

Money Attitude Typology and Stock Investment

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This study identifies segments of individual investors based on their money attitudes (attitude toward financial security, attitude toward stock investing, obsession with money, perceived immorality of the stock market, attitude toward gambling, interest in financial matters, attitude toward saving, frankness about finances). A cluster analysis of data from a representative mail survey conducted in Switzerland (N = 1,569) yielded four main segments of individual investors we term safe players, open books, money dummies, and risk-seekers. This typology has forecast value for behavior: Each type differed with regard to having investment portfolios, buying and selling securities, risk tolerance for maximization of capital, response to price fluctuations, and willingness to make environmentally and socially responsible investments.

Introduction

The percentage of people who invest in securities has risen sharply in recent years (Dreman et al. [2001]). The financial decisions these individual investors must make have also become more complex and risky. So understanding how people invest and what factors influence their financial decisions is increasingly important.

One reason we are seeing an increase in individuals investing in the stock market is because of the trend toward assuming responsibility for one's own retirement income (Clark-Murphy and Soutar [2004]). This trend has been driven by mandatory pension funds and an aging population. Clark-Murphy and Soutar [2004] found that, as a result of government policy, more than 50% of Australians own shares either directly or through managed funds.

In the U.S., MacGregor and Slovic [2000] surveyed people between forty-five and fifty-five years of age, who were "currently at or near the peak of their income earning ability and in a stage of life where retirement planning to meet future income needs is essential" (p. 1). Two-thirds of this age group reported having a portfolio of long-term investments in marketed securities; they regarded portfolio income as retirement income, necessary to supplement Social Security and pensions.

Gunnarsson and Wahlund [1997] discuss another reason for understanding individual financial strategies. They note that many western European countries

have lately experienced increasing competition due to deregulation of the financial services industries, cuts in social security systems, rapid technological change, and a generally difficult economic climate. This has made it necessary for financial industries to switch from supply-side to more demand-side marketing strategies.

In a detailed review of theory and research on stock market psychology, Wärneryd [2001] found that investors do not act in accordance with rational models of investment, as assumed by the theory of efficient markets and by rational models of portfolio choice. Instead of homogeneous behavior that can be explained rationally, investors exhibit behavioral differences. Economic psychology segments individual investors into subsets based on financial and psychological characteristics. Investment firms can then develop targeted marketing strategies to appeal more effectively to the different segments (Wärneryd [2001]).

However, although psychological variables were discussed for segmentation, Wärneryd [2001] found few empirical studies available on psychological factors in securities ownership by individual investors. This study aims to contribute to this area of research by segmenting current and potential consumers of investment products on the basis of the psychological variable of money attitudes.

Research on Psychological Factors of Securities Ownership

In their overview of individual investor research, Clark-Murphy and Soutar [2004] note that we know little about how and why individuals invest in securities. Their results suggest that the most important factors in people's decisions to buy a particular stock are 1) company management, and 2) recent movements in share price.

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But psychological factors also appear to play an important role in individual investing decisions (see Daniel, Hirshleifer, and Teoh [2002], De Bondt [1998], and Hilton [2001]). Some factors that have been investigated include locus of control (McInish [1982]), affects associated with industries (MacGregor et al. [2000]), the social unacceptability of firms perceived as producing risks to health, safety, and the environment (Fischhoff, Nadai, and Fischhoff [2001]), attitudes toward saving (Euwals, Eymann, and Borsch-Supan [2004]), and risk attitudes (Carducci and Wong [1998], Morse [1998], Tigges et al. [2000], Wärneryd [1996, 2001]).

Risk attitudes have been studied the most. Little correlation has been found between general risk attitudes and risky investment choices by individual investors (Morse [1998], Wärneryd [1996]). However, there is a significant correlation between the more specific investment risk attitude that captures risk tolerance in stock investing and the riskiness of investment portfolios (Wärneryd [1996]). This relates to the hypothesis that risk-taking is domain-specific (Weber, Blais, and Betz [2002]).

Research on Money Attitudes

Several scales have been developed to measure different aspects of people's attitudes toward money (Fank [1994], Lim [2003], Lim and Teo [1997], Tang [1995], Yamauchi and Templer [1982]). These studies suggest that money attitudes are multidimensional.

Based on clinical theoretical literature, Yamauchi and Templer [1982] formulated items for various areas related to money. A principal components analysis revealed five components, which the authors label as follows: 1) power-prestige, 2) retention-time, 3) distrust, 4) quality, and 5) anxiety. Fank [1994] developed a money-handling inventory and found correlations between money factors and risk behavior. Saving money, for example, correlated negatively with high-risk activities.

Tang [1992, 1995] developed a money ethic scale, consisting of affective, cognitive, and behavioral components. Lim and Teo [1997] developed a combined, more parsimonious scale using items from existing scales developed by Furnham [1984], Tang [1992], and Yamauchi and Templer [1982]. Exploratory factor analysis and varimax rotation of the sixty-six items yielded the following eight components: obsession, power, budget, achievement, evaluation, anxiety, retention, and non-generous.

The money attitude scales used in the past did not include items related to investing. Therefore, based on existing money attitude scales, Keller and Siegrist [2004] developed a scale that also includes attitude toward investing in stocks and ethical perceptions of the stock market. Exploratory factor analysis and varimax

rotation of the fifty-nine initial items yielded nine components:

- Attitude toward financial security.
- Attitude toward stock investing.
- Impulsive buying.
- Obsession with money.
- Perceived immorality of the stock market.
- Attitude toward gambling.
- Interest in financial matters.
- Attitude toward saving.
- Frankness about finances.

Research on Investor Segmentation

Bajtelsmit and Bernasek [1996] reviewed the research literature, and found that many studies conclude women are more conservative investors than men. In addition, women investors are found to trade much less than men, and thus enjoy higher net returns because they incur fewer trading fees (Barber and Odean [2001]). Overall, however, the differences between the gender groups appear far greater than the differences between men and women (Keller and Siegrist [2004]). Thus gender does not seem a suitable basis for market segmentation.

A few studies segment current and potential investors based on psychological factors (for a detailed review, see Wärneryd [2001]). Segmentation has also been based on financial knowledge and financial maturity (Harrison [1994]), savings strategies (Gunnarsson and Wahlund [1997]), and shared investing attitudes, biases, and behaviors (Wood and Zaichkowsky [2004]).

Rationale for the Present Study

Existing investor segmentations have used mainly behavior-based criteria. We know of only one segmentation study that characterized individual investors based on attitudes (Wood and Zaichkowsky [2004]). Our study seeks to segment current as well as potential investors, so we segment people on the basis of money attitudes rather than on behavior.

Attitudes are pivotal when identifying potential investors who have not actually owned securities yet, and so have not yet developed behavior-relevant investment strategies. However, because investing in stocks is widely discussed in the public and in the media, most people have developed certain attitudes about this topic.

Our study first investigates whether a money attitude typology that yields interpretable preference profiles can be developed. We then examine whether the different money attitude types differ behaviorally.

Method

Respondents

Our data come from a mail survey conducted in the German- and French-speaking parts of Switzerland. The questionnaire and cover letter were sent to a random sample of addresses taken from the telephone book. On the front page of the questionnaire and in the letter we asked that the person in the household whose birthday came next and who was older than eighteen fill out the questionnaire. Some time later a reminder letter was sent out, and we also resent the questionnaire to any households that had not responded.

We received 1,569 questionnaires back, a response rate of 40.4% ($n = 964$) in German-speaking Switzerland, and 32.2% ($n = 605$) in the French-speaking part. 43% ($n = 667$) of the respondents were women, and 57% ($n = 894$) were men. Eight respondents did not report their gender. The mean age was 47.54 ($SD = 16.1$). Eight respondents did not report their age. 6% of the respondents had no income, 10% earned less than 2,000 Swiss francs per month, 37% between 2,000 and 5,000 per month, 31% between 5,000 and 8,000, and 16% more than 8,000 Swiss francs per month. Thirty-six respondents did not report their income (for details, see Keller and Siegrist [2004]).

Questionnaire

We used eight of the nine money attitude scales from Keller and Siegrist [2004] in order to develop the typology. We did not include the ninth scale, impulsive buying, because it did not contribute substantially to differentiation of the types (clusters).

Keller and Siegrist [2004] developed the money attitude scales using items from existing scales (Lim and Teo [1997]), and formulating new items measuring attitudes toward stock investing, perceived immorality of the stock market, and gambling. The scales are as follows.

- *Attitude toward Financial Security* relates to budgeting money. It captures the prudent use of money as well as the subjective importance of financial security. This scale contains eleven items and has a reliability of $\alpha = 0.79$.
- *Attitude toward Stock Investing* (nine items, $\alpha = 0.80$) reflects the extent to which a person feels that stocks serve wealth accumulation and is willing to risk investing in them. Individuals with low scores on this dimension are probably not willing to invest in stocks because of the uncertainty and loss they associate with stocks.
- *Obsession with Money* (10 items, $\alpha = 0.75$) measures the extent to which a person views money

as a symbol of success, independence, and freedom, and the extent to which they consider accumulating wealth as the most important goal in life.

- *Perceived Immorality of the Stock Market* (5 items, $\alpha = 0.74$) reflects the extent to which a person feels that making profits on stocks or earning money without working is unethical, regards the stock market as a casino, or believes stock profits are made at the expense of other people.
- *Attitude toward Gambling* (4 items, $\alpha = 0.69$) measures enjoyment of investing money in gambling activities. Individuals with low scores on this dimension consider money too important to spend on gambling.
- *Interest in Financial Matters* (4 items, $\alpha = 0.58$) is comprised of four items. Individuals scoring high on this dimension enjoy money-related topics and believe they can handle money better than others.
- *Attitude toward Saving* (3 items, $\alpha = 0.66$) is comprised of three items that reflect the extent to which a person finds satisfaction in and is proud of saving money.
- *Frankness about Finances* (3 items, $\alpha = 0.68$) measures how willing a person is to disclose personal financial information to friends, family members, or others.

Our questionnaire also captured various behaviors and intentions regarding investment portfolios with these questions:

- “Do you have an investment portfolio?” Two response categories: yes, no.
- “Have you bought securities (stocks, bonds, mutual funds) within the last twelve months, excluding ‘third-pillar’ savings?” Two response categories: yes, no. (Individual, tax-advantaged personal savings products offered via a financial services entity such as a bank or a life insurance company make up the “third pillar” of the constitutionalized Swiss pension system.)
- “Have you sold securities (stocks, bonds, mutual funds) within the last twelve months, excluding ‘third-pillar’ savings?” Two response categories: yes, no.
- “I want maximum capital growth over the long term and am willing to tolerate higher investment risks.” Five response categories from “disagree completely” (1) to “agree completely” (5).
- “I put a priority on security and want to keep price fluctuations to a minimum.” Five response categories from “disagree completely” (1) to “agree completely” (5).

- “If the investment is socially or environmentally responsible, I am willing to accept a lower rate of return.” Five response categories from “disagree completely” (1) to “agree completely” (5).

Results

Money Attitude Typology

Cluster analysis allows us to examine whether respondents scored similarly on a set of variables. Cluster analysis places individuals with similar scores into homogeneous groups with the greatest possible distinction. Thus, the different cluster groups are dissimilar in significant ways.

In this study, we used k-means cluster analysis to identify groups of respondents who were similar in their money attitudes using the eight summed money attitude scales. We tested a range of clusters (3–6). Examination of interpretability supported a four-cluster solution. As we noted earlier, because of its low F-value ($F(3, 1562) = 45.8$) compared to the other scales, we omitted the scale impulsive buying for the final four-cluster analysis.

Table 1 shows the mean values of the remaining eight money attitude scales for the four clusters and the results of univariate ANOVAs of the summed scales across the four clusters. As shown, the ANOVA models indicate significant mean differences across the four clusters. Based on the information in Table 1, we provide an interpretation of the investor (and potential investor) segments, and label them as follows in our money attitude typology: safe players (cluster 1), open

books (cluster 2), money dummies (cluster 3), and risk-seekers (cluster 4).

Safe players. Safe players place high value on their personal financial security and on saving. They tend to be cautious in financial matters, planning most purchases carefully and large purchases intensively. They are thrifty and keep exact records of spending.

Saving money is more important to safe players than spending money. They are proud of the amounts they have saved. In comparison to the open books and the money dummies types, safe players are markedly more obsessed with money. Possessing money and increasing wealth are important goals in their lives.

Safe players associate money with success, independence, and freedom. They are more interested in and self-confident about their handling of money than the open books and money dummies types. Safe players have a negative attitude about stocks, the stock market, and gambling, and they do not like to disclose information about their personal finances.

Open books. Open books are more willing to disclose information about their personal financial situations to others, but otherwise have little affinity for money. They have a low obsession with money, low interest in financial matters, and little self-confidence about handling money. They have a negative attitude toward stocks, the stock market, and gambling. Financial security and saving money have medium importance to them, but in comparison to safe players, the importance is low.

Table 1. Mean Scores and Results of Univariate ANOVA on the Eight Clustering Variables for the Four Clusters

Money Attitude	Cluster Means				Overall Mean n = 1,569	F (df _{bet} , df _{with})	p
	Safe Players n = 391	Open Books n = 422	Money Dummies n = 392	Risk-Seekers n = 362			
Financial Security	4.39 (0.44)	3.63 (0.64)	3.80 (0.60)	3.67 (0.61)	3.87 (0.66)	144.71 (3,1562)	0.00
Attitude toward Stock Investing	1.91 (0.59)	2.39 (0.62)	2.58 (0.67)	3.09 (0.69)	2.48 (0.76)	211.79 (3,1540)	0.00
Obsession with Money	3.00 (0.67)	2.52 (0.60)	2.70 (0.57)	3.07 (0.54)	2.81 (0.64)	68.55 (3,1483)	0.00
Perceived Immorality of Stock Market	3.66 (0.76)	3.31 (0.93)	2.64 (0.78)	2.52 (0.74)	3.04 (0.93)	163.03 (3,1476)	0.00
Attitude toward Gambling	1.76 (0.76)	1.95 (0.75)	1.69 (0.60)	3.36 (0.77)	2.17 (0.98)	435.98 (3,1540)	0.00
Interest in Financial Matters	2.98 (0.85)	2.37 (0.66)	2.65 (0.73)	3.07 (0.75)	2.75 (0.80)	71.78 (3,1546)	0.00
Attitude toward Saving	4.14 (0.66)	2.80 (0.89)	2.85 (0.76)	3.24 (0.85)	3.25 (0.96)	240.18 (3,1548)	0.00
Frankness about Finances	1.92 (0.85)	3.74 (0.69)	1.71 (0.61)	2.56 (0.93)	2.51 (1.12)	558.65 (3,1543)	0.00

Money dummies. People in the money dummies group also have a low affinity for money, a low obsession with money, and little interest in financial matters. They have a negative attitude toward stocks and gambling. Money dummies have a more negative attitude toward the stock market than risk-seekers.

However, compared to safe players and open books, money dummies do not believe it is unethical to profit from the stock market. Savings and financial security are not as important to money dummies as they are to safe players. Money dummies do not like to reveal information about their personal financial situations.

Risk-seekers. The risk-seekers group has the most positive attitude toward stocks, the stock market, and gambling. Risk-seekers tolerate financial risk well, and would invest higher sums of money in securities. For risk-seekers, securities are not associated with loss or uncertainty.

Risk-seekers find profiting from the stock market the least objectionable ethically. Similar to safe players, risk-seekers have a more marked obsession with money; possessing money and amassing wealth are more important life goals for them than for open books or money dummies.

Risk-seekers associate money with success, independence, and freedom. They have more interest in money and more self-confidence in handling money than any of the other types. Predictably, they find financial security and saving less important than the other segments. Risk-seekers do not like to disclose information about their personal financial situations.

Money Attitude Typology and Demographics

Table 2 shows the demographic characteristics of the four money attitude types. 40% of the safe players are older than sixty-five; this segment also has the highest mean age ($M = 53.8$; $SD = 16.6$). Open books have the lowest mean age ($M = 42.8$; $SD = 15.5$). The majority of open books and risk-seekers have attained higher levels of education than safe players and money dummies, with almost 40% having attained a vocational training level (apprenticeship), and about 40% a diploma at the tertiary level (up to the doctorate level). 50% of safe players and money dummies attained vocational training. 24% of safe players and 33% of money dummies attained a tertiary diploma.

Gender does not differ much between clusters. Men and women are represented in the safe players and money dummies segments to approximately the same degree as in the total sample. Men are overrepresented in the risk-seekers cluster, and women are overrepresented in the open books cluster.

Risk-seekers have the highest overall monthly income. 60% had incomes of more than 5,000 Swiss

francs per month, while 53.6% of money dummies, 36.9% of safe players, and only 28.4% of open books earned more than 5,000 Swiss francs per month. The differences are not as marked for assets: Open books had the lowest assets, while money dummies had the highest. Risk-seekers and safe players were somewhere in between.

Money Attitude Typology and Stock Investment

41% of respondents reported having investment portfolios, which broke down among the four types as follows: risk-seekers 55%, money dummies 47%, safe players 31%, and open books 32% (see Table 3).

We asked respondents who owned investment portfolios about their securities trading behavior. Table 4 shows that significantly more risk-seekers bought securities in the preceding twelve months than any other type (risk-seekers 57%, money dummies 45%, safe players 32%, and open books 25%). Table 5 reports the differences found for the frequency of selling securities (see Table 5).

Risk-seekers also sold significantly more securities in the twelve months prior to the survey than the other types (40%). 33% of money dummies, and less than 25% of open books and safe players sold securities.

Variance analysis (ANOVA) revealed that the four money attitude types also differed in their desire to maximize capital and their tolerance of higher risk in order to reach that goal ($F(3, 612) = 25.15$; $p < 0.001$). Risk-seekers wanted to maximize capital growth in the long term most strongly, and were the most willing to tolerate higher risks ($M = 2.74$; $SD = 1.11$).

In contrast, safe players ($M = 1.86$; $SD = 1.08$) and open books ($M = 1.79$; $SD = 1.04$) showed the least desire to maximize capital and the lowest risk tolerance. Money dummies were between these two extremes ($M = 2.38$; $SD = 1.18$). The Scheffé test of comparison of means showed that the differences between the groups was significant ($p < 0.05$), except for the open books and safe players types ($p = 0.975$).

Variance analysis also showed significant differences between the four groups for response to price fluctuations ($F(3, 610) = 28.15$; $p < 0.001$). Safe players placed the highest priority on financial security and wanted to keep fluctuations the lowest ($M = 4.40$; $SD = 0.83$), while risk-seekers had the highest tolerance for price fluctuations ($M = 3.26$; $SD = 1.11$). Open books ($M = 3.68$; $SD = 1.09$) and money dummies ($M = 3.57$; $SD = 1.08$) were between these values, and only these two groups did not show a significant difference according to the Scheffé test ($p = 0.854$).

The four money attitude types differed in their willingness to accept lower returns for socially and environmentally responsible investments ($F(3, 609) = 11.8$; $p < 0.001$). Safe players ($M = 3.51$; $SD = 1.32$)

Table 2. *Percentages of Demographic Characteristics for All Clusters*

	Average	Cluster Percentage				χ^2
		Safe Players	Open Books	Money Dummies	Risk-Seekers	
Age		%	%	%	%	
18–29	13.6	7.9	22.0	8.5	15.6	
30–39	22.5	16.4	27.4	21.5	24.2	
40–49	21.4	17.2	19.6	25.1	23.9	
50–59	18.2	17.7	16.0	18.7	20.6	
65 and older	24.4	40.8	15.0	26.2	15.8	
N	1559	390	419	390	360	$\chi^2_{(12)} = 129.8^{**}$
Gender						
Male	57.3	59.0	47.6	56.8	67.6	
Female	42.7	41.0	52.4	43.2	32.4	
N	1559	390	420	391	358	$\chi^2_{(3)} = 32.1^{**}$
Education						
No Final Certificate	1.9	3.5	1.7	0.8	1.7	
Compulsory Schooling	6.5	11.4	4.5	6.2	4.3	
Vocational Training (apprenticeship)	44.2	50.4	39.5	49.1	38.1	
Technical School	5.5	6.0	4.0	5.6	6.5	
University Entrance Qualifications	6.8	4.9	9.4	5.4	7.4	
University of Applied Sciences	19.2	14.9	20.6	18.0	23.3	
University/ Federal Institute of Technology	10.7	4.9	15.4	7.8	14.5	
Doctoral Degree	5.1	4.1	5.0	7.2	4.3	
N	1,497	369	403	373	352	$\chi^2_{(21)} = 86.0$
Income in Swiss Francs (CHF)						
No Income	5.9	5.6	8.4	5.2	3.9	
Less than 2,000	10.1	12.7	12.5	7.9	6.8	
2,000–4,999	37.3	45.0	40.6	33.3	29.6	
5,000–7,999	30.7	26.5	27.4	35.1	34.4	
8,000–10,999	9.3	7.7	6.7	9.4	13.8	
11,000 or more	6.8	2.6	4.3	9.2	11.5	
N	1,531	378	416	382	355	$\chi^2_{(15)} = 80.2^{**}$
Assets in Swiss Francs (CHF)						
Less than 20,000	28.6	26.8	36.8	25.1	24.4	
20,000–49,999	16.7	19.3	17.5	12.5	17.4	
50,000–199,999	23.1	25.1	22.6	20.7	24.4	
200,000–499,999	15.7	14.7	13.5	19.6	15.1	
500,000 or more	15.9	14.1	9.5	22.1	18.6	
N	1,457	347	399	367	344	$\chi^2_{(12)} = 129.8^{**}$

Table 3. *Money Attitude Types and Owning Investment Portfolio*

Investment Portfolio?	Safe Players	Open Books	Money Dummies	Risk-Seekers	Total
Yes	31.2%	31.6%	47.4%	54.5%	40.8%
No	68.8%	68.4%	52.6%	45.5%	59.2%
N	372	415	382	356	1,525

Note: $\chi^2_{(3)} = 63.4$, $p < 0.001$.

Table 4. *Money Attitude Types and Purchasing Securities*

Purchased Securities in the Past Twelve Months?	Safe Players	Open Books	Money Dummies	Risk-Seekers	Total
Yes	31.6%	25.8%	44.7%	56.5%	42%
No	68.4%	74.2%	55.3%	43.5%	58%
N	114	128	179	193	614

Note: $\chi^2_{(3)} = 36.0$, $p < 0.001$.

Table 5. *Money Attitude Types and Selling Securities*

Sold Securities in the Past Twelve Months?	Safe Players	Open Books	Money Dummies	Risk-Seekers	Total
Yes	21.4%	24.8%	33.9%	40.3%	31.7%
No	78.6%	75.2%	66.1%	59.7%	68.3%
N	112	129	180	191	612

Note: $\chi^2_{(3)} = 15.2$, $p < 0.001$.

and open books ($M = 3.50$; $SD = 1.24$), according to the Scheffé test, were significantly more willing to accept lower returns for social and “green” investments ($p < 0.001$) than money dummies ($M = 2.99$; $SD = 1.11$) and risk-seekers ($M = 2.80$; $SD = 1.29$).

Discussion

We found that segmenting respondents based on money attitudes yielded four segments with clearly interpretable attitude profiles. Risk-seekers and safe players have a distinct affinity for money-related matters. Risk-seekers are tolerant of risk and have positive attitudes toward securities, the stock market, and gambling. Safe players find financial security and savings important, and they have negative attitudes toward securities, the stock market, and gambling. In accordance with their profile, more risk-seekers have investment portfolios, and they trade securities frequently. Only 33% of safe players own securities, and they did not engage in frequent buying or selling of securities.

Money dummies and open books also exhibit low risk tolerance and low interest in money matters. However, money dummies have a more positive attitude toward the stock market than open books. These results concur with existing studies finding that risk-tolerant individuals are more likely to own securities than risk-averse individuals (for examples, see Wärneryd [2001] and Tigges et al. [2000]). The results show that the money attitude typology has forecast value for behavior.

Unlike many other studies (such as Wood and Zaichkowsky [2004]), we investigated the general public, and did not focus on students. Our response rate was good, even though the questions were of a highly personal and confidential nature. There were disproportionately more men than women in our sample as compared to the general population. The age distribution of the respondents, however, was representative of the population.

Various criteria for segmentation have been proposed in the research literature and in practice. Gender is frequently used in the field of investment advising. However, results of an experiment by Siegrist, Cvetkovich, and Gutscher [2002] showed that both men and women overestimate men’s risk preferences.

This bias in predicting risk preferences may have serious practical implications.

Mutual fund managers, for example, help clients invest money. Their advice depends on the risk preferences they attribute to investors. Prediction biases may result in too conservative (for example, bonds) or too risky (stocks) client portfolios. Thus, market segmentation based on variables like gender may be problematic.

Consumers and advisors do not agree in their investment risk perceptions in any case (Diacon [2004]), so investment advisors need to understand what matters to their clients in order to advise them and meet their needs effectively. The segmentation we propose may be a better tool to guarantee a fit between investor preferences and the advice provided by investment plan sponsors and other financial professionals.

Another area in which our results may be helpful is illustrated in Chakravarty, Feinberg, and Rhee [2004]. They showed that having a positive relationship with a bank significantly lowers an individual’s propensity to switch banks. The variables empathy (“my bank gives me personalized attention”) and responsiveness (“the people at my bank are knowledgeable”) were more important predictors of the propensity to switch banks than the length of the banking relationship. Our results may assist banks in building relationships with their customers, increasing customer satisfaction and presumably decreasing customers’ propensity to switch banks.

Our method of segmentation may also offer insights into the marketing of financial institutions like banks and insurance companies. In marketing their services, the most promising target group is potential investors who do not yet have investment portfolios. We have shown that it may be possible to identify potential investors by means of segmentation based on money attitudes. Risk-seekers are the most interesting segment for financial services companies, but safe players and money dummies are also potential clients—providing their preferences are taken into consideration when developing effective marketing strategies.

Money dummies in particular should not be underestimated as potential clients. Despite this segment’s low interest in money, they tended to have a more positive attitude toward the stock market than the safe players and open books, and 50% of this segment owned

and traded securities to a certain extent. Moreover, this segment had the highest assets. This potential can be tapped more effectively through the development of targeted marketing strategies and investment products.

The money attitude typology proposed here is also of use to individual investors themselves, for they can gain a better understanding of their own preferences. This can facilitate investment decision-making, such as individual retirement planning.

One limitation of our study must be noted, however. Because it is a cross-sectional study, it is not clear whether the resulting segmentation is stable over time. Gunnarsson [1999], cited in Wärneryd [2001], found relative stability of the segmentation of money savers over two years, but individuals showed considerable movement between segments. People's financial strategies are, among other things, connected with the life cycle (Gunnarsson and Wahlund [1997]). Further research is needed to clarify stability of money attitude types over time. We also need to determine whether attitude profiles change in concert with life cycle categories, and whether certain individuals are more likely to shift from one money type to another.

Further research could also investigate the allocation preferences and portfolio diversification of the individual money attitude types. We found that the types differ in their willingness to put money into socially and environmentally responsible investments. Webley, Lewis, and Mackenzie [2001] found that ethical investors were generally committed to ethical investment and kept such investments even if they performed badly. Our results showed that safe players and open books have a higher willingness for social investing.

Along with Wood and Zaichkowsky [2004], who found that different investor segments tended to purchase different types of stocks, it is reasonable to assume there are further differences between the money attitude types. For instance, it is conceivable that risk-seekers, with their higher risk tolerance, purchase more stocks than bonds, and that safe players purchase more bonds than stocks.

Future studies should be conducted to further validate the proposed typology. Using experiments it should be investigated whether the four money attitude types show different investment behavior and whether they respond differently to possible losses and gains. Risk Seekers should be the most able to deal with the uncertainty that is entailed in investing money in stocks.

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