
Are men better investors than women? Gender differences in mutual fund and pension investments

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Abstract The majority of consumers lack awareness of how their financial situation will be when they retire. Women face a particularly severe situation. One reason is that reformed retirement systems are disadvantageous for women. Another reason is that women are much less interested to manage their money and to make long-term investments. This paper reviews prior studies on gender differences for financial consumers. Results are inconclusive and more research is needed to clarify when and why there are gender differences. This paper also analyses how the Swedish population has allocated their pension investments within the state pension system as well as the results from a nationally representative sample of consumers. There are less significant differences between expert men and women. Most differences are between novice men and women. Men are both more profit-oriented and more motivated to make financial investments than women are.

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INTRODUCTION AND PURPOSE OF THE STUDY

Financial experts, researchers, and government officials from several countries have concluded that the majority of consumers lack awareness of how their financial situation will be when they retire. People live in retirement for 20–30 years if they retire at the age of 65, which is a considerable part of their lives.¹ Most American boomers (60 per cent of the population born 1946–1964), however, will for example not be able to

maintain a lifestyle close to their current one without continuing to work, and only about a quarter of them are financially prepared for their twilight years.² Nearly half of the unprepared boomers are not aware of the difficult financial straits approaching and they have attitudes similar to those of the affluent segment.

Against this background it is problematic that several studies conclude that the situation is worse for women than for men. The pension prospects of the majority of women are poor, and many women face the pension poverty trap.³ One of the reasons is that women need to stretch their retirement income over a longer time since they live longer on average than men, and they must meet higher expenditures because chronic

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health problems increase with age.^{4,5} Another reason is that most OECD countries have reduced state pensions and are instead promoting private (occupational and personal) pension savings, a reform that ignores the particular difficulties women have to acquire an adequate pension income.

A common denominator for the European pension systems is that women's pensions are much more affected by the reform than men's pensions, because fewer women than men have occupational pensions and the amount of their entitlements is lower. Even for the pension systems such as the Danish and the Dutch, which may be the best in Europe, the norm does not meet female pension requirements.⁶ The old pension systems were developed on the basis of the family as a unit. But as long as labour markets, wages, pension schemes, and care are gender differentiated, the concept of individualisation based on the principle of equality does not fulfil its promises.⁶

Ginn³ argued that the situation is particularly acute in Great Britain. British women have a high rate of divorce and cohabitation, and they can therefore not rely on a husband's pension. In addition, Britain has a relatively small first tier state pension, which will sink to about 7 per cent of average earnings by 2050. Furthermore, the ratio of older women's personal income to older men's has declined from 71 per cent in the mid-1980s to 53 per cent in 1998. British women often have a part-time job that does not bring any financial gain because of the withdrawal of means-tested benefits.

The situation is problematic also for American women.⁵ About half of them work in low-paying jobs without pensions, and those who do have pensions receive only about half the amount that men do. Gender differences in income among the elderly in the US persist at levels comparable with those of 50 years ago.⁷ It is projected that married women who retire over the next 20 years will have pension benefits that average

35–40 per cent of men's.⁷ The comparable figure for married women who retired in the 1970s and 1980s was about 15 per cent of men's pension benefits. Improvements in single women's benefits relative to men's will have a lower rate of change. Women all over the world are consequently in a very vulnerable position at retirement. If these differences persist, women may end up accumulating less wealth for retirement regardless of how they invest their defined contribution (DC) assets.⁸

The purpose of this paper is therefore to review prior studies that focus particularly on gender differences. Of particular interest is the question whether differences are gender-based or not, and in what ways they may be different. The results of a large study on financial issues are presented and analysed based on what was found in prior research. Finally, these results are discussed and ideas for future studies are suggested.

THEORETICAL BACKGROUND

There is a general lack of research on consumers' financial investment behaviour, but the few studies available usually show that there are gender differences.^{9,10} A widespread view concerning financial decision-making is, for example, that women are more risk averse than men.¹¹ A review of prior studies must therefore include the risk aspect. Other gender differences reported are regarding motivation, confidence and knowledge of financial issues, and the use of financial advice.

Confidence and knowledge

A quote from Confucius says that: 'To know that we know what we know and that we do not know what we do not know, that is true knowledge'. Russo and Shoemaker¹² argued that such metaknowledge, that is, an appreciation of what we do know and what we do not know, may be more important than primary knowledge. It is consequently a mistake to equate experience and learning.

While experience is inevitable, learning is not. Overconfidence persists in spite of experience because people often fail to learn from experience. In order to learn, they need feedback about the accuracy of their opinions and doubts, and the motivation to translate this information into better metaknowledge. Nevertheless, prior research indicates that women have less confidence in their investment decisions.^{13,9} When American women assessed their own knowledge of financial products and services, they gave themselves a grade of C or lower.¹⁴ Only 18 per cent felt very well prepared to make wise financial decisions, and they were even less certain about their ability to protect their investments and retirement savings. While 67 per cent considered it important, only 15 per cent felt that they could accomplish it. Some studies have tried to explain why these differences exist. Estes and Hosseini⁹ made a statistical control of other variables such as the nature of the task, personal characteristics, knowledge of the domain, and information processing capabilities. These additional analyses did not change their conclusion that men are substantially more confident in their investment decisions than women. In general women tend to be less confident in domains considered to be masculine, in spite of equal ability to perform.⁸

Motivation to invest

Studies reviewed by Burton¹⁵ in 1995 showed that many women consider the purchase of financial services as a masculine activity. Men classified the service as masculine or feminine based on the gender of the service provider, while women based their classification on the gender of the typical user. Men's identities, self-esteem, and sense of power were all inextricably linked with money, while women sought immediate gratification through spending and were more security-oriented in money handling. Women were also more interested in their current debt than with their long-term

financial goals.¹⁴ The primary financial goal for the year was to pay off debts.¹⁴ They were much less interested in savings, investments, and to prepare for retirement. Studies have also shown that when women do not have a typical female outlook on financial services, they often encounter discrimination. It is for example more difficult for female entrepreneurs to borrow money.

Risk attitude and risk propensity

Women tend to be more risk averse than men in a number of different areas according to a large number of studies (see Byrnes *et al.*,¹⁶ for a review). This is explained by biological differences and by the way women and men are socialised (see eg Olsen and Cox⁸ for references). Women have higher levels of enzyme monoamine oxidase, which reduces sensation seeking. Gender-related risk-taking differences in childhood games develop only after an age when peer pressure and social expectancies become strong. Risk-taking differences are also somewhat context specific and experience and level of expertise reduce, but do not eliminate risk-taking differences by gender.

Risk taking involves options that might result in negative outcomes.⁸ Several studies have shown that experts tend to perceive of risk in more concise and abstract terms, while nonexperts are more intuitive.⁸ While the experts may use statistics to classify the risk level, nonexperts tend to characterise risk more broadly such as by feelings of dread, unknowing, and degree of trust. From a behavioural point of view, risk aversion may be seen as loss aversion. Uncertainty of outcome can serve as an amplifying factor in potential loss situations. Uncertainty is therefore similar to the basic emotion known as surprise, which by itself has no inherent hedonistic tone but can amplify.⁸

Some studies have found that women are more risk averse than men.^{4,10,17} The impact of gender on risk taking, however, was

significantly weakened when investor knowledge of financial markets and investments was controlled.¹⁰ All men are not equal. Optimistic men were active in the futures and options market, while pessimistic men were more active on the stock market.¹⁷ A study of professional investors showed that women placed more emphasis on the downside measures of risk and ambiguity than did men, and they gave lesser weight to variability of the return.⁸ Women professional investors were found to be more security prone decision makers, and exhibited a greater tendency to select a return target and then work to reduce risk. Men, on the other hand, focused more on increasing return.

The prevalence of stereotypic gender-specific risk attitudes has been questioned by some researchers. Female subjects do not generally make less risky financial choices than male subjects; the comparative risk propensity of male and female subjects in financial choices strongly depends on the decision frame.¹¹ When identical decisions are presented as investment choices, no gender differences in risk attitudes were found.¹¹ In a study of professional female and male investors there was no evidence of risk-taking differences.¹⁸

It was not gender alone that determined investment choice in another study, but rather a combination of gender and marital status.¹⁹ Single women and married men were less likely than single men to choose 'mostly stocks', and neither education nor age affected allocation decisions. Other studies also found differences based on marital status.^{4,20}

It is interesting to note that when a representative sample of the population is studied, women do not appear to be risk averse. Sweden launched a new public pension system in 1999 where 2.5 per cent of the earnings that go to the DC system can be invested in up to five mutual funds (from a total selection of around 600 mutual funds) chosen by the individual. The Premium Pension Authority (PPM), which was started

to run the new pension system, ran a massive information campaign to introduce the new system. A study based on a sample of 147,216 individuals showed that more women (68 per cent) than men (66 per cent) made an active investment decision, and the portfolio of the average active Swedish female investor is associated with a higher risk compared with the default alternative.²¹ The choice of PPM funds differs from other types of mutual fund investments. Consumers select PPM funds in their homes, and mail their selection to the PPM authority. This may therefore not be perceived as a masculine activity. Another difference is that the PPM money is much more abstract than money invested in private pension funds. The latter may be used for other purposes (eg consumption), but PPM money can only be used for PPM investments.

Financial advice

In many countries, financial due diligence regulations and ethical guidelines require either implicitly (eg the US and Canada) or explicitly (eg Australia, Ireland) that financial advisors know their clients and that investment recommendations are suitable given clients' financial and personal circumstances.²² A major problem with clinical judgments is that they are subject to a variety of cognitive biases, including gender stereotyping.²² Gender stereotyping may be regarded as a heuristic that not only serves as an energy-saving device, but may also lead to erroneous conclusions. If financial advisors stereotype their clients they may overgeneralise conclusions about their female versus male customers. They may, in that case, think that almost all women are risk averse (eg 95 per cent), while in reality only most (eg 60 per cent) of them are risk averse.

Prior studies reviewed by Roszkowski and Grable²² showed that males were viewed as more risk tolerant than they really were and females were viewed as more risk averse than they really were. In addition, stereotyping

about one's own group (in-group) may differ from stereotyping about other groups (out-groups), but results from prior studies are not consistent. Roszkowski and Grable found it rather disappointing that the 183 professional advisors they studied, who had actual experience with their 290 clients, were not more accurate in gauging their clients' risk tolerance than undergraduates who were only given visual clues and maybe some casual knowledge of their targets as the basis for their estimates. Advisors made systematic errors when they judged the risk tolerance of their clients, and seemed to have a somewhat distorted sense of the risk tolerance of males and the risk aversion of females with the latter being greater. Advisors seemed to see greater risk tolerance differences between males and females at the low end of the risk tolerance continuum than at the high end.

European women's need for financial advice to avoid the pension poverty trap is greater than men's, but they lack resources to pay for advice.³ American female clients depended more on advisors' advice than did male clients.⁸ Female clients were more concerned how their investments fit into the bigger picture of their economies and social lives. Most (82 per cent) female advisors were willing to look at portfolio investments from this larger perspective, whereas only 63 per cent of male advisors were willing to do it.

Conclusions about gender differences in prior studies

The review of prior studies on gender differences in financial matters provides quite an inconsistent picture. On the one hand, several studies report gender differences, but it is unclear whether such differences would exist if a representative sample of the population had been used. On the other hand, several researchers report that differences are significantly weakened when for example investor knowledge of financial markets and investments are controlled. Several studies control for variables that are

not theory-based. An example is that level of education is controlled for without any theory-based explanation why the level of education would be important for motivation for financial issues. What seems to be clear is that men are more confident and more motivated to invest than women. Despite the widespread view that women are more risk averse than men, the studies reviewed do not support that opinion. Prior studies reveal however that both male and female clients may get bad financial advice because of the prevailing gender stereotypes.

METHODOLOGY

The data analysed in this study come from the Swedish PPM²³ and from a survey sent to a nationally representative sample of consumers.

The pension data are based on actual choices made by 5,470,000 Swedes (2005) and a market value of more than €20bn (2005). The Swedish population can decide how they want to invest their premium pension money. The categories they can choose from are (a) share funds (mutual funds), (b) mixed funds, (c) generation funds, (d) interest-bearing securities, and finally (e) they may decide not to make an active choice themselves but to let the 7th AP-Fund manage their money. The 7th AP-Fund invests in global stocks. When risk is measured by variability, the share funds (mutual funds) generally have a high risk, the interest-bearing securities have a low risk, and the other funds are average in risk. Data from actual choices by the Swedish population 2002, 2003, 2004, and 2005 were used in this study.

The mutual fund investment data are based on a survey to a nationally representative sample of 5,000 people (25+ years) and 913 usable questionnaires were received (a response rate of 18.3 per cent). The database used is owned by the Swedish Government and includes all people living in the country. The database does not include

information about ownership of mutual funds, stocks, etc. Consequently, the survey had to be sent also to people who did not own mutual funds and stocks. When PPM funds are excluded, around half of the Swedish population owns private mutual funds and stocks.

Interaction among variables

Prior studies^{10, 21} have shown that financial knowledge and familiarity with financial products are important. A comprehensive body of research in marketing has acknowledged that motivation and ability to process domain-specific information influence how consumers process information for decision-making purposes. This type of research has used a dual-process approach, such as the elaboration likelihood model proposed by Petty and Cacioppo^{24–26} in 1984. The dual-process models are concerned with whether consumers use a thorough and effortful process-to-process information for their decisions and the consequences of such processing.

In the present study, two variables were included in the analyses of differences between customer groups: subjective knowledge of the stock market, which measures consumers perceived ability to understand the stock market: ‘If you make an evaluation of your own knowledge about MF&S, how knowledgeable do you perceive yourself to be?’ Involvement in the stock market is a measure of relevance and motivation; ‘How large is your interest/ involvement in the stock market?’ These

variables were used as categorisation variables for high, moderate, and low elaboration likelihood (EL) as suggested by Petty and Cacioppo.²⁴ *Low EL*: either motivation/ involvement or ability to think is absent or reduced substantially — the topic has low personal relevance to them; 420 respondents (men = 39 per cent, women = 64 per cent). *High EL*: both high motivation and ability to engage in issue-relevant thought — the topic has high personal relevance to them; 134 respondents (men = 19 per cent, women = 6 per cent). *Moderate EL*: the remaining respondents; 323 respondents (men = 42 per cent, women = 30 per cent). Due to missing data 16 respondents were excluded. The distribution of respondents clearly shows that men are much more motivated and are more knowledgeable than women. There are for example three times as many men as women who are categorised in the High EL group.

RESULTS

Major findings in pension fund study

Table 1 shows that there are actual differences between how women and men allocate their pension investments within the PPM system. Data for 2002 are presented because 2002 is a year when the stock market bubble effect is present, whereas 2005 illustrates a year when the market has recovered. Data for 2003 and 2004 are available, but adds no new information. The conclusion is that on the aggregate level men own more mutual funds than women. Men earn more money and

Table 1 Choice of pension investment (% of investment value) 2005

	2005 (%) Women	2005 (%) Men	2002 (%) Women	2002 (%) Men
Mutual funds (share fund)	49.8	53.0	49.9	52.7
Mixed funds	4.6	3.3	4.3	3.2
Generation funds	14.1	11.8	15.2	12.6
Interest-bearing securities	3.2	2.7	2.2	1.8
No active choice (7th AP-Fund)	28.3	29.9	28.5	29.7
	100	100	100	100

Table 2 Increase/decrease of pension value (market value as % of invested value)

<i>Pension category</i>	<i>2005 Women</i>	<i>2005 Men</i>	<i>2002 Women</i>	<i>2002 Men</i>
Mutual funds (share fund)	117	118	57	58
Mixed funds	113	113	74	74
Generation funds	110	110	63	64
Interest-bearing securities	101	101	103	103
No active choice (7th AP-Fund)	123	123	68	68
Average	117	118	63	63

they had more money to invest in the PPM system than women had.

Table 2 shows the results of the pension investments in different categories. In 2002, the market value of mutual funds decreased to half the value invested, but already in 2005 this category had a higher return on investments than the other categories. Table 2 also shows that when the stock market is volatile, interest-bearing securities do not lose value. When the stock market is up, however, it is more advantageous to invest in stocks. Finally, Table 2 shows that there are no statistically significant differences between women and men in terms of successful investments on the aggregate level. Over a longer period the conclusion may be different. Traditionally, it has been more advantageous to invest in stocks than in interest-bearing securities.

Significant gender differences in the mutual funds study (total sample)

Initially, the whole sample was analysed to see whether there were differences between men and women regarding various aspects of financial investments. Only the statistically significant differences are reported here, since it is argued that it is necessary to compare comparable men and women. Results from the total sample are included only to show that conclusions vary depending on how the data are analysed. Men feel more certain about the decisions they have made than women ($t=2.71$), and they are more involved

in the stock market than women ($t=6.98$). Men have owned mutual funds longer than women ($t=2.45$). Men are willing to take higher risks than women ($t=6.29$), but they also monitor the stock market much more frequently ($t=7.35$). Men have a much higher subjective knowledge of the stock market than women ($t=7.86$). Men think that it is less difficult and energy demanding to use information about the stock market ($t=3.37$). Men make more own evaluations of the stock market than women ($t=7.28$). Men have more knowledge to interpret annual reports ($t=4.43$). Finally, men are more profit-oriented than women ($t=4.18$). The conclusion is that these results confirm the stereotypic picture of gender differences among financial consumers.

Gender differences in three consumer groups

More men than women are interested in the stock market. It is consequently necessary to adjust for this fact in analyses of gender differences. Since the use of information, evaluations, etc are of utmost importance on the stock market, the categorisation suggested by Petty and Cacioppo²⁴ was used to categorise respondents. This categorisation makes a distinction of consumers in terms of their elaboration of information. Individuals who are high elaborators have both the ability and motivation to elaborate on the information (High EL). Individuals who are low elaborators lack both knowledge and

Table 3 Gender differences in relation to mutual funds in three consumer groups

	χ^2 test, <i>p</i> -values		
	High EL	Moderate EL	Low EL
<i>General</i>			
% total savings in MF	NS	NS	NS
MF as % of income	NS	NS	NS
Years owned MF	NS	NS	NS
Mutual funds for retirement	NS	NS	0.011
<i>Confidence and knowledge</i>			
Subjective knowledge	NS	NS	0.002
Difficulty to use information	NS	NS	NS
Feeling after purchase decisions	NS	NS	NS
Own evaluation stock market	NS	0.017	NS
Knowledge to interpret annual rep.	NS	NS	NS
<i>Motivation to invest</i>			
Reason to invest in stock market	NS	0.02	NS
Involvement/motivation	0.018	NS	NS
How often monitor market	NS	0.017	0.018
Read financial magazines	NS	NS	NS
How invest 10,000 euro	NS	0.042	NS
<i>Risk</i>			
Risk willingness	0.10	0.001	0.020
Wait to sell a bad fund	NS	0.029	0.008
<i>Financial advice</i>			
Adviser influence	NS	NS	NS
<i>Consequences</i>			
Success vs index for type of fund	NS	NS	NS

High EL=high subjective knowledge of stock market and high involvement; Moderate EL=either subjective knowledge or involvement is low; Low EL=low subjective knowledge and low involvement
 $p > 0.05$ = NS (not significant)

motivation to elaborate on the information (Low EL). Finally, those who lack either motivation or ability are classified as moderate elaborators (Mod. EL).

Table 3 shows an analysis of gender differences within the three groups that are comparable based on knowledge (subjective) and motivation. It is more relevant to compare men and women within these groups than to compare for example highly knowledgeable men with women who lack knowledge of the stock market. Table 3 shows that there are very few differences between men and women when they are comparable. The first difference in the table is that more women (54 per cent) than men (39 per cent) have invested in mutual funds for their retirement in the Low EL group. The second difference is that women's

subjective financial knowledge is lower than men's subjective knowledge in the Low EL group. This confirms findings from other studies that women describe their financial knowledge as very low. The third difference is that more men in the Moderate EL group make their own evaluation of the stock market. The fourth difference is that the reason for having mutual funds is more profit-oriented for men than for women in the Moderate EL group. The fifth difference is that men in the High EL group are more interested and involved than women in the same group. The sixth difference is that men in both the Moderate and Low EL groups monitor the stock market more often than women in their respective groups. The seventh difference is that if given 10,000 euro to invest in mutual funds, men would choose

funds that were successful now or would be so in the future while many women would choose ethical funds. The eighth difference between men and women is risk willingness. Men are willing to take more risks than women in all the groups. The ninth difference is that men in both the Moderate EL and the Low EL groups would sell unprofitable funds sooner than women. Whether this is good or bad is impossible to say, but it indicates that there are gender aspects in this respect.

The overall conclusion is that there are not as many differences between men and women when comparable men and women are compared. Knowledgeable and motivated women think, feel, and act as knowledgeable and motivated men. There are however many more knowledgeable and motivated men than women. As a consequence, it is much more likely that men have friends who are interested in various financial issues. Friends usually have common interests, which means that the average man get more financial stimulation than the average woman.

DISCUSSION

It is quite clear that the situation is much worse for women all over the world than it is for men, despite the overall conclusion that too many consumers lack awareness of their financial situation when they retire. There are two major factors working against women: the way the retirement systems are built up and the lack of motivation and ability among the majority of women to manage their money. With more studies showing when and how men and women make different investment decisions, it will be easier to understand how it may be possible to help women improve their decision making and thereby their standard of living. If women had as much knowledge about the stock market and were as involved in it as men are, they would make better decisions. Some studies¹³ have shown that overconfidence may result in more trading, but no better

returns. Lack of confidence may however influence motivation to learn more about the stock market and in that way be negative for many women. More studies are therefore needed on how one can increase the knowledge and motivation of consumers who lack sufficient knowledge and motivation to make good financial decisions.

The studies reviewed here show that both men and women may get financial advice based more on gender stereotypes than on individual preferences. Roszkowski and Grable²² suggested that the best solution may be to use a risk tolerance test and advisors must know client time horizon, investment preferences, expectations, and risk attitudes — all of which need to be properly assessed and documented.

Another area for future research is methodological. Schubert *et al.*¹¹ concluded that financial decisions are inherently contextual. Their study that did not find any gender differences suggests that abstract gambling experiments may not be adequate for the analysis of gender-specific risk attitudes toward financial decisions. Their results are confirmed by the results presented in this study where comparable men and women are compared. More studies are therefore needed to support or reject that conclusion.

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