HOW DO INDIVIDUAL ACCOUNTS WORK IN THE SWEDISH PENSION SYSTEM?

By Annika Sundén*

AN ISSUE IN BRIEF

CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE

AUGUST 2004, NUMBER 22

INSIDE

Introduction

Many countries are discussing how to reform their pension systems in order to meet the demands of an aging society. A trend in these reform discussions is to introduce individual accounts as part of both public and occupational schemes. Sweden was an early mover in this process. In 1998, Sweden introduced a second tier of mandatory individual accounts — the Premium Pension — in the public system.[1]

The individual account component in the public pension system was designed as a "carve-out" and constitutes a relatively small portion of the new system. The contribution rate to the overall system is 18.5 percent: 16 percent is paid to the first tier, which is financed on a pay-as-you-go basis and pays a benefit determined by a worker's lifetime earnings, while 2.5 percent is credited to a funded individual account. In addition, a means-tested guarantee benefit provides a minimum pension for workers with low earnings.[2] The individual accounts are self-directed and participants can invest in a broad array of domestic and international funds. For individuals who do not wish to make an active investment decision, the government has established a default fund. The first investment elections in the Premium Pension plan took place in the fall of 2000 when all Swedes born after 1938 were able to choose how to invest their contributions from a menu of about 500 mutual funds.

This brief evaluates the Swedish experience with individual accounts to date and discusses the lessons that can be learned from the first four years.

* Annika Sundén is a research associate at the Center for Retirement Research at Boston College and a senior economist at the Swedish National Social Insurance Board. The author thanks Hugo Sellert for valuable research assistance.

[1] Following the pension reform, three of the four occupational schemes also introduced individual accounts in their plans. The contribution rates in these schemes vary between 2.5 and 4 percent, which means that workers in Sweden currently contribute between 5 and 6.5 percent of their earnings to individual accounts.

[2] For a summary of the new Swedish pension system, see Sundén (2000).

How the Premium Pension Works

The introduction of mandatory individual accounts in the Swedish pension system was contentious. The Social Democrats strongly opposed the accounts while the center-right parties argued that the accounts should play a substantial role in the new pension system. The outcome was a compromise in which the Social Democrats accepted the accounts in exchange for keeping the scale of the public program unchanged.

A new government pension agency, the PPM (Premiepensionsmyndigheten), has been established to administer the plan and act as a clearinghouse. The clearinghouse model was chosen to keep administrative costs down by drawing on economies of scale in administration.

Contributions are withheld by employers and submitted to the National Tax Authority. Swedish employers make monthly tax and contribution payments, but they report information on individual earnings on an annual basis. For this reason, individual pension rights cannot be established until each worker has filed his income taxes and these reports have been consolidated with employers' reports, a process which takes an average of 18 months. Until pension rights have been established, pension contributions are placed on an interim basis in a government bond fund at the National Debt Office. When individual pension rights have been determined, participants select how to invest their funds. Contributions are invested by the PPM in lump sums; fund companies only know the total investment of pension contributions, not who the individual investors are. The PPM keeps all records of the individual accounts and fund share values. Individuals are allowed to change funds on a daily basis, and all such transactions are aggregated by the PPM and transmitted to fund companies as net purchase or redemption to each fund.

Investment Options

Policymakers decided to offer investors broad choice in the Premium Pension, so any fund company licensed to do business in Sweden is allowed to participate in the system. Fund companies seeking to participate must sign a contract with the PPM that governs reporting requirements and the fee structure. The total fee in the Premium Pension consists of two parts: a money management fee and a fixed administrative fee charged by the PPM. Fund managers charge the same fee for participants in the pension system as they do in private savings markets. Because the administration of the accounts is handled by the PPM, the actual costs for fund managers should be lower and they must rebate to the PPM a share of the fees, which the PPM then passes on to participants. In 2003, the average fund fee after the rebate was 0.43 percent of assets.[3] The fixed administrative fee charged by the PPM is 0.3 percent of assets resulting in a total cost of 0.73 percent of assets for an average participant.[4]

In 2000, at the time of the first investment elections, approximately 460 funds were registered with the PPM.[5] Currently over 650 funds participate in the system (see Table 1). The majority of funds are equity funds and about half of the funds invest primarily in international equities.[6] A large number of funds specialize in one type of asset, such as IT-funds, while a few funds are designed with retirement savings in mind. For example, only 4 percent of the available funds are life-cycle funds, (i.e. funds in which the asset allocation automatically changes as participants approach retirement). Instead, participants are expected to put together a diversified portfolio suitable for retirement savings on their own.

The government has established two funds. The first is the default fund for participants who do not wish to make an active investment choice. The second fund was set up for participants who wanted to make an active choice but also wanted the

Table 1. Funds in the Premium Pension System, 2004

Type	Number	Percent of All Funds
Equity funds	471	71.0
Sweden and the Nordic Countries	69	10.4
International	326	49.2
Industry Funds	76	11.4
Mixed/balanced Funds	52	7.8
Interest Funds	114	17.2
Life-cycle Funds	26	4.0
Total	663	100.0

Source: PPM (2004).

[3] The default fund is included in this calculation. The average rebate was 0.37 percent of assets.

[4] The administrative cost is relatively high compared to, for example, the U.S. government's Thrift Savings Plan, which has expense ratios of 0.1 percent of assets.

[5] Each fund manager is allowed to register a maximum of 15 funds.

[6] The large share of international equities is not surprising given that the Swedish equity market is relatively small.

government involved in the management. In initial discussions, reformers had suggested that the default should be a low-risk fund mostly invested in interest-earning assets. However, policymakers were concerned that such a strategy would have a negative effect on the distribution of benefits, because low-income workers would be more likely to invest in the default. Consequently, the default fund's investment strategy was formulated to mirror the asset allocation of an average investor in the system.

Currently the default fund seeks to achieve a high long-run rate of return at an overall low risk level.[7] Equity holdings cannot exceed 90 percent of the total value and may not fall below 80 percent; of these a maximum of 75 percent can be invested in foreign stocks.[8] Currently, the default fund holds 65 percent of its assets in international equities and 17 percent in Swedish equities. In the portfolio, 60 percent of all assets are managed passively.[9] The money management fee for the default fund was 0.5 percent and only 0.16 percent after the PPM rebate in 2003.

Information about the funds that participate in the system is distributed in a catalogue to participants once a year.[10] The funds are listed by type (interest-earning, mixed, life-cycle, and equity funds), and for each fund the catalogue provides information on the rate of return for the past five years, the risk (measured as the standard deviation of returns for the past three years), and the fee. Participants may choose up to five funds. A participant who makes an active investment choice may not invest any share of the portfolio in the default fund or shift the portfolio to the default at a later date.[11] Participants can change their allocations on a daily basis at no additional cost.

Benefits in the Premium Pension plan can be withdrawn beginning at age 61 and annuitization is mandatory. The PPM is the sole provider of annuities, and participants can choose between a fixed or variable annuity. The level of the annuity is based on standard insurance practices, and the PPM uses unisex life tables.[12]

Investment Behavior

The first investment election in the Premium Pension took place during the fall of 2000.[13] The PPM launched a large advertisement campaign to encourage participants to select their own portfolios. In addition to the PPM, private fund managers also put significant resources into ad campaigns to attract investors.

The number of investment options in the Swedish plan vastly exceeds what is available in other countries that have introduced individual accounts or in 401(k) plans. Psychologists and economists in general believe that more choice is better but recent research in both fields challenges this view by showing that a large number of options in fact can be demotivating.[14] Furthermore, making investment decisions is complicated, and many individuals have limited financial experience. As a result, they are likely to make mistakes as shown by the experiences with 401(k) plans.[15] For example, more than half of participants in 401(k) plans fail to diversify their portfolios.

To examine participant investment behavior in the Swedish plan, the following analysis looks at data from the PPM on participant investment allocations for 10,000 participants in 2000 matched with detailed information on earnings, education, non-pension assets, and occupation.

[7] The five-year return should be in the top quartile of the returns for all funds.

[8] The second fund can invest 100 percent in equities while the default must hold a minimum in interest-earning assets.

[9] The default fund is also required to incorporate environmental and ethical concerns, and the government funds will only invest in companies that follow international conventions on human rights, child labor, environment, and corruption to which Sweden has agreed. However, no exclusions will be made on the basis of the goods that the company produces; for example, tobacco companies will be allowed. The effect on the returns from this screening has been very small. Simulations done by the fund indicates that the portfolio excluding the 30 companies had a rate of return that was 15 basis points lower than the full portfolio. The government fund managers do not have voting rights for their holdings.

[10] The information is also available on the PPM's website.

[11] The reason for this rule was that the center-right parties wanted to limit the government's involvement in money management.

[12] The Premium Pension provides a voluntary survivor benefit. If a survivor benefit is selected and the individual dies before retirement (during the accumulation phase), the survivor benefit pays a fixed amount for five years. If the individual dies after retirement, the survivor benefit will be paid as a lifelong annuity to the surviving spouse. The account balance cannot be bequeathed as a lump sum.

[13] In preparation for the new system, the government began collecting contributions for the funded individual accounts in 1995 and held the money in an interest-bearing government account at the National Debt Office until the year 2000. According to the original timetable for the reform, the investment elections should have taken place in 1999 but were delayed due to implementation problems of the computer systems handling the administration.

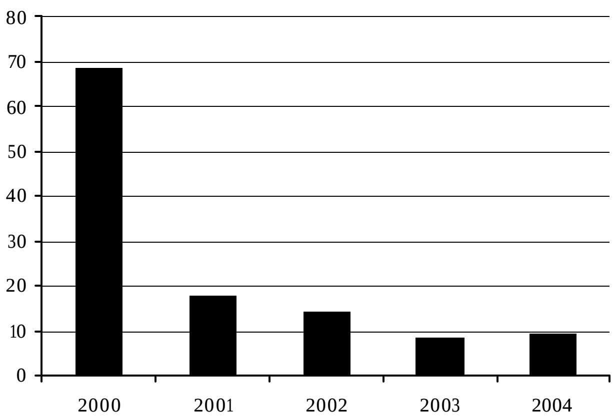
[14] Lowenstein (1999); Iyengar and Lepper (2000).

[15] Munnell and Sundén (2004).

Active Choice versus Default

Figure 1 presents the percent of new participants who made an active investment decision for the period 2000-2004. Initially, 68 percent of participants chose their portfolios, but in the second elections in 2001 that share decreased dramatically to less than 20 percent. In the most recent elections in 2004, only 10 percent of participants made an active choice.

Figure 1. Percent of New Participants Making an "Active" Investment Choice



Source: PPM (2004).

One explanation could be that the new entrants after 2000 are mostly young workers entering the labor market. These participants are less likely to make decisions about pensions because retirement is far away and they may have more immediate financial concerns such as paying off education loans or buying a house. Their account balances are small and they may view the gains from choosing a portfolio as small. However, close to 60 percent of participants under age 30 chose their own portfolio in the first investment elections in 2000. The more likely explanation for the downward trend is that the Premium Pension received much less attention in more recent enrollment periods and that selecting a portfolio among more than 500 funds is just too difficult. Furthermore, the default fund has performed better than the average portfolio.[16]

Table 2 shows that women were somewhat more likely than men to make a choice in 2000.[17] Age is also important for the decision to take an active role.[18] The Premium Pension will be less important for participants born before 1954 who will receive

Table 2. Percent of Participants Making Active Investment Choices by Characteristic, 2000

Characteristic	Percent of Participants
Gender	
Men	67.5
Women	69.6
Age	
Born before 1954	68.0
Born 1954 -1965	71.0
Born after 1965	60.4
Marital Status	
Married	72.5
Not Married	62.8
Education	
No High School	62.5
High School	69.2
College	71.5
Individual Retirement Account	
Yes	78.4
No	63.0
Own Equity	
Yes	75.9
No	62.7
Qualify for Guarantee Benefit	
Yes	65.8
No	70.9

Source: Author's calculations of PPM/LINDA data.

[16] The initial investment selections in 2000 coincided with the peak of the run-up in the stock market, and in the year following the first investments the stock market tumbled. Since the fall of 2000, the return of the default fund has been -29.9 percent, while the average investor who actively chose funds lost 39.6 percent (Cronqvist and Thaler 2004). The default fund is also considerably cheaper than other funds — the fund fee for the default fund is 0.16 percent while the average fund fee for participants who made an active choice is 0.55 percent.

[17] Engström and Westerberg (2003) found a similar result.

[18] The first cohort to participate in the new pension system is the group born in 1938; however this cohort will only receive one-fifth of their benefits from the new system. Each cohort thereafter will increase its participation in the new system by 1/20. Those born in 1954 or later will participate only in the new system.

some of their benefits from the old pension system and it is therefore not surprising that this group was less likely to make an active choice. Participants who were recent entrants to the labor market (born after 1965) were also less likely to choose. The analysis indicates that participants around age 40 were those most likely to take an active role. Married participants and participants with at least a high-school degree were more likely to make a choice. As expected, participants who had previous experience with investing (own equities as part of their non-pension portfolios) or had thought about retirement savings (have an individual retirement account) were more likely to make an active choice. Expected retirement benefits also influence the decision to put together a portfolio and workers with low expected benefits (qualify for the minimum guarantee) were less likely to make an active investment decision.

Investment Allocation

Among participants who made an active investment choice in 2000, the average number of funds selected was 3.4. However, almost one-third of participants chose five funds, the maximum allowed (see Table 3). Possibly, this strategy reflects a wish to diversify the portfolio. However, experience with investing in 401(k) plans has shown that participants often fall back on simple rules of thumb. One such rule is the 1/n heuristic which means that participants divide their contributions equally among all available investment options.[19] In the Swedish context, the 1/n heuristic suggests that participants would select the full five funds. If a plan offers only a few choices that are balanced between equity, bond, and fixed income funds, this strategy may lead to a diversified portfolio. On the other hand, if a plan offers many equity funds, participants tend to invest a too large share in equities. In the Premium Pension, 70 percent of the available funds are equity funds. The results show that the share of equities in the portfolio increases with the number of funds chosen: among participants who chose two funds, the equity share was 68.3 percent while the share for those who chose five funds was 83.1 percent.

Thus, although most participants invested in more than two funds, the overall portfolios are clearly undiversified. On the other hand, the Premium Pension plan is relatively small compared to the first tier of the public pension system so most of the overall benefit is not subject to financial risk.

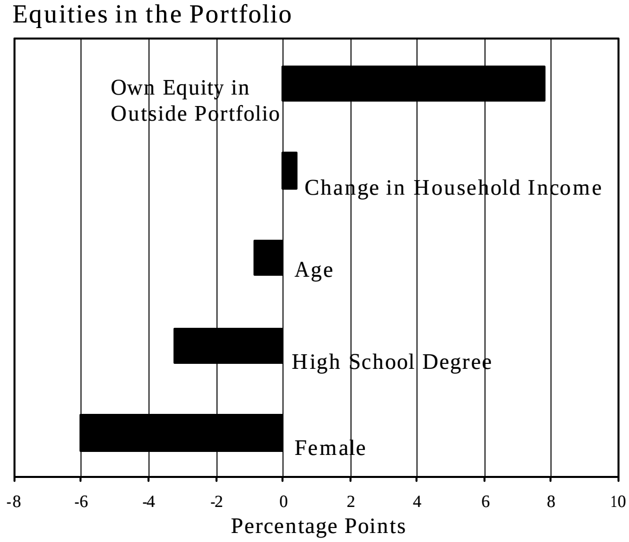
Table 3. Percent of Participants' Portfolios Invested in Equity Funds, Balanced Funds, Interest Funds, and Life Cycle Funds by Number of Funds Chosen

	Number of Funds Chosen					All
	1	2	3	4	5	
Percent of Participants	14.3	12.8	21.2	19.7	32.0	100.0
Percent of Portfolio in:						
Equity Funds	33.4	68.3	70.1	77.2	83.1	70.3
Balanced Funds	11.8	9.8	8.7	7.5	5.9	8.2
Interest-earning Funds	1.7	2.0	3.3	2.2	1.8	2.2
Life Cycle Funds	53.1	19.9	17.4	13.0	9.1	19.3

Source: Authors' calculations of PPM/LINDA data.

Figure 2 shows how the share in equities in participants' portfolios varies with demographic and economic characteristics. (The regression results for this analysis are presented in Table A1 in the Appendix). Women invested less in equities and their equity share was 6 percentage points lower than for men. The share in equities declined with age as theory predicts: for each year the equity share declined by one percentage point. Owning equities as a part of the non-pension portfolio increased the equity share in the Premium Pension by 7.8 percentage points. This may indicate that individuals who invested their non-pension funds in equities had a persistent preference for stocks and invested their pension fund in a similar fashion to

Figure 2. The Impact of Demographic and Economic Characteristics on the Percent of Equities in the Portfolio



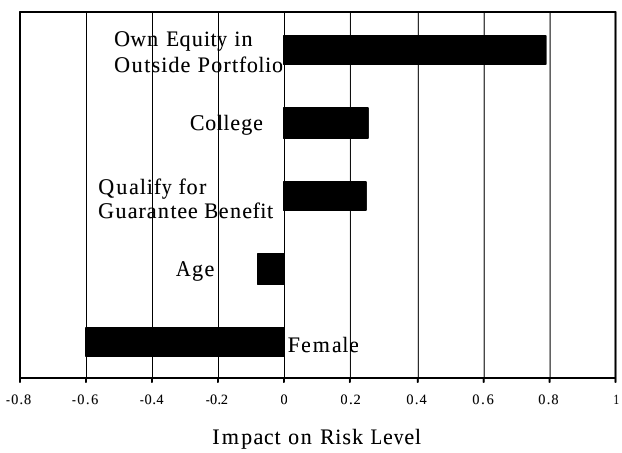
Source: Authors' calculations of PPM/LINDA data.

[19] Benartzi and Thaler (2001).

their non-pension assets. As expected, high-income households held more of their portfolio in equities although the effect is quite small; an increase by 100,000 Swedish crowns increased equity holdings by 0.4 percentage points.[20]

Overall, the share held in equities is high among Swedish participants. However, equity funds vary in terms of risk. Figure 3 shows how the average level of risk varies with participants' characteristics. A fund's risk is measured by the standard deviation of the rate of return for the past 36 months and ranges from 0 (very low risk) to 47.5 (very high risk).[21] In 2000, the average risk for participants' portfolios was 20.8. Women took less risk in their investments than men but both men and women invested in high-risk portfolios.[22] Previous research has argued that women tend to be conservative investors, and that their greater propensity to invest in low-risk assets could lead to large differences in retirement income between men and women. However, in Sweden, women did not appear to invest too conservatively; rather it was men who invested too riskily.

Figure 3. The Impact of Demographic and Economic Characteristics on the Level of Risk in the Portfolio



Source: Authors' calculations of PPM/LINDA data.

The level of risk decreased with age and for each year the risk level decreased by 0.1. Owning equities outside of the Premium Pension may be a proxy for the willingness to take risks and, not surprisingly, had a positive effect on the level of risk of the portfolio. The results also show that workers who expect to qualify for the minimum guarantee benefit took on more risk. These workers generally have low lifetime earnings and face earnings risk such as becoming unemployed or disabled. One way to offset this risk could be to invest their pension funds in relatively safe assets. However, participants who expect to receive the guarantee benefit have little to lose by taking on additional risk in their pension investments because the level of the guarantee benefit does not depend on the outcome in the Premium Pension. Total benefits cannot fall below the minimum level, so by investing in riskier assets these workers could increase their benefits without having to bear the full burden of a poor outcome.[23]

The Future of the Premium Pension

The original message of the PPM was that making an active choice was "a chance to affect benefits positively and end up better off." The investment elections received considerable media attention and this coverage contributed to the view that the default option was only intended for those who "absolutely did not wish to choose or did not know how to."

In later enrollment periods, the PPM's strategy has changed. The agency now takes a more passive role and has limited its communication to providing information about the funds' risks and fees. The agency plans to introduce a financial education program, and their objective is to improve the public's financial knowledge so that they can make good investment decisions. The question is whether this strategy will be successful. Experience with financial education programs for 401(k) plans shows some positive effects but, overall, the results indicate that it is difficult to improve financial knowledge.[24]

Information and education are clearly important components of the Premium Pension but it is equally important to consider how the design can be modified to make it easier for participants. Participants' investment choices during the first four years clearly show that the number of options is overwhelming. One approach to simplifying the investment decision would be to provide tiers of options.[25] The first tier would be a well-designed default fund. The current default fund is a global equity fund. Because most participants are far from retirement (the average age among participants is 42), the current investment strategy appears reasonable. However, as participants age, the default

[20] 100,000 Swedish crowns is approximately $13,300.

[21] In the fund catalogue, funds are grouped by risk as follows: 0-7 low-risk funds; 8-17 average-risk funds, 18-24 high-risk funds; and 25 and higher are very high risk funds.

[22] Säve-Södergbergh (2003) has examined gender differences in the Premium Pension plan.

[23] The minimum guarantee is quite generous; the benefit is equal to approximately 40 percent of the average wage.

[24] Munnell and Sundén (2004).

[25] Munnell and Sundén (2004); and Palme and Sundén (2004).

fund needs to be modified. One option is to change it into a life cycle fund. The second tier would provide three to five investment packages for people who would like to choose but do not want to become investment experts. The packages would correspond to different risk categories — low, medium, and high. The funds in the packages would be chosen on a competitive basis considering investment strategy and fees. The third tier would consist of the full menu of investment options for participants who are interested in selecting their own portfolio.

An issue is whether maintaining very broad choice is cost efficient. The fixed administrative fee for the PPM is relatively high, at 0.3 percent of assets, and the money management fee for the default fund is considerably lower than for the majority of funds.[26]

Conclusion

Individual accounts were introduced in Sweden as part of a major pension reform in 1998. The plan offers investors broad choice; currently participants can choose between more than 650 funds. The first investment election took place in the fall of 2000, and at that time almost 70 percent of participants made an active investment choice. The investment elections took place at the peak of the run-up in the stock market and a majority of participants concentrated their portfolios in equities. The average investor is still relatively far from retirement so investing a lot in equities may not be a problem right now. But unless participants rebalance their portfolios and change allocations as they age, this strategy could have negative consequences for retirement income. So far, the evidence indicates that Swedish participants exhibit the same inertia that has been observed for participants in 401(k) plans. An additional factor that will affect retirement income is the average fee of portfolios. Those who have selected their own portfolio have considerably higher fees than participants in the default.

The Swedish experience with individual accounts makes clear the importance of a well-designed default fund. The interest in the Premium Pension has declined dramatically since the plan's inception. In the most recent enrollment period, less than 10 percent of new participants made an active investment choice. Furthermore, most participants have lost money in their accounts because of the fall in the stock market and many are starting to question the reason for managing their own pension funds, in particular since the default fund has performed better than the average investor's portfolio.

[26] In the summer of 2004, the government appointed a commission to examine the Premium Pension and to suggest whether any changes should be made to the plan.

References

Benartzi, Schlomo and Richard Thaler. 2001. "Naïve Diversification Strategies in Defined Contribution Plans." *American Economic Review* 91: 79-99.

Cronqvist, Henrik and Richard Thaler. 2004. "Design Choices in Privatized Social Security Systems: Learning from the Swedish Experience." *American Economic Review Papers and Proceedings* 94: 424-428.

Engström, Stefan and Anna Westerberg. 2003. "Which Individuals Make Active Investment Decisions in the New Swedish Pension System?" *Journal of Pension Economics and Finance* 2: 225-245.

Iygengar, Sheena and Mark Lepper. 2000. "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* 79: 995-1006.

Lowenstein, George. 1999. "Is More Choice Always Better?" *Social Security Brief*. Washington, DC: National Academy of Social Insurance.

Munnell, Alicia H. and Annika Sundén. 2004. *Coming Up Short: The Challenge of 401(k) Plans*. The Brookings Institution Press.

Palme, Mårten and Annika Sundén. 2004. "Premiepensionen i det Reformerade Pensionsystemet – Är Det Önskvärt att Kunna Välja mellan 663 Fonder" (The Premium Pension — Is the Ability to Choose between 663 Funds a Good Thing?). *Ekonomisk Debatt* 32: 6-15.

Premiepensionsmyndigheten (PPM). 2004. "Premium Pension Statistics." [Available at: http://www.ppm.nu].

Sundén, Annika. 2000. "How Will Sweden's New Pension System Work?" *Issue in Brief* 3. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Säve-Söderbergh, Jenny. 2003. "Pension Wealth: Gender, Risk and Portfolio Choices." Essays on Gender Differences in Economic Decision-Making. Ph.D. dissertation, Swedish Institute for Social Research, Stockholm University.

Table A1. Parameter Estimates from Regressions Explaining Investment Choice Given Active Role

	Mean	Equation 1 Share in Equities (Tobit)		Equation 2 Level of Risk in Portfolio (OLS)	
Variable		Coefficient	Standard Error	Coefficient	Standard Error
Female	0.504	-0.060	0.011	-0.598	0.133
Age	42.5	-0.008	0.0005	0.087	0.050
Age Squared				-0.002	0.0006
Married	0.628	-0.012	0.011	0.013	0.143
High school	0.504	-0.032	0.013	0.151	0.167
College	0.309	0.006	0.015	0.252	0.184
Household Income (SEK,Divided by 100)	38.4	0.0004	0.0002	0.0006	0.002
Has Individual Retirement Account	0.412	-0.003	0.010	-0.105	0.129
Own Equities	0.486	0.077	0.010	0.790	0.127
Qualify for Guarantee Benefit	0.450	0.011	0.011	0.246	0.145
Constant		1.017	0.0265	20.82	1.011
R^2		0.039		0.042	
Number of Observations	6,853	6,853		6,672	

Source: Author's calculations of PPM/LINDA data.

Note: 1 U.S. Dollar is approximately equal to 7.50 Swedish Crowns.

CENTER FOR
RETIREMENT
RESEARCH
AT BOSTON COLLEGE

About the Center

The Center for Retirement Research at Boston College, part of a consortium that includes parallel centers at the University of Michigan and the National Bureau of Economic Research, was established in 1998 through a grant from the Social Security Administration. The goals of the Center are to promote research on retirement issues, to transmit new findings to the policy community and the public, to help train new scholars, and to broaden access to valuable data sources. Through these initiatives, the Center hopes to forge a strong link between the academic and policy communities around an issue of critical importance to the nation's future.

Affiliated Institutions

American Enterprise Institute
Massachusetts Institute of Technology
Syracuse University
The Brookings Institution
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Fulton Hall 550
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-1750
E-mail: crr@bc.edu
Website: http://www.bc.edu/crr

All of our publications are available on our website:

www.bc.edu/crr

The research reported herein was supported by the Social Security Administration. The opinions and conclusions are solely those of the author and should not be construed as representing the opinions or policy of the Social Security Administration or of any agency of the Federal Government, of the Swedish National Social Insurance Board, or of the Center for Retirement Research at Boston College.