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## Highlights

- We analyze individual heterogeneity in pension choices
- We exploit an Italian reform allowing the severance pay transfer in a pension fund
- We use the Elaboration Likelihood Model to study the decision process of employees
- Communication success depends on motivation and ability to process information
- Beyond cognitive skills, contextual elements also affect pension fund participation

ACCEPTED MANUSCRIPT

# Individual Heterogeneity and Pension Choices: Evidence from Italy

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## Abstract

The 2007 Italian pension reform allowed transferring future severance pay contributions into a pension fund. Although this was accompanied by an information campaign advising employees to make the transfer, only a minority of them did so. We analyze the heterogeneity in employees' choices using micro panel data from the Bank of Italy household survey. Two are the main findings. First, the decision to transfer and pension fund participation after the reform are more likely for more (financially) educated and older individuals, with high household income and wealth, and less likely for female employees, in the South, and in small firms. Second, framing the analysis within the Elaboration Likelihood Model highlights that the cognitive processes underlying the decision on pension fund participation may be quite different. The decision consciousness is lower for employees working in small firms, where employers have an incentive to stimulate workers to deny the transfer.

*This version: February 2018*

**Keywords:** pension savings, severance pay, financial literacy, elaboration likelihood model, cognitive skills

JEL classification: A12, C25, D03, D14

## 1. Introduction

Studies in household finance highlight individual heterogeneity in savings and household portfolio choices, including choices of pensions and other retirement saving products. Traditional explanations for the heterogeneity in participation in pension schemes rest on variation in socio-demographic attributes and economic and financial characteristics (e.g. Huberman et al. (2007) on the participation in Defined Contribution (401)k pension plans in the US, and Antolin (2008) on the participation in supplementary pension schemes for eight OECD countries). One strand of the literature specifically investigates the role of education, where low education in general and low financial education in particular are often found to have a negative impact on pension preparation; see, e.g., Lusardi and Mitchell (2006, 2011) for the US, Fornero and Monticone (2011) and Rinaldi (2011) for Italy, and Coppola and Lamla (2013) for Germany. Duflo and Saez (2003) find a small positive effect of information on participation in employer sponsored tax deferred accounts, and a larger effect of social interactions. Cappelletti et al. (2013) use Italian data and confirm the international evidence that individuals often lack basic knowledge of their complementary pension schemes, even those who participate in such a scheme: many participants cannot recall their chosen investment strategy or the amount of their annuity. They also find that participation rates are particularly low among younger workers, typically those who would benefit most. Unsurprisingly, they find that income is the strongest predictor of participation, as individuals who earn more have more resources to subscribe.

In this paper, we analyze the heterogeneity in specific pension choices connected to the 2007 policy reform in Italy that allowed transferring future severance pay contributions into a pension fund. The reform was accompanied by an information campaign with a clear message that resembled an advertisement in favor of the pension fund choice. The aim of our paper is to analyze employees' actual choices in relation to their financial literacy, specific pension knowledge, and other contextual factors such as the financial consequences of the individual's choice for the employer. The idea that not only cognitive skills, but also contextual elements can affect individual preferences and behavior over economic issues is also in line with Hoff and Stiglitz (2016), who maintain the need "to broaden economic discourse by importing insights into human behavior not just from psychology, but also from sociology and anthropology".

The reform did not produce the expected results (according to the National Committee of Supervisory on Pension Funds (COVIP, 2013) in 2012 the ratio ranges between 25% and 30%) although the validity of the reform message appears to be so far confirmed by the actual returns from pension funds with respect to severance pay.<sup>1</sup> However, the objective of this paper is not to assess the success of the reform, but to analyze the heterogeneity of the employees' decisions, accounting for the strong message that was communicated at the time of the reform.

The analysis is performed in two steps. First, we use logit-type of models to study the determinants of the decision to transfer the severance pay contributions into a pension fund and overall pension fund participation subsequent to the reform. Second, we analyze the type of elaboration process fostered by the reform and its communication campaign. To this latter end, we frame and interpret our findings using the conceptual framework of the Elaboration Likelihood Model (ELM; Petty and Cacioppo, 1983) often used in marketing studies to explain consumer choices (Jae and Delvecchio, 2004; Petty and Rucker, 2006). This approach also lends itself to investigate other types of individual choices connected with a communication message, such as the specific pension choice we consider. As far as we know this paper represents the first attempt to use ELM to investigate a pension choice.

We use data from several waves of the Bank of Italy's Survey of Household Income and Wealth (SHIW), which includes a question on the choice to transfer the severance pay into a pension fund or not. Two main results emerge from our analysis. First, the decision to transfer the severance pay

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<sup>1</sup> The pension fund return depends on the specific type of fund chosen, but in all cases it is definitely higher than the severance pay even over different horizons after the reform (3,5, 10 years). Detailed information can be found regularly updated on the website of the National Committee of Supervisory on Pension Funds ([www.covip.it](http://www.covip.it)).

contributions into a pension fund and, more generally, pension fund participation after the reform, are more likely for more educated and older individuals, with high household income and wealth, and less likely for women, for employees living in the South, and for those working in small firms. Thus the reform did not reach the target groups of e.g. young and lower income employees that it was mainly aimed at. Second, the ELM analysis shows that most employees retained their initial attitude about pension funds and highlights that there is large variation in the cognitive processes underlying the same final decisions. Moreover only a minority of those who transferred the severance pay did it consciously. Overall these results help to understand why the reform and the 2007 information campaign were not as successful as expected.

The remainder of this paper is organized as follows. Section 2 describes the Italian reform allowing the severance pay transfer into a pension fund, and its main message. Section 3 presents the dataset and provides descriptive statistics. Section 4 reports the analyses of the determinants of the transfer decisions, as well as determinants of pension literacy and pension fund participation after the reform. Section 5 puts the transfer decision in the framework of the Elaboration Likelihood Model and implements this empirically. Section 6 concludes.

## 2. The Italian severance pay reform

At the start of 1970s the Italian pension system was a mixed social system: a guaranteed minimum pension for all citizens, and a pension based on end-of-career earnings for workers in the public and private sectors, for employees as well as self-employed workers. The pension system was funded through a Pay-As-You-Go scheme, leading to a substantial coverage intervention by the State. The progressive increase in average life expectancy, the falling birth rate, the huge government budget deficit, and the slowdown of economic growth made the Italian pension system unsustainable in the long term. For these reasons, it has been deeply modified since the early 1990s, through reforms aimed at improving its long-term sustainability (Fornero and Monticone, 2011). These reforms implied that public pensions fell over time, so that future retirees will face the problem how to maintain their standard of living and finance their consumption after retirement. According to the State General Accounting Office's estimates, the average replacement rate of a private employee will decrease from about 74% in 2010 to 60-65% after 2040 (Ministry of Economics and Finance, 2014). To counteract this reduction, the Italian government introduced a non-compulsory ('supplementary') pension, in the form of participation in one or more pension funds. This implies that the new national pension scheme has two pillars: I) the Pay-As-You-Go compulsory pension, which remains the most important; and II) a non-compulsory pension funded through a Defined Contribution scheme.<sup>2</sup>

In addition to pensions, retiring private sector employees in Italy can rely on a severance pay (*Tfr*, *Trattamento di Fine Rapporto*) that depends on the length of the employment relationship in the same company and on the employee's wage. To finance the severance pay, companies are forced to set aside a percentage of each employee's gross annual salary (about 7.5%) on their annual budget. Since the severance pay (including a low inflation-based return) is due as a lump sum only at the end of the work relationship, it can be seen as a cheap loan from employee to employer. Indeed, for this particular funding source, companies have to set aside interest payments computed at the annual rate of 1.5% plus three quarters of the national inflation rate.

In the ten years after the introduction of the supplementary pension scheme in 1992, participation in pension funds remained much lower than in other developed countries (OECD, 2014).<sup>3</sup> In order to speed up the development of the second pillar, in the same spirit as the Austrian Severance Pay Reform in 2002 (Hofer, 2007), the Italian government decided in 2005 to allow employees to transfer

<sup>2</sup> There is also a third pillar: private pensions through voluntary savings. This entirely depends on individual responsibility and life-cycle choices, and is not imposed or recommended in any way by the State.

<sup>3</sup> Torricelli et al. (2016) investigate possible causes for low participation.

their own future severance pay contributions into a pension fund as of January 1, 2007.<sup>4</sup> This reform was motivated by the fact that pension funds generally have a higher return than the severance pay (considering an average inflation rate of about 2% during the decade 1997-2007, the average return of the non-transferred severance pay was equal to  $1.5 + 0.75 \times 2 = 3\%$ ). Moreover, contrary to the severance pay that is received as a lump sum, investments in pension funds can be converted into annuities at retirement. The Government's objective was to stimulate the development of pension funds to ensure an increase in the income of future retirees, using the severance pay (and related tax benefits) to help retiring employees to cope with the decreasing public pension in the future.

According to the reform, since January 1<sup>st</sup> 2007 all Italian employees in the private sector<sup>5</sup> have to choose among three alternatives: i) to deposit their future severance pay contributions into a pension fund (the portion set aside up to 31 December 2006 remains in the company), ii) to leave the severance pay in their companies, or iii) an intermediate solution, with the restriction that at least 50% of their severance pay then has to be invested in the pension fund. To further encourage participation in pension funds, the Italian government created tax incentives and a silence-as-assent mechanism. In fact, Italian employees have six months from the start of their job (or from the start of the law's effectiveness) to take an explicit decision, by filling in a form in which they communicate rejection or acceptance of the severance pay transfer. If they do not respond, the decision is tacitly made and their severance pay is automatically transferred into a pension fund managed by the Italian National Institute of Social Security (*Istituto Nazionale di Previdenza Sociale, INPS*).

In sum, there are three possible scenarios following the reform: I) the employee decides not to give up the severance pay and denies the transfer into a pension fund; II) the employee takes an explicit decision to transfer the severance pay into a pension fund, giving up the severance pay at the end of the work relationship;<sup>6</sup> III) the employee does not make any explicit decision and follows the default (i.e. the auto-enrolment). Once the severance pay is transferred into a pension fund the choice is irrevocable, whereas employees can always adhere to a pension fund later.

Of course many employees may have good reasons to deny the transfer, in spite of the higher expected returns of a pension fund investment, the tax stimulus and the government's information campaign. For example, risk averse individuals may dislike the risky nature of a pension fund investment or the irrevocable decision of the transfer, and individuals with a large discount rate may prefer the earlier lump sum severance pay to an annuity. Employees who already expect a high replacement rate may not be interested in an additional annuity either. Moreover, individuals may not trust the financial institutions that manage their pension contributions. Unfortunately, we do not have enough information to make the trade-off between the advantages and disadvantages of making the transfer for the respondents in our sample, but we will control for the relevant factors in the regressions.

In order to understand the outcome of the reform, two other features need to be emphasized. First, should the employee not transfer the severance pay, the reform introduces a difference between small firms (less than 50 employees) and medium or large firms (at least 50 employees). Medium and large firms no longer have the opportunity to use the severance pay as a cheap financing source, since their future severance pay payments are now managed by the Italian National Institute of Social Security. On the other hand, smaller firms can still take advantage of the severance pay left in their firm. Although the rationale is apparent (i.e. not depriving these firms of a cheap financial source), the differential treatment has implications contrasting the objective of the reform, since it provides smaller firms with an incentive to encourage their employees to deny the severance pay transfer. Second, the way of

<sup>4</sup> The reform is contained in the Legislative Decree no. 252/2005, supplemented by Law no. 296/2006 and Legislative Decree no. 28/2007.

<sup>5</sup> Since 2010 this reform also involved public employees hired after January 1, 2001. However, since this category is very small and the reform has different rules regarding public employees, we only consider employees in private sector.

<sup>6</sup> To simplify, we consider the so-called 'intermediate' cases, those in which the employee decides to transfer only a part of his/her severance pay, in the same way as those in which the employee decides to entirely transfer his/her severance pay.

communicating the decision is important. Each employee receives a form from the employer, which has to be filled out and handed back to the same employer. Employers of small firms can easily check the choice made by their employees and can push them to deny the severance pay transfer. In sum, the differential treatment of small firms, together with the operational feature that the administrative procedure works through the same employer, implies that the employer can easily reverse the auto-enrolment default option.

Given the importance attached to the reform and “to guarantee employees the possibility to choose and to determine their future consciously” (Damiano, 2007), the Italian government decided to communicate the message of the law in 2007 through all available channels: many public and private TV channels addressed the reform in their talk shows; a specific hotline and a specific website were created for questions of citizens; a daily information event was broadcasted on the main public TV channel (RAI 1). Relying on many different sources (literature, publications, and media), the message can be summarized as follows: *“Pension funds plus tax incentives linked to them can guarantee a higher retirement income than the severance pay (Tfr)”*. A key characteristic is that it is silent about several fundamental aspects of the employee’s choice. For example, it does not mention the fact that the higher return of pension funds is in expected terms and is connected to higher risk, the fact that tax incentives can change over time (regardless of the choice that is made), or the fact that the severance pay transfer is irrevocable. The choice of the message wording is supported by the well-known fact that only a small percentage of potential beneficiaries have full knowledge of the advantages and disadvantages of the reform, while most were completely unaware of these. Most information was given to potential beneficiaries of the reform by means of publications (books, articles), union meetings and TV shows. Moreover, in terms of written documents, private employees received the forms on which they had to communicate their decision on the severance pay transfer without any information helping them to make the decision more consciously. Consequently, the message and the forms to formalize the decision were often not received at the same time. In other words, it is likely that many beneficiaries of the 2007 reform did not really receive the government’s message at the time they had to take the decision.

### 3. Data

The Survey of Household Income and Wealth (SHIW) is a large biennial representative survey of the Italian population conducted by the Bank of Italy (2006, 2008, 2010, 2012). For each household member, the SHIW provides demographic information (age, level of education, gender and marital status), economic information at the household level including net wealth (real and financial assets net of financial liabilities) and the amounts invested in a variety of financial assets. Moreover, the survey contains questions on individuals’ financial literacy and knowledge of pension funds.

We use the longitudinal component of SHIW to build a four waves balanced panel from 2006 to 2012. The complete panel consists of 6,419 individuals (belonging to 2,767 households) for a total of 25,676 observations. Of this group, 65.9% were aged 16-65 in 2006 and 38.3% of these were employed in 2012. Almost two thirds among them only worked in the private sector. Selecting those who were employed in the private sector in 2012 and were 16-65 years old in 2006 (i.e. people who were already of working age at the time of the reform), leads to a data set of 1,125 individuals (belonging to 887 households).

Since the 2008 wave, the survey includes a question for employees in the private sector on the choice to transfer future severance pay contributions into a pension fund. The wording of the question is as follows:

*“In 2007 private-sector employees had to elect whether to keep their severance pay with their company or to transfer it to a supplementary pension scheme. If a worker did not make an explicit choice, the law called for his/her severance pay to be transferred to a pension fund. Was your*



*severance pay transferred to a supplementary pension scheme (pension fund or individual pension plan)?*" ('Yes', 'No', 'Do not know', or 'No answer').

The presence of the 'Do not know' option means that respondents are not forced to pick an answer, minimizing guessing. The 'No answer' option, available only in the 2012 wave, allows for refusals, e.g. due to unwillingness to declare information about wealth (Cannari and D'Alessio, 1993; D'Alessio and Faiella, 2002). In consideration of the silence-as-assent mechanism (cf. Section 2), 'Do not know' plausibly reflect cases of auto-enrolment. Since the intermediate case (i.e. partial transfer) is not a possible answer, and since the reform requires transferring at least 50% of the severance pay, we assume the interviewed responds 'Yes' in case of a partial transfer.

The data show that many answers to the severance pay transfer question changed over the 2008-2012 period, either because the 'No' response is revocable or because people gave the wrong answer in one wave but not in another wave. Moreover, although the phrasing of the question about the severance pay transfer remained the same, the interviewers gave more and more attention to this question, improving its reliability and reducing the number of missing values over time. For these reasons, we decided to consider employees' answers declared in the 2012 survey only, and to drop the 55 observations with missing or 'No answer' replies in 2012.<sup>7</sup> We also drop those who chose to transfer their severance pay into a pension fund and then declared not to have a pension fund in 2012 (7 observations), because of the inconsistency between these answers.

Our final data set thus consists of 1,063 individuals; 161 of them declared in 2012 they had transferred their severance pay into a pension fund, 775 declared they had not, and 127 declared 'Do not know' (Table 1). Based on the interpretation of the 'Do not know' as auto-enrolment, it means that 288 employees (i.e. 27% of the sample) have transferred their severance pay into a pension fund in 2012. This share is in line with the official aggregate statistics: according to the National Committee of Supervisory on Pension Funds (COVIP, 2013) in 2012 the ratio ranges between 25% and 30% depending on whether employees who are paid irregularly (for instance because of unemployment spells) are taken into account or not.<sup>8</sup>

**Table 1 – Severance pay choice by year**

Choice about the severance pay transfer	2008		2012	
	Obs.	Freq.	Obs.	Freq.
<b>Yes</b>	84	15.2%	161	15.1%
<b>No</b>	438	79.1%	775	72.9%
<b>Do not Know</b>	32	5.8%	127	11.9%
<b>Total</b>	554	100.0%	1063	100.0%

*Notes: In 2008 there are only 554 observations, because of missing replies and since non-employed individuals and public sector employees in that year do not get the severance pay transfer question.*

In order to test the persistence of the effect of the 2007 information campaign, we have compared 2008 with 2012 responses. Table 1 shows that five years after the reform and the extensive government information campaign, 12% is not aware of their choice (replying 'Do not know') and probably followed the default. This is in line with Cronqvist and Thaler (2004), who emphasize the huge increase in default choices three years after the Swedish pension reform. It should be stressed,

<sup>7</sup> Alternatively, we could have included missing and 'No answer' replies and interpreted them as 'Do not know' responses. We tested robustness of our final results against this alternative: conclusions remain unchanged, with estimated coefficients and significance levels practically the same as in main regressions in Tables 3, 5 and 8 (results available upon request).

<sup>8</sup> We have also tested the statistical significance of the difference between the ratio resulting by our sample (27%) and the highest among the official ones (30%). Results of significance tests show up that this difference is barely significant at the 5% level only.

however, that their choice situation is very different from ours: it concerns the selection of a specific fund in which to invest pension wealth. It should also be noted that in the complete cross-sectional samples, the fraction of “yes” answers is even lower, suggesting that sample selection is positively associated with pension fund participation. The trends, on the other hand, are the same (details available upon request).

The literature on other countries reports that a large majority of employees follows the default option to enroll in pension plans (e.g. Madrian and Shea, 2001). The lower percentage of participation in our data can be explained by the fact that, as discussed in Section 2, the default option may be ‘reversed’ because of the role of the employer, particularly for employees working in small firms, who represent about 65% of our sample. Moreover, the low percentages of participation is in line with well documented, stylized facts for Italy: low participation in stock markets, low level of financial knowledge, historically poorly developed financial markets, all of which point in the direction of staying away from more “risky” choices (Brunetti and Torricelli, 2010).

To analyze the severance pay choice, we use specific survey questions asked at least once between 2006 and 2012 to define measures of risk aversion, preference for the short run (impatience), preference for a lump sum rather than an annuity, financial literacy, and pension fund participation.

To measure risk aversion, we use a qualitative question about preferences for financial investments asked in each wave of the survey. We define individuals to have low risk aversion if they prefer investments that offer very high returns with high risk of losing part of the capital, and to have high risk aversion if they prefer investments that offer low or fair returns with no risk or a good degree of protection for the invested capital.

To measure impatience (or a preference for short run income), we use a question collected in the 2010 survey only. We define as impatient respondents who declare that, if they won a lottery with prize equal to the annual household disposable income to be received after one year, they would give up at least 10% of this prize to receive the money immediately.

Preference for receiving a lump sum is based on a question collected in the 2008 survey only, asking individuals to assume they are 65 years old and receive a total pension income of 1,000 euros a month adjusted for inflation. We define individuals as having “preference for lump sum” (instead of an annuity) if they declare they would give up half of this annual pension (to be paid for the rest of their life) in exchange for a lump sum of 100,000 euros to be paid immediately.

To measure financial literacy, we follow Fornero and Monticone (2011), using three standard questions in the SHIW survey measuring respondents’ understanding of inflation, diversification in investment strategies, and riskiness of financial assets. Over the period we analyze, the survey contains financial literacy questions only in 2006 and 2008. In 2006, however, these questions were asked to only half of the sample (randomly selected). We therefore decided to measure financial literacy using the questions in SHIW 2008 only.

Table 2 reports descriptive statistics of several individual and job characteristics in the sample obtained in 2006 (i.e., before the reform) and in 2012, separately for different answers to the 2012 severance pay transfer question. All variables are defined in Table A.1 the Appendix. Column (1) highlights that in 2006, the majority of the sample is represented by men and Italian citizens; average age is 38.4 years, 47.6% of the total sample completed high school, and only 7.7% have a university degree. The group with time-to-retirement larger than 30, i.e. those that should be most interested in the reform, represents 24.4% of the sample.<sup>9</sup> Most employees (63.7%) work in small companies (with less than 50 employees), whereas about 26.1% worked in large companies (with at least 100 employees). Table 2 shows that Italians are very risk averse: only 1.1% prefer investments with high levels of risk and return, while 83.9% prefer low returns and low or no risk.

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<sup>9</sup> The time-to-retirement is calculated as the difference between 40 (necessary number of contribution years to retire) and the current number of contribution years.

**Table 2 – Sample means by year and by 2012 severance pay choice**

Variables	2006	2012			
	Total sample	Total sample	Yes	No	Do not Know
	(1)	(2)	(3)	(4)	(5)
<b>Observations</b>	1,063	1,063	161	775	127
<b>Female</b>	41.5%	41.5%	34.2%	43.7%	37.0%
<b>Age (in years)</b>	38.4	44.4	46.8	44.4	41.1
<b>Italian</b>	95.7%	96.0%	99.4%	95.1%	96.9%
<b>Marital status</b>					
<i>Married</i>	62.7%	62.6%	74.5%	63.9%	39.4%
<i>Single</i>	31.2%	29.8%	19.9%	28.5%	50.4%
<i>Divorced</i>	5.2%	6.3%	5.0%	5.9%	10.2%
<i>Widow</i>	0.8%	1.3%	0.6%	1.7%	0.0%
<b>Education level</b>					
<i>Primary</i>	6.6%	5.7%	1.2%	7.1%	3.1%
<i>Lower secondary</i>	38.1%	34.4%	24.8%	36.8%	32.3%
<i>Secondary</i>	47.6%	49.0%	59.6%	46.7%	49.6%
<i>Tertiary</i>	7.7%	10.8%	14.3%	9.4%	15.0%
<b>Household size</b>	3.46	3.32	3.34	3.34	3.21
<b>Area</b>					
<i>North</i>	49.8%	49.8%	62.7%	48.0%	44.1%
<i>Centre</i>	20.2%	20.2%	22.4%	19.4%	22.8%
<i>South</i>	30.0%	30.0%	14.9%	32.6%	33.1%
<b>Size of municipality</b>					
<i>&lt; 20,000 inhabitants</i>	29.0%	29.0%	29.2%	28.0%	34.6%
<i>20,000 – 40,000</i>	22.0%	21.5%	16.1%	23.7%	15.0%
<i>40,000 – 500,000</i>	44.0%	44.5%	47.2%	43.6%	46.5%
<i>&gt; 500,000</i>	5.0%	5.0%	7.5%	4.6%	3.9%
<b>Time-to-retirement</b>					
<i>Time-to-ret. &gt; 30</i>	24.4%	21.6%	11.9%	22.0%	32.0%
<i>16-30</i>	47.8%	38.2%	33.1%	39.0%	40.0%
<i>Time-to-ret. ≤ 15</i>	27.9%	40.2%	55.0%	39.0%	28.0%
<b>Company size<sup>1</sup></b>					
<i>Employees ≤ 15</i>		46.6%	13.0%	53.5%	46.5%
16-49	63.7%	18.2%	13.7%	18.1%	24.4%
50-99	10.2%	7.4%	12.4%	7.0%	3.9%
<i>Employees ≥ 100</i>	26.1%	27.8%	60.9%	21.4%	25.2%
<b>Expected replacement rate</b>	64.1%	62.5%	63.3%	61.9%	65.7%
<b>Unknown replacement rate<sup>2</sup></b>	0.0%	45.1%	27.3%	45.9%	62.2%
<b>Disposable household income (€)</b>	38,455	41,811	50,373	39,523	44,918
<b>Household wealth (€)</b>	248,786	259,334	303,232	236,920	340,466
<b>Risk aversion</b>					
<i>Low</i>	1.1%	0.7%	1.2%	0.5%	0.8%
<i>Medium</i>	15.0%	8.9%	8.7%	9.3%	7.1%
<i>High</i>	83.9%	90.4%	90.1%	90.2%	92.1%
<b>Preference for short run<sup>3</sup></b>	-	33.3%	29.8%	35.4%	26.0%
<b>Preference for lump sum<sup>4</sup></b>	-	63.6%	58.2%	64.2%	70.0%
<b>Financial literacy<sup>4</sup></b>	-	60.4%	73.9%	59.6%	47.2%

Notes: <sup>1</sup> Before 2008, small firms were segmented in a different way, and in 2006 the first percentage refers to firm with less than 49 employees; <sup>2</sup> Since 2008, the question is asked only to household members present during the interview; <sup>3</sup> Evaluated in 2010; <sup>4</sup> Evaluated in 2008. Statistics in 2006 refer to the total sample except for time-to-retirement, company size, expected replacement rate, and unknown replacement rate, which are defined for employees only. Means of dummy variables are expressed as a percentage and in italics.

Comparison with Column (2) highlights that the main features of the sample are practically unchanged, but for the unknown expected replacement rate, which appear to increase from 0% to 45.1%. However it has to be said that since 2008, the question is asked only to household members present during the interview, which justifies the increase in the number of replacement rates that are

declared as unknown. Comparing the sample means in Table 2 with those of cross-section samples gives very similar results for 2012 but reveals some significant differences for 2006, again suggesting there is some selective attrition that we cannot take into account in the empirical analysis. The comparison with the national statistics suggest that this is not a major problem.

Comparing columns (3)-(5) in Table 2 reveals differences across the three groups with different severance pay responses, especially between 'Yes' and the other two ('No' and 'Don't know').<sup>10</sup> The 'Yes' group is composed mainly of men, living in the North, married, with higher education, and higher average household income than the other groups. Most notably they are older, which is contrary to expectations, since the higher expected returns of investing the severance pay in a pension fund pay off particularly in the long run. On the other hand, the average age of employees who answer 'Do not know' is lower than in the total sample, suggesting a greater lack of interest among young people. According to Pettigrew *et al.* (2007), a possible explanation is that young people, regardless of their education level, have a strong sense of 'living for today', with a low interest in financial planning and a poor understanding of available pension options. Given the strong correlation between time to retirement and age, it is not surprising that the same result is found for time to retirement. The 'Do not know' group has the highest average household wealth, in line with the findings of Cannari and D'Alessio (1993) and D'Alessio and Faiella (2002) who find more misreporting among wealthier households.

An interesting difference among the three groups is the size of the firm where respondents work. Most people in the 'Yes' group work in companies with more than 100 employees, while 'No' and 'Do not know' individuals more often work in companies with less than 50 employees. This is probably connected to the different regulation discussed above in case of transfer denial according to firm size (see Section 2) and the presence of unions. In medium-large firms, where unionization rates are higher, unions organized information meetings for all employees in which they explained the pension reform. These meetings often emphasize the potential advantages of the transfer, stimulating employees to transfer the severance pay into a pension fund. On the other hand, without information meetings in the workplace, employees of small firms were not adequately informed, or were pushed by their employers to deny the severance pay transfer so that the firm retained a cheap financing source.

Table 2 also shows that, as expected, employees who decided to transfer their severance pay into a pension fund were much more financially literate than the others. There is no significant difference between the three groups in terms of the level of the average expected replacement rate, risk aversion, or preference for the short run or for lump sum.

#### 4. The severance pay transfer decision and pension fund participation after the reform

In this section we first study the determinants of the decision to transfer the severance pay contributions into a pension fund. Then we analyze the determinants of pension fund participation subsequent to the reform.

Table 3 presents the marginal effects of a multinomial logit model explaining whether the severance pay choice answer was "Yes", "No" or "Do not know", using explanatory variables introduced in the previous Section (for a detailed description of each variable, see Table A.1 in the Appendix). The results confirm the conclusions from Table 2: the decision to transfer is positively associated with being male, living in the North, higher income and education, financial literacy, and firm size. The latter is consistent with the finding by Rinaldi (2011) that medium-large firms have the highest membership rates to contractual pension funds. The firm size association is much stronger than the association

<sup>10</sup> The following differences are significant at the 1% level: age, marital status, education level, area, time-to-retirement, company size, household income, unknown replacement rate, financial literacy, and pension fund participation. Citizenship and gender are significant at the 5% level. Household wealth is significant at the 10% level. Van Rooij and Teppa (2014) show the relevance of different personal traits in decisions, especially in explaining the popularity of the default option.

between severance pay choice and variables like income, education, or financial literacy. Females have a higher probability of denying the transfer. Being married and having a preference for the short run are negatively associated with the probability to answer 'Do not know'.

**Table 3 – Determinants of severance pay transfer choice: Multinomial Logit marginal effects**

VARIABLES	(1)	(2)	(3)
	Yes	No	Do not know
Female	-0.0407* (0.0208)	0.0651** (0.0266)	-0.0244 (0.0199)
Age < 35	-0.0634 (0.0526)	0.0089 (0.0616)	0.0545 (0.0427)
Age 35-45	-0.0354 (0.0357)	-0.0366 (0.0460)	0.0720** (0.0348)
Age 45-55	0.0381 (0.0297)	-0.0799* (0.0411)	0.0419 (0.0340)
Married	0.0316 (0.0331)	0.0602 (0.0409)	-0.0918*** (0.0300)
High school	0.0590** (0.0248)	-0.0506 (0.0318)	-0.0084 (0.0237)
University	0.0655* (0.0368)	-0.0919* (0.0481)	0.0265 (0.0345)
Household size	-0.0048 (0.0125)	0.0180 (0.0159)	-0.0133 (0.0123)
Centre	-0.0388 (0.0262)	-0.0024 (0.0342)	0.0412 (0.0254)
South	-0.0668*** (0.0247)	0.0212 (0.0348)	0.0456 (0.0283)
Small municipality	0.0318 (0.0295)	-0.0935** (0.0379)	0.0618** (0.0288)
Big municipality	0.0353 (0.0275)	-0.0744** (0.0362)	0.0391 (0.0285)
No. Employees ≤ 15	-0.1861*** (0.0361)	0.1059* (0.0578)	0.0802 (0.0512)
15 < No. Employees < 50	-0.1096*** (0.0378)	-0.0191 (0.0601)	0.1287** (0.0525)
No. Employees ≥ 100	0.0204 (0.0324)	-0.1132** (0.0565)	0.0928* (0.0521)
Medium income	0.0960** (0.0412)	-0.1022** (0.0467)	0.0062 (0.0313)
High income	0.0910** (0.0401)	-0.1089** (0.0467)	0.0179 (0.0324)
Medium wealth	0.0058 (0.0317)	0.0020 (0.0396)	-0.0079 (0.0288)
High wealth	0.0215 (0.0274)	-0.0158 (0.0360)	-0.0056 (0.0262)
High risk aversion	-0.0107 (0.0357)	0.0319 (0.0468)	-0.0213 (0.0353)
Preference for short run	0.0192 (0.0226)	0.0300 (0.0292)	-0.0492** (0.0222)
Financial literacy	0.0485** (0.0220)	0.0203 (0.0278)	-0.0687*** (0.0198)
Observations	1,063	1,063	1,063
Pseudo R-squared	0.157	0.157	0.157
Log Likelihood	-690.2	-690.2	-690.2

Notes: See Table A.1 in the Appendix for variable definitions. All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects.

In order to understand these results and, more generally, pension fund participation it is important to investigate pension literacy. In fact, even more than general financial literacy, knowledge of the basics of the pension reform is fundamental in making well-motivated pension related decisions such as the severance pay transfer. We measure this knowledge with the following four questions on the possible advantages of pension fund saving after the 2007 reform, included in the 2008 survey only:

- (1) *Pension funds enjoy tax benefits compared to a mutual fund.*  
True/False/Do not know. [Correct answer: True]
- (2) *When you retire, you can withdraw part of the invested capital.*  
True/False/ Do not know. [Correct answer: True]
- (3) *There are pension funds with guaranteed minimum returns.*  
True/False/Do not know. [Correct answer: True]
- (4) *Pension funds guarantee a fixed percentage of the last salary.*  
True/False/Do not know. [Correct answer: False]

Table 4 shows that only few respondents have a good knowledge of the functioning of pension funds after the reform. Only 4.0% answered all four questions correctly, while 33.7% did not even give one correct answer. Only 31.1% know about the tax benefits introduced by the 2007 reform, and only 25.4% know that pension funds do not guarantee a fixed percentage of the final salary.<sup>11</sup>

**Table 4 – Statistics of the pension fund knowledge questions. Year 2008**

Question 1 (%)		No. of correct answers	% of sample
Incorrect or 'do not know'	68.9		
Correct	31.1		
Question 2 (%)		0	33.7
Incorrect or 'do not know'	54.8		
Correct	45.2		
Question 3 (%)		1	17.5
Incorrect or 'do not know'	56.8		
Correct	43.2		
Question 4 (%)		2	23.0
Incorrect or 'do not know'	74.6		
Correct	25.4		
Question 4 (%)		3	21.8
Incorrect or 'do not know'	74.6		
Correct	25.4		
Question 4 (%)		4	4.0
Incorrect or 'do not know'	74.6		
Correct	25.4		
Question 4 (%)		Total (N = 1,063)	100.0
Incorrect or 'do not know'	74.6		
Correct	25.4		

We then define the variable Pension literacy as a binary indicator: 1 if at least two of the four pension knowledge questions are answered correctly, 0 otherwise. This variable will be used in the ELM application in Section 5 as a proxy for knowledge or the ability to process information and make well-informed decisions on pension issues.

In Table 5, Column 1, we investigate determinants of Pension literacy by using a Logit model. Keeping other characteristics constant, pension knowledge is positively related to financial literacy and education. Moreover, it appears to be significantly higher among high income or married individuals and individuals living in larger cities. As might be expected, pension fund knowledge is negatively associated with impatience ("Preference for short run"). It is also positively related to risk aversion, suggesting that risk-averse individuals put more effort in retirement planning.

<sup>11</sup> We have also assessed the potential positive effect of knowing about the fiscal stimulus on the severance pay transfer, adding a binary variable for the awareness of tax benefits to the regressions in Tables 3 and 5. This variable appeared to be insignificant for the severance pay transfer as well as for pension fund participation; it is only significantly associated with pension literacy. For this reason, we do not include it in the main regressions.

**Table 5 – Determinants of pension literacy, pension fund participation, and positive change in pension fund participation from 2006 to 2012: Logit marginal effects**

VARIABLES	(1) Pension literacy	(2) Pension fund participation	(3) Positive change in pension fund participation
Female	-0.0022 (0.0296)	-0.0484* (0.0248)	-0.0174 (0.0250)
Age < 35	0.0061 (0.0588)	-0.0784 (0.0599)	-0.0318 (0.0594)
Age 35-45	0.0144 (0.0483)	0.0426 (0.0423)	0.0437 (0.0433)
Age 45-55	0.0382 (0.0430)	0.0794** (0.0361)	0.0613 (0.0376)
Married	0.1289*** (0.0390)	0.0215 (0.0369)	0.0313 (0.0375)
High school	0.1030*** (0.0331)	0.0754*** (0.0289)	0.0591** (0.0293)
University	0.1950*** (0.0534)	0.0853* (0.0452)	0.0774* (0.0461)
Household size	-0.0326** (0.0158)	-0.0259* (0.0146)	-0.0153 (0.0152)
Centre	0.0245 (0.0394)	-0.0384 (0.0304)	-0.0196 (0.0314)
South	-0.0397 (0.0384)	-0.0175 (0.0335)	0.0101 (0.0331)
Small municipality	0.0718* (0.0402)	0.0618* (0.0363)	0.0549 (0.0361)
Big municipality	0.0924** (0.0368)	0.0448 (0.0336)	0.0228 (0.0343)
No. Employees ≤ 15	0.0440 (0.0557)	-0.1500*** (0.0414)	-0.1516*** (0.0418)
15 < No. Employees < 50	0.0397 (0.0621)	-0.0822* (0.0460)	-0.0730 (0.0469)
No. Employees ≥ 100	0.0797 (0.0576)	0.0682* (0.0414)	0.0554 (0.0421)
Medium income	0.0278 (0.0474)	0.0695 (0.0443)	0.0713* (0.0433)
High income	0.1684*** (0.0435)	0.0897** (0.0426)	0.0739* (0.0429)
Medium wealth	0.0698* (0.0424)	-0.0231 (0.0388)	-0.0221 (0.0390)
High wealth	0.0399 (0.0398)	0.0399 (0.0342)	0.0250 (0.0355)
High risk aversion	0.1755*** (0.0539)	-0.0483 (0.0442)	-0.0933* (0.0519)
Preference for short run	-0.0927*** (0.0308)	-0.0183 (0.0274)	-0.0190 (0.0274)
Financial literacy	0.1042*** (0.0292)	0.0524** (0.0262)	0.0245 (0.0265)
Observations	1,063	1,063	959
Pseudo R-squared	0.116	0.146	0.116
Log Likelihood	-650.9	-502.9	-427.9

Note: See Table A.1 in the Appendix for variable definitions. All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects. In column 3, 'Yes-No' and 'Yes-Yes' cases of change in pension fund participation are excluded.

In order to evaluate consistency between pension literacy and pension fund participation in general after the reform, we further look at two variables. The first, Pension fund participation, is based on a question in which individuals have to declare whether or not they have ever made any payment into a personal retirement plan or supplementary pension fund, including payments related to the severance

pay transfer.<sup>12</sup> It is a binary taking value 1 if the answer is positive, 0 otherwise. The second, named Positive change in pension fund participation, is defined, only for those not participating in 2006, as a binary taking value 1 if they participate in 2012, 0 otherwise.

Column 2 in Table 5 reports results of a Logit model to show which individual characteristics drive pension fund participation in 2012, whereas column 3 shows what drives the change in participation between 2006 and 2012. As expected, both participation in a pension fund and a change from non-participation to participation are positively related to age, education, income, wealth and financial literacy, whereas they are negatively related to being female and risk aversion (Fellner and Maciejovsky, 2007; Guiso and Jappelli, 2009; van Rooij et al., 2009). Marital status has no effect on the pension fund participation, differently from what results for general financial portfolio choices where married individuals generally tend to invest more in risky assets Bertocchi et al. (2011). An interesting result emerges the relation to firm size: employees in small firms are less likely to participate in or to join a pension fund than employees in larger firms. This is in line with the difference in incentives for small and large firms discussed in Section 2, although we find a gradually increasing firm-size pattern rather than the jump at fifty employees that would be implied by the rules.

In sum, the above results underscore that both the decision to transfer the severance pay into a pension fund and pension fund participation in general are more likely for males, more educated and older employees with high household income, and employees in larger firms. Since the reform was mainly directed at low income and younger individuals, this result calls for a better understanding of the type of decision process fostered by the reform and the communication campaign that accompanied it. In Section 5, we use the framework of the Elaboration Likelihood Model (ELM) to better understand the impact of communication and the nature of the transfer decisions.

## 5. An analysis of severance pay decisions using an ELM framework

The Elaboration Likelihood Model of persuasion (ELM; see Petty and Cacioppo, 1983) is essentially a theory about how individuals' decisions are influenced by communication. It assumes that an individual's attitudes can be influenced in different ways and that individuals differ in how carefully and extensively they think about a message. In other words, in a given context, the amount of individual elaboration or thinking about can vary from low to high along an "elaboration continuum". The position along this continuum is determined by an individual's motivation and ability to process the message. Here 'motivation' refers to the personal relevance of the issue, while 'ability' refers to resources and skills needed to understand and react to a message. Ability not only depends on intelligence, but also on time available or distraction in the communication environment.

If motivation and ability to think are high, individuals can follow a "central route" to persuasion. Otherwise they follow a "peripheral route". In the central route, individuals carefully consider the elements of the message in order to determine whether its proposal will be beneficial to them. Hence, if someone makes a decision through a central route, their attitude change tends to be enduring, resistant to counter persuasion, and predictive of behavior (Petty and Cacioppo, 1983; Jae and Delvecchio, 2004; Wilson, 2014). On the other hand, if a decision is based upon superficial cues, external context, or momentary feelings, then the resulting peripheral attitude is probably temporary, sensitive to counter persuasion, and not predictive of behavior. In this case the individual decides without making the effort required to process merits and demerits (Petty and Cacioppo, 1983).

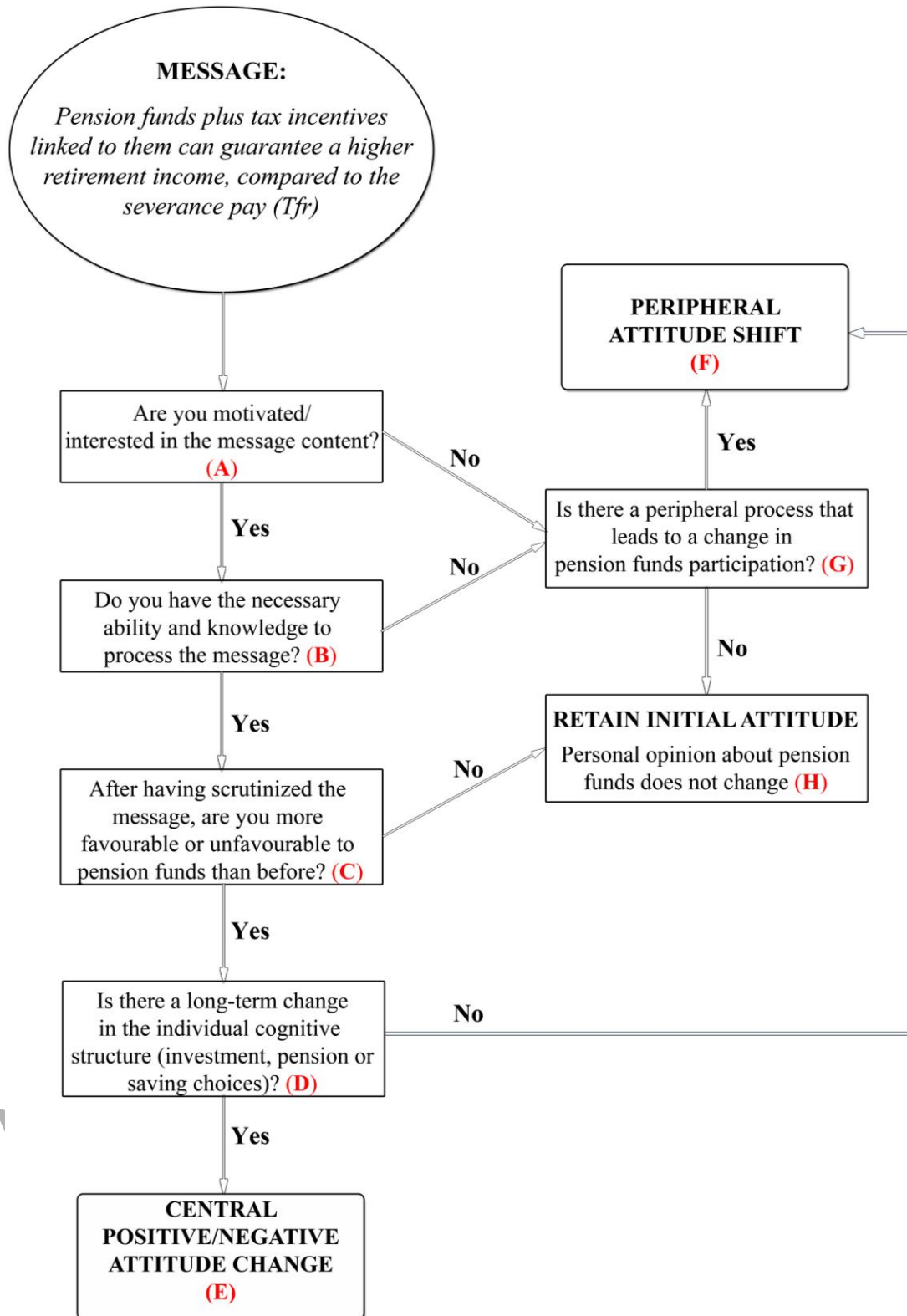
The application of the ELM to the severance pay choice is illustrated in Figure 1. The ELM works through a step-by-step sequence, where the message represents the starting point, each intermediate step (boxes **A**, **B**, **C**, **D**, and **G**) is a specific condition, and the concluding steps (boxes **E**, **F**, and **H**)

<sup>12</sup> The pension fund participation of employees rose from 9.8% in 2006 to 24.3% in 2012 in our data set. Since it also includes payments related to the severance pay transfer, this increase is likely due to the reform. Indeed, in 2012, the pension fund participation is equal to 100% among those who made the severance pay transfer, 11.5% among those who denied the transfer, and 6.3% among employees answering don't know.



represent three possible outcomes. To give this framework empirical content, we will use observed proxy variables for all steps in the figure.

**Figure 1 – The employee's decision process in the Elaboration Likelihood Model**



*Note: Adapted version of the scheme in Petty et al. (2009).*

The first step is to assess the employee's involvement in the message content (box A). To this end ELM applications sometimes develop dedicated surveys including questions on how much people thought about their choice or on their personal feelings about the message issue (e.g. important, boring,

or needed); see, e.g., Jae and Delvecchio (2004) and Wilson and Irvine (2013). Since we do not have such questions, we consider as involved or motivated those who respond 'Yes' or 'No' to the question about the severance pay transfer. These individuals apparently remember their choice at the time of the survey. Those who do not know or remember their responses, are plausibly considered as not interested in the message content. Accordingly, 88% of individuals in the sample are involved (73% answer 'No' and 15% 'Yes'), while the remaining 12% are not (the 'Do not know' answers in Table 1).

Even if involved and motivated, an employee must have the necessary ability to process the message (box **B**). To assess this ability, some ELM applications use dedicated tests (e.g. Flesch-Kinkaid reading test) or specific questions asking for the method or means of communication or the message clarity (Wilson and Irvine, 2013). The SHIW data do not contain such questions for the 2007 pension reform. Instead, we use the four pension literacy questions in Section 4 to construct a proxy: We define respondents as "able to process the message content" if they answered at least two of the four questions correctly. This definition implies that 48.8% of the sample has the ability to process the message and make an optimal decision (cf. Table 4).

The sample can now be divided into four groups: respondents not involved and not able to process the message content (6.9% of the sample), not involved but able (5.1%), involved but not able (44.3%), or both involved and able (43.7%). According to the ELM structure only the last group of employees can proceed to step **C** (and, possibly, get to the central route).

If the employee does not have the necessary involvement or ability, the next step is to assess the presence of contextual elements influencing the decision (box **G** in Figure 1). For this purpose, we consider whether participation in a pension fund (as defined in Section 4, i.e., any payments into a personal retirement plan or supplementary pension fund including the severance pay transfer to a pension plan) changed from 2006 to 2012. Indeed, in a scenario without any peripheral influence, it is plausible that individuals retain their initial (2006) attitude, so that they will still participate in a pension fund in 2012 if they did so in 2006 and vice versa (box **H**). In contrast, a change in 2012 with respect to their initial attitude (i.e., initial participation), given a lack of motivation or ability to make a conscious choice to change, signals the influence of contextual elements on the employee's behavior, triggering a 'peripheral route' (box **F**). One reason to change from non-participation to participation may be the severance pay transfer. This represents a sub-sample of all changes, because people can change their pension fund participation without transferring any severance pay contributions. Examples of contextual elements that can influence the employee's choice, are the presence of unions at the workplace or the role of the media (TV, newspapers, radio, websites, etc.). Several unions decided to sponsor specific occupational pension funds inside the workplace. Moreover, especially in 2007, the media massively reported potential positive and negative effects of the controversial reform. Another contextual element can be employers, particularly in small firms, where they had an incentive to make their employees deny the severance pay transfer (see Section 2). Employers had ample opportunities to do that, both providing and collecting the forms needed to make the transfer decision.

For employees motivated and able to process the message, we have to check whether, after scrutinizing the message and collecting all necessary information, they change their attitude towards pension fund participation (box **C** in Figure 1). We use a change in pension fund participation from 2006 to 2012 as a signal of attitude change (as for box **G**).

According to the ELM, motivation and ability are necessary but not sufficient conditions for following a central route. Even if employees are motivated and able to understand the message content, their attitude towards and participation in pension funds may be affected by positive or negative cues, contextual elements, or heuristics that may trigger a quick decision through a peripheral route (box **F**). To determine that message processing indeed followed the central route, we can check whether the

change in their pension fund participation persists in the long-term (box **D**). If the change is permanent (at least until 2012),<sup>13</sup> the employee probably followed a central route (box **E**).

We assess the presence of a long-term change in an employee's attitude by checking whether the change in pension fund participation from 2006 to 2012 is consistent with the response to the severance pay transfer question. In particular, there is consistency if a 'Yes' response to the severance pay question is accompanied by a positive change in pension fund participation (i.e. the respondent did not have a pension fund in 2006, but has one in 2012) or the 'No' response goes together with a negative change in pension fund participation (i.e. the respondent had a pension fund in 2006, but not in 2012). In the former case consistency is obvious, since if employees decide not to deny the transfer of the severance pay, they will surely have a pension fund in 2012. In the latter case the decision may be driven by a higher consciousness of negative characteristics of investing in a pension fund (e.g. higher riskiness). In sum, if there is no consistency, a peripheral route (box **F**) must have been followed since the participation change was not really conscious; otherwise, employees probably followed a central route (box **E**) and their attitude change is permanent.

**Figure 2 – Sample distribution in the ELM scheme**

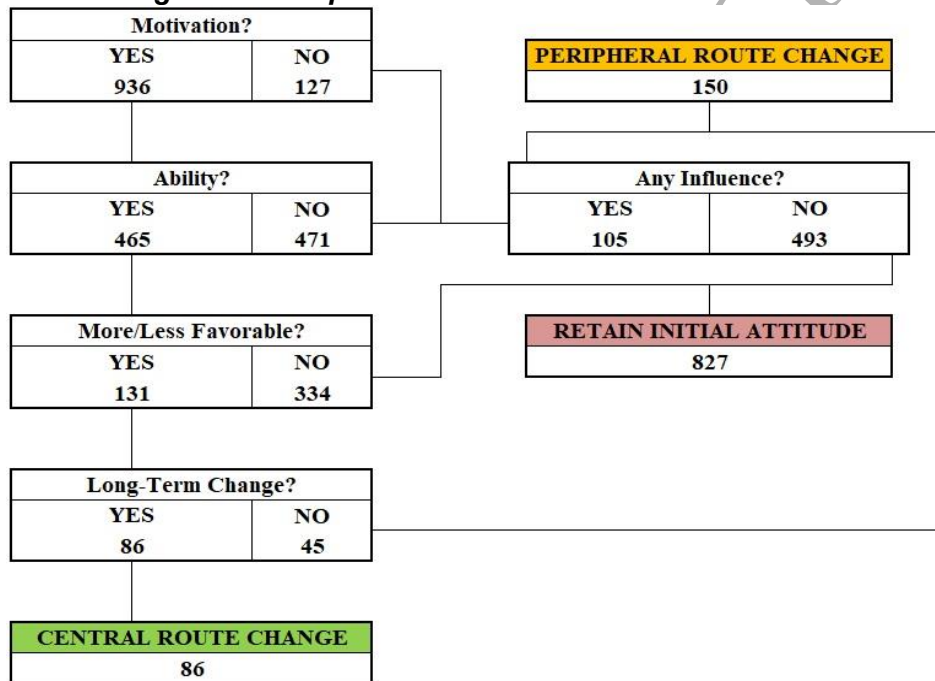


Figure 2 illustrates how the individuals in the sample pass through the ELM scheme represented in Figure 1 according to our proxy variables. It shows that only 236 of the 1063 employees in the sample changed their pension fund participation after the reform, 86 via a central route and 150 via a peripheral route. By contrast 827 respondents retained their initial attitude. The ELM scheme allows splitting individuals who retained this group in two different categories: 40.4% of them (334 observations) consciously retained their attitude, based on motivation and ability to scrutinize the message, whereas the remaining 493 did not make a conscious decision, due to lack of motivation or ability.

Summing up, we can define those as conscious decision makers whose decision is based on motivation and ability to process, independently of the change of pension fund participation, and whose change of attitude is permanent. According to this classification, 420 employees (39.5% of the sample) can be considered as taking a conscious decision. Figure 2 shows that, among the motivated and able employees reporting a participation change (Step D in Figure 1), 45 respondents did not transfer their

<sup>13</sup> In a robustness check, we find that an extension of the reference period from 2006-2012 to 2006-2014 hardly changes the results (see Section 5.2).

severance pay but still joined a pension fund after the reform. They can be considered as 'success cases' of the 2007 reform in terms of the attitude change aimed for by the Italian government (i.e., investing in a pension fund to better cope with a lower public pension in the future), even though according to our empirical implementation of the ELM, they followed a peripheral route.

As discussed above, the implementation of the ELM provides three possible outcomes: I) individuals change their initial attitude about pension fund following a central route (CR); II) individuals change their initial attitude following a peripheral route (PR), not really taking a conscious decision; III) individuals retain their initial attitude (RIA). Table 6 highlights that the most common ELM outcome is the third one, showing that most Italians do not change their participation in pension funds (77.8%). Among employees who changed their participation, the most common route was the peripheral one (14.1% of the sample). This happened because the message was not clear, and also because the majority of employees did not have the necessary motivation or ability to make a well-reasoned decision about such a complex subject. This creates opportunities for contextual stakeholders (e.g. employers and unions) to influence the employees. Only a small part of population (8.1%) of employees consciously changed their pension fund participation.

**Table 6 – ELM outcomes and severance pay transfer choice**

ELM Outcome	Severance pay transfer choice			Total
	Yes	No	Do not know	
Central Route Change	68 42.2%	18 2.3%	0 0.0%	86 8.1%
Peripheral Route Change	50 31.1%	84 10.8%	16 12.6%	150 14.1%
Retain Initial Attitude	43 26.7%	673 86.8%	111 87.4%	827 77.8%
Total	161 100.0%	775 100.0%	127 100.0%	1,063 100.0%

Regarding the ELM outcomes by severance pay choice group, retaining initial attitude was the most common outcome in the 'No' and 'Do not know' groups, while employees who answered 'Yes' retained their initial attitude only in 26.7% of all cases (Table 6). Among respondents answering 'Yes' to the severance pay transfer question, 42.2% changed through the central route. The peripheral route represents the most common route among those who decided to change their pension fund participation either positively or negatively (Table 7). Only 34.9% of those with a 'No – Yes' participation change followed a central route, compared to 43.9% of those who changed their participation from 'Yes' to 'No'.

**Table 7 – ELM outcomes and change in pension fund participation from 2006 to 2012**

ELM Outcome	Change in Pension Fund Participation (2006 - 2012)				Total
	No - No	No - Yes	Yes - No	Yes - Yes	
Central Route Change	0 0.0%	68 34.9%	18 43.9%	0 0.0%	86 8.1%
Peripheral Route Change	0 0.0%	127 65.1%	23 56.1%	0 0.0%	150 14.1%
Retain Initial Attitude	764 100.0%	0 0.0%	0 0.0%	63 100.0%	827 77.8%
Total	764 100.0%	195 100.0%	41 100.0%	63 100.0%	1,063 100.0%

Note: 'No-Yes' means no participation in 2006 and participation in 2012, etc.

### 5.1. Modelling the ELM outcomes

In order to evaluate the impact of demographic and socio-economic characteristics on the probability that an employee follows a specific ELM route or takes a conscious decision, we estimate a Multinomial Logit Model (MLM) for the ELM outcomes and a (binary) Logit Model for the consciousness of decision.

The model specification for the ELM outcome of individual  $i$  is as follows:

$$ELM_{ij}^* = \beta_j X_i^I + \gamma_j X_i^H + \omega_j X_i^W + \vartheta_j X_i^{IW} + \delta_j X_i^F + \varepsilon_{ij}$$

$$ELM_i = j \text{ if } ELM_{ij}^* > ELM_{ik}^* \text{ for } k \neq j; j, k = 1, 2, 3$$

$$\varepsilon_{ij} \underset{iid}{\sim} GEV(1), \text{ independent of } X_i^I, X_i^H, X_i^W, X_i^{IW}, X_i^F.$$

Here  $ELM$  is one of the three possible (unordered) ELM outcomes (CR, PR, or RIA),  $X^I$  is a vector of individual characteristics (gender, age, marital status, and education level),  $X^H$  is a vector of household characteristics of the employee (area of residence, size of the municipality of residence, household size),  $X_i^W$  represents the company size,  $X_i^{IW}$  is a vector of household income and wealth information, and  $X_i^F$  is a vector of individual economic and financial information (risk aversion, preference for short period investments, and financial literacy). The base outcome in the MLM is retaining the initial attitude (RIA).

In addition, we estimate the probability of taking a conscious decision in 2012 using the following binary logit model:

$$DC_i^* = \beta X_i^I + \gamma X_i^H + \omega X_i^W + \vartheta X_i^{IW} + \delta X_i^F + u_i$$

$$DC_i = 1[DC_i^* > 0]; u_i \underset{iid}{\sim} Logistic, \text{ independent of } X_i^I, X_i^H, X_i^W, X_i^{IW}, X_i^F.$$

Here  $DC$  is a binary variable equal to 1 if decision is conscious and 0 otherwise. The regressors are the same as those in Tables 3 and 5.

Table 8 reports the estimated marginal effects on the probabilities of the three ELM outcomes (Multinomial Logit) in columns (1)-(3) and on the consciousness of the decision (Logit) in column (4). In line with Jae and Delvecchio (2004), education and financial literacy are positively associated with the probability to follow a central route (CR) and with decision consciousness (DC).

Being married has a strong positive impact on both the probability to consciously change initial attitude (CR) and decision consciousness (DC). Since marital status has no significant effect on either the transfer decision nor the pension fund participation (cf. Tables 3 and 5), but a positive effect on Pension literacy (Table 5, column 1) this evidence is likely connected with the importance of pension literacy in the ability to process. Living in a small municipality is associated with a higher probability to change participation in pension funds via a PR. Living in the South has a strongly significant negative effect on decision consciousness, but regional dummies are not significant for CR.

The size of the company has a significant effect on the ELM outcome, in line with the institutional difference that makes it attractive for firms with less than 50 workers to discourage their workers to transfer their severance pay: indeed, employees in small firms have a much lower probability to choose CR than employees in larger firms. Employees in small firms are particularly likely not to change their initial attitude. Employees in large companies may also have received more and better information about pension funds and reform objectives due to information meetings organized by unions. While wealth does not affect the decision process, income levels have some effect: medium income is associated with a higher probability of a PR change than low income, while high income is negatively associated to retaining initial attitude and positively to making a conscious decision. As expected,

having a high-risk aversion prevents from peripheral changes in the decision, and increases both the probability of retaining the initial attitude and, particularly, the probability to make a conscious decision.

**Table 8 – Determinants of the ELM outcomes (Multinomial Logit)  
and of the decision consciousness (Logit): marginal effects**

VARIABLES	(1) Central route change CR	(2) Peripheral route change PR	(3) Retain initial attitude RIA	(4) Decision consciousness DC
Female	-0.0003 (0.0164)	-0.0014 (0.0215)	0.0017 (0.0250)	-0.0003 (0.0292)
Age < 35	0.0049 (0.0376)	-0.0445 (0.0525)	0.0395 (0.0584)	-0.0372 (0.0579)
Age 35-45	-0.0088 (0.0273)	0.0532 (0.0355)	-0.0444 (0.0419)	-0.0513 (0.0474)
Age 45-55	0.0187 (0.0230)	0.0136 (0.0320)	-0.0323 (0.0367)	0.0029 (0.0416)
Married	0.0476* (0.0255)	0.0043 (0.0318)	-0.0518 (0.0372)	0.1391*** (0.0388)
High school	0.0517** (0.0224)	0.0279 (0.0250)	-0.0795*** (0.0304)	0.0852** (0.0335)
University	0.0885*** (0.0277)	-0.0004 (0.0418)	-0.0881* (0.0466)	0.1607*** (0.0517)
Household size	0.0008 (0.0094)	-0.0104 (0.0129)	0.0096 (0.0148)	-0.0052 (0.0160)
Centre	0.0004 (0.0220)	-0.0098 (0.0260)	0.0094 (0.0318)	0.0216 (0.0392)
South	-0.0302 (0.0189)	0.0433 (0.0306)	-0.0131 (0.0334)	-0.0968*** (0.0370)
Small municipality	-0.0056 (0.0232)	0.0637** (0.0314)	-0.0580 (0.0359)	0.0155 (0.0404)
Big municipality	-0.0134 (0.0215)	0.0252 (0.0301)	-0.0118 (0.0340)	0.0572 (0.0372)
No. Employees ≤ 15	-0.0627** (0.0304)	-0.0569 (0.0382)	0.1197*** (0.0445)	0.0215 (0.0567)
15 < No. Employees < 50	-0.0667* (0.0352)	0.0199 (0.0412)	0.0468 (0.0498)	-0.0918 (0.0632)
No. Employees ≥ 100	-0.0017 (0.0287)	0.0434 (0.0391)	-0.0417 (0.0452)	0.0173 (0.0581)
Medium income	-0.0403 (0.0430)	0.0914** (0.0361)	-0.0511 (0.0494)	0.0121 (0.0487)
High income	0.0478 (0.0298)	0.0350 (0.0379)	-0.0828* (0.0439)	0.1146*** (0.0441)
Medium wealth	-0.0099 (0.0261)	-0.0178 (0.0334)	0.0276 (0.0388)	0.0709* (0.0425)
High wealth	-0.0114 (0.0224)	0.0218 (0.0311)	-0.0103 (0.0354)	0.0320 (0.0389)
High risk aversion	0.0285 (0.0259)	-0.1367** (0.0545)	0.1082* (0.0560)	0.2224*** (0.0495)
Preference for short run	0.0020 (0.0179)	-0.0263 (0.0241)	0.0242 (0.0278)	-0.0270 (0.0308)
Financial literacy	0.0431** (0.0193)	-0.0247 (0.0222)	-0.0184 (0.0272)	0.1333*** (0.0290)
Observations	1,063	1,063	1,063	1,063
Pseudo R-squared	0.102	0.102	0.102	0.112
Log Likelihood	-644.6	-644.6	-644.6	-633.5

Note: All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects. Base Outcome: 3 (RIA). See Appendix Table A.1 for variable definitions.

Our results show that, once other individual and household features are accounted for, gender neither matters for changing pension fund participation, nor for consciousness of the decision process (and also not for the pension literacy or ability to process, cf. column (1) of Table 5). This may seem to

contradict some studies in household finance highlighting that women have a higher probability to be financially excluded (Lusardi et al., 2010; van Rooij et al., 2011; Fornero and Monticone, 2011), but note that the gender effect in our regressions keeps financial literacy constant. Age is not significant either, even though the reform was primarily meant for younger generations.

## 5.2. Robustness checks and alternative specification of the ELM variables

We briefly summarize several robustness checks of the main results in Table 8, concerning the data set and different specifications of some of the variables (details are available upon request), or including additional covariates in the regressions (results reported in the Appendix). First, we updated the 2006-2012 balanced panel with the last release of the 2014 SHIW data. This leads to a reduction of about 34% in the size of the balanced panel because of attrition. Moreover, the attrition leads to a sample with higher education, higher household income, and higher financial literacy, making it less representative of the population that we aim to analyze. Still, all results remain practically unchanged except that the effect of financial literacy on following a CR is significant at the 10% level only.

We tried different specifications of some of the controls: a quadratic specification for age (instead of age classes), quadratic specifications for income and wealth (instead of quintile dummies), and dummies for household size (instead of the cardinal variable itself). All results in Table 8 remain essentially the same in these alternative specifications. In particular, employees in small firms are still found to be less likely to change their initial attitude, while high education levels, risk aversion, and financial literacy significantly increase the decision consciousness. We also replaced the financial literacy dummy (at least two correct answers) by the number of correct answers and by separate dummies for each of the three questions. Results are very similar to those in Table 8. For example, financial literacy remains significant and of the same sign, as well as firm size effects.

We also used different variables for motivation and ability to process, the two main variables in the ELM scheme. Requiring a higher number of correct answers (3 instead of 2) to define ability to process, reduces the number of employees following a CR from 86 to 46 but does not substantially change the estimation results. For motivation, we considered three alternatives for the variable on recalling the choice of severance pay transfer in 2012 used in our benchmark models: age, the expected replacement rate, and preference for short period investing.<sup>14</sup> As for age, since the severance pay reform aims to benefit younger employees we expected them to be more interested, but the age patterns of reform knowledge and reported severance pay choice show that this is not the case, suggesting that age is not a valid proxy for motivation. As for the expected replacement rate, we define as motivated only those employees who both recall their severance pay choice and have an expected replacement rate lower than 75%. Although this definition reduces the number of employees following a CR from 86 to 50, most results remain unchanged – except that the effect of financial literacy on the probability to follow a CR, is no longer significant (though still positive). Third, because the choice about the severance pay transfer is a choice between a lump sum and an annuity, we also considered as a proxy for motivation the combination of recalling the 2012 severance pay choice and a preference for short term investing. This definition leads to a decrease in the number of CR followers from 86 to 61, but results remain unchanged except for the effect of education – this is no longer significant for the probability to follow a CR. All in all, these results provide no reason to deviate from the simple proxy of motivation only based upon recalling the 2012 choice about the severance pay transfer.

Finally, we considered additional covariates in the models of Tables 3, 5, and 8. First, we included the expected replacement rate before the reform (i.e. 2006), since some people may deny the transfer because they are already satisfied with their expected replacement rate. Results (Table A.2 in the Appendix) show that a higher expected replacement rate in 2006 indeed decreases the probability to transfer the severance pay into a pension fund, as well as the probability of pension fund participation

<sup>14</sup> We did not use the time-to-retirement since the variable is missing for some employees.

or a positive change in this. These effects are significant at the 10% level only. The expected replacement rate has no significant effect on the ELM outcome or decision consciousness and does not change our conclusions concerning the other variables, such as the firm size effects. Adding it severely reduces our sample because the information is missing for 177 observations. We therefore decided not to include this variable in the main specification.

Second, we added some variables capturing trust in the individual's principal bank, general trust in banks, and trust in other people in general. Individuals who trust their principal bank more are less likely to report that they deny the severance pay transfer and more likely to report "don't know" (Table A.3 in the Appendix). The effects on ELM outcomes and decision consciousness are insignificant. General trust in banks is positively related to the probability to change pension fund participation via a CR and to take a conscious decision, absorbing both education and marital status effects (Table A.4 in the Appendix<sup>15</sup>). Trust in other people is never significant. Including these variables hardly changes the effects of other variables such as firm size or financial literacy. We decided not to include these variables in the main specification, because this would further reduce the sample (in the case of trust in banks to half of the current size).

## 6. Conclusions

This paper analyses the heterogeneity in pension choices accounting for the roles of motivation, communication, ability, and contextual factors. In particular, we analyze the choices connected to the 2007 Italian reform that allowed transferring contributions to employees' future severance pay (Tfr, *Trattamento di Fine Rapporto*) into a pension fund. We use data from the Bank of Italy's Survey of Household Income and Wealth (SHIW), combining information provided before (2006) and after (2008, 2010 and 2012) the reform. We focus on the decision to transfer the severance pay and, more generally, on changes in pension fund participation between 2006 and 2012. The objective is not to assess the success of the reform or the optimality of the choice, but to analyze the heterogeneity of the employees' decisions in relation to individual factors such as pension knowledge and financial literacy, and contextual factors like the organization of the choice process and the role of the employer.

The analysis is performed in two steps. First, we study the determinants of the decision to transfer the severance pay contributions into a pension fund, of pension knowledge, and of pension fund participation subsequent to the reform. We find that employees in small firms are much less likely to transfer the severance pay than employees in larger firms, highlighting the importance of contextual factors. The employer plays a large role in the actual transfer choice process, and small firms have an incentive to make their employees deny the transfer. Moreover, employees in smaller firms have less access to information provided by unions. The data also show that the decision to transfer the severance pay into a pension fund was taken by more educated and older employees, with high household income and wealth.

Since the reform was mainly meant to benefit young and low income employees, these results call for a better understanding of the type of elaboration process fostered by the reform and its communication campaign. This is the purpose of the second part of the paper, using the conceptual framework of the Elaboration Likelihood Model (ELM). Here we use the data to assess whether the employee has the involvement and the necessary ability to process the message in order to assign one of the three possible ELM outcomes to each individual: I) decision reached via a central route; II) decision reached via a peripheral route; III) retaining the initial attitude. Moreover, we explain whether the decision to change pension fund participation was made consciously or not. Results confirm the role of financial literacy, but also of contextual elements like firm size. In particular, we find that individuals working in small companies have a much lower probability to follow a CR and a higher probability to

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<sup>15</sup> Since trust in the principal bank and trust in banks in general are strongly correlated, including both in the same regressions leads to very imprecise results.



retain their (generally negative) initial attitude towards pension fund participation, possibly because their employers would in case of severance pay transfer lose a cheap source of financing. These results are robust across various sensitivity checks.

The first part of the analysis highlights that the probability of the severance pay transfer and of pension fund participation is lower for women, employees living in the South, and employees in small firms. Using the ELM framework with an explicit role for motivation, ability and decision consciousness, shows that the cognitive processes characterizing the decisions of these groups are quite different: employees living in the South have a lower probability to make a conscious decision and employees in small firms have a much lower probability to consciously change their initial attitude towards pension fund participation, while female decision consciousness or change in attitude does not differ from that of males. At the same time, the ELM framework finds an important role for other factors like marital status and risk aversion, which were not significant in the regressions in the first part. Finally, the ELM analysis confirms the importance of education and financial literacy to increase both participation and decision consciousness.

Our results help to understand why the reform and the 2007 information campaign were not as successful as expected, given that the objective was a much larger increase in pension fund participation. The main lessons are connected with: i) reform provisos that can neutralize the suggested default option, such as the differential treatment of small firms, which has as a matter of fact “reversed” the auto-enrolment default option; ii) the procedure adopted to communicate the decision (a form has to be returned to the employer) which may lead to pressure from small employers to make employees deny the transfer; iii) the importance of repeating the message, since its effectiveness vanishes over time.

Thus our results have useful policy implications for the effectiveness of a reform and the related communication in the pension domain. First of all, some exceptions, such as the differential treatment of smaller firms, if they apply to a wide population, may significantly affect the outcome of the reform, as demonstrated by the differential treatment of small firms (employing the large majority of employees in Italy). Treating smaller firms in a similar way as larger firms would be an effective means to promote transferring severance pay to pension funds. Second, timing is important. In fact, exhaustive informational campaigns normally take place close to the time of the reform, which is often insufficient to stimulate informed decisions later on. A solution could be to synchronize (or combine) the decision procedure and the information campaign. Also the organizational feature of the choice process may have side effects. For example, taking a decision in the workplace, in the proximity of the employer and/or unions makes the decision particularly susceptible for contextual elements, inducing individuals to make uninformed and unconscious decisions that may well be at their own disadvantage.

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## Appendix

**Table A.1 – SHIW variables description (all variables refer to 2012 except when specified differently)**

Variables	Description
<i>Dependent variables</i>	
Severance pay transfer choice	Multinomial variable assuming three values that cannot be ordered and represent the possible answers to the question about the severance pay transfer choice (Yes, No, or Do not know).
Pension literacy	Binary variable taking value 1 for employees who correctly answered at least two out of the four questions reported in Section 4, and 0 otherwise. The questions about pension funds knowledge are collected in the 2008 survey.
Pension fund participation	Binary variable is equal to 1 if employee declared to participate in a pension fund in 2012, and 0 otherwise.
Positive change in pension fund participation	Binary variable taking value 1 for employees who switched from non participation in 2006 to pension fund participation 2012, and 0 otherwise.
ELM outcomes	Multinomial variable which can assume three values that cannot be ordered and represent the possible ELM outcomes (CR, PR, or RIA).
Decision consciousness	Binary variable which is equal to 1 if decision is conscious, and 0 otherwise.
<i>Control variables</i>	
Female	Binary variable taking value 1 for female, 0 for male.
Age < 35 Age 35-45 Age 45-55	Binary variables representing the age group of employees. The reference category is Age ≥ 55.
Married	Binary variable taking value 1 for married employees, and 0 otherwise.
High school University	Binary variables representing the highest education level achieved. The reference category is composed by No education, Primary education, and Secondary education.
Centre South	Binary variables representing the area of residence. The reference category is North.
Small municipality Big municipality	Binary variables representing the size of the municipality of residence. The reference category is Medium municipality (number of inhabitants between 20.000 and 40.000).
Household size	Discrete variable representing the number of household components. When the household members are more than 5, it takes value 5.
No. Employees ≤ 15 15 < No. Employees < 50 Employees ≥ 100	Binary variables representing the company size. The reference category is 50 < No. Employees < 100.
Medium income High income	Binary variables representing the household income quintile. Medium income is the third quintile, while High income represents fourth and fifth ones. The reference category is Low income (first and second quintile).
Medium wealth High wealth	Binary variables representing the household wealth quintile. Medium wealth is the third quintile, while High wealth represents fourth and fifth ones. The reference category is Low wealth (first and second quintile).
High risk aversion	Binary variable taking value 1 for employees who declared to prefer an investment with low or fair returns, but also with no risk or a good degree of protection for the invested capital.
Preference for short run	Binary variable taking value 1 for employees who declared that if they won a lottery where the prize is equal to the annual household disposable income and it is postponed by a year, then they would give up to at least 10% of this prize to receive it immediately; and 0 otherwise. The question about individual preference for short period is collected in the 2010 survey.
Financial literacy	Binary variable taking value 1 for employees who correctly answered to at least two out of the three questions discussed in Section 3, and 0 otherwise. The questions about individual financial literacy are collected in the 2008 survey.

**Table A.2 – Determinants of the severance pay transfer choice (Multinomial Logit), the pension literacy, pension fund participation, positive change in pension fund participation from 2006 to 2012 (Logit), the ELM outcomes (Multinomial Logit) and of the decision consciousness (Logit): marginal effects with expected replacement rate in 2006**

VARIABLES	Severance pay transfer choice: Yes	Severance pay transfer choice: No	Severance pay transfer choice: Do not know	Pension Literacy	Pension Fund Participation	Positive Change in Pension Fund Participation	Central route change CR	Peripheral route change PR	Retain initial attitude RIA	Decision consciousness DC
Female	-0.0530**	0.0827***	-0.0297	-0.0033	-0.0600**	-0.0230	0.0036	-0.0065	0.0029	-0.0124
Age < 35	-0.0886	0.0338	0.0548	0.0083	-0.0625	-0.0152	-0.0104	-0.0081	0.0185	-0.0700
Age 35-45	-0.0537	-0.0069	0.0606*	0.0124	0.0310	0.0300	-0.0120	0.0497	-0.0380	-0.0518
Age 45-55	0.0288	-0.0683	0.0395	0.0429	0.0753*	0.0547	0.0179	0.0077	-0.0256	0.0037
Married	0.0341	0.0515	-0.0857***	0.1374***	0.0322	0.0425	0.0519*	0.0072	-0.0591	0.1345***
High school	0.0617**	-0.0528	-0.0089	0.1040***	0.0823***	0.0666**	0.0493**	0.0348	-0.0841**	0.0857**
University	0.0600	-0.0927*	0.0328	0.2350***	0.1105**	0.1048*	0.0938***	0.0112	-0.1051**	0.1720***
Household size	-0.0088	0.0186	-0.0098	-0.0343**	-0.0331**	-0.0214	-0.0021	-0.0096	0.0117	-0.0091
Centre	-0.0381	0.0074	0.0307	0.0278	-0.0275	-0.0051	-0.0035	0.0049	-0.0014	0.0195
South	-0.0727**	0.0281	0.0446	-0.0290	-0.0182	0.0183	-0.0304	0.0490	-0.0190	-0.0795*
Small municipality	0.0441	-0.1010**	0.0569*	0.0797*	0.0625	0.0529	0.0033	0.0515	-0.0548	0.0375
Big municipality	0.0462	-0.0780*	0.0319	0.0660	0.0514	0.0263	-0.0092	0.0220	-0.0131	0.0500
No. Employees ≤ 15	-0.2032***	0.1508**	0.0524	0.0347	-0.1655***	-0.1678***	-0.0574*	-0.0710	0.1284**	0.0190
15 < No. Employees < 50	-0.1129***	0.0285	0.0844*	0.0124	-0.0997*	-0.0889*	-0.0641	0.0046	0.0595	-0.0868
No. Employees ≥ 100	0.0207	-0.0687	0.0480	0.0733	0.0683	0.0558	-0.0051	0.0347	-0.0296	0.0253
Medium income	0.1215***	-0.1219**	0.0004	0.0308	0.0902*	0.0977*	-0.0373	0.1126***	-0.0752	0.027
High income	0.1081**	-0.1382***	0.0301	0.1907***	0.1121**	0.1009**	0.0533	0.0526	-0.1058**	0.1312***
Medium wealth	-0.0054	-0.0021	0.0075	0.0538	-0.0350	-0.0380	-0.0280	-0.0171	0.0450	0.0524
High wealth	0.0195	0.0034	-0.0229	0.0042	0.0334	0.0109	-0.0194	0.0140	0.0054	0.0176
High risk aversion	-0.0112	0.0271	-0.016	0.1915***	-0.0687	-0.1202**	0.0340	-0.1811***	0.1471**	0.2311***
Preference for short run	0.0237	0.0282	-0.0519**	-0.0795**	-0.0048	-0.0062	0.0000	-0.0118	0.0118	-0.0120
Financial literacy	0.0466*	0.0089	-0.0554**	0.1252***	0.0375	0.0029	0.0577**	-0.0557**	-0.0021	0.1571***
Exp. replacement rate in 2006	-0.0014*	0.0015*	-0.0002	0.0004	-0.0015*	-0.0017*	-0.0001	-0.0010	0.0011	0.0008
Observations	886	886	886	886	886	783	886	886	886	886
Pseudo R-squared	0.153	0.153	0.153	0.124	0.139	0.114	0.096	0.096	0.096	0.117
Log Likelihood	-582.6	-582.6	-582.6	-537.8	-443.9	-368.7	-570.9	-570.9	-570.9	-530

Note: All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects. Base Outcome (1° Multinomial Logit): Do not know. In estimating determinants of the positive change in pension fund participation, 'Yes-No' and 'Yes-Yes' cases of change in pension fund participation are excluded. Base Outcome (2° Multinomial Logit): 3 (RIA).

**Table A.3 – Determinants of the severance pay transfer choice (Multinomial Logit), the pension literacy, pension fund participation, positive change in pension fund participation from 2006 to 2012 (Logit), the ELM outcomes (Multinomial Logit) and of the decision consciousness (Logit): marginal effects with trust in principal bank**

VARIABLES	Severance pay transfer choice: Yes	Severance pay transfer choice: No	Severance pay transfer choice: Do not know	Pension Literacy	Pension Fund Participation	Positive Change in Pension Fund Participation	Central route change CR	Peripheral route change PR	Retain initial attitude RIA	Decision consciousness DC
Female	-0.0419*	0.0674**	-0.0254	-0.0089	-0.0530**	-0.0207	-0.0006	-0.0031	0.0037	-0.0041
Age < 35	-0.0629	0.0199	0.0430	0.0088	-0.0757	-0.0260	0.0054	-0.0424	0.0369	-0.0356
Age 35-45	-0.0372	-0.0138	0.0510	0.0079	0.0466	0.0479	-0.0103	0.0570	-0.0468	-0.0593
Age 45-55	0.0404	-0.0659	0.0254	0.0340	0.0833**	0.0647	0.0209	0.0123	-0.0332	0.0027
Married	0.0379	0.0514	-0.0893***	0.1356***	0.0279	0.0409	0.0494*	0.0088	-0.0582	0.1469***
High school	0.0621**	-0.0478	-0.0143	0.0944***	0.0787***	0.0630**	0.0517**	0.0289	-0.0806**	0.0800**
University	0.0682*	-0.0919*	0.0238	0.1908***	0.0882*	0.0801*	0.0888***	-0.0004	-0.0884*	0.1593***
Household size	-0.0046	0.0247	-0.0201	-0.0306*	-0.0259*	-0.0141	0.0013	-0.0100	0.0086	-0.0015
Centre	-0.0367	-0.0046	0.0413	0.0194	-0.0384	-0.0186	0.0023	-0.0095	0.0071	0.0172
South	-0.0642**	0.0190	0.0452	-0.0302	-0.0141	0.0141	-0.0297	0.0523	-0.0226	-0.0862**
Small municipality	0.0356	-0.1009***	0.0653**	0.0757*	0.0700*	0.0620*	-0.0055	0.0712**	-0.0657*	0.0138
Big municipality	0.0378	-0.0716*	0.0338	0.0982***	0.0526	0.0280	-0.0119	0.0302	-0.0182	0.0585
No. Employees ≤ 15	-0.1888***	0.1080*	0.0807	0.0631	-0.1453***	-0.1462***	-0.0613*	-0.0497	0.1110**	0.0368
15 < No. Employees < 50	-0.1121***	-0.0182	0.1303**	0.0465	-0.0835*	-0.0743	-0.0655*	0.0221	0.0435	-0.0873
No. Employees ≥ 100	0.0209	-0.1182**	0.0972*	0.0878	0.0716*	0.0581	0.0012	0.0432	-0.0444	0.0228
Medium income	0.1054**	-0.1400***	0.0346	0.0355	0.0800*	0.0855*	-0.0437	0.1061***	-0.0624	0.0095
High income	0.0973**	-0.1326***	0.0353	0.1733***	0.0971**	0.0819*	0.0472	0.0459	-0.0932**	0.1103**
Medium wealth	0.0062	-0.0065	0.0002	0.0681	-0.0224	-0.0211	-0.0134	-0.0185	0.0319	0.0668
High wealth	0.0211	-0.0229	0.0018	0.0355	0.0390	0.0238	-0.0148	0.0191	-0.0042	0.0276
High risk aversion	-0.0138	0.0328	-0.0190	0.1568***	-0.0531	-0.1006*	0.0267	-0.1438**	0.1171**	0.2123***
Preference for short run	0.0199	0.0325	-0.0524**	-0.0786**	-0.0110	-0.0103	0.0055	-0.0201	0.0147	-0.0160
Financial literacy	0.0540**	0.0168	-0.0707***	0.1047***	0.0554**	0.0263	0.0460**	-0.0268	-0.0192	0.1323***
Trust in principal bank	0.0376	-0.1231**	0.0855*	0.0306	0.0363	0.0501	0.0498	0.0088	-0.0586	0.0153
Observations	1,008	1,008	1,008	1,008	1,008	904	1,008	1,008	1,008	1,008
Pseudo R-squared	0.161	0.161	0.161	0.100	0.138	0.110	0.0980	0.0980	0.0980	0.0981
Log Likelihood	-655.3	-655.3	-655.3	-628.5	-491.4	-415.9	-630	-630	-630	-616.2

Note: All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects. Base Outcome (1° Multinomial Logit): Do not know. In estimating determinants of the positive change in pension fund participation, 'Yes-No' and 'Yes-Yes' cases of change in pension fund participation are excluded. Base Outcome (2° Multinomial Logit): 3 (RIA).

**Table A.4 – Determinants of the severance pay transfer choice (Multinomial Logit), the pension literacy, pension fund participation, positive change in pension fund participation from 2006 to 2012 (Logit), the ELM outcomes (Multinomial Logit) and of the decision consciousness (Logit): marginal effects with general trust in banks and other people**

VARIABLES	Severance pay transfer choice: Yes	Severance pay transfer choice: No	Severance pay transfer choice: Do not know	Pension Literacy	Pension Fund Participation	Positive Change in Pension Fund Participation	Central route change CR	Peripheral route change PR	Retain initial attitude RIA	Decision consciousness DC
Female	-0.0351	0.0624*	-0.0273	-0.0276	-0.0790**	-0.0463	-0.0088	-0.0312	0.0400	0.0015
Age < 35	-0.1551**	0.1544*	0.0007	0.0185	-0.1142	0.0024	0.0048	-0.0491	0.0444	-0.0348
Age 35-45	-0.1179**	0.0630	0.0549	0.0767	-0.0016	0.0449	0.0166	0.0560	-0.0726	-0.0064
Age 45-55	0.0034	-0.0151	0.0117	0.0517	0.0731	0.1086**	0.0469	0.0504	-0.0972*	0.0176
Married	-0.0310	0.1630***	-0.1320***	0.1308**	0.0037	0.0380	0.0150	0.0136	-0.0286	0.1346**
High school	0.0355	-0.0249	-0.0107	0.0585	0.0398	0.0219	0.0564*	-0.0032	-0.0531	0.0623
University	0.0337	-0.0424	0.0087	0.1531*	0.0089	-0.0544	0.0461	-0.0883	0.0422	0.1826**
Household size	0.0138	-0.0164	0.0025	-0.0185	-0.0191	-0.0135	0.0130	-0.0236	0.0106	0.0082
Centre	-0.0649*	-0.0018	0.0667*	0.0867	-0.0706*	-0.0596	-0.0037	-0.0348	0.0384	0.0847
South	-0.0549	-0.0113	0.0662	-0.0285	-0.0238	0.0054	-0.0147	0.0306	-0.0160	-0.0871
Small municipality	0.0674*	-0.1483***	0.0809*	0.0645	0.0548	0.0376	0.0551	0.0128	-0.0679	0.0290
Big municipality	0.0360	-0.0970*	0.0609	0.0810	0.0443	-0.0014	0.0217	-0.0214	-0.0002	0.0643
No. Employees ≤ 15	-0.2502***	0.1569	0.0933	-0.0423	-0.1865***	-0.1511**	-0.0795*	0.0078	0.0717	-0.0756
15 < No. Employees < 50	-0.1291**	-0.0546	0.1838*	0.0049	-0.0874	-0.0762	-0.1249**	0.0681	0.0568	-0.1369
No. Employees ≥ 100	-0.0258	-0.1078	0.1336	0.0028	0.0627	0.0620	-0.0355	0.1072*	-0.0717	-0.0982
Medium income	0.1275**	-0.1408**	0.0133	-0.0164	0.0736	0.0830	-0.0653	0.1104**	-0.0451	-0.0329
High income	0.0789	-0.0631	-0.0158	0.0988	0.0268	0.0227	0.0214	0.0261	-0.0475	0.0591
Medium wealth	-0.0264	0.0275	-0.0011	0.0847	-0.0126	-0.0325	-0.0141	-0.0499	0.0641	0.0771
High wealth	-0.0234	0.0367	-0.0133	0.0731	0.0129	-0.0129	-0.0486	0.0067	0.0419	0.0734
High risk aversion	-0.0347	0.0616	-0.0269	0.1555*	-0.0622	-0.1762*	-0.0297	-0.1174	0.1471*	0.2345***
Preference for short run	0.0188	0.0228	-0.0416	-0.0653	-0.0241	-0.0076	-0.0050	-0.0368	0.0418	-0.0089
Financial literacy	0.0703**	-0.0194	-0.0509*	0.1170***	0.0463	0.0238	0.0998***	-0.0403	-0.0595	0.1468***
Trust in banks	0.0448	-0.0595	0.0147	0.0728	0.0059	0.0313	0.0668**	-0.0481	-0.0187	0.0758*
Trust in other people	-0.0254	0.0430	-0.0176	0.0143	0.0065	0.0140	0.0171	0.0135	-0.0306	-0.0073
Observations	497	497	497	497	497	447	497	497	497	497
Pseudo R-squared	0.188	0.188	0.188	0.104	0.162	0.145	0.132	0.132	0.132	0.113
Log Likelihood	-299.1	-299.1	-299.1	-308.6	-222.2	-184.7	-283.5	-283.5	-283.5	-296.8

Note: All variables refer to 2012, except for financial literacy (to 2008) and preference for short run (to 2010). Robust standard errors; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The table presents average marginal effects. Base Outcome (1° Multinomial Logit): Do not know. In estimating determinants of the positive change in pension fund participation, 'Yes-No' and 'Yes-Yes' cases of change in pension fund participation are excluded. Base Outcome (2° Multinomial Logit): 3 (RIA).