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The Gamma Factors and the Value of Financial Advice*

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This study, based on a new Canadian survey and adjusting for the causality issue, reconfirms the positive value of having financial advice. As in our earlier paper, the discipline imposed by a financial advisor on households' financial behavior and increased savings of advised households are key to improving the value of household assets relative to comparable households without an advisor. Benefitting from a subset of participants in both surveys, we found that dropping an advisor between 2010 and 2014 was costly: households who kept their advisor saw the value of their assets increase by 16.4%, while households who dropped their advisor increased the value by only 1.7%. Thus, the value of financial advice goes largely beyond the traditional alpha and beta factors.

Key Words: The value of advice; Econometric models; Causality issue; Survival principle.

JEL Classification Numbers: G11, G23, C51.

1. INTRODUCTION

Not surprisingly, the impact of the value of advice has drawn considerable public attention. Positive industry claims are met with public skepticism, particularly when the markets show considerable volatility or downward results. Regulators are also under pressure to intervene in this business where perceived conflicts of interests are denounced by consumer groups and in some academic studies (Christoffersen, Evans and Musto, 2013; Mullainathan, Noeth and Schoar, 2012). A recent literature review by Burke, Hung, Clift, Garber, and Yoong (2015) analyses studies that somewhat alter those conclusions. Recently, Linnainmaa, Melzer, and Previtero (2016) have suggested that 'many advisors offer well-meaning, but misguided, recommendations rather than self-serving ones.'

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By nature, advice would seem to be a complex set of interrelated processes. The factors most referred to in academic literature are the market outperformance alpha factor, and the market returns, which are measured by the beta factor. Advisors over-performing the market are relatively rare, and numerous academic studies (Hackethal, Haliassos, and Jappelli, 2012; Kramer, 2012) have shown lower net returns with financial advice relative to non-advised households. This conclusion is not shared by the industry: advised savers received average net returns that were about three percentage points higher than non-advised participants (Ryan, Jaconetti, Kinniry Jr., Bennyhoff, and Zilbering, 2015). New studies reported by Hermansson and Song (2016) identified value in advice that prompted diversification, improved savings discipline and better-disciplined behavior facing market volatility rather than concentrating only on improving returns. This larger approach to the value of advice is referred to the gamma factors.

With a new Canadian survey, this current study reaffirms the strong positive effect on the amount and the value of assets of advised households. We were able to avoid the causality issue present in this kind of study to identify if wealth attracts advice or advice impacts financial wealth. Furthermore, with a subset of households surveyed in both 2010 and 2014, we show that keeping your advisor was widely beneficial compared to those who dropped their advisor after 2010 (the survival issue). In short, this research provides the foundation for a strong key message about the value of financial advice.

Limits have to be stressed, however, with our results. Although we control for many factors, we recognize that the positive effect of having the services of a financial advisor is overestimated due to the lack of measurable household characteristics, such as the willingness to invest attitude. Major factors that explain saving habits are hard to measure with a household survey.[1]

Following the introduction, section 2 briefly reviews the previous study. In section 3, the value of advice is revisited in the context of the gamma factors. In section 4, we discuss the survival principle by comparing the behavior of households present in both the 2010 and 2014 surveys. The final section concludes.

2. REVISITING THE VALUE OF FINANCIAL ADVICE

2.1. The Previous Study

In Montmarquette and Viennot-Briot (2015) we addressed three questions: 1) what are the determinants of having a financial advisor? 2) what

[1]Those characteristics are better measured in field experiments: for example associated with investing in human capital, see Johnson and Montmarquette (2015).

is the economic impact of having an advisor on household investment asset value? 3) how does financial advice work?

The study was based on a Canadian sample of 3,610 respondents who were the primary financial decision-makers or were involved in the household's financial decision-making.[2] The surveys captured significant details about the participants, aged between 25 and 65, such as financial situation, socio-economic background, financial literacy, behavioral tendencies, financial objectives, savings rate, type and tenure of advice, as well as their perceptions and satisfaction with their situation and financial advisors. Households retained in the sample had at least $1,000 in financial assets and income of less than $250,000.

In this survey, 49.4% of households declared having a financial advisor. It should be noted that the financial and economic data are for the 2009 fiscal year.

For the first question, "What are the determinants of having a financial advisor?", three relevant factors positively affect the probability of having a financial advisor: income level, the capacity of the household to save and the age of the respondent. Respondents who are more financially literate or have a post-secondary diploma are more likely to retain the services of a financial advisor. Households that declare they will never save for retirement are less likely to have one. Couples with no children are more likely to have a financial advisor, even when we control for income and savings.

Our results are robust but rely on the assumption that advisors influence wealth rather than wealth attracts advisors. In a survey setting, it was challenging to deal with the causality issue. Also to address the endogeneity issue, we made the model recursive by first estimating the determinants of having a financial advisor and then used the predicted probabilities (transferred into a binary variable: 0 or 1) of having a financial advisor to assess how having a financial advisor affects the value of a household investment portfolio.[3]

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[2]In December 2010, Ipsos Reid was commissioned by Power Financial Corporation to conduct an Internet-based survey on the financial situation of Canadian households. A total of 18,333 working-age households participated; 10 505 were retained after adjustments for out-of-scope and incomplete answers. Sponsored by Power Financial, CIRANO designed and conducted a follow-up survey focused on assessing the value of advice in June 2011 that reassessed the 10 505 respondents from the original. A total of 4 978 observations were collected; of these, 3 610 were retained after adjustments for out-of-scope, incomplete, and inconsistent answers. CIRANO administered both survey datasets.

[3]A recursive model is relevant here for both endogeneity and identification issues. See Smith (2009) for related questions related to simultaneous models applicable to financial problems.

For the second question "What are the economic impacts of having an advisor on the value of household assets?", the econometric results show that participants using a financial advisor for more than 15 years have on average about 173% more financial assets, ceteris paribus, or 2.73 times the assets of "comparable" non-advised respondents. The impact of advice on financial assets (cash, GICs, term deposits, stocks, bonds, ETFs, investment funds and other investment vehicles) increases with the tenure of advice.

With regards to the third question, "How does financial advice work?", the difference in financial assets is explained by higher household savings rates and a greater allocation of non-cash investments. That disciplined behavior and greater saving habits are acquired through advice. These were the key findings of that paper.

2.2. The Updated Study

Ipsos Reid conducted a second Internet-based survey on the financial situation of Canadian households between July and August 2014.[4] The financial and economic data assessed in the survey were for the 2013 fiscal year.

However, one key question was added to focus on the causality issue: What prompts households to seek financial advice? Respondents could select only one answer from these options:

- "Was recommended by friends/family/a trusted person";
- "We felt the need for it";
- "We were approached by a financial advisor";
- "Other (please specify)."

More than 85% of advised households chose their financial advisors and were not (directly) approached by one. This statistic strongly supports our assumption in the initial study about the direction of causality from advisor to wealth.

In the 2014 survey, a subset of respondents who participated in 2010 answered similar questions. By asking two specific questions to those respondents, we added a dynamic dimension to the study, which is associated with the concept of the "survival principle":

1) How does the value of household assets without a financial advisor in 2010 and 2014 compare with the value of household assets without a financial advisor in 2010 but with an advisor in 2014?

[4] A total of 18,333 working-age households participated, and 10,505 were retained after adjustments for out-of-scope and incomplete answers. About one-third were eligible for the study.

2) How does the value of household assets with a financial adviser in 2010 and 2014 compare with the value of household assets with a financial advisor in 2010 but without one in 2014?

In the next subsection, we present our new econometric analyses of the three questions:

1) What are the determinants of having a financial advisor?
2) What is the impact of a financial advisor on the value of assets?
3) What role do gamma factors play?

2.3. Some descriptive statistics

Although scattered references to the results of the 2010 survey are made, only the econometric results for 2014 are presented and fully discussed.

Among advised households, only those who chose their advisor were retained. Also to be part of the sample, households needed $1,000 in assets, an income of less than $250,000 and a savings rate below 90%. Retired respondents had to have government transfer income of less than $26,000 annually. The respondents were 25 years and older in 2014.

Table 1 reports descriptive statistics on the value of financial assets by categories of respondents.

TABLE 1.

Descriptive Statistics on the Value of Financial Assets by Categories of Respondents

	Advised (Chosen by Household)	Non-Advised
Observations	487	1,097
Median ($)	135,000	25,000
Mean ($)	273,091	79,634
Standard Deviation	427,866	173,901

30.7% of households had an advisor.[5] The mean value of assets for non-advised households decreased in 2014 relative to the same category in 2010.[6] For 2014, the median value of the financial assets of advised respondents was 5.4 times the median value of non-advised respondents. The standard deviation of the value of assets for advised households was relatively large in 2014.[7]

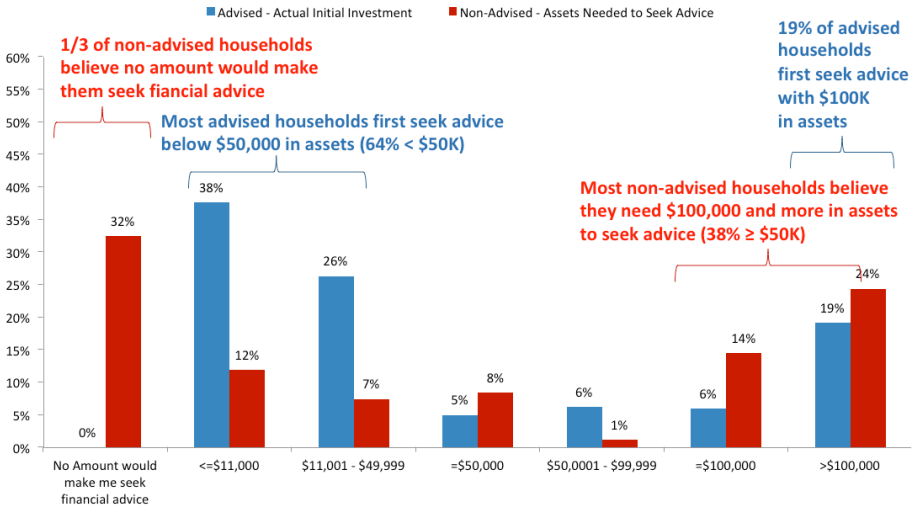
[5]34.2% if households approached by an advisor were to be included in the sample. This proportion is coherent with a recent independent statistic regarding Canadian households: https://www.investright.org/wp-content/uploads/2016/09/Smarter-Investor-Study-FULL-REPORT-1.pdf, p16.

[6]Financial assets include cash, GICs, term deposits, stocks, bonds, ETFs, investment funds and other investment vehicles.

[7]Differences in the mean value of assets between advised and non-advised households are statistically significant at a 1% level of confidence by standard t-test.

Figure 1 shows the distribution of the value of assets for 2014 that would prompt a household to seek advice. Households start relationships with only modest asset levels (the median initial investment is $11,000), while non-advised households believe they need more assets to seek advice. Among the non-advised, almost half (44%) feel they need $50,000 plus to qualify. 32% of non-advised households declared that no amount of assets would make them seek advice. From a Probit regression, we find that households with savings under $3,000, carrying life insurance and being financially literate, are less likely to be among this group.

FIG. 1. Distribution of the Value of Assets that Would Prompt Households to Seek Financial Advice in 2014



2.4. The determinants of having a financial advisor

The key factors in Table 2 that positively affect the probability of having a financial advisor are income level, the capacity to save, post-secondary education, and age of the respondent.[8][9] In the 2010 survey, having some level of financial literacy positively affected the probability of having an

[8]Asset levels were not introduced as a determinant of having or not having a financial advisor, as the respondents' income and savings are correlated with the respondents' asset levels.

[9]The role of education is fundamental in financial decision making: Cole, Gauri, and Shastry (2014) have demonstrated a causality between an additional year of education and an increase in the probability of positive investment income by 7-8 percentage point and the likelihood of owning equities by four percentage points. In our study, those effects are captured by the education level affecting the probability of having a financial advisor.

advisor. This variable presents a coefficient estimate not statistically significant in 2014. However, in 2014, the variable "respondent has a life insurance policy" positively affected the probability of having a financial advisor. It can be argued that for an individual to hold a personal life insurance policy implies a certain level of financial literacy. This variable is not present in the 2010 survey, and the measure of financial literacy is less well documented in 2014. We insist on this point for at least two reasons:

- First, Hung and Yoong (2010) stress the need for the recipient of advice to be prepared to benefit from the counsel received.[10]
- Second, for many, financial literacy appears to be a substitute for counsel. However, our results suggest that it is a complement, rather than a substitute, for financial advice.

Finally, this result is validated in a recent Canadian study by Letkiewicz, Robinson, and Domian (2016) who found that people who use a financial planner have higher financial self-efficacy than people who do not use a financial planner.

TABLE 2.

The Determinants of Having a Financial Advisor (Probit model)

Household's annual income before taxes	
Income before taxes <$35,000	Ref.
$35,000<= income before taxes <$60,000	0.142
	(0.155)
$60,000<= income before taxes <$90,000	0.196
	(0.159)
Income before taxes >=$90,000	0.344**
	(0.164)
Savings	
Savings=0	Ref.
0 < savings <=$3,000	−0.188*
	(0.100)
$3,000< savings<=$10,000	0.069
	(0.096)
Savings>$10,000	0.599***
	(0.098)

Assessing the impact of a financial advisor on the value of assets A critical goal for a financial advisor is to increase the value of his/her clients' assets. Does this occur?

[10] A similar point is also made by Bhattacharya et al (2012) in showing that the mere availability of unbiased financial advice is a necessary but not sufficient condition for benefiting retail investors.

TABLE 2—*Continued*

Labor market characteristics	
Wages and salaries & Self-employment income	0.105
	(0.198)
Workplace pension	0.028
	(0.074)
Working full-time	−0.065
	(0.120)
Fully retired	0.024
	(0.324)
Economic decisions or preferences	
Individual has life insurance	0.432***
	(0.073)
Financial literacy	0.065
	(0.078)
Gender	
Female	Ref.
Male	−0.042
7(0.073)	
Diploma	
High School / Elementary School diploma	Ref.
Post-secondary diploma	0.323***
	(0.101)
Age	
Age < 45	Ref.
45 <= age < 54	0.375***
	(0.084)
54 <= age < 65	0.624***
	(0.106)
Age >= 65	1.312***
	(0.354)

To assess the impact of a financial advisor on the value of assets, consider the linear equation (1) to follow the Probit model of having an advisor or not in a two equations recursive model:

$$\begin{aligned} \ln A_i \;=\; & y_i\theta + \alpha_0 FA * 4 \text{ to } 6 \text{ years} + \alpha_2 FA * 7 \text{ to } 14 \text{ years} \\ & + \alpha_3 FA * 15 \text{ years or more} + \varepsilon_i \end{aligned} \tag{1}$$

In equation (1), the effect of the financial advisor, FA, on the level of assets (expressed in logarithm terms), $\ln A$, is also influenced by the length

TABLE 2—*Continued*

Number of income earners aged 18 or older in the household	
One income earner	Ref.
Two income earners	0.094
	(0.111)
Three or more income earners	0.177
	(0.146)
Marital status	
Another family type	Ref.
Single individual household	−0.203
	(0.264)
Couple with no children	−0.437
	(0.270)
Couple with children	−0.505*
	(0.269)
Single-parent family	−0.163
	(0.305)
Region	
Atlantic	Ref.
Quebec	−0.037
	(0.148)
Ontario	0.037
	(0.141)
Manitoba, Saskatchewan	0.078
	(0.179)
Alberta	-0.140
	(0.173)
British Columbia	−0.041
	(0.164)
Constant	−1.402***
	(0.386)
Observations	1,584
ll_0	−977.399
ll	−861.935
χ^2	213.873
$Prob < \chi^2$	0.000
r2_p	0.118
Robust standard errors in parentheses	

*** $p < 0.01$, ** $p < 0.05$, * p¡0.1

of time one has had a financial advisor.[11] Positive and statistically signifi-

[11]To be part of the sample, households needed at least $1,000 in assets. To obtain a normal distribution for the error term, a semi-logarithmic equation is used.

cant parameter estimates for the α coefficients will suggest that a financial advisor adds to the financial assets of participants, taking into account the amount of time that one has had a financial advisor. y is a set of other explanatory variables, and ε is the error term.

In this configuration, the choice of having an advisor, FA, is endogenous and is therefore predicted using the parameter estimates of the Probit regression above. Substituting the predicted value for FA, the OLS estimation results of equation (1) are reported in Table 3.

TABLE 3.

Determinants of the (logarithm) Value of Assets (Linear Least Squares)

The household has a financial advisor (P)	0.468^{***}
	(0.144)
Advisor (P) X Tenure	
Financial advisor X Less than 4 years	Ref.
Financial advisor X 4 to 6 years	0.837^{***}
	(0.249)
Financial advisor X 7 to 14 years	0.504^{**}
	(0.216)
Financial advisor X 15 or more years	0.894^{***}
	(0.175)
Household's annual income before taxes	
Income before taxes <$35,000	Ref.
$35,000<= income before taxes <$60,000	0.041
	(0.158)
$60,000<= income before taxes <$90,000	0.504^{***}
	(0.163)
Income before taxes >=$90,000	1.277^{***}
	(0.170)
Labor market characteristics	
Wages and salaries & self-employment income	-0.867^{***}
	(0.220)
Workplace pension	-0.029
	(0.079)
Working full-time	0.040
	(0.134)
Fully retired	-0.193
	(0.383)

The impact of having a financial advisor took effect as soon as four years: for comparable households, the one with a financial advisor has 60% more

TABLE 3—*Continued*

Economic decisions or preferences	
Individual has life insurance	−0.127
	(0.078)
Financial literacy	0.463***
	(0.081)
Gender	
Female	Ref.
Male	0.297***
	(0.076)
Diploma	
High School / Elementary School diploma	Ref.
Post-secondary diploma	0.152
	(0.101)
Age	
Age < 45	Ref.
45 <= age < 54	0.551***
	(0.088)
54 <= age < 65	0.891***
	(0.132)
Age>= 65	0.406
	(0.444)
Number of income earners aged 18 or older in the household	
One income earner	Ref.
Two income earners	−0.090
	(0.120)
Three or more income earners	−0.096
	(0.154)
Marital status	
Another family type	Ref.
Single individual household	−0.205
	(0.260)
Couple with no children	−0.204
	(0.269)
Couple with children	−0.257
	(0.267)
Single-parent family	−0.257
	(0.313)

asset value.[12] This result is not too surprising along with those for the

[12]From the estimated coefficients of equation (1), we predict the ln of assets of an individual with a financial advisor for less than 4 years, that is $FA = 1$ with the following equation: $\ln A_i = y_i\theta + \alpha_0$ Without a financial advisor, $FA = 0$: $\ln A_j = y_j\theta$.

TABLE 3—*Continued*

Regions	
Atlantic	Ref.
Quebec	0.055
	(0.161)
Ontario	0.272*
	(0.157)
Manitoba, Saskatchewan	0.166
	(0.187)
Alberta	0.048
	(0.183)
British Columbia	0.278
	(0.182)
Constant	9.821***
	(0.392)
(P): predicted	
Observations	1,584
ll_0	−3109.660
ll	−2804.455
R-squared	0.320
r2_a	0.307
Robust standard errors in parentheses	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

other coefficient estimates associated with the tenure variable: we have observed a strong performance between 2009 and 2013 of the financial markets following the important drop during the 2007 to 2009 period.[13] The additional value reaches 290% for a household with an advisor for 15 years or more (3.9 times the value of assets of the equivalent non-advised household).[14]

The difference in the ln of assets for the same individual or a comparable individual in all aspects (same income, age) except for the presence of a financial advisor is: $\ln A_i - \ln A_j = \alpha_0$. Rising to the exponential on both sides: $A_i/A_j = \exp(\alpha_0)$. With $\alpha_0 = 0.468$ the expected ratio of assets is equal to 1.596. Similar computations were performed for the other cases.

[13]The Dow Jones index went from 13567 in October 2007 to a low of 6876 in November 2009. It has climbed since, reaching 16594 in December 2013.

[14]Those values differ from 2010 and are much higher. They are relatively reasonable given that for 2009 the average value of assets for advised respondents is $193,772 versus $93,384 for the average dollar financial assets for all non-advised respondents, thus a ratio of 2.07; while for 2013, the corresponding averages are respectively $273,091 versus $79,634 or a ratio of 3.43. As mentioned, the financial indices were performing better in 2013 than in 2009.

Other variables have coefficient estimates with positive, statistically significant effects on the logarithm of the value of assets. Notable variables include, households with income levels above $60,000, the household respondent exhibits financial literacy, the household respondent is older than 45 and male, and households in Ontario.

Assuming the same level of initial assets, what could explain substantial increases in the value of assets of long-tenured advised participants over comparable non-advised individuals? A 2015 report from mutual fund giant Vanguard Group Inc. claims that state-of-the-art professional advice can add "about 3 percent" a year in net returns.[15]

If markets are efficient, it is indeed difficult to earn even a 3% net rate of return through better stock picking. However, even compounded, with that kind of return, it will take a long time to achieve a 290% difference in returns between advised and non-advised individuals.

The positive impact of advice arises from factors other than better stock picking, such as an increase in saving rates, better portfolio diversification, and more tax-efficient investments. Also, with an advisor inducing more disciplined behavior during periods of market volatility, the statistically significant positive coefficient estimates on the tenure dummies are related to compounded growth rates.[16]

2.5. The role played by other gamma factors

How can one explain the much higher level of assets of long-tenured advised households compared to non-advised households?

Along with the discipline factor, an obvious factor to consider is the savings rate: the savings rate is a primary source of increasing assets. A strategy for improving portfolio performance is diversification of financial investments, which are associated in this study with the ratio of non-cash over total investments. Finally, a strategy that minimizes fiscal effects can also improve the value of one's assets. Therefore, the ratios of RRSP (Registered Retirement Savings Plan) and TFSA (Tax-Free Savings Account) investments over total investments are analyzed.

Figure 2 outlines respondents' observed savings rates and assets allocation. Statistically, significant differences emerged between non-advised and advised respondents' savings rates and allocation of assets into non-cash investments. When we combine the fiscal strategies of RRSPs and TSFAs, the difference in ratios between advised and non-advised households are not significant.

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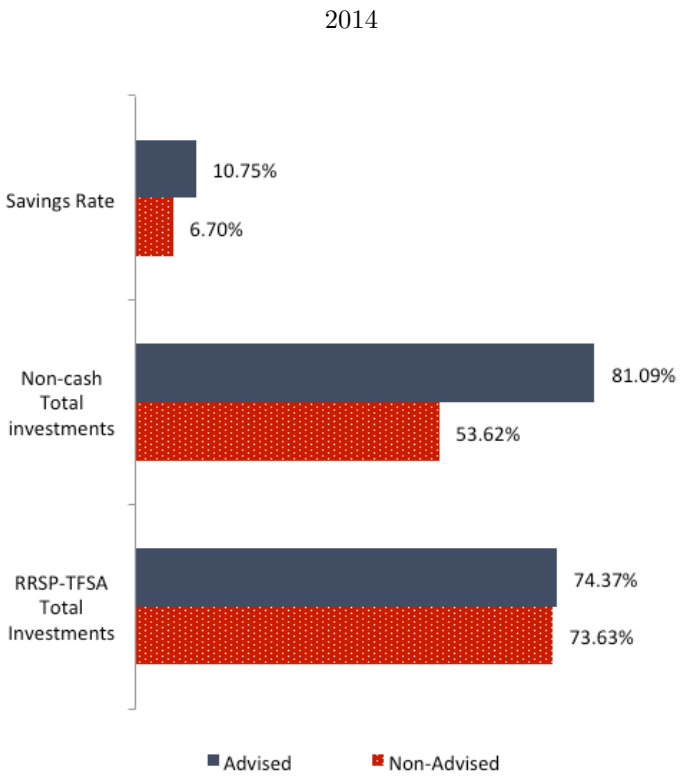
[15] Ryan, Jaconetti, Kinniry Jr., Bennyhoff, and Zilbering (2015).

[16] To further stress the discipline issue and the relative financial values involved, Morningstar. MSCI, Fidelity Analysis, have computed that missing out just the market's ten best days from 31 December 2002 to 31 December 2012 will transform a cumulative return from 68.96% to −4.64%!

FIG. 2. Savings Discipline and Asset Allocation (Mean Values)



The determinants of these ratios are measured with Tobit type 2 regressions. The results are presented in the first six columns of Table 4.[17] For each ratio, the Probit regression concerns the probability of a positive ratio. The regression relates to the determinants of the value of each ratio conditional on a positive ratio.[18] In all regressions, along with other explanatory variables serving as controlled variables, the variable of interest is the presence of advisors. This latter variable is predicted from the regression of Table 2.

[17]The Tobit model involved censored variables. For all ratios, we have an important mass point of observations at zero.

[18]A selection bias is therefore accounted for with the Inverse Mills' Ratio in Heckman two-step estimation procedure.

The advisor-predicted variable increases the probability of a positive savings rate, as well as the value of the savings rate when positive.[19] The likelihood of a positive ratio of non-cash investments over total investments is insignificant, while the value of the proportion of fiscal strategic investments over total investments decreased marginally with an advisor. Given the influence of financial advice on some of these ratios, the next step is to determine whether predicted values of these ratios help explain asset levels.

The semi-logarithmic regressions reported in the final column of Table 4 indicate positive and statistically significant elasticity estimates for the savings rate and the non-cash to total investments ratio. Thus, a one percentage point increase in the savings rate and non-cash to total investments ratio increases the level of assets by 4.8% and 8.3% in 2014.[20] Negative but lower statistically significant elasticity estimates are observed for the fiscal investments to total investments ratios.[21]

TABLE 4.

The Determinants of the Savings Rate, Non-cash to Total Investments Ratio, RRSP to Total Investments Ratio and the Logarithm of Financial Assets (Tobit Type 2 Models and Conditional Least Squares)

	Savings Rate	Non-cash over total investments	The RRSP (TFSA included) over total investments	Assets
Variable	Probit Regression	Probit Regression	Probit Regression	Regression
Savings rate (P)				4.834^{***}
				(0.691)
Non-cash over investments (P)				8.382^{***}
				(0.426)
The RRSP-TFSA over total investments (P)				-1.681^{***}
				(0.546)

From the results of Table 4, the effect of having a financial advisor on the level of financial assets can be isolated from the predicted values of those

[19] Burke and Hung (2015) raise the issue of the direction of causality between advisors and savings: advisors increase savings, but individuals with greater savings are more likely to seek out financial advice. Our study accounts for this endogeneity question by instrumenting the financial advisor variable in the saving equations from the Probit model of Table 2, where saving appears as an explanatory variable.

[20] This is the most parsimonious regression. The first two ratios remain statistically significant when we add 23 controlled variables. Note that with the full model, the adjusted R-squared moves from 0.260 to 0.316.

[21] This result may be an avenue for further research. The negative statistical significance of the fiscal investment ratios is an interesting result that may have arisen because of any number of factors. These include, limitations in data quality, already extensive use of RRSPs and TFSA by all respondents, or the annual limit on RRSPs, which is capped at 18% of earned income for the preceding year to an annual maximum of $22,970. TFSA contributions were limited to $5,500 in 2013.

TABLE 4—*Continued*

Financial advisor (P)						
The household has no financial advisor	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
The household has a financial advisor	0.867***	0.258***	0.099	0.013	0.213	−0.060**
	(0.119)	(0.091)	(0.178)	(0.017)	(0.185)	(0.026)
Income before taxes <$35,000	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
$35,000<= income before taxes <$60,000	0.358***	0.025	−0.040	0.052**	0.100	0.016
	(0.135)	(0.066)	(0.164)	(0.026)	(0.158)	(0.032)
$60,000<= income before taxes <$90,000	0.605***	0.054	0.085	0.066**	0.216	0.008
	(0.140)	(0.093)	(0.169)	(0.028)	(0.164)	(0.044)
Income before taxes >= $9,0000	0.622***	0.040	0.508***	0.066	0.665***	0.004
	(0.148)	(0.097)	(0.185)	(0.047)	(0.183)	(0.085)
Labor market characteristics						
Wages and salaries	1.249***	0.002	−0.055	−0.008	0.289	0.107*
	(0.207)	(0.197)	(0.343)	(0.026)	(0.259)	(0.059)
Self-employment income						
Workplace pension	−0.045	−0.008	0.231**	−0.020	0.109	−0.003
	(0.073)	(0.014)	(0.095)	(0.021)	(0.101)	(0.018)
Working full time	0.152	0.027	−0.032	0.005	−0.141	−0.010
	(0.116)	(0.031)	(0.136)	(0.020)	(0.139)	(0.027)
Fully retired			−0.455	0.029	0.236	−0.045
			(0.505)	(0.047)	(0.542)	(0.089)
Individual has life insurance	−0.142*	−0.065***	−0.042	−0.016	0.044	0.024
	(0.073)	(0.022)	(0.094)	(0.013)	(0.096)	(0.016)
Financial literacy	0.144*	0.025	0.254***	−0.002	0.250***	−0.066**
	(0.074)	(0.021)	(0.093)	(0.025)	(0.096)	(0.033)
Gender						
Female	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Male	−0.020	0.004	0.169*	−0.009	0.167*	−0.002
	(0.072)	(0.013)	(0.090)	(0.018)	(0.097)	(0.023)
Diploma						
High School and Elementary School diploma	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Post-secondary diploma	−0.083	−0.028	0.045	0.001	−0.008	−0.022
	(0.093)	(0.021)	(0.115)	(0.017)	(0.122)	(0.018)
Age						
Age < 45	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
45 <= age < 54	−0.035	−0.022	0.246**	0.053**	0.052	−0.002
	(0.083)	(0.014)	(0.108)	(0.024)	(0.116)	(0.018)
54 <= age < 65	−0.348***	−0.068	0.534***	0.052	−0.148	−0.036
	(0.115)	(0.041)	(0.176)	(0.041)	(0.157)	(0.027)
Age >= 65	−0.815*	−0.204	0.310	0.084*	4.921***	−0.038
	(0.478)	(0.133)	(4.807)	(0.051)	(0.307)	(0.109)

TABLE 4—*Continued*

One income earner	Ref.	Ref.					
Two income earners	0.089	−0.002					
	(0.110)	(0.027)					
Three or more income earners	−0.032	−0.010					
	(0.148)	(0.029)					
Marital status							
Another family type	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	
Single individual household	0.506*	0.115	0.024	0.024	−0.021	−0.040	
	(0.263)	(0.078)	(0.375)	(0.048)	(0.381)	(0.046)	
Couple with no children	0.585**	0.139*	−0.217	−0.000	−0.219	−0.069	
	(0.268)	(0.084)	(0.383)	(0.052)	(0.383)	(0.057)	
Couple with children	0.460*	0.102	−0.036	0.021	−0.333	−0.039	
	(0.266)	(0.073)	(0.382)	(0.049)	(0.387)	(0.065)	
Single parent family	0.413	0.097	0.101	0.042	−0.397	−0.006	
	(0.309)	(0.076)	(0.439)	(0.056)	(0.425)	(0.077)	
Regions							
Atlantic	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	
Quebec	0.202	0.032	−0.180	0.062**	0.464**	0.070	
	(0.152)	(0.034)	(0.205)	(0.031)	(0.189)	(0.058)	
Ontario	−0.104	−0.016	−0.182	0.049	0.217	−0.004	
	(0.146)	(0.027)	(0.199)	(0.030)	(0.177)	(0.039)	
Manitoba, Saskatchewan	−0.016	0.020	−0.120	0.047	0.025	0.018	
	(0.186)	(0.033)	(0.246)	(0.035)	(0.220)	(0.037)	
Alberta	0.035	0.027	−0.235	0.027	0.187	0.044	
	(0.175)	(0.031)	(0.231)	(0.038)	(0.221)	(0.041)	
British Columbia	−0.170	−0.013	−0.253	0.017	0.258	0.012	
	(0.166)	(0.036)	(0.222)	(0.038)	(0.209)	(0.045)	
Constant	−1.840***	−0.168	0.795	0.744***	0.392	0.824***	5.246***
	(0.377)	(0.465)	(0.528)	(0.115)	(0.495)	(0.203)	(0.434)
Inverse of Mills' Ratio		0.257		−0.105		−0.077	
		(0.242)		(0.268)		(0.421)	
(P): predicted							
Observations	1584		1584		1584		
Censored observations	550		193		161		
Uncensored observations	1034		1391		1423		
R-squared							0.260

Standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

ratios. First, consider the savings rate variable. The effect of having a financial advisor on the predicted expected savings rate can be computed. With P the probability of a positive savings rate, then the expected value

of the savings rate SR is given by: $E(SR) = P(SR > 0) + (1 - P)0 = P(SR > 0)$, as the savings rate is either positive or zero. Taken at mean values, differentiating (in a discrete form) this last equation with respect to the variable financial advisor, FAC, yields equation (2):

$$\frac{\Delta E(SR)}{\Delta FA} = \frac{\Delta P}{\Delta FA}(\overline{S > 0}) + \overline{P}\frac{\Delta(SR > 0)}{\Delta FA}. \tag{2}$$

Where, $\frac{\Delta P}{\Delta FA}$ is the marginal effect of having a financial advisor on the probability of a positive savings rate; $(\overline{S > 0})$ is the mean savings rate of all the respondents; $\overline{P}$ is the mean probability of a positive savings rate of all respondents; $\frac{\Delta(SR>0)}{\Delta FA}$ is the effect of having a financial advisor on the value of a positive savings rate.

To illustrate, from the Probit regression, the marginal effect of having a financial advisor on the probability of a positive savings rate is estimated to be 26.2 percentage points. Specifically, a respondent having an advisor increases the probability of having a positive savings rate by 26.2 percentage points above a "comparable" non-advised respondent.[22] From the results in Table 4, the effect of having a financial advisor on the value of a positive savings rate is 25.8 percentage points. Thus, a respondent with a financial advisor and a positive savings rate will have a savings rate that is 25.8 percentage points higher than an otherwise "comparable" non-advised respondent. Both estimated effects, on the probability of a positive savings rate and the value of the positive savings rate, are large relative to the observed means between households with and without an advisor. We note that few controlled variables are statistically significant in the regression for the positive savings rate. In the absence of a robust measure of the "preference for investing" by the participants, we might impute to the financial advisor too much in its causal effect to increase savings for their consumer.[23]

Solving equation (3) with S and P took at their mean values of 0.12 and 0.654 respectively indicates that the effect of having an advisor on the expected savings rate (holding everything else constant) translates into a

[22] This is taken directly from the regression of the second column of Table 4. For a Probit model to obtain the marginal effect of a variable x, one must differentiate $\int_{-x_i\delta}^{\infty} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{1}{2}x^2\right) ds$ with respect to x.

[23] In 2010, the impact of a financial advisor on the expected savings rate was 0.08. The impact was more on the probability for the household to have positive saving rates with an advisor than on the value of a positive savings rate. Most likely, there are personal characteristics, not well accounted for in 2014, like, as mentioned earlier, the "preference for investing" variable that might explain the differential in results. The same point, from an endogenous issue, however, 'that investors who choose to receive advice are already more inclined to save than those who don't want advice' was also raised by Burke, and Hung (2015). The direct effect of having a financial advisor on the results of Table 4 is, therefore, difficult to assess.

20.04 percentage point increase in the expected savings rate.[24] This impact is large although comparable results can be found in recent literature: Martin and Finke (2014, p.52), based on data from the U.S. National Longitudinal Survey, showed that those 'who had calculated retirement needs and used a financial planner generated more than 50 percent greater savings than those who estimated retirement needs on their own without the help of a planner'.[25] Repeating the exercise for the expected non-cash ratio and the expected (Registered Retirement Savings Plan + Tax-Free Savings Account) ratios indicates that having a financial advisor changes the values of these ratios by 0 and -5.38 percentage points respectively.[26]

From these numbers and using statistically significant coefficient estimates (the last column of Table 4), one can infer that for two 'identical individuals', the one with a financial advisor will have 188% more financial assets or 2.88 times the level of financial assets of the non-advised respondent.[27] This value is comparable to what was previously obtained. We note that the 2014 survey results reveal a more positive effect of having an advisor than in 2010. What explains these differences? In 2014, we better controlled the causality effect between advisor and wealth. The financial markets in 2013 performed significantly better than in 2009.

3. HOUSEHOLDS IN BOTH THE 2010 AND 2014 SURVEYS AND THE SURVIVAL PRINCIPLE

An exciting feature of the 2014 survey was the possibility to match households that were also present in the 2010 survey. This matching provides a sample of 282 observations to study the evolution of these households' financial situations over four years: 2009 to 2013. As this period is relatively short, we do not expect major differences in their socioeconomic situations. The households might differ on using the services of a financial advisor in two ways. The household did not have an advisor in 2010 but declared having one in 2014 (households found their advisors). Alterna-

[24] $(0.262 * 0.12) + (0.654 * 0.258) = 0.20$

[25] Interestingly, Hermansson and Song (2016) estimated that over a three-month period, customers who participated in a financial advisory meeting transferred 22% more savings to their mutual fund compared to those who had taken part in a meeting in the past but not during that particular period. This suggests an important difference in the savings between the two groups in this temporary situation.

[26] Only the statistically coefficient estimates different from zero are considered.

[27] For identical individuals, i with a financial advisor and j without, the difference in the logarithms of assets is a function of the incremental values of the savings and non-cash ratios due to having an advisor (the non-statistically coefficient estimate on the RRSP ratio is not considered). Thus: $\ln A_i - \ln A_j = \ln\left(\frac{A_i}{A_j}\right) = 4.834 * 0.2004 + (-1.681) * -0.0538 = 1.059$. Raising to the exponential on both sides: $\frac{A_i}{A_j} = 2.88$

tively, a household may have reported having a financial advisor in 2010 (for the most part households have found their advisors), but not in 2014.

The questions to be addressed are these:

1) How does the value of household assets without an advisor in 2010 or 2014 compare with the value of household assets without an advisor in 2010 but which reported having one in 2014?

2) How does the value of household assets with a financial adviser in 2010 and 2014 compare with the value of household assets with an advisor in 2010 but which declared not having one in 2014?

In Table 5, we report the results of t-tests of the means difference in the value of assets and the means difference in the logarithm value of assets for the categories of households concerned.

In the upper part of Table 5, the mean difference in the value of household assets without an advisor in 2010 and 2014 relative to households without an advisor in 2010 but reported having one in 2014 is −$79622,48. The difference between the two groups is statistically different from zero at the 4.14% level of significance: it confirms that a household that went from not having an advisor to having an advisor did significantly better than the household that continued without an advisor. However, the mean difference in the logarithm value of assets is not statistically significant. In parenthesis, we report the geometric means which correspond to the means in ratios of asset value at time t to the asset value at time $t-4$.[28] Those statistics are descriptive and do not, however, prove a causal effect of the presence of an advisor.

At the bottom of Table 5, the mean difference of the value of household assets with an advisor in 2010 and in 2014 relative to households that had an advisor in 2010 but reported not having one in 2014 is $90149,47. This difference is statistically different from zero at the 7.45% level of significance only: it suggests that on average households with an advisor in both years did better than households who dropped their advisor in 2014.[29] However, the mean difference in the logarithm value of assets is highly statistically significant at the 0.17% confidence level. It terms of the geometric means, households who kept their advisor improved their assets' value by 27% over

[28] As $\sum_{i=1}^{n} \frac{1}{n}(\ln(A_{i,t}) - \ln(A_{i,t-4})) = \sum_{i=1}^{N} \frac{1}{n} \ln\left(\frac{A_{i,t}}{A_{i,t-4}}\right)$. Taking the exponential of the arithmetic mean in logarithm terms gives the geometric mean of the ratios of the current value of assets over the previous four-year value: $\left(\prod_{i=1}^{n}\left(\frac{A_{i,t}}{A_{i,t-4}}\right)\right)^{\frac{1}{n}}$.

[29] Poor returns are one of many reasons why an investor will drop an advisor. In the survey questionnaire, respondents were asked: "Why did you stop using a financial advisor?" One answer was "Poor financial outcome/performance of our portfolio". It was chosen by 45% (along with others reasons) of respondents. Unfortunately, too few respondents have answered this question: only seven in the sample concerned.

the four-year period while households who dropped their advisor suffered a loss of 34%.

Again, what is imputed to an advisor effect is a more difficult issue than observing those descriptive statistics. Evaluating the impact of keeping or dropping an advisor are examined with regressions in the differences in (logarithm) the value of assets for each household in the sample survey taken into account some changes in their socioeconomic characteristics or status that might have occurred since 2010.[30]

TABLE 5.

T-tests of the Means Difference of the value of Assets and the Means Difference in the Logarithm Value of Assets by Category of Households Concerned

Group (At last FA)	Obs	Mean	Mean difference in logs
0 = no advisor in 2010/no advisor in 2014	124	3762.57	0.2404 (1.27)
1 = no advisor in 2010/advisor in 2014	21	83385.05	0.3763 (1.45)
Combined	145	15294.10	0.2601
$Diff = mean(0) - mean(1)$		−79622.48	−0.1359
Degrees of freedom		143	143
H0: $diff < 0 Pr(T < t)$		0.0414	0.3256

Group (No more FA)	Obs	Mean	Mean difference in logs
0 = advisor in 2010/advisor in 2014	96	105809.30	0.2355 (1.27)
1 = advisor in 2010/no advisor in 2014	41	15659.85	−0.4186 (0.66)
Combined	137	78830.28	0.03974
$Diff = mean(0) - mean(1)$		90149.47	0.6542
Degrees of freedom		135	135
H0: $diff > 0, Pr(T > t)$		0.0745	0.0017

Geometric means of the ratios of the current value of assets over the previous four-year value are reported in parentheses. See footnote 28.

The regressions (not reported) using the full sample of 282 observations indicate that the only robust result is for the variable "no more financial advisor in 2014". The negative coefficient estimate for this variable suggests that those households suffered a drop in the value of their assets relative to households that kept an advisor: on average, households who kept their advisor have seen the value of their assets increase by 26% while the other types of households have suffered a loss of 34.2%.

One difficulty with the regressions with the full sample is that some households in all categories have reported considerable changes in the value of their assets. We do not know the reasons for those situations. They could occur, for example, with a windfall gain from a sudden heritage or

[30]The differences in the logarithms of the value of assets follow the specification retained in Table 3, to obtain a difference in difference specification as close as possible.

a loss because of a switch from financial assets to real estate property or a business venture. To cope with some of those outliers, we restrict the sample to the observed differences in the log of assets value between -0.5 and $+0.5$ (corresponding to the ratio of assets value of 2013 over 2009 of 0.61 and 1.65 respectively). The drawback is a loss of observations by more than 40%.

In Table 6, we report the results of the restricted sample. In column (1), we pool the whole sample of 150 observations while in columns (2) and (3) we use the same set of comparisons as in Table 5.

As for the unrestricted sample, only the dropping of an advisor situation is relevant. However, keeping all the coefficients estimates for the predictions, the results indicate, on average, that households who kept their advisor have seen their assets' value increase by 16.4% while the households who dropped their advisor present a gain of 1.7%.[31][32]

4. CONCLUSION

This study, based on a new Canadian survey, reconfirms the positive value of having financial advice. As in our earlier paper, the discipline imposed by a financial advisor on households' financial behavior and increased savings of advised households are key to improving the value of household assets compared to households without an advisor.

Two major research elements were associated with the new survey.

First, a new question was added to the previous questionnaire to identify who approaches whom for financial advice. This question has been referred to in the literature as the causality issue: Does financial advice improve household wealth, or is it household wealth that attracts advice? Through our new questionnaire, we found that more than 85% of households with a financial advisor chose their advisor and were not approached by one. This vital statistic validates our assumption on the direction of causality from advisor to wealth in our previous study. It provides an easy way to disentangle the causality issue by restricting our econometric analysis to households declaring they found their advisor.

[31] This method does not compare identical households with and without a financial advisor in 2014 as changes in some socio-economics situations could have occurred for one type of households and not the other, and the relatively small number of observations makes this kind of comparison difficult.

[32] This remark raises the point that dropping an advisor is a decision and therefore an endogenous variable. We did not instrument this decision in this regression because we do not have appropriate instrumental variables. The loss in asset value could be considered an explanatory variable, but will complicate the model and raises serious identification issues. Furthermore, as seen in Table 5, on average the value of household assets who have dropped their advisor have increased between the four years.

TABLE 6.

OLS Regressions in the Differences in (logarithm) Assets' Value between 2010 and 2014 (restricted sample)

	(1)	(2)	(3)
Variable[a]/Sample	All	No advisor in 2010	Advisor in 2010
No more FA in 2014	−0.106*		−0.120**
	(0.060)		(0.059)
At last a FA in 2014	0.130*	0.130	
	(0.078)	(0.092)	
Difference in income	0.000	0.000	−0.000
	(0.000)	(0.000)	(0.000)
Difference in income (squared)	−0.000	−0.000	0.000
	(0.000)	(0.000)	(0.000)
No more wages	0.025	0.003	0.048
	(0.066)	(0.137)	(0.074)
At last wages	−0.127	−0.237	−0.066
	(0.124)	(0.161)	(0.222)
No more working pension	−0.048	0.006	−0.091
	(0.077)	(0.110)	(0.114)
At last working pension	−0.081	−0.123	0.025
	(0.074)	(0.111)	(0.102)
No more full time	0.068	−0.032	0.170***
	(0.042)	(0.070)	(0.054)
At last full time	0.045	−0.164	0.532**
	(0.124)	(0.157)	(0.228)
No more fully retired	-	-	-
At last fully retired	−0.007	−0.028	−0.038
	(0.097)	(0.192)	(0.118)
No more financial literacy	−0.132**	−0.199*	−0.113
	(0.060)	(0.100)	(0.079)
At last financial literacy	−0.034	−0.062	0.011
	(0.054)	(0.077)	(0.077)
Change in the composition of the household	0.068	0.077	0.034
	(0.045)	(0.073)	(0.057)
Moved to another province	0.264	0.353*	
	(0.178)	(0.201)	
Constant	0.092**	0.148**	0.047
	(0.041)	(0.068)	(0.051)
Observations	150	73/11	77/19
R-squared	0.163	0.251	0.274
r2_a	0.069	0.070	0.124

Standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

[a]: Except for the income variable, all other variables are dichotomized (= 1; 0 otherwise)

Second, we were able to compare the financial situation of 282 households in 2010 and 2014 and to evaluate the consequences of having or not having a financial advisor in the evolution of the value of their assets.

As expected, in both surveys, key factors that positively affect the probability of having a financial advisor are the income, the savings capacity, the age, the education level, and the financial literacy of the respondents.

The two regressions investigating links between asset levels and household use of an advisor confirm the active role of financial advice on the value of assets. However, some differences associated with the importance of this advisory effect became evident.

In 2010, having a financial advisor for at least four years affected financial asset levels of respondents. Compared to non-advised households, the long-tenured (15 years plus) advised households had 2.73 times more financial assets. With the 2014 survey, the presence of a financial advisor proves its effect as soon as four years. The additional value reaches 290% for a household with an advisor for 15 years or more: 3.9 times the value of assets of the equivalent non-advised households.

In both surveys, the discipline associated with a long-tenured financial advisor and higher savings are key gamma factors explaining the differential in the value of household assets over those without an advisor.

Applying the survival principal to a restricted sample, dropping an advisor between 2010 and 2014 was costly: the results indicate, on average, that households who kept their advisor have seen the value of their assets increase by 16.4% while the households who dropped their advisor present a gain of 1.7%.

While we recognize some shortcomings in the present study, notably the difficulty to control for the 'willingness to invest' by the participants, we feel comfortable in concluding that financial advice matters, the results are robust, and time is needed for an impact. The value of financial advice goes largely beyond the traditional alpha and beta factors.

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