

Saving for Retirement in the Third Pillar of the Belgian Pension System



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We analyze the participation in and contributions to the third pillar of the Belgian pension system by households. We use a detailed dataset of tax declarations over the period 1993 – 2003. We find that overall contributions to the third pillar increased by 42% in real terms between 1993 and 2003. A microeconomic analysis reveals a number of variables that relate to the participation and contribution decisions: age, income, self-employment and home ownership have a positive impact on participation in and contributions to the third pillar¹.

I. Introduction

The process of aging in a society, as is the case in most industrialized countries, will have important implications for the viability of the statutory pensions (the so-called first pillar of the pension system), as well as on fiscal policy, social security and health care expenditures. This pressure has triggered a debate on the reforms needed to cope with these challenges. Private saving for retirement is one way of dealing with this issue. It is also an important one. Indeed, given the pressure on *e.g.* statutory pensions or social security, households probably will need to finance part of their expenditures themselves. The second pillar (work related) and third pillar (private) of the pension system aim to achieve this goal and tax stimuli, are present to encourage participation in both pillars.

In this paper, we analyze participation in and contributions to the third pillar of the pension system by households. A detailed discussion of this third pillar is presented in Section II. Subsequently, in Section III, we decompose contributions to the third pillar into different variables at the aggregate level, being: demographic effect,

participation rate, income and contribution rate. We then proceed by a microeconomic analysis at the level of the household in Section IV. We first investigate the participation decision of households to the third pillar and examine the factors driving this decision. Subsequently, we also analyze the amounts contributed by those that have chosen to participate. For both, participation and contributions, we investigate the evolution of the underlying determinants over time.

Our paper is related to the literature studying saving decisions for retirement (see *e.g.* Bosworth *et al.*, 2004 or Poterba, 2004 for an overview). A number of papers investigate 401(k) plans and Individual Retirement Accounts (IRA) in the US. In general, participation is found to be positively related to income, age, education and job tenure; and negatively to the presence of another plan. Munnell *et al.* (2000) find that also wealth and planning horizon play a role. Poterba *et al.* (1996) find that IRA and 401(k) contributions represent new saving and are not a substitute for other forms of saving. Other studies find however that only a small part of private saving for retirement represents new

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savings, and that most is just a rebalancing of the current portfolio of savings (Attanasio *et al.*, 2004). Bernheim and Garrett (1996) report that the presence of another plan has an impact on the decision to participate in 401(k) plans. In our analysis, we therefore account for the presence of two pillars. Hubbard *et al.* (1995) use a life-cycle model which accounts for precautionary saving and asset-based, means tested social security. This is shown to discourage saving by households with low expected lifetime income.

The study closest to ours is Peeters *et al.* (2003) who examine the importance of and access to the second and third pillar in Belgium. They find an increased importance of supplementary pensions pillars, mainly due to a rise in the third pillar. In particular high income, self-employed, older households, owning a home, participate the most. In the current paper, we provide additional insights, in particular, a more detailed analysis of the effects of age on participation to the third pillar. Moreover, we consider a wider range of explanatory variables. Besides, we complement their analysis by not only investigating the participation to the third pillar, but also contributions, *i.e.* amounts that are deposited to the third pillar. Furthermore, we account for the second pillar in our analysis.

II. Description of the Data Set

A. Scope of the Third Pillar in Belgium

The third pillar refers to private individual pension schemes for households. These are contracted on a voluntary basis, outside the workplace, and are designed to top up first- and/or second-pillar pension provisions. In Belgium, contributions to the third pillar can be invested under two distinct statuses: pension-based savings and individual life insurance. In pension saving schemes, the contributor is free to choose between banking products investing in particular shares or bonds, and insurance products offering a guaranteed minimum return. With life insurance, premia are either invested in the same instruments offering a guaranteed return, or poured into contracts linked to mutual funds. As one can see, both third-pillar categories encompass defined-contribution as well as defined-benefit products with the common aim of procuring an additional income upon retirement.

The main difference actually lies in the tax treatment applicable to each category. Indeed, under certain conditions², both third-pillar schemes entitle their affiliates to specific tax breaks, up to certain ceilings³. It is also important to note that while the tax benefit of pension saving is “stand-alone”, this is not the case for life insurance. In the latter case, the maximum amount on which a tax benefit can be obtained, is determined jointly for life insurance, long-term saving products and deductions for mortgages. In other words, if a household already has a high mortgage, it may be impossible to obtain a further tax benefit for life insurance products of the third pillar, while it still can receive the tax benefits for pension saving. Obviously this will affect their decision when choosing between both products. For a detailed overview of the tax features of the third pillar, we refer to the ministry of Finance’s 2006 Tax Survey.

B. Data Set

Third-pillar savings need to be declared in the tax return so as to entitle their contributors to the above-mentioned tax benefits. Hence, tax returns form a natural dataset particularly suitable for analyzing participation in and contributions to the third pillar in Belgium. Our study relies on repeated cross-sections of administrative data from the Belgian federal ministry of Finance, available for the period 1993-2003. Each year, a representative sample of tax returns is randomly selected. The overall sample size varies from 10,343 (in 1993) to 47,484 tax returns (in 2003). The tax unit is the household, which may be a married couple or a single. Cohabitants are treated as singles during the sample period. By nature, tax returns provide a vast amount of information that may explain the behavior of households when deciding upon saving for retirement: variables regarding individual characteristics (age, gender, civil status, dependent children, etc.), the various types of income, or even personal contributions to the second pillar are present in our dataset.

Despite its richness, our dataset also faces a number of limitations. The most important one is that households are not obliged to declare contributions to the third pillar. Nevertheless, a large number of them can be expected to do so in order to benefit from the tax break. However, the upper bounds on the amounts considered for tax cuts may provide households with an incentive to declare only

2. The main conditions are as follows: the contract must have been concluded before the age of 65, its duration must be at least ten years and, last but not least, in case of insurance product, it cannot be linked to a mutual fund.
3. In 2003 the ceiling for pension saving was € 600. For life insurance this was € 1,500 (first limit) and € 1,800 (second limit). In earlier years in our sample, the ceilings were slightly lower.

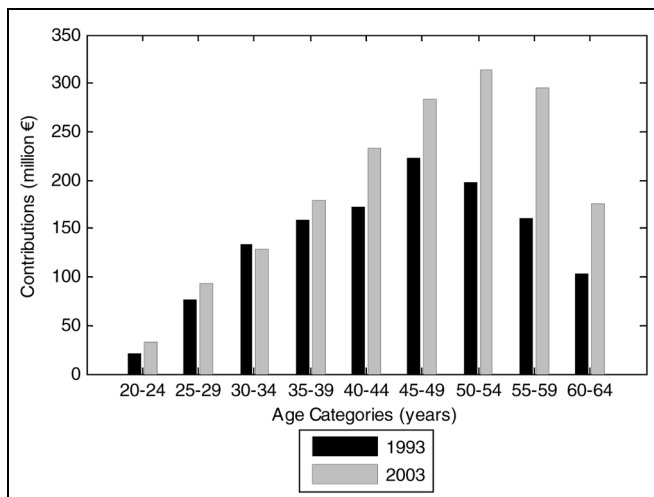


savings up to these maxima, and leave out any additional contributions to the third pillar. Therefore, the amounts from our database may not cover the entire flows of contributions towards the third pillar. Nevertheless, they constitute at present the best proxy available in Belgium at the micro level. Moreover, this does not affect our measure for participation.

III. Aggregate Analysis of the Third Pillar

In this section, we present an aggregate analysis of the third pillar of the Belgian pension system. In order to remain concise, we will not make a distinction between pension saving and life insurance, but show results for the third pillar as a whole. The reasoning is that both schemes exhibit in general similar patterns, apart from some differences in the order of magnitude. Total contributions to the third pillar increased by 42% in real terms between 1993 and 2003, when it amounted to 1.786 billion euro. In Figure 1 contributions are broken down by age category. As can be seen from this figure, contributions exhibit diverging developments over the period under review: people aged 20 to 39 kept their contributions roughly unchanged, whereas the 40- to 64-years old substantially increased them.

Figure 1: Contributions to the Third Pillar



Note: This figure presents total contributions to the third pillar. Amounts are in thousands of euro, using 2003 prices.

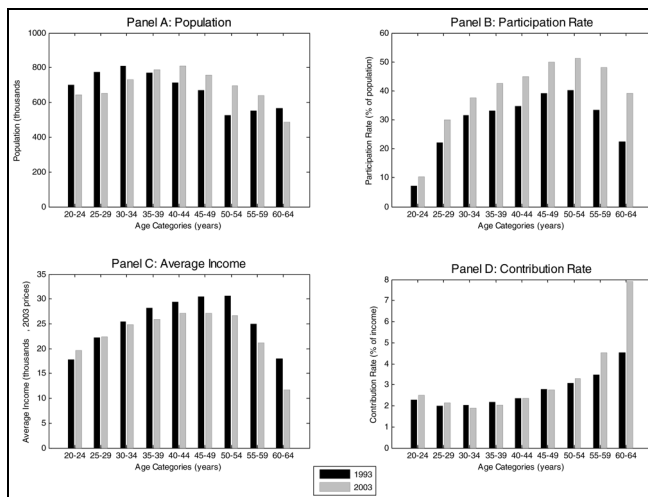
For a more detailed study, it is useful to decompose overall contributions into their macroeconomic determinants. Indeed, for every age category, the total amount of contributions, paid over a particular year, can be considered as the product of four factors: the population, the rate of participation to the third pillar, the average income of

affiliated people and their rate of contribution. This decomposition is defined in Identity (1):

$$\begin{aligned}
 \text{contributions} &\equiv \text{population} * \frac{\text{participation}}{\text{population}} * \frac{\text{income}}{\text{participation}} * \frac{\text{contributions}}{\text{income}} \quad (1) \\
 &\equiv \text{population} * \text{participation rate} * \text{average income} * \text{contribution rate}
 \end{aligned}$$

We now provide a brief description of each of the ratios involved. We focus on the evolution between the first and final year in our data set, *i.e.* 1993 and 2003. This evolution is presented in the different panels of Figure 2.

Figure 2: Decomposition of Contributions to the Third Pillar



Note: This figure presents the decomposition of the contributions to the third pillar, as defined in Identity (1).

The first element, the demographic evolution, is shown in Panel A. The overall impact of demography has been somewhat limited: the total number of Belgian residents increased by 3% between 1993 and 2003. Among the working-age population, the rise only concerned the 35- to 59- years old, reflecting the aging of baby-boomers. Populations of the remaining age categories actually declined. Hence, the population pyramid's deformation partly explains why the rise in contributions to the third pillar primarily concerned the older age categories.

The rate of participation to the third pillar, defined as the number of affiliated reported to total population, rose by 38% over the period under review. Panel B presents the rates of participation across age categories. The impressive overall rise clearly supported the above-mentioned increase in contributions. It might itself have been driven by two factors. The first explanation lies in the growing employment rate observed during the nineties, assuming workers' ability to save for pension is superior to that of unemployed or inactive people. The other explanatory factor is related to aging. Originally, supplementary pension plans were introduced to meet the demand from higher-wage workers wishing to preserve their standard of

living upon retirement, by attenuating the discrepancy between their final salary and the amount of their statutory pension⁴. But since the 1990s, attention has regularly been drawn to the limits to the funding of first pillar pensions on an apportionment basis. Also, the prospect of the erosion of the replacement ratio has probably encouraged other categories of people to establish their own supplementary savings plan under the third pillar.

The latter argument is confirmed by the decline in average income (either from work or from social security) of contributors between 1993 and 2003, drawn in Panel C. In real terms, it registered an 11% decrease fully consistent with the thesis of a democratization of private pensions towards lower-income people. Unsurprisingly, the spread is the highest for age categories that exhibited the sharpest increases in participation rate.

On average, the rate of contribution to the third pillar registered a 12% increase between 1993 and 2003. As can be seen from Panel D, this ratio appears to fluctuate around 2.5% of the income of the participants aged between 20 and 54. The sharply higher rates of contribution registered for the oldest working-age categories might compensate for their low average income, maintaining the level of average contributions more or less constant. This strategy, implying to delay some immediate consumption, might well be worthwhile given the attractive tax treatment of contributions paid beyond 60⁵, associated with the proximity of the retirement period. Undoubtedly, this constitutes an incentive to rise the rate of contribution to the third pillar.

In Section IV, the microeconomic factors underlying participation and contribution rates are investigated. Together, both ratios registered changes that largely explain the rise in contributions observed between 1993 and 2003. It has been shown that other macroeconomic determinants (namely demography and average income) also played a significant (positive or negative) role; however, their microeconomic analysis is beyond the scope of this paper.

IV. Microeconomic Analysis of the Third Pillar

A. Empirical Models

Section III presented an analysis of the third pillar on an aggregate level. In this section we provide a complementary microeconomic analysis at the level of the household. In order to identify determinants that are able to explain third pillar saving, we estimate two types of equations. The first one is a participation equation, meant to investigate what drives the decision of a household to participate in the third pillar. The second one is a contribution equation, which investigates the factors explaining the amounts saved by those households that are participating. All models are estimated for each year separately, so that we can study evolutions over time for the relation between the respective dependent variables and the independent variables.

Table 1: Definition of Variables

Dependent Variables	Definition
<i>Part_Third_Pillar</i>	= 1 if the household participates to the third pillar, = 0 otherwise
<i>Contr_Third_Pillar</i>	Declared amount of third pillar savings (in euro)

Independent Variables	Definition
<i>Age</i>	Age of the main declarant in the household (in years)
<i>Married</i>	= 1 if the declaration is for a married couple, = 0 for singles
<i>Unempl</i>	= 1 if the main declarant is unemployed, = 0 otherwise
<i>Self_Empl</i>	= 1 if the main declarant is self-employed, = 0 otherwise
<i>Dep_Pers</i>	The number of dependent persons (e.g. children) in the household
<i>Prepension</i>	= 1 if the main declarant is prepensioned, = 0 otherwise
<i>Total_Inc</i>	Sum of wage incomes, and incomes of unemployed and self-employed (in 1000 euro)
<i>Home_Owner</i>	= 1 if the household owns a house, = 0 otherwise
<i>Part_Second_Pillar</i>	= 1 if the household participates privately in the second pillar, = 0 otherwise
<i>Contr_Second_Pillar</i>	Declared amount of personal savings in the second pillar (in euro)
<i>Region_Fl</i>	= 1 if the household lives in Flanders, = 0 otherwise
<i>Region_Wal</i>	= 1 if the household lives in Wallonia, = 0 otherwise

Note: This table presents the definitions of the dependent variables (upper panel) and independent variables (lower panel).

Table 1 presents an overview of the definitions of the variables used in the regression models⁶. The upper panel

- Indeed, the statutory pension is subject to a ceiling, and, once that ceiling is reached, the replacement ratio – *i.e.* the ratio between the amount of the statutory pension and the final pay – is in inverse proportion to the pay received at the end of working life.
- At the age of 60, the taxpayer can keep on contributing and benefit from the tax break until 65 years old without having to pay the withholding tax upon the payment of their third-pillar pension.
- A list of the precise codes of items on the tax declarations, used for each variable, is available upon request from the authors.

presents the dependent variables: the participation decision (*Part_Third_Pillar*), as well as the amounts contributed (*Contr_Third_Pillar*). Based on the literature, a number of variables can be expected to be related to both decisions. These variables are presented in the second panel of Table 1. Peeters *et al.* (2003) show that income, home ownership, marital status, age and self-employment influence the participation decision. They don't investigate whether these variables also determine contributions. We thus include *Age*, *Married*, *Unempl*, *Self_Empl* and *Home_Owner* in the models. Munnell, Sundén and Taylor (2000) find that age may have non-linear effects, both on participation in and contributions to 401(k) programs. We therefore not only include *Age* but also *Age*². Bernheim and Garrett (1996) show that the presence of another pension plan has a negative impact on participation, wage has a positive effect. We include the presence of other plans in our analysis by including private participation in and contributions to the second pillar (*Part_Second_Pillar* and *Contr_Second_Pillar*, respectively)⁷. Finally, we also correct for the place of residence of the household by including *Region_Fl* and *Region_Wal*, the reference category being the Brussels region.

First, we study the decision of households to participate in the third pillar by estimating Equation (2).

$$\begin{aligned} Part_Third_Pillar_i = & c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self_Empl_i \\ & + c_6 Dep_Pers_i + c_7 Prepension_i + c_8 Total_Income_i \\ & + c_9 Home_Owner_i + c_{10} Part_Second_Pillar_i \\ & + c_{11} Region_Fl_i + c_{12} Region_Wal_i + u_i \end{aligned} \quad (2)$$

Secondly, we investigate the contributions of those that participate to the third pillar and estimate the following equation:

$$\begin{aligned} Contr_Third_Pillar_i = & c_0 + c_1 Age_i + c_2 Age_i^2 + c_3 Married_i + c_4 Unempl_i + c_5 Self_Empl_i \\ & + c_6 Dep_Pers_i + c_7 Prepension_i + c_8 Total_Income_i \\ & + c_9 Home_Owner_i + c_{10} Contr_Second_Pillar_i \\ & + c_{11} Region_Fl_i + c_{12} Region_Wal_i + u_i \end{aligned} \quad (3)$$

B. Participation in the Third Pillar

Equation (2) analyzes the participation of households in the third pillar of the pension system. This equation is estimated for each year separately, using a logit estimator. The estimation results are presented in Table 2. To save space, we only present results for the odd years in our sample. Between brackets, we report standard errors which correct for heteroskedasticity. Significant coefficients at the 5% level are shown in bold.

7. Recall that we do not have data on the employer part of the second pillar.

Table 2: Estimation Results Logit Model Participation in the Third Pillar

	Part_Third_Pillar					
	1993	1995	1997	1999	2001	2003
<i>c</i>	-3.875	-3.916	-4.172	-3.169	-3.797	-3.835
	(0.369)	(0.354)	(0.348)	(0.310)	(0.245)	(0.167)
<i>Age</i>	0.087	0.103	0.099	0.067	0.093	0.096
	(0.019)	(0.019)	(0.018)	(0.016)	(0.012)	(0.009)
<i>Age</i> ²	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
<i>Married</i>	0.228	0.282	0.106	0.117	0.064	0.057
	(0.069)	(0.068)	(0.063)	(0.062)	(0.046)	(0.033)
<i>Unempl</i>	-0.279	-0.195	-0.243	-0.179	-0.311	-0.229
	(0.068)	(0.065)	(0.063)	(0.061)	(0.047)	(0.031)
<i>Self_Empl</i>	0.429	0.301	0.325	0.252	0.414	0.427
	(0.077)	(0.076)	(0.074)	(0.075)	(0.057)	(0.045)
<i>Dep_Pers</i>	-0.103	-0.071	-0.038	-0.061	-0.081	-0.129
	(0.030)	(0.028)	(0.027)	(0.027)	(0.020)	(0.015)
<i>Prepension</i>	-0.059	-0.008	0.021	0.235	0.248	0.449
	(0.147)	(0.147)	(0.138)	(0.130)	(0.108)	(0.076)
<i>Total_Inc</i>	0.022	0.025	0.025	0.025	0.026	0.027
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
<i>Home_Owner</i>	0.488	0.655	0.608	0.863	1.004	1.060
	(0.063)	(0.061)	(0.059)	(0.056)	(0.042)	(0.029)
<i>Part_Second_Pillar</i>	0.126	-0.023	-0.033	-0.052	-0.108	-0.056
	(0.087)	(0.085)	(0.078)	(0.076)	(0.059)	(0.043)
<i>Region_Fl</i>	0.297		0.552	0.402	0.519	0.494
	(0.097)		(0.096)	(0.091)	(0.068)	(0.048)
<i>Region_Wal</i>	-0.029		0.118	0.042	0.015	-0.007
	(0.103)		(0.101)	(0.096)	(0.072)	(0.050)

Note: This table presents the estimation results of Equation (2). Between brackets, heteroskedasticity consistent standard errors are reported. Significant coefficients at the 5% level are shown in bold. The definition of the variables can be found in Table 1.

It is noteworthy that the sign of a specific coefficient tends to remain the same over time, although its order of magnitude may vary considerably across years (see the discussion below). We now provide a more detailed discussion of our results.

For *Age*, we find a positive sign. Moreover, we find a significant non-linear effect (*Age*²). Older households are thus more likely to participate in the third pillar, but the effect of age on participation declines for higher ages. This can be explained as follows. The effective tax rate (ETR) of saving for retirement varies according to the maturity of the contract. The shorter the contract, the more negative is the ETR. As is shown in Valenduc (2003), in fact younger households have a lower incentive to save than older ones.

As can be expected, unemployed are less likely to contribute to the third pillar (*Unempl*), the same holds for households with more dependent persons (*Dep_Pers*). Conversely, self-employed are much more likely to contribute to the third pillar. The reasoning is that Belgian self-employed receive a lower statutory pension and hence in general will be more inclined to save for retirement.

Prepensioned households are in general somewhat more

likely to participate to the third pillar. However, this variable is only significant in a number of cases. Our findings indicate that prepensioned are more likely to participate especially during the later years of our sample. As expected, households with a higher income are more likely to participate, the same holds for households that are home owners. The effect of total income is relatively constant over time, while the impact of owning a house is increasing.

Participation to the private part of the second pillar is not significant in the estimations. However, a not-reported decomposition of the third pillar in its two forms (pension saving and life insurance) reveals that *Part_Second_Pillar* has a positive impact on participation in pension saving, but a negative one for life insurance. These two opposite effects result in an insignificant coefficient for the third pillar taken as a whole.

Finally, our results also show that households in the region of Flanders are more likely to participate in the third pillar, compared to households in Brussels (the omitted reference region). There is no significant difference between Wallonia and Brussels. As the *ceteris paribus* assumption implies that we compare an identical household in the different regions, and as tax stimuli are the same in all three regions, this result indicates that other factors than tax stimuli or the variables in our

dataset play a role in a household's decision to participate in the third pillar.

Comparing our results to Peeters *et al.* (2003), we find the same sign for *Age* (although the authors do not account for nonlinear effects). Moreover, in general, households with a mortgage – a variable comparable to *Home_Owner* – are more likely to participate in the third pillar, as do self-employed and households with higher income. As in Munnell, Sundén and Taylor (2000), we find a positive sign for *Age* and a negative sign for *Age*², as well as a positive sign for income. Bernheim and Garrett (1996) find that the presence of another plan has a negative impact on participation, whereas wage has a positive effect. In their analysis, age and education are insignificant.

C. Contributions to the Third Pillar

The model in Equation (3) investigates the contributions of the households that participate to the third pillar. Important to stress, is that we only include in the dataset those households that participate in the third pillar, in other words only those observations for which *Part_Third_Pillar* equals one. The equation is estimated for each year separately, using an OLS estimator with White standard errors. Table 3 presents the estimation results. Again, we only present the results for the odd years.

Table 3: Estimation Results Model Contributions to the Third Pillar

	Contr_Third_Pillar					
	1993	1995	1997	1999	2001	2003
<i>c</i>	-315.960	-449.666	-390.804	-316.741	135.026	422.721
	(165.559)	(183.701)	(192.039)	(163.981)	(135.411)	(97.456)
<i>Age</i>	25.319	32.167	19.561	21.488	3.756	-13.464
	(8.179)	(9.320)	(9.361)	(8.208)	(6.573)	(4.772)
<i>Age</i> ²	-0.134	-0.160	0.000	-0.028	0.183	0.394
	(0.096)	(0.109)	(0.109)	(0.098)	(0.076)	(0.056)
<i>Married</i>	189.333	274.303	255.370	278.079	363.617	324.916
	(28.496)	(31.261)	(29.799)	(28.124)	(21.152)	(15.682)
<i>Unempl</i>	-93.151	-70.486	-10.514	-25.838	-100.118	-92.295
	(30.082)	(31.839)	(32.332)	(30.177)	(24.285)	(16.547)
<i>Self_Empl</i>	136.695	126.227	57.009	91.316	79.139	104.276
	(29.934)	(32.767)	(32.828)	(32.310)	(24.348)	(19.544)
<i>Dep_Pers</i>	-10.701	-34.714	-24.677	-47.455	-28.478	-40.231
	(12.468)	(13.431)	(13.001)	(12.527)	(9.486)	(7.093)
<i>Prepension</i>	-120.348	-12.191	-119.428	-136.034	-196.675	-96.802
	(60.655)	(70.019)	(67.611)	(60.892)	(50.766)	(34.598)
<i>Total_Inc</i>	4.266	3.223	7.150	5.036	2.597	5.473
	(0.571)	(0.485)	(0.595)	(0.435)	(0.273)	(0.277)
<i>Home_Owner</i>	-38.287	-84.287	-144.703	-120.612	-111.477	-111.582
	(26.701)	(28.916)	(28.826)	(27.094)	(20.862)	(15.112)
<i>Contr_Second_Pillar</i>	-0.054	0.022	-0.020	-0.012	0.006	-0.055
	(0.029)	(0.023)	(0.028)	(0.022)	(0.019)	(0.016)
<i>Region_Fl</i>	91.248		140.355	135.498	95.382	87.578
	(41.015)		(49.340)	(45.241)	(35.311)	(25.434)
<i>Region_Wal</i>	-4.218		59.956	38.900	-59.511	-34.985
	(43.979)		(52.183)	(47.667)	(37.412)	(26.820)

Note: This table presents the estimation results of Equation (3). Between brackets, heteroskedasticity consistent standard errors are reported. Significant coefficients at the 5% level are shown in bold. The definition of the variables can be found in Table 1.



From Table 3, it can be seen that age in general has a positive effect on contributions to the third pillar. The exception is 2003. A (not reported) more detailed analysis of the two parts of the third pillar separately, reveals that the effect of age on contributions to pension saving is significantly positive in all years, while age has a negative impact on contributions to life insurance products in 2001 and 2003. The overall results for the third pillar as a whole are a not significant coefficient in 2001 and a negative one in 2003. A possible explanation of the difference between the two schemes of the third pillar is the intertwining of life insurance products and mortgages, as explained in Section II. Furthermore, we find nonlinear effects of age on contributions.

Married couples contribute more, compared to singles, as do self-employed. Conversely, the number of dependent persons and the fact of being prepensioned or unemployed have a negative impact on contributions of households that do participate. Also home owners contribute less, compared to non-home owners. Private contributions to the second pillar on the other hand hardly have a significant impact on contributions. Finally, next to being more likely to participate, participating households in Flanders also contribute more than participating households in the other regions.

V. Conclusion

Aging societies are faced with a number of issues that will emerge in the years to come. One of the challenges ahead is the preservation of a sustainable pension system. In the light of the pressure that aging imposes on statutory pensions, a number of initiatives has been developed to establish and encourage alternative pension pillars. In this paper, we investigated individual private saving for retirement by household, the so-called third pillar.

We have shown that the amounts that were contributed to the third pillar increased by over 40% in real terms over the period 1993-2003, a development which largely resulted from the rise in both the participation and the contribution rates. Our microeconomic analysis revealed a number of variables that relate to the participation and contribution decisions. We find a positive relation between participation to the third pillar and the variables Age, Income and Home Ownership. Also self-employed tend to participate more, which is in line with the fact that they receive a lower statutory pension than employees. Conversely, being unemployed or having more dependent persons decreases the probability that a household partic-

ipates. For the amounts contributed by those households that participate, again older, self-employed households with a higher income contribute more. Unemployed or prepensioned households and those having more dependent persons contribute less. Finally, we find significant differences in participation in and contributions to the third pillar between regions in Belgium: households living in Flanders are more likely to participate than households in other regions, all other things equal, and Flemish affiliates also save more.

Our results also highlight some interesting topics for future research. The fact that households with a higher income participate and contribute more, may seem straightforward as they have income that they can save. Moreover, they have a higher incentive to privately save for retirement since the drop in income when changing from a wage to a statutory pension is higher for them. However, it might also mean that households with lower incomes have less access to the third pillar, are less informed about it or are planning less for retirement (see also the literature on financial literacy and planning for retirement, *e.g.* Lusardi and Mitchell (2006) and references therein). Moreover, we also found differences between participation and contributions between Belgian regions. As tax benefits are the same in all regions, this suggests that tax incentives may only be a part of the decision of households to engage in private saving for retirement. This decision may also be driven by other factors, not present in our data set. Future research and policy should therefore also consider other elements to encourage households to carefully plan and save for retirement.

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