive results for Argentina coincide with those in this paper for cash expenditures (i.e., RStransfers). While they concentrate on the different sources of income, the main difference with this paper is that we include revenues and expenditures –both cash and in kind–, consider national and provincial governments, and decompose effect among groups of provinces (and among provinces, forthcoming); but we pool some sources of income, which are analyzed separately in their paper.

14 Recent literature has identified overspending in terms of employment, assigning a responsibility to clientelism (Gimpelson and Treisman, 2002; Calvo and Murillo, 2004). Along this line, policymakers allocate resources to seek for the support of a group of citizens, channeling them through employment offers in the public sector. Robinson and Verdier (2013) link such expenditures to the chances of patron policymakers in electoral competition. Oliveros (2013) argues that employees engage in political activities that support politicians (patrons) because their fates are tied to the political fate of their patrons. The literature on clientelism is rather large to summarize it here (see a discussion and related literature in these papers).

15 A deep analysis of the benefits of cash vs. in-kind expenditures is necessary. In the education sector, on the one hand, in-kind expenditures might result of redundant employment but, on the other hand, deficit in infrastructure affects performance of children. In Argentina and other Latin American countries, the deficit is higher in schools located in poorer neighborhoods (Duarte et al., 2011).
second case (because education and health represent a high share of provincial expenditure while cash payments represent a lower share of national expenditure).\textsuperscript{16}

![Figure 4](image_url)  
**Figure 4** Contribution of national and provincial expenditure and national and provincial taxes to Reynolds-Smolensky

**Observation about this Figure 4:**  
Expenditure (Taxes) measures the joint effect of size and progressivity $g \times Kg(t \times Kt)$.

### Table 4 Reynolds-Smolensky: National and Provincial budgets

<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$G$</td>
<td>0.089</td>
<td>0.087</td>
<td>0.090</td>
<td>0.092</td>
<td>0.095</td>
<td>0.097</td>
<td>0.094</td>
<td>0.085</td>
<td>0.098</td>
<td>0.103</td>
<td>0.111</td>
<td>0.116</td>
<td>0.106</td>
<td>0.113</td>
<td>0.140</td>
<td>0.138</td>
</tr>
<tr>
<td>$g_{NS}$</td>
<td>0.031</td>
<td>0.030</td>
<td>0.030</td>
<td>0.029</td>
<td>0.028</td>
<td>0.030</td>
<td>0.026</td>
<td>0.028</td>
<td>0.036</td>
<td>0.039</td>
<td>0.040</td>
<td>0.043</td>
<td>0.033</td>
<td>0.036</td>
<td>0.049</td>
<td>0.049</td>
</tr>
<tr>
<td>$g_{N}(t \times g)$</td>
<td>0.203</td>
<td>0.205</td>
<td>0.229</td>
<td>0.218</td>
<td>0.201</td>
<td>0.217</td>
<td>0.200</td>
<td>0.233</td>
<td>0.272</td>
<td>0.294</td>
<td>0.290</td>
<td>0.306</td>
<td>0.222</td>
<td>0.220</td>
<td>0.255</td>
<td>0.232</td>
</tr>
<tr>
<td>$g_{p}$</td>
<td>0.058</td>
<td>0.057</td>
<td>0.060</td>
<td>0.063</td>
<td>0.067</td>
<td>0.067</td>
<td>0.069</td>
<td>0.057</td>
<td>0.062</td>
<td>0.064</td>
<td>0.071</td>
<td>0.073</td>
<td>0.073</td>
<td>0.078</td>
<td>0.091</td>
<td>0.089</td>
</tr>
<tr>
<td>$K_{Np}$</td>
<td>0.436</td>
<td>0.443</td>
<td>0.463</td>
<td>0.472</td>
<td>0.480</td>
<td>0.482</td>
<td>0.478</td>
<td>0.473</td>
<td>0.497</td>
<td>0.486</td>
<td>0.498</td>
<td>0.496</td>
<td>0.478</td>
<td>0.485</td>
<td>0.518</td>
<td>0.506</td>
</tr>
<tr>
<td>$g_{p}(t \times g)$</td>
<td>0.133</td>
<td>0.128</td>
<td>0.130</td>
<td>0.134</td>
<td>0.140</td>
<td>0.140</td>
<td>0.143</td>
<td>0.121</td>
<td>0.125</td>
<td>0.132</td>
<td>0.142</td>
<td>0.148</td>
<td>0.153</td>
<td>0.160</td>
<td>0.175</td>
<td>0.176</td>
</tr>
<tr>
<td>$T$</td>
<td>-0.027</td>
<td>-0.022</td>
<td>-0.022</td>
<td>-0.022</td>
<td>-0.024</td>
<td>-0.018</td>
<td>-0.024</td>
<td>-0.024</td>
<td>-0.020</td>
<td>-0.018</td>
<td>-0.021</td>
<td>-0.019</td>
<td>-0.018</td>
<td>-0.032</td>
<td>-0.033</td>
<td></td>
</tr>
<tr>
<td>$t_{N}$</td>
<td>-0.118</td>
<td>-0.113</td>
<td>-0.124</td>
<td>-0.122</td>
<td>-0.141</td>
<td>-0.145</td>
<td>-0.127</td>
<td>-0.142</td>
<td>-0.117</td>
<td>-0.086</td>
<td>-0.084</td>
<td>-0.093</td>
<td>-0.078</td>
<td>-0.072</td>
<td>-0.121</td>
<td>-0.109</td>
</tr>
<tr>
<td>$t_{N}(t \times g)$</td>
<td>0.190</td>
<td>0.179</td>
<td>0.177</td>
<td>0.177</td>
<td>0.168</td>
<td>0.175</td>
<td>0.140</td>
<td>0.170</td>
<td>0.204</td>
<td>0.230</td>
<td>0.218</td>
<td>0.229</td>
<td>0.238</td>
<td>0.248</td>
<td>0.264</td>
<td>0.303</td>
</tr>
<tr>
<td>$t_{p}$</td>
<td>-0.005</td>
<td>-0.006</td>
<td>-0.007</td>
<td>-0.007</td>
<td>-0.008</td>
<td>-0.008</td>
<td>-0.008</td>
<td>-0.009</td>
<td>-0.010</td>
<td>-0.009</td>
<td>-0.009</td>
<td>-0.009</td>
<td>-0.007</td>
<td>-0.007</td>
<td>-0.010</td>
<td>-0.008</td>
</tr>
<tr>
<td>$K_{tp}$</td>
<td>-0.073</td>
<td>-0.099</td>
<td>-0.104</td>
<td>-0.107</td>
<td>-0.112</td>
<td>-0.117</td>
<td>-0.120</td>
<td>-0.148</td>
<td>-0.142</td>
<td>-0.131</td>
<td>-0.129</td>
<td>-0.128</td>
<td>-0.096</td>
<td>-0.096</td>
<td>-0.117</td>
<td>-0.099</td>
</tr>
<tr>
<td>$t_{p}(t \times g)$</td>
<td>0.065</td>
<td>0.065</td>
<td>0.069</td>
<td>0.066</td>
<td>0.067</td>
<td>0.068</td>
<td>0.065</td>
<td>0.064</td>
<td>0.071</td>
<td>0.071</td>
<td>0.071</td>
<td>0.074</td>
<td>0.072</td>
<td>0.078</td>
<td>0.083</td>
<td>0.084</td>
</tr>
<tr>
<td>RS (+)</td>
<td>0.062</td>
<td>0.060</td>
<td>0.061</td>
<td>0.064</td>
<td>0.064</td>
<td>0.064</td>
<td>0.069</td>
<td>0.052</td>
<td>0.065</td>
<td>0.074</td>
<td>0.083</td>
<td>0.086</td>
<td>0.081</td>
<td>0.088</td>
<td>0.098</td>
<td>0.097</td>
</tr>
</tbody>
</table>

**Source:** own elaborations; **Note:** RS is positive definite.

### 5.4 Reynolds-Smolensky decomposition between expenditures and taxes

A final aggregate comparison concerns the expenditure functions and sources of taxes. Table 5 and Figure 5 show the RS decomposition between expenditures on social services, economic services, and administration, police and justice (administration, in short), and taxes collected from production, consumption and transactions; income and assets; and others. As expected, social

\textsuperscript{16}The fact that provincial budgets contribute to redistribution more than the national budget was already noticed by Cont and Porto (2014) in an analysis concentrated on year 2004.

~ 86 ~
Expenditure (Kg averaging 0.396, and increasing from 0.360 in 1995-2001 to 0.430 in 2003-2010) is most important than economic services (Kg averaging 0.097, from 0.108 in 1995-2001 to 0.085 in 2003-2010). This way, the redistributive effect of social services inherits those of education and health (which represent about 41 percent of consolidated budget in 2003-2010), social security (41 percent) and direct cash transfers to households (13 percent, having increased 4 points between sub-periods, see Table 1). Notice also that the size of economic expenditures almost doubled from 2.1 percent of GDP in 1995-2001 to 4 percent of GDP in 2003-2010, pushed by government subsidies in energy and transport (in these sectors consumption is more evenly distributed across population than in other sectors). On the other hand, taxes based on consumption and production increased from 11.4 percent of GDP in 1995-2001 to 16.7 percent of GDP in 2003-2010, mostly explained by increases in VAT and the introduction of export taxes; while taxes based on income and assets increased from 9 percent of GDP in 1995-2001 to 11.8 percent of GDP in 2003-2010. Again, sizes compensated the lower component of regressive taxation.

Table 5 Reynolds-Smolensky of expenditures (social services, economic services and administration) and taxes (production-consumption-transactions, income-assets, others)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Kg (SS)</td>
<td>0.396</td>
<td>0.360</td>
<td>0.430</td>
</tr>
<tr>
<td>g (SS)</td>
<td>0.192</td>
<td>0.184</td>
<td>0.201</td>
</tr>
<tr>
<td>Kg (ES)</td>
<td>0.097</td>
<td>0.108</td>
<td>0.085</td>
</tr>
<tr>
<td>g (ES)</td>
<td>0.030</td>
<td>0.021</td>
<td>0.040</td>
</tr>
<tr>
<td>Kg (A)</td>
<td>0.366</td>
<td>0.345</td>
<td>0.384</td>
</tr>
<tr>
<td>g (A)</td>
<td>0.067</td>
<td>0.068</td>
<td>0.068</td>
</tr>
<tr>
<td>Kt (PCT)</td>
<td>-0.109</td>
<td>-0.120</td>
<td>-0.098</td>
</tr>
<tr>
<td>t (PCT)</td>
<td>0.141</td>
<td>0.114</td>
<td>0.167</td>
</tr>
<tr>
<td>Kt (IA)</td>
<td>-0.030</td>
<td>-0.031</td>
<td>-0.027</td>
</tr>
<tr>
<td>t (IA)</td>
<td>0.104</td>
<td>0.090</td>
<td>0.118</td>
</tr>
<tr>
<td>Kt (R)</td>
<td>-0.377</td>
<td>-0.362</td>
<td>-0.382</td>
</tr>
<tr>
<td>t (R)</td>
<td>0.033</td>
<td>0.034</td>
<td>0.032</td>
</tr>
<tr>
<td>RSp</td>
<td>0.073</td>
<td>0.063</td>
<td>0.084</td>
</tr>
</tbody>
</table>

Figure 5 Reynolds-Smolensky of expenditures (social services, economic services and administration) and taxes (production-consumption-transactions, income-assets, others)

Observation about Figure 5: Expenditure (Taxes) measures the joint effect of size and progressivity g*Kg (t*Kt).
How redistributive are the results for Argentina compared with other countries? Hani et al. (2014) compare the effect of fiscal policy on income distribution in Latin American countries (year 2011). Inequality is high in Latin America: Gini coefficients range from 0.573 in Brasil to 0.400 in El Salvador and Venezuela. Fiscal policy redistributes income progressively in all countries. The average effect in the 17 countries of Latin America is a reduction of the Gini coefficient in 9 points. Given the size of fiscal policy considered by the authors (it includes social expenditure and income taxes, which approximates to our construction of social expenditure and income-assets taxes), the redistribution effect is similar to the 8.5 points (out of 9.7 points of consolidated effect) in Argentina in 2010. Similar results can be found in Lustig et al. (2013): the average Gini decreased in 16 out of 17 countries, from an average of 0.548 during selected years around 2000 to an average of 0.488 during selected years around 2010. The authors ascribe such changes to the functioning of labor markets and to government transfers. Lustig et al. (2014) report a positive impact of direct taxes and social spending on inequality and poverty reduction in six Latin American countries (Argentina, Bolivia, Brazil, Mexico, Perú and Uruguay). They refer to the case of Argentina as one in which the government embarked on a redistributive process that generates unfair losses and may not be fiscally sustainable. In spite of all these results, fiscal policy seems to have little effect in reducing income inequality, compared to OECD and EU countries, in which changes are 23 points and 18 points, respectively (Hani et al., 2014; see also Goñi et al., 2008). The main differences are explained by a large public sector size, which conditions the size of redistributive policies, large social security coverage, and high share of (progressive) income taxes in OECD and EU countries, relative to Latin American countries (and, specifically, Argentina).

6. Conclusions

This paper analyzes the effect of consolidated (national-provincial) fiscal policy on personal income distribution in Argentina during 1995-2010, following benefit and incidence principles, and avoiding double accounting. We build a novel database, which allows us to construct ex ante, interim and ex post measures of income inequality. The Gini interim, constructed from household surveys, increased from 0.457 to 0.508 in 2002 and decreased to 0.451 in 2010. The ex ante and ex post measures of inequality followed a qualitatively similar trend. Such trends have a parallel with two socioeconomic regimes nested in the sample (Convertibility between 1995 and 2001 and post - Convertibility since 2002).

The effect of fiscal policy is an average reduction in the Gini coefficient of 7 points during the period of analysis (6 points during 1995-2001; 8 points during 2003-2010). We approach this result by reviewing different channels, which is possible from a decomposition between (i) cash expenditure vs. in-kind expenditure, and their corresponding taxes, (ii) national and provincial budgets (expenditures and taxes), and (iii) spending in social services, economics services and administration vs. taxes on production, consumption and transactions, on income and others.

The first decomposition is relevant to unveil dynamics in fiscal policy. The mix of instruments to redistribute income changed with time, tilting towards cash transfers and against in-kind expenditures. The “mix effect” has two consequences. On the one hand, it creates dependence by cash-recipients, not only a financial dependence but also a political dependence, favoring clientelism. On the other hand, it is far from the most efficient tool to correct income distribution, although we favor a deeper analysis of the efficiency-equity performance of such tools.

The second decomposition is useful assess the effect of expenditures and taxes and to identify the role of provinces in redistribution. The average RS coefficient of 0.073 (-0.063 in 1995-2001 and -0.084 in 2003-2010) is the result of expenditure progressivity and size (0.104 in average, 0.092 in 1995-2001 and 0.116 in 2003-2010) and taxation regressivity and size (approximately -0.03 in
average and in the corresponding sub-periods. We find that provincial expenditure accounts for 66 percent of the positive impact of expenditure on income distribution (showing a little reduction in 2003-2010). National revenues explain the negative impact of taxation, while provincial taxes contribute very little. A direct conclusion from this result is the need to strengthen relationships between national and provincial governments, and to improve efficiency in provision of services.

The third decomposition is important because, on the one hand, it unveils the evolution of typical social spending (encompassing education, health, social security and cash transfers to household) vs. subsidies on consumption in energy and transport, which took place during the last decade, and, on the other hand, allows us to compare with international findings. As expected, social expenditure is the most important redistribution tool. However, we notice the increasing role of economic services (which are less progressive than social services) in the post-Convertible sub-period, pushed by government subsidies in energy and transport. Although a cross-country comparative analysis is unfeasible at this level of detail, we compare our results with those available in the literature: a partial effect (approximated through social expenditure and income taxes) is similar to results found for Latin American countries, which altogether underestimate the full effect of fiscal policy. Also, the effect on redistribution is less than that in OECD and EU countries, where the main characteristics of fiscal policy is higher size of public sector and higher share of progressive income taxes. Argentina went through this path recently (as the size of the consolidated public sector increased from 40 to 45 percent of GDP, and income taxes increased from 6 to 8.5 percent of GDP, between 2010 and 2014). Such changes faced some social resistance, but their progressive effects are yet to be measured, and their stability or reversion will be under review during the coming Administration (December, 2015).

We alert of the importance of understanding the limitations of works that measure (partial or full) incidence of fiscal policy, which go beyond assumptions made to allocate expenditures and taxes among households. Typically, papers measure the distribution of budget but leave aside the distribution of results. For example, some papers find pro-poor expenditures but pro-rich results (see Skinner and Zhou, 2006, and comment by Le Grand, 2006). Dixon et al. (2007) find significant results from the substitution of low-quality public goods or services for high-quality private goods, differences in information of different groups and their control on the way services are provided (not only through “exit” as in the previous case, but also through “voice”), or the cost of complementary services (transport costs or indirect cost of forgone labor to receive health services, etc.). Another example, concerning education in Argentina, is that expenditure in elementary and high-school education is typically found as pro-poor; however, performance results by public schools is significantly lower that performance by private schools. This is reflected, for example, in trend changes in school enrolment (83 out of 100 new students in elementary and high-school enrolled in private schools during 2003-2010; this ratio was 22 in 1996-2003), success rates (70 percent of enrolled students in private schools finish high-school; this rate is 27 in public schools), and geographic performance (40 percent of enrolled in CABA graduated from high school; 14 in Santiago del Estero), as reported by CEA (2015). Similar results (“helping the good better, but leaving the poor behind”) were found by Galiani et al. (2008) in their study on the impact of decentralization of high schools in Argentina. Llach et al. (2006) and Duarte et al. (2011) complement these results by finding that children form lower economic and social level attend lower-quality elementary and high schools (measured by the endowment of physical, human and social capital).

Several aspects widely discussed in theoretical papers, but less covered in empirical papers, such as externalities of some categories of expenditures, leakages in expenditures, and tax burden, were taken into account. Simulations of these aspects (not included in the paper) seem to suggest
that the first two effects weaken the positive impact of provincial fiscal budgets (if the leakage or externality is appropriated by medium to high income households). Tax burden creates more size effects than distributive effects (in particular, if the tax system is mildly regressive).

During the time period analyzed in this paper, fiscal policy compensated income inequality arising from market conditions (for example, the Gini coefficient decreased 6 points in 1995-2001 and 8 points in 2003-2010), but the long-term effects seem to be fade out. The ex-ante Gini in 2010 was similar to that in 1996-1997. A relevant question to undertake in the future regards the long-term sustainability of compensatory fiscal policy, particularly in a country with a public sector that grew from 28 percent in 1995 to about 40 percent in 2010, biasing towards centralized government, and taking into account that the expenditures with more redistributive impact are provided by provincial governments. The benefits of this process may accrue in the long term.

The case of Argentina may provide useful lessons for other federal countries, in particular, considering all the expenditures and taxes and the responsibility of different levels of governments and their effect on income distribution.

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References


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