

# The National Care System in Uruguay: Who Benefits and Who Pays?

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## Introduction

DEMOGRAPHIC AND SOCIAL changes have posed challenges to social protection systems in both developed and developing countries. In the former, population is gradually aging due to the ongoing demographic transition, characterized by fewer children being born and more adults surviving into old age. At the same time, the prevalence of significant gender gaps in the provision of care, with links to documented differences between men and women in the labor market, reinforce the need for innovation and new approaches to the provision of social protection.

In this context, many countries are implementing important efforts to extend child- and elder care services. In the case of child care, evidence is abundant on the importance of the early years of life in terms of individual health and cognitive, social, and emotional development (e.g., Heckman et al. 2010a; 2010b). Child care services may also be seen as an instrument to encourage women's labor force participation rates, as well as strengthen their position within the labor market. In the case of elder care, even if elderly morbidity and disability continue to improve, a growing number of the old will need help to lead satisfactory lives. Improving living standards for elderly people provides a rationale for new policies, as does the aim of relieving relatives from the burden of providing permanent care in elders' advanced stages of life.

Uruguay is a country that stands out in Latin America because of its relatively older and more mature social protection system (Ocampo and Gómez-Arteaga 2017). It has recently made advances in the implementation of a National Care System (NCS), which includes both child care and elder care for dependents. The policy also offers care services for persons with disabilities, although the analysis we present in this article does not cover this population. The NCS can be included among the recent interventions that address new social risks—sometimes referred to as social investment interventions—borne by groups such as the young, the

low-skilled, and women, as opposed to such traditional social risks such as old age or unemployment, which had their roots mostly in the protection of male breadwinners (Cantillon 2011; Morel, Palier, and Palme 2012). Although social investment interventions do not necessarily crowd out spending on traditional risks, the possibility of some shift raises the issue of the redistributive impact of these new interventions. How to evaluate their effects in redistributive terms (Vaalavuo 2013; Van Kersbergen and Hemerijck 2012)?<sup>1</sup> Redistribution—at least vertical redistribution—is not always the rationale for public services (Vaalavuo 2013), but the discussion about redistributive impacts is still important to understanding, among other things, the political economy of these policies.

Different countries have adopted a variety of models to implement and finance child care and promote early child development. European countries tend to rely on publicly funded programs, whereas the United States relies more on subsidies and tax credits to reimburse parents for child care expenses (Waldfogel 2001). In the Nordic countries, parents' contributions are set nationally at a maximum level decided by the state and depend on household earnings and the number of children benefiting from child care. In addition, there may be rules about maximum payment (Eydal and Rostgaard 2013). The final result of differential combinations of child care policies is that in most countries, services are not entirely free, but parents pay subsidized prices (Plantenga and Remery 2005).

With regard to long-term care, given the rapid process of aging and reduction in the supply of informal care due to employment of traditional (mostly female) caregivers, governments all over the world have found organizing and funding these services to be a major challenge (Barr 2010; Costa-Font, Courbage, and Zweifel 2017; and Wouterse and Smid 2017, among others). Public long-term care coverage systems across countries in the Organisation for Economic Co-operation and Development (OECD) require users to share a portion of the cost for their care. In Latin America, the prevalence of fiscal constraints, the limited supply of long-term services by public health service providers, and the lack of regulated private markets for long-term care are of particular concern. It is reasonable to expect—both for the region and for Uruguay—that society will have to address the growing risks of dependency at older ages through publicly financed mechanisms, focused initially on the poor and vulnerable (Caruso, Galiani, and Ibarrarán 2017). Doing this may entail implementing tax incentives or subsidies (means-tested or universal), which may in turn affect savings.

In this article, we assess the distributional impact that the NCS would have in Uruguay through the calibration of a static tax benefit model which places values on the public services provided and allocates them among households. We estimate the impact of two alternative scenarios that reflect different allocations of social investment as between children and the elderly. While children are overrepresented among the poor, the elderly

have above-average income and low poverty rates. Also, the scope of the intervention is different between the two populations—we simulate universal coverage among the preschoolers and assistance rates over 50 percent for 2-year-olds while determining elderly coverage by the person's dependent condition. Thus, the expected redistributive effects should be stronger for children than for the elderly; in the latter case, the effects may even be regressive. We consider both populations together, as their inclusion in the same initiative is a distinctive characteristic of the Uruguayan proposal and institutional design, but we also report separated effects, due to the differences explained above. As a funding strategy, we simulate an increase in marginal income tax rates.

The analysis we present is a first approximation of the potential impact, in that it considers only first-round effects, excluding long-term redistributive effects that may arise from increases in labor supply and consequently in household income. If increases in female labor force participation were to take place—mainly among women from lower-income households, for whom the current labor supply is lower—redistributive effects would be higher. Also, given that children's enrollment in formal child care or preschool education has proven beneficial for their future school achievement and earnings (Heckman and Masterov 2007; Heckman et al. 2010a, 2010b; Duncan and Sojourner 2013), these policies entail a further potential redistributive effect in the medium- and long runs, as higher equality could result over time. Moreover, these effects tend to be stronger for children who come from vulnerable backgrounds (Cascio 2015), improving the potential distributive effects in the long term.

Another important issue not considered in this article is the fiscal pressure that arises from demographic trends. Uruguay was one of the first countries in Latin America to embark on the demographic transition. These trends will have important implications for the social protection system and labor market (Rofman, Amarante, and Apella 2016). The expected increase in the elderly population will probably increase the total demand for care, even considering the predicted reduction in the demand for child care due to declining fertility. At the same time, there will probably be a reduction in the availability of informal and familial care due to the increase in female labor force participation. Our analysis only considers the effects arising from the current design of the programs up to 2020, based on the 2014 population structure.

Evidence on the redistributive impact of these policies is still scarce, especially in developing countries. Nevertheless, a new strand of literature provides useful information about the effects of public care services, and our article aims at contributing to the ongoing discussion. On that note, the extension of child care services has been found to reduce income inequality (Hufkens et al. 2015; Matsaganis and Verbist 2009; Vaalavuo 2013). However, these results depend heavily on who uses the services and on the tax

structure (Van Lancker and Ghysels 2011). In every case, the impact is relatively small compared with traditional welfare state spending, though it may be equalizing or pro-poor (Vaalavuo 2013). Less research has been carried out for elderly care services, although scarce existing results seem to be along the same lines as those for child care (Vaalavuo 2011, 2013).

## The NCS and the baseline situation

The NCS's objective is to expand available care services for the dependent population, as well as to create new services. For the NCS, the dependent population consists of children aged 0–12 years (prioritizing those aged 3 and younger), persons with disabilities, and those elderly who are not autonomous in their daily lives. A synthesis of the policy process that led to the design of the Uruguayan NCS can be found in MIDES (2014), and details about the current policy design can be found in Junta Nacional de Cuidados (2015) and in the preamble to the 2015 Budget Law (MEF 2015).

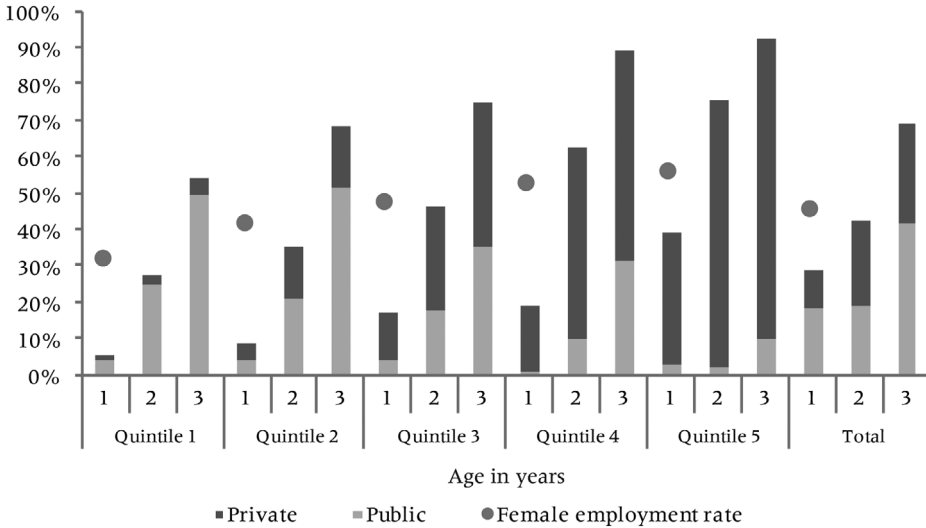
For younger children, the policy consists of the expansion of child care services, whereas for the dependent disabled and elderly, it focuses on the provision of home-based paid care. Care services for persons with disabilities are not considered in our distributional analysis, due to the lack of suitable statistical information. The new policy has a universal claim but foresees a gradual implementation. In the first stage (until 2020), the aim is to install and develop diverse programs directed toward the dependent elderly population but targeting the benefits to those in greater need.

The 2015 Budget Law sent to Congress covered up to the year 2017, establishing additional resources for the NCS and setting coverage goals. However, it did not include any new tax revenues to finance the proposed expansion of the NCS. Instead, the law based the funding of the new programs on the proceeds of economic growth. The estimated annual additional resources approved for 2017 were US\$67 million (prices as of January 2015); more than one-third of this sum was allocated for early childhood services (36 percent), while 29 percent was set aside for the elderly, 22 percent to people with disabilities, and 12 percent to administrative expenses.

## Child care services and the elderly dependent population

Child care and education, while both depending on the national government, are separate policy domains in Uruguay. Pre-primary education starts at 3 years of age but is compulsory from age 4. Primary schooling starts at age 6. For children aged between 1 and 3, child care is available through a wide variety of public and private services. The main public service is Plan CAIF, a program that emerged in the late 1980s with a clear target of serving

**FIGURE 1** Age-specific assistance rates and female employment rate, by per capita income quintile, Uruguay, 2014



NOTE: Assistance rates do not include CAIF's family workshops for 1-year-olds.  
 SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

vulnerable children. Public preschool and child care are free of charge and state-funded, although child care is privately organized.

Public child care services at Plan CAIF offer day care for children ages 2 and 3, and an incipient service is proposed for 1-year-olds. CAIF also provides weekly workshops on childrearing and child development guidelines for families with children under 2. Originally, the daily services covered four hours a day; they are now expanding to cover six and eight hours per day. Public preschool started to expand in the 1990s to cover children aged 4 and 5 and is currently committed to universal coverage for 3-year-olds.

Figure 1 shows assistance rates by age for day care and preschool at public and private services, by income groups. For 3-year-olds, both types of services (day care and preschool) overlap, so the rates refer to the global coverage. The rates increase with age, as well as the weight of public provision: overall, 42 percent of children aged 1–3 use child care or preschool centers on a daily basis—13 percent of 1-year-olds, 42 percent of 2-year-olds, and 69 percent of 3-year-olds. As expected, assistance rates hide important differences between income groups, being significantly higher among the better-off households, which concentrate their use in the private sector. In the lowest quintiles, the rates are lower, and the public sector predominates.

At the same time, female employment increases with income, presenting an important socioeconomic stratification. The correlation between female employment and child care has been a debated issue in economic studies (Baker, Gruber, and Milligan 2008; Cascio 2009; Del Boca, Pasqua,

**TABLE 1** Percent of Uruguayans aged 65 and older classified as having severe dependency, and percent distribution of severely dependent, by age group (2013)

| Age-group (years) | Severe dependency rate (%) | % distribution of severely dependent |
|-------------------|----------------------------|--------------------------------------|
| 65–69             | 1.3                        | 12                                   |
| 70–74             | 2.3                        | 18                                   |
| 75–79             | 3.2                        | 20                                   |
| 80–84             | 3.7                        | 18                                   |
| 85 and above      | 7.8                        | 32                                   |
| Total             | 3.1                        | 100                                  |

SOURCE: Authors' calculations, based on the Longitudinal Social Protection Survey (BPS and IDB 2013).

and Pronzato 2009). In effect, the obvious correlation suggests that publicly provided or subsidized child care could induce increases in female employment. However, it is also possible that these policies may crowd out other forms of care, resulting in smaller-than-expected increases in employment (Havnes and Mogstad 2011). In Uruguay, an impact evaluation of an expansion of public preschool services for children aged 4 and 5 during the 1990s found that this expansion crowded out attendance at private schools, particularly among children of high-skilled mothers. Among children of low-skilled mothers, attendance increased, but the policy did not have any effect on mothers' labor market outcomes (Nollenberger and Perazzo 2016). These results are important for the discussion about the potential impacts on female employment of the NCS.

Turning to the elderly, public care services are a very recent development. Besides some examples of institutional elderly care, the first program intended to address care of dependent elderly—the Programa de Asistentes Personales—was implemented in 2014, and its coverage was very limited. In contrast, the pension and the health systems have almost universal coverage in Uruguay, and their quality is better than the average of the region. In Uruguay, people aged 64 and older have higher incomes than the national average and exhibit the lowest poverty rates in the population (INE 2016).

The NCS has distinguished four levels of dependency based on a person's capacity to perform daily life activities without help: nondependence, mild dependency, moderate dependency, and severe dependency. Following the objectives of the NCS in this first stage, this article focuses on severe dependency.

Severe dependency affects 3.1 percent of persons aged 65 and older (Table 1). The incidence is significantly higher among those aged 85 or older, which poses a threat for the future of social policies in a demographic context where the population of the "oldest old" is expanding more rapidly than that of the elderly as conventionally defined. If the dependency rate does

not change, the proportion of severely dependent people in the population may be sizable by 2050. The limited scope of this article does not allow an analysis of these trends in greater detail or their implications in terms of public spending and distributive impact. These issues should be covered in future research.<sup>2</sup>

Owing to imputation procedures detailed in the next section, the income distribution of the severely dependent is assumed to follow that of the elderly. This implies that about one-third belong to households in the richest quintile and only 5 percent to those in the poorest one. It derives from this procedure that the incidence of severe dependency is similar among all the income groups, which may introduce some bias into our results.<sup>3</sup> The relationship between income and dependency is not clear, but previous research for Uruguay shows higher rates of disability in poorer households (Bagnato, Luzardo, and Padula 2011). This may not stand so clearly for the elderly, as life expectancy is lower for people who belong to vulnerable households, whereas old-age dependency is highly age-related.<sup>4</sup>

## Methodology

Our objective is to analyze the impact of the new NCS programs on the budgets of affected households. To do so, we calibrate a static tax benefit model. We first apply the rules that define the social programs involved to identify the beneficiaries. Then we assign public services a monetary value. The final step consists of deducting the payments that each household would have to make to finance the NCS. By comparing the original and counterfactual vector of household income, we identify “winners” and “losers” from this intervention and quantified its redistributive impact. When the counterfactual household income is higher than the original one for a certain household, it is considered a winner, and when it is lower, it is considered a loser. Households whose income does not change (they do not receive benefits nor pay taxes) are considered unaffected.

Our analysis is based on the 2014 Uruguayan Continuous Household Survey, a reference survey for income, living conditions, labor market status, and education conducted by the National Statistical Institute (INE 2014). In 2014, this nationally representative survey covered 132,000 people in 49,000 households. It provided information on the use of child care and preschool services and accurate income data. Unfortunately, it did not collect information on dependency. We took that information from the Longitudinal Social Protection Survey (LSPS) (BPS and IDB 2013). (Details on how we combined these datasets are provided below.) Additional data on the costs of service provision were derived from the 2015 Budget Law.

Given that the household survey collected information on net income (after taxes and social contributions), gross income was calculated by applying the rates of taxation and social contribution. Our analysis was

incremental, meaning that we did not take into account the individual's previous state: we added the valuation of the benefit to the gross income of the beneficiary's household in the case of new beneficiaries. This is especially relevant for the case of infants, as the coverage of public child care is important and the in-kind transfer is not included as income in the baseline situation.

We identified as NCS beneficiaries those people who would directly use the system in the reference year, so we took a static and dichotomous point of view for the identification of beneficiaries, especially when we considered winners and losers. From a life-cycle perspective, it is highly probable that everyone will use the NCS at some point in life, either as a direct beneficiary or as a parent, son, or daughter of one.

Our analysis covered those programs whose potential beneficiaries could be identified using the data available: child care services (expansion of CAIF for children aged 1–2), preprimary expansion for 3-year-olds, and home-based care for the dependent elderly. According to the preamble to the 2015 Budget Law, the programs that were included in our analysis make up around 53 percent of the 2017 budget allocated to the NCS.

The specific expansion and coverage goals of the programs for 2016 and 2017, as well as the global incremental costs of each program, were described in the preamble to the 2015 Budget Law. More general and imprecise goals were established for 2020. Based on this information and on further documentation of each program—the organizational structure of CAIF (Plan CAIF 2015) and Decree No. 117.016 (Government of Uruguay 2016)—we built the expansion simulation scenarios for 2020. Table 2 shows the number of beneficiaries and the unitary and incremental costs, according to the goals established for 2020.

In the case of children, age-specific incremental coverage rates are proposed for 2020 in the 2015 Budget Law. To perform the simulation, we assumed that all of the expansion will be publicly provided and that all of the offered places will be taken. This implies that the coverage expansion will translate directly to public assistance rates. These assumptions may be very optimistic, as enrollment and assistance rates differ substantially for these services and as some part of the expansion might be privately provided, diminishing the number of actual beneficiaries.<sup>5</sup> Evidence from European countries shows that the cost and availability of child care are not the only factors that determine the use of child care services; cultural factors may also play a role (Del Bocca 2015). Previous research for Uruguay has suggested that the existence of strong family ties may limit the use of child care services for very young children (Batthyány, Genta, and Perrotta 2013). We do not take these aspects into account in our simulations.

Table 3 shows the assistance rates before and after the simulation. The variation mimics that proposed in the preamble of the 2015 Budget Law (shown in the last column), except for 1-year-olds, where the law includes



**TABLE 2** Number of beneficiaries, monthly unit costs, and annual incremental costs of each simulated program, by age and income group

|  | No. of beneficiaries | Monthly unit costs (US\$) | Annual incremental costs (millions of US\$) |
|--|----------------------|---------------------------|---|
| <b>Early childhood education and care services</b> |                      |                           |   |
| Child care services (CAIF)                         |                      |                           |   |
| 1 year   | 5,886                | \$462                     | \$33  |
| 2 years  | 7,886                | \$241                     | \$23  |
| Preschool (ANEP)                                   |                      |                           |   |
| 3 years  | 8,408                | \$175                     | \$18  |
| Total  | 22,161               | —                         | \$73  |
| <b>Elder care</b>                                  |                      |                           |   |
| Home-based care (personal assistants)              |                      |                           |   |
| <3 BPC   | 400                  | \$540                     | \$3   |
| 3–6 BPC  | 3,256                | \$362                     | \$14  |
| Between 6–11 BPC                                   | 3,027                | \$178                     | \$6   |
| >11 BPC  | 1,942                | \$0                       | \$0   |
| Total  | 8,625                |                           | \$23  |
| Grand total  | 30,786               | —                         | 96  |

NOTE: CAIF = Centros de Atención a la Infancia y la Familia; ANEP = Administración Nacional de Educación Pública; BPC = Base de Contribuciones y Pensiones, a monetary index that defines taxation and social benefits, valued in US\$120 in 2014.

SOURCE: Authors' calculation, based on the Continuous Household Survey (INE 2014) and on official information.

**TABLE 3** Assistance rates for child care before and after simulation and measures of variation, all by child's age

| Age (years) | Assistance rate before (%) | Assistance rate after (%) | Percentage-point variation of simulation | Percentage-point variation in Budget Law |
|-------------|----------------------------|---------------------------|--|--|
| 1           | 13                         | 25                        | 13                                       | 17                                       |
| 2           | 42                         | 58                        | 17                                       | 17                                       |
| 3           | 69                         | 87                        | 18                                       | 18                                       |
| Total       | 42                         | 58                        | 16                                       | —  |

SOURCE: Continuous Household Survey (INE 2014).

the coverage corresponding to family workshops, which is not considered in this article.

The distributional impact depends strongly on the beneficiaries' income strata. However, official information does not specify definite criteria for assigning the new beneficiaries. The allocation of beneficiaries defines the scope of the intervention and its ambitions of universality. As stated in the literature, given that child care acts as a precondition for maternal employment, it is reasonable to expect that the demand for these services will be higher among employed parents (Cantillon 2011; Cantillon and Van Lancker 2013). On the contrary, targeting children in greater need provides

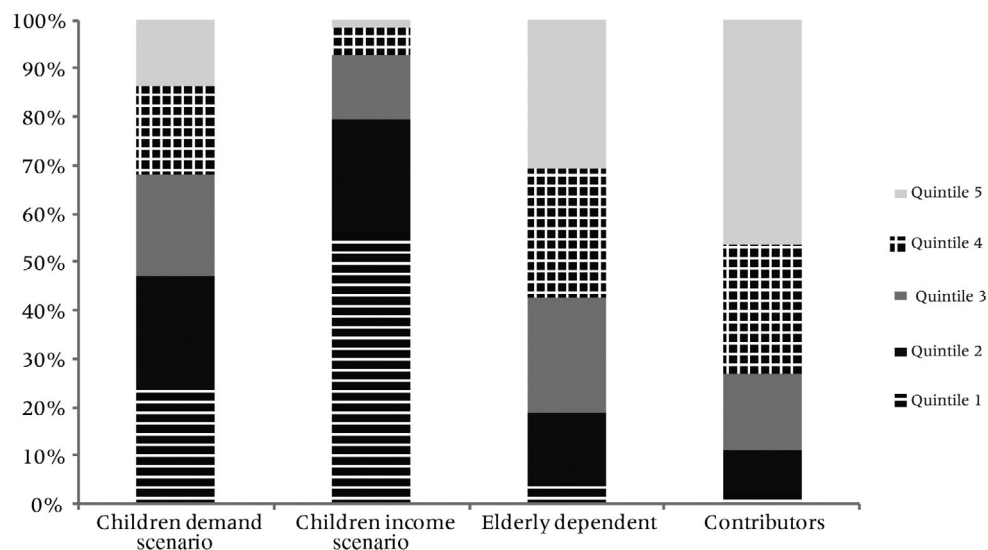
further incentives for the labor participation of their mothers and may have greater redistributive impact.

To estimate reasonable bounds for the impact, we present two alternative allocations. The first assumes that beneficiaries will be selected based on their demand for child care. We estimated a probit model for child care assistance (public and private) and ordered the children not receiving assistance by their predicted probability of assistance.<sup>6</sup> Those who have a higher probability (but who are not attending child care) are identified as beneficiaries until the number of beneficiaries by age is met. This model reflects the actual use of the available services, which implies higher probabilities for higher incomes.

The second alternative assumes that selection is defined upon some vulnerability criteria, selecting the poorer children of each age. This matches traditional resource allocation in child care, which historically is directed toward the worst-off households. We used the territorial dimension of the child care programs to find the best location for the new care centers in order to target children from lower income households. Botto Núñez and Detomasi (2015a) defined the location of the new CAIF centers by considering that the potential beneficiaries live within a 1-km radius and that at least 60 percent of them belong to households eligible for the conditional cash transfer program (known as *Asignaciones Familiares-Plan de Equidad*, or AFAM-PE). For the expansion of preschool, a territorial view was also proposed by Botto Núñez and Detomasi (2015b), who defined where the expansion should focus for better results, considering that it takes place in locations with enough 3-year-old children. Based on their work, we scaled the total places offered by the new centers proposed to match the number of total beneficiaries defined in Table 2. Then, we selected them randomly from the locations where the centers would be placed, considering the proportion of beneficiaries by age and the proportion of AFAM-PE that the theoretical beneficiaries had in each location.<sup>7</sup>

Regarding the elderly, the preamble to the 2015 Budget Law proposed achieving 60 percent coverage of the severely dependent by 2020. The challenge is identifying dependent people among the elderly, as dependency is not asked about in the household survey and far from every person above age 64 needs help in performing daily life activities. We turned to the 2014 LSPS, which included a set of variables allowing identification of the four categories of dependency used by the NCS in the elderly: nondependence, mild dependency, moderate dependency, and severe dependency.<sup>8</sup> MIDES (2015) concluded that the LSPS was a reasonably accurate data source for the identification of severe dependency.

To identify the eligible population in the household survey, we applied the age-group-specific severe dependency rate observed in the LSPS to the corresponding population. The selection of beneficiaries among the eligible population estimated in the household survey was based on demographic

**FIGURE 2** Percentage distribution of beneficiaries, by income quintiles

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

and income criteria. We selected 60 percent of the severely dependent population, assuming that the age- and income-group distribution of the beneficiaries is the same as for the total elderly population. The income groups were based on the thresholds that the program establishes for the subsidy. The age and income distributions of the beneficiaries are presented in Appendix Table A2. This estimation is based upon a number of assumptions, due to the lack of reliable dependency data. In that sense, our results should be considered as preliminary and need further testing once better data are available.

Figure 2 illustrates the distribution of the beneficiaries and contributors by quintile. In both allocations, the larger potential distributive effects would come from children, as their distribution is more concentrated in the lower part of the income distribution, contrary to that of the elderly. Relevant differences are found between the alternative scenarios of identification of child care beneficiaries. As expected, in the demand alternative, the distribution among income groups is almost uniform, whereas the vulnerability alternative prioritizes poorer households (almost 80 percent of the beneficiaries are among the poorer 40 percent). Contributors are concentrated mainly in the upper quintiles (more than 70 percent).

Turning to the valuation of public services (child care and preschool services), we followed the standard approach in the literature of transferring to the beneficiaries the average production costs of the service. This is a strong assumption, as it does not account for the quality and efficiency of service provision. Another relevant drawback is that we do not consider

the intensity of use (number of hours), turning instead to average costs. The services are available for four, six, or eight hours per day, but we do not have information about the distribution of the new beneficiaries between modalities.

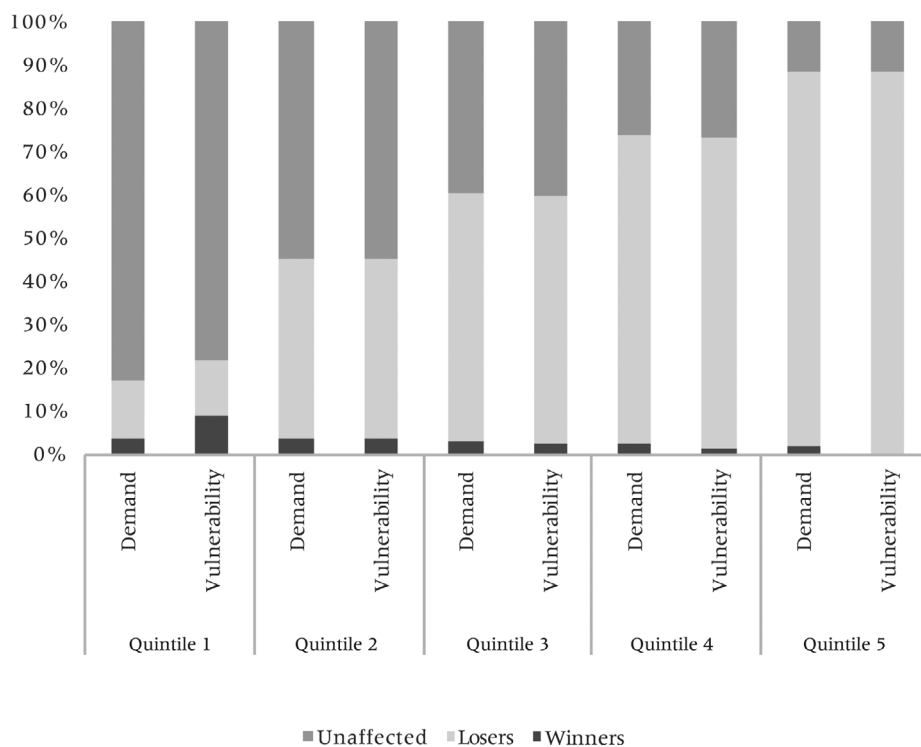
Given that our exercise aimed at reflecting the potential effects of the theoretically designed policy, it used an *ex ante* analysis based on budgetary costs as planned in 2015.<sup>9</sup> We took the incremental budget and beneficiaries for each program from the preamble to the 2015 Budget Law and calculated the unitary costs. This process was straightforward for preschool, as it only referred to children aged 3. For child care (1- and 2-year-olds), we had to account for the fact that the unitary costs for each age differ; in addition, for children aged 1, the program included two modalities (daily care and the once-a-week workshop), but only the former was of interest for this analysis. Considering the staff distribution of the program between ages and the number of incremental beneficiaries in each age, we built an age-specific unitary cost.<sup>10</sup> We deflated the costs using an appropriate index for each program.<sup>11</sup>

The personal assistant program is a cash-for-care transfer for hiring an assistant. The percentage of the subsidy is income-dependent: there are four per-capita household income groups, and the amount of the subsidy decreases with rising income. Hence, we transferred to the beneficiaries the correspondent monetary subsidy. The complete subsidy is set at 4.6 monthly BPC.<sup>12</sup> The lower-income group receives the complete subsidy, the next group receives 67 percent of the amount, the following receives 33 percent, and no subsidy is assigned to the highest-income group.<sup>13</sup>

The final step consists of deducting the payments that each household would have to make to finance the NCS. The funding strategy consists of increasing the income tax.<sup>14</sup> Uruguay has a direct tax consisting of a dual personal income tax (the Impuesto a la Renta de las Personas Físicas, or IRPF), which combines a progressive tax schedule for labor income with a low flat tax rate on capital income. The labor income component of the IRPF consists of seven marginal income tax rates, ranging from zero percent in the lowest bracket to 30 percent in the highest one, with deductions. This tax is only applied to formal workers (those contributing to the social security system), who represent around 75 percent of all workers. Pensions are taxed by a similar tax (the Impuesto a la Asistencia de la Seguridad Social, or IASS). Capital income is taxed at differential rates (from 3 percent to 12 percent, depending on the source). We propose a 5 percent increase in the marginal rates of personal income tax to finance the incremental costs of the expansion of NCS. Details on the current and proposed rates are presented in Appendix Table A3. The expected revenue from such a change would be about \$92 million, which would almost cover the total needs (\$96 million, as shown in Table 2). The programs that we are simulating are equivalent to 0.2 percent of GDP in 2014 and imply around half of the

**FIGURE 3** Percentage of winners and losers, by quintile, according to scenario

a) Percentage of winners and losers, by quintiles, for income tax financing scenario



budget of AFAM-PE, a conditional cash transfer that has been proved to reduce inequality by one point of the Gini index in Uruguay (Amarante, Ferrando, and Vigorito 2013).

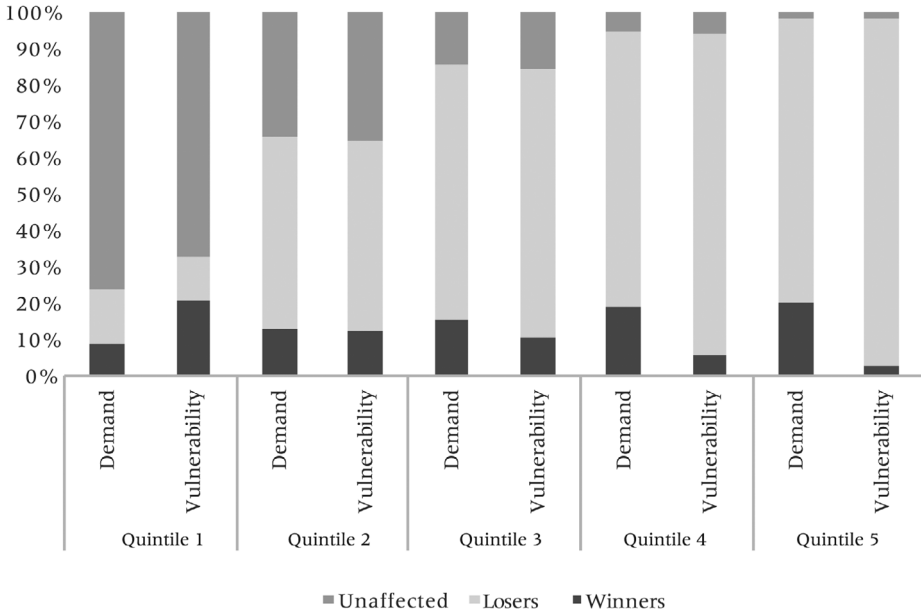
## Results

### Winners and losers

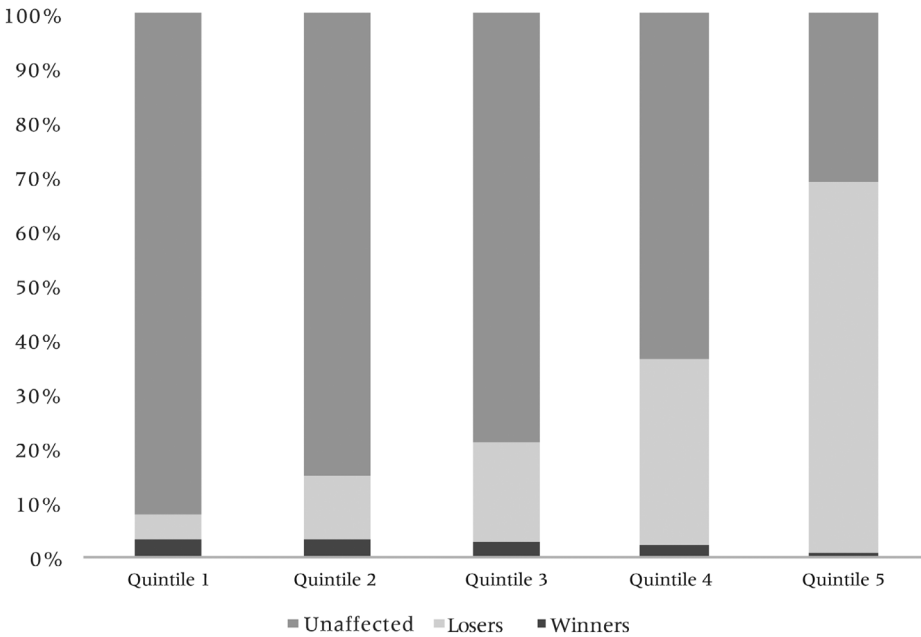
The distribution of beneficiaries and contributors by income group defines a structure of potential households that can be identified as winners and losers of the programs. Figure 3 shows the percentage of potential winners and losers (expressed in terms of persons) by per capita income quintiles for each alternative of beneficiaries' allocation (demand and vulnerability). In both cases, the potential winners are a very small part of the population (3 percent), even considering both children and the elderly, whereas the losers represent the majority of the population (54 percent). This is a documented characteristic of care programs: they benefit a small, even marginal,

**FIGURE 3 (continued)**

b) Households with children below age 4



c) Households with elders above age 64



SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

proportion of the population, but the levels of spending per person are high (Vaalavuo 2011; Verbist, Foster, and Vaalavuo 2012), and they may be financed by the whole population (or at least by a sizable proportion).

The percentage of potential losers increases with income in both allocation alternatives, following the progressive design of the income tax used to finance this exercise: about 13 percent of individuals from quintile 1 would end up as net losers, compared with 88 percent of those in the top quintile. These results suggest that financing can contribute to the progressivity of the policy.

The distribution of potential winners depends on the allocation of child care and preschool beneficiaries, although they would represent 3 percent of the total population in every case. For the demand alternative, the winners would consist of a comparable percentage in every income group: 3 percent of those in quintiles 1–4, and 2 percent for quintile 5. When allocation is based on vulnerability, the percentage of winners would decrease with income group, from 9 percent among the poorest to 0.4 percent in the richest quintile. The differences in the distributional impact of these two alternatives thus are straightforward.

The proportion of potential winners rises to 13 percent of people if the analysis is restricted to households with children up to 4 years old (Figure 3). In this case, potential winners represent about 20 percent of the last quintile of individuals in households with young children in the demand allocation scenario and the same percentage of the first quintile for the vulnerability alternative. When considering households, the percentage of winners would increase with income in the demand allocation alternative, whereas the opposite happens in the vulnerability one. On the other hand, considering households with elderly members reveals the limited coverage of this program (Figure 3). Note that in the last quintile, the elderly may benefit from the program, but if they belong to the program's highest-income group, they would not receive any money. This means they will be identified as potential losers if they pay or as unaffected if they do not. However, Figure 3 shows the progressivity and limited incidence of the complete set of programs simulated on the old people's households.

### Household income variation

As mentioned before, care programs often spend a large amount per user, although the coverage is relatively limited. This implies that while the proportion of potential winners may be irrelevant, the income variation for those who actually do benefit from the program may be very important. On the contrary, the change in the tax structure proposed here is small, which suggests that for households that do not benefit from the program but are compelled to pay, the loss should be small. However, these households represent a large proportion of all households in Uruguay.

**TABLE 4 Mean gains and losses as a share of household income, by quintile, according to scenario**

|            | Winners  |   | Losers         |
|------------|--|---|----------------|
|            | Income tax, cash-for-care for the elderly, and demand alternative for children (%) | Income tax, cash-for-care for the elderly, and vulnerability alternative for children (%) | Income tax (%) |
| Quintile 1 | 24   | 28  | -0.2           |
| Quintile 2 | 17   | 18  | -0.2           |
| Quintile 3 | 15   | 15  | -0.3           |
| Quintile 4 | 11   | 10  | -0.3           |
| Quintile 5 | 7  | 7   | -0.5           |
| Total      | 16   | 22  | -0.3           |

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

Table 4 presents these results, which raise questions about the political economy of implementing this kind of policy. In effect, those who would receive a significant net benefit (16 percent or 22 percent of their income, on average, depending on the scenario), whereas those who would lose end up with an average net benefit of -0.3 percent. This analysis raises doubts about whether voters would support a policy that requires almost everyone to pay, but benefits only a small part of society. However, the characteristics of dependency imply that nearly every individual will use these services at some point in their lives, either as a direct beneficiary or as a parent, spouse, son, or daughter of one. In this sense, the payment may be understood as insurance against dependency, and the position of individuals toward the program may depend on the risks they perceive of having to use the services.

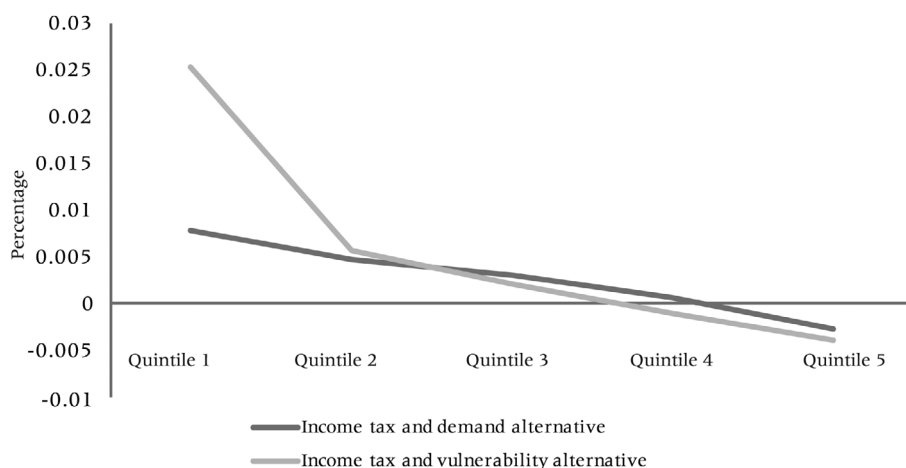
Regarding the distribution of net benefits, Table 4 shows that both allocation alternatives would be progressive in a strict sense. Matsaganis and Verbist (2009) reported similar results for child care subsidies in several European countries. The results were slightly more progressive for the vulnerability alternative, although the differences were not important.

Turning to losses, the progressivity is not that clear, although it still stands in a broad sense. The bottom quintile pays a smaller proportion of their income than does the top quintile. However, there is little or no variation in the intermediate quintiles.

Progressivity is also present when considering all households (Figure 4). In both scenarios, the income variation is positive and larger for the lowest-income quintile and decreases systematically for higher income groups. It is worth noting that the richer quintiles experience a net average loss.

As expected, the percentage of mean household income variation differs between the allocation alternatives, driven mostly by the difference in the number of beneficiaries in each quintile. Whereas in the first quintile the demand alternative is 0.7 percent, it is 2.4 percent in the income



**FIGURE 4** Percentage of mean household income variation, by quintile, according to scenario

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

**TABLE 5** Inequality indicators for transfers and tax

|   | Gini         | Variation<br>(percentage points) |
|---|--------------|----------------------------------|
| <b>Baseline income</b>                            | <b>37.47</b> |                                  |
| Only children services: demand alternative        | <b>37.41</b> | -0.06                            |
| Only children services: vulnerability alternative | <b>37.28</b> | -0.19                            |
| Only personal assistants                          | <b>37.45</b> | -0.02                            |
| Only income-tax variation                         | <b>37.39</b> | -0.08                            |
| Only services: demand alternative                 | <b>37.39</b> | -0.08                            |
| Only services: vulnerability alternative          | <b>37.26</b> | -0.21                            |
| Complete scenario: demand alternative             | <b>37.31</b> | -0.16                            |
| Complete scenario: vulnerability alternative      | <b>37.18</b> | -0.29                            |

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

alternative. In the rest of the distribution, there are no significant differences between scenarios.

### Income distribution

We estimated the Gini index before and after the simulation of each program and of the whole policy. The effect of the expansion of NCS proposed toward 2020 will have little impact on the overall income distribution (Table 5), although it reduces inequality in both scenarios. The limited impact is associated with the low coverage of its programs. Note that we only estimate the impact of the expansion proposed by the NCS, leaving unconsidered the current state of the programs involved. In the case of child care and preschool, the coverage of existing programs is relevant, especially for those aged 2 and 3.

**TABLE 6** Percent distribution of care spending, by income quintile, according to scenario

|                              | Demand alternative (%) | Vulnerability alternative (%) |
|------------------------------|------------------------|-------------------------------|
| Quintile 1                   | 20                     | 55                            |
| Quintile 2                   | 23                     | 23                            |
| Quintile 3                   | 23                     | 14                            |
| Quintile 4                   | 20                     | 6                             |
| Quintile 5                   | 14                     | 2                             |
| Total                        | 100                    | 100                           |
| Quintile share ratio (Q5/Q1) | 0.706                  | 0.028                         |

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

All of the policies involved would, considered on their own, improve the income distribution. The best result in redistributive terms comes, as expected, from the vulnerability alternative of child care services, as it gives more importance to the lower part of the distribution. The worst result comes from the provision of services for the elderly, because of their position in the income distribution, but this policy is not regressive, due to the progressive design of the subsidy. When taken together, the simulations are consistent with the individual policy exercises, showing better results when the allocation is based on vulnerability. In both cases, the income tax variation contributes to the improvement of income distribution.

These results are similar, in sign and magnitude, to those found by several studies of child care in European countries (Matsaganis and Verbist 2009; Verbist, Foster, and Vaalavuo 2012). On the other hand, Vaalavuo (2011) found no change or a slight increase in the Gini index for the Nordic countries. The results regarding elder care were stronger in Nordic countries, the Netherlands, and the United Kingdom, following the demographic structure of income distribution in these countries, a slight difference in beneficiary's identification, and the focus of the programs on the low-income elderly (Vaalavuo 2011; Verbist, Foster, and Vaalavuo 2012).

As shown in Table 6, in both allocation alternatives, NCS spending would benefit the bottom quintile more than the top quintile (shares below 1). However, the differences between both are very important. In the demand alternative, quintiles 1–4 would receive a similar proportion of the benefits, with a minor reduction for the richest quintile. In the vulnerability scenario, more than half of the benefits would go to the worst off, whereas the top quintile would receive only 2 percent.

The ratio between the first and last quintile shares is presented as in Vaalavuo (2013) and Van Lancker and Ghysels (2011) for European countries with similar programs. Vaalavuo (2013) included child care, education, and elder care, revealing shares below 1 for the six European countries analyzed. Van Lancker and Ghysels (2011) reported ratios for child care services in Sweden and Flanders with opposite results: 0.4 for Sweden and 2.1 in

Flanders. Our demand alternative shows shares similar to France, Slovenia, Spain, and United Kingdom, whereas the vulnerability alternative is much more pro-poor. In general terms, the analysis provided by the Commitment to Equity Institute for Latin America indicates that preschool education is progressive in the region.<sup>15</sup> For Uruguay, Bucheli et al. (2013) analyzed the redistributive impacts of different components of social spending and found that preschool education placed fifth out of 13 programs in terms of progressivity, with a concentration coefficient of  $-0.45$ . The most progressive program corresponded to food vouchers, with a concentration index of  $-0.76$ .

Finally, we evaluated the distributive effects of the cash-for-care program for the elderly as an employment program. It is reasonable to expect that people who could become employed as personal assistants once the program is begun have a certain profile, associated with low employability. Workers who fit the profile for this occupation mainly are low-skilled, middle-aged, and female. To illustrate the potential impact of this type of job creation, we assigned the full salary to potential assistants, identified as randomly selected women aged 30–69 years who were not employed, students, or retired and who had less than 12 years of formal education. Their incorporation into the labor force as personal assistants would imply a small reduction in the Gini coefficient (0.07 points), similar to that observed for the demand alternative for child care.<sup>16</sup>

## Discussion

This article has analyzed two policy interventions that constitute the main components of the NCS in Uruguay. These interventions can be considered as embedded in what is called the social investment paradigm: child care services and care for the elderly dependent. Both may help to achieve multiple objectives. Early child care and preschool care can boost human capital accumulation and result in higher productivity in the long term, and home-based care for the elderly can help to improve living conditions for those in need of assistance. At the same time, both policies have the potential to help promote more inclusive development, by facilitating the inclusion of women in the labor market.

The redistributive scope of these interventions is a widely debated issue in developed countries. In developing countries, the discussion about these policies is at a much earlier stage, as is the related evidence. As discussed in this article, who benefits from these care services is a crucial point for analysis, an aspect that is especially relevant in the case of child care. If services are allocated following demand, it is possible that these end up benefiting those who are already better off, meaning children whose parents are employed or have higher probabilities of employment, at least in the short term. The positive side of a policy developed along such a path—in case it is temporary—may be the possibility of discouraging middle classes from

opting out of public services. If the rationale is that other households may follow in time, this may help consolidate a universal policy while protecting the quality of the service through the pressure of users for institutional improvements and their willingness to contribute to the financing. If, on the contrary, the policy starts out as being strictly targeted toward poorer households, this may compromise the quality of services—"A program for the poor is a poor program," runs the old saying—and the ambitions of universality in the long term. However, the distributional effects will be higher. In any case, policy actions may influence results in one way or the other, so it is desirable that the policy's orientation (in terms of the beneficiaries it wants to reach) is clear in its design, and also that it is publicly announced and understood by the society.

Our results indicate that the potential winners from NCS are a very small part of the population, whereas the potential losers represent the majority. The policy benefits a small, even marginal, proportion of the population, but the levels of spending per beneficiary are relatively high. As the policies are financed by means of a progressive income tax, the many losers lose little relative to their income whereas the few winners gain much. The many lose little; the few gain much. As result, the political economy of support for this desirable social investment policy is discouraging.

Additionally, our results indicate that the redistributive impact of the specific in-kind transfers considered for the Uruguayan case is very limited, even when child care services are targeted towards more vulnerable children. Even if the benefits are significant for individual households, the overall impact is weak, as the number of beneficiaries is low. These results are similar, in sign and magnitude, to those found in several European child care studies. Nevertheless, we should stress that the direct redistributive impact is just one dimension of the effects of the policy and that consideration of our results must be complemented with a rigorous analysis of the impacts of the policy in other dimensions. The redistributive effects found here may be considered as a lower bound, as there may be other indirect effects. Increases in female labor market participation, especially if it is concentrated among poorer households, would increase the redistributive effect of the intervention. From a longer-term perspective, more opportunities for lower-income children could have beneficial impacts on education and on future income, increasing equality in the long run.

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## Notes

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on “The political economy of social protection systems.”

1 It has been argued (Cantillon 2011) that the growing interest of European governments in child care, education, and elder care, with a view to enhancing people’s ability to work and to balance work and family life, has meant backsliding in more traditional policies, such as the direct provision of economic maintenance, and that this has had consequences in terms of poverty and inequality indicators.

2 Colacce and Manzi (2017) estimate that the number of dependent children will decline from 185,000 to 148,000 between 2017 and 2050, whereas the number of elderly dependents will increase from 64,000 to 120,000 in the same period, resulting in an increase in the total dependent population. The authors also consider the resources that will be needed to accomplish the NCS’s goals in different time horizons (2020 and 2050), when the demographic trends are considered.

3 The lack of precise information about income-specific dependency rates is a major drawback of this analysis. Further detail is provided in the next section.

4 The only source of information that may reveal some clues about this relationship is the Longitudinal Social Protection Survey, a recent survey showing that the pronounced dependency ratio has little variation by income group, although it is higher for the lowest- and the highest-income groups (BPS and IDB 2013). However, there are some doubts about the quality of the income information in this survey, as it differs significantly from the validated information taken from the household survey.

5 If we consider that the distribution between public and private provision remains unchanged, the beneficiaries will be 58 percent of those considered for the simulation. Alternatively, considering the current relationship between enrollment and assistance would imply that 77 percent would be beneficiaries.

6 The estimated model is presented in Appendix Table A1.

7 For CAIF, we used the census segment, and for preprimary care, we used

either the census segments selected in each department or the total department population, if we could not meet the total beneficiaries needed or the AFAM-PE proportion.

8 The original syntax for the construction of these categories was provided by MIDES. The variables used are similar to those used to target the program.

9 During 2016 and 2017, the budget execution was around 85 percent.

10 We used as reference a large type of center that provides care for 1- and 2-year-olds (CAIF type D). Complete information about the structure and costs of each type can be found in Plan CAIF (2015). Further information about this construction is available from the authors upon request.

11 For CAIF, we used the variation of UR between January 2015 and the average of 2014. The UR is a monetary index which varies with the wage index, it is used to adjust mortgages and rents. For preschool, we used the variation of the public preschool and school teachers’ salary taken from the household survey.

12 Base de Contribuciones y Pensiones (BPC, Base de Prestaciones Contributivas, pensions and contributions’ base) is a monetary index that defines taxation and social benefits. We use the 2014 value, about US\$120.

13 The per capita income defined for the first group is less than US\$358, the second group has a per capita income of between US\$358 and US\$716, the third is between US\$716 and US\$1,312, and the fourth is more than US\$1,312.

14 The alternative approach of financing the NCS through indirect taxes is very unlikely, given the already high value-added tax pressure in Uruguay (ECLAC, 2018) and the regressive nature of this tax (Bucheli et al, 2013).

15 See <http://commitmenttoequity.org/publications-ceqworkingpapers/>. In particular, CEQ Working Papers 9, 10, 18, 50, 51 and 52 present analysis of the redistributive impact of preschool spending in different Latin American countries.

16 If we assume that the assistants are drawn from the poorest among

eligible women, the redistributive effects would be larger, similar to the vulnerability alternative for children (a reduction of 0.22 in Gini). These results are available upon request, as are the complete results of these simulations (the distribution of winners between income quintile and income variation).

## References

- Amarante, Veronica, Mery Ferrando, and Andrea Vigorito. 2013. "Teenage school attendance and cash transfers: An impact evaluation of PANES," *Economía*, 14(1): 61–102.
- Bagnato, María José, Mario Luzardo, and Darío Padula. 2011. "Oferta de servicios y prestaciones para la población con discapacidad e identificación de la demanda" [*Services and benefits for people with disabilities and identification of demand*]. Montevideo: Fondo Carlos Filgueira. Infamilia. Ministerio de Desarrollo Social.
- Baker, Michael, Jonathan Gruber, and Kevin Milligan. 2008. "Universal child care, maternal labor supply and family well-being," *Journal of Political Economy* 116(4): 709–745.
- Barr, N. 2010. "Long-term care: A suitable case for social insurance," *Social Policy & Administration* 44(4): 359–374.
- Batthyány, Karina, Natalia Genta, and Valentina Perrotta. 2013. La población uruguaya y el cuidado. Análisis de representaciones sociales y propuestas para un Sistema de Cuidados en Uruguay [*The Uruguayan population and care. Analysis of social representation, and proposals for a Care System in Uruguay*]. Montevideo, Uruguay: Universidad de la República. Available at: [http://www.sistemadecuidados.gub.uy/innovaportal/file/23783/1/libro\\_snc01\\_v07\\_distribucion\\_digital.pdf](http://www.sistemadecuidados.gub.uy/innovaportal/file/23783/1/libro_snc01_v07_distribucion_digital.pdf) (accessed December 2016).
- Botto Núñez, Germán, and Richard Detomasi. 2015a. "Bases metodológicas para la planificación espacial de servicios de educación inicial en Uruguay" [*Methodological basis for spatial planning of early education services in Uruguay*]. Paper presented at Jornadas Argentinas de Geotecnologías, San Luis, Argentina. Available at: <http://dinem.mides.gub.uy/innovaportal/file/61794/1/tecnologias-de-la-informacion-para-nuevas-formas-de-gestion-del-territorio.-2015.pdf> (accessed December 2016).
- . 2015b. "Evaluación espacial de servicios de educación inicial: la densificación de la oferta para niños de tres años en la Administración Nacional de Educación Pública" [*Spatial evaluation of early education services: Density of three-year-old children's services in the National Administration of Public Education*]. Working Paper. Montevideo, Uruguay: Ministerio de Desarrollo Social.
- BPS and IDB. 2013. Longitudinal Social Protection Survey (LSPS). Montevideo, Uruguay: Banco de Previsión Social (BPS) and Inter-American Development Bank (IDB).
- Bucheli, Marisa, Nora Lustig, Máximo Rossi, and Florencia Amábile. 2013. "Social Spending, Taxes, and Income Redistribution in Uruguay," CEQ Working Paper 10, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue.
- Cantillon, Bea. 2011. "The paradox of the social investment state: Growth, employment and poverty in the Lisbon era," *Journal of European Social Policy* 21(5): 432–449.
- Cantillon, Bea, and Wim Van Lancker. 2013. "Three shortcomings of the social investment perspective," *Social Policy and Society* 12(4): 553–564.
- Caruso, Martín, Sebastian Galiani, and Pablo Ibararán. 2017. Long-Term Care in Latin America and the Caribbean? *Theory and Policy Considerations*. NBER Working Paper No. 23797. Cambridge, MA: National Bureau of Economic Research.
- Cascio, Elizabeth U. 2009. "Maternal labor supply and the introduction of kindergarten in American public schools," *The Journal of Human Resources* 44(1): 140–170.
- . 2015. "The promises and pitfalls of universal early education," *IZA World of Labor*, No. 116. Bonn: Instituto para el Estudio del Trabajo (IZA) (January).

- Colacce, Maira, and Pilar Manzi. 2017. "El cuidado de la población uruguaya y la creación del Sistema Nacional Integrado de Cuidados: una mirada de largo plazo," Serie Estudios y Perspectivas, LC/MVD/TS.2017/2, Oficina de la CEPAL en Montevideo.
- Costa-Font, Joan, Christophe Courbage, and Peter Zweifel. 2017. "Policy dilemmas in financing long-term care in Europe," *Global Policy* 8(S2): 38–45.
- Del Boca, Daniela, Silvia Pasqua, and Chiara Pronzato. 2009. "Motherhood and market work decisions in institutional context: A European perspective," *Oxford Economic Papers* 61(Suppl. 1): i147–i171.
- Del Bocca, Daniela. 2015. "Child care arrangements and labor supply," Inter-American Development Bank (IDB) Working Paper 569. Washington, DC.
- Duncan, Greg J., and Aaron J. Sojourner. 2013. "Can intensive early childhood intervention programs eliminate income-based cognitive and achievement gaps?" *Journal of Human Resources* 48(4): 945–968.
- ECLAC. 2018. *Fiscal Panorama of Latin America*. Santiago, Chile.
- Eydal, Gudny Björk, and Tine Rostgaard. 2013. "Caring families: Policies and practices in Nordic countries," in: Ulla Björnberg and Mai Heide Ottosen (eds.), *Challenges for Future Family Policy in the Nordic Countries*. Copenhagen: SFI—The Danish National Center for Social Research, pp. 83–122.
- Government of Uruguay. 2016. "Servicio de asistentes personales para cuidados de larga duración para personas en situación de dependencia severa" [Long-term care service of personal assistants for the severely dependent]. Decree No. 117.016. Montevideo, Uruguay Accessed December 2016 at [https://medios.presidencia.gub.uy/legal/2016/decretos/04/cons\\_min\\_307.pdf](https://medios.presidencia.gub.uy/legal/2016/decretos/04/cons_min_307.pdf).
- Havnes, Tarjei, and Magne Mogstad. 2011. "Money for nothing? Universal child care and maternal employment," *Journal of Public Economics* 95(11–12): 1455–1465.
- Heckman, James J., and Dmitri V. Masterov. 2007. "The productivity argument for investing in young children," *Review of Agricultural Economics* 29(3): 446–493.
- Heckman, James J., Seong Hyeuk Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Q. Yavitz. 2010a. "Analyzing social experiments as implemented: A reexamination of the evidence from the HighScope Perry Preschool Program," *Quantitative Economics* 1(1): 1–46.
- . 2010b. "The rate of return to the HighScope Perry Preschool Program," *Journal of Public Economics* 94 (1–2): 114–128.
- Hufkens, Tine, Gerlinde Verbist, Francesco Figari, Andrés Gábos, Niki Kalavrezou, Manos Matsaganis, and Alari Paulus. 2015. "The distributive effects of work-family life policies in European welfare states," *ImProvE Working Paper 16/09*. Antwerp: Herman Deleeck Centre for Social Policy, University of Antwerp.
- Instituto Nacional de Estadística (INE). 2014. Continuous Household Survey. Montevideo, Uruguay.
- INE. 2016. "Estimación de la pobreza por el método del ingreso: año 2015," División Estadísticas Sociodemográficas, INE. Accessed December 2016 at <http://www.ine.gub.uy/documents/10181/364159/Estimaci%C3%B3n+de+la+pobreza+por+el+M%C3%A9todo+del+Ingreso+2015/321a0edb-d97e-4ab0-aa88-e31ce7a22307>.
- Junta Nacional de Cuidados. 2015. "Plan Nacional de Cuidados: 2016–2020" [National Care Plan, 2016–2020]. Montevideo, Uruguay: Sistema de Cuidados, Ministerio de Desarrollo Social. Accessed December 2016 at <http://www.mides.gub.uy/innovaportal/file/61181/1/plan-nacional-de-cuidados-2016-2020.pdf>.
- Matsaganis, Manos, and Gerlinde Verbist. 2009. "Distributional effects of publicly funded childcare," in Terry Ward, Orsolya Lelkes, Holly Sutherland, and István György Tóth (eds.), *European Inequalities. Social Inclusion and Income Distribution in the European Union*. Budapest: TÁRKI Social Research Institute, pp. 176–185.
- Ministerio de Economía y Finanzas (MEF). 2015. "Proyecto de presupuesto nacional 2015–2019" [National Budget Project, 2015–2019]. 31 August. Montevideo: MEF. Accessed December 2016 at <https://www.mef.gub.uy/16501/1/mef/proyecto-de-presupuesto-nacional-2015—2019.html>.

- Ministerio de Desarrollo Social (MIDES). 2014. "Cuidados como Sistema. Propuesta para un modelo solidario y corresponsable de cuidados en Uruguay" [Care as system: Proposal for a supportive and co-responsible model of care in Uruguay]. Montevideo, Uruguay: MIDES. Accessed December 2016 at [http://www.sistemadecuidados.gub.uy/innovaportal/file/34676/1/cuidados\\_como\\_sistema.pdf](http://www.sistemadecuidados.gub.uy/innovaportal/file/34676/1/cuidados_como_sistema.pdf).
- MIDES. 2015. "Aproximación a la población dependiente mediante encuestas" [Approximating the dependent population through surveys]. Working Paper. Montevideo, Uruguay: MIDES.
- Morel, Nathalie, Bruno Palier, and Joakim Palme (eds). 2012. *Towards a Social Investment State? Ideas, Policies and Challenges*. Bristol, UK: Policy Press.
- Nollenberger, Natalia, and Ivone Perazzo. 2016. "Efectos de la provisión universal de educación pre-escolar sobre la asistencia y la participación laboral femenina. Evidencia para el caso uruguayo" [Effects of universal preschool education on attendance and female labor participation: Evidence for the Uruguayan case]. Documentos de Trabajo 16-04. Montevideo: Instituto de Economía, Universidad de la República. Accessed December 2016 at <http://www.iecon.ccee.edu.uy/dt-04-16-efectos-de-la-provision-universal-de-educacion-pre-escolar-sobre-la-asistencia-y-la-participacion-laboral-femenina-evidencia-para-el-caso-uruguayo/publicacion/538/es/>.
- Ocampo, José Antonio, and Natalie Gómez-Arteaga. 2017. "Social protection systems, redistribution and growth in Latin America," *CEPAL Review* No. 122, pp. 7–30.
- Plan CAIF. 2015. "Estructura organizativa de los centros CAIF" [Organizational structure of CAIF centers]. Montevideo: División Coordinación Técnica de Plan CAIF, Instituto del Niño y Adolescente del Uruguay. Accessed December 2016 at <http://caif.org.uy/wp-content/uploads/2013/12/NUEVA-ESTRUCTURA-ORGANIZATIVA.pdf>.
- Plantenga, Janneke, and Chantal Remery. 2005. *Reconciliation of Work and Private Life. A Comparative Review of Thirty European Countries*. Brussels: European Commission.
- Rofman, Rafael, Verónica Amarante, and Ignacio Apella (eds.) 2016. *Demographic Change in Uruguay: Economic Opportunities and Challenges*. Washington, DC: ECLAC and World Bank.
- Vaalavuo, Maria. 2011. "Towards an improved measure of income inequality. The impact of public services on income distribution: An international comparison," *PhD thesis*. Florence, Italy: European University Institute.
- . 2013. "The redistributive impact of 'old' and 'new' social spending," *Journal of Social Policy* 42(3): 513–539.
- Van Kersbergen, Kees, and Anton Hemerijck. 2012. "Two decades of change in Europe: The emergence of the social investment state," *Journal of Social Policy* 41(3): 475–492.
- Van Lancker, Wim, and Joris Ghysels. 2011. "Who reaps the benefits? The social distribution of public childcare in Sweden and Flanders," *Working Paper 11/06*. Antwerp: Herman Deleeck Centre for Social Policy, University of Antwerp. Accessed December 2016 at [http://www.centrumvoorsociaalbeleid.be/sites/default/files/CSB%20Working%20Paper%2011%2006\\_April%202011.pdf](http://www.centrumvoorsociaalbeleid.be/sites/default/files/CSB%20Working%20Paper%2011%2006_April%202011.pdf).
- Verbist, Gerlinde, Michael Förster, and Maria Vaalavuo. 2012. "The Impact of Publicly Provided Services on the Distribution of Resources: Review of New Results and Methods," *OECD Social, Employment and Migration Working Papers, No. 130*. Paris: OECD. Accessed December 2016 at <http://www.oecd-ilibrary.org/docserver/download/5k9h363c5szq-en.pdf?expires=1484249530&id=id&accname=guest&checksum=763D851C44F914580D00BCF6D3803AD3>.
- Waldfogel, Jane. 2001. "International policies toward parental leave and child care," *The Future of Children* 11(1): 99–111.
- World Bank. 2016. "World Bank Country and Lending Groups," Accessed December 2016 <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>.
- Wouterse, Bram, and Bert Smid. 2017. "How to finance the rising costs of long-term care: Four alternatives for the Netherlands," *Fiscal Studies: The Journal of Applied Public Economics* 38(3): 369–391.



## APPENDIX

**TABLE A1 Probit model for assistance of children aged 1–3 years through public and private care and preschool services**

| Variables                               | Assistance                     |
|---|--------------------------------|
| Region                                  | 0.282 <sup>***</sup> (0.0448)  |
| Low education of head of household      | −0.768 <sup>***</sup> (0.0687) |
| Moderate education of head of household | −0.542 <sup>***</sup> (0.0602) |
| Working mother                          | 0.375 <sup>***</sup> (0.0447)  |
| Number of children in household         | −0.163 <sup>***</sup> (0.0224) |
| Age                                     | 0.897 <sup>***</sup> (0.0279)  |
| Constant                                | −1.596 <sup>***</sup> (0.0944) |
| Observations                            | 4,704                          |

NOTE: Robust standard errors in parentheses. \*\*\* $p < .01$ .

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014).

**TABLE A2 Age and income distribution of elderly dependent beneficiaries**

|                    | Beneficiaries | Percentage of elderly | Percentage of dependent elderly |
|--------------------|---------------|-----------------------|---------------------------------|
| Age groups (years) |               |                       |                                 |
| 65–69              | 1,005         | 0.7                   | 57.9                            |
| 70–74              | 1,540         | 1.3                   | 58.5                            |
| 75–79              | 1,717         | 1.9                   | 58.2                            |
| 80–84              | 1,455         | 2.1                   | 57.7                            |
| 85–89              | 2,661         | 4.6                   | 59.8                            |
| Total              | 8,378         | 1.8                   | 58.6                            |
| Income             |               |                       |                                 |
| Quintile 1         | 359           | 1.6                   | 53.6                            |
| Quintile 2         | 1,229         | 1.9                   | 57.0                            |
| Quintile 3         | 2,005         | 1.9                   | 59.5                            |
| Quintile 4         | 2,224         | 1.8                   | 59.3                            |
| Quintile 5         | 2,561         | 1.8                   | 59.0                            |
| Total              | 8378          | 1.8                   | 58,6                            |

SOURCE: Authors' calculations, based on the Continuous Household Survey (INE 2014) and the Longitudinal Social Protection Survey (BPS and IDB 2013).

**TABLE A3 Marginal income tax rates**

|            | <b>Current</b> | <b>Proposed</b> |
|------------|----------------|-----------------|
| Category 1 | 10             | 10.50           |
| Category 2 | 15             | 15.75           |
| Category 3 | 24             | 25.20           |
| Category 4 | 25             | 26.25           |
| Category 5 | 27             | 28.35           |
| Category 6 | 31             | 32.55           |
| Category 7 | 36             | 37.80           |

Source: Authors' calculations.