Setting Up a Communication Package for the Italian NDC

Tito Boeri, Maria Cozzolino, and Edoardo Di Porto
Abstract: In the last 30 years the Italian pension system was repeatedly reformed and counter-reformed, increasing uncertainty about future pensions. A low level of financial literacy exacerbated this problem. In 2015, the Italian Social Security Institute (INPS) launched a project to allow all insured workers to have more precise information about their future benefits. This paper analyzes the results of a survey carried out to evaluate the project’s performance. The findings are encouraging – around 80 percent of respondents rate the INPS service as at least “very helpful.” Even if 42 percent of the sample overestimates their future pension, 16–29 percent reveal a willingness to change their expectation on retirement income after receiving new information.

Key words: Financial Literacy, NDC, Retirement Planning

JEL codes: H55, G14
Acknowledgments

This paper is written for Progress and Challenges of Nonfinancial Defined Contribution Pension Schemes, Volume 2: Addressing Gender, Administration, and Communication, edited by Robert Holzmann, Edward Palmer, Robert Palacios, and Stefano Sacchi, to be published by the World Bank in autumn 2019. The authors acknowledge the research support from Isabella Rota Baldini. We are also grateful to Tullio Jappelli, Imma Marino, and Mario Padula and anonymous referees for comments and suggestions and to Amy Gautam for first-rate copy editing. A first version of the paper was presented at the NDC III conference in Rome, October 5–6, 2017, and we are thankful to the participants for their comments and encouragement. The views expressed herein are those of the authors and do not necessarily reflect the views of the institutions they are associated with or the views of the World Bank.
Abbreviations and Acronyms

INPS  Italian Social Security Institute

IV    Instrumental Variable
1. Introduction

Since the beginning of the 1990s, the Italian pension system has been subject to several significant reforms. The “Fornero reform,” introduced in 2012, is merely the last of a series of measures that modified Italy’s national pension system. The first reform in 1992 (the so-called “Amato reform”) was followed by the Dini reform in 1995 and by three minor subsequent adjustments introduced in 1997, 2005, and 2007.¹

This process resulted in: an increase in the minimum pension age; the gradual transition from a defined benefit system toward a defined contribution one; and a drop in the replacement rate. These reforms standardized the rules for the future, but also generated major differences in treatment between younger workers (those who had no contributions paid prior to 1995), middle-age workers (with less than 18 years of contributions paid in 1995), and older workers.

These are the most significant changes in the Italian pension system in the last 20 years. However, this was no smooth ride, as these changes often overlapped and were incoherent with one another: periods of tightening were suddenly followed by periods of loosening and derogations, undoing some of the previous reforms. This inevitably produced anxiety and uncertainty among future retirees.

As a result, today a vast number of people tend to overestimate their future pensions, and Italy’s low rate of financial literacy exacerbates the situation. Analyses, based on data by the Bank of Italy, indicate a widening of the gap between the expected and effective replacement rate, together with heterogeneity in the population’s knowledge of basic social security concepts.²

² Comparing the prereform period (1989–1991) and the postreform period (2000–2002), the percentage of people who overestimate or underestimate their replacement rate by 25 percent or more increased from 10
A survey carried out by INPS (the Italian Social Security Institute) in 2016 seems to confirm these findings. The questionnaire asked respondents a few basic questions on the functioning of the pension system in a multiple-choice framework, where only one answer was correct. The results from this survey show that people with higher education levels tend to have higher scores, probably because they are more financially literate and have a better understanding of the mechanisms that regulate the national social security system (Figure 1.1 and Figure 1.2).

**Figure 1.1: Knowledge of the Italian pension system financial situation, by education**

![Bar chart showing knowledge of the Italian pension system financial situation by education level.]

*In surplus, in break even*

---

percent to 14 percent among employees, from 10 percent to 16 percent among civil servants, and from 11 percent to 29 percent among the self-employed (Bottazzi, Jappelli, and Padula 2006).
Figure 1.2: Knowledge of the Italian pension system features, by education

The probability of receiving a wrong answer is relatively higher for questions that refer to how the contributions deposited into the system are employed. The majority of respondents believe that contributions are deposited into a personal account that they will tap into when they retire. Just over one-third (32 percent) of graduates (33 percent of those with a high school diploma) are aware of the fact that Italy has a pay-as-you-go system. This figure drops to 24 percent among those with only a primary school diploma.

Evidence shows that the number of correct answers (current contributions are used to pay current pensions and contributions are not enough to fund them) increases with age, as people get closer to retirement, while younger people appear to be less familiar with the functioning of the pension system. This age effect is evident in the above-mentioned analyses on the expectations regarding the replacement rate. Workers who entered the labor force more recently display a higher tendency to have naive expectations. This is true
also for workers with discontinuous careers, for employees in small firms, and for the self-employed. In addition to lacking information, these groups of people do not have solid certainties about their future incomes. They also do not seem to have adequate tools enabling them to make informed choices that will allow them to reduce the risk of having low incomes after retirement.

This paper shows the first results of a communication campaign (the so-called “La mia pensione futura”; referred to as “My future pension” hereafter) launched by INPS in 2015 to let all INPS-insured workers know when they will be able to retire and to provide a prediction of their future pension level.

2. Pension reforms and communication

The reform process of the Italian pension system, starting in 1992 with the Amato reform, put greater responsibility on all workers, who are responsible for planning their retirement. To keep their current standard of living when they retire, workers should invest part of their savings into a complementary pension scheme along with the first-pillar public pension.\(^3\) Moreover, the 1995 reform changed the calculation method, making the assessment of future benefits more difficult. Specifically, like Sweden, Italy opted for a defined contribution retirement plan in which notional accumulated contributions are transformed into an annuity at retirement.\(^4\)

Current literature clearly points out that workers’ ability to carefully plan their retirement, and adjust consumption and savings over the working life, is closely related to financial literacy levels: higher literacy results in more knowledgeable behavior. Lusardi and Mitchell

---

\(^3\) One year after the Amato reform, changes in complementary pension system were approved to develop a supplementary funded pillar (D.Lgs n.124/1993).

\(^4\) Pensions are related to the contribution paid over the working life, capitalized every year by a five-year moving average of gross domestic product growth, and to retirement age. Capitalized contributions are then annualized at retirement by multiplying them by an age-related conversion coefficient.
(2011) showed that 30–40 percent of the differences in the savings rate of individuals close to retirement can be attributed to differences in their levels of financial literacy.

Italy is a country with a low financial literacy. Italian financial literacy lags behind other advanced economies, as highlighted by the Organisation for Economic Co-operation and Development (OECD 2014) and by Klapper, Lusardi, and van Oudheusen (2015). The latter show that only 37 percent of Italians correctly understand basic financial concepts, much less than the European Union average of 52 percent. In addition, di Salvatore et al. (2017), using the results of Bank of Italy surveys conducted in 2017, demonstrate that just a minor part of this gap depends on Italian sociodemographic differences compared to other countries.

This low level of financial literacy is one of the main reasons why pension reforms, especially the most disruptive ones, should be adequately communicated and explained to workers. For example, Sweden also moved to a contribution-based method for the calculation of pensions at the end of the 1990s. Since 1999, just one year after the reform passed, the Swedish social security agency (Försäkringskassan) has automatically sent a statement (the “Orange Envelope”) to all resident citizens aged 28 years or more of their current personal pension position, including an estimate of their future pension benefit conditional on their planned retirement age and on different assumptions about the growth of the Swedish economy. Swedish workers can obtain a forecast that also includes their occupational pension and any private pension. In 2018 the Swedish pensions agency decided to exclude the projection from the statement. The aim is to move toward a digital “Orange Envelope,” and projections (state pension, occupational pension, private pension plans) will be made in digital interactions with contributors via MinPension.se, the agency’s website.

____________________________

5 The proposal for Swedish reform was drawn up between 1992 and 1994 but it was adopted in 1998. For a detailed description of the Swedish pension reform, see Pollnerová (2002).
In Italy, the law that introduced the 1995 reform, which radically changed the pension calculation method, envisaged a communication campaign to ensure that all Italian citizens would be able to fully grasp the implications of the reform on their future pensions. In contrast with Sweden, however, it took more than 20 years after the Dini reform to launch this campaign.

Section 3 provides details on Italy’s communication campaign, while section 4 analyzes user satisfaction with the “My future pension” program using feedback collected on a survey.

3. INPS “My future pension” campaign

3.1. Establishment of “My future pension”

The expectations of Italian workers regarding their replacement rate trend downward irrespective of the categories under analysis (Figure 3.1). This means that Italian workers have negative expectations regarding their future pension, understandable given the characteristics of the new regime. However, there is a distance between expected retirement age and that will be applied to younger workers. As for the retirement age, “during the last 15 years, expectations have been very optimistic, and young generations may have accumulated an insufficient amount of wealth” (Jappelli, Marino, and Padula 2014).

In this specific setting it is always advisable to give clear financial information.
In 2015, INPS launched a project called “My future pension” to inform insured workers (at least those insured by INPS – i.e., almost 90 percent of the Italian workforce) of when they will be able to retire and to give them some order of magnitude of their future pension incomes at retirement. This online service will gradually allow all workers to estimate their future pension on the basis of their past careers and on the projection of their future contributions until retirement.

To start with, the service was opened to roughly 19 million INPS-insured workers,\(^6\) beginning with the youngest ones with at least a three-year contribution record. The service was offered to private sector employees, the self-employed, most of the workers

---

\(^6\) Of these INPS-insured employees, around 15 million are in the private sector while almost 4 million are self-employed.
contributing to “special” industry-level funds (a legacy of past ad hoc rules for some specific categories of workers), and workers contributing to the so-called “gestione separata,” a fund established in 1995 for those workers who did not, at that time, have a dedicated social security fund (i.e., some independent workers, occasional workers, etc.). Three years after the launch of the project, essentially all private sector employees and the self-employed now have the opportunity, if they register and log onto the platform, to use this tool.

In its startup phase, an email was sent to 5.6 million INPS-insured workers (registered on the INPS website), inviting them to use the online program. This was followed by the delivery of around 4 million Orange Envelopes, starting in 2016, only to those who were not registered on the INPS website. The Orange Envelopes contain workers’ account of past contributions, date of earliest possible retirement, and a forecast of the future pension, based on expected economic scenarios and on likely future salary progression (assuming the current job is held until retirement). Furthermore, an accompanying letter invited workers to get an INPS PIN code and to use the online service.\(^7\)

In the beginning of 2018, INPS started to open up this service to public sector employees. Their access to the program is currently limited, though, since it is difficult to map the entire working career of a number of civil servants (particularly those who are most mobile and change employers often), and especially to track their payments to their specific social security fund. However, INPS is investing time and resources to solve these difficulties and recently opened up the program to a sample of 30,000 public-sector employees.

3.2. Use of “My future pension”

Over the first three years of “My future pension,” more than 3 million unique users logged onto the INPS website to estimate their future pension. Between 2015 and May 2018, users

\(^7\) Examples of the personal statement sent by INPS and by the Swedish pensions agency are shown in the Appendix.
made 14.5 million simulations. This means that many users took advantage of the interactive features of the program, and used it more than one time (4.5 times on average), simulating different scenarios such as gaps in their future contributions or a less favorable growth scenario for the Italian economy.

Access to the service was highest in the first two years (Figure 3.2). This suggests that people responded to the incentives of emails and Orange Envelopes sent in 2016 to reach those workers who, not being registered on the INPS portal, did not have a PIN code and thus could not access “My future pension.”

**Figure 3.2: Number (millions) of users and simulations of future pensions on INPS’s “My future pension” website, 2015–May 2018**

![Bar chart showing users and simulations on future pensions on INPS "My future pension" programme (thousand) 2015 - May 2018]

The 2018 data in Figure 3.2 suggest that legislative changes play a role in increasing people’s propensity to gather information on their pension record. In 2018, there is, in fact, an increase in the number of users of the service. This is probably related to the new voluntary
early retirement option (*Ape volontaria*) that allows individuals to retire early but with a penalty on the amount.

*Ape volontaria*, introduced by 2017 Budget Law, is essentially a pension-guaranteed financial loan. This scheme allows all workers who satisfy certain conditions (among which the most important are to have less than three years until retirement, and to have an estimated monthly pension above 1.4 times the minimum) to be granted a loan from a bank for a maximum of three years. This loan is then paid back over 20 years and the monthly rate deducted from the INPS pension.

To help workers understand this sophisticated scheme, and to ensure they are informed of the fact that *ape volontaria* will have a permanent impact on their future pension, INPS created an online “simulator.” This tool allows users to estimate the minimum and maximum monthly loan they will be granted from the bank, the monthly payment that will be deducted from their future pension, as well as their retirement date.

In addition to the legislative shock, which pushes people to evaluate whether it is possible to exploit the new available option, a more direct effect may increase the number of visits to the “My future pension” service. The *ape volontaria* simulator, in fact, requires people to insert an estimated value for their future pension, an estimate that few people can make correctly without using the ““My future pension” online service.

4. **User feedback on “My future pension” and Orange Envelopes**

After using the “My future pension” program, online users are asked to complete a questionnaire that allows for monitoring of user satisfaction, usability, and usefulness of the service provided. The following tables and figures show the results of almost 90,000 questionnaires (85,527 filled in by private sector employees and the self-employed, 1,831 by civil servants), accounting for almost 3 percent of users who ran a simulation.
The percentage of those who find the program extremely/very useful is high (over 76 percent on average) (Figure 4.1); the majority (59 percent on average) think the program gave them significant additional information; and 95 percent of respondents judge it user-friendly.

Figure 4.1: Users’ satisfaction with “My future pension” service, by education level

Table 4.1 shows descriptive statistics for the key variables in the analysis: a set of sociodemographic controls: age, gender, and a set of binary variables (dummies) indicating level of education. Overall, 26 percent of respondents are women; the age bracket spans from 21 to 80 years, with an average of 52; and most respondents have a high school diploma (58 percent) while around 20 percent of respondents have a Bachelor’s degree or higher.

A series of information about the difficulty of performing the simulation is also collected. Need help is a dummy equal to 1 if the respondent needed some help using the program, while the dummy unfriendly indicates that the online service was difficult to use. Overall, around 5 percent of respondents find the task difficult. A variable night indicates that the simulation was performed between 10 pm and 7 am, when productivity is generally lower.
and it is more difficult to focus on financial tasks, even the most elementary ones. Seven percent of respondents completed the questionnaire at night.

Another set of variables is analyzed to understand if the simulation helped individuals to improve their knowledge of their future pension. The variable *overestimating* is a dummy equal to 1 if the simulated pension was lower than expected and 0 if the simulated pension was higher or very similar to the expected one. Notably, 42 percent of respondents overestimated their future pension (Table 4.1). The variable *willing_change* describes the propensity to change expectations on the future pension. This question is asked after the result of the simulation, thus when respondents should update their expectation. This variable is equal to 1 for those individuals willing to change their expectation; after using the program, 38 percent of respondents are willing to change their expectation on their future pension. After computing it for just those who overestimate, the figure increases to 47 percent.

This is interpreted as “bare bones” proof that respondents might take precise actions based on new information received about their future pension.
Table 4.1: Summary statistics from “My future pension” user satisfaction survey

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>willing_change</td>
<td>0.38</td>
<td>0.0</td>
<td>0.48</td>
</tr>
<tr>
<td>overestimating</td>
<td>0.42</td>
<td>0.0</td>
<td>0.49</td>
</tr>
<tr>
<td>female</td>
<td>0.26</td>
<td>0.0</td>
<td>0.44</td>
</tr>
<tr>
<td>age</td>
<td>52.15</td>
<td>54.0</td>
<td>8.31</td>
</tr>
<tr>
<td>no edu</td>
<td>0.00</td>
<td>0.0</td>
<td>0.04</td>
</tr>
<tr>
<td>primary</td>
<td>0.01</td>
<td>0.0</td>
<td>0.10</td>
</tr>
<tr>
<td>middle school diploma</td>
<td>0.19</td>
<td>0.0</td>
<td>0.39</td>
</tr>
<tr>
<td>high school diploma</td>
<td>0.58</td>
<td>1.0</td>
<td>0.49</td>
</tr>
<tr>
<td>b.a. degree</td>
<td>0.18</td>
<td>0.0</td>
<td>0.39</td>
</tr>
<tr>
<td>higher than b.a.</td>
<td>0.04</td>
<td>0.0</td>
<td>0.19</td>
</tr>
<tr>
<td>very useful</td>
<td>0.76</td>
<td>1.0</td>
<td>0.42</td>
</tr>
<tr>
<td>unfriendly</td>
<td>0.05</td>
<td>0.0</td>
<td>0.22</td>
</tr>
<tr>
<td>need_help</td>
<td>0.06</td>
<td>0.0</td>
<td>0.24</td>
</tr>
<tr>
<td>night</td>
<td>0.07</td>
<td>0.0</td>
<td>0.26</td>
</tr>
</tbody>
</table>

Source: Authors’ estimates based on INPS data.

A series of nonparametric local polynomial regressions is also performed to show how the age profile is associated with a different probability of overestimating the future pension or of taking action after the simulation (as indicated by the willing_change dummy). Figure 4.2 shows very heterogeneous ability to estimate the future pension along different age profiles. In particular, between 45–65 years of age, where the sample is thicker and the local polynomial is estimated more precisely, the inability to estimate the pension properly has a reverse U-shaped form. This inability grows until (around) 55 years and then tends to decrease sharply. This demonstrates that individuals tend to gather more information on their pension only when they start to approach retirement. In line with this tendency, the willingness to take action after receiving information about the future pension also has a reverse U-shaped pattern (Figure 4.3). The growth pattern is less pronounced for the age bracket 45–65 than before, but the propensity to change expectations is high until the age of 55 and decreases sharply afterward. Figure 4.4 shows a similar pattern, but the willingness to change is always higher than that shown in Figure 4.3. This evidence is
straightforward considering that these data include just people who overestimate their future pension.

**Figure 4.2: Local linear regression of overestimating as a function of age**

![Graph showing local linear regression of overestimating as a function of age.](image)

Source: Authors’ estimation based on INPS data.

Note: Dependent variable: overestimating; Regressor: age.

Taken together these two pictures suggest that those who overestimate their future pension are then more willing to change their habits after receiving information on their realistic pension check – that is, when the information gap shrinks.

Finally, individuals 55 years and older found the simulation less useful (Figure 4.5), confirming that the information provided is less useful when individuals already have a decent estimate of their pension in mind. These last results are interpreted as bare bones proof that when respondents tend to overestimate more, the information provided by the simulation is more useful and respondents are therefore more satisfied with the program. Conversely, the little drop just after age 60 suggests that older people are less satisfied because they have less time and fewer opportunities to take action to increase their future pension.
Figure 4.3: Local linear regression of \textit{willing\_change} as a function of \textit{age} (whole sample)

Source: Authors’ estimation based on INPS data.
Note: Dependent variable: \textit{willing\_change}; Regressor: \textit{age}. 
Figure 4.4: Local linear regression of *willing_change* as a function of *age* (sample of overestimators)

Source: Authors’ estimation based on INPS data.

Note: Dependent variable: *willing_change* conditioned; Regressor: *age*. Analytic sample restricted to those who overestimated their future pension.
Figure 4.5: Local linear regression of *very useful* as a function of *age*

Source: Authors’ estimation based on INPS data.

Note: Dependent variable: *very useful*; Regressor: *age*.

The last set of estimates is aimed at understanding why individuals overestimate their future pension and which characteristics induce them to revise their expectation and to subsequently take some action after receiving better information about their pension.

First, it is worth remembering that an empirical analysis on this sample cannot claim causal results. The online simulations were performed by individuals who self-selected into the INPS website; these individuals have a higher demand for financial information and are probably more literate on this topic. To control for this self-selection bias, information on education and on the difficulties encountered in performing the simulation is used.
Table 4.2: Results of IV and OLS regressions of \textit{willing\_change} on \textit{overestimating}

<table>
<thead>
<tr>
<th></th>
<th>IV First stage</th>
<th>IV Second stage</th>
<th>OLS willing_change</th>
<th>OLS willing_change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>P value</td>
<td>Coef</td>
<td>P value</td>
</tr>
<tr>
<td>Overestimating</td>
<td>.297</td>
<td>.000</td>
<td>.169</td>
<td>.000</td>
</tr>
<tr>
<td>Female</td>
<td>.001</td>
<td>.735</td>
<td>.032</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>.030</td>
<td>.000</td>
<td>.015</td>
<td>.000</td>
</tr>
<tr>
<td>Agesq</td>
<td>-.000</td>
<td>.000</td>
<td>-.000</td>
<td>.000</td>
</tr>
<tr>
<td>Unfriendly</td>
<td>.182</td>
<td>.000</td>
<td>-.063</td>
<td>.000</td>
</tr>
<tr>
<td>Need_help</td>
<td>.048</td>
<td>.000</td>
<td>-.010</td>
<td>.117</td>
</tr>
<tr>
<td>Night</td>
<td>-.008</td>
<td>.178</td>
<td>-.15</td>
<td>.010</td>
</tr>
<tr>
<td>no edu</td>
<td></td>
<td></td>
<td>-.110</td>
<td>.175</td>
</tr>
<tr>
<td>primary</td>
<td></td>
<td></td>
<td>-.079</td>
<td>.018</td>
</tr>
<tr>
<td>middle school diploma</td>
<td></td>
<td></td>
<td>-.043</td>
<td>.000</td>
</tr>
<tr>
<td>b.a. degree</td>
<td></td>
<td></td>
<td>.064</td>
<td>.000</td>
</tr>
<tr>
<td>higher than b.a.</td>
<td></td>
<td></td>
<td>.084</td>
<td>.000</td>
</tr>
<tr>
<td>cons</td>
<td>-.3635082</td>
<td>.000</td>
<td>.070</td>
<td>.140</td>
</tr>
<tr>
<td>EDU_level FE</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Region FE</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Kleibergen-Paap Test:</td>
<td>863.615</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>89358</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors' estimation based on INPS data.

The first two columns of Table 4.2 show the first specification. This is an instrumental variable (IV) regression in which \textit{willing\_change} is the dependent variable. It is assumed that \textit{willing\_change} might be predicted by \textit{overestimating}, so the analysis studies how overestimating the future pension affects willingness to take action after being given new financial information. This setup specifies \textit{overestimating} as the endogenous variable, instrumented using the education dummies, \textit{unfriendly}, \textit{need\_help}, and \textit{night}.

The rationale behind this specification is that one’s precision to estimate future pension derives from one’s financial literacy and ability to perform the simulation; the instruments want to capture these skills. When specifying this model, it is implicitly assumed that education and ability to perform the simulation predict \textit{willing\_change} just through the ability to estimate. The first-stage regression on \textit{overestimating} should resolve the selection
bias due to unobserved financial literacy and produce consistent estimates on the correlation between overestimating and willing_change in the second stage. The model is closed by controlling for sociodemographic characteristics and a set of 20 regional and 6 education dummies. For brevity, estimates for these dummies are not reported, but they are mostly in line with theoretical expectations.\(^8\) Even if far from being causal, some of the results are still informative.

The IV model shows that when individuals fail to estimate their future pension, they tend to change their willingness to take action in the future. Individuals who overestimate have a higher propensity to declare that they will change their future decisions regarding their pension, 29 percent more on average in comparison to individuals who do not overestimate. It is also worth noticing that the constant term in this regression indicates that a benchmark individual who does not overestimate\(^9\) declares a willingness to change his future actions in just 7 percent of the cases. A K-P (Kleibergen-Paap) test shows that the instruments are relevant. In general, women do not tend to overestimate more than men, but they seem to be more prone to take action after an overestimation (3 percent more compared to men). Those who do not find the program user-friendly, or who declared to have asked for help using the program, have a higher probability of overestimating. The age profile results confirm the reversed U-shaped relation already shown in the local linear regression analysis. Column 3 is the “acid” form model\(^10\) for the IV shown in columns 1 and 2. The “acid” specification confirms the previous findings and reports a positive and significant relation for overestimating. As expected by the “acid” form, the coefficient is lower in magnitude in comparison to the IV coefficient. The “acid” model confirms almost all the findings of the IV specification; notably, the reversed U-shaped pattern for the age profile is confirmed.

\(^8\) These results are available upon request from the authors.
\(^9\) The benchmark individual is a male resident in Abruzzo Region with a high school degree.
\(^10\) In the IV setting, the “acid form” is a specification in which the dependent variable is regressed on the endogenous covariates and the instruments.
In the last column of Table 4.2, the “acid” specification is enhanced with a series of interaction dummies created by multiplying the overestimating dummy and the six education dummies. The results from this specification confirm the previous findings on the relation between the main variable of interest. Moreover, the interaction terms suggest that an “overestimating” individual with a higher education level is more willing to change her actions concerning future pensions than someone with a lower education level. These results lead to two interesting interpretations. First, more educated individuals exploit new financial information more easily, and are thus more prone to take action. Second, lower-educated individuals might give up after receiving negative information about their ability to estimate their future pension because they get discouraged when they realize that they did not estimate well.

Finally, the impact of providing additional information about future pension on workers’ behavior is evaluated using a sample of 1,000 people (who completed the survey) who used the program twice: the first time between June and September 2015, the second time between June and September 2016. For this sample, the analysis looks at the amount of contributions accrued in 2015 and 2016 (based on the last salary available on users’ records).

The findings suggest that those workers who had a tendency to overestimate their future pension before using the program increased the amount of hours worked (thus increasing their yearly salary and contributions). In fact, all respondents who overestimated their future pension showed an average increase in their salary from one year to the next of around 7.8 percent. In contrast, those people who correctly estimated (or underestimated) the amount of their future pension displayed an average increase in their salary of around 3.5 percent.
5. **Summary and conclusions**

In the mid-1990s Italy transitioned to a nonfinancial defined contribution pension system. Yet this transition was implemented very gradually, and will be fully completed only in the 2040s. The law that introduced this radical change in the Italian pension system envisaged a communication campaign to ensure that all Italian citizens would be able to fully grasp the implications of the reform on their future pensions. Yet this campaign was not launched for 20 years. Considering that financial literacy in Italy is below the European Union average (37 percent versus 52 percent), this type of communication is essential.

In May 2015 the Italian Social Security Institute (INPS) developed an online program “My future pension” – followed by the dispatch of around 4 million “Orange Envelopes” – that allows contributors to calculate an estimated future pension on the basis of their past careers and on the projection of their future contributions until retirement.

Over the first three years of the project, more than 3 million contributors logged onto INPS’s website to calculate their future pension. Taking advantage of the program’s interactive features, users have simulated different scenarios (more than four on average), such as simulating gaps in their future contributions or a less favorable growth scenario for the Italian economy.

The feedback received thus far on this communication campaign is encouraging. Around 80 percent of all users rate this service as either “very helpful” or “extremely helpful.” Roughly two-thirds of all users declare that the service significantly improved their understanding of the different factors that will determine their future pension. Roughly one-third state that they are likely to revise their expectations regarding their future pension. These revisions are more frequent among contributors who overestimated their future pensions, and, conditional on this overestimation, among those who are better educated.

To establish a causal effect of information on expectations, and potentially behavior, one would need to draw on random samples of treated and untreated individuals. The only
available data to date are from a survey of those who used the service and completed the questionnaire attached to the simulation exercise. Yet the IV estimates are consistent with a causal effect of the information provided by the survey on the revision of expectations.

These results are reassuring for the current communication campaign launched by INPS among workers planning to take the “ape volontaria,” a bank loan provided at a subsidized rate for workers close to retirement, using the future pension as collateral. Given the complexity of the measure and the quasi-permanent effects it will have on monthly pensions, INPS structured a communication package to ensure that workers who opt for this measure are fully aware of all its implications. Working closely with trade unions, INPS developed a communication kit, published on its website, that describes the different early retirement options introduced by the 2016 Budget Law and the potential beneficiaries. It also developed a new online simulator that allows interested parties to estimate the amount of their future pension and the amount to be repaid if they opt for ape volontaria.
References


Appendix

Subject: Calculate your future pension

Dear Mr Mario Rossi,

INPS has recently released on its website the pension estimator “My future pension.” This useful tool can help you estimate the amount of your future pension.

In this letter we provide some information on the monthly allowance you will be able to count on when you retire.

The calculation is based on your contribution record and on an estimate of your future contributions. This calculation is not legally binding.
The forecast of your pension

The calculation of your future pension is based on current legislation. Its amount depends on GDP growth rate, retirement age, working career and salary profile.

You can find the retirement date, the pension amount and both gross and net replacement rate in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Old age benefit</th>
<th>Early retirement benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirement date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forecast of Pension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forecast of last salary before the retirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross replacement rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net replacement rate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Warning: Extra rules/conditions allowing you to anticipate the retirement are not considered

Personal contribution account

The personal contribution record used to forecast your pension consists of two components: the first includes the sum of contributions you have already paid, the second is a projection of the amount of contributions you will pay, provided that your career path will not alter.
Your contribution record

<table>
<thead>
<tr>
<th>Contribution Source</th>
<th>Period</th>
<th>Contribution accrued (week)</th>
<th>Earning</th>
<th>INPS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Since</td>
<td>to</td>
<td>right</td>
<td>measure</td>
</tr>
</tbody>
</table>

| Employee Fund       |            |                            |         |           |
|                     |            |                            |         |           |

| Deemed contribution: sickness |          |                           |         |           |
|                              |          |                           |         |           |

Warning: You may need personal assistance from Inps to collect information on the different options available to you to value your contributions from different periods and Inps funds.

Your future contribution record - simulated

<table>
<thead>
<tr>
<th>Contribution Source</th>
<th>Period</th>
<th>Contribution accrued (week)</th>
<th>Earning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Since</td>
<td>to</td>
<td>measure</td>
</tr>
</tbody>
</table>

| Employee Fund       |            |                            |         |
|                     |            |                            |         |

You can use pension on line calculator “My future pension” (www.inps.it) to assess the impact of change in key assumption (retirement age, total contribution accrued etc.) on your future pension and to make a tailored simulation of the future benefit. To use “My future pension” you need Spid (Public Digital Identity System), if necessary, we can provide Spid upon request.
Your Pension Accounts

<table>
<thead>
<tr>
<th>Changes during 2017 in SEK</th>
<th>Income pension</th>
<th>Premium pension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value 2016-12-31</td>
<td>1 078 853</td>
<td>226 710</td>
</tr>
<tr>
<td>Pension entitlement for 2016</td>
<td>52 448</td>
<td>8 238</td>
</tr>
<tr>
<td>Reduction of the pension entitlement due to balancing</td>
<td>- 552</td>
<td>-</td>
</tr>
<tr>
<td>From deceased contributors</td>
<td>368</td>
<td>168</td>
</tr>
<tr>
<td>Administration and fund fee</td>
<td>- 354</td>
<td>- 1 314*</td>
</tr>
<tr>
<td>Change in value</td>
<td>29 503</td>
<td>16 289**</td>
</tr>
<tr>
<td>Value 2017-12-31</td>
<td>1 160 266</td>
<td>250 091</td>
</tr>
</tbody>
</table>

* Including SEK 1 710 discount on the fee for 2016.
** Including SEK 82 as interest on your pension entitlement for 2016.

Your Premium Pension

<table>
<thead>
<tr>
<th>Premium pension account 2017-12-31</th>
<th>Value, SEK</th>
<th>Change in value, per cent</th>
<th>Fund fee, per cent</th>
<th>Chosen allocation, per cent</th>
<th>Current allocation, per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity Fund Sverige</td>
<td>73 502</td>
<td>11</td>
<td>0,47</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Equity Fund Global</td>
<td>82 510</td>
<td>13</td>
<td>0,57</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>Interest Fund Sverige</td>
<td>18 759</td>
<td>1</td>
<td>0,14</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Generation Fund</td>
<td>49 852</td>
<td>10</td>
<td>0,21</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Pharmaceutical Fund</td>
<td>25 468</td>
<td>8</td>
<td>0,49</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>250 091</td>
<td>10</td>
<td>0,43</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*The average pension saver*

10 0,23
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>Developing Coherent Pension Systems: Design Issues for Private Pension Supplements to NDC Schemes</td>
<td>William Price</td>
<td>April 2019</td>
</tr>
<tr>
<td>1928</td>
<td>Pensions in a Globalizing World: How Do (N)DC and (N)DB Schemes Fare and Compare on Portability and Taxation?</td>
<td>Bernd Genser and Robert Holzmann</td>
<td>April 2019</td>
</tr>
<tr>
<td>1927</td>
<td>The Politics of NDC Pension Scheme Diffusion: Constraints and Drivers</td>
<td>Igor Guardiancich, R. Kent Weaver, Gustavo Demarco, and Mark C. Dorfman</td>
<td>April 2019</td>
</tr>
<tr>
<td>1926</td>
<td>Setting Up a Communication Package for the Italian NDC</td>
<td>Tito Boeri, Maria Cozzolino, and Edoardo Di Porto</td>
<td>April 2019</td>
</tr>
<tr>
<td>1925</td>
<td>Sweden’s Fifteen Years of Communication Efforts</td>
<td>María del Carmen Boado-Penas, Ole Setergren, Erland Ekheden, and Poontavika Naka</td>
<td>April 2019</td>
</tr>
<tr>
<td>1924</td>
<td>Information and Financial Literacy for Socially Sustainable NDC Pension Schemes</td>
<td>Elsa Fornero, Noemi Oggero, and Riccardo Puglisi</td>
<td>April 2019</td>
</tr>
<tr>
<td>1923</td>
<td>Communicating NEST Pensions for “New” DC Savers in the United Kingdom</td>
<td>Will Sandbrook and Ranila Ravi-Burslem</td>
<td>April 2019</td>
</tr>
<tr>
<td>1922</td>
<td>Harnessing a Young Nation’s Demographic Dividends through a Universal NDC Pension Scheme: A Case Study of Tanzania</td>
<td>Bo Larsson, Vincent Leyaro, and Edward Palmer</td>
<td>April 2019</td>
</tr>
<tr>
<td>1921</td>
<td>The Notional and the Real in China’s Pension Reforms</td>
<td>Bei Lu, John Piggott, and Bingwen Zheng</td>
<td>April 2019</td>
</tr>
<tr>
<td>1920</td>
<td>Administrative Requirements and Prospects for Universal NDCs in Emerging Economies</td>
<td>Robert Palacios</td>
<td>April 2019</td>
</tr>
<tr>
<td>1919</td>
<td>Bridging Partner Lifecycle Earnings and Pension Gaps by Sharing NDC Accounts</td>
<td>Anna Klerby, Bo Larsson, and Edward Palmer</td>
<td>April 2019</td>
</tr>
</tbody>
</table>
1918 The Impact of Lifetime Events on Pensions: NDC Schemes in Poland, Italy, and Sweden and the Point Scheme in Germany
by Agnieszka Chłoń-Domińczak, Marek Góra, Irena E. Kotowska, Iga Magda, Anna Ruzik-Sierdzińska, and Paweł Strzelecki
April 2019

1917 Drivers of the Gender Gap in Pensions: Evidence from EU-SILC and the OECD Pension Model
by Maciej Lis and Boele Bonthuis
April 2019

1916 Gender and Family: Conceptual Overview
by Nicholas Barr
April 2019

1915 Labor Market Participation and Postponed Retirement in Central and Eastern Europe
by Robert I. Gal and Márta Radó
April 2019

1914 NDC Schemes and the Labor Market: Issues and Options
by Robert Holzmann, David Robalino, and Hernan Winkler
April 2019

1913 NDC Schemes and Heterogeneity in Longevity: Proposals for Redesign
by Robert Holzmann, Jennifer Alonso-García, Heloise Labit-Hardy, and Andrés M. Villegas
April 2019

1912 Annuities in (N)DC Pension Schemes: Design, Heterogeneity, and Estimation Issues
by Edward Palmer and Yuwei Zhao de Gosson de Varennes
April 2019

1911 Overview on Heterogeneity in Longevity and Pension Schemes
by Ron Lee and Miguel Sanchez-Romero
April 2019

1910 Chile’s Solidarity Pillar: A Benchmark for Adjoining Zero Pillar with DC Schemes
by Eduardo Fajnzylber
April 2019

1909 Sweden: Adjoining the Guarantee Pension with NDC
by Kenneth Nelson, Rense Nieuwenhuis, and Susanne Alm
April 2019

1908 The ABCs of NDCs
by Robert Holzmann
April 2019

1907 NDC: The Generic Old-Age Pension Scheme
by Marek Góra and Edward Palmer
April 2019

1906 The Greek Pension Reforms: Crises and NDC Attempts Awaiting Completion
by Milton Nektarios and Platon Tinios
April 2019
The Norwegian NDC Scheme: Balancing Risk Sharing and Redistribution
by Nils Martin Stølen, Dennis Fredriksen, Erik Hernæs, and Erling Holmøy
April 2019

The Polish NDC Scheme: Success in the Face of Adversity
by Sonia Buchholtz, Agnieszka Chłoń-Domińczak, and Marek Góra
April 2019

The Italian NDC Scheme: Evolution and Remaining Potholes
by Sandro Gronchi, Sergio Nisticò, and Mirko Bevilacqua
April 2019

The Latvian NDC Scheme: Success Under a Decreasing Labor Force
by Edward Palmer and Sandra Stabina
April 2019

The Swedish NDC Scheme: Success on Track with Room for Reflection
by Edward Palmer and Bo Könberg
April 2019

Rapid Social Registry Assessment: Malawi’s Unified Beneficiary Registry (UBR)
by Kathy Lindert, Colin Andrews, Chipo Msowoya, Boban Varghese Paul, Elijah Chirwa, and Anita Mittal, November 2018

Human(itarian) Capital? Lessons on Better Connecting Humanitarian Assistance and Social Protection
by Ugo Gentilini, Sarah Laughton and Clare O’Brien, November 2018

Delivering Social Protection in the Midst of Conflict and Crisis: The Case of Yemen
by Afrah Alawi Al-Ahmadi and Samantha de Silva, July 2018

Aging and Long-Term Care Systems: A Review of Finance and Governance Arrangements in Europe, North America and Asia-Pacific
by Laurie Joshua, November 2017

Social Registries for Social Assistance and Beyond: A Guidance Note & Assessment Tool
by Phillippe Leite, Tina George, Changqing Sun, Theresa Jones and Kathy Lindert, July 2017

Social Citizenship for Older Persons? Measuring the Social Quality of Social Pensions in the Global South and Explaining Their Spread
by Tobias Böger and Lutz Leisering, July 2017

The Impacts of Cash Transfers on Women’s Empowerment: Learning from Pakistan’s BISP Program
by Kate Ambler and Alan de Brauw, February 2017

Social Protection and Humanitarian Assistance Nexus for Disaster Response: Lessons Learnt from Fiji’s Tropical Cyclone Winston
by Aisha Mansur, Jesse Doyle, and Oleksiy Ivaschenko, February 2017

ABSTRACT

In the last 30 years the Italian pension system was repeatedly reformed and counter-reformed, increasing uncertainty about future pensions. A low level of financial literacy exacerbated this problem. In 2015, the Italian Social Security Institute (INPS) launched a project to allow all insured workers to have more precise information about their future benefits. This paper analyzes the results of a survey carried out to evaluate the project’s performance. The findings are encouraging — around 80 percent of respondents rate the INPS service as at least “very helpful.” Even if 42 percent of the sample overestimates their future pension, 16–29 percent reveal a willingness to change their expectation on retirement income after receiving new information.

ABOUT THIS SERIES

Social Protection & Jobs Discussion Papers are published to communicate the results of The World Bank’s work to the development community with the least possible delay. This paper therefore has not been prepared in accordance with the procedures appropriate for formally edited texts.

For more information, please contact the Social Protection Advisory Service, the World Bank, 1818 H Street, N.W., Room G7-803, Washington, DC 20433, USA. Telephone: +1 (202) 458 5267, Fax: +1 (202) 614 0471, E-mail: socialprotection@worldbank.org or visit us on-line at www.worldbank.org/sp.