Choice or no choice: what explains the attractiveness of default options?

Maarten van Rooij, De Nederlandsche Bank and Netspar
Federica Teppa, Erasmus University Rotterdam and Netspar*

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Abstract

This paper contributes to the literature on default in a number of ways. First, it compares the role of the default option across several domains (e.g. organ donation, voting behavior and pension savings). Second, it provides empirical evidence on the relative importance of potential explanations for default choices (including procrastination, inertia, illiteracy, obedience and regret aversion). We identify the extent in which our respondents are exposed to these characteristics using factors from a principal component analysis on twenty statements about individual behavior. Third, the analysis is based on a special module devised for the DNB Household Survey in the Netherlands, for which no empirical findings exist yet. The use of survey data, where existing studies are based on either administrative data or field/laboratory experiments, allows us to assess quantitatively the relevance of any of the potential reasons standing behind the attractive role of defaults, either by direct questions or by indirect inference. Moreover, the use of survey data allows having a rather complete picture of default behavior, as the interviewed people belong to the entire population distribution rather than to a particular sub-sample (students, workers, etc.), so that it is possible to study the role of default options not only in several domains (and possibly find different explanations across the domains), but also with respect to individual characteristics like age, gender, marital status and level of education.

In line with the findings for other countries, this paper shows that in the Netherlands the default plays a key role in individual decision making. Its relevance, however, differs across domains. In particular, the default option attracts the majority of preferences in domains where the marginal disutility associated to postponing the decision is lower (like getting rid of commercials, subscriptions or telemarketing), or in domains where the decision requires some

* Maarten C.J. van Rooij, Economics & Research Division, De Nederlandsche Bank, P.O. Box 98, 1000 AB, Amsterdam (m.c.j.van.rooij@dnb.nl). While writing this paper, Federica Teppa was in the Economics & Research Division of the Nederlandsche Bank. The views expressed in this paper are those of the authors and do not necessarily reflect those of the institutions they belong to. The authors are grateful to Arie Kapteyn and Arthur van Soest, both for their valuable comments and suggestions for a substantial improving of the questionnaire, and for letting us use US data. A special thank goes to Jeffrey Dominitz, for his outstanding work in implementing the questionnaire in US. We are grateful to Rob, Alessie, Peter van Els, Stefan Hochguertel, Lex Hoogduin, Peter Vlaar and participants of several seminars and workshops for their valuable comments. Moreover, we thank the staff of CentERdata and in particular Corrie Vis for their assistance in setting up the survey and the field work.

Corresponding author: Federica Teppa - Department of Applied Economics, Erasmus School of Economics, Erasmus University Rotterdam - Burg. Oudlaan 50 / Post Box 1738 - 3000 DK Rotterdam; e-mail: teppa@few.eur.nl; Phone +31 (0)10 408 1477 - Fax +31 (0)10 408 9141

financial skills (like retirement savings). In domains where the consequences of the decision are more substantial and immediate (like organ donation, or voting participation), the default option is much less relevant, if at all. Moreover, we extract seven factors as potential explanations for individual decision making, and we find evidence of the fact that personal behavior is driven by different reasons across different domains. We find preliminary evidence of procrastination and being financially illiterate to contribute to explaining why people do stick to the default. However, these behavioral factors seem to some extent to be dominated by individual background characteristics, when the latter are included as controls. This is not the case for obedience. We find evidence (also after including a rich set of controls) that more obedient people are more strongly motivated to deviate from the default when this is seen as 'socially desirable'. Obedience is for example positively related to the probability to vote and to be registered as an organ donor.

Key words: default options, factor analysis, individual preferences, individual decision making, behavioral economics

JEL Codes: D01, C13, C9

1. Introduction

The role of default options in individual decision making is well documented in the literature. The polarization at the default is a persistent empirical finding not only in economics (e.g. decisions about pension savings, insurance), but also in several other domains, like organ donation, phone marketing, Internet privacy policies. A number of potential explanations for this phenomenon have been put forward in the literature, like inertia, laziness, procrastination, status-quo bias, interpretation of defaults as the recommended options, and more. However, little evidence is provided about what the main reason stands behind a particular behavior. Moreover, the existing literature shows how even a "bad" default is by far the most chosen option, but a comparative study of the role of the default in different settings seems to be missing. This research aims at filling these gaps, by analysing the role of defaults in several domains and providing empirical evidence on the reasons for individual behavior. As a matter of fact, even if the default option works as an attractor in different domains, the reasons behind this finding might not be necessarily the same. If the main policy implication stemming from the relevant role of defaults is the need to very carefully design the default option, another important lesson for policy makers to induce individuals to increase the use of their discretion when making a decision would be to help them in doing so.

The main contributions of this paper are the following. First, the study will be focused on The Netherlands, for which no empirical findings exist yet. Second, the analysis will be based on survey data. All the existing studies on default options derive from either administrative data or field/laboratory experiments. The intrinsic nature of such data sources has always prevented from (quantitatively) testing the relevance of any of the potential reasons listed above. On the contrary, survey data are flexible enough to allow measuring the importance of the explanations, either by direct questions or by indirect inference. Third, the use of survey data allows having a more complete picture of the phenomenon as the interviewed people belong to the entire population distribution rather than to a particular subsample (students, workers, etc.). It will then be possible to analyse the role of default options not only in several domains (and possibly find different explanations across the domains), but also with respect to background individual characteristics like age, gender, marital status, education level, wealth.

In this paper we use *ad-hoc* data from the DNB Household Survey for the Netherlands. Eight distinct domains are identified for which a given default option applies unless individuals explicitly deviate by undertaking some action. For each domain respondents are

asked to report their behavior. It is thus possible to construct a dummy variable reflecting individual preferences. We then apply principal component analysis on twenty statements about personal attitude with respect to general concepts, like regret, obedience, inertia, and so on. Seven factors are identified, that nicely cope with the behavioral concepts used in the literature to explain the attractive role of default options. The final step consists in using these extracted factors, as well as some background individual characteristics, as control variables for the role of default in each of the domains.

In line with the findings for other countries, we find that in the Netherlands the default plays a key role in individual decision making. Its relevance however differs across domains. In particular, the default option attracts the majority of preferences in domains where the marginal disutility associated to postponing the decision is lower, or in domains where the decision requires some financial skills. In domains where the consequences of the decision are more substantial and immediate, the default option is much less relevant, if at all. Moreover, we find evidence of the fact that personal behavior is driven by different reasons across different domains. Procrastination and being financially illiterate seem to be the main explanations of sticking to the default. Age turns out to be the personal characteristic that significantly affects the largest number of domains, followed by the number of children, gender, level of education, and home ownership. However, the results about the explanatory power of the behavioral factors do not seem to be very robust, as they are dominated by individual background characteristics. This is not surprising, given that the behavioral factors may suffer of measurement errors to a greater extent than the personal characteristics.

The paper is organized as follows. Section 2 reviews the individual decision making process. Section 3 aims at summarizing the extensive literature on the role of default options. The data used for the empirical analysis is described in section 4 and section 5. The empirical results are reported in section 6 and section 7. Finally, section 8 concludes.

2. The individual decision making process: the role of (ir)rationality and social norms

Individual decision making is one of the most inter-disciplinary topics in academic research. The fact that not only economists, but also psychologists, sociologists, anthropologists and even lawyers have devoted much attention to it is not surprising, provided that the individual decision process does not involve purely economic/monetary aspects only, but also, if not primarily, emotions and feelings (Loewenstein, 2000). As a matter of fact, the way people take decisions has been studied for much longer by other disciplines than

economics, by which only relatively recently economists have been more and more influenced. As a result, over the last decades there has been an increasing need to "improve" the standard micro-economic normative models of decision making (expected utility, rational choice) by incorporating additional, more "behavioral" aspects in those models. Prospect theory is an impressive example: developed in the early Eighties by two psychologists (Daniel Kahneman and Amos Tversky), it nowadays represents an important milestone in economics. Economists contend that people are highly rational utility maximizers who are able to compute any action's likely effect on their total wealth, and choose accordingly. Kahneman and Tversky (1979) proved in a number of experiments that the day-to-day reality of decision makers deviates from the assumptions held by economists. By paying attention to whether a given course of action might result in a gain or loss from the status quo (or some other relevant reference point), and to whether people are (highly) sensitive to how choices are presented or "framed", they thus have generated an alternative, descriptive theory of decision making known as Prospect Theory.

The crucial point is that decision making is a reasoning process, and as such it can be rational or irrational. In everyday life several tecniques can be adopted when taking decisions. We may list the advantages and disadvantages of each option, or accept the first option that seems like it might achieve the desired result. We may acquiesce to a person in authority or an "expert", or simply flip a coin. We may even make use of tarot cards, astrology, augurs, revelation, or other forms of divination. In any case, thinking is costly (Shugan, 1980) and the decision making process can at some point be "biased", so that individuals might choose an option that deviates from the one considered to be the correct outcome. Not surprisingly, which normative models are to be used to evaluate what constitutes an erroneous decision is far from being generally agreed upon. Status quo, inertia, regret, procrastination, wishful thinking (or optimism), anchoring, peer pressure, myopia, inconsistency, prejudice are the most commonly debated cognitive biases in decision making. Interestingly enough, these are concepts economists have learned and borrowed from other disciplines, and become more and more familiar with. Economic models that take into account these aspects have been growing rapidly, leading to the so-called behavioral economics, according to which agents are boundedly rational (Rubinstein, 1998). Default options are making the above mentioned list even longer. Given the relevant and persistent role of defaults (see section 3 for a detailed description of the related literature), economists are now involved in developing models for "optimal" defaults (Choi *et al.*, 2005). However, whether sticking to the default option is good or bad is still under debate.

Moreover, the individual decision process might very likely be influenced to some extent by so called "social norms", e.g. rules that are socially enforced. The more the individuals who violate these norms are considered eccentric, or even deviant and are stigmatized, the greater the role of the default option as an attractor. To accept social norms as a driving force in personal decision making does not necessarily mean to deny the importance of rational choice: some actions are rational, others are norm-guided. In general, actions typically are influenced both by rationaliy and by norm. Sometimes, the outcome is a compromise between what the norm prescribes and what rationality dictates. The subjects in the experiment of Kahneman *et al.* (1986) who reject very unfair distributions, preferring to take nothing rather than to be exploited by others, do accept mildly skewed distributions. In certain cases, individuals may decide to behave in a certain way as a response to others' actions. Gift-giving serves as an example. There may not be an unconditional norm of celebrating birthdays at work, but once a colleague starts to offer cakes, the others may feel under an obligation to do the same, for reciprocity (Gouldner, 1960). At other times, rationality acts as a constraint on social norms. Many people go and vote out of civic duty, except when the costs become very high. Alternatively, voting can be interpreted as a phenomenon based on norms of cooperation of "fairness": an individual decide to cooperate if and only if most other people cooperate (Barry, 1979).

3. Related literature

A rapidly growing economic literature points out that, when taking decisions, individuals appear to depend heavily on default options. Several potential explanations for this kind of behavior have been provided. First, the *status quo bias*, i.e. the tendency to prefer an existing state of affairs to alternative ones, because the disadvantages of leaving it are larger than the advantages. By using data on the selections of health plans and retirement programs by faculty members (TIAA-CREF), Samuelson and Zeckhauser (1988) show that more than half the participants in the retirement program reached retirement with the same asset allocation as they had when they became eligible for the plan. Similarly, Ameriks and Zeldes (2000) analyse a 10-year panel of TIAA-CREF participants and find similar results. Fernandez and Rodrik (1991) argue that (ex ante) uncertainty about who would be the recipients of the gains and losses from a policy reform could lead to outcomes in which the median voter chooses the status quo outcome, even if total surplus is higher in expectation under the policy change. Clearly, the status quo bias is a direct implication of loss aversion,

the empirically demonstrated tendency for people to strongly prefer avoiding losses than acquiring gains (Kahneman and Tversky, 1979; Kahneman *et al.*, 1991), so that deviating from the default might be especially aversive (Johnson *et al.*, 1993).

Another reason of the relevance of default options in individual decision making is *time-inconsistent procrastination*, i.e. the tendency to delay a change longer than it should (Strotz, 1955). Laibson (1997) argue that hyperbolic discount functions induce dynamically inconsistent preferences, implying a motive for consumers to constrain their own future choices. Hyperbolic agents procrastinate because they think that whatever they will be doing later will not be as important as what they are doing now. O'Donoghue and Rabin (1999, 2001) examine self-control problems in a model where a person must do an activity exactly once. They show how a person who naively procrastinates due to a time-inconsistent taste for immediate gratification may put off investing, or implementing, superior investment strategies. Even when the person knows that the benefits of finding a superior investment enormously outweigh the short-term effort costs, she may significantly procrastinate because she repeatedly plans to put in the effort soon. They argue that policies aimed at default options and short-term incentives that do not significantly alter long-term incentives may be particularly useful to influence the savings behavior of procrastinators. In the same spirit, Shefrin and Thaler (1981) show that households might lack the self-control to delay current consumption in favour of future consumption.

A third explanation is simply *inertia, or laziness*: accepting the default requires no effort, while changing the default does. Moreover, when faced with difficult and confusing decision problems, many individuals will simply accept the provided default choice. The role of inertia in participant behavior is best illustrated with automatic enrolment plans in the US (the so called 401(k) plans). Madrian and Shea (2001) use employee-level data on 401(k) participation and savings behavior from a large, publicly traded Fortune 500 company in the health care and insurance industry. The company implemented a change in 401(k) enrollment and eligibility that took effect on April 1, 1998. The first change was that all employees became immediately eligible to participate in the 401(k) plan regardless of service, although the one-year service requirement was maintained to qualify for an employer match. The second change was that all newly hired employees were automatically enrolled in the 401(k) plan unless they explicitly chose to opt out. By using data from 1999, the authors find that participation rate for newly eligible employees increased from 49 percent to 86 percent. Much of the gap persisted over time: although employees hired under the original plan increased their participation over time, the enrolment rates of even the most senior employees under the

old regime continued to be below the enrolment rates of new hires under automatic enrolment. Morever, once people were defaulted into a money market fund, they were unlikely to take an action and reallocate their portfolio. In terms of wealth accumulation, the beneficial effects of automatic enrolment were roughly offset by harmful effects of defaults on contribution rates and investment allocations. Choi *et. al.* (2004) extend the analysis to a longer time horizon and find that the enrolment gap is still substantial after four years. Both studies show that automatic enrolment as a form of default choice is particularly successful raising the participation rate of lower-pay employees. Cronqvist and Thaler (2004) provide similar evidence for Sweden. When private social security accounts (Premium Pension Funds) were instituted, 33% of participants chose the default allocation despite the government urging them not to do so. The proportion of default choices rose to 93% three years later, after the government stopped its campaign. It seems that some workers are simply avoiding a difficult decision. However, all the above mentioned studies raise another potential explanation for the role of defaults, namely the idea that people perceive the default as an implicit recommendation by the policy makers (Johnson and Goldstein, 2003). Another study by Choi *et al.* (2003) compares participation in a plan that changed from a default choice not to participate to a new enrolment procedure that required employees to check one box or another, to participate or not. This redesign of the pension plan, requiring an active decision, led to participation rates as much as 25 percent higher than the standard default of non-enrolment. Inertia seems to affect portfolios as well, as recently documented by Bilias *et al.* (2006), who find evidence for substantial inactivity both in terms of trading and in terms of changing participation status, and irrespective of the stock market upswing or downswing.

Two recent papers provide further evidence that saving products designed to address behavioral factors can have large effects on the ability of people to reach their saving goals. The first one is by Benartzi and Thaler (2004), who propose a prescriptive savings program in the US (called Save More Tomorrow, or SMarT), so that people commit in advance to allocating a portion of their future salary increases towards retirement savings. This plan basically makes inertia work in favour of employee saving by establishing a higher saving rate as the default each salary cycle. They find that 78 percent of people offered the plan joined, of which 80 percent remained in it through the fourth pay raise. Moreover, they find that the average saving rates for the participants increased from 3.5 percent to 13.6 percent over the course of 40 months. The second paper is by Ashraf *et al.* (2004), who design and implement a commitment savings product (called Save, Earn, Enjoy Deposits, or SEED account) with a small rural bank in the Philippines. The SEED account requires that clients

commit to not withdraw funds that are in the account until they reach a goal date or amount, but does not explicitly commit the client to deposit funds after opening the account. Individuals are assigned randomly to one of three groups, a commitment-treatment group that is offered the special product, a second treatment group that receives a special marketing visit to promote savings but no special product, and a control group. They find that 28 percent of those in the commitment treatment group do open the SEED account. Moreover, the SEED account generates a strong positive impact on savings: after six months, average bank account savings increase by 46 percent in the commitment-treatment group relative to the control group; those who open the account increase savings by 192 percent. After one year, average bank account savings increased 80 percent for the control group, 337 percent for the marketing group. Furthermore, commitment-treatment group participants have a 12.3 (9.6) percent higher probability of increasing their savings by more than 20 percent after six (twelve) months, relative to the control group participants, and an 11 (6.4) percent higher probability of increasing their savings by more than 20 percent, relative to the marketing group participants. The increase in savings over the twelve months suggests that the savings response to the commitment treatment is a lasting change, not merely a short-term response to the new product.

Nowadays, the main challenge facing governments and employers is how to exploit the lessons of such behavioral research to design saving plans to encourage individuals to make decisions that are in their own long-term self-interest.

4. The data

In this paper we use data collected from the households in the so-called DNB Household Survey. The DNB Household Survey (formerly known as the CentER Savings Survey) is a panel survey of more than 2,000 households in the Netherlands that started in 1993 and collects data every year. The panel members are aged 16 years and older, and they are representative of the Dutch population. The data contains information about employment, pensions, accommodation, mortgages, income, assets, debts, health, economic and psychological concepts, personal characteristics, and much more. The DNB Household Survey (DHS) data is unique in the sense that it allows to combine and analyze both psychological and economic aspects of financial behavior.

The analysis in this paper is mainly based on the results of a special module that we have devised. This module was fielded in the weekend of June 2-6, 2006, to 2467 panel

members of which 1648 completed the questionnaire. The corresponding response rate equals 66.5 percent. For each respondent, we then merge the data referring both to individual background characteristics and to income/wealth at the household level. As a consequence of the merging process, for some variables the total number of observations is somewhat smaller, due to missing values. The variables used as controls in the empirical analysis are listed below, whereas Table 1 reports the corresponding summary statistics.

Independent variables:

Male	dummy for gender (1=male, 0=female)
Age	respondents' age (in years)
Age2	squared age of the respondent
Low education	dummy for low completed education (1=primary and preparatory intermediate vocational, 0=other)
Mid education	dummy for middle completed education (1= secondary pre-university and intermediate vocational , 0=other)
High education	dummy for high completed education (1= higher vocational and university, 0=other)
Not working	dummy for not working for a wage (student/unemployed/disabled/housewife)
Employed	dummy for employed (paid job)
Self-employed	dummy for self-employed
Retired	dummy for retired
Partner	dummy for being single or having a partner (1=married or living together, 0=single)
Children	dummy for having children (1=yes, 0=no)
N. children	total number of children (both living with their parents and on their own)
Home owner	dummy for house ownership (1=house owner, 0=other)
Gross income	gross individual monthly income (in quartiles dummies)
Tot. fin. assets	total net household financial assets (in quartiles dummies)

5. Domains for the study of default options

This section is devoted to illustrate the domains for which the default options are studied. Organ donation, voting behavior, last will, commercials, telemarketing, subscriptions, and voluntary pension savings are analysed. The attention is focused on the questions used to detect the role of the default options and on providing some empirical evidence on the individual decision making process in each of the above listed domains.

5.1. Organ donation

The first domain we consider is organ donation. Two systems of organ donation are used in current practice around the world: opting in, and opting out. In the so-called "opt in" system, individuals are asked to register their intention to become a donor. An alternative

system consists of deeming people to have given their consent to organ donation unless they had specifically "opted out" by recording their unwillingness to give organs in writing.

The Netherlands is currently operating under an "opting in" policy, e.g. the default option consists of not being an organ donor, unless individuals are explicitly willing to become one, by registering in the donor register[1]. For the purposes of this paper, three questions are considered, and read as follows:

- *Do you think in general people ought to be prepared to be an organ donor?*

- *Are you willing to be an organ donor?*

- *Are you an organ donor, i.e. are you registered in the donor register as being willing to act as an organ donor?*

Table 2.1 shows the results. When asked whether *in general* people ought to be prepared to be an organ donor, slightly less than 20 percent stick to the default option, whereas almost 70 percent of the respondents deviate from it. However, among the latter, when asked whether they are *de facto* organ donors, the percentage of those who then stick to the default option (and thus are not donors) raises to 30 percent.[2] It is worth mentioning that one of the reasons it is being suggested that this opting in approach to organ donation is in need of review is the fact that it may deviate potential donors from becoming ones. Our data seems to (partially) support this fear.

5.2. Voting behavior

One of the distinguishing features of a democracy is universal voting. Each individual has free access to the voting system, conditional of satisfying some legal requirements, like age and nationality (or residence). However, the default option in voting behavior is not to vote.

We analyze voting (non)participation with respect to three elections' levels, namely national general elections, European elections, and local elections. The purpose is to detect any differences in terms of voting behavior that may potentially arise, for example, from a greater interest at the national level than at the European level, or from a greater involvement in local elections than in national elections. We first ask whether in general people ought to

[1] A similar system can be found in Italy and UK. The "opting out" system is operating in Belgium, whereas the required request policy is operating in the US.

[2] The actual official figure for the Netherlands is considerably higher, about 80 percent. This raises a potential representativeness issue for our data. However, individuals participating to surveys usually are more sensitive to social matters.

vote, and then whether they have voted for the one-but-last national elections, that took place in January 2003. The same question is then repeated for the last European elections (June 2004) and for the last local elections (March 2006). Before analyzing the role of the default option in this domain, it is useful to mention that according to our data, 88 percent of respondents have voted for the national elections, 79 percent have voted for the European elections, and 82 percent have voted to the local elections. If these self-reported participation rates are compared to the official ones, we notice a rather huge discrepancy. As a matter of fact, official statistics report voting rates equal to 80 percent for national elections, 40 percent for European elections, 58 percent for local elections. Even after recalculating our results using weights (correcting for differences between the sample composition and population statistics on age, income, gender and education), this discrepancy does not disappear, as voting rates become 84 percent for the national elections, 74 percent for the European elections, and 77 percent for the local elections. These findings are consistent with previous findings as it has been documented that people participating in panel surveys care more - on average - about social matters. Along this dimension of social involvement, our sample seems to be affected by some kind of self-selection.[3]

Table 2.2 shows that the default option never attracts the majority of respondents. This is not only as expected, but also as (socially) desirable. The fact that at least 84 percent of the respondents claim to have (recently) voted is quite good news for democracy. It is worth noting however that the percentage of respondents defaulted into not voting in the European elections is more than double the percentage of respondents defaulted into not voting in the national elections (15 vs. 6 percent, respectively). A similar pattern applies when comparing local elections with national elections (13 vs. 6 percent, respectively). Of course, this table alone does not provide enough support to the conclusion that the respondents in our sample shows more interest in national matters than in European or local affairs. Nevertheless, a sort of different role of the default option seems to arise across voting settings and might be worth investigating more deeply.

5.3. Last will, commercials, telemarketing and subscriptions

A will (or testament) is a document by which a person (the testator) regulates the rights of others over his property or family after death. Respondents are asked whether they have a will.

[3] This also explains the high number of respondents having registered as an organ donor if compared to official statistics.

In the Netherlands (as well as in a many other countries), a lot of companies and other institutions send around unaddressed commercial leaflets or free local papers. Prabably typical for the Netherlands is that people may choose not to receive commercial leaflets by putting a “yes/no” (or a “no/no”) sticker on their mailbox. The yes/no sticker makes clear to the mailman that the persons living at this address do not want to receive commercial leaflets but do like to read local papers. The no/no sticker clarifies that none of these are welcomed at this address. These stickers are free. Sometimes they are distributed by local authorities, but they are also easy to order via internet of calling a special phone number. Many households complain about the high number of `useless` paper they receive in their mailbox. We therefore ask the respondents whether they have such stickers.

Similarly, a lot of companies and other organizations make use of telemarketing, i.e. they approach people by phone (often around dinner time) to sell their products. It is however possible for people to register themselves as to let these companies and organizations know that they do not want to be called by them. We ask the respondents whether they have registered themselves in order not to receive telemarketing.

Finally, many households have subscriptions that are automatically continued unless they are cancelled in time. Public transport cards, magazines, newspapers, tv-guide abonements, membership of charity organizations, lotto, membership of sport clubs or other clubs are examples of this type of subscriptions. Respondents who claim to have at least one of these subscriptions are asked whether they intend to cancel any of them.

Table 2.3 shows that in any of the above mentioned domains the default option attracts the large majority of individuals. The percentage exceeds 80 percent in the cases of commercials and telemarketing. We should however consider that respondents also might intentionally want to receive either commercials or telemarketing calls, or both, and consequently stick to the default options. When investigating the self-reported reasons for not getting rid of commercials and/or telemarketing, we see that 65 percent claim that they indeed consider commercials useful, whereas the corresponding figure for telemarketing is strongly different: only 2 percent of the people who do not get rid of telemarketing find these calls useful.

As for the will, almost 60 percent of respondents do not have one. Moreover, of the individuals who have first reported to have at least one of the subscriptions automatically renewed (1,418 observations), almost 70 percent claim they do not intend to cancel them.

5.4. Voluntary retirement savings and "levensloopregeling"

The pension system in the Netherlands consists of three pillars, of which the first one is pay-as-you-go and provided by the state, the second one is fully funded and privately provided, and the third one is on a voluntary basis. We ask respondents the following question on third pillar pension savings products:

Do you have other arrangements for your pension apart from the standard customary pension you build up through your employer?

As of 1 January 2006, a new savings scheme for employees has been introduced in the Netherlands, the so-called "levensloopregeling", that goes along and eventually replaces another already existing savings arrangement, called "spaarloonregeling"[4]. Employees are allowed to save part of their gross salary in a tax friendly way to finance a future period of absence (e.g. sabbatical leave, parental leave, long care leave, educational leave, early retirement, etc.). They are allowed to save up to 12 percent of their gross wage, but it is not allowed to participate in the "levensloopregeling" and the "spaarloonregeling" at the same time. Respondents are first asked to report whether their employer has offered them the opportunity to participate in a "levensloopregeling". We explicitly point out that their answer to this question should be positive even in case they have been offered the opportunity, but have decided not to use it (yet). Then, the respondents who have reported a positive answer, are asked to indicate whether they do participate in a "levensloopregeling". Since the participation to this scheme is fully voluntary, the default option consists in not being part of a "levensloopregeling".

Table 2.4 summarizes the results. In both domains, the default option works as an attractor, particularly strong for the "levensloopregeling". It should however be noticed that the 88 percent corresponding to people defaulted into the non-participation might be explained by both the severe drop in the number of observations (only 944 out of 1,648 have been offered the new savings scheme), and by the relatively recent introduction of this

[4] See Alessie *et al.* for a better understanding of the "spaarloonregeling".

scheme. With this *caveat* in mind, the fraction of people reporting that they do not have any other arrangements for their pension apart from the standard customary pension built up through their employer (58 percent) appears more informative.

5.5. What role for the default option?

The empirical evidence so far emphasizes that in the Netherlands the default plays a key role in individual decision making. This result is in line with the findings for other countries. However, the relevance of the default option differs across domains. In particular, the default option attracts the majority of preferences in domains where the marginal disutility associated to postponing the decision is lower (like getting rid of commercials, subscriptions or telemarketing), or in domains where the decision requires some additional financial skills (like retirement savings). Moreover, in domains where the consequences of the decision are more substantial and immediate (like organ donation, or voting participation), the default option is much less relevant, if at all.

In interpreting these findings, one should also take into account that different features characterize the domains. Organ donation, for example, is a reversible decision, potentially driven by either moral or religious convictions. Voting occurs at fixed dates, it is an irreversible action, and causes (positive) externalities. Having a will is a reversible choice, but costly. Getting rid of commercials or telemarketing is also a reversible decision, but by far much less costly. Periodical subscriptions are subject to deadlines. Finally, voluntary pension saving is a continuous, dynamic choice, certainly requiring some additional specific financial expertise than all other previously mentioned domains. It is then clear that these different properties have differential implications for the individual behavior.

6. Potential determinants of defaulted preferences: a factor analysis approach

In order to elicit information about regret, we ask respondents two hypothetical questions. In both questions, we aim at distinguishing between regretting action and regretting inaction, both associated with negative outcomes. As a matter of fact, it is a rather well established finding in the psychological literature that, in the short run, individuals regret action more than inaction, i.e. they regret negative outcomes caused by actions more than equally negative outcomes caused by inactions (Kahneman and Tversky, 1982; Landman,

1987; Gleicher *et al.*, 1990). This phenomenon is known as regret aversion. The first question reads as follows:

Imagine you have a safe job and you are asked by another employer to apply for a different job. Suppose you decide to give it a try and you fulfill the application procedure. At the end of the procedure (with e.g. 3 different meetings) someone else is chosen and you keep working in your current safe job. Please indicate on a scale from 1 to 7 to which extent you agree with each of the following statements (1 means 'totally disagree' and 7 means 'totally agree'):

a1: If I had known the outcome of the selection procedure, I would not have taken any action

a2: Despite the unfortunate outcome, I would not regret to have taken part in the selection procedure

The second question replicates Kahneman and Tversky' (1982) formulation, and it reads as follows[5]:

a3: Paul owns stock of company A. Last year he considered switching to stock of company B, but he decided not to do so. He now discovers that he would have been better off by € 1200 if he had switched to stock of company B.
John owned stock of company B, but last year he switched to stock of company A. He now discovers that he would have been better off by € 1200 if he had kept his stock of company B.

Please indicate on a scale from 1 to 7 who you think regrets most his decision (1 means 'Paul regrets much more than John', 4 means 'Paul and John regret to the same extent' and 7 means 'John regrets much more than Paul')

The two questions differ for the fact that in the first one, the final outcome is neutral, e.g. the individual would not get the new job, but she would not loose her job either: she would simply keep working with the same employer as before. Taking action would not lead to any negative outcome, rather it would be Pareto-efficient. In contrast, the second question involves a negative outcome for both Paul and John. Table 3 summarizes frequencies and percentages associated to the above mentioned questions. The table shows a different distribution between the first question (statements 1 and 2) and the second one (Paul and John case). For the latter, the highest percentage is associated with the indifferent outcome (34.53 percent); for the former, the highest percentages are associated with the top part of the distribution (21.42 percent and 19.78 percent for statement 1 and statement 2, respectively). This might be due to the fact that the second questions deals with numbers, so that the decision between Paul and John regretting more involves a mathematical calculus. Indeed,

[5] Kahnemand and Tversky used a different regime for responses though. They required respondents to choose between Paul and John, not allowing for the opportunity of equal regret.

from an algebraic point of view, Paul and John's actions have the same expected value, so they should regret to the same extent their (in)action. Instead, the first question displays a more smoothed distribution (people who state to be indifferent represent 11.47 percent in statement 1, and 12.26 percent in statement 2), that might be explained by the more qualitative nature of the question. Moreover, Table 3 shows evidence for regret aversion, as high percentages are associated with considering John more regretting than Paul. This finding is in line with the existing literature on regret.

A second set of questions are asked. Respondents are given a list with eighteen statements, reported in Table 4.1, that are meant to elicit information about (some of) the reasons, other than regret, commonly mentioned in the literature as the driving forces of the tendency to stick to the default options. We ask respondents to indicate on a scale from 1 to 7 to which extent they agree with the eighteen statements.

Finally, respondents are asked to assess their financial skills, by answering again on a 7-point scale (1 means 'very bad' and 7 means 'very good'). We refer to this statement as statement c from now on.

We then perform principal component analysis in order to extract "factors" from the set of data deriving from all the questions listed above. Factor analysis, in fact, is a methodology largely used in the psychological literature to study the patterns of relationship among many dependent variables, with the goal of discovering something about the nature of the independent variables that affect them, even though those independent variables are not measured directly. The inferred independent variables are called "factors". Principal component analysis is a particular form of factor analysis. It seeks a linear combination of variables such that the maximum variance is extracted from the variables; it then removes this variance and seeks a second linear combination which explains the maximum proportion of the remaining variance, and so on. After applying varimax rotation, seven factors are extracted from our data (see Table 4.2 and Table 4.3). The good news is that each of these factors relatively easily copes with the reasons claimed in the literature for the attractive role of default. We thus re-call these factors as procrastination, being careful and precautious, willingness to be advised, obedience, financial literacy, regret aversion, and inertia/status-quo.

The order used to present the factors reflects the magnitude of the eigenvalues of the correlation matrix, from highest to lowest.[6]

In order to give a name to the extracted factors, we highlight the highest score (in absolute value) for each of the questions used in the factor analysis as independent variables. Table 4.2 reports these highest scores in bold characters. Providing each factor with an appropriate name is a rather straightforward exercise.[7]

The relation among behavioral factors and individual background characteristics is analyzed by performing OLS regressions. Corresponding results are reported in Table 5 in terms of estimated coefficients, robust t-statistics (in brackets) and significance levels.

Gender is significant at the 1%-level for three out of seven factors: males tend to be more careful or to take more precautions, to be more obedient, and to regret more than females. Age and age squared are jointly significant for all factors but regret and status-quo/inertia.

Education dummies are jointly significant at the 1%-level for being careful/precautious and for financial literacy, and at the 10%-level for regret. For being careful/precautious and for regret, the sign of the estimated coefficients is negative, implying that higher levels of education induce individuals to take few precautions and to regret less. For financial literacy the estimated coefficients are positive: as expected, more educated people are more financially literate. Dummies for job status are jointly significant at the 10% level for carefulness/precaution only: the negative estimated coefficients reveal that the unemployed (acting as reference group) are more likely to be more careful/precautious than anyone else.

The presence of a partner is always significant at least at the 5%-level with the only exception of obedience. Respondents who have a partner tend to procrastinate less, to be less careful/precautious, more willing to ask for an advice, less financially literate, less regret averse, and more inert[8]. Household composition (presence of children and number of children) is relevant at the 5%-level at best for procrastination and for obedience only. Home ownership hardly has any relevance: only financial literacy is positively affected at the 1%-level by being a home owner.

[6] Factor 1 (procrastination) for example has the highest eigenvalue (2.86), whereas factor 7 (status-quo/inertia) has the lowest eigenvalue (1.02). The cumulative proportion of the extracted seven factors equals 54 percent.
[7] For a robustness check, we implement principal component analysis by forcing the program to retain six factors only, instead of seven. It turns out that financial literacy drops out, and that the corresponding question c displays the highest score to the status-quo/inertia component.
[8] For the last three factors, the significance level is 1 percent.

Finally, gross personal income quartiles (the lowest quartile acts as reference group) are jointly significant for financial literacy (at the 1%-level), and for being careful/precautious and for status-quo/inertia (at the 5%-level). The corresponding estimated coefficients display a positive sign, with the exception of the highest quartile for taking precautions. A much more limited explanatory power on the behavioral factors is found for total net household financial assets quartiles (the lowest quartile serves as reference group). Only being careful/precautious is significantly affected at the 1%-level, in that richer individuals tend to take more precautions.

The next step consists in using the behavioral factors as explanatory variables in studying individual choices in the domains analyzed in the section 5. This is done in the following section.

7. What explains the attractiveness of default options?

This section is devoted to study the determinants of default preferences or more precise the characteristics that make a certain choice more likely just because it is framed as the default option. To this end, we exclude those respondents who actively choose the default option. In the descriptive statistics discussed so far, the reported frequencies of the default option included both so-called active and passive default choices. At forehand, it is not clear whether a choice for the default option is either an active choice because the respondent decided after careful consideration of the alternatives that the default option coincides with his preferences or a passive choice that is merely the result of the way the choice problem is framed. In order to filter out those respondents who very consciously choose for the default option and would also have chosen this option when the choice was framed otherwise, we have asked respondents why they came to their choice for the default option.

In the case of organ donation and voting, we focus on those people who state that basically everyone who is eligible ought to be an organ donor respectively ought to vote. Thus the regressions reported in this section concentrate on explaining default behavior (not being an organ donor and not voting) for those people who agree that they should do so. We study the relation between individual behavior and characteristics and not having a will, excluding those respondents who indicate that they do not think it is necessary because they have no assets (and for whom we know that they do not have kids). When people do not take action to protect themselves for commercial leaflets or phone marketing we disregard the group of

people who state that they find this kind of marketing useful, a group that is quite large in the case of commercial leaflets. In the subscriptions domain, we limit our analysis to those people who state they are thinking of canceling subscription but did not do so for other reasons than that they just made this decision and thus they had to respect the terms of cancellation. In analyzing what type of people do not have voluntary pension savings, we exclude those who are retired or state they have other assets what makes additional pension savings abundant. In analyzing the levensloopregeling we consider employees who state they do not have this type arrangement (except those who state that it is more attractive to save otherwise).

After filtering out the respondents that make an active choice for the default option, we perform a probit regression analysis for each of the domains illustrated in section 5. The dependent variable takes value 1 if respondents report to stick to the default option, 0 otherwise. As regressors, we use the seven factors extracted from factor analysis, that correspond to behavioral aspects of the decision making process, and the observed background individual characteristics at disposal. We first consider the behavioral factors alone in order to capture a pure effect from them (section 7.1). We then combine the behavioral factors with the individual background characteristics (section 7.2). Results are always presented in terms of marginal effects.

7.1. Pure behavioral factors' effect

Table 6 summarizes the results, by reporting the estimated marginal effects, absolute value of z-statistics (in brackets) and significance levels. A positive sign implies that the higher the degree of the corresponding explanatory variable, the higher the probability of sticking to the default option. The opposite applies for a negative sign.

Table 6 shows that the behavioral factors are jointly significantly different from zero at the 5%-level in seven domains out of ten, and in four domains at the 1%-level. Choices within the telemarketing domain is affected by the behavioral factors at the 10%-level of significance only.

Procrastination and financial literacy are the factors that significantly affect (mostly at the 1%-level) the highest number of domains. The more individuals procrastinate, the higher the probability of not being an organ donor, of not voting at the European as well as at the local level, of not having a will, and of not canceling subscriptions. The highest magnitude are found for organ donation and for the subscription domain: a marginal increase in procrastination reduces the probability of canceling subscriptions by almost 10 percent, and

that of being an organ donor by 8 percent. The probability of having a will increases marginally by approximately 6 percent. A smaller effect is found for voting behavior: if individuals procrastinate marginally more, the probability of voting decreases by 3 percent at the European level, at 2 percent at the local level.

The higher the degree of financial literacy, the higher the probability of voting (for national, and local elections), of having a will, of getting rid of commercials and telemarketing calls, of having voluntary pension savings schemes. The marginal effects are stronger for the commercial and the supplementary retirement savings (6 percent), and lower for voting participation (less than 2 percent). In the will domain, the marginal effect is of slightly more than 4 percent. Also in the other domains where the effect of financial literacy is not significant, more financially literate people tend to deviate form the default. The only exception is for the levensloopregeling. These findings are in line with expectations and common sense. More counterintuitive is the negative relation between procrastination and sticking to the default with respect to commercials and subscriptions, although in both these domains the effect is not significant.

Being careful and/or precautious increases the probability of having a will (the corresponding marginal effect equals 4 percent and the significance level is 5 percent), and the probability of voting at the national level (the corresponding marginal effect equals 1 percent and the significance level is 10 percent), but decreases the probability of being an organ donor (with a 3 percent marginal effect and a 5 percent significant level). Being obedient increases the probability of voting at the local level, and of getting rid of commercials, but decreases the probability of canceling subscriptions. Being inertial significantly affects organ donation only (at the 1 percent significance level), in that the stronger the status-quo bias the higher the probability of being an organ donor. The magnitude of the marginal effect is of the order of 5 percent. Finally, regret has a relevant explanatory power for the tendency to not get rid of commercials, with a marginal effect equal to 3 percent.

The willingness to get some advice from other people affects significantly (1 percent level) and negatively (with a 8 percent marginal effect) the voluntary pension savings domain. Moreover, the people who regret more tend to have a smaller probability of getting rid of commercials. The significance level is 5 percent and the marginal effect is 4 percent.

7.2. Pooling behavioral factors and individual characteristics

So far we have considered behavioral factors only. The next step is to re-run the regressions by adding the set of individual background characteristics (gender, age, level of education, job status, household composition, home ownership, gross personal income, and total household net financial assets) as explanatory variables. Results (estimated marginal effects, standard errors, and p-values) are reported in Table 7. The main findings are summarized as follows.

The evidence on the robustness of the relevance of behavioral factors as discussed in the previous section is somewhat mixed. When testing for joint significance the behavioral factors lose their explanatory power in seven domains, namely voting participation (at both national and European level), having a will, telemarketing calls, subscriptions, voluntary pension savings, and levensloop. As a consequence, the coefficients of the behavioral factors are jointly significantly different from zero in three domains only out of ten: organ donation at the 1%-level, voting at local elections and commercials at the 5%-level. However, when looking at the explanatory power of each single factor, we see that the estimated coefficients do still play an important role in some domains. Nevertheless, part of the explanatory power in the suggestive previous regressions obviously is taken over by the more objective personal characteristics. This is to be expected insofar the choices are also very much related to household characteristics, like home ownership and having a will. On the other hand, this presentation of results could underestimate the importance of behavioral factors, as we know from Table 5 that we can identify some groups (based on age, gender, education, labor market status, household characteristics) who are more prone to certain behavior. To the extent that behavioral characteristics are measured with error, the demographic characteristics might take over some of their explanatory power.

Turning the attention to the background characteristics, g*ender* significantly affects at the 5%-level organ donation, voting behavior (at the local level), and having a will. If compared to females, males are less likely to be organ donors (being male decreases the probability of organ donation by 10 percent), to vote at local elections (being male increases the probability of not voting by 5 percent), and to have a will (being male decreases the probability of having a will by 11 percent).

Age is significant at the 10 percent level in six out of ten cases, and at the 1 percent level in four domains. Age is included linearly. We have also experimented with quadratic age terms, but the corresponding coefficients appeared insignificant. Older respondents are less likely to be organ donors, more likely to vote (at both European and local elections), to have a

will, and to have taken action to prevent them from receiving commercials. Age is also related to voluntary pension savings (at the 10%-level). Older generations (not including those who are already retired) have more often put additional money aside for their pension.

Another control that contributes significantly to the explanation of choice behavior in several domains is *home ownership*. Home ownership is relevant for having a will (1 percent significance level), levensloop (5 percent), telemarketing, and voluntary pension savings (10 percent significance level). Home owners are more likely to have a will, to vote, to join both the new levensloop arrangements and supplementary retirement schemes, and to get rid of telemarketing. Particularly strong is the magnitude of the marginal effect for the will domain: being home owner increases the probability of having a will by 34 percent. This very strong effect might in part explain the insignificant role of both gross personal income and total net household wealth in this domain. The marginal effects for the other domains are much smaller, in the order of 5-11 percent.

The level of *education* turns out to be significant for commercials at the 1 percent level, and for levensloop at the 10 percent level. The higher the education level, the higher the probability of getting rid of commercials, and the lower the probability to join the levensloop scheme. Similarly, job status significantly affects individual behavior in the subscriptions domain only at the 10 percent level . Individuals with a paid job appear more likely to get rid of subscriptions.

The financial situation (gross personal income and total household net financial assets) does not seem to play a very significant role in respondents' behavior. The effect of the two controls is significant in the domains that are linked to financial matters the most, namely supplementary pensions and levensloop, at the 1%-level and 10%-level respectively. In both domains, richer individuals are more likely to have both voluntary pension savings and levensloop.

The *number of children* increases the motivation to vote with a significance level of 1 percent for local elections, of 5 percent for European elections and of 10 percent for national elections. The marginal effects are rather similar across voting contexts, ranging between 1 and 4 percent.

8. Concluding remarks and further extensions

This paper investigates the role of default options in the Netherlands. Several domains are considered, where a given default option applies unless individuals explicitly deviate from it by undertaking some action. For each domain we regress the self reported personal preferences on a number of behavioral factors commonly mentioned in the literature as responsible for the relevance of the default, and on a number of personal background characteristics.

In line with the existing literature, we find evidence for the fact that the default option attracts the majority of individual preferences in the Netherlands. However, the role of default varies across domains, in that it is stronger in areas where the marginal disutility associated to postponing the decision is lower (like getting rid of commercials, subscriptions or telemarketing), or in domains where the decision requires some additional financial skills (like retirement savings). Moreover, in domains where the consequences of the decision are more substantial and immediate (like organ donation, or voting participation), the default option is much less relevant, if at all.

Both behavioral factors and personal characteristics matter for the decision making processes. However, when including both sets of explanatory variables simultaneously, the contribution of some of the behavioural factors decreases. This could be due to the fact that some of the behavioural factors appear to be strongly related to demographic characteristics. Moreover, we need to experiment more with the specification of the regressions to further investigate the robustness of the results. We find preliminary evidence of procrastination and being financially illiterate to contribute to explaining why people do stick to the default. However, these behavioral factors seem to some extent to be dominated by individual background characteristics, when the latter are included as controls. This is not the case for obedience. We find evidence (also after including a rich set of controls) that more obedient people are more strongly motivated to deviate from the default when this is seen as 'socially desirable'. Obedience is for example positively related to the probability to vote and to be registered as an organ donor.

This paper is meant to be extended by incorporating US data. While writing this version, we are in the process of fielding the questionnaire in the US. Results will be very likely available in about one month. A consequent update of the paper will then follow shortly.

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Table 1: Summary statistics for the variables used in the empirical analysis

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**	**N. obs.**
Male	0.526	0.500	0	1	1648
Age	48.51	16.28	16	91	1648
Education level					
Low education (reference group)	0.335	0.472	0	1	1644
Mid education	0.316	0.465	0	1	1644
High education	0.349	0.477	0	1	1644
Job status					
Not working (reference group)	0.279	0.448	0	1	1648
Job	0.495	0.500	0	1	1648
Self-employed	0.031	0.173	0	1	1648
Retired	0.196	0.397	0	1	1648
Partner	0.711	0.453	0	1	1648
Children	0.65	0.476	0	1	1603
N. children	1.56	1.45	0	8	1585
Home owner	0.664	0.473	0	1	1648
Gross income (quartiles)	3467	2859	0	64437	1648
Tot.fin. assets (quartiles)	199428	276334	-125507	4243322	1396

Note: Median values: 1900 euro for gross income; 19650 euro for total net household financial assets.

Table 2.1: Organ donation

	Do you think in general people ought to be prepared to be an organ donor?		Are you an organ donor, i.e. are you registered in the donor register as being willing to act as an organ donor?	
	Freq.	Percent	Freq.	Percent
Yes	1,145	69.48	770	67.25
No	**321**	**19.48**	**349**	**30.48**
Refusal	18	1.09	5	0.44
Do not know	164	9.95	21	1.83
Total	1,648	100	1,145	100

Note: default option in bold

Table 2.2: Voting participation - frequencies

	Do you think in general people ought to vote?		Did you vote last time for the *national elections*?		Did you vote last time for the *European elections*?		Did you vote last time for the *local elections*?	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Yes	1,471	89.26	1,378	93.68	1,242	84.43	1,279	86.95
No	**114**	**6.92**	**87**	**5.91**	**214**	**14.55**	**191**	**12.98**
Refusal	5	0.30					1	0.07
Do not know	58	3.52	6	0.41	15	1.02		
Total	1,648	100	1,471	100	1,471	100	1,471	100

Note: default option in bold

Table 2.3: Last will, commercials, telemarketing, subscriptions - frequencies

	Do you have a last will?		Do you have a 'yes/no' or a 'no/no' sticker on your mailbox?		Have you registered yourself in order not to receive telemarketing?		Are you thinking of cancelling any subscriptions which are automatically continued?	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Yes	637	38.65	261	15.84	192	11.65	434	30.61
No	**981**	**59.53**	**1,349**	**81.86**	**1,404**	**85.19**	**951**	**67.07**
Refusal	9	0.55	6	0.36	6	0.36	-	-
Do not know	21	1.27	32	1.94	46	2.79	33	2.33
Total	1,648	100	1,648	100	1,648	100	1,418	100

Note: default option in bold

Table 2.4: Pension voluntary contributions & "levensloopregeling" - frequencies

	Do you have other arrangements for your pension apart from the standard customary pension you build up through your employer?		Do you participate in a "levensloopregeling"?	
	Freq.	Percent	Freq.	Percent
Yes	543	32.95	71	7.52
No	**954**	**57.89**	**831**	**88.03**
Refusal	18	1.09	6	0.64
Do not know	133	8.07	36	3.81
Total	1,648	100	944	100

Note: default option in bold

Table 3: Regret questions – frequencies and percentages

	If I had known the outcome of the selection procedure, I would not have taken any action.			Despite the unfortunate outcome, I would not regret to have taken part in the selection procedure.			Paul and John actions: who regrets more?		
	Freq.	Percent	Cumul.	Freq.	Percent	Cumul.	Freq.	Percent	Cumul.
Totally disagree / Paul regrets more	82	4.98	4.98	98	5.95	5.95	24	1.46	1.46
2	146	8.86	13.83	161	9.77	15.72	25	1.52	2.97
3	174	10.56	24.39	149	9.04	24.76	32	1.94	4.92
4 (indifferent)	189	11.47	35.86	202	12.26	37.01	569	34.53	39.44
5	243	14.75	50.61	269	16.32	53.34	252	15.29	54.73
6	353	21.42	72.03	326	19.78	73.12	353	21.42	76.15
Totally agree / John regrets more	256	15.53	87.56	237	14.38	87.50	219	13.29	89.44
Refusal / Do not know	205	12.44	100	206	12.50	100	174	10.55	100
Total	1,648	100		1,648	100.00		1,648	100	

Table 4.1.: Opinion on eighteen statements about personal attitude and behavior
Percentages of total number of respondents (N==1648)

Please indicate on a scale from 1 to 7 to which extent you agree with each of the following statements (1 means 'totally disagree' and 7 means 'totally agree')?

	1	2	3	4	5	6	7	DK	Mean
When making important decisions (e.g. buying a car or investing money)									
b1 - I usually talk with other people about it	3,1	8,6	8,0	13,8	25,1	27,4	11,7	2,1	4,82 (1,58)
b2 - I usually take these decisions on my own	19,8	24,9	16,3	9,7	9,7	11,4	5,5	2,4	3,21 (1,87)
b3 - I usually leave it to someone else	37,6	29,3	13,8	8,0	5,0	2,7	1,4	1,9	2,26 (1,43)
b4 - If someone tells me to do something, I tend to do the opposite	10,9	24,3	17,7	25,0	12,3	5,1	2,3	2,2	3,29 (1,49)
b5 - I usually do what other people tell me to do	13,8	26,7	22,2	21,4	10,7	2,7	0,4	1,8	2,99 (1,35)
b6 - If I have heart problems and the cardiologist in my hospital tells me to get a surgery, I will consult another cardiologist for a second opinion	8,9	19,5	15,4	16,9	14,3	10,7	4,6	9,5	3,65 (1,70)
When I have to buy products requiring specific expertise (e.g. a financial or a technological product),									
b7 - I follow the advice of experts	0,9	1,2	5,3	14,8	34,4	31,8	9,2	2,4	5,18 (1,13)
b8 - I talk about it with family or friends	3,0	7,2	7,9	14,7	29,5	24,6	10,6	2,4	4,81 (1,51)
b9 - I do chores right away	4,7	14,4	23,4	21,2	17,8	12,7	4,5	1,1	3,91 (1,53)
b10 - I often rely on what people say	8,9	23,3	24,2	25,7	12,3	3,3	0,4	1,6	3,21 (1,30)
b11 - The past is better than the present	12,6	18,7	15,6	28,3	10,9	4,8	2,7	6,2	3,34 (1,52)
b12 - Changes are scary	12,7	26,9	20,4	20,7	13,1	3,3	1,0	1,6	3,09 (1,41)
b13 - Changes are often not an improvement	4,3	13,8	14,5	30,4	16,6	11,8	6,0	2,5	4,03 (1,52)
b14 -.I have troubles to say no to people	6,4	14,8	12,1	13,5	25,9	18,5	7,0	1,6	4,23 (1,71)
b15 - I tend to make promises that I cannot keep	29,4	38,8	13,6	8,1	5,9	1,7	0,6	1,6	2,29 (1,29)
b16 - When I promise to do something, I usually do that later than I should	18,8	34,4	16,6	11,0	12,3	3,6	1,6	1,5	2,81 (1,51)
b17 - I would describe myself as a careful person	1,6	5,6	11,9	20,9	27,9	23,7	6,6	1,5	4,68 (1,37)
b18 - When there is possible danger, I take many precautions	0,4	4,1	8,0	17,4	31,9	25,5	10,1	2,4	4,99 (1,28)

Note: DK = 'I do not know', Mean refers to the average of the seven response categories from 1 to 7 (standard deviation in parentheses), DK's and response categories 1-7 do not sum up to 100% due to refusals.

Table 4.2: Factor analysis output (varimax rotated factors)

Var.	Procrastination	Carefulness/ precaution	Advice	Obedience	Financial literacy	Regret	Status quo/ inertia
a1	-0.00848	-0.02386	0.01282	0.03818	0.06948	**0.57329**	-0.00016
a2	-0.00051	0.07770	0.00284	0.00190	0.00835	**-0.58313**	-0.00947
a3	0.16598	0.09508	0.12293	-0.20511	0.05883	0.04797	**0.64088**
b1	0.03454	-0.05085	**0.44140**	-0.02190	0.01701	0.00014	-0.00194
b2	0.07645	0.06888	**-0.35053**	0.16253	0.25719	-0.04608	-0.07648
b3	-0.04894	-0.07624	0.02596	0.08932	**-0.43532**	-0.00835	-0.05585
b4	0.22505	0.03435	0.07352	**-0.26930**	-0.10662	-0.03017	-0.18468
b5	-0.04104	-0.07037	-0.05504	**0.47067**	0.04367	0.04151	-0.08001
b6	0.09037	-0.00839	0.14264	-0.05837	0.15757	0.04711	**-0.54622**
b7	-0.09981	**0.17585**	0.11631	0.04315	0.04046	0.01373	0.07529
b8	0.00896	0.00934	**0.38331**	-0.00479	0.07878	-0.03333	-0.06169
b9	**-0.35551**	0.00071	-0.05921	0.08362	-0.09571	-0.03787	-0.10175
b10	0.06593	-0.02664	0.04502	**0.39565**	0.06278	0.00063	-0.05840
b11	0.00899	0.11031	0.00452	-0.16567	**-0.30398**	0.05643	-0.23186
b12	0.10846	**0.26534**	-0.02509	0.02058	-0.11136	-0.02586	-0.07687
b13	-0.00458	**0.32130**	-0.12162	-0.16050	-0.23217	-0.00615	0.03255
b14	0.02256	0.10466	-0.06927	**0.23683**	-0.01248	-0.03250	0.01252
b15	**0.32550**	0.00448	-0.01983	0.08619	0.01544	-0.02938	0.02115
b16	**0.40296**	0.04378	-0.02485	0.02835	0.09449	0.00073	0.03777
b17	0.02466	**0.42343**	-0.04460	0.02030	0.12206	-0.05158	0.09004
b18	-0.00174	**0.34796**	0.08161	-0.05072	0.18923	0.00345	0.01301
c	0.04705	0.08780	-0.00422	0.04371	**0.47130**	0.02955	-0.15548

Note: highest scores (in absolute value) for each variable in bold.

Table 4.3: Summary statistics for the behavioral factors

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**	**N. obs.**
Procrastination	0.00	1.00	*-2.80*	*3.21*	1128
Carefulness/Precaution	0.00	1.00	-3.85	3.96	1128
Advice	0.00	1.00	-3.86	2.60	1128
Obedience	0.00	1.00	-3.45	3.26	1128
Financial Literacy	0.00	1.00	-4.15	2.56	1128
Regret	0.00	1.00	-2.29	2.27	1128
Status quo	0.00	1.00	-3.74	3.01	1128

Table 5 Behavioral factors and background characteristics							
	Procrastination	Carefulness/ precaution	Advice	Obedience	Financial literacy	Regret	Status-quo/inertia
Male	0.229 (2.86)***	0.014 (0.19)	-0.348 (4.33)***	-0.045 (0.55)	0.280 (3.46)***	-0.128 (1.55)	-0.020 (0.25)
Age	-0.054 (3.52)***	0.015 (4.28)***	-0.063 (3.57)***	-0.010 (2.75)***	-0.007 (2.31)**	-0.003 (0.89)	-0.005 (1.45)
Age2	0.000 (2.72)***		0.000 (2.26)**				
Mid education	0.051 (0.59)	-0.124 (1.55)	0.019 (0.24)	-0.017 (0.20)	0.228 (2.88)***	-0.124 (1.46)	-0.038 (0.45)
High education	-0.052 (0.60)	-0.333 (4.00)***	0.140 (1.66)*	0.081 (0.87)	0.387 (4.80)***	-0.203 (2.38)**	-0.104 (1.21)
Employed	0.066 (0.58)	-0.131 (1.24)	-0.162 (1.56)	0.074 (0.67)	-0.207 (1.97)**	-0.094 (0.89)	-0.169 (1.58)
Self-employed	0.343 (1.89)*	-0.474 (2.79)***	-0.280 (1.57)	-0.286 (1.69)*	-0.133 (0.64)	0.156 (0.78)	-0.008 (0.05)
Retired	-0.041 (0.33)	-0.072 (0.64)	0.001 (0.01)	0.080 (0.69)	-0.065 (0.54)	0.147 (1.26)	0.050 (0.39)
Partner	-0.198 (2.23)**	-0.221 (2.30)**	0.210 (2.25)**	-0.146 (1.48)	-0.386 (4.31)***	0.310 (3.38)***	0.227 (2.51)**
Children	-0.211 (1.91)*	0.070 (0.66)	0.137 (1.28)	-0.284 (2.52)**	-0.159 (1.46)	-0.093 (0.80)	0.101 (0.90)
N. children	0.073 (2.14)**	-0.014 (0.45)	0.051 (1.56)	0.069 (2.21)**	0.029 (0.86)	0.036 (1.01)	-0.034 (0.93)
Home owner	-0.016 (0.21)	-0.010 (0.12)	-0.127 (1.55)	0.043 (0.50)	0.214 (2.66)***	-0.049 (0.61)	-0.020 (0.24)
Gross income q2	-0.123 (1.07)	0.072 (0.69)	0.120 (1.12)	-0.190 (1.66)*	0.311 (2.75)***	0.022 (0.20)	0.316 (2.90)***
Gross income q3	-0.048 (0.37)	0.043 (0.37)	-0.002 (0.02)	-0.144 (1.14)	0.302 (2.34)**	0.260 (1.98)**	0.306 (2.46)**
Gross income q4	-0.003 (0.02)	-0.176 (1.42)	0.037 (0.30)	-0.169 (1.21)	0.617 (4.57)***	0.182 (1.32)	0.372 (2.82)***
Tot.fin.assets q2	0.026 (0.27)	0.219 (2.28)**	0.121 (1.34)	-0.028 (0.30)	-0.106 (1.23)	0.134 (1.44)	0.059 (0.58)
Tot.fin.assets q3	-0.023 (0.25)	0.263 (2.90)***	0.173 (1.89)*	0.043 (0.44)	0.037 (0.39)	0.010 (0.10)	0.074 (0.76)
Tot.fin.assets q4	0.009 (0.09)	0.350 (3.72)***	0.130 (1.38)	0.064 (0.65)	0.028 (0.31)	0.022 (0.22)	-0.002 (0.02)
Constant	1.715 (4.04)***	-0.527 (2.48)**	1.903 (4.20)***	0.738 (3.31)***	0.023 (0.11)	0.015 (0.07)	-0.079 (0.38)
N. Obs.	965	965	965	965	965	965	965
R-squared	0.08	0.14	0.13	0.04	0.19	0.03	0.02
Log-likelihood	-1328.371	-1281.073	-1298.020	-1355.472	-1275.904	-1360.067	-1353.951
p-value test age=0	0.000	0.000	0.000	0.006	0.021	0.375	0.146
p-val ue test education=0	0.454	0.000	0.166	0.470	0.000	0.058	0.470
p-val ue test job status=0	0.220	0.051	0.245	0.145	0.234	0.159	0.189
p-val ue test income=0	0.567	0.033	0.507	0.425	0.000	0.098	0.018
p-val ue test fin. assets=0	0.960	0.003	0.286	0.784	0.314	0.425	0.763

Note: OLS estimation results: robust t-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variables are the output of the principal component factor analysis.

Table 6 Behavioral determinants of default choices

Domains/ Factors	Organ donation	Voting - national	Voting- European	Voting - local	Last will
Procrastination	0.081 (4.73)***	0.009 (1.47)	0.033 (3.11)***	0.022 (2.24)**	0.059 (3.64)***
Carefulness Precaution	0.035 (2.05)**	-0.011 (1.87)*	-0.009 (0.90)	-0.011 (1.20)	-0.039 (2.39)**
Advice	-0.005 (0.32)	0.010 (1.58)	-0.012 (1.10)	0.005 (0.47)	0.008 (0.52)
Obedience	-0.027 (1.63)	0.001 (0.13)	0.002 (0.22)	-0.022 (2.18)**	0.018 (1.11)
Financial literacy	-0.005 (0.28)	-0.011 (1.82)*	-0.014 (1.29)	-0.017 (1.77)*	-0.045 (2.73)***
Regret	0.010 (0.60)	0.006 (1.00)	-0.002 (0.22)	0.016 (1.64)	-0.008 (0.49)
Status-quo Inertia	-0.053 (3.12)***	-0.005 (0.75)	0.009 (0.81)	0.008 (0.81)	0.003 (0.16)
N. Obs.	797	1035	1029	1038	978
Log-likelihood	-475.147	-188.002	-409.473	-364.809	-663.800
p-value test factors=0	0.000	0.104	0.050	0.016	0.000

Note: Marginal effects from probit estimates: absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. For each domain (column), the dependent variable takes value 1 if respondents report to stick to the default option, 0 otherwise.

Table 6 Behavioral determinants of default choices – continued

Domains/ Factors	Commercials	Telemarketing	Subscription	Voluntary pension savings	Levensloop
Procrastination	-0.014 (0.65)	-0.011 (1.08)	0.096 (3.38)***	0.003 (0.14)	0.051 (1.88)*
Carefulness Precaution	0.004 (0.20)	0.007 (0.71)	0.015 (0.55)	0.028 (1.35)	-0.003 (0.10)
Advice	-0.006 (0.29)	0.009 (0.89)	-0.010 (0.37)	0.077 (3.65)***	0.003 (0.10)
Obedience	-0.054 (2.46)**	0.014 (1.39)	0.046 (1.67)*	-0.008 (0.38)	-0.043 (1.58)
Financial literacy	-0.061 (2.77)***	-0.029 (2.75)***	-0.005 (0.16)	-0.067 (3.27)***	0.012 (0.41)
Regret	0.044 (2.04)**	0.013 (1.27)	0.028 (0.99)	0.010 (0.52)	0.010 (0.39)
Status-quo Inertia	-0.026 (1.19)	-0.002 (0.17)	0.006 (0.21)	-0.027 (1.30)	0.022 (0.78)
N. Obs.	513	1096	320	615	213
Log-likelihood	-332.253	-413.986	-209.295	-406.362	-96.345
p-val ue test factors=0	0.006	0.075	0.039	0.001	0.457

Note: Marginal effects from probit estimates: absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. For each domain (column), the dependent variable takes value 1 if respondents report to stick to the default option, 0 otherwise.

Table 7 Determinants of default choices – behavioral and background characteristics					
	Organ donation	Voting – national	Voting – European	Voting - local	Last will
Male	0.100 (2.10)**	0.016 (1.27)	0.023 (0.80)	0.054 (2.23)**	0.114 (2.24)**
Age	0.006 (2.92)***	-0.000 (0.03)	-0.002 (1.83)*	-0.003 (2.96)***	-0.007 (3.54)***
Mid education	0.006 (0.12)	-0.011 (1.00)	-0.000 (0.01)	0.013 (0.52)	0.061 (1.30)
High education	0.077 (1.51)	-0.015 (1.26)	-0.030 (1.00)	-0.024 (0.93)	0.033 (0.65)
Employed	-0.083 (1.36)	0.011 (0.69)	-0.020 (0.55)	-0.000 (0.00)	0.005 (0.08)
Self-employed	-0.199 (1.99)**				-0.106 (0.92)
Retired	-0.111 (1.73)*	0.008 (0.41)	-0.009 (0.23)	0.079 (1.88)*	-0.065 (0.97)
Partner	0.052 (1.02)	0.001 (0.04)	0.010 (0.31)	-0.010 (0.36)	-0.056 (0.96)
Children	0.066 (1.08)	0.022 (1.52)	0.062 (1.76)*	0.060 (1.96)**	0.033 (0.51)
N. children	-0.019 (1.01)	-0.012 (1.84)*	-0.028 (2.09)**	-0.038 (2.89)***	-0.025 (1.34)
Home owner	-0.052 (1.10)	0.010 (0.91)	-0.039 (1.34)	-0.030 (1.21)	-0.336 (7.26)***
Gross income q2	0.012 (0.19)	-0.014 (0.92)	0.029 (0.71)	-0.038 (1.29)	0.024 (0.37)
Gross income q3	-0.027 (0.37)	-0.002 (0.11)	0.039 (0.82)	-0.027 (0.78)	0.016 (0.22)
Gross income q4	-0.097 (1.27)	-0.014 (0.76)	0.061 (1.16)	-0.029 (0.74)	-0.065 (0.79)
Tot. fin. assets q2	-0.088 (1.68)*	-0.001 (0.08)	-0.043 (1.46)	-0.006 (0.24)	-0.020 (0.36)
Tot. fin. assets q3	-0.026 (0.48)	-0.019 (1.43)	-0.027 (0.90)	0.027 (0.90)	0.028 (0.50)
Tot. fin. assets q4	-0.090 (1.63)	-0.002 (0.17)	-0.055 (1.77)*	0.014 (0.46)	-0.056 (0.97)
Procrastination	0.091 (4.59)***	-0.002 (0.32)	0.010 (0.88)	0.003 (0.26)	0.033 (1.75)*
Carefulness/ Precaution	0.016 (0.78)	-0.003 (0.51)	0.019 (1.63)	0.006 (0.62)	-0.019 (0.93)
Advice	0.008 (0.44)	0.012 (2.25)**	-0.006 (0.55)	0.009 (0.85)	-0.002 (0.11)
Obedience	-0.016 (0.89)	-0.004 (0.90)	-0.006 (0.55)	-0.019 (2.07)**	0.006 (0.35)
Financial Literacy	0.009 (0.46)	-0.006 (1.11)	-0.011 (0.90)	-0.027 (2.69)***	-0.042 (2.07)**
Regret	0.006 (0.33)	0.005 (1.05)	0.001 (0.12)	0.014 (1.59)	0.006 (0.34)
Status-quo/ Inertia	-0.070 (3.74)***	-0.005 (0.97)	0.004 (0.41)	0.001 (0.12)	0.011 (0.61)
N. Obs.	693	865	860	867	874
Log-likelihood	-389.780	-113.958	-304.372	-258.749	-526.492
p-value test age=0	0.004	0.978	0.068	0.003	0.000
p-value test education=0	0.229	0.409	0.494	0.296	0.431
p-value test job status=0	0.119	0.789	0.862	0.107	0.546
p-value test income=0	0.288	0.550	0.714	0.638	0.378
p-value test fin asset=0	0.205	0.406	0.295	0.652	0.383
p-value test factors=0	0.000	0.248	0.666	0.047	0.246

Note: Marginal effects from probit estimates: absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. For each domain (column), the dependent variable takes value 1 if respondents report to stick to the default option, 0 otherwise.

Table 7 Determinants of default choices – behavioral and background characteristics – continued					
	Commercials	Telemarketing	Subscriptions	Voluntary pension savings	Levensloop
Male	0.042 (0.66)	-0.028 (1.00)	0.133 (1.53)	-0.076 (1.31)	0.043 (0.72)
Age	-0.009 (3.16)***	0.002 (1.24)	-0.002 (0.65)	-0.005 (1.86)*	0.002 (0.89)
Mid education	-0.156 (2.15)**	-0.005 (0.19)	-0.089 (0.98)	-0.013 (0.22)	0.062 (1.11)
High education	-0.273 (3.73)***	0.032 (1.08)	-0.057 (0.59)	-0.001 (0.02)	0.134 (2.12)**
Employed	0.045 (0.51)	-0.007 (0.20)	-0.279 (2.54)**	-0.050 (0.69)	0.058 (0.57)
Self-employed	0.223 (1.84)*	-0.010 (0.13)	-0.281 (1.55)	0.001 (0.00)	
Retired	0.121 (1.38)	-0.011 (0.25)	-0.108 (0.85)		
Partner	0.119 (1.62)	0.031 (0.94)	-0.073 (0.79)	-0.032 (0.46)	0.104 (1.23)
Children	0.231 (2.57)**	-0.003 (0.08)	0.010 (0.08)	-0.018 (0.19)	0.152 (1.45)
N. children	0.006 (0.22)	0.020 (1.51)	-0.047 (1.31)	0.030 (0.98)	-0.038 (1.38)
Home owner	-0.018 (0.30)	-0.051 (1.95)*	-0.066 (0.82)	-0.109 (1.83)*	-0.113 (2.13)**
Gross income q2	0.144 (1.59)	0.026 (0.70)	0.099 (0.87)	-0.076 (0.98)	-0.424 (2.26)**
Gross income q3	0.141 (1.41)	0.033 (0.79)	0.013 (0.10)	-0.216 (2.52)**	-0.551 (2.60)***
Gross income q4	0.211 (1.99)**	0.014 (0.30)	0.064 (0.44)	-0.295 (3.06)***	-0.487 (2.26)**
Tot. fin. assets q2	-0.133 (1.63)	-0.011 (0.36)	0.139 (1.49)	-0.110 (1.67)*	0.079 (1.26)
Tot. fin. assets q3	-0.128 (1.60)	0.041 (1.35)	0.092 (0.94)	-0.161 (2.45)**	-0.075 (0.90)
Tot. fin. assets q4	-0.124 (1.57)	0.027 (0.84)	0.088 (0.94)	-0.274 (3.87)***	-0.220 (2.18)**
Procrastination	-0.046 (1.77)*	-0.011 (0.95)	0.084 (2.50)**	-0.006 (0.24)	0.060 (2.36)**
Carefulness/ Precaution	0.014 (0.51)	0.009 (0.74)	0.003 (0.09)	0.023 (0.90)	0.024 (0.96)
Advice	-0.021 (0.86)	0.017 (1.49)	0.007 (0.20)	0.055 (2.11)**	0.017 (0.71)
Obedience	-0.067 (2.57)**	0.010 (0.93)	0.011 (0.36)	-0.017 (0.72)	-0.042 (1.65)*
Financial Literacy	-0.044 (1.62)	-0.021 (1.68)*	-0.017 (0.49)	-0.031 (1.17)	0.049 (1.77)*
Regret	0.038 (1.55)	0.007 (0.67)	0.040 (1.20)	-0.000 (0.01)	-0.020 (0.91)
Status-quo/ Inertia	-0.012 (0.49)	-0.004 (0.39)	0.007 (0.21)	-0.026 (1.10)	0.010 (0.38)
N. Obs.	437	939	273	524	174
Log-likelihood	-254.180	-346.420	-171.734	-295.398	-60.259
p-value test age=0	0.002	0.214	0.515	0.063	0.374
p-value test education=0	0.001	0.352	0.618	0.969	0.100
p-value test job status=0	0.195	0.995	0.071	0.753	0.571
p-value test income=0	0.236	0.793	0.730	0.008	0.079
p-value test fin. assets=0	0.321	0.278	0.519	0.001	0.017
p-val test factors=0	0.044	0.414	0.390	0.403	0.163

Note: Marginal effects from probit estimates: absolute value of z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. For each domain (column), the dependent variable takes value 1 if respondents report to stick to the default option, 0 otherwise.