Journal of Economic Psychology 81 (2020) 102317

Contents lists available at ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

Out-of-pocket vs. out-of-investment in financial advisory fees: Evidence from the lab☆

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ARTICLE INFO

JEL classification:
G40
G28

Keywords:
Lab experiment
Payment structure
Advisor remuneration
Willingness to pay
Post-service and pre-service payments

ABSTRACT

The implications of the method of payment to financial advisors on the behavior of individuals are of interest to economists and regulators around the globe. This paper uses an experimental approach to compare two common alternative forms of payment. The first is "out-of-pocket" (an upfront payment from a checking account), and the second is "out-of-investment" (a deferred payment from an investment portfolio account). We document that for the same financial advice, the subjects in the first treatment were willing to pay on average 25 per cent less than the subjects in the second treatment – payment following an investment outcome knowledge, where the payment was framed in terms of gains. We introduce an additional out-of-pocket payment structure where the actual payment is deferred until after the subject discovers the outcome of the investment. Thus, the design can be broken down into two distinct possible effects, an out-of-pocket vs. out-of-investment framing effect and a pre-outcome vs. post-outcome timing effect. We find that the timing effect is the key element: across out-of-pocket payment structures, the subjects were willing to pay significantly less in the pre-outcome treatment than their counterparts were in the post-outcome treatment. Our results highlight the difference between post-service and pre-service payments in a broader context, and provide an explanation for why allowing late payment, after the service has been performed and its outcome revealed, may increase the ex-ante willingness to pay for the service.

1. Introduction

In recent years, there has been a rise in public and regulatory concern aimed at improving transparency and mitigating conflicts of

☆ We acknowledge helpful comments and suggestions by two anonymous referees and the responsible editor (Carlos Alos-Ferrer). Additionally, we are grateful for comments on previous versions made by Angela Fontes, Assaf Hamdani, Mark Lush, Ori Putterman, Brian Scholl, Stefan Trautmann, Yishay Yafeh as well as by seminar participants at the Israeli Ministry of Finance, the Bank of Israel, and the Law & Finance workshop at the Hebrew University. We also thank participants of the North American ESA-SEF Conference (2017), 2018 ESA–Berlin, and 2018 Heidelberg University Experimental Finance Conference. This project was supported by the Israel Science Foundation (grant no. 1929/17), the Krueger Center of Finance at the Hebrew University (Sade), and the Israeli Prime Minister's Office. Sade thanks the Stern School of Business at New York University for support and hospitality. The full data frame can be downloaded from the link reported here.

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https://doi.org/10.1016/j.joep.2020.102317
Received 24 September 2019; Received in revised form 1 September 2020; Accepted 3 September 2020
Available online 19 September 2020

interest in the field of financial planning services.[1] In numerous countries, including the UK, Ireland, Israel, Canada, Australia, and South Africa, an area of particular concern is the remuneration of financial advisors. Specifically, regulators are alarmed with several issues surrounding the payment mechanism (e.g., agency conflicts, transparency, financial literacy and behavioral biases), and are evaluating different payment structures in an effort to mitigate some of these issues. One aspect of the payment mechanism that many regulators have taken a particular interest in is direct vs. indirect payment. Under the direct payment method, the client pays an agreed-upon sum directly to the advisor, whereas under the indirect payment method, the payment to the advisor is calculated as a fraction of the management fees and commissions that the client pays to the financial institution. While in both cases the payment is fixed in the sense that it is not contingent on profits, the latter payment method potentially compromises transparency regarding the magnitude and, at times, the very existence of advisor remuneration. Hence, many countries are considering moving from an indirect payment method to a direct and transparent one.

However, even within the domain of direct payments there are more than one potential structure, and different actual payment structures within this domain may yield different degrees of ex-ante willingness to pay for financial advice. The purpose of our paper is to examine these payment structures (which are *independent* of profits) and to study their effect on investors' willingness to pay.

In practice, common use is made of two alternative payment methods. The first, called "out-of-pocket," involves the investor paying "cash" (from a checking account) around the day on which the advice is given. The second, called "out-of-investment,"[2] involves the withdrawal of an agreed-upon sum from the investment account. Both payment methods are not contingent on profits. In this work, we integrate an additional possible payment structure, called "deferred out-of-pocket," where the investor pays from a checking account after the investment advice has already realized a profit. This design serves to distinguish between the out-of-pocket vs. out-of-investment framing effect and a possibly distinct pre-outcome vs. post-outcome timing effect. Thus, we study the three following alternatives: (1a) "immediate out-of-pocket" – a payment from a checking account before the investment outcome, (1b) "deferred out-of-pocket" – a payment from a checking account after the investment outcome, and (2) "out-of-investment" – a deduction from an investment portfolio (also after the investment outcome). All three alternatives are independent of profits, and hence, any difference in actions is purely behavioral. Potential differences between (1a) and (1b) are associated with the timing effect of deferring the payment until after the outcome has been revealed. Potential differences between (1b) and (2) are associated with the framing effect.

In this paper, we present a lab experiment study designed to test the extent of the influence of the assigned payment structure on willingness to pay (WTP).[3] This setting enables us to focus on the payment mechanism while controlling for all other factors. As noted above, the participants in the experiment were randomly divided into three treatment groups. Each treatment was distinguished by a single element of the payment structure for the same suggested financial advice, aimed at improving investment outcome prospects.

In the first part of the experiment, each subject was given the task of solving the quantitative reasoning section of the Psychometric (University) Entrance Test, with a reward of 30 NIS[4] for those who passed. The intention of the procedure was to create the perception among those who passed the test that they had earned the money for their effort, as opposed to receiving a gratuitous reward.[5] The subjects in the out-of-pocket treatments received their money at the end of the test (thus simulating a deposit in a "checking account"), whereas the subjects in the out-of-investment treatment were told that they would receive their money at the end of the next part of the experiment (thus simulating a deposit in an "investment portfolio"). In the next part of the experiment, subjects in all treatments could use this sum of money: they were presented with the same prospects of gaining rewards and were offered an opportunity to use the services of an advisor to improve those prospects. *Prior to the actual payment*, each participant was asked to state the price he would be willing to pay for this service, without knowing the fee requested by the "virtual advisor"[6] or the amount offered by the other participants.[7] If this sum was greater than or equal to the fee demanded by the advisor, the participant received the service. Shortly thereafter, all the participants were informed of their total gains.[8]

Our main results are summarized as follows. On average, investors had greater willingness to pay for financial advice through the

[1] A simple example of such a conflict of interest encouraged by a commission-based remuneration method is the disincentive to recommend commission-free products such as ETFs and ETNs. Experimental results of Hoffmann, Chesney, Chuah, Kock, and Larner (2020) suggest differential prospects for persuasion and selling of different kinds of products, and services.

[2] In this paper, "out-of-investment" represents payment of an amount agreed upon in advance that is to be deducted from the total sum in the investment portfolio. This is in contrast to an alternative payment method – which is forbidden in the field of regulated money management, but can be found in unregulated investment vehicles, such as hedge funds – where the financial advisor is remunerated by an incentive fee, i.e., by a percentage of the profits he brings to the customer. On incentive fees in the field of private pension funds, see Hamdani, Kandel, Mugerman, and Yafeh (2017).

[3] In our experiment the WTP is used as a "proxy" for the extent to which financial advice will be purchased in the market at different payment regimes. Note that the market equilibrium will also depend on the price of the service, which in turn depends on the supply of qualified advisors. However, it is reasonable to assume that the method of payment will not have a substantial effect on the supply side of the market, and hence the willingness to pay is a good proxy for the equilibrium demand for the service.

[4] Sums in US dollars are approximately 1/3.5 of the reported sums in New Israeli Shekels (NIS).

[5] Whether or not participants perceived the work in the way we expected is not crucial for interpreting our findings.

[6] The framing of the experiment was neutral. The role of the advisors was implemented through an improvement of the lottery (to a lottery that first-order stochastically dominates the lottery without advisors).

[7] It should be noted that this design also aimed to mitigate the behavioral effect of pain of payment by distancing the act of evaluating the financial service from the actual payment by cash out of the account.

[8] The rapid succession of the nature's moves in this part of the experiment served to eliminate the disassociation between the consumption of the advisor's service and the timing of the payment.

investment portfolio account, where the decision was framed in terms of gains. The extent of the effect was significant: subjects were willing to pay on average 25 percent less when assigned to the immediate out-of-pocket (checking account) payment structure, under which the payment was framed in terms of losses. Further, we disentangle this effect into two components: the framing component and the outcome component (actual payment before or after the outcome knowledge). Our findings suggest that the deferred payment, after the advice outcome is realized, appears to be the key component that explains our results. Subjects in the immediate out-of-pocket payment treatment were willing to pay 22 percent less for the same advice than their counterparts in the deferred out-of-pocket payment treatment. The framing, by itself, has an insignificant effect. That is, subjects in treatments (1b) and (2), in both of which the actual payment happens after the outcome is realized, were willing to pay almost the same amount. In the deferred out-of-pocket treatment, where the payment was framed in terms of losses, the willingness to pay was (only) two percent less than in the out-of-investment treatment, where the payment was framed in terms of gains.

The conjectures on the interpretation of our findings are related to the literature on the financial effects of payment structures on decision-making behavior. Our novel contribution is that we attempt to quantify the "outcome effect" (ex-post payment after the outcome knowledge). We document a statistically and economically significant gap in subjects' willingness to pay between the two out-of-pocket treatments.

There are two possible explanations for this finding. First, we note that in the post-service treatment, the simultaneity between the lottery outcome and the payment reduces subjects' loss aversion. If the lottery outcome is positive, its gain exceeds the loss caused by the payment, and the investor can thus avoid a negative payoff that generates a greater mental loss. By contrast, the pre-service treatment lacks a similar remedy since the loss (payment) takes place before the lottery outcome has been revealed. This explanation relates to the well-established literature on the effect of prior outcomes on risk attitudes (see Shefrin & Statman, 1985; Thaler & Johnson, 1990; Coval & Shumway, 2005; Kaustia & Knüpfer, 2008; Liu, Tsai, Wang, & Zhu, 2010; Ingersoll & Jin, 2013; Cohn, Engelmann, Fehr, & Maréchal, 2015; Necker & Ziegelmeyer, 2016).

Particularly, Barberis, Huang, and Santos (2001) show that an individual who has previously incurred a loss has already experienced the pain of admitting this loss and will consequently be more risk averse. Imas (2016) tests this supposition in a controlled experiment, in which participants take part in a series of gambles. In one treatment, the participants settle their accounts in cash after each gamble is played out; in another, they settle their accounts at the end, after all the gambles have been played out. The reasoning behind this experiment is that a participant who has to settle her account after every round is forced to accept any intermediate loss she experiences. The results of the experiment show that participants who experience an intermediate loss in the round-by-round settlement treatment subsequently take fewer risks compared to participants in the settle-at-the-end treatment group who also experience an intermediate loss. While the aforementioned literature deals mostly with the issue of *dynamic* risk taking (dynamic investment) we use its insights to explain why post-service payment leads to higher willingness to pay than pre-service payment.

Our second explanation, which is admittedly more speculative but also consistent with the experimental results, relates to the insights and experiences pertaining to the purchase of services that subjects gain outside the laboratory, which influence their behavior within the laboratory setting. Since service quality is almost always highly uncertain, fairness considerations and market forces may lead service providers to forgo or reimburse payment if the outcome of the service was unsatisfactory. But service providers are more reluctant to agree to reimburse a customer than they are to waive an as-yet unpaid charge following a failed service (possibly because reimbursement induces a greater sense of loss aversion on the part of the service provider). Endowed with this insight, we always prefer post-service payment to pre-service payment; in other words, our post-service willingness to pay is greater than our pre-service willingness to pay. We do not claim that subjects in the lab expected to forgo their payment if the outcome of the lottery were negative. It is safe to assume that they understood the instructions of the experiment and knew that this would not be an option. However, the simple insight we described above and the rule of thumb it induces may have played a role in their decisions. Regardless of which of the two explanations dominates, both allude to the fact that a decisive point of time for payment that increases willingness to pay is not the time at which the service is provided, but rather the time at which its outcome becomes known.

Regulators might advocate for use of the (1a) structure, i.e., the immediate out-of-pocket payment from a checking account before the investment outcome, as it is simple, clear and transparent. And yet, this structure has a potentially severe drawback, in that it might reduce investors' willingness to pay to the extent that many of them will remain without any advice. Indeed, the dilemma of which of the two structures ought to be implemented arose as part of a discussion with regulators who sought our scientific advice regarding new regulation they were designing.

A pronounced and well-documented example that can serve as an additional motivation for our research is the Retail Distribution Review (RDR) regulatory change, already implemented in the beginning of 2013 by the Financial Services Authority in the UK. Under the RDR reform, the customer pays the advisor directly, and the advisor provides clear disclosure in terms of cash, in the form of a flat rate or an hourly rate. This is a change in policy from the previous arrangement of an annual payment of a percentage of the portfolio, which was argued to be less transparent and capable of leading to a conflict of interests (UK HM Treasury and Financial Conduct Authority, 2016).

Our main interest in this paper is the effect of the payment regime on the willingness to purchase financial advice. However, our results highlight the importance of this payment regime in a much broader context. Deferring payment until after benefits from the good or service have been acquired is likely to increase willingness to pay.

The rest of the paper is organized as follows. Section 2 describes the design and methodology of the experiment. Section 3 presents the analysis and the results of the experiment. Section 4 concludes the paper. The Complementary Notes include a description of the course of the experiment, copies of the pre- and post-experiment questionnaires, illustrations of the computer interface, and a formal model of the effect of the post-service payments.

2. Design and methodology

2.1. Experimental design

A computerized lab experiment was designed to investigate the effect of the structure of payment on willingness to pay. The three assigned structures of direct payment were either payment out of a checking account – (1a) immediate or (1b) deferred; or (2) a deduction from an investment portfolio. Here is the illustrative representation of the treatments and comparisons we aim to make:

Treatment	*Decision made*	*Payment from*	*Payment/ Outcome*	*Framing effect*	*Outcome effect*
1a	*ex-ante*	*Checking Account*	*Now/Not revealed*	*Loss*	*No*
1b	*ex-ante*	*Checking Account*	*Later/Revealed*	*Loss*	*Yes*
2	*ex-ante*	*Investment account*	*Later/Revealed*	*Gain*	*Yes*

It is important to reiterate that all three alternatives are independent of profits, and hence any difference in actions is purely behavioral. Potential differences between (1a) and (1b) are associated with the timing effect of deferring the payment until after the outcome (outcome effect). Potential differences between (1b) and 2 are associated with the framing effect (gains vs. losses).

In each session, the participants in each treatment were shown the same prospects of gaining financial assets: a 40% probability of gaining a superior asset (*Asset A*) and a 60% probability of obtaining an inferior asset (*Asset B*). Fig. 1 illustrates the structure of the nature's move 1 (the original lottery).

Subsequently, subjects were offered to use the services of a financial advisor, whose abilities were specified and fully known to the participants; an improvement of the probability of getting the better asset (Asset A) from 40% to 90%. Hence, *on average*, an "advisor" creates a value of 12 (risk neutral). Fig. 2 depicts the structure of the nature's move 2 (the improved lottery).

Next, each participant was asked to state the price he would be willing to pay for this service, without knowing the fee requested by the advisor or the sum offered by any of the other participants. The requested advisor fee (which reflects her cost of operation) was picked at random in each session, out of a defined uniform distribution (the distribution was known to the subjects). If the amount offered by the subject was greater than or equal to the requested fee, the advisor provided the service in exchange for the requested sum. The participant's final payoff at the end of the experiment consisted of the initial amount of 30 gained in the first part of the experiment, plus the amount gained in the lottery, minus the advisor's fee (if the participant employed the advisor's services).

Two tactics were implemented in the experiment to reduce the behavioral effects of pain of payment and temporal discounting. The participants were requested to decide on the price they would be willing to pay and record it *prior* to the actual payment. This design aimed at disassociating the price from the act of payment, especially in cash. In addition, only a few minutes passed between the moment the participant stated his price and the moment the profit was announced; moreover, the difference in the timing of the actual payments between (1a) and (1b)/(2) was also only several minutes. This design served to eliminate the disassociation between the consumption of the advisor's service and the timing of the payment, as well as to nullify temporal discounting issues.

2.2. Experimental methodology

The experiment was conducted at the Ratiolab laboratory at the Center for the Study of Rationality, at the Hebrew University of Jerusalem. A total of 367 subjects, graduate and undergraduate students from the Hebrew University, participated in the experiment. All of them were native Hebrew speakers. The division of the participants into three treatment groups was done at random.

Each session involved a cohort of twelve subjects. We used a between-subjects design, so that each cohort participated in a single experiment treatment. To avoid any potential selection bias, the treatment groups had a similar gender ratio and the three treatments were conducted at approximately the same hours of the day. At the beginning of each session, the participants were seated in separate stations to prevent any influence[9] on their responses. To encourage the subjects to state their true valuation for the financial service proposed by the advisor, we used the term *true valuation* as per Vickrey (1961) second-price sealed-bid auction.

Before beginning the experiment, the participants received a short description of the experiment and its reward system. Afterwards, they were asked to sign a consent form. The experiment was carried out through a computer program, except for the distribution of the rewards and the collection of the payments to the advisor under condition (1). The entire experiment was 30–45 min long (the detailed description of the course of the experiment is given in Complementary Note no. 1).

The experiment consisted of five stages: (1) filling out the personal information questionnaire; (2) solving the quantitative reasoning chapter from the Psychometric Entrance Test;[10] (3) learning of the structure and prospects of the lottery and of the advisor's service, and stating the price the subject would be willing to pay; (4) performing the lotteries and presenting their results; (5) filling out a concluding questionnaire.

The personal information questionnaire filled out by the participants served to collect the data on their personal, demographic, and behavioral characteristics, including factors regarding risk aversion, present bias, and financial literacy. In the quantitative reasoning chapter from the Psychometric)University) Entrance Test, the participants who passed the threshold condition of two correct answers

[9] It should be noted that in addition to the separation of the participants, the experiment observers were not informed of the experiment's purpose and the significance of its design elements.

[10] The standardized university entrance exam in Israel.

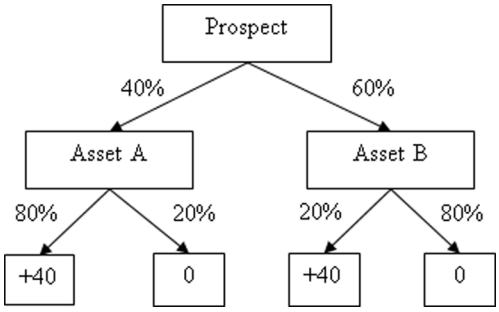

Fig. 1. The Structure of the Nature's Move 1.

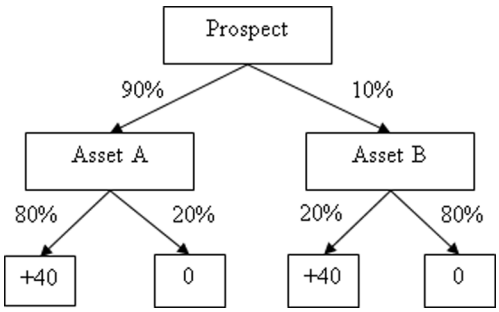

Fig. 2. The Structure of the Nature's Move 2.

received 30 NIS and proceeded to the second part of the experiment; the other participants received 20 NIS and did not proceed with the experiment past this stage. Participants in treatments (1a) and (1b) received their money at the end of the quantitative reasoning test, while participants in treatment (2) received their money at the end of the experiment. Note that all participants passed the threshold condition of two correct answers. Consistent with theories of mental budgeting and mental accounting (Henderson & Peterson, 1992), the participants who passed the test were supposed to perceive the 30 NIS as money earned for their work and effort, as opposed to a gratuitous reward.[11] This design aimed to reinforce the perception that they would make a payment decision that was related to their own income, and subsequently pay the financial advisor out of their own income.

3. Analysis and results

3.1. Experimental results

Table 1 contains a summary of the descriptive statistics of the experiment, showing the mean and standard error (presented in parentheses) of the controlled variables. The controlled variables were based on the data collected from the personal information form filled out by the participants at the beginning of the experiment, including personal, demographic, and behavioral characteristics, which enabled us to control for factors regarding risk aversion, perceived risk, and present bias; and the number of correct answers in the math test conducted during the experiment.

As shown in Table 1, there were no observed statistical differences in the controlling factors between the treatment groups.

The clear statistical difference between the treatments, as presented in Fig. 3, was observed in the dependent variable, willingness to pay: 8.35 NIS in the immediate out-of-pocket payment treatment vs. 10.22 NIS in the deferred out-of-pocket payment treatment, and 10.42 NIS in the out-of-investment treatment.

This experiment produced clear and significant statistical and economic results showing that under the immediate out-of-pocket payment treatment, the participants' average willingness to pay for the advisor's financial service was considerably lower than under other treatments. After controlling for related demographic and behavioral factors (such as gender, age, time and risk preferences, etc.) and for performance on the quantitative reasoning test, the extent of the financial effect was statistically significant and showed 20%–25% lower willingness to pay across the specifications.

Formally, we use the following base specification:

$$y_i = \alpha + \beta_1 T_i + X_i^{'}\gamma + \beta_2 G_i + \varepsilon_i \quad (1)$$

[11] It should be noted that the precondition of just two correct answers to pass the test was not revealed to the participants.

Table 1
Descriptive Statistics.

	Immediate Out-of-Pocket	Deferred Out-of-Pocket	Out-of-Investment	Total
Subjects	115	124	128	367
Male	0.55	0.51	0.54	0.53
	(0.05)	(0.05)	(0.04)	(0.03)
Age	24.10	23.91	24.39	24.14
	(0.22)	(0.25)	(0.22)	(0.13)
Relig.	0.40	0.41	0.33	0.38
	(0.05)	(0.04)	(0.04)	(0.03)
Smoking	0.10	0.13	0.15	0.13
	(0.03)	(0.03)	(0.03)	(0.02)
Smoking Past	0.26	0.31	0.29	0.29
	(0.04)	(0.04)	(0.04)	(0.02)
Immig.	0.13	0.09	0.10	0.11
	(0.03)	(0.03)	(0.03)	(0.02)
Working	0.56	0.50	0.57	0.55
	(0.04)	(0.05)	(0.04)	(0.03)
Age 85	74.12	73.48	73.46	73.67
	(1.43)	(1.84)	(1.58)	(0.94)
Econ. or Fin. Major	0.44	0.39	0.41	0.41
	(0.05)	(0.04)	(0.04)	(0.03)
Risk Pref.	−56.47	−56.29	−58.87	−57.25
	(7.13)	(3.29)	(6.42)	(3.35)
Time Pref.	89.18	82.70	78.51	83.27
	(23.14)	(18.70)	(15.63)	(11.03)
Tracking	0.57	0.60	0.59	0.58
	(0.05)	(0.04)	(0.04)	(0.03)
Insurance	0.35	0.40	0.39	0.38
	(0.04)	(0.04)	(0.04)	(0.03)
Pension	0.30	0.37	0.27	0.32
	(0.04)	(0.04)	(0.04)	(0.02)
Overdraft	0.20	0.16	0.17	0.18
	(0.04)	(0.03)	(0.03)	(0.02)
Correct	13.64	13.77	12.92	13.43
	(0.29)	(0.31)	(0.32)	(0.18)

The table shows the observations under the three treatments: payment out of the checking account (out-of-pocket), deferred out-of-pocket, and deduction from the investment portfolio (out-of-investment). The table shows the means and standard errors (presented in parentheses) for the controlled variables: male indicator (Male); age (Age); religious indicator, excluding non-practicing Jew and non-religious (Relig.); smoking habits indicator (Smoking and Smoking Past);(For a discussion on smoking, time preference, and long-term saving decisions see (Hurwitz & Sade, 2019).) immigrant indicator (Immig.); working indicator, part-time or full-time employment (Working); perceived probability of reaching age 85 (Age 85); studying financially related major indicator (Econ or Fin. Major); risk preference score (Risk Pref.) ;(The measurement of risk preference is based on the subjects' self-reported maximum amount they would be willing to pay for a lottery ticket with an expected return of NIS 200 (see Complementary Note no. 1). The score is calculated as a natural logarithm of the entered sum divided by 200.) time preference score (Time Pref.) ;(The measurement of time preference is based on the subjects' self-reported minimum amount they would be willing to accept one year from now instead of NIS 3000 today (see Complementary Note no. 1). The score is the interest rate.) checking the bank account more than once a month indicator (Tracking); having life insurance indicator (Insurance); having a pension fund indicator (Pension); going into and out of overdraft indicator (Overdraft); number of correct answers in the math test (Correct).

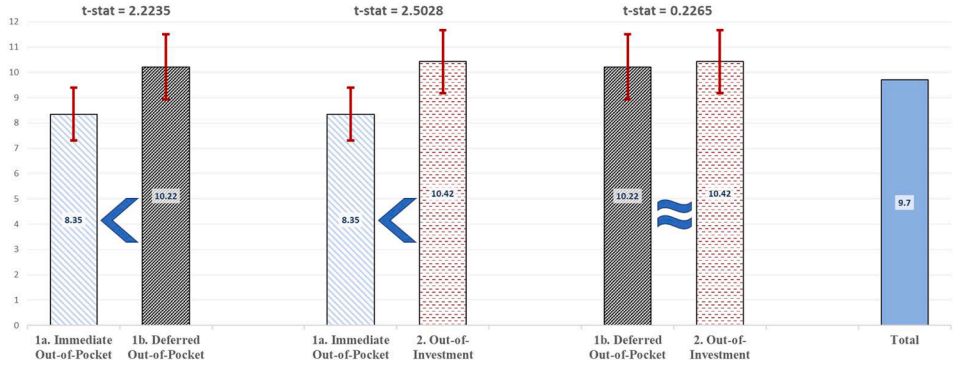

Fig. 3. Willingness to Pay for the Advisor's Services.

where y_i is the outcome variable for individual i (the individual's willingness to pay for the financial advisor), T_i is a set of dummy variables indicating i's relevant treatment, $X'_i$is a vector of individual i's personal, demographic, and behavioral characteristics as detailed in Table 1, G_i is individual i's grade in the math test, ε_i is the error term, representing the idiosyncratic taste of subject i.

The regression model (1) shows that the individual's willingness to pay is a function of the structure of payment, as the participants were willing to pay less in the immediate out-of-pocket payment treatment for the same service. Employing the model with the control variables shows statistically significant results with WTP coefficient averages of −2.33 (column 3, Table 2) and −2.25, when other demographical and behavioral variables are controlled for (column 1, Table 2).

These results demonstrate that the willingness to pay was about 25% less in the checking account payment immediate payment treatment than in the investment portfolio payment treatment, and are, *prima facie*, consistent with the reference point concept of prospect theory. Based on the prospect theory argument, one may conjecture that for the same service, the subjects framed payments perceived as withdrawn from a checking account in terms of losses, whereas they framed payments perceived as deducted from an investment portfolio in terms of gains. This result is consistent with the RDR lessons.

However, this result could be explained by two underlying mechanisms: (A) framing in terms of gains or losses, and (B) the outcome effect of the timing of the payment. When we break down this 25%-result into the components, using the treatment (1b),[12] we document that the outcome effect appears to be a key factor in explaining participants' WTP for the financial advice. For the ease of interpretation, column 4 of Table 2, specifically, presents the statistically significant difference of 1.94 NIS between the ex-ante WTP where the actual payment happens *before* the outcome has been revealed, and the ex-ante WTP where the actual payment happens *after* the outcome. Consistent with the results outlined, Imas (2016) finds that a participant who experiences an intermediate loss in the round-by-round payment condition subsequently takes less risk, as compared to a participant in the payment-at-the-end condition who also experiences an intermediate loss.

Our alternative explanation is rooted in subjects' real-world experiences about the purchase of services, where fairness considerations and market forces may lead service providers to waive the payment if the outcome of the service is disappointing.

We propose a simple and intuitive model that can explain this tendency to be willing to pay more after observing the outcome, even though the subject is told that the payment is unconditional of this outcome. The model demonstrates two possibilities; the first is that the subjects may have a non-trivial perceived probability that there will be *no (or less)* actual money transfer in case of non-desirable investment outcome, following the investment advice. The second is that the subjects may have a non-trivial perceived probability that there will be *no (or less)* actual money transfer eventually, regardless of the outcome.[13] To clarify this argument we use a formal model (See Complementary Note no. 3).

Statistically insignificant indicator coefficients for deferred out-of-pocket payment treatment in columns 1–3 of Table 2 suggest that there is no significant gains/losses framing effect in our setting.

Table 2 provides additional interesting and statistically significant results. The table plausibly shows that men are significantly more willing to pay for a financial service than women,[14] with the statistically significant coefficients of 1.72 (column 1), and 1.74 (columns 2–4). These results are consistent with studies that show that women are less confident than men in dealing with financial issues, which consequently affects their motivation to improve their financial skills and situation (Bashir, Rasheed, Raftar, Fatima, & Maqsood, 2013; OECD, 2013). These theories are reflected in other surveys conducted in the past few years by financial agents such as MGM Advantage and Country Financials. Those surveys show that women value financial advice less than men, and that men tend to seek professional financial advisory services more than women. Thus, the result of the present experiment once again draw attention to the risk that those customers who need financial advisory services the most may not be receiving it.

The last noteworthy result demonstrated in Table 2 shows that subjects who did not perform well on the math test were also willing to pay less for financial advice. Regarding the relationship between test performance and willingness to pay, it is reasonable to assume that it results from the fact that mathematically/financially illiterate individuals find it hard to decide whether hiring a financial advisor is a worthwhile deal, and do not know how much to pay him/her. It probably does not result from the perception that they can do better without an advisor. To check this hypothesis, we took a group of "zero-offer" people who were not willing to pay anything for the advisory services (58 subjects),[15] and compared the test performance results of this group to those of the rest. The differences are statistically significant (t-stat = 5.41).

Similarly, subjects who do not frequently monitor their bank account (a proxy for lack of involvement and engagement in financial practices) were also willing to pay less for the service. It is also interesting to notice that subjects who believe that they will live past age 85 were willing to pay more for the financial advice service.

[12] Payment from a checking account after the investment outcome – deferred out-of-pocket.

[13] Although there are also significant results for the age variable, those results will not be analyzed as there were only small age differences among the participants.

[14] Although there are also significant results for the age variable, those results will not be analyzed as there were only small age differences among the participants.

[15] This group, in fact, expressed preference for not taking the advice. Remarkably, there is no difference in this group across treatments, 19 subjects were from the out-of-pocket (1a) treatment, 19 subjects were from the out-of-pocket (1b) treatment, and 20 from the out-of-investment treatment (2). Thus, on the one hand, there is no difference across treatments in subjects' willingness to buy, but on the other hand, there is a compelling difference in their willingness to pay for this advice.

Table 2
Out-of-Pocket vs. Out-of-Investment *(Dependent variable = individual i's willingness to pay).*

	(1)	(2)	(3)	(4)
Out-of-pocket immediate payment Treatment	−2.25**	−2.35**	−2.33**	
	(0.79)	(0.79)	(0.79)	
Out-of-pocket deferred payment Treatment	−0.39	−0.43	−0.40	1.94*
	(0.91)	(0.89)	(0.88)	(0.80)
Out-of-investment Treatment				2.33**
				(0.79)
Correct	0.28*	0.30**	0.29**	0.29**
	(0.11)	(0.10)	(0.10)	(0.10)
Tracking	0.58	0.71		
	(0.72)	(0.68)		
Overdraft	0.95	0.67		
	(0.95)	(0.88)		
Age 85	0.05*	0.05*	0.05**	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)
Male	1.72*	1.74*	1.74*	1.74*
	(0.74)	(0.73)	(0.71)	(0.71)
Age	−0.07	−0.05		
	(0.16)	(0.16)		
Other Demographical and Behavioral Controls	Yes	No	No	No
Observations	367	367	367	367
$AdjustedR^2$(%)	5.46	6.92	7.27	7.27

Notes: OLS, robust standard errors are in parentheses. Dependent variable is individual i's willingness to pay. Main explanatory variables are the relevant treatment indicators. Unreported controls include immigrant indicator, working indicator, life insurance indicator, having pension indicator, studying financially related major indicator, risk appetite, religious indicator, smoking habits indicator, and time preferences.
* $p < .05$.
** $p < .01$.

3.2. ***Variations in effect size*** *(with numerical skills and financial illiteracy)*

The regression analysis (1) shows a correlation between the controlled variableG_i, individual *i*'s grade in the math test, and willingness to pay. In our experiment, the participants' cognitive and mathematical abilities play a meaningful role, as they were required to solve a quantitative exam and calculate the expected value of probabilistic outcomes.

A substantial number of other studies have dealt with the issue of whether cognitive ability – measured by IQ or mathematical skills – is related to behavioral anomalies and financial decisions (Grinblatt, Keloharju, & Linnainmaa, 2011; Dohmen, Falk, Huffman, Marklein, & Sunde, 2009; Rabin & Weizsaacker, 2007). Notable scholars such as Bergman, Ellingsen, Johannesson, and Svensson (2010) demonstrate that individuals with low cognitive abilities tend to be more affected by behavioral biases, such as anchoring and conjunction fallacy. Other scholars, like Dohmen et al. (2009), show a different correlation, where the gambler's fallacy is prevalent even amongst highly educated individuals. More importantly, Xue et al. (2012) found that participants' use of the gambler's fallacy strategy was positively correlated with their general intelligence. A supplementary theoretical framework also brings the emotional system into play. Under this framework, the emotional system increases risk aversion and myopic preferences, while the cognitive system decreases impatience and is more risk neutral (Bernheim & Rangel, 2004; Benhabib & Bisin, 2005).

To estimate the extent of the influence of mathematical abilities on WTP, we divided the total sample into two subsamples based on the median of the controlled variable of the math grade (the *Correct* variable*)*. One subsample includes a median score equal to or above 14, presented in the second column of Table 3 (*Correct* High), and the second subsample includes grades less than the median score, presented in the third column of Table 3 (*Correct* Low). The results show that the influence of the out-of-pocket treatment is evident in all subsamples. The coefficient in the Correct Low subsample is negative; however, it is not precisely estimated (column 3), while the Correct High subsample (column 2) is highly statistically significant.

Next, we examined whether financial literacy – realized in terms of involvement and engagement in financial practices (Meir, Mugerman, & Sade, 2016) – has a significant effect on willingness to pay (Table 4). Financial illiteracy, which is typically a characteristic of financially vulnerable populations, is of increasing concern to regulators and public policy makers, and poses a substantial financial burden on financial systems (Stolper & Walter, 2017).

To estimate the extent of the effect of financial illiteracy on the willingness to pay, we examined three related controlled variables: individuals who track their bank accounts less than once a month (*No Tracking*), who do not have a life insurance policy (*No Insurance*), and who are unsure or do not have a pension fund (*No Pension*). The results show that the out-of-pocket effect is even more prominent for participants with low financial involvement.

4. Conclusion

Methods of payment identical in their economic consequences can still induce different degrees of willingness to pay. Using a laboratory experiment, our paper highlights this evidence in the context of the purchase of financial advisory services. The assignment

Table 3
Robustness: Mathematical Abilities *(Dependent variable = individual i's willingness to pay)*.

	Base (1)	Correct High (2)	Correct Low (3)
Out-of-pocket immediate payment Treatment	−2.33**	−2.87**	−1.71
	(0.79)	(1.05)	(1.23)
Out-of-pocket deferred payment Treatment	−0.40	−0.29	−0.49
	(0.88)	(1.22)	(1.29)
Correct	0.29**	−0.06	0.25
	(0.10)	(0.29)	(0.23
Age 85	0.05**	0.05	0.05
	(0.02)	(0.03)	(0.03)
Male	1.74*	2.07*	1.65
	(0.71)	(1.02)	(1.03)
Other Demographical and Behavioral Controls	No	No	No
Observations	367	188	179
$AdjustedR^2$(%)	7.27	5.42	2.52

Notes: OLS, robust standard errors are in parentheses. Dependent variable is individual i's willingness to pay. Main explanatory variables are the relevant treatment indicators.
* $p < .05$.
** $p < .01$.

of a payment through a checking account vs. through an investment portfolio causes a decrease of 25 percent in subjects' valuation of financial advisory services. Most of this gap in the willingness to pay can be attributed to the deferral of payment until after the outcome of the investment is revealed. One possible interpretation for the increase in the willingness to pay under such a deferred payment regime is that players (naively) perceive a small positive probability of being partially relieved of the payment's obligation, when the service appears ex-post to be unsatisfactory. Our data is silent about this issue, and further studies are required to shed light on it.

We also show that the gap in willingness to pay between the payment structures is wider when subjects' scores in the psychometric test are higher. Finally, we find that men are more willing to pay for financial advice than women. As classical economics and finance theories fail to provide an explanation for these results, this study points to the crucial relevance of the empirical approach of behavioral economics research to regulatory decision-making processes. We believe that these laboratory experiment results have practical implications in real-world situations and, in particular, in the current public policy discussions on possible regulatory changes in current methods of remuneration of financial advisors. Moreover, we believe that our results are relevant in the market of financial advisory services and beyond.

Many countries are debating whether to change regulatory policy on the relationship between financial advisors and financial institutions in order to avoid potential conflicts of interest. The UK has already implemented such a reform with the RDR in 2013. The practical importance of the present study is clearly visible in light of the negative implications that the RDR has had on the financial advisory market in the UK - for example, a clear decline in the number of financial advisors in the industry.[16] Another significant consequence of the shift toward direct payment has been termed the "advice gap," i.e., the situation in which people with a lower overall level of assets do not receive professional financial advice.[17]

These two major implications, the shrinking market and the advice gap, pose a challenge. Customers with fewer assets now have less financial protection. Consequently, consumers making unadvised major financial decisions – for example, by accessing and handling their own pension pots – may make matters even worse for themselves. As these possible unwanted implications of the UK's early application of the regulatory reform become known, it is not surprising that in other financially developed countries such as Ireland, Canada, and Australia, similar suggestions of regulatory reform based on banning commissions and forcing direct payment face harsh criticism. Notably, however, there is considerable disagreement (including among academics) as to whether the advice dispensed by financial advisors is worthwhile (see, for instance, Foerster, Linnainmaa, Melzer, & Previtero, 2017). In our experimental setting, the advisor creates value. Outside the experiment, part of the advisors' value could even be as "money doctors" (Gennaioli, Shleifer, & Vishny, 2015), i.e. people seek out financial advice because it helps them deal with a stressful situation by delegating the decision to professionals. In the similar vein, Shin, Kim, and Seay (2020) emphasize the role that financial professionals play in helping

[16] Already in 2013, the FSA revealed that the total number of advisors was down by 13%, while the number of advisors working for banks and building societies fell by 44%. These numbers continued to decline in 2014. According to AXA Wealth Ltd., today there is only one advisor per 2700 customers in the UK, compared to 1 to 1400 in Australia and 1 to 156 in Hong Kong.

[17] A Mintel report from 2015 showed that 47% of consumers in the UK had not received any sort of financial advice within the last three years. Two intertwined types of advice gaps can be observed: consumers with lower income are unable to get financial advice at the price they are able to or willing to pay; and financial advisors, retail banks, and investment management firms raise the minimum required invested amount to a sum that is too high for those with lower assets. The FCA found that the proportion of financial advisory firms that ask for a minimum portfolio of £100,000 has more than doubled, from 13% in 2013 to 32% in 2015. At the same time, there has been a notable increase in the proportion of investment products sold without advice, from 40% in 2012–2013 to 66% in 2014–2015.

Table 4
Robustness: Financial Illiteracy. *(Dependent variable = individual i's willingness to pay).*

	Base Specif. (1)	No Tracking (2)	No Insurance (3)	No Pension (4)
Out-of-pocket immediate payment Treatment	−2.33**	−3.11**	−3.33***	−3.22***
	(0.79)	(1.07)	(0.98)	(0.94)
Out-of-pocket deferred payment Treatment	−0.40	0.91	−1.53	−0.77
	(0.88)	(1.46)	(1.02)	(1.14)
Correct	0.29**	0.34*	0.35**	0.36**
	(0.10)	(0.15)	(0.13)	(0.13)
Age 85	0.05**	0.08**	0.09***	0.05*
	(0.02)	(0.03)	(0.02)	(0.03)
Male	1.74*	1.32	2.02*	1.45
	(0.71)	(1.08)	(0.85)	(0.85)
Other Demographical and Behavioral Controls	No	No	No	No
Observations	367	153	226	243
$AdjustedR^2$(%)	7.27	12.51	13.83	8.56

Notes: OLS, robust standard errors are in parentheses. Dependent variable is individual i's willingness to pay. Main explanatory variables are the relevant treatment indicators.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

households make investment decisions.[18]

It is reasonable to assume that any regulation that separates the financial institution from customers' advisors (for conflict of interest reasons), and highlights the fact that it is the customer who is paying for the advice, will reduce customers' willingness to pay and potentially leave many of them without professional advice. Our findings propose an important remedy to this problem. As one might expect, if the payments are made through an investment account rather than by writing checks, the effect on consumers' willingness to pay is likely to be substantially milder. However, the former mode of payment may be insufficient in terms of the regulator's desire to highlight the separation between the advisory service and the pension fund. Our results show, somewhat contrary to expectations, that almost the same high willingness to pay can be achieved with check payments, as long as those payments are deferred until after the customer receives the annual statement on his fund revealing its performance. We take a novel step identifying and quantifying this outcome effect. People voice statistically and economically higher *ex-ante* willingness to pay for the same financial advice when the actual payment for this advice occurs after the outcome is revealed rather than before it. Future research should further develop and confirm these initial findings.

We also view our paper as a contribution to the interface between academic work in behavioral economics and policy making in financial markets. Indeed, this work was initiated by Israeli Capital Markets Authority regulators who approached us with a request to investigate the consequences of the regulatory changes discussed above.

Finally, while our research project was framed in the context of financial advisory services, our insight into the effect of the payment modes on willingness to pay for a service applies outside the financial advisory market. Consider, for example, the immediate implication that whenever payment for a service can be deducted from some benefit account, willingness to pay for the service will increase. This can be easily done, for example, by deducting the cost of a subscription to a workplace's sports club from the employee's salary, or by deducting a real estate agent's fee from the revenue attained from the home sale. In other cases where such a benefit account does not exist, deferral of payment until after the release of an annual report that summarizes the benefits acquired from the service during the year may yield a similar increase in willingness to pay.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.joep.2020.102317.

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[18] The authors highlight the fact that how financial advice is received also has an effect.

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