

# Financial literacy and the use of financial advice—a non-monotonic relationship

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## 1. Motivation

Individuals have greater responsibility for personal financial matters today, even as financial markets and products become progressively more complex. However, previous findings have indicated the prevalence of financial mismanagement among individuals due to low levels of financial literacy (Lusardi and Mitchell, 2014). Using professional financial advice is considered a potential remedy for this problem—if financial advice can serve as an adequate substitute, low financial literacy need not result in poor financial decisions (Calcagno and Monticone, 2015). Examining the substitutability between financial literacy and financial advice, along with the drivers for and hurdles to use of advice, is of considerable importance for initiatives to ameliorate negative outcomes associated with financial illiteracy.

Results from previous empirical studies regarding the substitutability between financial literacy and use of financial advice are both limited and mixed. Some evidence indicates substitutability—less knowledgeable individuals are more likely to use professional financial advice (Bucher-Koenen and Koenen, 2015; Hachethal et al., 2012; Stolper, 2018). Other researchers have reported a complementarity between financial literacy and financial advice use (Bhattacharya et al., 2012; Calcagno and Monticone, 2015; Collins, 2012; van Rooij et al., 2011). To our knowledge no effort has been made to confirm or refute coexisting substitutability and complementarity at different financial literacy levels, likely due to the standard assumption of a monotonic relationship between the use of financial advice and financial literacy.

Theoretical models of the relationship between financial literacy and the use of financial advice are even scarcer. Most frameworks assume low financial literacy means higher costs for acquiring financial expertise and reduced access to financial products and

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information. Thus, less knowledgeable investors have greater need for professional financial advice—the substitutability relationship between financial literacy and use of financial advice (Bluethgen et al., 2008; Bucher-Koenen and Koenen, 2015; Georgarakos and Inderrst, 2014; Hackethal et al., 2012). A significant challenge is to determine the rationale underlying a complementary relationship. Most studies have focused on supply-side issues associated with financial advisory services—typical financial advisor incentive structures, such as the commission-based compensation, can produce misaligned interests with clients; as a result, financial advisors tend to provide better advice to more knowledgeable investors, who are, therefore, more likely to use the service (e.g., Bucher-Koenen and Koenen, 2015; Calcagno and Monticone, 2015).

In this paper, we provide theoretical and empirical analysis regarding the effect of financial literacy on investor use of financial advice. In developing the theoretical model, we focus on providing an alternative explanation for complementarity between financial literacy and use of financial advice—investors, especially those who are less knowledgeable, have incomplete information on advisor quality which in turn discourages use of financial advice. Meanwhile, investors can reduce search costs associated with making investment decisions by using professional advisors and low literacy investors are expected to benefit more with the professional assistance. After considering incentives for and hurdles to the use of financial advice, and differentiating two forms of use—consulting with an advisor when making investment decisions versus delegating decision-making responsibility to an advisor—our proposed model predicts a non-monotonic relationship between financial literacy and use of financial advice. We then use a representative U.S. dataset from the 2015 National Financial Capability Study (NFCS) to empirically test the hypotheses derived from our proposed model. The analysis allows for variation in the effects of financial literacy on the use of financial advice at different levels of financial literacy. The results confirm our primary hypothesis: investors with medium levels of financial literacy are the most likely to

consult a financial advisor, and investors with the lowest levels of financial literacy are the most likely to delegate decision-making responsibility to a financial advisor. We describe the theoretical model, empirical analysis and key findings in the following section.

## 2. Main analysis and key findings

### Theoretical model

Investors are assumed to have three options for using financial advice when making investment decisions: self-investing without advice, consulting financial advisors to help with decision-making, and delegating decision-making to financial advisors. Advisor quality varies and is not known to investors. However, it is possible for investors to gather information on advisor quality during consultation and they can reject advice. Financial literacy varies among investors. Investors with greater financial literacy are better able to judge quality when consulting an advisor. However, there is no opportunity to judge advisor quality if decision-making is delegated.

If an investor chooses to self-invest without an advisor's help, she incurs costs when searching for investment information and opportunities. Search costs are lower for investors with higher financial literacy. If an investor chooses to delegate investment decisions to a financial advisor, she pays a fee for this service, but incurs no search costs. In addition, no information is available regarding the advisor's quality. If an investor chooses to consult an advisor, she pays a fee for this service which is assumed to be lower than the fee paid for delegation service. It is possible to gather information on the advisor's quality in the process; investors with greater financial literacy are more likely to identify the true quality of the advisor. After consulting with a financial advisor, an investor can either accept and follow the offered advice, or ignore the advice and invest autonomously. Upon accepting the advice, the investor incurs search costs to understand and follow the advice; such costs are lower than those incurred by investors who self-invest and are higher for low literacy investors. If the investor chooses to ignore the advice, she incurs the self-investing search costs like other self-investing investors.

Solving for investor choice of financial advice use, we find that delegation is preferable to self-investment and consulting for investors with low financial literacy. Search costs are relatively high for low financial literacy investors if they choose to invest autonomously or to consult; delegation eliminates search costs. In addition, expected benefits from consulting are lower among low literacy investors because their likelihood of accurately identifying advisor quality is relatively low.

As investor financial literacy increases, consulting becomes preferable to delegation due to the increased capability for identifying financial advisor quality and, in addition, due to decreased search costs in implementing accepted advice. While investors with moderately high financial literacy levels are capable of identifying high-quality advisors, they generally cannot achieve self-investment success. Therefore, investors with medium levels of financial literacy will choose to consult an advisor.

At still higher levels of financial literacy, self-investing without using a financial advisor becomes preferable as the least costly approach. Capability is high and search costs are low for these investors, so there is insufficient gain from incurring fees associated with delegating to or consulting with a financial advisor.

## Empirical analysis

Our empirical analysis confirms the theoretical model's prediction that the probability of consulting with a financial advisor initially increases and then decreases as investor financial literacy increases—a non-monotonic hump-shaped relationship. In addition, it confirms that the probability of delegating investment decisions to a financial advisor consistently decreases as financial literacy increases.

Two datasets commissioned by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation are used in the empirical analysis: the National Financial Capability Study (NFCS) 2015 State-by-State Survey and the NFCS 2015 Investor Survey. The purpose of the State-by-State survey with a nationally representative sample of 27,564 Americans aged 18 and

older is to assess the financial capability of the national population. To provide additional insights on individual investment decisions outside of retirement accounts, a follow-up Investor Survey was distributed to 2,000 State-by-State respondents who reported having investments outside of retirement accounts (Applied Research & Consulting LLC, 2015). Unique respondent IDs are used to link the State-by-State and Investor Surveys. Our theoretical model and empirical analysis are designed to reflect the fact that all individuals in the sample have investments outside of retirement accounts.

The effect of financial literacy on the use of financial advice—self-investment, consulting, or delegation—is estimated using a financial literacy measure based on ten investment knowledge questions. We control for other factors that could affect the decision to use financial advice, such as gender, age, ethnicity, education attainment, marital status, risk preference, household income, non-retirement account wealth, and whether an individual has investments in stocks outside of retirement accounts.

If the potential non-monotonic effect of financial literacy on the use of financial advice is ignored, financial literacy is estimated to exert a significantly positive effect on the probability of self-investment and a significantly negative effect on the probability of delegating investment decisions to an advisor. The effect of financial literacy on consulting with a financial advisor is negative, but not statistically significant. While this finding of substitutability is consistent with those previously reported by Bucher-Koenen and Koenen (2015), Hachethal et al. (2012), and Stolper (2018), it does not hold when the possibility of a non-monotonic relationship is allowed in the analysis. Also, these estimates underscore the importance of distinguishing between the two types of financial advice use (consulting and delegation) when analyzing the effects of financial literacy.

The sample is divided into two groups, those with low financial literacy and those with high financial literacy, to investigate the potential non-monotonic effect of financial literacy on the use of financial advice. It is found that among low literacy investors, a one-unit

increase in financial literacy results in a 4.88% increase in the probability of consulting with a financial advisor and a 2.88% decrease in the probability of delegating decisions to a financial advisor; the effect of financial literacy on self-investment probability is non-significant. So, consulting a financial advisor is found to be a complement to financial literacy among investors with low financial literacy levels.

The financial literacy-financial advice relationship is fundamentally different among high literacy investors. Among high financial literacy investors, the probability of using a financial advisor for consulting or delegation decreases with each unit increase in financial literacy score (-3.32% for consulting and -2.73% for delegation). In both cases, the estimated effect is statistically significant at 1% level. We also find that the probability of self-investment increases significantly as financial literacy increases among high literacy investors.

The results underscore the importance of viewing the use of financial advice as having a non-monotonic relationship with financial literacy, i.e., whether they are substitutes or complements depends on the level of financial literacy. By allowing for non-monotonic effects, we find that the investors who have the greatest propensity to consult with financial advisors are not the ones with the highest or lowest financial literacy levels, but those with medium levels.

### **Additional tests**

Our empirical findings above do not necessarily imply the direction of the causality, with potential endogeneity of financial literacy possibly resulting in a spurious relationship between financial literacy and the use of financial advice. For example, investors who use professional financial advice may have more

opportunities to acquire investment knowledge from multiple sources, especially when an investor chooses to consult a financial advisor, resulting in a positive relationship between financial literacy and the use of financial advice. Other unobserved factors may also influence both the willingness to acquire financial literacy and pursue financial advice, leading to a spurious positive relationship between the two.<sup>1</sup> However, additional empirical work that controls for potential endogeneity of financial literacy finds that it is not a factor and the results of a non-monotonic relationship hold.<sup>2</sup>

In addition, we investigate whether agency conflicts, rather than the ability of investors to identify high-quality advisors, serve as the main driver of our empirical findings regarding complementarity. Agency conflicts have been widely used in previous models to explain complementarity between financial literacy and the use of financial advice. This assumes that agency conflicts result in a situation where superior financial advice is more likely to be provided to individuals with high levels of financial literacy, who in turn are more likely to use it. Additional tests indicate that our empirical findings on complementarity between financial literacy and use of financial advice are not mainly driven by agency conflicts.<sup>3</sup>

## **3. Implications**

Our results provide new, more nuanced insights regarding the relationship between financial literacy and use of financial advice. Rather than financial advice simply being a substitute for financial literacy or a complement to financial literacy, the nature of the relationship varies with the level of financial literacy.

We recognize two different ways that investors can engage with financial advisors—they may consult with

<sup>1</sup> See Calcagno and Monticone, 2015.

<sup>2</sup> The control function approach described by Rivers and Vuong (1988) and Wooldridge (2010) is used to examine the potential impacts of endogeneity of financial literacy.

<sup>3</sup> We find that our main results still hold when we use subsamples of investors exposed to agency conflicts to a minimum extent—those who do not pay commissions when they use financial advisors as an information source and those who do not identify stockbrokers as their information sources when making investment decisions.

an advisor in making investment decisions or they may delegate investment decisions to an advisor. Alternatively, they may do neither and make investment decisions on their own. We find that the likelihood of delegating investment decision-making to an advisor is highest among investors with relatively low levels of financial literacy and lowest among those with high levels of financial literacy. Furthermore, there is a non-monotonic relationship between financial literacy and the likelihood of consulting with a financial advisor such that investors with a middle level of financial literacy are the most likely to do so. These findings have important implications for understanding the needs underlying investor behavior, and thus for helping them achieve better outcomes.

In an effort to understand the hurdles preventing individuals from seeking professional financial advice, previous studies have focused on misaligned interests between individuals and financial advisors tied to compensation schemes. Our theoretical and empirical evidence highlight a different hurdle: lack of information for identifying high-quality service, which can stop less knowledgeable investors from making the necessary

effort to find and consult with high-quality advisors. In addition, the belief that delegation eliminates further review of initial quality evaluations of advisors makes it more likely for investors to consult with advisors rather than delegate decisions to them.

To encourage individuals to use professional financial advisory services and to help them select high-quality advisors, it is thus necessary to design and promote a system for accessing reliable information on the quality of the advisors. Possible solutions include existing and new professional credentials such as Certified Financial Planners (CFP), public information on advisor backgrounds and form of compensation, and the enforcement of practice standards such as fiduciary rules for certain types of financial advisors. We also acknowledge the utility of well-planned and executed financial education programs aimed at training individuals in financial self-management and in selecting high-quality advisory services. Combined, these interventions and education programs can also give financial advisory service providers access to larger pools of potential clients.

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