

Tilburg University

Why Individual Investors want Dividends

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Publication date:
2003

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):

Dong, M., Robinson, C., & Veld, C. H. (2003). *Why Individual Investors want Dividends*. (CentER Discussion Paper; Vol. 2003-28). Finance.

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Discussion Paper

No. 2003–28

WHY INDIVIDUAL INVESTORS WANT DIVIDENDS

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March 2003

ISSN 0924-7815

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February 25, 2003

Abstract

The question of why individual investors want dividends is investigated by submitting a questionnaire to a Dutch consumer panel. The respondents indicate that they want dividends, partly because the transaction costs of cashing in dividends are lower than the transaction costs involved in selling shares. The results are inconsistent with the uncertainty resolution theory of Gordon (1961, 1962) and the agency theories of Jensen (1986) and Easterbrook (1984). In contrast, a very strong confirmation is found for the signaling theories of Bhattacharya (1979) and Miller and Rock (1985). The behavioral finance theory of Shefrin and Statman (1984) is not confirmed for cash dividends but is confirmed for stock dividends. Finally, our results indicate that individual investors do not tend to consume a large part of their dividends. This raises some doubt on the effectiveness of the elimination of dividend taxes in order to stimulate the economy.

JEL classification: G30; G35; G38

Keywords: Dividends; individual investors; survey

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The authors thank Marcel Das and Mariëlle Klerks for their help with the CentERpanel survey. Furthermore they are grateful to Abe de Jong, George Frankfurter, Rez Kabir, Elizabeth Maynes, Moshe Milevsky, Sara Reiter, Gordon Roberts, Pauline Shum, Yulia Veld-Merkoulova, Marno Verbeek, and participants at the APFA-conference in Hamburg (August 2002), and seminars at the Erasmus University Rotterdam, Tilburg University and York University for helpful comments and suggestions. They also gratefully acknowledge the financial support of the Faculty of Economics at Tilburg University, the CFP Board of Standards in Denver, and York University. The usual disclaimer applies.

WHY INDIVIDUAL INVESTORS WANT DIVIDENDS

Abstract

The question of why individual investors want dividends is investigated by submitting a questionnaire to a Dutch consumer panel. The panel of 2,723 household members yields 555 responses from members who hold or recently held stocks and/or investment funds. The respondents indicate that they want dividends, partly because the transaction costs of cashing in dividends are lower than the transaction costs involved in selling shares. The results are inconsistent with the uncertainty resolution theory of Gordon (1961, 1962) and the agency theories of Jensen (1986) and Easterbrook (1984). In contrast, a very strong confirmation is found for the signaling theories of Bhattacharya (1979) and Miller and Rock (1985). The evidence on the behavioral finance theory of Shefrin and Statman (1984) is mixed. This theory is not confirmed for cash dividends but is confirmed for stock dividends. Finally, our results indicate that individual investors do not tend to consume a large part of their dividends. This raises some doubt on the effectiveness of the elimination of dividend taxes in order to stimulate the economy.

1. Introduction

Dividend policy and dividend payments have long been a staple in academic and practitioner literature. Miller and Modigliani (1961) show that individuals can undo management's decisions on dividend policy by either reinvesting dividends or selling off stock in a perfect capital market, making dividend policy irrelevant. In the United States, as well as in most other countries, dividends are currently taxed more heavily than capital gains. The irrelevance theorem in combination with the unfavorable taxation of dividends makes dividends a puzzle. Brealey and Myers (2003) consider the dividend controversy to be one of the "10 unsolved problems in finance".

The finding of Fama and French (2001) that the proportion of U.S. firms paying cash dividends has fallen from 66.5% in 1978 to 20.8% in 1999 seems to signal the end of this puzzle. At the same time, Jagannathan, Stephens, and Weisbach (2000) conclude that share repurchases are on the rise¹. However, recently dividends have gained renewed attention. In January 2003, the Bush administration put forward a proposal to abolish the taxation of dividends in order to stimulate the economy. In the same month, Microsoft announced that it would start paying dividends for the first time in its 28-year old history. Technology companies such as Cisco and Oracle have stated that if dividend taxes were eliminated, they would start paying dividends. While there appears to be a general belief that investors like dividends, there has been no systematic study on why individual investors want dividends. This paper aims to fill the gap by exploring a new avenue of research. This new line of research consists of asking individual investors about their attitude towards dividends.

We use a unique Dutch panel of ordinary families who answer questions on personal finance and consumption matters weekly via an organized website/e-mail link. Since this voluntary panel is accustomed to completing questionnaires and most of the panel members will respond, many of the difficulties of survey research are avoided. Furthermore, a demographic profile of the panel members is available, which allows us to

¹ It should be noted that Jagannathan, Stephens, and Weisbach (2000) conclude that share repurchases are not a perfect substitute for cash dividends. They find that dividends are paid by firms with higher "permanent" operating cash flows, while share repurchases are used by firms with higher "temporary", non-operating cash flows.

better understand the survey responses and test the dividend theories more fully. To the extent that characteristics of Western investors are not really different, we expect our results to be also relevant for other Western countries.

The literature on dividend policy generally starts with Miller and Modigliani (1961). They assume “rational” investors and perfectly competitive capital markets to arrive at dividend irrelevance. Attention then turns to the effect of the various imperfections. At the same time, Gordon (1961, 1962) argues that dividends are relevant, under the less restrictive assumptions of the Dividend Growth Model. These economic modeling approaches dominated the subsequent literature, both in developing hypotheses and in empirical investigations of dividend policy².

The most obvious imperfection is income taxes, which almost always affect dividends more unfavorably than share repurchases and capital gains caused by investor trading. In fact, anyone whom we might call a purely rational investor in the economic sense requires a strong incentive to overcome the tax disadvantage of dividends in most countries. Conducting research in the Netherlands on dividend preferences has a special advantage, because the new Dutch tax system does not tax dividends and capital gains differently, while the old (pre-2001) tax system taxed dividends more heavily than capital gains. This tax environment provides us with a unique setting to test dividend theories by isolating the tax effect on dividends from other considerations.

Brennan (1970) provides an after-tax model of dividend valuation and the Capital Asset Pricing Model that other researchers use. Notably, Black and Scholes (1974) find no evidence of a dividend effect and Litzenberger and Ramaswamy (1979) find a significant effect. Many other papers grapple with this conflict and related hypotheses, but the field of finance has not yet reached a conclusive effect of dividend policy on firm value. Even though many papers appear later than Black (1976), his belief is still the current opinion (page 5): *“Why do corporations pay dividends? Why do investors pay attention to dividends?... I claim that the answers to these questions are not obvious at all. The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don’t fit together”*.

² For a review of this literature see e.g. Allen and Michaely (2002), Frankfurter and Wood (2002), and Lease, Kose, Kalay, Loewenstein, and Sarig (2000).

In this paper we try to determine what individual investors believe about dividend policy. We summarize the various hypotheses and conjectures advanced about investor beliefs and behavior regarding corporate dividend policy. We test their validity as descriptions of investor behavior with direct survey research conducted on a sample of Dutch household members who constitute a voluntary panel that answers personal survey questionnaires on family financial and consumer matters every week. From a sample of 2,723 household members we received 555 usable responses from members who hold or recently held common shares and/or investment funds.

Our results unambiguously indicate that individual investors are not indifferent to dividends. The mean score on the question whether they want dividends was answered with an average score of 4.98 on a scale that ranges from 1 (= I do not want dividends) to 7 (= I want dividends). Both the mean and the median score on this question are significantly different from the neutral score of 4 at the 1%-level. The results further indicate that transaction costs are an important reason for why individuals like dividends. Investors appear to view dividends as a cost-efficient way of realizing capital gains or losses. These results are stronger for relatively old, low income and less-educated investors. There is also a strong confirmation of the signaling role of dividends.

Our results are inconsistent with both the free cash flow theory of Jensen (1986), and the agency theory of Easterbrook (1984). The uncertainty resolution theory of Gordon (1961, 1962) is also not confirmed. Investors seem to consider dividend-paying stocks to be more risky than non-dividend paying stocks. Overall, investors do not believe that dividend-paying firms are less likely to manipulate earnings, although the notion that dividends work as a safeguard to earnings quality finds some support among old investors.

The behavioral finance theory of Shefrin and Statman (1984) is not confirmed for cash dividends. On the other hand, this theory is strongly confirmed for stock dividends. In case companies cannot pay out a cash dividend, investors prefer the companies to “pay” a stock dividend, rather than no dividends at all, even though in principle stock dividends are no more than stock splits.

Finally, we find that, apart from older and low-income investors, individual investors do not tend to consume a large part of their dividends. They rather re-invest

their dividend income. This raises some doubt on the effectiveness of the abolition of taxation on dividends as a means to stimulate the economy.

The remainder of this paper is built up as follows. Sections 2 and 3 summarize the theories and hypotheses in the literature on cash and stock dividends respectively. Section 4 describes the research method, and the data collection. Section 5 describes survey results and discusses how they relate to our hypotheses. Section 6 concludes.

2. Theories on Why Investors Want Cash Dividends

a. The Miller and Modigliani (1961) dividend irrelevance theory

In their seminal paper Miller and Modigliani (1961) show that in a perfect and complete capital market the dividend policy of a firm does not affect its value. The underlying idea is that the stockholder can replicate any desired stream of payments by purchasing and selling equity. This theory also shows that in perfect and complete capital markets, investors are indifferent towards receiving dividends. This question only matters to them if financial markets are imperfect or incomplete.

b. Transaction costs

A rational argument in favor of dividends consists of transaction costs. An investor who wants to receive a regular income from her security holdings has a choice between buying dividend-paying stocks and cashing in the dividends, and buying non-dividend paying stocks and regularly selling part of her portfolio. For a small individual investor the transaction costs of cashing in the dividends may be significantly smaller than the transaction costs associated with selling a part of the stocks (see e.g. Allen and Michaely (2002)).

c. Uncertainty resolution

Gordon (1961, 1962) argues that outside shareholders prefer a high dividend policy. They prefer a dividend today to a highly uncertain capital gain from a questionable future investment³. A number of studies demonstrate that this model fails if it is posited in a complete and perfect market with investors who behave according to notions of rational behavior (see e.g. Miller and Modigliani (1961) and Bhattacharya (1979)). Nonetheless, the original reasoning of Gordon (1961, 1962) is still frequently quoted. For example, Ross, Westerfield, and Jaffe (2002) discuss Gordon's reasoning in the latest edition of their textbook⁴. The model also seems to accord very well with casual observations.

The argument also often comes up in the financial press. It is often stated that the dividend yield takes a substantial part of the total stock return, especially in down markets. For example, in a *Wall Street Journal* article, a portfolio manager states: "*Dividends are now of greater interest to investors – share prices have gone up and down dramatically, but dividends stay fairly steady, and provide some cash income during the bear market.*"⁵ Although, this statement is irrational from a theoretical point of view, it can still be the case that a large number of investors want dividends exactly for this reason.

d. A smaller influence from accounting manipulations

An important reason for companies to pay dividends may be that companies that pay healthy dividends are perceived as being relatively honest and less subject to accounting manipulations. For example, a recent Barron's article argues: "*Embrace stocks that pay healthy dividends. A bird in the hand is better than two in the bush (...). Healthy dividend payments also indicate that companies are generating real earnings rather than cooking the books.*"⁶ The earlier mentioned *Wall Street Journal* article also states: "*Dividends are paid by companies that grow earnings over a longer period of time. [Buying dividend-paying stocks] is a way of getting into growth through the back door, in a lower-risk*

³ This theory is also known as the "bird in the hand" theory. See e.g. Barberis and Thaler (2002).

⁴ They disagree with Gordon's reasoning that increased dividends make the firm less risky. Their argument is that a firm's overall cash flows cannot be changed with a change in dividend policy.

⁵ See the article "Long in the shadows, dividends take stage," by Erin Schulte, *Wall Street Journal Online*, April 20, 2002.

⁶ See the article "After the bubble," by Jonathan Laing, *Baron's Online*, July 1, 2002.

way.” This argument is closely related to the uncertainty resolution argument mentioned under c.

e. Behavioral finance

Shefrin and Statman (1984) develop a theory of dividends based on the fact that, even if the amount of cash received is the same, it can still make a difference for the investor whether the cash comes in the form of dividends or capital gains. Their model is based on a behavioral theory. In this theory investors want dividends because of self-control. This argument comes down to investors wanting to restrict themselves from consuming too much in the present. They don't want to dip into capital and, therefore, they only allow themselves to consume current income such as dividends. The effect described by Shefrin and Statman (1984) is especially strong for elderly (retired) investors, as they have little or no labor income and rely more heavily on income from their securities holding. Shefrin and Statman (1984) refer to this as the behavioral life cycle⁷.

At first this theory shows some resemblance with Gordon's (1961, 1962) theory. However, the theory of Gordon is based on uncertainty towards future dividends, while the theory of Shefrin and Statman (1984) is based on investors who prefer to consume from dividends instead of capital gains.

f. Free cash flow

Free cash flow is the cash flow that remains after all positive net present value (NPV) projects are undertaken. According to the overinvestment theory of Jensen (1986), managers aim to expand the size of the firm, and thus may take on negative NPV projects instead of paying dividends. Managers consider a large firm to be more prestigious and they expect to earn more compensation than they would in a small firm. This is obviously not in the interest of the existing shareholders. Black (1976) argues that paying dividends can mitigate a potential overinvestment problem, because they reduce the amount of free

⁷ Shefrin and Statman (1984) argue that their theory is supported by the outcomes of a study from Lease, Lewellen, and Schlarbaum (1976) who find that elderly persons have a stronger preference for dividend paying stocks than younger persons.

cash flow. This theory is difficult to test in the context of our research. The reason is that it is difficult to convey the notion of a negative Net Present Value project to individual investors who are not aware of finance theory. One possible way to test this theory is by linking free cash flow to down markets or economic downturns. The assumption is that there are less growth opportunities in such circumstances.

g. Agency costs

Even if a firm does not have free cash flow, dividend payments can still be useful for the shareholders in order to control the overinvestment problem. Easterbrook (1984) argues that dividends reduce the overinvestment problem because the payment of dividends increases the frequency with which firms have to go to equity markets in order to raise additional capital. In the process of attracting new equity, firms subject themselves to the monitoring and disciplining of these markets⁸. This lowers agency costs. A share repurchase creates the same monitoring effect.

h. Signaling

Bhattacharya (1979) and Miller and Rock (1985) argue that information asymmetries between firms and outside shareholders may induce a signaling role for dividends. They show that dividend payments communicate private information in a fully revealing manner. The most important element in their theory is that firms have to pay out funds regularly. Therefore, a similar reasoning applies to recurrent share buy-backs.

i. The choice between cash dividends and share buy-backs

Common stock repurchase is a well-known alternative to cash dividends. Both ways of paying out cash are useful to mitigate the agency problems that are raised by Easterbrook (1984) and Jensen (1986).

⁸ See also the article: “*The macro investor*” by Steve Liesman, *Wall Street Journal Online*, September 5, 2002.

A large number of academic papers find that share buy-backs are especially useful to signal that the stock price of the company that buys back its shares is undervalued. A number of studies, including Comment and Jarrell (1991) and Ikenberry, Lakonishok, and Vermaelen (1995, 2000) find that share buy-back announcements are associated with significantly positive abnormal returns. Ikenberry, Lakonishok, and Vermaelen (1995, 2000) have also analyzed the long-run performance of US and Canadian companies after share buy-backs. In these studies a significantly positive long-run positive abnormal returns is found. These results confirm the undervaluation hypothesis for share buy-backs.

j. Taxes

The subject of dividend policy has received a lot of attention in the United States. The reason for this is that in the US (and most other countries) dividends are taxed more highly than capital gains. The difference is material, and thus provides a substantial incentive for investors to prefer to generate income by selling some of their shares and to receive no dividends. This situation might come to an end given the earlier mentioned plans of the Bush administration, but until now (February 2003) dividends are still taxed more heavily than capital gains in the United States.

Under the Dutch income tax system, since January 1, 2001, rational individual investors in the Netherlands are entirely indifferent between receiving dividends and capital gains.⁹ The tax system now levies what is effectively a wealth tax, applied to the market value of capital. Capital is basically cash and portfolio investments. The tax rate is a flat 1.2% of the asset value, regardless of the dividends, interest and capital gains received during the year. In the old tax system, prevailing before January 1, 2001 dividends were treated as ordinary income and were taxed at a progressive rate. In the old system, capital gains were not taxed at all.¹⁰

⁹ See Meussen (2000) for a detailed description of the Dutch income tax system that is operational since 2001.

¹⁰ An extensive description of the taxation of dividends in the Netherlands, both in the new and in the old income tax systems, is on request available from the authors.

There is a withholding tax (*dividendbelasting*) of 25% on dividends. This withholding tax was levied both in the current and in the old tax system, and would be refunded if the taxpayer completed a tax return.

The taxation of investment funds deserves special attention. Both in the current and in the previous tax system, investment funds can apply for the status of investment institution (*beleggingsinstelling*). If this status is granted the investment fund pays no corporate tax. However, it also has the obligation to pay out its profits within eight months after the end of the book year. Given the equal treatment of dividends and capital gains in the current system, it has become increasingly beneficial for Dutch investment funds to apply for this status. This also means that investment funds are more likely to pay dividends than ordinary exchange-listed companies.

3. Theories on Why Investors Want Stock Dividends

k. Stock dividends as small stock splits

An issue that is closely related to that of cash dividends is the question of why some companies “pay” stock dividends. As every standard textbook in Finance teaches us, stock dividends are nothing more than a small stock split. DeBondt and Thaler (1995) refer to stock dividends as one of the big anomalies in finance.

l. Transaction costs

Stock dividends may have an advantage over cash dividends because they may carry lower transaction costs. This is the case if the ultimate goal of the investor is to re-invest the dividends. With a stock dividend, the dividend is effectively re-invested in the same stock. With a cash dividend, transaction costs have to be made to re-invest the money in stocks. Again, it has to be noticed that a stock dividend is not a real dividend. However, for an investor who sees a stock dividend as a real dividend, and who wants to re-invest her money, stock dividends may reduce transaction costs. It also has to be noticed that with a cash dividend, an investor can choose to invest her money in another stock. This is

not the case with a stock dividend. Finally, a stock dividend may carry a disadvantage if the investor owns an odd number of shares. For example, an investor holding 113 shares might receive one share for 100 stock dividends. This would mean that she either has to sell 13 stock dividends or that she will have to buy 87 stock dividends. This might make a stock dividend relatively expensive for a small investor.

m. Taxes

In the old Dutch tax system, stock dividends were not taxed if they were paid out of the additional paid-up reserve (*agioreserve*). It should be noted that the fact that stock dividends were tax-free under the old tax system did not carry as big of an advantage as seems at first. Stock dividends are nothing more than a stock split and should not be taxed in the first place. In the new tax system, the tax indifference that applies to cash dividends also applies to stock dividends.

n. Behavioral finance

Shefrin and Statman (1984) argue that there are behavioral reasons to “pay” stock dividends. These reasons are especially compelling if the company does not want to pay a cash dividend, e.g. because it does not have free cash flow. They argue that stock dividends are labeled as dividends. Therefore, an investor who sells off and subsequently consumes her stock dividend does not break the rule to not consume out of capital. Furthermore, stock dividends that are kept in portfolio are considered differently from the original stocks. The reason for this is that many investors think in terms of gains and losses. They consider the price for which they acquired the share of common stock. This price is different for the original share and for the share that was acquired with the stock dividend.

4. Empirical Methods and the Data

In some previous studies, researchers have used questionnaires to find out why companies pay dividends, including Lintner (1956), Baker, Farrelly, and Edelman (1985), and De Jong, Van Dijk, and Veld (2003). We are not aware of any published study that asked for individual investors' opinions.

We test the theories discussed in the previous two sections with a questionnaire submitted to the panel of CentERdata¹¹ at Tilburg University in the Netherlands. This panel, which consists of members from more than 2,000 households, was established in 1991. It is representative of the Dutch population. In other words, the average panel member has the same experiences and knowledge as the average person living in the Netherlands. The members of the panel are interviewed each week on a number of issues that deal with financial matters. Clients of the panel are businesses and researchers at universities. Previous finance research with this panel has mostly focused on household portfolios¹².

The use of this panel has great advantages over the more usual survey/questionnaire research. The professional experience of CentER staff provides assurance that the mechanical aspects of questionnaire distribution, confidentiality and data collection run smoothly. The final form of the questionnaire is largely standardized so that the respondents do not have to accustom themselves to new formats for each separate research project. The respondents are accustomed to answering questions from CentERdata and thus the error rate should be low. Although panel members are not obliged to fill in all the questionnaires, the response rate is guaranteed to be very high. Furthermore it is possible to link the results to demographic factors (such as education, income and age). Besides that, the identity of respondents is kept confidential. Clients cannot get any identifying information, and the respondents know this, which makes

¹¹ CentERdata is the division for applied research of the Center for Economic Research (CentER). CentER is the research school of the Faculty of Economics and Business Administration of Tilburg University in the Netherlands. Information about the panel can be found at <http://www.centerdata.uvt.nl>

¹² For example, Donkers and Van Soest (1999) and Donkers, Melenberg, and Van Soest (2003) have used the panel in order to elicit information about subjective measures of household preferences, financial decisions and risk attitudes.

them more likely to answer truthfully. Finally, it is possible to test for non-response bias more effectively than is possible with ordinary surveys.

The English language version of the survey instrument is included in the Appendix. We originally created the questionnaire in English as it appears here, but the version sent to the respondents had been translated into Dutch¹³.

While there is a substantial literature on survey and questionnaire design, most of the difficult issues do not arise in our work. There is no politically or socially desirable answer to bias respondents. The only challenge is to design the questions in such a way that captures the essence of the hypotheses that were put forward in Sections 2 and 3. Therefore the questions have to be couched in plain, unambiguous language that the respondents understand. For this reason, the questions were designed in cooperation with the researchers from CentERdata who administer the panel and who have a lot of experience with conducting this type of research.

Questions 1-4 determine whether the respondents own, or have owned within the last three years, shares in companies and/or investment funds. Questions 5-26 investigate the various hypotheses and theories about cash dividends we advanced in the previous section. Question 27 asks a question unique to the Dutch tax system. Questions 28-32 ask questions related to stock dividends.

5. Results

5.1. Overview of Survey Respondents

The questionnaire based on the theories discussed in Sections 2 and 3 was presented to the 2,723 members of the panel of CentERdata on the weekend of October 4, 2002¹⁴. These members had the opportunity to fill out the questionnaire from 17.00 hours on Friday October 4, 2002 to 24.00 hours on Tuesday October 8. In total 2,035 respondents filled out the questionnaire (74.7%). This makes the number of non-respondents equal to 688. Out of the 2,035 respondents, 555 panel members own or used to own shares in

¹³ The Dutch version of the questionnaire is, on request, available from the authors.

¹⁴ For this purpose all panel members of 16 years and older were selected. This allows the possibility that multiple persons from one household answer the questionnaire.

exchange-listed companies and/or investment funds. Table 1 gives the summary demographic statistics of the survey respondents.

[Please insert Table 1 here]

From Table 1 it can be concluded that a large part of the investors (42.5%) either owns (or used to own) stocks and investment funds. The remainder of the investors owns or used to own only stocks (18.6%) or only investment funds (38.9%). Furthermore, it can be concluded that the majority of the investors are below age 55 (60%), earn a low income (68.5%)¹⁵ and have no university education (72.8%).

Figure 1 gives the demographic distributions of the survey respondents.

[Please insert Figure 1 here]

It can be concluded from Figure 1 that on average investors are older, have higher income and are better educated than non-investors, which is what we would expect.

5.2. Results for Cash Dividends

Table 2 includes the responses to the questions on cash dividends. These responses are both presented for the whole sample and for sub-samples according to demographic statistics, *i.e.*, age, income and education. Most of the questions are asked on a scale of 1 to 7, with 4 as the neutral score. Respondents could also answer 8 for “Don’t know/No opinion” and these responses are omitted from the statistics.

[Please insert Table 2 here]

Tables 2 and 3 present the result of tests on both the theories, and whether the different demographic groups have significantly different attitudes towards the theories. Therefore, the significance of results in the first column, “All Investors,” measures whether the mean and median are significantly different from 4. The results in the remaining columns should be read in pairs, where the test is whether difference between the means/medians of the two groups (*e.g.* “Age Below 55” versus “Age Above 55”) is statistically significant.

¹⁵ From now on a low income is defined as a monthly gross income lower than 3,000 Euro. A high income is from now on defined as a monthly gross income higher than 3,000 Euro.

The first question in Table 2 (Question 7) asks whether investors like their stocks to pay dividends, with possible answers from 1 for “I do not want dividends” to 7 for “I want dividends”. A score equal to 4 means that the investor is neutral between receiving dividends or not. Both the whole sample and all the sub-samples show means and medians significantly greater than 4. The mean for the whole sample is 4.98 with a t-value of 14.04. The median is 5 with a binomial p of 0.0000. The percentage above the neutral score of 4 (60.5%) is much larger than the percentage below the neutral score of 4 (12.3%). This justifies the conclusion that investors want dividends. In other words, investors do not believe in the irrelevance theorem of Miller and Modigliani (1961). The preference for dividends is larger amongst investors with an age above 55, from now on to be referred to as older investors, compared to investors with an age below 55, from now on to be referred to as younger investors. However, both categories show highly significant means and medians.

The second theory tested in this table is whether investors want dividends for reasons of transaction costs. The mean score for this question is 4.20 with a t-statistic of 2.79. The median is 4 and is significantly different from the neutral score of 4, on a significance level of 0.0002. At first sight it looks strange that a median score of 4 is significantly different from the neutral score of 4. This can be explained by the fact that 33.3% of the observations are above 4, while only 20.5% of the observations lie below 4. Despite the fact that the mean and median score of the whole sample are significantly different from the neutral scores, there are remarkable differences between the different demographic groups. Old investors, low-income investors, and investors without university education all have a preference for dividends because of transaction costs. On the other hand, young investors and investors with a high income and/or university education have less interest in dividends based on transaction costs. For each of these three groups the difference in means is significant. For the income and education categories the difference in the median scores is also significantly different from zero.

The third theory is the uncertainty resolution theory that was originally suggested by Gordon (1961, 1962). According to this theory investors prefer dividend-paying stocks, because they are perceived to be less risky. The result for Question 9 for the whole sample suggests the opposite result. Investors perceive dividend paying stocks to

be more risky: the mean score is 4.13 with a t-value of 2.37. Questions 10 and 11 also confirm this result. Apparently, investors perceive high dividend yield stocks to be more risky than low dividend yield stocks. This result may be explained by the level of the stock index in the research period. In the period from July 2002 to October 2002 the index of the Amsterdam Stock Exchange, the AEX-index, dropped to a level below 300 points. This was the lowest level in 7 years. At the same time most of the companies in the index maintained their old dividend levels. As a consequence, the dividend yield especially rose strongly for badly performing stocks. This may have contributed to the perception that high dividend yield stocks are riskier.

The theory that dividends are a safeguard against accounting manipulations is rejected in Question 13. In Question 12 the mean of 3.92 and the median of 4 for the whole sample are insignificant. Both questions show the remarkable result that older investors more strongly believe in this notion than younger investors do. The results suggest that the watch for dividends as a safeguard measure is still “old-fashioned”, even in light of the recent accounting scandals.

The results on the free cash flow theory of Jensen (1986) are remarkable. Both the results for the whole sample and for the individual sub-samples are inconsistent with this theory. For both Questions 17 and 18, the results for the whole sample and for all the sub-samples show mean scores that are well below 4. The results indicate that individual investors do not see dividends as a way to control for possible overinvestment tendencies by management¹⁶.

Our results are also inconsistent with the agency theory of Easterbrook (1984). Both Question 19 and Question 20 show very low means and medians. For example, the median score for both questions is never above 2. Moreover, these means and medians are strongly significant. This result holds for all demographic sub-samples. These results suggest that individual investors have a preference for management to use internal funds to finance capital budgeting projects, in line with the pecking order theory of Myers and

¹⁶ It should be mentioned that we only look at one side of the free cash flow theory, i.e. the possibility to control the tendency for overinvestment by the disciplining role of dividends. We do not look at other possibilities to control for this tendency, such as the disciplining role of debt.

Majluf (1984)¹⁷. The results of the free cash flow theory and the Easterbrook theory taken together show that individual investors have a lot of trust in the management of the companies.

In contrast to the agency theories, we see a very strong confirmation of the signaling theory of Bhattacharya (1979) and Miller and Rock (1985). All means and medians are significant, indicating that individual investors believe that dividend payments contain a signal about the profitability of the firm. This result gives justification to management's "sticky" dividend policy in good and bad times.

Even though both dividends and share buy-backs are ways of paying money back to shareholders, investors do not see share buy-backs as equivalent to dividends. Question 23 shows that, for the whole sample, investors do not want companies to substitute dividends for share buy-backs. The question how they would value a company decision to stop paying dividends and instead buying back shares, with a score of 1 representing "extremely negative" and a score of 7 representing "extremely positive" leads to a mean score of 3.81 with a t-value of -2.67 . Note that high-income investors have a bigger preference for share buy-backs to dividends compared to small investors, consistent with the finding from Questions 7 and 8 that small investors have a stronger preference for dividends. Question 24 shows that investors on average perceive a share buy-back to be a signal that the stock is undervalued. This confirms results by e.g. Comment and Jarrell (1991) and Ikenberry, Lakonishok, and Vermaelen (1995, 2000).

Individual investors definitely do not have a preference for dividends for tax reasons. Question 26 indicates that this is true under the old tax regime. This is not surprising, since in this regime dividends were taxed and capital gains were not. Strangely enough, the dislike of dividends seems to be stronger in the new system. The mean response drops from 3.79 (Question 26) to 3.60 (Question 25). This is remarkable, since under the new system, theoretically investors would be expected to be neutral to dividends for tax reasons. Question 27 checks whether investors have handed in a tax form in 2001. Such a form is necessary for investors to get their 25% dividend surtax

¹⁷ Although it can also be noticed that investors have greater difficulties with the firm borrowing funds than with the firm issuing new stock in order to pay for a dividend. The mean result for the "borrowing question" (Question 20) is 2.03 and the mean result for the "issuing stock" question (Question 21) is 2.40.

reimbursed. We find that 60% of the investors did not hand in such a form. There can be two reasons for investors not to hand in a tax form. First, some investors may not have received dividends in 2001. Second, investors may not be aware of the fact that the dividend taxes can be reimbursed. We checked whether the second reason is responsible for the dislike of dividends under the new tax system. In order to investigate this, we partition the whole sample into two sub-samples according to whether the responses to Question 25 are larger or smaller than 4. We find that the investors who dislike dividends for tax reasons (a score smaller than 4 on Question 25) are also those that do not submit an income tax form. Only 37.3% of those investors have asked for a tax reimbursement. In contrast, 61.1% of the investors who like dividends for tax reasons (a score higher than 4 on Question 25) have asked for such a reimbursement. The difference in means from the two sub-samples is significant at the 1%-level.

Table 3 includes the responses to the general dividend questions.

[Please insert Table 3 here]

More specifically, these questions ask why investors hold stocks in investment funds in addition to individual companies (Question 5) or why they hold stocks in investment funds without having stocks in individual companies (Question 6). The assumption behind both questions is that investment funds pay more reliable dividends (because of tax reasons). If the answers of both questions are taken together, we find that dividends are valued more by older, less-educated and low-income investors. These results are in line with the answers to the question on the transaction costs (Question 8). They give further rise to the idea that a part of our respondents want dividends because of transaction costs.

The responses to the behavioral finance questions are included in Table 4.

[Please insert Table 4 here]

In Table 4 we test whether investors want dividends, because they prefer to consume from dividends rather than from capital gains. This notion was put forward first by Shefrin and Statman (1984). In Question 16 we ask whether investors, for consumption purposes, would sell their stocks in a company that has always paid a dividend, if the

This result is not consistent with the pecking order theory, since that theory states that companies prefer borrowing to issuing new stock.

management of that company would decide not to pay a dividend anymore. From Question 16 we find that the mean score is 2.87, which means that investors tend to disagree with the given statement. Both the mean and the median are significantly different from zero. This holds both for the whole sample and for all the sub-samples. The answer to this question is unfavorable for the behavioral finance theory. However, it can also be the case that investors have different reasons for not wanting to sell the stocks in such companies. For example, they might find the transaction costs of selling such stocks too high.

Questions 14 and 15 are different from most of the other questions that are included in the questionnaire. In these questions we ask for the percentage of dividends and regular salary respectively that the investors use for consumption purposes. In order to facilitate the respondents we have put the percentages in five categories, ranging from 1 (= 0 to 20 percent) to 5 (= 80 to 100 percent). The mean score for the consumption from dividends is only 1.83. The mean score for the regular income is 3.13. The difference between these two categories (-1.44) is significantly different from zero at the 1%-level. This indicates that investors consume more out of their regular salary than out of dividends.

We test the behavioral life cycle theory of Shefrin and Statman (1984). According to this theory, older investors have a larger preference for dividends than younger investors do, because they receive less regular salary. The mean consumption out of dividends is 2.00 for older investors and 1.69 for younger investors. This difference is significantly different from zero at the 5%-level. This is also consistent with the finding that these two categories of investors have a preference for dividends because of transaction costs. However, we also find that older investors consume more out of their regular salary than younger investors. The mean score is 3.37 for the older investors and 2.95 for the younger investors. The difference between the age groups is significantly different from zero at the 1%-level. However, the difference between Questions 14 and 15 is -1.44 for both younger and older investors.

Apart from the older and low-income investors it seems that most investors do not consume out of their dividends. They rather seem to re-invest their money. The answers to Questions 14 and 15 in combination with the answers to Question 8 suggest that these

investors want cash dividends, because cash dividends give investors a way of realizing capital gains or losses. Presumably, when stock prices go up, investors may want to realize capital gains by selling some of the stocks. They avoid the regret aversion that might otherwise occur, if they sell don't stocks that later go down. Likewise, when stock prices drop, investors may want to stop losses by selling. It is a well-known finding from the behavioral finance theory that investors do not like to realize losses. This finding was first put forward by Shefrin and Statman (1985) and was later confirmed in an empirical study by Odean (1998)¹⁸. Dividends offer a convenient and less costly way of getting rid of stocks that recently have not done well. The proceeds can then be used for re-investment. They can e.g. be put in a bank account, or used to buy bonds or stocks of other companies.

Finally, the results of Questions 14 and 15 are interesting in light of the tax proposal of the Bush administration. In an article in the *Wall Street Journal Online* of January 7, 2003, it is stated: “*One of the chief initiatives [of the Bush proposal] is to eliminate income taxes on corporate dividends, arguing that the corporations were already taxed on their profits. This double taxation, the White House says, saps investors of cash they could otherwise be spending to bolster the economy.*” Our results show that investors do not spend dividends as much as ordinary income. Instead they seem to re-invest most of the dividends. However, a caveat is in order here. In the current U.S. tax system, dividends are paid to shareholders gross, that is with no personal income tax deducted. The shareholders then report the dividends on their tax return each year. The Bush proposal would therefore mean that investors still receive the same amount of dividends, but they will pay less in taxes at the end of the year. Still, our result offers direct evidence on the often-made statement that the marginal propensity to consume is significantly lower, on average, for most people who own shares.

5.3. Results on Stock Dividends

The responses to the questions on stock dividends are included in Table 5.

¹⁸ See also the review papers on behavioral finance by Hirshleifer (2001), and Barberis and Thaler (2002) for a discussion of this phenomenon.

[Please insert Table 5 here]

The first question in Table 5 asks whether respondents consider stock dividends to be more like stock splits (response possibility 7) or like cash dividends (response possibility 1). The textbook answer would naturally be 7. The mean score for the whole sample is 4.16. The t-statistic is 2.04. The median score is 4. The median is significantly different from four at the 5%-level. The number of scores higher than 4 is 39.8% versus only 27.7% that is lower than 4. It can be concluded that there is only a slight recognition that a stock dividend is more like a stock split than like a cash dividend. This either means that investors do not understand stock dividends or that there is a psychological explanation. The mean for the sub-samples of high income and university-educated investors is not significantly different from zero. It is especially remarkable that investors with university education do not understand the nature of stock dividends. However, it should also be remarked that the differences in scores between the different education and income groups are not significantly different from zero.

The second question on stock dividends (Question 29) shows that when only considering transaction costs, on average, investors prefer stock dividends compared to cash dividends. This result suggests that most investors reinvest their dividends, and further confirms the earlier conclusion we draw from Questions 8, 14 and 15. As mentioned in Section 3 stock dividends are a costless way of reinvesting dividends in the same stocks. However, as mentioned before, this assumes that investors consider stock dividends as real dividends, not as stock splits.

According to the answers to Question 30, investors are indifferent between cash and stock dividends for tax reasons. The average answer to Question 31 (4.56) shows that under the old tax system, investors had a preference for stock dividends over cash dividends for tax reasons. All sub-samples for this question show a score that is significantly higher than 4. This applies both to the means and to the medians. Finally, Question 32 shows that investors prefer a stock dividend to no dividend at all. Again, this applies for all sub-samples. This notion is stronger for respondents without university education than for respondents with university education.

5.4. Robustness Checks

One possible confusing effect on the tests of the theory is answers by respondents who do not want to receive dividends or who are indifferent. These investors answered 1, 2, 3 or 4 to Question 7 (Do you like your stocks to pay dividends? 1= I do not want dividends; 4 = neutral; 7 = I do want dividends). Investors who do not want dividends, for whatever reason, or who are indifferent, may answer the later questions relating to the theories differently and thus provide spurious evidence. No *a priori* theoretical or empirical basis exists for this distinction, but it does seem possible. We believe that investors who prefer not to receive dividends or are indifferent, should still have valid opinions on the theories for and against dividends, since they are equally part of the market for shares. However, we tested to see if this potentially confounding effect exists. We recalculated Tables 2, 3, 4 and 5 for the subset of investors who answered 5, 6 or 7 to Question 7. The results display a similar pattern to those in Tables 2 – 5, and so we have not reproduced them here.¹⁹

6. Summary and conclusions

In this paper we have tried to contribute to the solution of the dividend controversy. Most of the existing finance literature on this topic has studied this question from the point of view of the company. There is particularly little attention to the question of why individual investors want to receive dividends. In this paper we have tried to fill this gap by submitting a questionnaire on cash and stock dividends to a Dutch consumer panel that is regularly interviewed on a number of issues that deal with financial matters. We received 555 responses from consumers that have, or recently had, investments in stocks of individual companies or investment funds. We find that investors have a strong preference to receive dividends. If the company cannot pay cash dividends, they prefer to receive stock dividends compared to not receiving dividends at all. This clearly shows that they are definitely not neutral towards the dividend policy. We do not find much support for the “irrational” explanations of the existence of dividends, i.e. the uncertainty

¹⁹ These tables of results for this subsample are available from the authors on request.

solution theory of Gordon (1961, 1962) and the behavioral explanation of Shefrin and Statman (1984). We mostly find support for the latter in case of stock dividends. Furthermore, we find that investors partly want dividends because of transaction costs. The results are inconsistent with the agency theories of Easterbrook (1984) and Jensen (1986). On the other hand a strong support is found for the signaling theories of Bhattacharya (1979) and Miller and Rock (1985).

Appendix: The Questionnaire

Question 1

Do you currently own stocks of exchange-listed companies (other than investment funds)?

If the answer to this question is yes, please continue with Question 3. If the answer is no, please continue with Question 2.

Question 2

Did you own stocks of exchange-listed companies (other than investment funds) during the last three years?

Question 3

Do you currently own stocks of investment funds?

This question only refers to direct investments in investment funds. Indirect investments, such as investments in the context of an investment mortgage or a life annuity are excluded.

If the answer to this question is yes, please continue with Question 5. If the answer is no, please continue with Question 4.

Question 4

Did you own stocks of exchange-listed companies (other than investment funds) during the last three years?

This question only refers to direct investments in investment funds. Indirect investments, such as investments in the context of an investment mortgage or a life annuity are excluded.

Remark 1 for the respondents:

- A. If you have answered yes to either Question 1 or 2 AND yes to either Question 3 or 4, then please continue with Question 5.
- B. If you have answered no to both Questions 1 and 2 AND yes to either Question 3 or 4, please continue with Question 6.
- C. If you did not fulfill conditions A and B, but you have answered yes to at least one of the questions from 1 to 4, then please continue with Question 7.
- D. If you have answered no to all of the first four questions, then this questionnaire is finished for you.

Remark 2 for the respondents: Questions 5 to 26 have to be answered for cash dividends only.

Question 5

Please indicate on the following scale whether you hold some shares in investment funds in addition to holding shares in individual companies directly, because investment funds pay more reliable dividends (1 = completely disagree; 4 = neutral; 7 = completely agree; 8 = no opinion/don't know).

Question 6

Please indicate on the following scale whether you hold shares in investment funds only and no shares in individual companies, because investment funds pay more reliable dividends (1 = completely disagree; 4 = neutral; 7 = completely agree; 8 = no opinion/don't know).

Question 7

Please indicate on the following scale whether you like your stocks to pay dividends or not (1 = I do not want dividends; 4 = neutral; 7 = I want dividends; 8 = no opinion/don't know).

Question 8

An individual investor can get money from shares either by receiving dividends or by selling some of the shares. Both ways require transaction costs. Transaction costs are the costs that the bank or the broker charges you when paying a dividend or selling a share of common stock. Please indicate on a scale from 1 to 7 your opinion on the following statement.

The transaction costs can be different between the sale of common stock and the receipt of a dividend. Because of this difference I have a preference for receiving dividends. (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 9

Companies that pay little or no dividends have more cash flow left to invest in new growth projects than companies that pay a lot of their income in dividends. Comparing high dividend yield companies with low dividend yield companies, do you believe that the high dividend companies are 1= less risky; 4= just as risky; 7= more risky; 8= no opinion/don't know.

Question 10

Please indicate your opinion on a scale from 1 to 7 on the following statement.

Shares that pay relatively higher dividends are less risky.

(1 = strongly disagree; 4 = neutral; 7 = strongly agree; 8 = no opinion/don't know).

Question 11

The total return on a share of stock consists of the capital gains and the dividend yield. The dividend yield is the dividend expressed as a percentage of the stock price. In a down market, the dividend yield is a more substantial fraction of the total returns than in an up market. Is this a reason for you to invest more in dividend paying shares in a down market?

(1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 12

Do you think that dividend-paying stocks offer more certainty about the companies' future earnings perspectives compared to stocks that do not pay dividends? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 13

Do you buy dividend-paying stocks because these companies generate real earnings and are less likely to "cook the books" (1 = no definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 14

How much of the total dividends that you receive do you use for current consumption purposes? Consumption purposes are expenditures for the purchase of goods such as cars, washing machines, food and such or for services such as holidays, going out to dinner and such. It is emphasized that the purchase of stocks, bonds and deposits do not classify as consumption purposes.

(__ 0-20% of the total amount; __ 20-40% of the total amount; __ 40-60% of the total amount; __ 60-80% of the total amount; __ 80-100% of the total amount; 8 = no opinion/don't know).

Question 15

How much of the total income that you receive from regular salary (including pension) and social benefits do you use for consumption purposes? (__ 0-20% of the total amount; __ 20-40% of the total amount; __ 40-60% of the total amount; __ 60-80% of the total amount; __ 80-100% of the total amount; __ I receive no income from these sources; __ no opinion/don't know).

Question 16

Would you for consumption purposes sell part of your stocks in a company that has always paid a dividend, if the management of that company would decide not to pay a dividend anymore? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 17

In economic downturns, fewer good investment projects are available. Would you, for this reason, invest more in dividend paying stocks in down markets or in economic downturns? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 18

Do you wish to receive dividends because you believe the company will otherwise invest the money unprofitably? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 19

Would you like to receive cash dividends if a company would have to issue new shares of common stock in order to be able to afford the dividend payment? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 20

Would you like to receive cash dividends if a company would have to borrow money in order to be able to afford the dividend payment? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 21

Do you think that a dividend *increase* tells you something about the company's future performance? A dividend *increase* is an indication that the future performance: (1 = will deteriorate strongly; 7 = will improve strongly; 8 = no opinion/don't know)
Please choose 4 if a dividend increase does not tell you anything on the future performance of the company.

Question 22

Do you think that a dividend *decrease* tells you something about the company's future performance? A dividend *decrease* is an indication that the future performance: (1 = will deteriorate strongly; 7 = will improve strongly; 8 = no opinion/don't know)
Please choose 4 if a dividend decrease does not tell you anything on the future performance of the company.

Question 23

Suppose a company would stop paying dividends and instead use the money to buy back its own stocks on the market. How would you value such a decision? (1 = extremely negative; 4 = neutral; 7 = extremely positive; 8 = no opinion/don't know).

Question 24

Do you think that a stock repurchase is good because it is a signal that the stock is undervalued? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely; 8 = no opinion/don't know).

Question 25

Please indicate on the following scale whether you like your stocks to pay dividends or not for tax reasons. (1 = no, definitely not; 7 = yes, definitely; 8 = no opinion/don't know). Please choose 4 if, for tax reasons, you are neutral towards dividends. Note: please answer this question in light of the current tax system (IB 2001).

Question 26

Please indicate on the following scale whether you used to like stocks to pay dividends or not for tax reasons under the old income tax regime (prevailing before January 1, 2001). (1 = no, definitely not; 7 = yes, definitely; 8 = no opinion/don't know). Please choose 4 if, for tax reasons, you were neutral towards dividends before January 1, 2001.

Question 27

Did you submit an income tax form for the year 2001 in order to ask for a reimbursement of the dividend surtax ("dividendbelasting")? (1 = yes; 2 = no).

Remark 3 for the respondents: Questions 28 to 32 go into the comparison of cash and stock dividends. A cash dividend is a dividend in the form of cash. A stock dividend is a dividend in the form of shares of common stock.

Question 28

Please indicate on a scale from 1 to 7 whether you think that stock dividends are like cash dividends or whether they are like (small) stock splits.

In a stock split a company decides to exchange each share of common stock in a fixed number of new shares.

Stock dividends:

(1 = more look like cash dividends; 7 = more look like stock splits; 8 = no opinion/don't know). Please answer "4" if you think that they are neither like cash dividends nor like stock splits.

Question 29

Transaction costs are the costs that the bank or broker charges you when paying a dividend or selling shares.

Can you please give your opinion on a scale from 1 to 7 on the following statement?

Because of transaction costs I have a preference for stock dividends over cash dividends. (1 = No, definitely not; 7 = Yes, definitely; 8 = no opinion/don't know).

Please answer "4" if transaction costs do not play a role for you in the choice between stock and cash dividends.

Question 30

If you only consider income taxes, do you currently have a preference for stock or for cash dividends? Please answer this question in the context of the currently prevailing tax system that is operational since January 1, 2001

(1 = I prefer cash dividends; 7 = I prefer stock dividends; 8 = no opinion/don't know). Please answer "4" if income taxes do not play a role for you in the choice between stock and cash dividends.

Question 31

If you only consider income taxes, did you use to have a preference for stock or for cash dividends under the old tax regime (prevailing before January 1, 2001)? (1 = I used to prefer cash dividends; 4 = neutral; 7 = I used to prefer stock dividends; 8 = no opinion/don't know). Please answer "4" if income taxes did not play a role for you before January 1, 2001 in the choice between stock and cash dividends.

Question 32

Suppose a company does not have enough cash to pay a dividend. What is your preference in such a case: (1) to receive a stock dividend or (2) not to receive a dividend at all? (1 = preference not to receive a stock dividend; 4 = neutral; 7 = preference to receive a stock dividend; 8 = no opinion/don't know).

References

Allen, F., and Michaely, R.: "Payout policy", in: G. Constantinides, M. Harris, and R. Stulz (eds.), *North-Holland Handbook of Economics*, North-Holland, Amsterdam, 2002 (forthcoming).

Baker, H.K., Farrelly, G.E., and Edelman, R.B.: "A survey of management views on dividend policy", *Financial Management*, 1985, page 78-83.

Barberis, N., and Thaler, R.: "A survey of behavioral finance", in: G. Constantinides, M. Harris, and R. Stulz (eds.), *North-Holland Handbook of Economics*, North-Holland, Amsterdam, 2002 (forthcoming).

Bhattacharya, S.: "Imperfect information, dividend policy and the "bird in the hand" fallacy", *Bell Journal of Economics*, 1979, page 259-270.

Black, F.: "The dividend puzzle", *The Journal of Portfolio Management*, 1976, page 5-8.

Black, F., and Scholes, M.: "The effects of dividend yield and dividend policy on common stock prices and returns", *Journal of Financial Economics*, 1974, page 1-22.

Brealey, R.A., and Myers, S.C.: "*Principles of Corporate Finance*", 7th edition, McGraw-Hill, New York, 2003.

Brennan, M.J.: "Taxes, market valuation and financial policy", *National Tax Journal*, 1970, page 417-429.

Comment, R., and Jarrell, G.A.: "The relative signaling power of Dutch-auction and fixed-price self-tender offers and open market share repurchases", *The Journal of Finance*, 1991, page 1243-1271.

DeBondt, W.F.M., and Thaler, R.H.: "Financial decision making in markets and firms: A behavioral perspective", in R. Jarrow, V. Maksimovic, and W.T. Ziemba (eds.), *Finance, Handbooks in Operations Research and Management Science*, vol. 9, North-Holland, Amsterdam, 1995, page 385-410.

De Jong, A, Van Dijk, R., and Veld, C.: "The dividend and share repurchase policies of Canadian firms: empirical evidence based on an alternative research design", *International Review of Financial Analysis* (forthcoming), 2003.

Donkers, B., and Van Soest, A.: "Subjective measures of household preferences and financial decisions", *Journal of Economic Psychology*, 1999, page 613-642.

Donkers, B., Melenberg, B., and Van Soest, A.: "Estimating risk attitudes using lotteries – a large sample approach", *Journal of Risk and Uncertainty*, 2001, page 165-195.

Easterbrook, F.H.: "Two agency-cost explanations of dividends", *American Economic Review*, 1984, page 650-659.

Fama, E.F., and French, K.R.: "Disappearing dividends: changing firm characteristics or lower propensity to pay?", *Journal of Financial Economics*, 2001, page 3-43.

Frankfurter, G.M., and Wood, B.G.: "Dividend policy theories and their empirical tests", *International Review of Financial Analysis*, 2002, page 111-138.

Gordon, M.: "*The Investment, Financing, and Valuation of the Corporation*", Richard D. Irwin, Homewood (Illinois), 1961.

Gordon, M.: "The savings, investment and valuation of a corporation", *Review of Economics and Statistics*, 1962, page 37-51.

Hirshleifer, D.: "Investor psychology and asset pricing", *The Journal of Finance*, 2001, page 1533-1597.

Ikenberry, D., Lakonishok, J., and Vermaelen, T.: "Market underreaction to open market share repurchases", *Journal of Financial Economics*, 1995, page 181-208.

Ikenberry, D., Lakonishok, J., and Vermaelen, T.: "Stock repurchases in Canada: performance and strategic trading", *The Journal of Finance*, 2000, page 2373-2398.

Jagannathan, M., Stephens, C.P., and Weisbach, M.S.: "Financial flexibility and the choice between dividends and stock repurchases", *Journal of Financial Economics*, 2000, page 355-384.

Jensen, M.C.: "Agency costs of free cash flow, corporate finance and takeovers", *American Economic Review*, 1986, page 323-329.

Lease, R.C, Kose, J., Kalay, A., Loewenstein, U., and Sarig, O.H.: "*Dividend policy: Its impact on firm value*", Harvard Business School Press, 2000.

Lease, R.C., Lewellen, W., and Schlarbaum, G.: "Market segmentation: evidence on the individual investor", *Financial Analysts Journal*, 1976, page 53-60.

Litzenberger, R.H., and Ramaswamy, K.: "The effects of dividends on common stock prices: tax effects or information effects", *The Journal of Finance*, 1982, page 429-443.

Lintner, J.: "Distribution of incomes of corporations among dividends, retained earnings, and taxes", *American Economic Review*, 1956, page 97-113.

Meussen, G.T.K.: "Netherlands: Income tax act 2001", *European Taxation*, November 2000, page 490-498.

Miller, M., and Rock, K.: “Dividend policy under asymmetric information”, *The Journal of Finance*, 1985, page 1031-1051.

Miller, M., and Modigliani, F.: “Dividend policy, growth and the valuation of shares”, *Journal of Business*, 1961, page 411-433.

Myers, S.C., and Majluf, N.S.: “Corporate financing and investment decisions when firms have information that investors do not have”, *Journal of Financial Economics*, 1984, page 187-221.

Odean, T.: “Are investors reluctant to realize their losses?”, *The Journal of Finance*, 1998, page 1775-1798.

Ross, S.A., Westerfield, R.W., and Jaffe, J.E.: “*Corporate Finance*”, McGraw-Hill, New York, 2002.

Shefrin, H.M., and Statman, M.: “Explaining investor preference for cash dividends”, *Journal of Financial Economics*, 1984, page 253-282.

Shefrin, H.M. and Statman, M.: “The disposition to sell winners too early and ride losers too long”, *The Journal of Finance*, 1985, page 777-790.

Figure 1. Demographic Distributions of Survey Respondents

Among survey respondents, there are 555 investors who own stocks and/or investment funds, and there are 1,480 non-investors who do not own stocks or investment funds. This figure shows the age, income and education distributions of investors and non-investors.

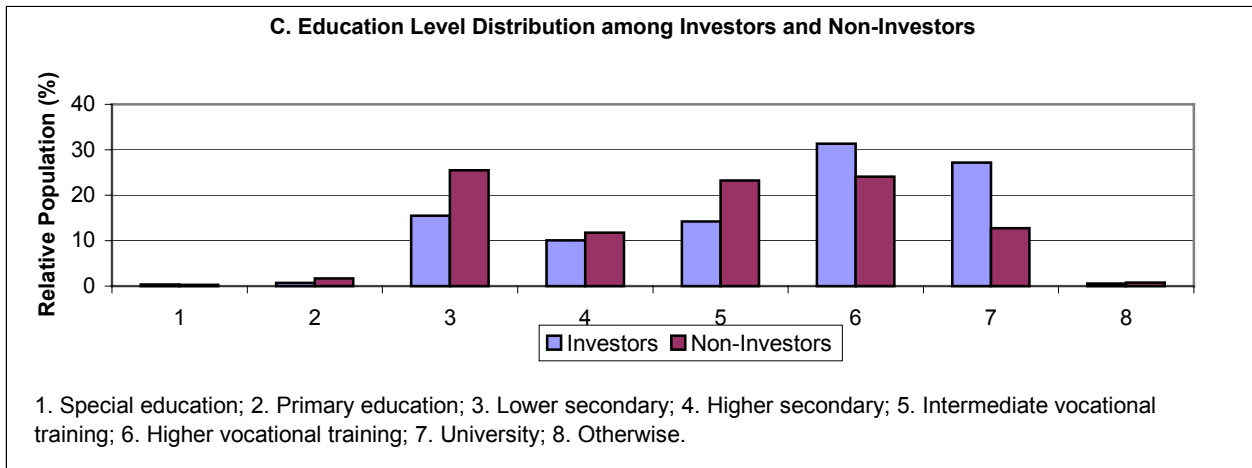
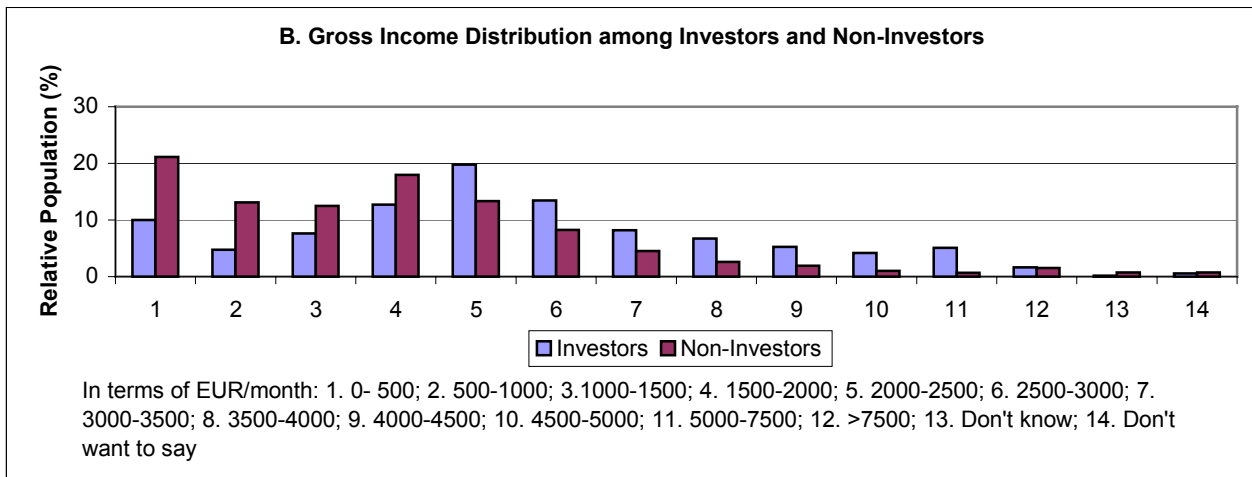
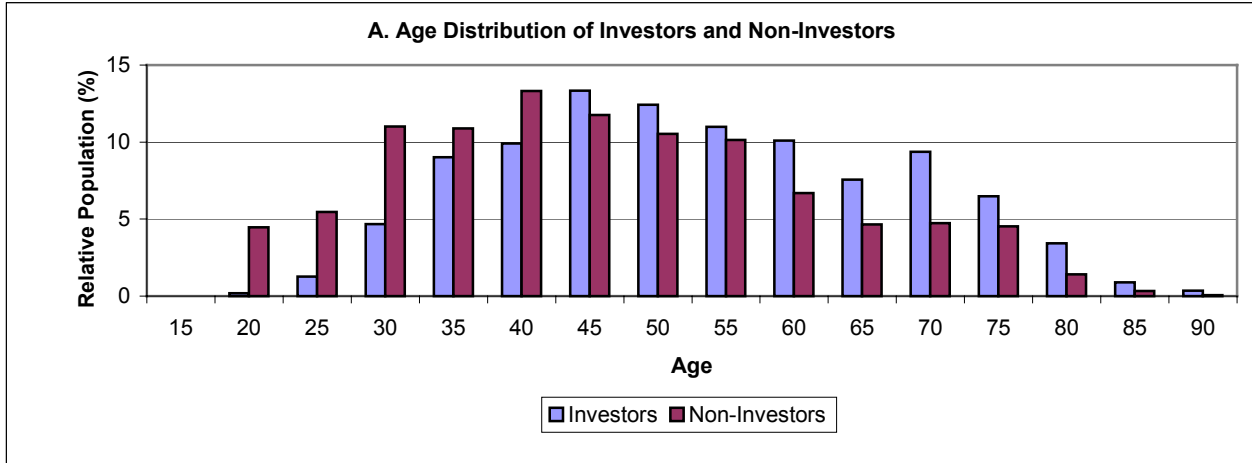


Table 1. Summary Demographic Statistics of Survey Respondents

A sample of 2,723 CentER members (in the Netherlands) was selected for the survey. This table reports the summary demographic statistics of survey respondents. The survey results shown in the subsequent tables are from the 555 investors only.

| | |
|---|-----------------------------|
| Number of CentER members surveyed | 2,723 |
| Number of responses | 2,035 (74.7% response rate) |
| Number of respondents who are investors (who own stocks or investment funds) and who have answered most survey questions | 555 (27.3% of respondents) |
| Number of investors who own both stocks and investment funds | 236 (42.5% of investors) |
| Number of investors who own stocks only | 103 (18.6% of investors) |
| Number of investors who own investment funds only | 216 (38.9% of investors) |
| Number of investors who are below age 55 | 333 (60.0% of investors) |
| Number of investors who are above (and including) age 55 | 222 (40.0% of investors) |
| Number of investors who earn a high income (monthly gross income \geq 3,000 EUR) | 175 (31.5% of investors) |
| Number of investors who earn a low income (monthly gross income $<$ 3,000 EUR) | 380 (68.5% of investors) |
| Number of investors who have university education | 151 (27.2% of investors) |
| Number of investors who have no university education | 404 (72.8% of investors) |

Table 2. Responses to Questions on Cash Dividends

This table reports responses to survey questions on cash dividends from all investors, as well as owners of stock/investment funds, investors aging below/above 55, high/low income investors, and investors with/without university education. t-stat tests whether the mean is different from 4. Binomial p tests whether the median is different from 4 based on the two-tail Fisher sign test. %(>4) [%(<4)] is the percentage responses greater [less] than 4. N is the number of valid responses to each question. In the “All Investors” column, one diamond (♦) denotes mean (median) is significantly different from 4 at the 0.10 level, ♦♦ at the 0.05 level, and ♦♦♦ at the 0.01 level based on the Student’s t value (binomial p). One, two, or three asterisks (*) denote these significance levels for difference in mean (median) between the pairs of demographic groups based on the two-sample t-test (non-parametric median test).

| Abbreviated Question Description | Statistics | All Investors | Owning | Owning | Age | Age | High Income | Low Income | University Educated | No university education |
|---|------------|---------------|---------------------|------------|----------|----------|-------------|------------|---------------------|-------------------------|
| | | | (and perhaps Funds) | Funds Only | Below 55 | Above 55 | | | | |
| <i>Theory a. MM dividend irrelevance theorem</i> | | | | | | | | | | |
| 7. Do you like your stocks to pay dividends? (1 = I do not want dividends; 4 = neutral; 7 = I want dividends) | Mean | 4.98♦♦♦ | 5.03 | 4.91 | 4.84** | 5.19** | 4.86 | 5.04 | 4.87 | 5.03 |
| | t-stat | 14.04 | 11.30 | 8.32 | 8.91 | 11.63 | 6.63 | 12.56 | 6.44 | 12.54 |
| | Median | 5♦♦♦ | 5 | 5 | 5** | 5** | 5 | 5 | 5 | 5 |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 60.5 | 61.9 | 58.3 | 57.3 | 65.1 | 58.4 | 61.5 | 55.6 | 62.4 |
| | % (<4) | 12.3 | 13.4 | 10.6 | 13.7 | 10.4 | 15.7 | 10.8 | 11.8 | 12.5 |
| | N | 519 | 320 | 199 | 307 | 212 | 166 | 353 | 144 | 375 |
| <i>Theory b. Transaction costs</i> | | | | | | | | | | |
| 8. I have a preference for receiving dividends because of transaction costs. (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 4.20♦♦♦ | 4.24 | 4.13 | 4.09* | 4.35* | 4.01* | 4.29* | 4.00* | 4.28* |
| | t-stat | 2.79 | 2.55 | 1.21 | 0.99 | 3.15 | 0.10 | 3.49 | 0.00 | 3.31 |
| | Median | 4♦♦♦ | 4 | 4 | 4 | 4 | 4** | 4** | 4** | 4** |
| | Binomial p | .0002 | .0021 | .0530 | .0251 | .0029 | .8199 | .0000 | .9007 | .0000 |
| | % (>4) | 33.3 | 35.3 | 29.9 | 32.3 | 34.5 | 26.8 | 36.3 | 25.0 | 36.6 |
| | % (<4) | 20.5 | 21.3 | 19.2 | 21.9 | 18.6 | 24.8 | 18.5 | 23.5 | 19.3 |
| | N | 463 | 286 | 177 | 269 | 194 | 149 | 314 | 132 | 331 |
| <i>Theory c. Uncertainty resolution (Bird-in-the-hand)</i> | | | | | | | | | | |
| 9. Comparing high dividend yield companies with low dividend yield companies, do you believe that the high dividend companies are: 1 = less risky; 4 = just as risky; 7 = more risky) | Mean | 4.13♦♦ | 4.08 | 4.24 | 4.04** | 4.26** | 3.91*** | 4.25*** | 4.15 | 4.13 |
| | t-stat | 2.37 | 1.11 | 2.65 | 0.53 | 3.28 | -0.89 | 3.54 | 1.35 | 1.95 |
| | Median | 4♦♦♦ | 4 | 4 | 4* | 4* | 4*** | 4*** | 4 | 4 |
| | Binomial p | .0083 | .1777 | .0111 | .4478 | .0018 | .4188 | .0002 | .1608 | .0317 |
| | % (>4) | 26.8 | 25.5 | 29.4 | 24.7 | 29.7 | 17.0 | 31.8 | 26.7 | 26.8 |
| | % (<4) | 17.9 | 19.6 | 14.7 | 21.0 | 13.7 | 22.0 | 15.9 | 17.2 | 18.2 |
| | N | 418 | 275 | 143 | 243 | 175 | 141 | 277 | 116 | 302 |

| Abbreviated Question Description | Statistics | All Investors | Owning Stocks (and perhaps Funds) | | | | Age | | High Income | Low Income | University Educated | No university education |
|---|------------|---------------------|-----------------------------------|--------------|--------------|-------------|------------|-------|-------------|------------|---------------------|-------------------------|
| | | | Owning Funds Only | Age Below 55 | Age Above 55 | High Income | Low Income | | | | | |
| 10. Shares that pay relatively higher dividends are less risky. (1 = strongly disagree; 4 = neutral; 7 = strongly agree) | Mean | 3.62 ^{***} | 3.71* | 3.47* | 3.66 | 3.57 | 3.62 | 3.63 | 3.57 | 3.65 | | |
| | t-stat | -5.99 | -3.54 | -5.48 | -4.03 | -4.50 | -3.36 | -4.97 | -3.39 | -4.93 | | |
| | Median | 4 ^{***} | 4** | 3** | 4 | 4 | 4 | 4 | 4 | 4 | | |
| | Binomial p | .0000 | .0007 | .0000 | .0001 | .0000 | .0022 | .0000 | .0067 | .0000 | | |
| | % (>4) | 21.0 | 22.8 | 17.9 | 23.1 | 18.2 | 23.4 | 19.8 | 24.4 | 19.8 | | |
| | % (<4) | 43.2 | 38.9 | 50.6 | 43.5 | 42.7 | 44.2 | 42.7 | 45.5 | 42.3 | | |
| | N | 447 | 285 | 162 | 255 | 192 | 154 | 293 | 123 | 324 | | |
| 11. In a down market, the dividend yield is a more substantial fraction of the total returns than in an up market. Is this a reason for you to invest more in dividend paying shares in a down market? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 3.46 ^{***} | 3.56* | 3.27* | 3.26*** | 3.72*** | 3.53 | 3.43 | 3.57 | 3.42 | | |
| | t-stat | -6.92 | -4.40 | -5.76 | -6.93 | -2.47 | -3.27 | -6.26 | -2.73 | -6.53 | | |
| | Median | 4 ^{***} | 4 | 4 | 4*** | 4*** | 4 | 4 | 4 | 4 | | |
| | Binomial p | .0000 | .0101 | .0001 | .0000 | .1915 | .0617 | .0000 | .0662 | .0001 | | |
| | % (>4) | 24.3 | 27.9 | 18.0 | 23.0 | 26.0 | 30.5 | 21.1 | 26.6 | 23.4 | | |
| | % (<4) | 41.5 | 40.8 | 42.9 | 47.3 | 33.9 | 44.2 | 40.1 | 40.6 | 41.9 | | |
| | N | 448 | 287 | 161 | 256 | 192 | 154 | 294 | 128 | 320 | | |
| <i>Theory d. A smaller influence from accounting manipulations</i> | | | | | | | | | | | | |
| 12. Do you think that dividend-paying stocks offer more certainty about the companies' future earnings perspectives compared to stocks that do not pay dividends? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 3.92 | 3.92 | 3.93 | 3.73*** | 4.19*** | 3.90 | 3.94 | 3.97 | 3.91 | | |
| | t-stat | -1.09 | -0.85 | -0.69 | -2.95 | 1.82 | -0.83 | -0.74 | -0.23 | -1.16 | | |
| | Median | 4 | 4 | 4 | 4*** | 4*** | 4 | 4 | 4 | 4 | | |
| | Binomial p | .4255 | .5522 | .6646 | .1205 | .0020 | .8392 | .4419 | .6530 | .5587 | | |
| | % (>4) | 32.1 | 34.3 | 28.3 | 25.5 | 41.4 | 33.1 | 31.6 | 35.0 | 31.0 | | |
| | % (<4) | 28.9 | 31.0 | 25.2 | 33.3 | 22.7 | 31.1 | 27.7 | 30.8 | 28.2 | | |
| | N | 436 | 277 | 159 | 255 | 181 | 151 | 285 | 120 | 316 | | |
| 13. Do you buy dividend-paying stocks because these companies generate real earnings and are less likely to "cook the books"? (1 = no definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 3.66 ^{***} | 3.61 | 3.74 | 3.44*** | 3.97*** | 3.46* | 3.76* | 3.54 | 3.70 | | |
| | t-stat | -4.57 | -4.05 | -2.17 | -5.57 | -0.30 | -3.97 | -2.67 | -3.11 | -3.40 | | |
| | Median | 4 [*] | 4 | 4 | 4*** | 4*** | 4* | 4* | 4 | 4 | | |
| | Binomial p | .0517 | .0556 | .5900 | .0005 | .2898 | .0279 | .5285 | .1133 | .2342 | | |
| | % (>4) | 26.4 | 27.4 | 24.5 | 22.3 | 32.3 | 27.2 | 25.9 | 27.8 | 25.8 | | |
| | % (<4) | 33.7 | 36.8 | 28.2 | 39.2 | 25.8 | 42.4 | 29.0 | 39.8 | 31.1 | | |
| | N | 451 | 288 | 163 | 265 | 186 | 158 | 293 | 133 | 318 | | |

| Abbreviated Question Description | Statistics | All Investors | Owning Stocks (and perhaps Funds) | Owning Funds Only | Age Below 55 | Age Above 55 | High Income | Low Income | University Educated | No university education |
|---|------------|---------------|--------------------------------------|-------------------|--------------|--------------|--------------|--------------|---------------------|-------------------------|
| | | | Free cash flow | Agency costs | Agency costs | Agency costs | Agency costs | Agency costs | Agency costs | Agency costs |
| <i>Theory f. Free cash flow</i> | | | | | | | | | | |
| 17. In economic downturns, fewer good investment projects are available. Would you, for this reason, invest more in dividend paying stocks in down markets or in economic downturns? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 3.54*** | 3.65** | 3.35** | 3.46 | 3.65 | 3.70 | 3.46 | 3.70 | 3.48 |
| | t-stat | -6.17 | -3.71 | -5.49 | -5.73 | -2.94 | -2.38 | -5.88 | -2.04 | -6.01 |
| | Median | 4*** | 4* | 4* | 4 | 4 | 4 | 4 | 4 | 4 |
| | Binomial p | .0000 | .0427 | .0000 | .0002 | .0469 | .4168 | .0000 | .4096 | .0000 |
| | % (>4) | 22.1 | 26.1 | 14.9 | 19.3 | 25.8 | 29.1 | 18.5 | 26.2 | 20.6 |
| | % (<4) | 37.5 | 35.9 | 40.4 | 37.4 | 37.6 | 35.1 | 38.7 | 32.8 | 39.3 |
| | N | 448 | 287 | 161 | 254 | 194 | 151 | 297 | 122 | 326 |
| <i>Theory g. Agency costs</i> | | | | | | | | | | |
| 18. Do you wish to receive dividends because you believe the company will otherwise invest the money unprofitably? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 3.06*** | 2.97* | 3.22* | 2.81*** | 3.41*** | 2.88* | 3.15* | 2.75*** | 3.19*** |
| | t-stat | -13.15 | -11.54 | -6.58 | -12.85 | -5.53 | -8.99 | -9.77 | -10.20 | -9.43 |
| | Median | 3*** | 3** | 4** | 3*** | 4*** | 3* | 4* | 3** | 4** |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 13.0 | 13.0 | 12.9 | 9.2 | 18.2 | 11.5 | 13.7 | 6.7 | 15.5 |
| | % (<4) | 51.0 | 54.8 | 44.1 | 58.3 | 40.9 | 56.4 | 48.2 | 59.7 | 47.5 |
| | N | 469 | 299 | 170 | 271 | 198 | 156 | 313 | 134 | 335 |
| 19. Would you like to receive cash dividends if a company would have to issue new shares of common stock in order to be able to afford the dividend payment? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 2.40*** | 2.34 | 2.51 | 2.43 | 2.36 | 2.19** | 2.51** | 2.32 | 2.44 |
| | t-stat | -23.66 | -19.30 | -13.70 | -17.41 | -16.01 | -15.76 | -17.93 | -13.44 | -19.47 |
| | Median | 2*** | 2* | 2* | 2 | 2 | 2*** | 2*** | 2 | 2 |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 7.4 | 7.6 | 7.1 | 7.5 | 7.4 | 5.0 | 8.7 | 6.5 | 7.8 |
| | % (<4) | 73.7 | 75.2 | 71.0 | 71.6 | 76.4 | 78.3 | 71.3 | 73.9 | 73.6 |
| | N | 471 | 302 | 169 | 268 | 203 | 161 | 310 | 138 | 333 |
| 20. Would you like to receive cash dividends if a company would have to borrow money in order to be able to afford the dividend payment? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 2.03*** | 1.93** | 2.20** | 2.02 | 2.05 | 1.97 | 2.07 | 2.05 | 2.03 |
| | t-stat | -32.31 | -27.74 | -17.29 | -25.58 | -19.92 | -19.55 | -25.74 | -17.48 | -27.15 |
| | Median | 2*** | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 1 |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 4.5 | 4.2 | 5.0 | 3.2 | 6.3 | 3.1 | 5.3 | 3.6 | 4.9 |
| | % (<4) | 80.9 | 84.4 | 74.9 | 81.0 | 80.7 | 82.2 | 80.2 | 81.3 | 80.7 |
| | N | 486 | 307 | 179 | 279 | 207 | 163 | 323 | 139 | 347 |

| Abbreviated Question Description | Statistics | All Investors | Owning | Owning | Age | Age | High Income | Low Income | University Educated | No university education | |
|--|------------|---------------------|----------------------------|---------------------|-----------------|-----------------|---------------------|---------------------|---------------------|-------------------------|-------|
| | | | Stocks (and perhaps Funds) | Funds Only | Below 55 | Above 55 | | | | | |
| <i>Theory h. Signaling</i> | | | | | | | | | | | |
| 21. Do you think that a dividend <i>increase</i> tells you something about the company's future performance? A dividend <i>increase</i> is an indication that the future performance: (1 = will deteriorate strongly; 7 = will improve strongly) | Mean | 4.67 ^{***} | 4.68 | 4.64 | 4.61 | 4.75 | 4.62 | 4.69 | 4.68 | 4.66 | |
| | t-stat | 15.26 | 12.40 | 8.90 | 10.88 | 10.77 | 9.19 | 12.27 | 10.44 | 11.89 | |
| | Median | 5 ^{***} | 5 | 4 | 4 ^{**} | 5 ^{**} | 4 | 5 | 5 | 4.5 | |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 50.7 | 52.5 | 47.7 | 46.8 | 56.3 | 47.8 | 52.2 | 52.5 | 50.0 | |
| | % (<4) | 3.8 | 3.7 | 4.0 | 4.0 | 3.6 | 2.5 | 4.4 | 0.0 | 5.4 | |
| | N | 475 | 299 | 176 | 278 | 197 | 159 | 316 | 139 | 336 | |
| 22. Do you think that a dividend <i>decrease</i> tells you something about the company's future performance? A dividend <i>decrease</i> is an indication that the future performance: (1 = will deteriorate strongly; 7 = will improve strongly) | Mean | 3.56 ^{***} | 3.51* | 3.64* | 3.54 | 3.59 | 3.51 | 3.59 | 3.51 | 3.58 | |
| | t-stat | -11.77 | -10.13 | -6.09 | -9.15 | -7.39 | -7.80 | -8.94 | -7.55 | -9.22 | |
| | Median | 4 ^{***} | 4 ^{**} | 4 ^{**} | 4 | 4 | 4 | 4 | 4 | 4 | |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | |
| | % (>4) | 5.9 | 5.9 | 5.7 | 4.7 | 7.5 | 3.8 | 6.9 | 4.3 | 6.5 | |
| | % (<4) | 41.6 | 45.2 | 35.4 | 41.0 | 42.5 | 46.2 | 39.4 | 47.1 | 39.4 | |
| | N | 478 | 303 | 175 | 278 | 200 | 158 | 320 | 138 | 340 | |
| <i>Theory i. The choice between cash dividends and share buy-backs</i> | | | | | | | | | | | |
| 23. Suppose a company would stop paying dividends and instead use the money to buy back its own stocks on the market. How would you value such a decision? (1 = extremely negative; 4 = neutral; 7 = extremely positive) | Mean | 3.81 ^{***} | 3.90* | 3.65* | 3.86 | 3.74 | 4.10 ^{***} | 3.66 ^{***} | 3.92 | 3.77 | |
| | t-stat | -2.67 | -1.16 | -3.04 | -1.55 | -2.28 | 0.82 | -3.92 | -0.63 | -2.69 | |
| | Median | 4 | 4 ^{**} | 4 ^{**} | 4 | 4 | 4 ^{**} | 4 ^{**} | 4 | 4 | |
| | Binomial p | .4821 | .5939 | .0415 | .6154 | .6812 | .2352 | .0697 | .5900 | .2350 | |
| | % (>4) | 34.7 | 38.2 | 28.3 | 33.7 | 36.2 | 42.1 | 31.0 | 35.9 | 34.3 | |
| | % (<4) | 37.7 | 35.3 | 42.2 | 36.6 | 39.3 | 33.3 | 39.9 | 31.3 | 40.1 | |
| | N | 472 | 306 | 166 | 276 | 196 | 159 | 313 | 128 | 344 | |
| 24. Do you think that a stock repurchase is good because it is a signal that the stock is undervalued? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 4.36 ^{***} | 4.50 ^{***} | 4.10 ^{***} | 4.40 | 4.30 | 4.52 ^{**} | 4.28 ^{**} | 4.35 | 4.36 | |
| | t-stat | 5.85 | 6.45 | 1.04 | 5.01 | 3.15 | 5.35 | 3.51 | 2.94 | 5.07 | |
| | Median | 4 ^{***} | 5 ^{***} | 4 ^{***} | 4 | 4 | 5 | 4 | 4 | 4 | |
| | Binomial p | .0000 | .0000 | .0821 | .0000 | .0001 | .0000 | .0000 | .0006 | .0000 | |
| | % (>4) | 45.6 | 52.2 | 33.1 | 47.1 | 43.5 | 50.3 | 43.1 | 45.7 | 45.6 | |
| | % (<4) | 18.5 | 16.6 | 22.1 | 17.5 | 19.9 | 15.7 | 20.0 | 20.5 | 17.7 | |
| | N | 443 | 289 | 154 | 257 | 186 | 153 | 290 | 127 | 316 | |

| Abbreviated Question Description | Statistics | All Investors | Owning Stocks (and perhaps Funds) | Owning Funds Only | Age Below 55 | Age Above 55 | High Income | Low Income | University Educated | No university education |
|---|-------------------------|---------------|--------------------------------------|-------------------|--------------|--------------|-------------|------------|---------------------|-------------------------|
| | | | <i>Theory.j. Taxes</i> | | | | | | | |
| 25. Please indicate on the following scale whether you like your stocks to pay dividends or not for tax reasons under the new tax regime. (1 = no, definitely not; 7 = yes, definitely) | Mean | 3.60*** | 3.62 | 3.56 | 3.60 | 3.60 | 3.57 | 3.61 | 3.62 | 3.59 |
| | t-stat | -5.72 | -4.17 | -4.00 | -4.63 | -3.45 | -3.46 | -4.55 | -3.04 | -4.84 |
| | Median | 4*** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | Binomial p | .0001 | .0030 | .0066 | .0024 | .0093 | .0034 | .0052 | .0049 | .0032 |
| | % (>4) | 19.0 | 20.9 | 15.7 | 17.2 | 21.5 | 18.2 | 19.4 | 15.9 | 20.3 |
| | % (<4) | 32.6 | 33.9 | 30.2 | 30.2 | 35.6 | 35.8 | 30.9 | 33.3 | 32.2 |
| | N | 473 | 301 | 172 | 268 | 205 | 159 | 314 | 138 | 335 |
| 26. Please indicate on the following scale whether you used to like stocks to pay dividends or not for tax reasons under the old income tax regime (prevailing before January 1, 2001). (1 = no, definitely not; 7 = yes, definitely) | Mean | 3.79*** | 3.76 | 3.84 | 3.94** | 3.59** | 3.58** | 3.89** | 3.68 | 3.84 |
| | t-stat | -2.96 | -2.57 | -1.47 | -0.70 | -3.50 | -3.40 | -1.22 | -2.57 | -1.90 |
| | Median | 4* | 4 | 4 | 4** | 4** | 4** | 4** | 4 | 4 |
| | Binomial p | .0746 | .1111 | .4828 | 1.0000 | .0078 | .0124 | .8091 | .0344 | .4952 |
| | % (>4) | 24.0 | 25.7 | 20.8 | 24.5 | 23.2 | 22.2 | 24.8 | 20.3 | 25.5 |
| | % (<4) | 30.3 | 33.1 | 25.2 | 24.1 | 38.7 | 38.6 | 26.2 | 34.6 | 28.6 |
| | N | 455 | 296 | 159 | 261 | 194 | 153 | 302 | 133 | 322 |
| 27. Did you submit an income tax form for the year 2001 in order to ask for a reimbursement of the dividend surtax ("dividendbelasting")? (1 = yes; 0 = no) | Mean | 0.40*** | 0.41 | 0.38 | 0.35*** | 0.47*** | 0.46** | 0.37** | 0.44 | 0.38 |
| | t-stat ^a | -4.99 | -3.36 | -3.79 | -5.80 | -0.94 | -0.98 | -5.42 | -1.39 | -5.02 |
| | Median | 0*** | 0 | 0 | 0*** | 0*** | 0** | 0** | 0 | 0 |
| | Binomial p ^a | .0000 | .0011 | .0003 | .0000 | .3830 | .3644 | .0000 | .1927 | .0000 |
| | N | 555 | 339 | 216 | 333 | 222 | 175 | 380 | 151 | 404 |

^a The t-stat (binomial p) for Question 27 is for testing whether the mean (median) response is different from 0.5.

Table 3. Responses to General Dividend Questions

This table reports responses to general dividends questions from all investors, as well as owners of stock/investment funds, investors aging below/above 55, high/low income investors, and investors with/without university education. t-stat tests whether the mean is different from 4. Binomial p tests whether the median is different from 4 based on the two-tail Fisher sign test. %(>4) [%(<4)] is the percentage responses greater [less] than 4. N is the number of valid responses to each question. In the "All Investors" column, one diamond (*) denotes mean (median) response is significantly different from 4 at the 0.10 level, ** at the 0.05 level, and *** at the 0.01 level based on the Student's t value (binomial p). One, two, or three asterisks (*) denote these significance levels for difference in mean (median) between the pairs of demographic groups based on the two-sample t-test (non-parametric median test).

| Abbreviated Question Description | Statistics | All Investors | Age Below 55 | Age Above 55 | High Income | Low Income | University Educated | No university education |
|---|-------------------|----------------------|---------------------|---------------------|--------------------|-------------------|----------------------------|--------------------------------|
| 5. Do you hold some shares in investment funds in addition to holding shares in individual companies directly, because investment funds pay more reliable dividends? (1 = completely disagree; 4 = neutral; 7 = completely agree) | Mean | 3.68*** | 3.54 | 3.86 | 3.45* | 3.83* | 3.49 | 3.77 |
| | t-stat | -3.03 | -3.26 | -0.90 | -3.08 | -1.32 | -2.69 | -1.85 |
| | Median | 4 | 4 | 4 | 4* | 4* | 4 | 4 |
| | Binomial p | .2315 | .1766 | .8957 | .0674 | 1.0000 | .1839 | .6752 |
| | % (>4) | 27.1 | 26.8 | 27.5 | 25.3 | 28.3 | 26.1 | 27.6 |
| | % (<4) | 33.8 | 37.4 | 29.4 | 42.5 | 28.3 | 40.6 | 30.8 |
| | N | 225 | 123 | 102 | 87 | 138 | 69 | 156 |
| 6. Do you hold shares in investment funds only and no shares in individual companies, because investment funds pay more reliable dividends? (1 = completely disagree; 4 = neutral; 7 = completely agree) | Mean | 4.00 | 3.74*** | 4.39*** | 3.71 | 4.11 | 3.53** | 4.16** |
| | t-stat | 0.00 | -1.86 | 1.97 | -1.16 | 0.86 | -1.85 | 1.26 |
| | Median | 4 | 4*** | 4*** | 4 | 4 | 4 | 4 |
| | Binomial p | .2313 | .7035 | .0222 | .6177 | .0598 | .5966 | .0662 |
| | % (>4) | 33.5 | 24.6 | 46.8 | 29.1 | 35.2 | 27.5 | 35.6 |
| | % (<4) | 26.4 | 28.0 | 24.1 | 36.4 | 22.5 | 35.3 | 23.3 |
| | N | 197 | 118 | 79 | 55 | 142 | 51 | 146 |

Table 4. Responses to Behavioral Finance Questions

This table reports responses to behavioral finance questions (Theory e) from all investors as well as demographic groups. N is the number of valid responses to each question. One diamond (♦) denotes mean (median) response is significantly different from 4 (or 0, for Difference14-15) at the 0.10 level, ♦♦ at the 0.05 level, and ♦♦♦ at the 0.01 level based on the Student's t value (binomial p). One, two, or three asterisks (*) denote those significance levels for difference in mean (median) between the pairs of demographic groups based on the two-sample t-test (non-parametric median test).

| Abbreviated Question Description | Statistics | All Investors | Owning | Owning | Age | Age | High | Low | University | No |
|---|-------------------------|---------------|---------------------|------------|----------|----------|---------|---------|------------|----------------------|
| | | | (and perhaps Funds) | Funds Only | Below 55 | Above 55 | Income | Income | Educated | university education |
| 14. How much of the total dividends that you receive do you use for current consumption purposes? (1= 0-20% of the total amount; 2=20-40% of the total amount; 3= 40-60% of the total amount; 4= 60-80% of the total amount; 5= 80-100% of the total amount) | Mean | 1.83 | 1.90 | 1.69 | 1.69** | 2.00** | 1.54*** | 1.96*** | 1.75 | 1.86 |
| | Median | 1 | 1 | 1 | 1** | 1** | 1** | 1** | 1 | 1 |
| | N | 379 | 246 | 133 | 210 | 169 | 123 | 256 | 102 | 277 |
| 15. How much of the total income that you receive from regular salary (including pension) and social benefits do you use for consumption purposes? (1= 0-20% of the total amount; 2=20-40% of the total amount; 3= 40-60% of the total amount; 4= 60-80% of the total amount; 5= 80-100% of the total amount) | Mean | 3.13 | 3.20 | 3.02 | 2.95*** | 3.37*** | 3.19 | 3.10 | 3.20 | 3.10 |
| | Median | 3 | 3 | 3 | 3*** | 4*** | 3 | 3 | 3 | 3 |
| | N | 492 | 303 | 189 | 282 | 210 | 161 | 331 | 135 | 357 |
| Difference 14 – 15 | Mean | -1.44♦♦♦ | -1.40 | -1.50 | -1.44 | -1.44 | -1.72** | -1.30** | -1.68* | -1.35* |
| | t-stat ^a | -16.33 | -12.68 | -10.32 | -11.80 | -11.30 | -12.54 | -11.65 | -10.00 | -13.10 |
| | Median | -2♦♦♦ | -2 | -2 | -2 | -2 | -2 | -1 | -2 | -1 |
| | Binomial p ^a | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>0) | 12.7 | 14.9 | 8.7 | 13.1 | 12.3 | 8.5 | 14.8 | 11.3 | 13.2 |
| | % (<0) | 94.9 | 80.5 | 97.8 | 96.3 | 91.5 | 94.1 | 95.1 | 93.5 | 95.2 |
| | N | 362 | 235 | 127 | 199 | 163 | 118 | 244 | 97 | 265 |
| 16. Would you for consumption purposes sell part of your stocks in a company that has always paid a dividend, if the management of that company would decide not to pay a dividend anymore? (1 = no, definitely not; 4 = neutral; 7 = yes, definitely) | Mean | 2.87♦♦♦ | 2.74** | 3.09** | 2.68*** | 3.13*** | 2.57*** | 3.02*** | 2.75 | 2.91 |
| | t-stat | -14.08 | -12.95 | -6.49 | -12.82 | -6.92 | -10.93 | -9.77 | -8.18 | -11.48 |
| | Median | 2♦♦♦ | 2 | 3 | 2*** | 3*** | 2*** | 3*** | 2 | 2 |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 15.9 | 13.0 | 21.1 | 12.8 | 20.1 | 11.4 | 18.2 | 16.5 | 15.6 |
| | % (<4) | 90.9 | 68.1 | 95.4 | 93.2 | 85.0 | 86.7 | 91.8 | 85.6 | 91.9 |
| | N | 472 | 301 | 171 | 273 | 199 | 158 | 314 | 133 | 339 |

^a The t-stat (binomial p) for Difference14-15 is for testing whether the mean (median) difference in responses to Question 14 and Question 15 is different from 0.

Table 5. Responses to Questions on Stock Dividends

This table reports responses to stock dividend questions from all investor, as well as owners of stock/investment funds, investors aging below/above 55, high/low income investors, and investors with/without university education. t-stat tests whether the mean is different from 4. Binomial p tests whether the median is different from 4 based on the two-tail Fisher sign test. %(>4) [%(<4)] is the percentage responses greater [less] than 4. N is the number of valid responses to each question. In the "All Investors" column, one diamond (*) denotes mean (median) response is significantly different from 4 at the 0.10 level, ** at the 0.05 level, and *** at the 0.01 level based on the Student's t value (binomial p). One, two, or three asterisks (*) denote these significance levels for difference in mean (median) between the pairs of demographic groups based on the two-sample t-test (non-parametric median test).

| Abbreviated Question Description | Statistics | Owning Stocks (and perhaps Funds) | | | | | Age | | University | |
|--|------------|-----------------------------------|-------------------|--------------|--------------|-------------|------------|---------------------|-------------------------|-------|
| | | All Investors | Owning Funds Only | Age Below 55 | Age Above 55 | High Income | Low Income | University Educated | No university education | |
| <i>Theory k. Stock dividends as small stock splits</i> | | | | | | | | | | |
| 28. Stock dividends are: (1 = more look like cash dividends; 7 = more look like stock splits) | Mean | 4.16** | 4.21 | 4.06 | 4.18 | 4.13 | 4.01 | 4.24 | 4.09 | 4.19 |
| | t-stat | 2.04 | 2.14 | 0.46 | 1.76 | 1.08 | 0.05 | 2.60 | 0.59 | 2.09 |
| | Median | 4*** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | Binomial p | .0036 | .0065 | .2836 | .0128 | .1388 | .6208 | .0013 | .3374 | .0051 |
| | % (>4) | 39.8 | 42.3 | 35.0 | 40.9 | 38.3 | 38.6 | 40.4 | 40.2 | 39.6 |
| | % (<4) | 27.7 | 27.9 | 27.1 | 27.0 | 28.6 | 34.3 | 24.2 | 32.0 | 25.8 |
| | N | 405 | 265 | 140 | 230 | 175 | 140 | 265 | 122 | 283 |
| <i>Theory l. Transaction costs</i> | | | | | | | | | | |
| 29. Can you please give your opinion on a scale from 1 to 7 on the following statement? Because of transaction costs I have a preference for stock dividends over cash dividends. (1 = No, definitely not; 7 = Yes, definitely) | Mean | 4.40*** | 4.37 | 4.46 | 4.38 | 4.43 | 4.27 | 4.47 | 4.46 | 4.38 |
| | t-stat | 5.47 | 3.81 | 4.20 | 4.06 | 3.66 | 1.95 | 5.41 | 3.38 | 4.33 |
| | Median | 4*** | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0127 | .0000 | .0001 | .0000 |
| | % (>4) | 42.3 | 42.8 | 41.4 | 41.8 | 42.9 | 39.9 | 43.5 | 44.4 | 41.4 |
| | % (<4) | 17.1 | 19.7 | 12.5 | 17.2 | 17.0 | 22.5 | 14.5 | 16.9 | 17.2 |
| | N | 421 | 269 | 152 | 239 | 182 | 138 | 283 | 124 | 297 |
| <i>Theory m. Taxes</i> | | | | | | | | | | |
| 30. If you only consider income taxes, do you currently have a preference for stock or for cash dividends? Please answer this question in the context of the currently prevailing tax system that is operational since January 1, 2001 (1 = I prefer cash dividends; 7 = I prefer stock dividends) | Mean | 4.11 | 4.15 | 4.04 | 4.24** | 3.94** | 4.01 | 4.16 | 4.27 | 4.04 |
| | t-stat | 1.47 | 1.56 | 0.35 | 2.57 | -0.47 | 0.06 | 1.78 | 2.17 | 0.46 |
| | Median | 4** | 4 | 4 | 4** | 4** | 4 | 4 | 4 | 4 |
| | Binomial p | .0231 | .0304 | .4570 | .0012 | 1.0000 | .6201 | .0193 | .0534 | .1592 |
| | % (>4) | 28.8 | 30.7 | 25.4 | 31.0 | 26.0 | 25.2 | 30.7 | 29.1 | 28.7 |
| | % (<4) | 20.6 | 20.7 | 20.4 | 15.9 | 26.6 | 21.6 | 20.1 | 16.2 | 22.4 |
| | N | 403 | 261 | 142 | 226 | 177 | 139 | 264 | 117 | 286 |

| Abbreviated Question Description | Statistics | All Investors | Owning | Owning | Age | Age | High | Low | University | No | |
|---|------------|---------------------|-------------------------------------|---------------|-------------|-------------|------------------|------------------|------------|-------------------------|-------|
| | | | Stocks (and perhaps Funds) | Funds Only | Below 55 | Above 55 | Income | Income | Educated | university education | |
| 31. If you only consider income taxes, did you use to have a preference for stock or for cash dividends under the old tax regime (prevailing before January 1, 2001)? (1 = I used to prefer cash dividends; 4 = neutral; 7 = I used to prefer stock dividends) | Mean | 4.56 ^{***} | 4.62 | 4.45 | 4.48 | 4.67 | 4.79** | 4.44** | 4.80** | 4.47** | |
| | t-stat | 7.17 | 6.16 | 3.68 | 5.00 | 5.15 | 5.71 | 4.72 | 5.39 | 5.08 | |
| | Median | 4 ^{***} | 4 | 4 | 4 | 4 | 4 ^{***} | 4 ^{***} | 4 | 4 | |
| | Binomial p | .0000 | .0000 | .0016 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 38.6 | 41.3 | 33.3 | 34.7 | 43.6 | 47.4 | 34.1 | 42.5 | 37.0 | |
| | % (<4) | 14.5 | 14.7 | 14.1 | 13.5 | 15.7 | 11.3 | 16.1 | 9.7 | 16.4 | |
| | N | 394 | 259 | 135 | 222 | 172 | 133 | 261 | 113 | 281 | |
| <i>Theory n. Behavioral finance</i> | | | | | | | | | | | |
| 32. Suppose a company does not have enough cash to pay a dividend. What is your preference in such a case: (1) to receive a stock dividend or (2) not to receive a dividend at all? (1 = preference not to receive a stock dividend; 4 = neutral; 7 = preference to receive a stock dividend) | Mean | 4.72 ^{***} | 4.72 | 4.71 | 4.79 | 4.62 | 4.67 | 4.74 | 4.46** | 4.83** | |
| | t-stat | 8.91 | 6.98 | 5.55 | 7.40 | 5.07 | 4.52 | 7.77 | 3.11 | 8.59 | |
| | Median | 5 ^{***} | 5 | 5 | 5 | 5 | 5 | 5 | 4** | 5** | |
| | Binomial p | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| | % (>4) | 55.7 | 55.9 | 55.4 | 56.0 | 55.4 | 55.5 | 55.9 | 48.8 | 58.5 | |
| | % (<4) | 17.0 | 16.5 | 17.8 | 15.6 | 18.8 | 19.2 | 15.9 | 18.4 | 16.4 | |
| | N | 436 | 279 | 157 | 250 | 186 | 146 | 290 | 125 | 311 | |