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Summary
Are retirement savings sufficient to finance a good pension income? This highly uncertain and subjective dimension of life cycle decision making is assessed among married working individuals using an identical survey distributed to Dutch and American workers in 2007. Despite marked differences in expected and needed pension replacement rates - where the Dutch replacement rates are systematically higher than the American rates - the perceived savings adequacy is more or less the same across Dutch and American workers. Moreover, individuals' perceived savings adequacy was found to be influenced by the three groups of factors: institutional forces, social forces and psychological dispositions. This study shows that differences in the mind set of American workers plays a far larger role in explaining differences in perceptions of savings adequacy than it does in the Netherlands.

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1. Introduction

Are the lifetime savings people make sufficient to provide them with a comfortable pension income? To answer to this question, one must address a wide range of issues including the institutional setting in which savings take place, the level of uncertainty surrounding the life course in terms of work, income and health dynamics, and the subjective assessment of what constitutes a 'comfortable' or 'good' pension income (Engen et al.,1999; Skinner, 2007; and Bovenberg et al., 2007). The latter is often framed as a comparison between ones' post-retirement income relative to pre-retirement standards, or to some other indicator of the poverty threshold (cf. Haveman et al. 2007). In the present study, we analyze perceptions of the pension savings adequacy of Dutch and American workers, as well as the institutional, social and psychological forces that affect them.

There is increasing recognition that insights from the fields of behavioral economics and finance could help to inform pension fund designers who seek to offer saving programs and institutions to individuals who act rationally, but within certain limited bounds (cf. Benartzi and Thaler, 2007; Shiller, 2005). Policy issues surrounding pension design gain particular importance in light of recent population ageing dynamics and studies that suggest a generation of soon-to-retire workers will be poorly prepared to meet their financial obligations. Studies by Bernheim (1993, 1997) suggest that American baby boomers are saving just one-third of what they need in order to retire comfortably. A more recent study by Munnell et al. (2007) revealed that 43 percent of American households are at risk of a substantial income decline upon entering retirement. To prepare the American pension system for the future consequences brought about by an aging population, reforms have been implemented in which the responsibility for retirement saving is shifted from employers and the government to the individual worker. Pension funds in the U.S. are in the process of undergoing finance reforms, as witnessed by the massive shift over the past two decades from defined benefit (DB) to defined contribution (DC) plans. This shift has not gone unnoticed by American workers, however. According to Helman et al. (2007), nearly half of individuals surveyed indicated that the shift from DB to DC plans left them less confident in their level of future benefits. Their *level* of confidence regarding the adequacy of their pension, however, remained remarkably high, with 70 percent feeling 'confident' they would have enough money to live comfortably throughout their retirement years.

Striking differences of opinion are often found between experts and lay persons regarding what constitutes an adequate level of retirement savings. The fact that this disparity

exists serves to underscore the importance of examining individuals' *perceptions* of savings adequacy and their determinants. This is an issue that has received relatively little attention in the literature to date. Kemp, Rosenthal, and Denton (2005) have argued that it is critical to tap subjective (in addition to strictly objective) indicators of financial planning for late life, because it is the former that structures individuals' perceptions of financially-related opportunities and constraints and triggers savings behavior.

For quite some time, economists have relied on the lessons derived from standard neoclassical models of lifetime consumption. Two implicit assumptions made in these models are that individuals have the cognitive ability to *solve* intertemporal maximization problems *independently,* and they have sufficient *willpower* and *skills* to carry out optimal plans. There is, however, clear evidence that many people lack the ability to delay gratification and exercise self-control, both of which are important determinants of saving behavior (Thaler, 1994). Thaler states that "if we are to understand why people are saving so little and are to make helpful recommendations as to how to get people to save more, then we have to incorporate more of the psychology of savings into our economic models (1994, p.186)." In this article we take the position that retirement savings decisions and perceptions of savings adequacy are linked to: (a) the institutional setting in which one lives and works, (b) social forces that may or may not stimulate one to save, and (c) psychological dispositions that may predispose one to plan and save for retirement. Whereas many studies have documented the importance of psychological forces in relation to retirement savings (for an overview see Mitchell and Utkus, 2004), few have examined the impact social forces have on saving, and nearly none have considered the role of public and occupational pensions in relation to saving adequacy.

This proposed extension to behavioral economic models may have important ramifications, because it could help explain why it is people fail make optimal use of available savings and investments opportunities. For instance, individuals have demonstrated less than full participation in savings programs, their savings contributions are often inadequate, they routinely fail to diversify their investments, overinvest in company stock, and fail to rebalance their portfolio at different points in their lives (Munnell and Sunden, 2006).

An international perspective on perceptions of savings adequacy should be particularly helpful in terms of understanding how different pension institutions affect private savings practices. Pension experts sometimes look with envy to the Dutch pension system, in which enrollment is automatic, pension replacement rates are high (cf., OECD, 2007), and pension

funds offer low transaction costs in providing an adequate pension. One way such low pension financing transaction costs can be attained is by generating economies of scale. This is achieved by making pension savings mandatory. The pension guru Ambachtsheer (2007) goes so far as to make the claim that "Holland is currently the number one pension country in the world" (p. 43). However, it is unclear how reforms toward mandatory retirement savings would interact with (or conflict with) individual dispositions to plan and save for retirement. It is also unclear how reforms aimed at increasing individual saving responsibility would interact with the social and psychological forces that shape workers savings decisions, as well as their perceptions of savings adequacy. Reforms that fail to take into account social and psychological influences run the risk of decreasing savings rates rather than stimulating them, as intended. For instance, the introduction of mandatory savings programs might have the effect of reducing one's future orientation when it comes to retirement, thus, not just adversely affecting private pension savings but also other long term investments, such as for education or health care. The reverse effect could also occur if, for instance, a decrease in the collective responsibility for retirement savings is not compensated for at the individual level by an increase in private savings.

This article studies differences in perceived savings adequacy among Dutch and American workers using comparable samples of individuals drawn from the two countries. For the purposes of this investigation, savings adequacy was conceptualized in two qualitatively different ways. First, we measured *perceived* savings adequacy using a set of questions designed to elicit individuals' subjective perceptions of the construct. Perceived savings adequacy, in this instance, is assumed to be the outcome of an evaluation that compares one's expected retirement income with the income level believed to be required in order to live comfortably. As a second measure of savings adequacy, we used individuals' best estimate of their *expected* retirement income replacement rate. Examining individuals' *perceptions* of savings adequacy represents an important extension of previous work, which has generally relied on objective measures of retirement saving. Most economic studies have used either the gap between actual wealth holdings and an optimal wealth path in order to measure the adequacy of one's savings (cf. Engen et. al., 1999, Scholtz et al., 2006), or the divergence between actual pension income levels and some benchmark income standard. The present study is designed to complement these other types of studies and is, to the best of our knowledge, the first to simultaneously investigate perceived savings adequacy and self-reported replacement rates. Examining both types of measures should enable us to assess the extent to which perceptions of savings adequacy are linked to more objective indicators, such

as one's anticipated replacement rate. Simply stated, our goal is to explore the extent to which perceptions of savings adequacy mirror actual future resource needs, with the latter being based on an estimate of one's expected replacement rate.

This paper is structured along the following lines. First, in order to provide a sufficient conceptual backdrop for the investigation, we review the characteristics of the American and Dutch pension systems, with a particular emphasis on differences in saving rates across countries (section 2). In section 3 we elaborate on some of the factors we believe might affect individuals' perceptions of savings adequacy. Section 4 contains details regarding the way the data were collected and the methodology that was used. In section 5, a number of theoretical predictions regarding savings adequacy and replacement rates are tested, and we examine perceived savings adequacy estimates in relation to the gap between expected and needed replacement rates. Section 6 contains a summary and discussion, with a particular emphasis on possible policy implications.

2. Two Pension Cultures

2.1 Different pension institutions

Old age pension programs traditionally have two main objectives. The first is an insurance function: to help workers maintain an adequate standard of living during retirement by replacing income lost from the cessation of work. The second aim is to redistribute income toward low-income pensioners in order to prevent destitution in old age. Pension programs in countries around the world differ widely with respect to how these two objectives are balanced (OECD, 2007; World Bank, 1994), which can clearly be seen by comparing the pension and retirement systems in the U.S. and the Netherlands.

The Dutch pension system consists of two main tiers, a flat-rate public pension scheme (the so-called old-aged pension law or AOW, comparable to what is commonly referred to as "social security" in the U.S.) and earnings-related occupational plans (often referred to in the U.S. as "employer pensions"). Although Dutch employers are not required to offer pension schemes to their employees, the force of collective wage agreements is strong in the Netherlands and 91 percent of employees are covered by at least some form of occupational pension. The overwhelming majority of occupational pension contracts — 96 percent of all employees in 2006 — of are of the DB type. With DB plans, employees can count on a defined level of retirement income based on a computation that uses their salary and years of service (often up to a maximum of 70 percent of their average gross salary). After-tax replacement rates are usually substantially higher due to lower marginal tax rates in

retirement. For example, a pre-tax replacement rate of 70 percent is tantamount to an after tax replacement rate that exceeds 85 percent (Alessie and Kapteyn, 2001). Nearly 80 percent of occupational pension premiums are paid for by the employer; the remainder is paid for by the employee. Post-retirement indexing of benefits is the rule, as virtually all DB pension contracts offer conditional indexation for cost-of-living increases. Indexation depends to a large extent on the level of reserves, which are monitored by the Dutch central bank. Pension assets should be normally around 130 percent of the pension liabilities. DC plans—in which the amount of one's pension income depends on the specific amount of pension premiums paid—are clearly not favored in the Netherlands. Only four percent of Dutch workers have a DC pension plan.

In addition to these two tiers, there is a third tier—voluntary retirement savings—which until the 1990s played a negligible role for Dutch households. Somewhat recently however, voluntary arrangements have begun to emerge in which individuals can enter into private pension arrangements with an insurance company to "top off" their retirement income. These private savings plans are subsidized by the state to cover income shortfalls in old age (i.e., for those with an income replacement rate of less than 70 percent). The role of retirement annuities is also becoming more popular among those who seek early retirement.

Due to the mandatory character of the Dutch pension system, a relatively small number of older individuals are poorly supported in retirement. In fact, in 2003 only six percent of older individuals were living at or below the poverty level. Among Dutch citizens, the low-income elderly are over-represented by single women who worked at part-time jobs before retiring, and first generation immigrants who failed to accumulate sufficient public pension rights before leaving the workforce.

The structure of the American retirement financing system also consists of three tiers. First, there is the social security program (also known as OASDI), which is a means tested scheme designed to provide an income "safety net" for retirees. For approximately 20 percent of Americans of 65 years and older, social security represents their only stream of income (U.S. Department of Labor, 2005). The second tier consists of employer-sponsored occupational pensions. In contrast to the Netherlands, American employers are *not* required to provide pension benefits for their employees. Among those employers that do offer pension contracts, they are not required to cover all of their employees (e.g., low income and part-time workers may be excluded from coverage). Employers often require a minimum tenure period before an employee can participate in a pension plan, and a vesting period is routinely applied that limits an employee's access to funds for a pre-specified period of time (e.g., 10 years). In

years past most Americans were covered by DB pension plans. Since 1997, however, the number of individuals who participate in DC programs has outnumbered those who participate in DB plans. In fact, as of 2004 53 percent of the full-time employees in the U.S. have a pension plan which is defined in terms of a worker's level of contributions, whereas 34 percent has a defined benefit plan (Social Security Administration, 2006). The most common type of DC program is a 401(k) plan (named for the section in which it is described in the Internal Revenue Service code), in which workers make voluntary saving and investment choices, encouraged by federal tax benefits and employer matching contributions.

The third pillar of the U.S. pension system—voluntary saving arrangements—are made up of private saving instruments such as annuities and other forms of personal investments. This pillar is far more important in the United States compared to that of the Netherlands. According to Börsch-Supan (1998) 21 percent of Americans' pension income comes from privately saved and accumulated wealth, whereas in the Netherlands, the corresponding figure is only 4 percent (see also OECD, 2001).

To highlight the main differences across countries, in the Netherlands a host of individual risks and responsibilities are carried and organized at a collective level. Public pension is organized through the AOW (Old Age Pensioners' Law) and is financed by a payroll tax on income up to a certain level. Public pension premiums are de facto income taxes. Moreover, supplementary pension premiums have a mandatory character.

In the United States, the burden of risk and responsibility for retirement saving is shouldered by the individual worker. Pension plans often have a voluntary character, although many employers make significant contributions to employee pensions, and outcomes are highly uncertain as most pensions rely on DC contracts. Besides pensions and personal savings, older American adults can rely on social security benefits, but this safety net is far less than what the Dutch state pension system offers.

2.2 Different saving rates

The differences between the two countries are not only visible at the level of institutional design, but also with respect to individual savings performance. Of course, savings are generated not solely for retirement purposes, but the aggregate savings trends in the two countries (see Figures 1 and 2) make it is quite clear that the personal savings rate has fallen on both sides of the Atlantic since the 1980s. In the Netherlands, however, mandatory savings schemes offer quite a strong counterweight to the extremely low rate of discretionary saving. From 2006 onward, the average saving rate in the U.S. has hovered around zero, and in 2005

it dipped below zero for the first time since 1933. Until the early 1980s, the average savings rate had been 8 to 10 percent of personal disposable income, but it has steadily dropped since that time. Of course, measuring savings rates is a task fraught with conceptual and statistical difficulties, but whichever measure one chooses to use, the extremely low personal savings rate is clear and unambiguous (Reinsdorf, 2007). The personal savings rate becomes even lower if DC and DB pension plans are excluded from consideration, and available figures suggest that pension contributions and private savings (excluding those contributions) very much move in tandem. Of course, the aggregate savings rate of zero may represent a process of saving and dissaving of equal force by different cohorts of individuals, but considering the fact that the cohort of working individuals outranks the cohort of retirees, this possibility is not very likely. What it may very well suggest is that at an aggregate level, the U.S. is facing a true savings crisis.

FIGURES 1 AND 2 HERE

The same downward trend in personal savings can be seen in the Netherlands, where discretionary savings are clearly negative. That is, Dutch consumers over the past few years have become net borrowers—but with a mandatory savings rate of 9 to 10 percent, the aggregate personal savings rate still works out to be positive at 6 to 7 percent.

It is beyond the scope of this paper to disentangle the nature of personal savings developments over time. However, the data shown in Figures 1 and 2 do suggest that mandatory retirement savings programs in the Netherlands offer a counterforce that helps to stabilize pension savings over the business cycle. The puzzling issue regarding retirement income security in the U.S., of course, is why private savings contributions are so hard to trigger. One possible explanation may have to do with the fact that people feel their existing savings will be sufficient.

3. Theoretical background

The most common framework used to explain and assess the development of public and private savings is the lifecycle consumption model, designed and developed by Ando and Modigliani (1963), and Samuelson (1958). Two tacit assumptions made in these standard neoclassical models of lifetime consumption are that: (1) people have the cognitive ability to *solve* intertemporal maximization problems *independently*, and (2) people have sufficient *willpower* and *skills* to carry out optimal plans. It is further assumed that at a very basic level,

institutions do not matter. The characteristics of public and privately designed savings plans are inherently transparent, which effectively neutralize fiscal policy choices or other collective savings choices. In short, the life-cycle model of savings offers a handsome starting point to think about retirement savings, but it tends to neglect three inextricable elements of private savings decisions:

- Institutional forces: the fact that individual saving decisions are shaped by the quality and design of pension institutions;
- Social forces: the fact that individual saving decisions are shaped by the social context in which they are made;
- Psychological dispositions: the fact that individual saving decisions are affected by one's cognitive capabilities, the ability to plan over time, and the perseverance required to carry out those long range plans.

We will discuss each of these three elements in some detail, below.

Pension Institutions

The institutional design of a pension system is sure to have a significant impact on individuals' retirement decisions. At the most basic level, anyone who saves for the future is putting their trust in a system that will serve an insurance function by protecting property rights over time. Or as Hyde et al. (2007, p. 57) state: "Trust reduces complexity, because it enables people to transfer responsibilities for activities that they themselves are not sufficiently competent to undertake". The most rational decision, if one is lacking in pension knowledge or the willpower to see a plan through to its completion, is to outsource one's investment and management decisions to a financial intermediary. Evaluating the adequacy of one's savings under these circumstances boils down to the level of trust individuals have in their financial intermediaries, or in the institutions that govern retirement savings. This issue of trust comes into play among all three pillars of the retirement financing system. First, there needs to be a level of trust in the state, not only as provider of public pensions, but also as guardian of the public interest who regulates the pension and insurance industry. Second, trust lies with the pension funds which offer insurance contracts, and those who manage them. And finally, with respect to personal savings, there need be trust in private intermediaries like banks and insurance companies who offer pension insurance products and savings accounts. What determines one's level of trust in each of these institutions is a more difficult question to answer, but it is generally accepted that past performance and expectations of future conduct will be in accordance with the reputation these institutions have previously come to establish.

Appropriate regulatory guidelines, prudent oversight and a track record of no bankruptcies or bank failures are all part of an institutional setting that serves to generates trust. Returning to the present investigation, this brings us to formulate the *institutional trust hypothesis*. Simply stated, this hypothesis suggests that higher levels of trust in the prevailing pension institutions will be associated with higher levels of perceived savings adequacy.

Social Forces

With regard to the social forces that may influence savings decisions, we distinguish between two different, yet related, forms of social support. First, we acknowledge that individuals' decisions are often influenced the members of one's social network (spouses, colleagues, friends) by providing social norm cues regarding the "right" course of action. It is widely acknowledged that retirement decision making is a household affair, and among older adults, spousal support for retirement increases the likelihood of an early exit from the workforce (Henkens, 1999). Spousal influences may also be apparent much earlier in the life course, for instance with regard to retirement saving decisions. For example, a spouse may encourage a conscientious program of retirement saving contributions in order to ensure a comfortable standard of living in old age. Dufflo and Saez (2002) recently showed that peer effects also have an important influence on workers' savings decisions. As such, we propose the *social support hypothesis*. That is, the stronger the support from spouses, friends and colleagues for saving for retirement, the more likely workers will save and consequently the more likely workers will perceive their pension savings as adequate.

Early parental socialization processes constitute a second social mechanism by which workers are believed to be influenced to save. This complex form of intergenerational socialization involves parents modeling adaptive behaviors for their children to observe (Bandura and Mischel, 1965), thereby providing not only guidance, but a basis for the development of habit formation. In short, parents who have conscientiously saved for their own retirement serve as role models for their children. In fact, Bernheim et al. (2001) found that those who were encouraged to save as children saved more as adults than individuals who had not received similar encouragement. Furthermore, a recent study by Webley and Nyhus (2006) showed that features of economic socialization (such as discussing financial matters with parents) not only had an impact on children's economic behavior, but on their economic behavior in adulthood as well. Accordingly, in the present study we plan to test the *socialization hypothesis.* Specifically, exposure to positive role models and adaptive financial learning experiences during childhood should have a positive effect on retirement savings,

thereby increasing the likelihood the individual will perceive high levels of savings adequacy.

Psychological Dispositions

The third group of factors believed to influence retirement savings decisions and perceptions of savings adequacy involve individuals' psychological disposition to save. Within the same institutional or household context, individuals saving practices may differ due to differences in the skills, attitudes and abilities required for successful financial planning. Three different psychological dispositions are assumed to be particularly important when it comes to implementing a program of retirement savings: *one's future time perspective, one's level of financial knowledge, and the extent to which one engages in financial planning activities.* We elaborate on these factors below.

Future time perspective is a psychological dimension that indicates the extent to which individuals focus on the future, as opposed to the past or the present. Conceived of by psychologists as a personality trait, one's time orientation has, in a number of studies, been shown to have either a direct or indirect influence on planning and saving (cf., Burtless, 2006; Hershey et al., 2007; Lusardi, 1999). Although orientation to time has been conceptualized in a variety of ways (Seijts, 1998), in the present study future time perspective is viewed as how far into the future an individual looks when making decisions about his or her life course. There is some evidence to suggest that this form of future orientation may increase over the course of the adult lifespan (Padawer et al., 2007). We predict that individuals with higher future time perspectives will report having higher levels of perceived savings adequacy (i.e., the *future time hypothesis*).

The second psychological dimension involves one's self-reported level of *financial knowledge*. One of most often identified cognitive predictors of planning and saving is one's level of financial knowledge. High-knowledge individuals have consistently been shown to plan and save more than their low-knowledge counterparts (Chan and Stevens, 2003; Ekerdt and Hackney, 2002; Grable and Lytton, 1997). Mitchell and Moore (1998) concluded that individuals often fail to plan for retirement because they lack sufficient domain-specific knowledge. Financial knowledge, which has been demonstrated to increase as a function of both formal interventions and hands-on investing experience (Bernheim et al., 1997), has been shown to be an excellent predictor of asset accumulations. Findings on the relationship between financial literacy and age in adulthood have been equivocal, with some studies showing a positive relationship between the constructs (e.g., Lusardi and Mitchell, 2007), and others reporting non-significant outcomes (e.g., Bernheim, 1998). We predict that financial

knowledge will be positively related to perceived savings adequacy (i.e., the *knowledge hypothesis*).

Finally, in the present investigation one's level of engagement in *financial planning activities* has been included as a predictor of savings adequacy. Financial planning activities can span a wide range of behaviors. They may include information-seeking activities, such as reading books or visiting web sites on financial planning, meeting with a financial investment counselor, attending a seminar, or participating in a workplace retirement preparation program. They may also involve instrumental activities such as gathering, organizing, and reviewing one's financial and investment records, calculating how much will be needed to attain a desired standard of living, or ascertaining one's projected level of pension and social security benefits. Lusardi (1999) found heads of households who had not engaged in planning activities had accumulated significantly less wealth than households in which the head had done some planning, and Ameriks, Caplin and Leahy (2003) reached similar findings. We predict that financial planning will be found to be positively related to perceived savings adequacy (i.e., the *planning hypothesis*)

In sum, it is believed that three separate groups of factors will be found to be influential when it comes to individuals' retirement saving decisions and perceptions of savings adequacy. These include factors that work at the level of the individual, society, and societal institutions. On an a priori basis, one would expect that the individual and social forces would be more important in cultures that stress individual responsibility in matters of retirement. Institutional level factors, in contrast, are expected to be of greater importance in societies where retirement savings decisions are made at the collective level. That is, in societies in which trust in the institution is paramount.

4. Method and data

The data were collected in the U.S. and the Netherlands using a core set of identical questions that had been back-translated in order to ensure conceptual equivalence. Dutch participants were a subset of working individuals 25-64 years of age, drawn from a large national panel surveyed in March 2007 by the *CentERdata* databank at the University of Tilburg. *CentERdata* maintains a representative internet-based panel of 2,000 households in the Netherlands.[1] Only one member per household was eligible to participate in the study in order to avoid overrepresentation at the household level, and only panel members who had a spouse

[1] For more details see http://www.centerdata.nl/en/index.html.

or partner at the time of testing were sampled. This latter inclusionary criterion was put in place in order to be able to examine the social forces that affect perceived savings adequacy within a household. American respondents were also married or partnered working adults 25-64 years of age, who were surveyed in North Central Oklahoma in March 2007. Beside the use of different sampling methodologies used in the two countries, the demographic structure of the Dutch and American groups differed primarily in terms of gender (see Table 1). Relative to members of the American sample, the Dutch group was slightly underrepresented by females; a finding that reflects the relatively low labor market participation of women in the Netherlands.

TABLE 1 HERE

Five social-demographic indicators were also included in this study—age, gender, self reported health status, level of education and perceived income adequacy. Each was measured along conventional lines. Level of education was measured by transforming it into effective years of education, in order to ensure that educational levels were roughly comparable across nations. Health status was included in this set of variables, as some experts have predicted the cost of out-of-pocket health care expenses will outstrip the growth in (pension) income. Being in good health in old age seems to generate a double dividend; not only will it help individuals to save on health care costs, but it may also help older people to engage in home production, thereby making ends meet more easily (Skinner, 2007).

Table 1 also contains mean scores for a number of scales that measure psychological and retirement constructs used in the statistical analyses, and Table 2 provides a full description of each of those variables. Table 2 also includes a description of scale characteristics, a sample item from each measure, and coefficient alpha values that indicate the internal consistency of each scale. Items for all five scales used the same 5-point Likert-type response format.

TABLE 2 HERE

One of the central dependent measures in this study—retirement savings adequacy—is based on a three-item scale that includes the following questions:
(1) Do you think you will have enough money to retire comfortably? (see Figure 3a);
(2) I expect to have a good retirement income (see Figure 3b); and

(3) I am saving enough to retire comfortably (see Figure 3c).

FIGURES 3A TO 3D HERE

To facilitate interpretation of the survey and estimation results, we have presented a breakdown of scores for each of the three savings adequacy items, as well as the savings adequacy full-scale score (Figures 3a to 3d). The levels of disagreement shown in figures 3A to 3D provide an impression of the level of undersaving for retirement, whereas levels of agreement signal that retirement savings are perceived to be either adequate or more than adequate. As indicated in the first two figures, comparable numbers of American and Dutch employees have similar feelings about their retirement savings being inadequate. In Figure 3a the dissatisfaction rate is approximately 12 percent, and in Figure 3b disagreement levels center around 17 percent. What is surprising, in light of the two different pension cultures, is that the first two questions suggest American workers are more satisfied with their savings than the Dutch. Dutch workers are somewhat more neutral about the assessment of their retirement savings. This picture is somewhat corrected in the third question, which gives the impression that American and Dutch workers are more or less equally satisfied that they have saved enough to retire comfortably (as judged by the percentage agreeing with that statement), and far more Americans are dissatisfied with the statement (30 percent disagreement level versus 21 percent among the Dutch). In that respect, the full-scale savings adequacy scores used in this study provides a more balanced view (see Figure 3d), showing Dutch and American workers are more or less equally satisfied and dissatisfied with their savings.

5. Results

5.1 Perceived savings adequacy

To estimate the effect of the various factors, a step-wise procedure was used. Table 3a and 3b present OLS regression estimates for four models designed to account for differences in the perceived savings adequacy of American and Dutch workers, respectively. The first model uses trust levels in pension institutions as explanatory variables. The second model includes social forces as explanatory variables, and the third model include variables reflecting the psychological predisposition to save. All three sets of forces—institutional, social and psychological—have been incorporated into the fourth model. Because of the linearity of the estimation method and the consistent use of five-point rating scales (save the income

adequacy question which used a four-point scale) the coefficients are well interpretable. Specifically, a coefficient of 0.2 on a five-point scales means that the difference between high and low scores for a given predictor will result in a full one point difference in retirement savings adequacy.

TABLES 3a and 3b HERE

It becomes immediately apparent upon viewing the regression estimates across countries from the pension institution analysis (model I), that one's trust in pension funds has a far greater effect on savings adequacy among Dutch workers than Americans. Relative to a baseline model containing only the control variables (not shown), the explained variance estimate in the Dutch model almost doubles when the institutional variables are taken into account. The baseline model alone explained 20 percent of the variance in savings adequacy, compared to 39 percent of the variance in the model that also contained the institutional variables. In the American case, the increase in explained variance was far smaller: from 29 percent in the baseline model to 37 percent in the model containing the institutional variables.

The picture is not so clear-cut with respect to the model examining the impact of social forces on saving adequacy (model II). In both countries support from spouses and other players in one's social network was found to have a significant effect on savings adequacy. The effects of parental socialization, however, were small if not altogether absent. Being socialized as a child to learn savings lessons is of some importance in the U.S., but the role of parents as role models seemed to have little effect on perceptions of savings adequacy. In the Netherlands the effects were just the opposite. Socialization as a child seems to matter very little, whereas having had parents who served as role models was, at least to a small extent, significantly related to retirement savings evaluations.

Model III contains the set of psychological disposition variables, and it is here that the most telling differences emerged between the American and Dutch pension cultures. Future time perspective had a very large effect on retirement savings adequacy among American workers, whereas the comparable Dutch effect was far smaller. The effect of planning activities and financial knowledge were of more or less equal importance in the two countries. Whereas this simple (partial) model explained 60 percent of the variation in savings perceptions among Americans, it only explained 39 percent of the variability among the Dutch. Furthermore, it is striking how in both countries the effects of gender and education disappear from the model once the psychological dispositional variables are entered. This

suggests, as one might expect, that the accumulation of human capital (education, health) is related to a large extent by the same psychological factors that motivate individuals to accumulate pension wealth. The same may well apply to gender differences in the psychological disposition to save.

Of course, the best overview of the contribution of the various elements in driving savings adequacy is obtained by estimating the full model (model IV). In this analysis, the differences between the two cultures really crystallize. What appears to matter most in the American setting is the individual pension mind set; in particular, one's level of future orientation and financial planning capabilities. What matters most in the Dutch setting is trust in the pension fund that manages the worker's retirement assets. Interestingly, in the Netherlands one's level of future orientation plays virtually no role in structuring perceptions of savings adequacy. It should also be noted that health status and income adequacy were of significant importance in the Dutch case. And whereas income adequacy was also important among Americans, health status appeared to have no impact on perceptions of saving adequacy among those living in the U.S. Finally, education did not seem to matter much in terms of accounting for perceived savings adequacy in either country, after the other sets of predictors had been entered into the model

5.2 Perceived savings adequacy and replacement rates

Perceived savings adequacy is assumed to be the outcome of an evaluation that compares one's expected retirement income with the income level believed to be required in order to live comfortably. In the Dutch and American surveys we asked respondents not only what level of replacement rate they expected to receive in retirement, but also the level of replacement rate they needed in order to have a 'good' retirement. The "needed" replacement question was formulated as follows: *'Imagine your annual income just before you retire. What percentage of that annual amount do you think you would need in order to have a good retirement income?'* The expected replacement rate question was formulated as follows: *'What percentage of your annual income just prior to retirement do you expect to receive after you retire?'* In Table 4, we present an overview of the differences across the two countries along these dimensions. It shows a cross tabulation of employees who report different degrees of savings adequacy, their expected and needed replacement rates, and the gap between expected and needed replacement rates.[2] As seen in the table, the mean needed

[2] In Table 4, all reported replacement rate values for the two countries were taken into account. This included a small number of very low reported replacement rate values. One could argue that these particularly low values

replacement rate is 75.7 in the Netherlands, and 63.7 percent in the U.S.

TABLE 4 HERE

Other differences across countries are clearly visible when one looks the replacement rate levels in combination with their variance estimates (as measured by the standard deviation). Relative to Americans, Dutch workers generate on all levels higher expected replacement rates, accompanied by considerably lower levels of variability. In part, the higher amounts of variability seen in among members of the American sample presumably stem from the uncertainty that surrounds their expected retirement income. Another contributing factor to the divergence in variability is that the American system relies to a great extent on individual decision making processes, whereas the Dutch pension system is highly centralized. Thus, the former would surely be likely to generate a larger spread in replacement rates, and accordingly, higher variability estimates. The most surprising result in Table 4, however, is that the gaps in replacement rates are more or less identical in both countries. In general, workers in the U.S. and the Netherlands who have a high level of perceived savings adequacy see a close connection between their expected and needed retirement income (note the very small replacement rate gap). This is in strong contrast to those who perceive their savings to be inadequate; among these individuals the replacement rate gap in both countries is roughly 20 percent.

We then examined the extent to which the expected replacement rate values were related to the main determinants of perceived savings adequacy (see Table 5). If the same factors that explain *perceptions* of savings adequacy also explain *expected* replacement rates, then this may indicate that one's perceptions are driven by the accumulation of wealth, and therefore, not simply a matter of preferences.

TABLE 5 HERE

In this analysis, the most striking difference between the two samples was that again, American workers who were actively involved in retirement planning expected far higher replacement rates than those who were less involved. In the Netherlands, in contrast, engaging

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were the result of financial illiteracy on the part of the respondent, or some other misunderstanding, and excluding these low values could change the statistical outcome. A recalculation of the replacement rates results

in retirement planning activities did not lead participants to expect a higher replacement rate. What did appear to matter in the Netherlands was again, one's level of trust in the pension fund of the employer. Trust in one's employer pension also mattered among Americans, but to a far smaller extent. This may reflect the fact that in the U.S., accumulated savings in pension funds are not as extensive as they are in the Netherlands. Interestingly, in both countries we found that females expected lower replacement rates than males.

In sum, the findings from the full model examining expected income replacement rates delivered a mixed message. On the one hand, some of the forces that explained perceptions of savings adequacy were clearly at work in this analysis. On the other hand, other new forces were found to emerge, and some that had been important in the perceptual analysis were non-significant when examining expected replacement rates. In other words, this combination of findings suggests that perceived savings adequacy is apparently a matter of wealth *as well as* a matter of perception.

6. Summary and Conclusions

Are the lifetime savings people make sufficient to provide them with a comfortable pension income? This highly uncertain and subjective aspect of life cycle decision making was assessed in 2007 among Dutch and American workers using equivalent forms of a retirement pension survey. In the past, these two countries have made markedly different design choices regarding their pension systems. The American system relies to a large extent on individual responsibility and self-determination, whereas the highly centralized Dutch system—with its mandatory enrollment policy—effectively circumvents the problems of procrastination and lack of willpower. Our analyses revealed that despite large cross-national differences in pension benefit levels and institutional settings, in both countries, about half of respondents were confident they had amassed sufficient retirement savings. Additional analyses demonstrated that the gap between needed and expected replacement rates were more or less equivalent across countries, although the levels of replacement rates differed. The mean value of expected and needed replacement rates are 67 and 76 percent of individuals' pre-retirement income in the Netherlands, respectively, and 57 and 64 percent in the U.S.

We also found that individuals' perceived savings adequacy was influenced by three different groups of factors: institutional forces, psychological dispositions and social forces. Beginning with the latter, social interactions at the micro level proved to be significant

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after first having excluded all values lower than 30 percent has been carried out (available upon request from the authors). The general conclusions with respect to cross-national differences remained robust.

predictors of perceptions of savings adequacy. However, the overall impact of the social force dimensions was limited. Spousal support for retirement saving was of some importance among Americans, whereas for the Dutch, perceptions of savings adequacy were influenced by the socializing force of parents as role models.

The primary determinants of perceived savings adequacy were identified to be a combination of institutional characteristics and psychological forces. The extent to which individuals express confidence in various pension institutions—such as employer pension funds, banks and insurance companies—was clearly related to perceived savings adequacy. Trust in the government to provide an adequate public pension, in contrast, was not found to be significantly related to this outcome variable. Respondents' mean level of trust in employer pension funds and the government was found to differ across countries, with the Dutch reporting a higher level of confidence in these two institutions than Americans. Moreover, the positive relationship found between trust in one's employer pension and perceived savings adequacy was also much stronger among the Dutch. It is unclear, however, whether these levels of institutional trust will remain stable over time, and the extent to which future policy changes would cause these trust levels to wax or wane.

The incorporation of psychological forces into our models clearly helped to explain why it is that individuals plan and save for retirement. In both countries, financial knowledge was found to be positively related to perceptions of retirement savings adequacy. Individual differences in the mind set of American workers, however, played a far larger role in explaining differences in savings adequacy than it did in the Netherlands. Perhaps the most interesting psychological outcome involved the future orientation dimension. The average level of future orientation was not only stronger in the U.S., but it was also more strongly related to perceptions of savings adequacy than it was among the Dutch. These two findings serve to underscore the important role of psychological forces when it comes to saving patterns within the American system. For the Dutch, perceived savings adequacy was found to be unrelated to one's level of future time perspective. The Dutch were not only less future oriented than the Americans, but more importantly, their perception of future retirement income was unrelated to their orientation to time. In other words, thinking about the future and saving for retirement are two separate issues in the Netherlands, whereas these issues are clearly linked in the US.

Our analyses suggest that elements of institutional settings and pension designs can have an appreciable impact on an individual's pension mindset. That being the case, public policy makers and pension designers need to be cautious in instituting broad-based changes,

as radical reforms may not generate the intended effects. For example, privatizing a state-based pension system in a country where workers are not accustomed to making their own retirement savings decisions could result in a larger spread of replacement rates, because many individuals will be ill-prepared to effectively deal with policy regime changes. In such a case, a privatization plan could backfire due to either adverse selection processes or the inability of individuals to adjust to the norms and attitudes that are part and parcel of a privatized pension culture. On the other hand, the findings from this study suggest that establishing a paternalistic institutional design—effectively the opposite of a privatized scheme—may conflict with individuals' freedom of choice, and thus, perceptions of control in designing their own future life course. Opting for a paternalistic system may also serve to reduce future orientation levels, which may well impinge on other intertemporal decisions such as investing for health and education. Thus, those involved in formulating pension reforms face a double-edged sword when attempting to foresee the long-range impact of their decisions.

This study is not without its limitations. Although our data were collected with the intention of examining cross-national differences in pension savings adequacy, the sample of American respondents were not nationally representative. In addition, cross-sectional data were used, which limit some of the causal conclusions that can be drawn, and some of the items were measured by single-item indicators. There are, nevertheless, several strengths to this investigation. Perhaps the most significant strength involved the incorporation of three qualitatively different types of forces into a single analytical framework. This is an important contribution to the empirical literature, which in the past has focused on the impact of one or two sets of forces, and then usually only in one country. This brings us to the second strength. This study has focused on two countries with markedly different pension cultures with different norms and institutions. It turns out that the cultural context – as embedded in institutions and social norms – but also the psychological disposition of individual actors are pivotal in understanding pension perceptions and expectations and most likely subsequent behavior. This has significant implications for pension reforms since it suggests that their success will strongly depend on the specific cultural context in which they are implemented.

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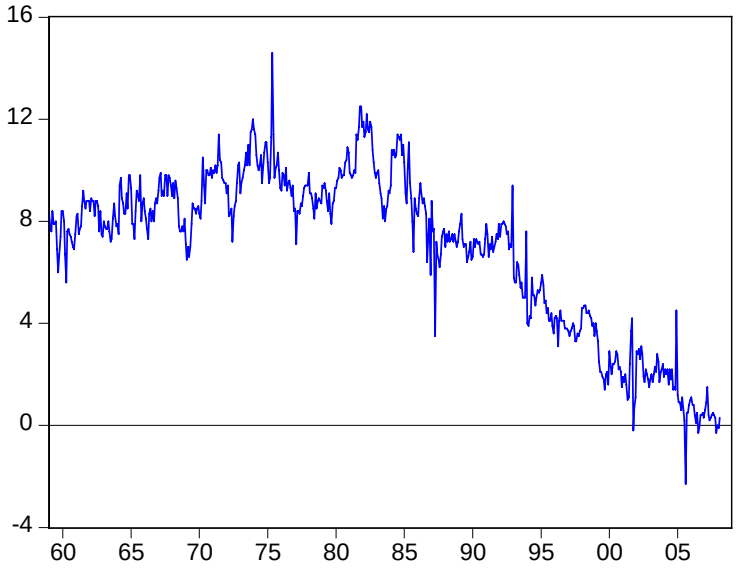
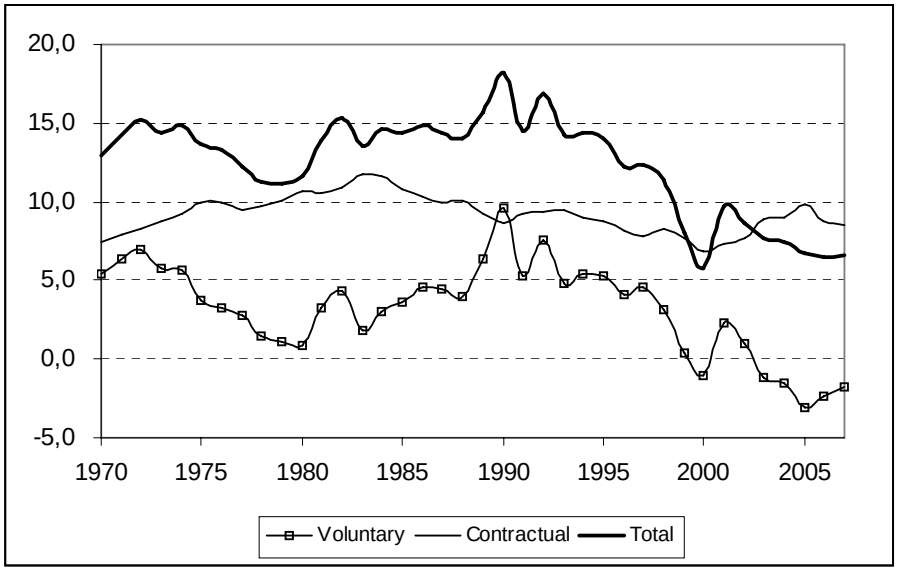
Figure 1: U.S. personal savings rate (as a percentage of personal disposable income), January 1959-February 2008



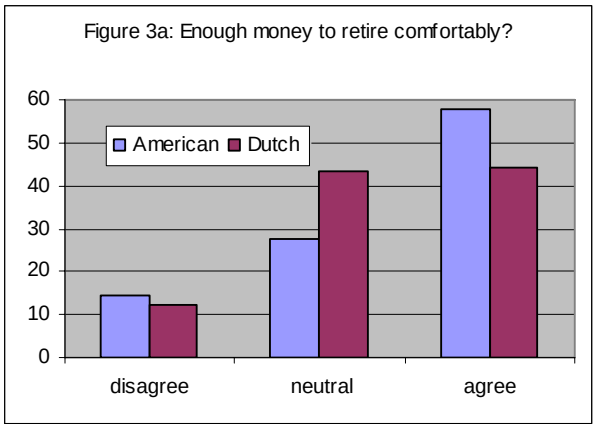
Source: Federal Reserve Bank of St. Louis

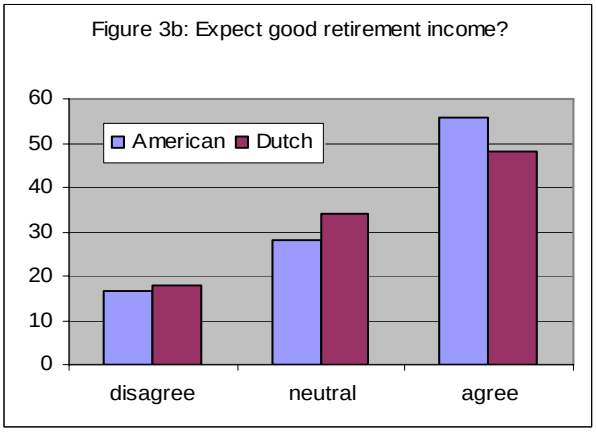
Figure 2: Personal savings rate, voluntary and contractual savings in the Netherlands, 1970-2007



Source: data of Central Planning Bureau

Figures 3a-d: Scores for the three perceived savings adequacy items as well as the constructed full-scale score.





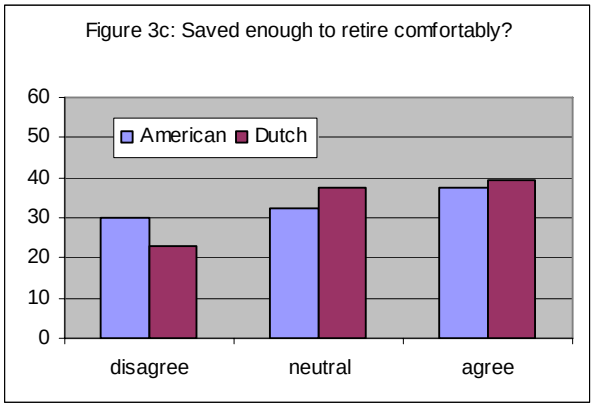


Figure 3c: Saved enough to retire comfortably?
60
50
40
30
20
10
0
American
Dutch
disagree
neutral
agree

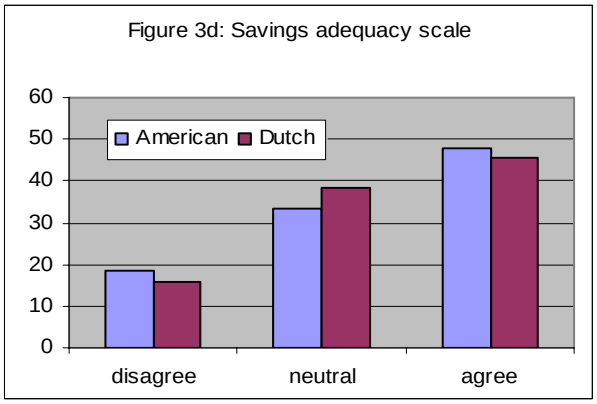


Figure 3d: Savings adequacy scale
60
50
40
30
20
10
0
American
Dutch
disagree
neutral
agree

Table 1: Mean Scores and Standard Deviations (in Parentheses) on Variables for the Dutch and American Samples

	American	Dutch
Sample size	524	519
Perceived retirement savings adequacy	3.38	3.33
	(0.91)	(0.77)
Expected replacement rate	56.39	67.32
	(24.12)	(18.54)
Background variables		
Age	43.48	43.79
	(11.70)	(9.81)
Sex	0.47	0.39
	(0.50)	(0.49)
Health status	1.82	1.82
	(0.86)	(0.64)
Education	15.84	15.55
	(2.48)	(2.58)
Current income adequacy	2.89	2.90
	(0.72)	(0.74)
Trust in pension institutions		
Employer's pension	3.10	3.59
	(1.32)	(1.07)
Government	2.63	3.05
	(1.14)	(1.07)
Banks/Insurance companies	3.37	3.04
	(1.02)	(1.02)
Social forces		
Spousal support	3.82	3.44
	(1.05)	(0.95)
Support from friends and coworkers	3.56	3.10
	(0.75)	(0.66)
Learned to save as a child	2.96	3.65
	(1.30)	(1.07)
Parents as role models	3.12	3.32
	(1.43)	(1.21)
Psychological forces		
Future time perspective	3.48	3.14
	(0.84)	(0.71)
Retirement planning activity	2.97	2.70
	(1.08)	(1.03)
Perceived financial knowledge	3.05	2.95
	(1.04)	(0.88)

(a) The sample sizes for the replacement rate variables are 515 (US) and 517 (Dutch).

Table 2: Scale Characteristics, Psychometric Properties, and Wording of Survey Items for the Psychological and Retirement Variables

Scale/Variable Name and Source	Items and Response Format	Scale Properties
Trust in Government	*To what extent do you trust the government to manage your future pension* (answer categories 1= no confidence at all; 5= a lot of confidence)	n.a.
Trust in Banks/Insurance companies	*To what extent do you trust banks and insurance companies to manage your future pension* (answer categories 1= no confidence at all; 5= a lot of confidence)	n.a.
Quality of Employer pension	*My employer provides a good pension plan* (1 = strongly disagree; 5 = strongly agree)	n.a.
Health status	*How do you consider your health in general?* (1=very good; 2 = good; 3 =fair; 4 = poor; 5 = very poor)	n.a.
Income adequacy	*To what extent can you manage with your current household income?* (1= with great difficulty; 2 = with some difficulty; 3 = easily; 4 = very easily)	n.a.
Socialization as a child	*Saving was a lesson I learned as a child* (1 = strongly disagree; 5 = strongly agree)	n.a.
Parents as role models	*My parents did a good job of planning and saving for their own retirement* (1 = strongly disagree; 5 = strongly agree)	n.a.
Support from spouse 2-item scale. A single score for this measure was constructed by calculating an unweighted mean. Higher scores correspond to higher spousal support	(1) *My spouse believes it's important to save for retirement* (2) *My spouse is indifferent about saving for retirement* (1 = strongly disagree; 5 = strongly agree)	American α = .76 Dutch α = .66
Support from friends and coworkers 2-item scale. A single score for this measure was constructed by calculating an unweighted mean. Higher scores correspond to higher friend and coworker support	(1) *My friends believe it's important to save for retirement* (2) *My colleagues at work believe it's important to save for retirement* (1 = strongly disagree; 5 = strongly agree)	American α = .76 Dutch α = .44

Future time perspective 4-item scale. A single score for this measure was constructed by calculating an unweighted mean. Higher scores correspond to longer future time perspectives.	(1) *I enjoy thinking about how I will live years from now in the future.* (2) *I follow the advice to save for a rainy day.* (3) *The distant future is too uncertain to plan for.* (4) *I pretty much live on a day-to-day basis* (1 = strongly disagree; 5 = strongly agree)	American α = .69 Dutch α = .65
Perceived financial knowledge 3-item scale. Higher scores correspond to higher levels of perceived financial knowledge.	(1) *I know more than most people about retirement planning.* (2) *I am very uninformed about financial planning for retirement.* (3) *When I have a need for financial services, I know exactly where to obtain information on what to do.* (1 = strongly disagree; 5 = strongly agree)	American α = .85 Dutch α = .79
Retirement planning activity 3-item scale. Higher scores correspond to more planning activities.	(1) *Calculations have been made to estimate how much money I need to save to retire comfortably* (2) *I have informed myself about the level of my future pension benefits.* (3) *I have informed myself about financial preparation for retirement.* (1 = strongly disagree; 5 = strongly agree)	American α = .88 Dutch α = .79
Perceived retirement savings adequacy 3-item indicator. Higher scores correspond to higher levels of perceived savings adequacy.	(1) *I am saving enough to retire comfortably.* (2) *I expect a good retirement income* (1 = strongly disagree; 5 = strongly agree), and (3) *Do you think you will have enough money to retire comfortably* (1= no, certainly not; 5 = yes, certainly)	American α = .83 Dutch α = .74

Table 3a: Regression analyses explaining the perceived retirement savings adequacy of American workers (N=524)

Explanatory variables	Explaining: adequacy of retirement savings							
	I		II		III		IV	
	Pension Institutions		Social Forces		Psychological Dispositions		Full Model	
Background factors [a]								
Age	-0.00	(0.72)	-0.01*	(2.12)	-0.01**	(4.59)	-0.01**	(4.82)
Sex (male = 0)	-0.14*	(2.14)	-0.18**	(3.04)	-0.07	(1.39)	-0.08	(1.57)
Health status	-0.18**	(4.72)	-0.14**	(3.86)	-0.07*	(2.18)	-0.05	(1.79)
Years of education	0.03*	(2.12)	0.03*	(2.22)	0.01	(1.28)	0.01	(0.86)
Income adequacy	0.48**	(10.14)	0.41**	(8.96)	0.26**	(6.57)	0.21**	(5.29)
Trust in pension institutions								
Government	-0.02	(0.77)	-	-	-	-	-0.00	(0.17)
Employer's pension fund	0.17**	(6.94)	-	-	-	-	0.09**	(4.81)
Banks/insurance companies	0.11**	(3.47)	-	-	-	-	0.07**	(2.74)
Social forces								
Spousal support	-	-	0.23**	(7.19)	-	-	0.12**	(4.73)
Support from colleagues and friends	-	-	0.21**	(5.02)	-	-	0.03	(0.86)
Learned to save as a child	-	-	0.10**	(3.59)	-	-	0.01	(0.48)
Parents as role model	-	-	-0.03	(1.05)			0.02	(0.81)
Psychological forces								
Future time perspective	-	-	-	-	0.30**	(7.94)	0.24**	(6.45)
Retirement planning	-	-	-	-	0.24**	(5.95)	0.21**	(5.41)
Perceived financial knowledge	-	-	-	-	0.17**	(4.33)	0.14**	(3.69)
Constant	1.18**	(4.28)	0.50	(1.75)	0.77**	(3.42)	0.19	(0.81)
Adjusted R^2	0.37		0.42		0.60		0.64	

Note: Absolute t values are stated in parentheses; * Significant at p <0.05; ** Significant at p <0.01
(a) The explanatory power of a model (as measured by the adjusted R^2) with only the background variables is 0.29

Table 3b: Regression analyses explaining the perceived retirement savings adequacy of Dutch workers (N=519)

Explanatory variables	Explaining: adequacy of retirement savings							
	I		II		III		IV	
	Pension Institutions		Social Forces		Psychological Dispositions		Full Model	
Background factors [a]								
Age	0.01**	(2.80)	0.00	(1.48)	0.00	(0.94)	0.01*	(1.99)
Sex (male = 0)	-0.15**	(2.71)	-0.23**	(3.83)	-0.09	(1.50)	-0.07	(1.42)
Health status	-0.20**	(4.65)	-0.18**	(3.85)	-0.19**	(4.32)	-0.17**	(4.29)
Years of education	0.03*	(2.37)	0.03**	(2.71)	0.03*	(2.82)	0.02*	(2.30)
Income adequacy	0.23**	(6.07)	0.29**	(7.07)	0.25**	(6.50)	0.19**	(5.41)
Trust in pension institutions								
Government	0.04	(1.42)	-	-	-	-	0.03	(1.07)
Employer's pension fund	0.29**	(11.41)	-	-	-	-	0.24**	(9.87)
Banks/insurance companies	0.07*	(2.35)	-	-	-	-	0.05*	(1.95)
Social forces								
Spousal support	-	-	0.08**	(2.52)	-	-	0.02	(0.75)
Support from colleagues and friends	-	-	0.20**	(4.02)	-	-	0.02	(0.50)
Learned to save as a child	-	-	0.04	(1.23)	-	-	0.02	(0.80)
Parents as role model	-	-	0.07**	(2.80)	-	-	0.06**	(2.85)
Psychological forces								
Future time perspective	-	-	-	-	0.09*	(2.23)	0.07	(1.78)
Retirement planning	-	-	-	-	0.21**	(7.44)	0.15**	(5.80)
Perceived financial knowledge	-	-	-	-	0.19**	(5.31)	0.15**	(4.65)
Constant	0.94**	(3.48)	0.94**	(3.03)	0.96**	(3.57)	-0.02	(0.07)
Adjusted R^2	0.39		0.28		0.39		0.51	

Note: Absolute t values are stated in parentheses; * Significant at p <0.05; ** Significant at p <0.01
(a) The explanatory power of a model (as measured by the adjusted R^2) with only the background variables is 0.20

Table 4: Savings adequacy and mean replacement rates – American versus Dutch samples (standard deviations in parentheses)

	Americans			Dutch		
Savings adequacy	Expected replacement rate	Needed replacement rate	Gap	Expected replacement rate	Needed replacement rate	Gap
	(1)	(2)	(1) - (2)	(1)	(2)	(1) - (2)
Low	46.4	67.7	-21.7	59.6	79.1	-19.3
	(24.2)	(26.1)	(29.9)	(21.9)	(18.1)	(20.1)
Average	55.8	59.7	-4.2	68.0	74.7	-6.7
	(23.2)	(26.0)	(20.7)	(18.0)	(18.6)	(17.7)
High	65.6	64.7	0.8	72.6	74.4	-1.8
	(21.8)	(21.6)	(17.3)	(13.8)	(14.2)	(12.1)
Total	56.6	63.7	-7.3	67.3	75.7	-8.3
	(24.2)	(24.7)	(24.4)	(18.5)	(17.3)	(18.1)

Note: The expected replacement rate value is based on the question: *'What percentage of your annual income just prior to retirement do you expect to receive after you retire?'* The needed replacement rate was based on the question: *'Imagine your annual income just before you retire. What percentage of that annual amount do you think you would need in order to have a good retirement income?'*

Table 5: Explaining expected income replacement rates, American versus Dutch workers

	Expected retirement replacement rate			
	American Workers		Dutch Workers	
Explanatory variables	Coefficient	t-value	Coefficient	t-value
Background factors				
Age	0.10	1.03	-0.03	0.36
Sex (male = 0)	-4.18*	2.04	-4.86**	2.91
Health status	0.38	1.26	-2.88*	2.28
Years of education	0.20	0.46	-0.29	0.91
Income adequacy	1.66	1.67	0.27	0.23
Trust in pension institutions				
Government	1.67	1.78	-0.71	0.85
Employer pension	2.16**	2.65	4.47**	5.71
Banks/insurance companies	1.92	1.81	0.23	0.26
Social forces				
Spousal support	-0.22	0.20	-1.05	1.15
Support from colleagues and friends	-0.98	0.66	0.61	0.44
Learned to save as a child	-1.72	1.85	-1.20	1.51
Parents as role models	0.76	0.93	1.33*	1.96
Psychological forces				
Future time perspective	2.72	1.73	0.73	0.56
Retirement planning	5.01**	3.04	1.14	1.32
Perceived financial knowledge	-1.41	0.88	0.34	0.33
Constant	14.77	1.49	60.17**	6.94
Adjusted R^2	0.13		0.10	
N =	515		517	