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Author(s)	Chang, EC; Tang, DY; Zhang, M
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Household Investments in Structured Financial Products: Pulled or Pushed? [*]

Eric C. Chang[†]

Dragon Yongjun Tang[‡]

Miao Zhang[§]

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Abstract

Why did individual investors buy structured financial products? Were they too greedy to consider the risk involved? Or did the banks lure them to buy? Using unique household investment data from Hong Kong, we show that investor demand of such products (the "push" effect) was not the key driver. Important determinants according to portfolio theories, such as product premium, have little explanatory power to investor's actual allocation decisions. More financially literate investors who can form reasonable expectations about stocks bought less. Education, IQ, and relationship with the distributing banks are statistically significant explanatory variables. However, we can only explain one-fifth of the cross-sectional variations of investment in structured products. The rest could be due to bounded rational investor behaviors and mis-selling by distributors.

[†]School of Economic and Finance, University of Hong Kong. Phone: (+852) 28578347. Email: ecchang@business.hku.hk
[‡]School of Economic and Finance, University of Hong Kong. Phone: (+852) 22194321. Email: yjtang@hku.hk
[§]School of Economic and Finance, University of Hong Kong. Phone: (+852) 67074270. Email: benzhang@hku.hk

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Abstract

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1   Introduction

Securitization is the main channel transforming the U.S. subprime housing market decline into a global credit crisis. Those subprime mortgage loans are first packaged into mortgage-backed securities (MBS), which are then repackaged into collateralized debt obligations (CDOs). Those CDOs, mostly bearing AAA credit ratings, are either kept on the investment banks' balance sheet, or insured by credit default swaps (CDS), or sold to investors all over the world. Securitization was the biggest U.S. export to the world in the 21st century till the crisis broke out in August 2007.[1] After the crisis, international investors, especially those from high savings countries such as China, are blamed to be the root cause of the crisis. The critics claim that U.S. asset demand directed capital inflows drove global imbalance, fueled the real estate bubble, and facilitated excessive consumption.[2] Such claims are crucially based on the asset demand assumption. However, it is an empirical issue to determine the specific roles of the demand side and the supply side. Were capital flows into securitization market pulled or pushed? In this paper we investigate household investment decisions in structured products using unique data from Hong Kong.

Household finance behavior could provide microfoundation for macroeconomic fluctuations (see Mian and Sufi (2009) for leverage choice). Investment patterns at individual investor level prior to the crisis is important to understand the root causes of the crisis. The crisis reveals that CDOs were, to a large extent, poor investment choice. Practitioners, academics, and regulators have quickly reached a rare consensus on the detrimental role of CDOs in the economy. However, CDOs are merely a financial innovation subject to market selection. One adverse realization of investment return does not totally disprove their usefulness as an investment tool. After all, investors seemingly had non-satiable appetite for CDOs and other structured products prior to the crisis as evidenced by the flourish of such markets. Did investors understand the risk-return profiles of those investments when investing in them?

Individual investors' appetite for structured products is puzzling from several as-

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[1] "Evil Wall Street Exports Boomed With 'Fools' Born to Buy Debt", Bloomberg.com, August 27, 2008.

[2] "Paulson says crisis sown by imbalance," *Financial Times*, January 1, 2009. ". . . it is impossible to understand this crisis without reference to the global imbalances . . . " Ben S. Bernanke, Speech at the Council on Foreign Relations, Washington, D.C., March 10, 2009. Curbing global imbalance is the main agenda of the G-20 meetings in November, 2009. Caballero and Krishnamurthy (2009) develop a model to show how global imbalance has driven the US securitization boom and bust. Other references include Obstfeld and Rogoff (2009) and Jagannathan, Kapoor, and Schaumburg (2009).

pects. First, a security will be included in an investor's portfolio only if it is on the efficient frontier (see Boyle, Garlappi, Uppal, and Wang (2009) for a review of portfolio theories). However, evidence from U.S., U.K., Germany, Swiss, among others, shows that structured products are massively overpriced.[3] Second, structured products are financial innovations with little historical performance data and much ambiguity. Ambiguity averse investors would avoid such investments. Third, CDOs and other structured products have capped returns but substantial downside due to default risk. Such feature does not match investors' preference for positive skewness (Barberis and Huang (2008), Kumar (2009)).

One potential explanation for individual investors' seemingly suboptimal investments in structured products is that investors misunderstood them and simply followed the fads. Taken for granted the disadvantage of investing in structured products, the remaining question is whether the investment mistakes were made by investors themselves (investment was "pushed" by investors) or induced by the product issuers (investment was "pulled" by issuers). It is no surprise that bounded rational investors make suboptimal investment decisions (Calvet, Campbell, and Sodini (2007)). Individual investment practice is constrained by transaction costs, information processing capacity, and liquidity shocks. However, even perfectly informed investors may rebel conventional wisdoms. DeMiguel, Garlappi, and Uppal (2009) show that a naive 1/N rule outperforms sophisticated mean-variance optimization strategies in historical data. On the other hand, CDOs could be mis-sold to investors by investment banks and other financial intermediaries (Inderst and Ottaviani (2009)). It is important to distinguish these two alternatives (investor mistake or mis-selling) for security design and market regulation.

Empirical study of investments in retail structured products is difficult as investors are hard to identify. Obtaining such information from brokers or banks is unrealistic for confidentiality reasons. It is commonly believed that CDOs are only sold to institutional investors. However, it was revealed through the collapse of Lehman Brothers in September 2008 that individual investors in Asia (Hong Kong, Taiwan, and Singapore in particular) have invested in CDOs disguised under other names from local bank distributors in retail structured products market. Thousands of individuals bought "minibonds", a type of credit-linked notes (CLN), issued by Lehman Brothers from 2003 to 2008. Many bought "constellation", CLN referencing Lehman Brothers, issued by Development Bank of Singapore (DBS) in 2006-2007. Although ownership data on CDOs is extremely prohibited as such securities are privately placed, the minibond incident

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[3]See Wilkens and Stoimenov (2007), Henderson and Pearson (2008), and Bergstresser (2008).

provides a unique opportunity to examine such investment decision.

The Lehman Brothers bankruptcy unveils that many structured products investors in Hong Kong are likely to lose their investment significantly. Hence, they gather together and often hold demonstrations to ask for government intervention. Through those occasions we interviewed 783 investors and collected comprehensive data about their demographic background and transaction details over the period of January to June 2009. Our subjects include not only minibond and constellation investors, but also equity-linked notes (ELN) investors who bought ELNs issued by or linked to Lehman Brothers via over-the-counter transactions. Investors are willing to share information with us as they want to draw more attention and investigation. We augment investor information with detailed description of structured products compiled by Securities and Futures Commissions (SFC), which is the securities market authority of Hong Kong and government body investigate the incident.

Our first finding is that most product characteristics are not associated with investment decisions. Investors did not invest more fraction of their wealth in higher premium products. Counter-intuitively, given the same level of premium and other product characteristics, investment amount *increases* with the true riskiness of the product. Those products are so complex that the true riskiness can be overshadowed by the perceived (false) safeness. The only other significant product characteristic is coupon payment frequency. All else equal, investors preferred products with more frequent coupon payments, while payment frequency plays little role in asset allocation theories. Those findings may appear puzzling but could be consistent with issuer's successful extraction of consumer surplus.[4] The explanatory power of product characteristics for allocation decision is limited, with an adjusted R^2 of 2.5% in the regression using all prominent product features.

Investor background also did not matter much. Investor spending on lottery tickets, our measure of risk aversion, is statistically insignificant in explaining investment proportion in structured products. Life cycle variables such as age, employment, marriage, and gender are also insignificant. Financial background has some effect. High income earners and homeowners made significantly less investments in structured products. Such findings are also puzzling because, regardless whether we treat structured products as risky assets or safe assets, investor profile variations should differentiate

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[4]It is interesting to note that at the beginning US dollar denominated minibonds and HK dollar denominated minibonds have the same coupon rate but different coupon rates for later issues, although HK dollar is pegged to US dollar.

investment allocations, through the argument of "revealed preference". Again, adjusted R^2 from investor background variables is merely 4.3%. We further consider transaction environment and market conditions. To our surprise, investors who are more trusting the distributors and more familiar with salespeople bought significantly less. Neither equity market condition nor credit market condition matters much.

Combining the effects of product characteristics, investor background, transaction environment, and market condition only produces an adjusted R^2 of 6.9%. Most of the economically important variables turn out to be insignificant. It is difficult to tell a demand story from our findings. Hence, investments in structured products are more likely to be "pulled" by the issuers. In such case, will individual investor financial literacy be effective in attenuating the influence from the supply side (e.g., sales pitch)? We hypothesize that more financially literate investors are better positioned to fend off investment sophistry. Our measure of financial literacy is related to reasonable expectation of stock returns in Hong Kong market. We expect more financially literate investors will behave more consistently with rational expectation based theories. In the case of retail structured products, ambiguity averse investors would participate less. Empirical results are consistent with such prediction: Financially literate investors buy about 10% less structured products. This finding is robust to alternative measures of financial literacy.

Next we investigate the channels through which financial literacy works. The blossom of financial engineering and the field of mathematical finance in recent years suggests that calculating ability can be important for investment. However, we find that, while individually both calculation and comprehension capabilities are important, jointly comprehension has more important effects. Hence, improving investor's understanding of the market seems to be a good lesson learned from this structured product experience (mathematical skills are arguably more related to IQ). However, the premise is that investors can learn. If better investment decisions are due to intelligence which can hardly be improved upon training, then investor education programs will not be useful. Therefore, it is important to know which components of financial literacy, education or intelligence (IQ), will help investors make better investment decisions. We find that both education and IQ have significant effect on allocation decisions with control for other factors. Moreover, education seems to be relatively more important with a higher stand-alone adjusted R^2 (9.9%) than IQ (adjusted R^2 2.6%). Our findings on financial literacy, cognitive ability, education, and IQ are robust across investor groups and product types. Moreover, these results survives after controlling for Heckman's sample

selection bias.

In his American Finance Association (AFA) Presidential Address, Campbell (2006) summarizes empirical evidence on household finance and argues that poorer and less well educated make investment mistakes. Furthermore, he believes that some financial products exist to exploit naive investors. Our empirical evidence supports his conjecture. At household level for Hong Kong structured product investments, risk-return tradeoff is not the main decision metric, financial literacy plays a bigger role. However, we also point out that some very well educated investors all invest in such products and that the highest adjusted R^2 explaining structured product investments is less than 20%. Therefore, the majority of cross-sectional variations in investor decision is not identified. Either investors made random decisions or distributors were overly successful in marketing/selling. Currently our data cannot distinguish those two scenarios. While bounded investor rationality may have played some role in the structured products market, investor demand of such products (the "push" effect) was not the driving force for market growth.

The rest of the paper is organized as follows: We first discuss our motivation relative to the existing literature in Section II. In Section III we describe the structured product market with a focus on Hong Kong market. Data and sample characteristics are presented in Section IV. Our main empirical analyses on investment allocation are provided in Section V. Robustness checks are supplied in Section VI. Section VII summarizes our findings and concludes.

2 Related Literature

The investment literature often assumes good behavior from all market players: security issuers design a new product to improve social welfare, financial intermediaries truthfully transmit information about the products, investors understand the product and execute the best strategy. It is an empirical issue whether these conditions are met in reality. The best evidence is from laboratory experiments and field experiments. For example, Charness and Levin's (2005) lab experiments show that investors over-extrapolate from their former experience and tend to follow a suboptimal reinforcement strategy. Choi, Laibson, Madrian and Metrick (2009) substantiate such result using individual 401(k) investment data. Kaustia and Knupfer (2008) have similar findings for individual IPO investors. Asparouhova, Bossaerts, Eguia and Zame (2009) show that investor's cognitive

biases hinder information updating, lead to perceived ambiguity, and cause deviation from rational decision marking.

Above studies are on stocks or familiar investment vehicles. The findings may not generalize to financial innovations such as structured products. We examine how individual investors *actually* make allocation decisions over new illiquid financial products, which is part of household finance that needs more empirical research as advocated by Campbell (2006). Although Das and Statman (2009) argue that structured products can help improve portfolio allocation, several recent studies suggest that retail structured financial products are persistently overpriced by about eight percent (see Henderson and Pearson (2008), and Bergstresser (2008)). A natural question is how the issuers get investors to buy large amount of such overpriced products. Investors have little prior knowledge about those investments. Theories on choice under ambiguity would imply zero participation in such case. Hence, market frictions might have existed to defy compliance with theoretical predictions. Subrahmanyam (2009a) shows that financial intermediaries such as distributing banks may delay educating inexperienced individual investors in order to earn more commissions. Moreover, Carlin and Manso (2009) argue that firms may strategically use product complexity to extract consumer surplus. Our empirical results will shed light on the existence of such frictions.

How can individual investors make best investment decisions in a market flourished with financial innovations issued by strategic financial intermediaries? One answer is market selection. Only those good at financial securities (financially literate) should be participating. However, Hilgert, Hogorth and Beverly (2003), Agrew and Szykman (2005), National Council on Economic Education's report (NCEE 2005), show that most Americans fail to understand basic financial concepts and conditions of financial instruments, such as consumer loan and mortgages. More recently, Lusardi and Mitchell (2006, 2008) report a wide-spread lack of ability on interest compounding among older (50+) individuals in the U.S. Lusardi and Tofano (2009) show a lack of knowledge on debt among all U.S. citizens. Similar problems of low financial literacy are also found in other countries.[5]

More importantly, lack of financial literacy influences individual suboptimal saving and portfolio choices. For example, Lusardi and Mitchell (2006, 2008) find that, those who have a better understanding of compound interest, inflation and diversification are more likely to set up plans for retirement. On portfolio choice, less literate investors

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[5]See OECD (2005), Smith and Stewart (2008), Christelis, Jappelli, and Padula (2008), Moore (2003), Miles (2004).

are less likely to invest in stocks (van Rooij, Lusardi and Alessie (2007), Yoong (2007), Christelis, Jappelli, and, Padula, (2008)), and less likely to choose mutual funds with lower fees (Hastings and Tejeda-Ashton (2008)). Similarly, Campbell (2006) reports that individuals with lower incomes and lower education levels – characteristics that are strongly related to financial literacy – are less likely to refinance their mortgages during a period of falling interest rates.

Further studies have shown the channels through which financial literacy works. Dohmen, Falk, Huffman, and Sunde (2009) use more than 1000 adults in Germany and find that investor's IQ, which is a usual proxy for cognitive ability, is negatively related with risk aversion and impatience. Grinblatt, Keloharju, and Linnainmaa (2009) provide consistent empirical evidence on a strong correlation between IQ and stock market participation using data from Finland. A conceivable way to improve financial literacy is education. Berheim, Garrett, and Maki (1997) show that, in states with mandates of financial education curriculum in high school, students five year after graduation on average have saving rates that are 1.5 percent higher than students from other states. Bayer, Berheim and Scholz (2008) provide evidence that the frequent seminars increase both participation rates and contribution rates for non-highly compensated individuals. The author conclude that this can only provide *limited* support for the effects of financial education on retirement savings. Woodward (2003) shows that college education is associated with a remarkable $1,500 reduction in average broker fees for mortgage loans. Campbell (2006) suggests that more of household with high education level should participation in stock market, since they are more likely to overcome the barrier of not knowing the existence of equity markets, and fixed costs to enter the market. He also shows that higher educated investors are less likely to make mistakes in the market. Similar results have been found be Luigi and Jappelli(2005) who show that education is related to individual awareness of stocks. Lusardi and Mitchell (2006, 2008), Lusardi and Tofano (2009), Stango and Zinman(2009) also suggest that more education to improve financial literacy is needed.

However, while it is easy to reach consensus on financial literacy, discontent exists on the effectiveness of education. Heckman (2006) argues that the relationship between cognitive and non-cognitive skills is complex, such that non-cognitive skills and personality traits could cause people to endogenously create environments during childhood that foster faster cognitive development. Education has less effect on cognitive ability when it is given later, an may provide little help on their decision making. The data on Hong Kong household investments in structured financial products provide a perfect

setting for us to investigate above issues. We shed light on investor behavior in a new market of illiquid securities (with plenty of ambiguity). Our results on financial literacy, cognitive abilities, IQ, and education will help resolve some of the theoretical debates.

3   Market for Retail Structured Financial Products

Structured financial products, characterized by customized payoff streams and illiquid secondary market, have become increasingly important investment vehicles. The most well known structured product is probably collateralized debt obligations (CDOs) which are the key driver of the recent credit market boom (2005-2007) and bust (2007-2009). (See Brunnermeier (2009) and Coval, Jurek, and Stafford (2009) for overviews.) However, given the extremely high requirement of minimal investment in CDOs, individual investors can hardly afford to purchase such products. Hence, investors in Hong Kong, Taiwan, and Singapore were shocked when they were informed of their holdings in retail structured financial product issued or related to the failed Lehman Brothers.

At the time of Lehman Bankruptcy on September 15, 2008, HKD20.173 billion structured products associated with Lehman were still outstanding in the market from 43,707 investment accounts.[6] Two types of structured products are affected to Lehman bankruptcy: credit-linked note (CLN) and equity-linked note (ELN). The most publicized is the "minibond" CLN issued by Lehman Brothers. Another noteworthy CLN is the constellation issued by Development Bank of Singapore (DBS). Appendix II provides detailed issuance information on minibond and constellation. The investment in these three groups of products take 97% of the total investment in Lehman Brothers related products.

Figure 1 shows the structure of CLNs and ELNs. CLNs are medium-term notes issued by financial institutions. Their payouts are based on a group of companies' ("reference entities") credit performance. Those notes normally have 3 to 5 years investment horizon with coupon rates slightly higher than quarterly bank deposit rates. However, the risks of CLNs come from multiple sources. The first risk of this product comes from underlying collateral. When investors purchase the minibond, issuer will use the proceeds collected from investors to buy CDOs as underlying collateral for the minibond. When there is an event of default for collaterals, minibond with be redeemed early at the price based

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[6] "List of information/ documents requested by Members", Hong Kong legislative Council, www.legco.gov.hk/yr08-09/english/hc/papers/hc1013cb2-100-3-e.pdf

on the proceeds of selling the collateral assets (so called "early redemption amount"), which may be significantly below the principal amount of the minibond outstanding. The second risk is swap counterparty risk. The issuer signs swap contracts to hedge currency risk and interest rate risk. Swap counterparty takes the yields from the underlying collaterals and provides fixed coupon payment to the investors. But when default of swap counterparty occurs, minibond will also be redeemed at the early redemption amount. Finally, the investors' position as insurer in the swap leads to another risk. Lastly, the swap is based on the credit performance of the reference entities (normally 5 to 8 names). For the case of minibond, the credit rating for these reference entities may range from AA+ to BBB. If *any* of these reference entity goes bankrupt, fails to pay its liability, or is restructured, minibond will be redeemed at an amount based on selling of the subordinate debt of that in-troubled reference entity. In this case, investors may lose most of their investments. We summarize the payoff function per share of CLNs, take minibond series 35 for example, as follow:

$$
f(x) = \begin{cases}
1 + i_t & : \quad \textit{if issuer exercise call option before maturity date;} \\
x & : \quad \textit{if early redemption event occurs;} \\
r_j & : \quad \textit{if credit event occurs on reference entity j;} \\
1 + 5.6\% & : \quad \textit{if nothing happens.}
\end{cases}
$$

Where i_t is the cumulative interest rate before the day issuer exercise call option; x is the value of collateral when early redemption event occurs; r_j is the recovery rate of the subordinated debt of the reference entity at credit event.

For equity-linked notes, as illustrate in Figure 1, investors also suffer the underlying collateral risk and swap counterparty risk. The key difference in the structure of ELNs with that of CLNs is that the swap is linked to the stock price of a basket of (normally 3 to 6) companies. Figure 2 shows how the payoff of ELNs is linked to the stock price of the reference companies. Take Pyxis Series 21, an ELN issued by Lehman Brothers on May 2007, for example. The investment horizon of the note is 2.5 years. Coupon will be paid every half a year after issuance at the observation dates. During each of the second to fifth observation dates, there are four auto-calls by the issuer. If the closing price on observation date is at or above 96% of fixing price (equity to the stock price when the note is issued), the note will be redeemed. This auto-call structure together with the fixed coupon rate put a "cap" on the payoff. In the best scenario, investor will get a 20% return when the note matures. However, when the stock price of *any* of the linked companies fall below 75% of the fixing price at *any* day within the 2.5 years, investor

will have to wait until the maturity date to get back principal. Moreover, when default under the underlying collateral or swap counterparty occurs, the note will also have to be redeemed early at an amount based on the proceeds of selling the collateral, which may be significantly lower than the principal.

Unlike those structured products examined by Henderson and Pearson (2008), retail structured financial products are not listed on any exchange in Hong Kong. All transactions are executed over the counter at a distributing bank. Once issued, most of the structured products are not priced until maturity or when knock-out events, such as credit event for CLNs, occur. There is no way to track the performance and market value of such products. Hence, it is difficult for investors to form expectation about the risks and returns of such products. There is no secondary market for those products. Initial investors likely have to hold the products till maturity. The relatively long maturity, 3 to 5.5 years for CLNs and 2 years for ELNs, makes investment in such products even riskier. Overall, it seems difficult for investors to get a good handle of such investments. We use survey data to explore the key motives for investors to purchase these products.

4   Data and Sample Description

4.1   Data Collection

We obtain data from investors of Lehman related structured products through individual interviews. The interviewers are University of Hong Kong students, mostly Cantonese speakers. The interview will go over a list of items on a questionnaire designed by ourselves. The interviews were conducted during the 11 times of the large protests and gatherings by investors between January 15 and May 22, 2009. Our sample consists of data from 783 structured product investors. The interviewers randomly selected the interviewees and asked questions face-to-face. Our questionnaire has three sections: investment decision characteristics, investor financial characteristics, and investor demographic characteristics. On March 14, 2009, we revised our questionnaire by adding questions on family monthly income, homeownership, whether they are familiar with salesman, and a question on simple calculation, without changing the original questions. The sample is roughly evenly distributed: 430 investors surveyed before March 14 and 353 investors surveyed after March 14, 2009.

In order to examine sample selection issue, we further interviewed a group of in-

vestors who did not invest in Lehman related structured products as control sample. Those interviews were conducted between July 24 and August 10, 2009. We used similar questionnaire, with minor change on the questions in investment decisions. We chose to conduct the surveys in 11 districts of Hong Kong where most of the Lehman structured product investors live to control for geographic factors. We randomly selected 75 investors in those areas, such as from streets, parks, or from railway stations, and obtained similar information on demographic, financial, and investment characteristics.

Figure 3 illustrates a pattern of co-movement between total investments in minibonds from the subjects in our sample and Hang Seng Index (HSI) from July 2, 2003 to June 30, 2008. Presumably investors have more to invest in structured products when equity market condition is good. Notably, as shown in Appendix II, the largest group comes from investors of minibond series 35B issued on February 22, 2008, at a time financial crisis was going strong.

4.2 Sample Description

Table I presents descriptive statistics of our key variables (definitions are given in Appendix I). Respondents report the name of the structured products they purchased and the proportion of their total financial wealth that they invested in the structured products. Their average monthly income is HKD17,700. On average, each investor made HKD1.04 million (59% of wealth) investment in such products. Only 31% of the subjects ever bought lottery tickets., 40% of them buy stocks with average holding of 15%, 82% own properties. About 62% of the investors were familiar with the salespeople, 86% investors closed the deal on the spot while 14% took the documents back home and purchased after some consideration. About 42%, 38%, 9% investors purchased through Bank of China (Hong Kong).

Our sample contains all of the three main structured products that are related to Lehman Brother, namely Minibond, Constellation and equity-linked notes (ELN hereafter). The differences between ELN investors and CLN investors are substantial. ELN investors are better educated, with 2 more years of education on average, and more affluent than CLN investors in both total financial wealth and family monthly income. The average self-reported investment proportions by investors of each group are all above 50%. Financial and demographic characteristics show that these investors are basically senior and poorly educated people. The average age is above 55; more than 70% of them

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are retired, and only 15% attended college. More than a quarter of the investors cannot read, and about two thirds of them cannot do simple calculation.

A key variable to our analysis is investor's self-reported expectation of Hong Kong stock market annual return which we use as a proxy for financial literacy. Among the 353 interviewees we asked for their expectation, 159 cannot answer. The histogram of answers from the other 194 investors is plotted in Figure 4. Unsurprisingly, investors tend to choose sentimental numbers such as 0% (25 responses), 5% (30 responses), 10% (48 responses), 20% (20 responses), but there is also wide dispersion among the answers. Panel A of Figure 5 shows that the wealth invested in structured financial products is high in groups sorted on their stock return expectation. The investment proportions are all higher than 50%. However, those who can give more reasonable expectation to Hong Kong stock market annual return (the third group) on average put less proportion of wealth in purchasing structured financial products.

Panel B of Figure 5 shows that the proportion of financially literate investors decreases as the investors' investment proportion increases. Among those who have invested less than half of their wealth in structured products, there are significantly more literate investors than non-literate investors. However, this difference decreased and reversed in the group of people who invested more than half of their wealth in structured products. Panel C of Figure 5 shows that investment proportion in structured products first increase and then decrease as we move from low income investors to high income investors. Investors of middle income level invest more proportion of wealth in structured products. Within each group, the financially illiterate investors invest more proportion of their wealth than literate investors.

5 Empirical Results on Allocation

5.1 Fundamental Determinants

Conventional mean-variance portfolio allocation theories suggest that investment decision in risky assets θ is determined by

$$\theta = \frac{E(\mu) - r_f}{\gamma \sigma}, \tag{1}$$

where $E(\mu) - r_f$ is risk premium or expected return over risk-free rate, σ is risk, and γ is investor risk aversion. Investment proportion increases with risk premium but decreases with risk. More risk averse investors will allocate less to risky assets. When we adapt above predictions to structured notes, we need to have a precise mapping to conventional investments according to description of product characteristics. In particular, structured notes mostly are linked to multiple names with different credit ratings. The number of reference names and their ratings can be informative of the risk and return of the CLNs and ELNs.

Specifically, we consider the premium of the product over Libor rate. The highest rating of the reference entities as well as the lowest rating of the reference entities, resulting a rating range (Max-Min rating). The maturity of the product is used to capture the term structure in premium and liquidity clientele effects. Furthermore, number of reference entities and coupon payment frequency are often emphasized in the product prospectus. The products are either denominated in Hong Kong dollar or U.S. dollar. We separate CLNs from ELNs.

Additional to security's risk and return and investor's risk appetite, factors related to investment environment may also affect asset allocation decisions. In particular, we consider the relationship between distributing bank and investor to capture the trust effect. Guiso, Sapienza, and Zingales (2008) show that less trusting investors buy less stocks using Italian and Dutch data. Trust is measured in three ways: a dummy variable which equals one if the investor has ten years or longer relationship with the distributing bank, investor's self report trust (from 1 to 5) level at the time of purchase, a discrete variable which equals 3 if the salesperson is a personal friend of the investor, 2 if the investor is acquainted with the salesperson, and 1 if investor did not have previous interaction with the salesperson.

We also consider other factors such as market conditions and investment opportunities which intertemporal asset pricing models such as Merton (1973) suggest are important. Specifically, we consider Hong Kong Interbank Borrowing Rate (Hibor) for credit market condition and Hang Seng index trailing quarterly return for general equity market condition. These macroeconomic variables may also account for some of the effect of investor sentiment and information uncertainty.

Table II reports our baseline results on fundamental determinants of structured product allocation. In model 1, we include only product characteristics capturing the risk, return, and type of the security. We find that investors allocate more to structured prod-

ucts with more frequent coupon payments and wider range of reference entities. The latter finding is puzzling as products with wider range are riskier. It may seem surprising that investors' allocation does not depend on the premium. However, this is expected result in equilibrium of successful marketing strategy. The issuers will offer minimum return in order to fully capture consumer surplus. Overall, the low 0.025 adjusted R^2 indicate that overall investors pay little attention to product characteristics analyzed.

In model 2, we consider investor background. We proxy investor risk aversion by lottery purchase frequency. Other variables such as age, retirement status, income, wealth, home ownership, gender, marital status could also be related to risk aversion or background risk (susceptibility to liquidity shocks). We find that higher income earners and home owners are less likely to buy structured products. The economic significance is high for the home ownership status. Moreover, a group of investors cannot recall the details (purchase date and security type) of their investment. This group may be less careful but this variable is insignificant. In aggregate, investor background has more explanatory power than product characteristics with adjusted R^2 of 0.043.

In model 3, we analyze transaction environment. We find that investors trusting the distributor more and more familiar with the salespeople bought significantly less. Whether investors bought on the spot or reconsidered has no effect. Bank relationship is not important. Although a large group of investors bought from Bank of China, those investors did not allocate more in structured products. In model 4, we examine the effects of market condition or investment opportunity. We find credit market condition characterized by Hibor rate and equity market condition characterized by Hang Seng index 3-month trailing return are insignificant in explaining investment proportion.

In model 5, we combine the effects of product risk-return profile and investor preference. In the presence of investor background variables, rating range of the reference names become insignificant. In model 6, we consider all above variables. Furthermore, coupon paying frequency becomes insignificant. The adjusted R^2 in the regression of full set of explanatory variables is merely 0.069. In summary, our theorized variables explain little of the investment decisions.

5.2   Literacy and Investment Decision

Results from previous analysis suggest that investors seem to have defied allocation theories. Therefore, the investments in structured products may not represent investors best

desire. Then the follow-up question is, does financial literacy matter? In Table III, we use investor's stock market expectation to measure financial literacy. The premise is that financially literate investors should be able to form reasonable expectation about stock returns. We find that indeed, more financially literate investors purchased about 10% less structured products, controlling for other determinants. Alternatively, financially literate investors may invest in risky assets including stocks, we find similar supporting evidence in Table IV. It is worth pointing out that the effect from financial literacy drives out other effects except trust in distributing bank.

Literacy can be driven by two factors: calculation and comprehension. In Table V we find that both components are important individually. Moreover, they have substantially more explanatory power relative to other variables. Stand-alone adjusted R^2s are 4.5% for calculation and 9.7% for comprehension. However, counter-intuitively, comprehension rather than calculation seems to be relatively more important. Financial literacy is still significant after controlling calculation and comprehension. Hence, financial literacy may reach beyond conventional literacy measured by cognitive abilities. The importance of literacy, calculation, and comprehension is further demonstrated by the increased adjusted R^2 from 0.069 to 0.185. Additionally, investor income and home ownership become insignificant in the presence of literacy variables.

5.3   Effects of Education and IQ

If financial literacy has significant effect on investment performance, improving investor financial literacy through education programs seems to be a promising route to pursue. However, the result may not be encouraging if literacy is mostly determined by individual intelligence which cannot be materially affected by training. Ehrlich, Hamlen, and Yin (2008) use micro-level data to show that more educated households invest more in risky assets and obtain higher returns. Grinblatt, Keloharju, and Linnainmaa (2009b) show that IQ affects stock market performance. In this subsection, we separately explore these two potential drivers of literacy effects.

Table VI show that investors with high school or above education bought 11% to 14% less structured products. This negative relationship between education and structured product investment prevails when we measure education by number of schooling years. Furthermore, education effect is robust to controlling for literacy and its two components calculation and comprehension. However, marginal explanatory power of education

is limited as adjusted R^2 is little changed with the inclusion of education. Although education has a stand-alone adjusted R^2 of 0.06, its effects probably correlate with other variables.

Although education effect is strong, the casuality is unclear as smarter people tend to perform better in school and get more education opportunity. However, we do not have direct measure of IQ to put in as control variables. In order to examine the effect of IQ, we construct several indirect measures. First, if a person attended high school or college but still has limited reading skills, we presume such person has low IQ. However, we are aware of self-reporting accuracy issue. Hence, we also define people without much schooling but can read as high IQ. Additional measures with intermediate groups are also used. The specific classification is included in Table VII. From correlation matrix in Panel B of Table I, we see that our IQ proxy is highly correlated with comprehension (correlation coefficient 0.86).

The effect of IQ is report in Table VIII. We find very strong relationship between IQ and investment. High IQ investors purchase 16% to 24% less structured products. Furthermore, both education and IQ are significant jointly, after controlling for product characteristics, investor background, etc. However, the incremental R^2 is minimal. It is interesting to note that high IQ, well educated, and (relatively) financially literate investors still purchase structured products.

6 Robustness Checks and Interpretation

Our above results on financial literacy, education, and IQ could be driven by a specific group of investors or product. In this section, we explore whether those effects vary across different sample selection criterion. By doing so we can verify the robustness of our prior findings as well as explore new implications within subgroups.

6.1 CLN vs ELN

Credit-linked notes and equity-linked notes could be very different securities. Some may argue that CLNs investors are more conservative as CLNs resemble several features of bonds. ELNs investors are more likely experienced investors with prior stock investments. As we see from summary Table I, ELNs bear much higher premium than

CLNs. ELN investors are better educated with higher income. Hence, we separate CLNs investors from ELNs investors.

Table IX shows that there are indeed salient difference across CLNs and ELNs. Literacy effect is only significant for ELN investors. Male ELN investors bought 10% to 14% less CLNs. Older ELN investors bought less. These age, gender, and literacy effects only exist for ELNs investors. Notably, older ELN investors made less investments. Therefore, CLN investments are more likely to be "pulled" by the issuer rather than "pushed" by individual household investors. Note that education, IQ, and comprehension are still significant for both groups.

For the subsample of CLNs, the rating range (max-min rating) is no longer significant. Investors bought less high premium CLNs and shun away from CLNs with more reference entities, after controlling for other effects. Household hold more U.S. dollar denominated CLNs. If the investor bought under 'consideration', allocation proportion is about 7% higher. Hence, investors could use some simple measures to make investment decisions. However, the adjusted R^2 is still below 0.20. Note that the negative premium effect is highly consistent with issuer "pulling" effect.

6.2   Age and Wealth

We separate into different wealth groups and age groups. Vissing-Jorgensen (2003) discuss whether irrational behavior would disappear with wealth. Korniotis and Kumar (2009) examine the role of age in investment performance. Literacy, education, and IQ may play different role under different conditions. Indeed, as shown in Table X, we find that literacy, education, and IQ effects are stronger for the group of investors aged 50 and above. Those effects are insignificant for investors below 50. For the younger investors, currency and income are stronger.

According to Table XI, literacy is significant for the most wealth group but not for the highest earners. Education and IQ effects are significant for both wealthy and low income households. Among the high income group (income in 20,000 to 99,999), structured product investment proportion increase with lottery buying frequency. For income below 20,000 group, the income effect is positive and significant. The the most wealthy quartile, male investors bought 23% less. Wealthy investors put less in structured products when they bought through Bank of China Hong Kong.

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6.3 Determinants of Financial Literacy

In Table XII, we attempt to understand the driving factors of financial literacy. We find the calculation has a stand-alone pseudo R^2 of 0.147 with a very high z-score. Other significant determinants are retirement status, which is likely correlated with age, and home ownership. Lastly, trust in distributor is positively significantly related to financial literacy, consistent with existing studies that more literate people are more trusting. Note that our proposed explanatory variables for literary are reasonably well specified with pseudo R^2 as high as 0.33.

6.4 Heckman Selection Model with Control Sample

We realize that our sample may not be random. In order to control for selection bias, we use Heckman two-stage analysis. We include subjects who did not buy structured products in the first stage analysis to calculate the selection probability (Mills lambda), which is then included in the second stage analysis of investment in structured products. From Table XIII, we find that effects of literacy, comprehension, education, and IQ are robust to the selection bias.

It is interesting that in the selection model, less educated household with low lottery purchase frequency are more likely to be structured product investors. Female, low calculation capability, married investors are more likely to be structured products investors. Investors more familiar with salespeople are more likely to buy structured products. Homeowners are more likely to be investors. The selection model is reasonably well specified with pseudo R^2 of 0.469. However, some of the variables in the selection model have opposite effects in the analysis of investment proportion. For example, more trusting investors are more likely to be investors, but conditioning on investing, they put less in structured products. Similarly, households more familiar with salespeople are more likely to be approached but invest less. Homeowners are more likely to invest but invest less in proportion. The inverse Mills ratio from the selection model is highly significant with a negative sign. Therefore, selection effect is indeed at work. But our main findings are robust to sample selection.

7   Summary and Conclusion

Individual investors in Hong Kong, Taiwan, and Singapore bought substantial amount of structured products which turned out to be CDOs in disguise, as revealed by the Lehman Brother bankruptcy in September 2008. It is difficult to justify initial investment decisions in retail structured products from standard rational theories as those investors had little prior knowledge. We consider investment decisions under ambiguity but find mixed results. On one hand, more financially literate investors bought less structured products. On the other hand, product characteristics such as risk premium and risk, investor demographic background, and investor relationship with distributing banks have little explanatory power.

All our proposed explanatory variables can only explain up to 20% of the variations in investments. Our finding suggests that either investors made random buying decisions or the distributors mis-sold the products for commissions. Consistent with prior studies, our evidence suggests that improving investor financial literacy through education could be important for the future of financial innovations. However, more vigilant market monitoring by regulators may be equally important.

Our findings have important implications for the ongoing debate on root causes of the credit crisis in 2007-2009. If investors did not knowingly pursue investments in structured products, the investment banks manufacturing such products are more likely to be the culprit of the market development and the amplification of the crisis.

REFERENCES

Agarwal, Sumit, John C. Driscoll, Xavier Gabaix, and David Laibson, 2009, The age of reason: Financial decisions over the lifecycle, Working paper NBER.

Ameriks, John, Andrew Caplin, Steven Laufer, and Stijn Van Nieuwerburgh, 2009, The joy of giving or assisted living? Using strategic surveys to separate bequest and precautionary motives, Working paper, New York University.

Ashenfelter, Orley, and Alan Krueger, Estimates of the economic return to schooling from a new sample of twins, *American Economic Review* 84, 1157-1173.

Asparouhova, Elena, Peter Bossaerts, Jon Eguia, and Bill Zame, 2009, Cognitive biases, ambiguity aversion and asset pricing in financial markets, Working paper, New York University.

Barber, Brad M., and Terrance Odean, 2008, All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors, *Review of Financial Studies* 21, 785-818.

Barberis, Nicholas, and Ming Huang, 2008, Stocks as lotteries: The implications of probability weighting for security prices, *American Economic Review* 98, 2066-2100.

Barberis, Nicholas, and Richard Thaler, 2003, A survey of behavioral finance, in George Constantinides, Milton Harris, and Rene Stulz, eds.: *Handbook of the economics of finance* (North Holland).

Bergstresser, Daniel, 2008, The retail market for structured notes: Issuance patterns and performance, 1995-2008, Working paper, Harvard Business School.

Bernard, Carole, and Phelim Boyle, 2008, Locally-capped investment products and the retail investor, Working paper, University of Waterloo.

Bernheim, B.Douglas, Daniel M. Garrett, 2003, The Effects of Financial Education in the Workplace: Evidence from a Survey of Households, *Journal of Public Economics* 87, 1487-1519.

Bernheim, B.Douglas, 1998, Financial illiteracy, education and retirement saving, in O.Mitchell and S. Schieber, ed.: *Living with defined contribution pensions* (University of Pennsylvania Press, Philadelphia).

Bertrand, Marianne, Erzo F.P. Luttmer, and Sendhil Mullainathan, 2000, Network effects and welfare cultures, *Quarterly Journal of Economics* 115, 1019-1055.

Borghans, Lex, Bart H. H. Golsteyn, James J. Heckman, and Huub Meijers, 2009, Gender differences in risk aversion and ambiguity aversion, *Journal of the European Economic Association* 7, 649-658.

Boyle, Phelim, Lorenzo Garlappi, Raman Uppal, and Tan Wang, 2009, Keynes meets Markowitz: the tradeoff between familiarity and diversification, Working paper London Business School.

Brunnermeier, Markus K., 2009, Deciphering the liquidity and credit crunch 2007-08, Working Paper Princeton University.

Caballero Ricardo J. and Arvind Krishnamurthy, 2009, Global imbalances and financial fragility, *American Economic Review* 99, 584-588.

Calvet, Laurent E., John Y. Campbell, and Paolo Sodini, 2007, Down or out: Assessing the welfare costs of household investment mistakes, *Journal of Political Economy* 115, 1553-1604.

Calvet, Laurent E., John Y. Campbell, and Paolo Sodini, 2009, Measuring the financial sophistication of households, Working paper NBER

Campbell, John Y., 2006, Household finance, *Journal of Finance* 61, 1553-1604.

Carlin, Bruce Ian, Florin Dorobantu, and S. Viswanathan, 2009, Public trust, the law, and financial investment, *Journal of Financial Economics* 92, 321-341.

Carlin, Bruce Ian, and Gustavo Manso, 2009, Obfuscation, learning, and the evolution of investor sophistication, Working Paper NBER.

Charness, Gary B., and Dan Levin, 2005, When Optimal Choices Feel Wrong: A Laboratory Study of Bayesian Updating, Complexity, and Affect, *American Economic Review* 95, 1300–1309.

Choi, James J., David Leibson, Brigitte C. Madrian, and Andrew Metrick, 2009, Reinforcement learning and saving behavior,*Journal of Finance* Forthcoming.

Christelis, Dimitris, Tullio Jappelli, and Mario Padula, 2008, Cognitive abilities and portfolio choice, *mimeo, University of Salerno*.

Coval, Joshua D., and Tyler Shumway, 2005, Do behavioral biases affect prices?, *Journal of Finance* 60, 1-34.

Coval, Joshua D., Jakub Jurek, and Erik Stafford, 2009, The economics of structured finance, *Journal of Economic Perspectives* 23, 3-25.

Curcuru, Stephanie, John Heaton, Deborah Lucas, and Damien Moore, 2005, Heterogeneity and portfolio choice: Theory and evidence. in Yacine Ait-Sahalia, and Lars Peter Hansen, eds.: *Handbook of financial econometrics* (North-Holland).

Das, Sanjiv R., and Meir Statman, 2009, Beyond mean-variance: Portfolios with structured products and Non-Guussian returns, Working paper, Santa Clara University.

Demarzo, Peter M., Ron Kaniel, and Ilan Kremer, 2004, Diversification as a public good: Community effects in portfolio choice, *Journal of Finance* 59, 1677-1715.

DeMiguel, Victor, Lorenzo Garlappi, and Raman Uppal, 2009, Optimal versus naive diversification: How inefficient is the 1/N portfolio strategy? *Review of Financial Studies* 22, 1915–1953.

Dhar, Ravi, and William N. Goetzmann, 2006, Bubble investors: What were they thinking?, Working paper, Yale University.

Dohmen, Thomas, Armin Falk, and Uwe Sunde, 2009, Are risk aversion and impatience related to cognitive ability?, *American Economic Review* forthcoming.

Dow, James, and Sergio Ribeiro da Costa Werlang, 1992, Uncertainty aversion, risk aversion, and the optimal choice of portfolio, *Econometrica* 60, 197-204.

Duflo, Esther, and Emmanuel Saez, 2002, Participation and investment decisions in a retirement plan: The influence of colleagues' choices, *Journal of Public Economics* 85, 121-148.

Easley, David, and Maureen O'Hara, 2009, Ambiguity and nonparticipation: The role of regulation, *Review of Financial Studies* 22, 1817-1843.

Ehrlich, Isaac, William A. Hamlen Jr., and Yong Yin, 2008, Asset management, human capital, and the market for risky assets, *Journal of Human Capital* 2, 217–261.

Fox, Graig R., and Amos Tversky, 1995, Ambiguity aversion and comparative ignorance, *Quarterly Journal of Economics* 110, 585-603.

Gomes, Francisco, and Alexander Michaelides, 2005, Optimal life-cycle asset allocation: Understanding the empirical evidence, *Journal of Finance* 60, 869-904.

Graham, John R., Campbell R. Harvey, and Hai Huang, 2005, Investor competence, trading frequency, and home bias, Working paper, NBER.

Grinblatt, Mark, and Matti Keloharju, 2000, The investment behavior and performance of various investor types: A study of Finland's unique data set, *Journal of Financial Economics* 55, 43-67.

Grinblatt, Mark, Matti Keloharju, and Juhani Linnainmaa, 2009a, IQ and stock market participation, Working paper, University of California, Los Angeles.

Grinblatt, Mark, Matti Keloharju, and Juhani Linnainmaa, 2009b, Do smart investors outperform dumb investors?, Working paper, University of California, Los Angeles.

Guiso, Luigi, and Tullio Jappelli, 2005, Awareness and stock market participation, *Review of Finance* 9, 537-567.

Guiso, Luigi, and Tullio Jappelli, 2009, Financial literacy and portfolio diversification Working paper, EUI.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2008, Trusting the stock market, *Journal of Finance* 63, 2557-2600.

Hastings, Justine, and Lydia Tejeda-Ashton, 2008, Financial literacy, information, and demand elasticity: Survey and experimental evidence from mexico, Working Paper NBER.

Heckman, James J., 2008, Schools, skills, and synapses, *Economic Inquiry* 46, 289-324.

Henderson, Brian J., and Neil D. Pearson, 2009, The dark side of financial innovation, Working paper, University of Illinois at Urbana-Champaign.

Hens, Thorsten, and Marc Oliver Rieger, 2009, The dark side of the moon: Structured products from the customer's perspective, Working paper, University of Zurich.

Hilgert, Marianne, Jeanne Hogarth, and Sondra Beverly, 2003, Household financial management: The connection between knowledge and behavior, *Federal Reserve Bulletin*, 309-32.

Hong, Harrison, Jeffrey D. Kubik, and Jeremy C. Stein, 2004, Social interaction and stock-market participation, *Journal of Finance* 59, 137-163.

Hong, Harrison, Jeffrey D. Kubik, and Jeremy C. Stein, 2005, Thy neighbor's portfolio: Word-of-mouth effects in the holdings and trades of money managers, *Journal of Finance* 60, 2801-2824.

Jessen, Pernille, and Peter Lochet Jorgensen, 2008, Optimal investment in structured bonds, Working paper.

Kedia, Simi, and Shiva Rajgopal, 2009, Neighborhood matters: The impact of location on broad based stock option plans, *Journal of Financial economics* 92, 109-127.

Korniotis, George M., and Alok Kumar, 2009, Do behavioral biases adversely affect the macro-economy?, Working paper, University of Texas, Austin.

Korniotis, George M., and Alok Kumar, 2009, Do older investors make better investment decisions, *Review of Economics and Statistics, Forthcoming.*

Korniotis, George M., and Alok Kumar, 2009, Superior information or a psychological bias? A unified framework with cognitive abilities resolves three puzzles, Working paper, University of Texas, Austin.

Kumar, Alok, 2009, Who gambles in the stock market? *Journal of Finance* 64, 1889–1933.

List, John. A., 2003, Does market experience eliminate market anomalies?, *Quarterly Journal of Economics* 118, 41-71.

Lusardi, Annamaria, and Olivia S. Mitchell, 2006, Financial literacy and planning: Implications for retirement wellbeing, Working paper MRRC.

Lusardi, Annamaria, and Olivia S. Mitchell, 2007, Baby boomer retirement security: The role of planning, financial literacy, and housing wealth, *Journal of Monetary Economics* 54, 205-224.

Lusardi, Annamaria, and Peter Tufano, 2009, Debt literacy, financial experiences, and overindebtedness, Working paper, NBER.

Mandell, Lewis, 2008, Financial education in high school, in Annamaria Lusardi, ed.: *Overcoming the saving slump: How to increase the effectiveness of financial education saving programs* (University of Chicago Press, Chicago).

Mcdonald, Robert, and Daniel Siegel, 1986, The value of waiting to invest, *Quarterly Journal of Economics* 101, 707-727.

Mian, Atif, and Amir Sufi, 2009, Household leverage and the recession of 2007 to 2009, Working paper, University of Chicago Booth School of Business.

Milgrom, Paul, 2008, What the seller won't tell you: Persuasion and disclosure in markets, Journal of Economic Perspectives 115–131.

Mulligan, Casey B., and Francesc X. Sala-i-Martin, 2000, Extensive margins and the demand for money at low interest rates, *Journal of Political Economy* 108.

Pastor, Lubos, and Veronesi Pietro, 2009, Learning in financial markets, Working paper, University of Chicago.

Perry, Vanessa, and Marlene Morris, 2005, Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior, *Journal of Consumer Affairs* 39, 299-313.

Rahi, Rohit, and jean-Pierre Zigrand, 2008, Strategic financial innovation in segmented markets, *Review of Financial Studies* 22, 2941–2971.

Stango, Victor, and Jonathan Zinman, (forthcoming), Exponential growth bias and household finance, *Journal of Finance*

Stein, Jeremy, 2009, Presidential Address: Sophisticated investors and market efficiency, *Journal of Finance* 64, 1517–1548.

Stoimenov, Pavel A., and Sascha Wilkens, 2005, Are structured products fairly priced? An analysis of the German market for equity-linked instruments, *Journal of Banking & Finance* 29, 2971–2993.

Subrahmanyam, Avanidhar, 2007, Behavioral finance: A review and synthesis, *European Financial Management* 14, 12-29.

Subrahmanyam, Avanidhar, 2009a, Optimal financial education, *Review of Financial Economics* 18, 1-9.

Subrahmanyam, Avanidhar, 2009b, Optimal financial naivete, Working paper, University of California at Los Angeles.

Tanaka, Tomoni, Colin F. Camerer, and Quang Nguyen, 2009, Risk and time preferences: Linking experimental and household survey data from vietnam, *American Economic Review* forthcoming.

Tian, Weidong, and Hong Yan, 2009, Heterogeneous beliefs, imitation, and the vulnerability of financial innovation Working paper, University of North Carolina at Charlotte.

Tirole, Jean, 2009, Cognition and incomplete contracts, *American Economic Review* 99, 265-294.

Van, Rooij, Maarten, Annamaria Lusardi, and Rob Alessie, 2007, Financial literacy and stock market participation, Working paper MRRC.

Vissing-Jorgensen, Annette, 2003, Perspectives on behavioral finance: Does 'irrationality' disappear with wealth? Evidence from expectations and actions, NBER Macroeconomics Annual 2003.

Wilkens, Sascha, and Pavel A. Stoimenov, 2007, The pricing of leverage products: An empirical investigation of the German market for 'long' and 'short' stock index certificates, *Journal of Banking & Finance* 31, 735–750.

Minibond Series 35 (Issued January 2008)
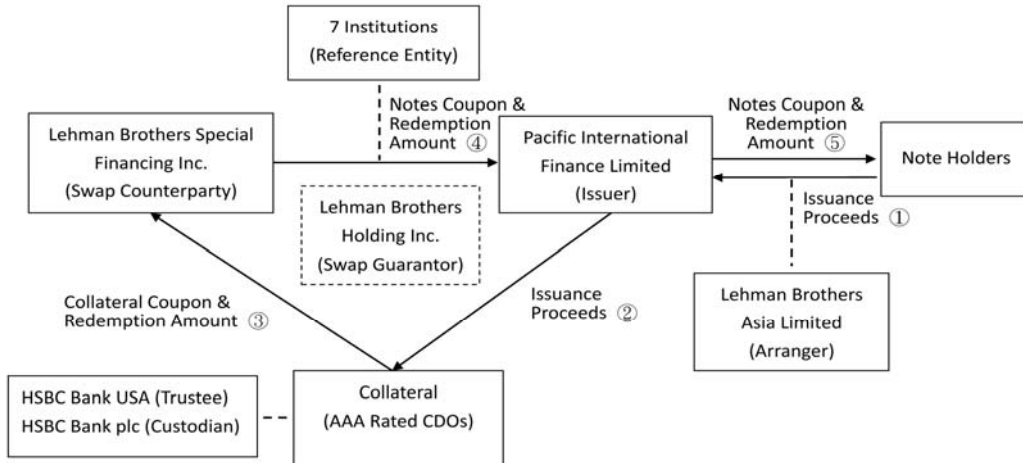
Pyxis Equity-Linked Notes Series 21 (Issued May 2007)
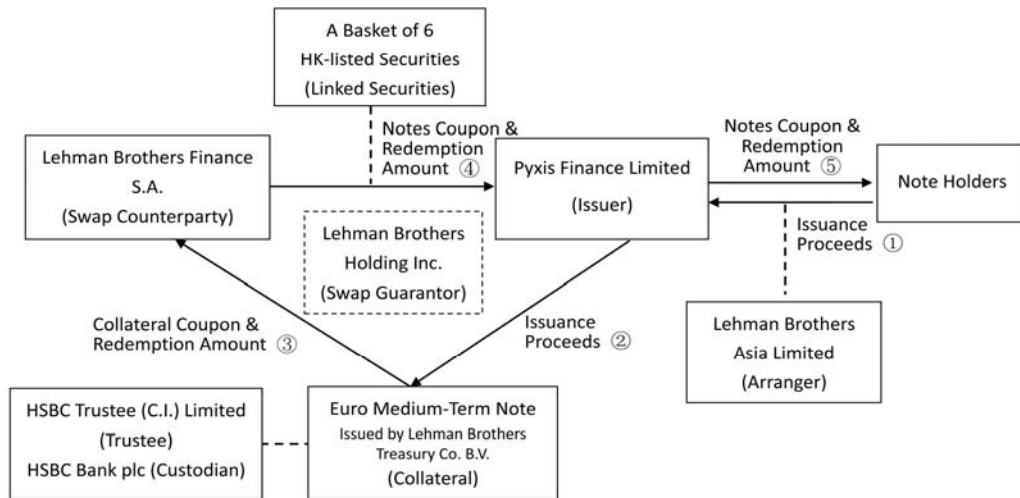
Figure 1. Structure of Credit-Linked Notes and Equity-Linked Notes. The first figure shows the structure of Credit-Linked Notes by taking Minibond Series 35 as an example. The 7 institutions been taken as reference entity of Minibond Seri 35 are: HSBC Bank PLC (Aa2/AA-), Hutchison Whampoa Limited (A3/A-), MTR Corporation Limited (Aa2/AA), the People's Republic of China (PRC) (A1/A), Standard Chartered Bank (A3/A), Sun Hung Kai Properties Limited (A1/A) and Swire Pacific Limited (A3/A-). The credit ratings shown next to each reference entity are those applicable to the reference obligation as at 11 January 2008--shortly before the minibond is issued, as published by Moody's Investors Service and/or Standard & Poor's. The second figure shows the structure of Equity-Linked Notes (ELN) by taking Pyxis ELN Series 21 as an example. The 6 HK-listed securities are: Air China Limited, China Communications Construction Company Limited, China Mobile Limited, Esprit Holdings Limited, Li & Fung Limited, and Ping An Insurance (Group) Company of China, Ltd.
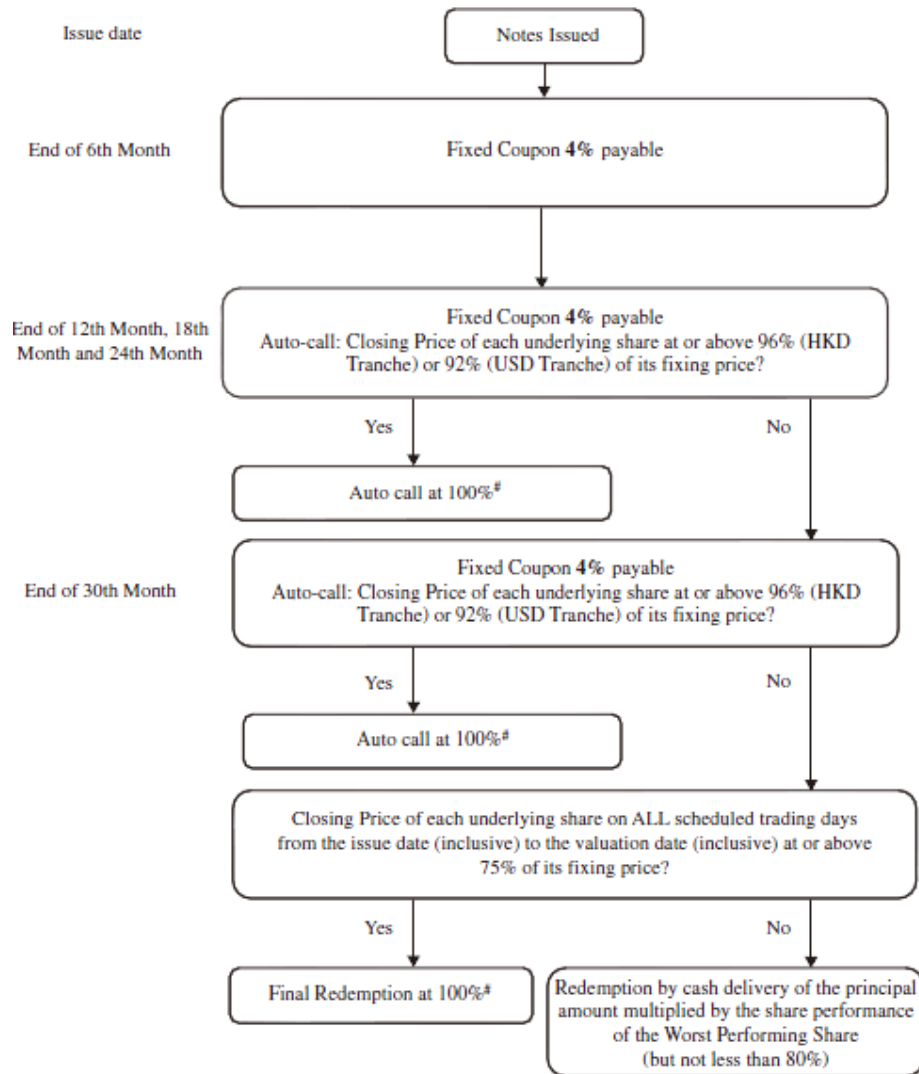
Figure 2. Payoff Structure of Equity-Linked Notes if No Early Termination Occurs. This figure shows the payoff structure of Equity-Linked Notes by taking Pyxis Series 21 issued on 28 May 2007 as an example. This figure is taken directly from the prospectus of Pyxis Series 21. The investment horizon for the note is 2.5 years. Coupon will be paid every half a year after issuance at the observation dates. There are four auto-calls by the issuer on each of the second to the fifth observation dates. Valuation date is equal to the fifth observation date—about 2.5 years after issue date. When the swap between issuer and swap counterparty is terminated prior to maturity date, the note will be redeemed at a price based on the proceeds of selling the underlying collateral, which may be significantly below the principal of the note. For Pyxis Series 21, the underlying collateral is European Medium-Term Notes issued by Lehman Brothers Treasury Co. B.V.
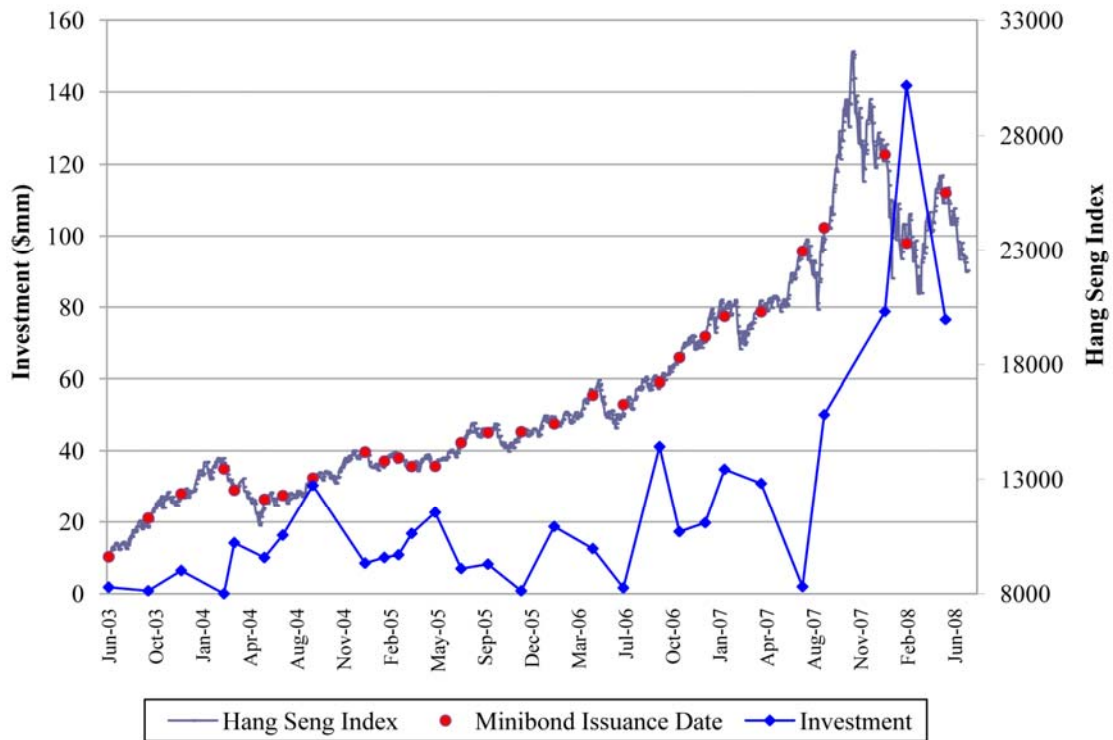
Figure 3. Market Performance and Minibond Investment. This figure shows the relation of total investment in each series of Minibond in our sample and Hang Seng Index. The time line starts from July 2, 2003 to June 30, 2008. There are 637 observations of Minibond investors. Those who purchased multiple series have been counted multiple times. The red circle spots on the HSI line illustrate the date when each series of Minibond were issued.
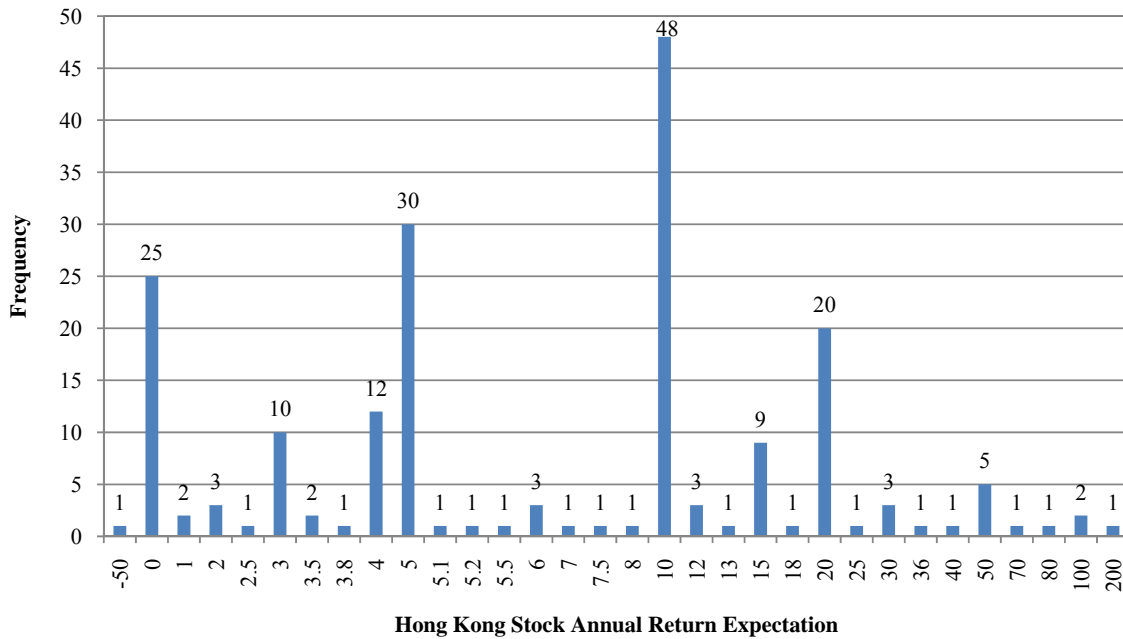
Figure 4. Distribution of Expectation to Stock Annual Return. This figure shows the distribution of investors' expectation to Hong Kong stock market annual return. We surveyed 783 investors, who have purchased Credit-linked notes or/and Equity-linked notes from February 2003 to May 2008 in Hong Kong, and randomly picked 353 of them to give expectation to Hong Kong stock market annual return. 194 investors responded as a percentage; the other 159 investors claimed that they cannot answer this question. We further constructed two dummy variables, "Literate Proxy1" and "Literate Proxy2", as proxies for been financially "Literate". "Literate Proxy1" equals 1 if the investor's expectation to Hong Kong stock market annual return lies between 7% and 17%; "Literate Proxy2" equals 1 if the investor's expectation to Hong Kong stock market annual return lies between 5.1% and 50%.

Panel A
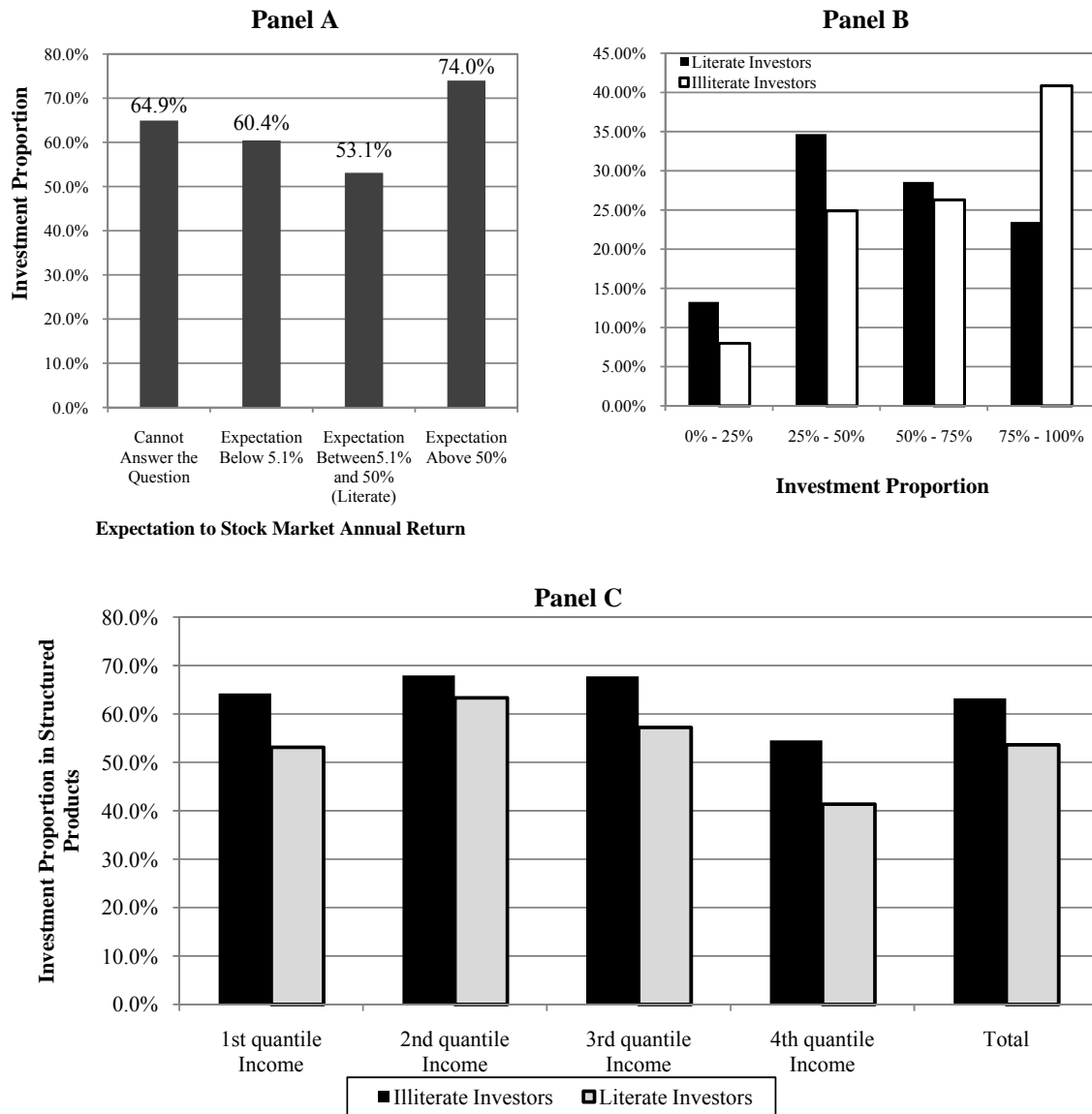
Panel B

Panel C

Figure 5. Financial Literacy and Investment Proportion. Panel A shows the average investment proportion of investors in 4 groups separated by their expectation to Hong Kong stock market annual return. The four groups are: 1. cannot answer the question; 2. expectation to stock annual return below 5.1%; 3. expectation to stock annual return between 5.1% and 50%; 4. expectation to stock annual return above 50%. Panel B compares the composition of literate investors in four investment proportion groups and composition of illiterate investors in four investment proportion groups. Investor is regarded as financially "Literate" if his/her expectation to Hong Kong stock market annual return lies between 5.1% and 50%. The sample size of both Panel A and Panel B is 311. Panel C categorizes literate investors and illiterate investors by their household income level, and compares their investment proportion in structured products in each group. There are in all 312 observations in this sample. The factor of income ranges from 0 HKD to 125,000HKD.

Table I
Sample Descriptive Statistics

Panel A reports the summary statistics of nearly all the variables we used in the analysis from our survey sample. The data were collected by questionnaire survey on Hong Kong investors who purchased credit-linked note or/and equity-linked note from February 2003 to May 2008. We conducted the survey from February 22 to June 18, 2009, and obtained 783 observations in our sample. The variables of stock annual return, monthly income, own house, familiar with sales, calculation are added after March 15, 2009. We categorize the investors by the product type they mainly purchased: Minibond, Constellation, and Equity-linked Notes (ELN). All capital is measured in Hong Kong dollars. Panel B reports correlations matrix of all the key variables used in our analysis. "Education" refers to the year of education. "Trust" means the investor's trust in distributing banks. "IQ proxy" means the Four Element IQ Proxy, which is defined in Table VII. A detailed instruction of the variable definitions is provided in Appendix I.

Panel A: Sample Summary Statistics by Type of Invested Products								
Variables	Minibond		Constellation		ELN		Total	
	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs
Investment Outcome:								
Investment Proportion	0.60	420	0.56	73	0.60	126	0.59	693
Investment($mm)	0.91	456	0.67	80	1.74	144	1.04	767
Investment Characteristics:								
Literate Proxy (Expected Stock return 7%-17%)	0.16	231	0.24	33	0.17	30	0.18	353
Literate Proxy (Expected Stock return 5.1%-50%)	0.28	231	0.39	33	0.27	30	0.29	353
Buy Lottery	0.29	435	0.39	75	0.29	137	0.31	727
Risk Premium of Product	3.81	464	3.00	80	9.83	146	4.98	783
Reconsider	0.16	442	0.05	77	0.11	129	0.14	732
10 Year Relationship with Bank	0.57	456	0.46	76	0.41	140	0.53	757
Trust in Distributing Banks	4.81	228	4.87	31	4.93	28	4.81	339
Familiar with salesman	0.67	225	0.56	32	0.38	26	0.62	335
Buy from Bank of China	0.42	464	0.38	80	0.09	146	0.34	783
Financial Characteristics:								
Wealth($mm)	1.80	417	1.95	73	4.76	125	2.36	688
Monthly Income($10,000)	1.61	203	1.39	33	2.52	25	1.77	312
Own House	0.81	196	0.81	32	0.92	24	0.82	303
Saving Proportion	0.67	344	0.59	57	0.72	94	0.68	566
Stock Proportion	0.14	344	0.28	57	0.13	94	0.15	566
Buy Stock	0.39	344	0.60	57	0.46	94	0.40	566
Buy Risky Assets	0.39	464	0.49	80	0.35	146	0.38	783
Demographic Characteristics:								
Age	56.04	459	53.51	78	54.42	145	55.53	773
Male	0.38	432	0.33	69	0.33	114	0.37	700
Retired	0.77	457	0.85	75	0.71	140	0.76	762
Married	0.83	432	0.77	65	0.85	143	0.83	725
Years of Education	9.66	451	9.97	79	11.52	142	10.14	761
Some/finished College	0.11	451	0.10	79	0.26	142	0.15	761
Some/finished High School	0.54	451	0.59	79	0.75	142	0.59	761
Comprehension	0.61	454	0.72	78	0.73	142	0.65	764
Calculation	0.31	227	0.33	33	0.38	29	0.34	348
Number of Observations	-	464	-	80	-	146	-	783

Table I-_Continue_

Panel B: Correlation Matrix

No	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1	InvestProp	1.00																					
2	Literate1	-0.15	1.00																				
3	Literate2	-0.18	0.74	1.00																			
4	BuyStock	-0.26	0.13	0.22	1.00																		
5	BuyRisky	-0.30	0.14	0.20	0.77	1.00																	
6	Calculation	-0.18	0.22	0.27	0.08	0.20	1.00																
7	Comprehension	-0.26	0.04	0.01	0.19	0.20	0.19	1.00															
8	IQProxy	-0.13	0.05	-0.01	0.12	0.11	0.11	0.86	1.00														
9	Education	-0.35	0.04	0.11	0.20	0.23	0.26	0.60	0.15	1.00													
10	Age	-0.02	-0.04	0.01	-0.04	0.00	0.00	-0.17	-0.08	-0.18	1.00												
11	Male	-0.09	0.06	0.08	0.08	0.12	0.08	0.03	0.01	0.06	0.21	1.00											
12	Retired	0.01	0.06	0.11	-0.08	-0.06	-0.06	-0.22	-0.15	-0.20	0.39	-0.04	1.00										
13	Married	-0.03	-0.02	0.05	-0.02	0.02	0.03	-0.04	-0.03	-0.03	0.00	0.07	-0.01	1.00									
14	Income	-0.20	0.03	0.02	0.05	0.10	0.17	0.19	0.07	0.29	-0.05	0.08	-0.24	0.10	1.00								
15	Wealth	-0.09	-0.00	-0.00	0.07	0.09	0.09	0.05	0.01	0.10	-0.06	0.06	-0.07	0.03	0.51	1.00							
16	Own House	-0.15	0.03	0.09	0.14	0.19	0.14	0.15	0.04	0.22	0.10	0.06	0.10	0.05	0.16	0.13	1.00						
17	BuyLottery	-0.02	-0.02	-0.02	0.00	0.04	0.07	0.04	0.02	0.02	-0.02	0.15	0.01	-0.02	0.12	-0.01	0.08	1.00					
18	RiskPremium	-0.01	-0.03	-0.07	0.04	-0.03	0.01	0.06	-0.01	0.16	-0.07	-0.02	-0.07	0.02	0.16	0.09	0.07	-0.01	1.00				
19	Reconsider	0.01	-0.02	-0.05	-0.00	0.06	-0.00	0.05	0.01	0.08	-0.11	0.02	-0.12	0.04	-0.02	-0.01	0.04	-0.04	-0.01	1.00			
20	10yrRelation	0.01	-0.08	-0.01	-0.02	0.03	-0.11	-0.06	-0.04	-0.05	0.09	0.01	0.02	-0.00	-0.11	-0.04	0.02	0.00	-0.11	-0.04	1.00		
21	Trust	-0.11	-0.04	0.00	0.08	0.05	-0.04	0.01	-0.06	0.11	-0.01	0.02	0.05	-0.07	-0.06	0.04	0.00	-0.11	0.06	-0.03	0.16	1.00	
22	SalesFamiliar	-0.10	-0.11	-0.05	0.08	0.04	-0.01	-0.07	-0.05	-0.09	0.08	-0.09	0.12	-0.02	0.06	0.14	0.10	-0.07	-0.09	0.00	0.26	0.07	1.00

Table II
Economic Determinants of Investment Decision

This table shows the effects of the traditional and behavioral economic factors on investor's decision on how much proportion of wealth to be invested in structured products. "Premium" is the risk premium of the purchased security. "Max Rating" is the maximal credit rating of reference obligation, with 9 given to AAA and 1 given to BBB. "#Reference Entity" is the number of reference entity. Coupon Freq. is the frequency of coupon payment, with 1/12, 1/4, 1/2 represents monthly, quarterly and semi-annually, respectively. "Currency" is a dummy variable with 1 given to U.S. dollar and 0 given to Hong Kong dollar. "Cannot Recall" is a dummy variable with 1 given to the investors who cannot recall either the name of the security or the date when she/he purchased the security. "10 year Relation with Bank" is a dummy variable with 1 given to investors who have relation with structured product distributing banks for 10 years or more. T statistics are in parentheses, *, ** and *** represent that $p<0.1$, $p<0.05$ and $p<0.01$, respectively.

Table II - *Continued*

Independent	Dependent Variable = Investment Proportion					
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Product Characteristics						
Premium	-0.019				-0.014	-0.013
	(-1.06)				(-0.78)	(-0.67)
Max Rating	-0.006				0.002	-0.008
	(-0.22)				(0.08)	(-0.25)
Max-Min Rating	0.039*				0.033	0.029
	(1.71)				(1.45)	(1.24)
Maturity(years)	-0.031				-0.025	-0.016
	(-1.22)				(-0.95)	(-0.61)
#Reference Entity	-0.028				-0.022	-0.014
	(-1.19)				(-0.96)	(-0.53)
Coupon Freq.	0.436*				0.488*	0.438
	(1.69)				(1.89)	(1.58)
Currency	0.047				0.036	0.049
	(1.50)				(1.16)	(1.56)
ELN Dummy	-0.083				-0.038	-0.054
	(-0.63)				(-0.29)	(-0.38)
Investor Background						
Buy Lottery		0.022			0.037	0.019
		(0.56)			(0.90)	(0.44)
Age		-0.000			-0.000	-0.000
		(-0.18)			(-0.10)	(-0.05)
Retired		-0.024			-0.023	-0.009
		(-0.54)			(-0.51)	(-0.21)
Income		-0.023**			-0.027***	-0.026**
		(-2.30)			(-2.70)	(-2.52)
Own House		-0.096**			-0.093**	-0.087*
		(-2.12)			(-2.03)	(-1.79)
Male		-0.054			-0.057	-0.065
		(-1.42)			(-1.46)	(-1.59)
Married		-0.029			0.011	-0.028
		(-0.53)			(0.19)	(-0.46)
Cannot Recall		-0.113			-0.036	-0.016
		(-0.98)			(-0.29)	(-0.10)
Transaction Environment						
Reconsider			0.008			0.012
			(0.16)			(0.25)
10 year Relation with Bank			0.046			0.034
			(1.20)			(0.85)
Trust in Distributor			-0.074**			-0.092**
			(-1.99)			(-2.44)
Familiar with Sales			-0.075**			-0.068*
			(-1.99)			(-1.73)
Bank of China			-0.019			-0.044
			(-0.55)			(-1.19)
Market Condition						
HIBOR				-0.015		-0.003
				(-1.11)		(-0.17)
HSI Quarterly Return				-0.001		-0.002
				(-0.72)		(-1.03)
Constant	0.774***	0.798***	0.986***	0.647***	0.792***	1.289***
#Obs.	250	247	244	252	245	237
Adj. R²	0.025	0.043	0.014	0.002	0.066	0.069

Table III
Financial Literacy and Investment Decision

This table reports the effects of financial literacy on investment decision making. We construct two dummy variables as proxies for the investors been financially "Literate". In the regressions at the left side, "Literate" equals 1 if investor's expectation to Hong Kong stock annual return lies between 7% and 17%. In the regressions at the right side, "Literate" equals 1 if investor's expectation to Hong Kong stock annual return lies between 5.1% and 50%. In column 4 and 8, we restrict the sample for only stock market non-participants.

Table III - *Continued*

Independent Variables	Dependent Variable = Investment Proportion							
	Literate=1 if Stock Expectation ∈ [7% , 17%]				Literate=1 if Stock Expectation ∈ [5.1% , 50%]			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Literate	-0.102**	-0.062	-0.090**	-0.153**	-0.118***	-0.084**	-0.097**	-0.126**
	(-2.47)	(-1.48)	(-2.04)	(-2.47)	(-3.29)	(-2.30)	(-2.56)	(-2.29)
Premium		-0.012	-0.010	-0.010		-0.013	-0.011	-0.012
		(-0.69)	(-0.56)	(-0.37)		(-0.73)	(-0.57)	(-0.44)
Max Rating		0.001	-0.008	-0.075		0.002	-0.004	-0.069
		(0.03)	(-0.26)	(-1.64)		(0.06)	(-0.12)	(-1.51)
Max-Min Rating		0.031	0.025	0.034		0.029	0.025	0.037
		(1.37)	(1.09)	(0.95)		(1.31)	(1.08)	(1.03)
Maturity(years)		-0.023	-0.013	-0.048		-0.023	-0.013	-0.052
		(-0.91)	(-0.50)	(-1.16)		(-0.88)	(-0.49)	(-1.25)
#Reference Entity		-0.019	-0.010	0.006		-0.017	-0.011	-0.004
		(-0.82)	(-0.39)	(0.15)		(-0.73)	(-0.42)	(-0.09)
Coupon Freq.		0.493*	0.426	0.548		0.502*	0.415	0.536
		(1.92)	(1.54)	(1.35)		(1.97)	(1.51)	(1.31)
Currency		0.031	0.044	0.045		0.036	0.051	0.063*
		(1.01)	(1.40)	(1.25)		(1.16)	(1.63)	(1.75)
ELN Dummy		-0.038	-0.054	-0.122		-0.027	-0.043	-0.148
		(-0.29)	(-0.38)	(-0.58)		(-0.21)	(-0.30)	(-0.70)
Buy Lottery		0.035	0.014	0.025		0.036	0.013	0.026
		(0.86)	(0.34)	(0.42)		(0.88)	(0.30)	(0.44)
Age		-0.000	-0.000	-0.004		-0.000	-0.000	-0.004
		(-0.23)	(-0.23)	(-1.30)		(-0.19)	(-0.20)	(-1.35)
Retired		-0.015	0.004	0.029		-0.011	0.007	0.025
		(-0.34)	(0.09)	(0.48)		(-0.25)	(0.16)	(0.43)
Income		-0.025**	-0.023**	-0.020		-0.026***	-0.024**	-0.023
		(-2.51)	(-2.22)	(-1.39)		(-2.62)	(-2.40)	(-1.63)
Own House		-0.094**	-0.087*	-0.049		-0.089*	-0.077	-0.042
		(-2.05)	(-1.81)	(-0.76)		(-1.96)	(-1.62)	(-0.65)
Male		-0.051	-0.058	-0.017		-0.051	-0.056	-0.020
		(-1.31)	(-1.42)	(-0.29)		(-1.31)	(-1.38)	(-0.33)
Married		0.007	-0.038	0.008		0.017	-0.026	0.021
		(0.12)	(-0.63)	(0.10)		(0.30)	(-0.43)	(0.26)
Cannot Recall		-0.048	-0.056	-0.137		-0.058	-0.062	-0.117
		(-0.38)	(-0.34)	(-0.62)		(-0.45)	(-0.38)	(-0.53)
Consideration			0.012	0.044			0.004	0.041
			(0.25)	(0.68)			(0.09)	(0.62)
10 year Relation with Bank			0.032	0.038			0.036	0.039
			(0.79)	(0.71)			(0.91)	(0.72)
Trust in Distributor			-0.099***	-0.135**			-0.098***	-0.132**
			(-2.62)	(-2.54)			(-2.61)	(-2.49)
Familiar with Sales			-0.081**	-0.082			-0.079**	-0.072
			(-2.06)	(-1.52)			(-2.04)	(-1.33)
Bank of China			-0.049	-0.061			-0.051	-0.076
			(-1.33)	(-1.21)			(-1.40)	(-1.49)
HIBOR			-0.004	-0.012			-0.004	-0.011
			(-0.21)	(-0.52)			(-0.20)	(-0.47)
HSI Quarterly Return			-0.001	-0.001			-0.001	-0.000
			(-0.86)	(-0.36)			(-0.60)	(-0.17)
Constant	0.626***	0.794***	1.338***	1.947***	0.644***	0.769***	1.308***	1.994***
#Obs.	252	245	237	135	252	245	237	135
Adj. R²	0.020	0.071	0.082	0.078	0.038	0.083	0.092	0.071

Table IV
Alternative Measures of Financial Literacy

This table reports the effects of the alternative proxies for financial literacy on investment decision making. In the regressions at the left side, "Literate" equals 1 if the investor buys risky assets (stock, bond, mutual fund). In the regressions at the right side, "Literate" equals 1 if the investor buys stock.

Independent Variables	Dependent Variable = Investment Proportion					
	Literate =1 if Investor Buy Risky Asset			Literate =1 if Investor Buy Stock		
	(1)	(2)	(3)	(4)	(5)	(6)
Literate	-0.107***	-0.073**	-0.060	-0.105***	-0.079**	-0.075*
	(-3.09)	(-2.03)	(-1.61)	(-2.84)	(-2.07)	(-1.90)
Premium		-0.015	-0.015		-0.014	-0.015
		(-0.83)	(-0.80)		(-0.80)	(-0.81)
Max Rating		0.003	-0.008		0.002	-0.009
		(0.11)	(-0.25)		(0.09)	(-0.29)
Max-Min Rating		0.033	0.030		0.032	0.029
		(1.48)	(1.30)		(1.41)	(1.27)
Maturity(years)		-0.022	-0.014		-0.024	-0.017
		(-0.85)	(-0.53)		(-0.95)	(-0.63)
#Reference Entity		-0.025	-0.019		-0.026	-0.020
		(-1.08)	(-0.71)		(-1.10)	(-0.78)
Coupon Freq.		0.447*	0.410		0.461*	0.421
		(1.74)	(1.48)		(1.80)	(1.52)
Currency		0.039	0.051		0.037	0.051
		(1.25)	(1.62)		(1.21)	(1.61)
ELN Dummy		-0.038	-0.060		-0.050	-0.080
		(-0.29)	(-0.42)		(-0.38)	(-0.56)
Buy Lottery		0.032	0.016		0.030	0.013
		(0.79)	(0.37)		(0.73)	(0.30)
Age		-0.000	-0.000		-0.000	-0.000
		(-0.13)	(-0.06)		(-0.04)	(-0.02)
Retired		-0.014	-0.003		-0.020	-0.007
		(-0.32)	(-0.07)		(-0.45)	(-0.16)
Income		-0.025**	-0.024**		-0.027***	-0.025**
		(-2.56)	(-2.34)		(-2.72)	(-2.47)
Own House		-0.076	-0.071		-0.080*	-0.072
		(-1.65)	(-1.46)		(-1.73)	(-1.47)
Male		-0.041	-0.050		-0.045	-0.051
		(-1.04)	(-1.21)		(-1.14)	(-1.24)
Married		0.017	-0.020		0.013	-0.025
		(0.30)	(-0.32)		(0.22)	(-0.41)
Cannot Recall		-0.035	-0.018		-0.033	-0.023
		(-0.28)	(-0.11)		(-0.26)	(-0.14)
Consideration			0.011			0.006
			(0.22)			(0.13)
10 year Relation with Bank			0.033			0.036
			(0.82)			(0.89)
Trust in Distributor			-0.087**			-0.089**
			(-2.29)			(-2.36)
Familiar with Sales			-0.066*			-0.065*
			(-1.70)			(-1.67)
Bank of China			-0.042			-0.045
			(-1.15)			(-1.24)
HIBOR			-0.001			0.000
			(-0.03)			(0.02)
HSI Quarterly Return			-0.002			-0.002
			(-1.12)			(-1.19)
Constant	0.649***	0.811***	1.289***	0.635***	0.824***	1.329***
#Obs.	252	245	237	252	245	237
Adj. R²	0.033	0.079	0.075	0.027	0.079	0.080

Table V
General Cognition and Investment Decision

This table shows the effects of investor's comprehension ability and calculation ability on his/her investment decision making. Comprehension ability measures how well the investor reads; calculation ability measures whether the investor can do simple calculation.

Independent Variables	Dependent Variable = Investment Proportion							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Calculation	-0.125***	-0.084**	-0.113***	-0.093**				-0.057
	(-3.55)	(-2.28)	(-2.97)	(-2.36)				(-1.43)
Comprehension					-0.181***	-0.157***	-0.167***	-0.157*
					(-5.21)	(-4.19)	(-4.36)	(-4.01)
Literate				-0.068*				-0.086*
				(-1.71)				(-2.22)
Premium		-0.015	-0.014	-0.012		-0.005	-0.003	-0.003
		(-0.86)	(-0.74)	(-0.66)		(-0.30)	(-0.18)	(-0.19)
Max Rating		-0.007	-0.021	-0.016		0.004	-0.005	-0.010
		(-0.25)	(-0.69)	(-0.53)		(0.15)	(-0.17)	(-0.33)
Max-Min Rating		0.036	0.036	0.032		0.033	0.028	0.029
		(1.58)	(1.55)	(1.38)		(1.46)	(1.24)	(1.25)
Maturity(years)		-0.024	-0.014	-0.012		-0.017	-0.006	-0.001
		(-0.93)	(-0.53)	(-0.46)		(-0.65)	(-0.21)	(-0.05)
#Reference Entity		-0.021	-0.015	-0.013		-0.020	-0.010	-0.008
		(-0.88)	(-0.59)	(-0.50)		(-0.90)	(-0.38)	(-0.34)
Coupon Freq.		0.439*	0.388	0.380		0.362	0.224	0.189
		(1.71)	(1.41)	(1.39)		(1.42)	(0.81)	(0.69)
Currency		0.036	0.048	0.050		0.026	0.043	0.045
		(1.17)	(1.56)	(1.60)		(0.88)	(1.41)	(1.51)
ELN Dummy		-0.042	-0.082	-0.070		0.010	0.010	-0.002
		(-0.32)	(-0.58)	(-0.49)		(0.08)	(0.07)	(-0.01)
Buy Lottery		0.036	0.014	0.011		0.026	0.004	-0.003
		(0.89)	(0.32)	(0.25)		(0.66)	(0.10)	(-0.08)
Age		0.000	-0.000	-0.000		-0.000	-0.000	-0.001
		(0.02)	(-0.02)	(-0.13)		(-0.20)	(-0.19)	(-0.33)
Retired		-0.029	-0.015	-0.003		-0.037	-0.027	-0.013
		(-0.65)	(-0.34)	(-0.06)		(-0.84)	(-0.63)	(-0.29)
Income		-0.023**	-0.021**	-0.021**		-0.019*	-0.018*	-0.014
		(-2.32)	(-2.08)	(-2.06)		(-1.92)	(-1.76)	(-1.40)
Own House		-0.082*	-0.065	-0.063		-0.076*	-0.060	-0.046
		(-1.76)	(-1.34)	(-1.29)		(-1.70)	(-1.28)	(-0.97)
Male		-0.050	-0.051	-0.047		-0.045	-0.049	-0.034
		(-1.28)	(-1.27)	(-1.16)		(-1.18)	(-1.25)	(-0.87)
Married		0.005	-0.032	-0.031		0.005	-0.038	-0.033
		(0.09)	(-0.50)	(-0.48)		(0.09)	(-0.64)	(-0.55)
Cannot Recall		-0.016	-0.027	-0.057		-0.069	-0.055	-0.103
		(-0.13)	(-0.17)	(-0.35)		(-0.56)	(-0.35)	(-0.66)
Consideration			0.007	0.003			-0.005	-0.011
			(0.14)	(0.05)			(-0.10)	(-0.23)
10 year Relation with Bank			0.018	0.022			0.031	0.021
			(0.45)	(0.55)			(0.79)	(0.53)
Trust in Distributor			-0.101***	-0.103***			-0.101***	-0.111*
			(-2.70)	(-2.77)			(-2.78)	(-3.09)
Familiar with Sales			-0.060	-0.069*			-0.084**	-0.085*
			(-1.53)	(-1.77)			(-2.21)	(-2.23)
Bank of China			-0.058	-0.061*			-0.034	-0.049
			(-1.60)	(-1.66)			(-0.96)	(-1.39)
HIBOR			0.002	0.001			-0.013	-0.009
			(0.14)	(0.06)			(-0.74)	(-0.53)
HSI Quarterly Return			-0.002	-0.001			-0.001	-0.001
			(-0.93)	(-0.64)			(-0.81)	(-0.49)
Constant	0.648***	0.849***	1.422***	1.412***	0.711***	0.829***	1.413***	1.499**
#Obs.	249	242	234	234	245	238	230	227
Adj. R²	0.045	0.079	0.097	0.106	0.097	0.142	0.158	0.185

Table VI
Education and Investment Decision

This table reports the effects of investor's education on their investment decision making. In the regressions at the left side, we use dummy variable of whether the investor has entered high school as proxy for investor's education level. In the regressions at the right side, we use the investor's years of education as proxy for his/her education level.

Independent	Dependent Variable = Investment Proportion							
Variables	High School Dummy			Years of Education				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Education	-0.141***	-0.111***	-0.113***	-0.024***	-0.019***	-0.020***	-0.019***	-0.009*
	(-4.10)	(-2.95)	(-2.96)	(-5.33)	(-3.81)	(-3.85)	(-3.73)	(-1.69)
Literate							-0.093**	-0.084**
							(-2.51)	(-2.15)
Calculation								-0.061
								(-1.52)
Comprehension								-0.113**
								(-2.39)
Buy Lottery		0.026	0.011		0.018	0.002	-0.001	-0.008
		(0.64)	(0.25)		(0.44)	(0.04)	(-0.03)	(-0.19)
Age		-0.001	-0.001		-0.002	-0.002	-0.002	-0.001
		(-0.69)	(-0.59)		(-0.83)	(-0.75)	(-0.90)	(-0.65)
Retired		-0.035	-0.022		-0.033	-0.018	-0.003	-0.012
		(-0.80)	(-0.50)		(-0.75)	(-0.42)	(-0.06)	(-0.27)
Income		-0.022**	-0.021**		-0.019*	-0.018*	-0.017	-0.012
		(-2.18)	(-2.01)		(-1.90)	(-1.71)	(-1.64)	(-1.21)
Own House		-0.058	-0.049		-0.053	-0.043	-0.034	-0.031
		(-1.24)	(-1.00)		(-1.15)	(-0.89)	(-0.72)	(-0.65)
Male		-0.050	-0.057		-0.043	-0.049	-0.042	-0.033
		(-1.29)	(-1.41)		(-1.12)	(-1.21)	(-1.06)	(-0.84)
Married		0.019	-0.018		0.019	-0.018	-0.013	-0.014
		(0.32)	(-0.28)		(0.32)	(-0.30)	(-0.21)	(-0.23)
Cannot Recall		-0.021	0.007		-0.014	0.001	-0.043	-0.085
		(-0.17)	(0.04)		(-0.11)	(0.01)	(-0.27)	(-0.54)
Consideration			0.012			0.012	0.007	-0.003
			(0.25)			(0.24)	(0.13)	(-0.07)
10 year Relation			0.030			0.023	0.024	0.011
with Bank			(0.74)			(0.59)	(0.62)	(0.29)
Trust in			-0.080**			-0.078**	-0.084**	-0.104***
Distributor			(-2.12)			(-2.09)	(-2.28)	(-2.86)
Familiar with			-0.074*			-0.076*	-0.085**	-0.080**
Sales			(-1.90)			(-1.96)	(-2.21)	(-2.07)
Bank of China			-0.044			-0.050	-0.057	-0.056
			(-1.22)			(-1.40)	(-1.62)	(-1.57)
Control for								
Product Character	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Control for								
Market Condition	No	No	Yes	No	No	Yes	Yes	Yes
Constant	0.681***	0.865***	1.312***	0.840***	0.971***	1.425***	1.437***	1.532***
#Obs.	249	242	234	249	242	234	234	225
Adj. R²	0.060	0.096	0.098	0.099	0.118	0.122	0.144	0.186

Table VII
Definition of IQ

We construct proxies for IQ (or cognition ability) based on investor's education level and comprehension (reading ability). Low IQ is defined as can only read some or cannot read after some or finished high school education, as illustrated in the shadow area of Panel A. There are 53 (6.98%) investors belong to this group. High IQ means investors who did not have access to higher education besides primary school, but can read or read some.

Panel A: Classification of IQ

	Primary-	High School	College
Cannot Read	Medium IQ	Low IQ	Low IQ
	(57)	(5)	(0)
Can Read Some	Medium IQ	Low IQ	Low IQ
	(162)	(39)	(3)
Can Read	High IQ	Ambiguous	Ambiguous
	(93)	(280)	(114)

Panel B: Definition of IQ Proxies

Proxy Name	Type	Description
Above Low IQ	Dummy	=1 if investor do not belong to the Low IQ category;
High IQ	Dummy	=1 if investor have primary or below education but can read or read some;
IQ Four Element Measured	1-4	4=High IQ, 3=Ambiguous, 2=Medium IQ, and 1=Low IQ;
I Q Benchmark Measured	1-3	3=High IQ, 2=Ambiguous=Medium, and 1=Low IQ.

Panel C: Correlation of IQ Proxies and Education

	Education (years)	Above High School	Low IQ	High IQ	IQ Four Element Measured
Above High School	0.93				
Low IQ	0.15	0.23			
High IQ	-0.79	-0.85	-0.18		
IQ Four Element Measured	0.15	0.12	-0.58	0.02	
IQ Benchmark	-0.40	-0.47	-0.64	0.51	0.82

Table VIII
IQ and Investment Decision

This table reports the effects of investors' IQs on their investment decision making. In Panel A, in the first column, "Above Low IQ Dummy" contains 227 of 1 and 20 of 0. In the fifth column, "High IQ Dummy" contains 32 of 1 and 211 of 0. In Panel B, in the first column, "IQ Four Element Measured" contains 16, 72, 123, and 32 of 1 to 4, respectively. In the fifth column, "IQ Benchmark Measured" contains 16, 195 and 32 of 1 to 3, respectively.

Independent	Panel A: Above Low IQ, High IQ and Investment Proportion							
	Dependent Variable = Investment Proportion							
Variables	IQ Proxy = Above Low IQ Dummy				IQ Proxy = High IQ Dummy			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IQ Proxy	-0.160**	-0.238***	-0.243***	-0.236***	0.099***	-0.148**	-0.143**	-0.135**
	(2.51)	(3.78)	(3.64)	(3.58)	(2.72)	(-2.53)	(-2.33)	(-2.22)
Above High School		-0.170***	-0.140***	-0.131***				
		(-4.89)	(-3.62)	(-3.38)				
Education(years)						-0.039***	-0.035***	-0.032***
						(-5.23)	(-4.16)	(-3.82)
Calculation				-0.074*				-0.074*
				(-1.94)				(-1.91)
Literate				-0.076*				-0.073*
				(-1.95)				(-1.83)
Buy Lottery			0.013	0.008			-0.012	-0.015
			(0.31)	(0.19)			(-0.28)	(-0.36)
Age			-0.001	-0.001			-0.001	-0.001
			(-0.55)	(-0.69)			(-0.58)	(-0.66)
Retired			-0.024	-0.013			-0.017	-0.007
			(-0.55)	(-0.29)			(-0.39)	(-0.16)
Income			-0.019*	-0.015			-0.015	-0.012
			(-1.86)	(-1.50)			(-1.50)	(-1.20)
Own House			-0.052	-0.033			-0.044	-0.028
			(-1.10)	(-0.69)			(-0.92)	(-0.58)
Male			-0.061	-0.048			-0.038	-0.027
			(-1.54)	(-1.22)			(-0.95)	(-0.66)
Married			-0.035	-0.019			-0.017	-0.005
			(-0.57)	(-0.31)			(-0.27)	(-0.09)
Cannot Recall			-0.064	-0.108			-0.015	-0.061
			(-0.40)	(-0.69)			(-0.10)	(-0.39)
Consideration			-0.002	-0.007			0.020	0.015
			(-0.04)	(-0.14)			(0.41)	(0.31)
10 year Relation with Bank			0.033	0.018			0.012	-0.002
			(0.84)	(0.47)			(0.31)	(-0.05)
Trust in Distributor			-0.090**	-0.101***			-0.089**	-0.101***
			(-2.46)	(-2.80)			(-2.42)	(-2.78)
Familiar with Sales			-0.069*	-0.066*			-0.078**	-0.074*
			(-1.81)	(-1.73)			(-2.03)	(-1.92)
Bank of China			-0.033	-0.051			-0.057	-0.072**
			(-0.93)	(-1.44)			(-1.60)	(-2.03)
Control for *Product Character*	No	No	Yes	Yes	No	No	Yes	Yes
Control for *Market Condition*	No	No	Yes	Yes	No	No	Yes	Yes
Constant	0.585***	0.677***	1.317***	1.414***	0.558***	1.043***	1.643***	1.727***
#Obs.	247	247	232	229	243	243	228	225
Adj. R²	0.021	0.105	0.150	0.182	0.026	0.122	0.153	0.183

Table VIII - *Continued*

Independent Variables	Dependent Variable = Investment Proportion							
	IQ Proxy = IQ Four Element Measured				IQ Proxy = IQ Benchmark Measured			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IQ Proxy	-0.077***	-0.063***	-0.069***	-0.063***	-0.028	-0.135***	-0.140***	-0.125***
	(-3.43)	(-2.93)	(-2.92)	(-2.64)	(-0.69)	(-3.28)	(-3.11)	(-2.75)
Education(years)		-0.022***	-0.018***	-0.016***		-0.031***	-0.026***	-0.024***
		(-5.00)	(-3.42)	(-3.13)		(-6.32)	(-4.75)	(-4.24)
Calculation				-0.058				-0.057
				(-1.44)				(-1.42)
Literate				-0.083**				-0.080**
				(-2.13)				(-2.06)
Buy Lottery			-0.005	-0.009			-0.008	-0.011
			(-0.13)	(-0.22)			(-0.18)	(-0.27)
Age			-0.001	-0.001			-0.001	-0.001
			(-0.49)	(-0.63)			(-0.49)	(-0.62)
Retired			-0.025	-0.010			-0.022	-0.008
			(-0.57)	(-0.24)			(-0.50)	(-0.18)
Income			-0.015	-0.012			-0.014	-0.012
			(-1.46)	(-1.18)			(-1.41)	(-1.15)
Own House			-0.048	-0.033			-0.050	-0.036
			(-1.01)	(-0.69)			(-1.06)	(-0.75)
Male			-0.043	-0.032			-0.041	-0.030
			(-1.09)	(-0.80)			(-1.04)	(-0.76)
Married			-0.028	-0.015			-0.028	-0.015
			(-0.47)	(-0.24)			(-0.46)	(-0.23)
Cannot Recall			-0.047	-0.093			-0.053	-0.096
			(-0.30)	(-0.59)			(-0.34)	(-0.61)
Consideration			-0.002	-0.005			-0.003	-0.005
			(-0.05)	(-0.11)			(-0.06)	(-0.11)
10 year Relation with Bank			0.022	0.009			0.019	0.007
			(0.56)	(0.24)			(0.49)	(0.18)
Trust in Distributor			-0.094**	-0.104***			-0.095**	-0.105***
			(-2.57)	(-2.89)			(-2.60)	(-2.90)
Familiar with Sales			-0.083**	-0.080**			-0.082**	-0.079**
			(-2.17)	(-2.08)			(-2.15)	(-2.06)
Bank of China			-0.041	-0.057			-0.044	-0.059*
			(-1.17)	(-1.61)			(-1.25)	(-1.67)
Control for Product Character	No	No	Yes	Yes	No	No	Yes	Yes
Control for Market Condition	No	No	Yes	Yes	No	No	Yes	Yes
Constant	0.801***	0.989***	1.623***	1.689***	0.651***	1.180***	1.806***	1.846***
#Obs.	243	243	228	225	243	243	228	225
Adj. R²	0.043	0.130	0.166	0.191	-0.002	0.137	0.170	0.193

Table IX
Investment Decision by Product Type

This table reports the effects of all the variables we have tested previously on CLN investors' and ELN investors' investment decision making. "Literate" equals 1 if investor's expectation to Hong Kong stock annual return lies between 5.1% and 50%. All the missing variables are filled with zero and controlled by dummy variables. The dummy variables are not reported here.

Independent	Dependent Variable = Investment Proportion							
Variables	Credit-linked Note Investors				Equity-linked Note Investors			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Literate		-0.049		-0.050		-0.237*		-0.215*
		(-1.23)		(-1.34)		(-1.86)		(-1.83)
Calculation			-0.041				-0.020	
			(-1.03)				(-0.10)	
Comprehension			-0.123***				-0.249***	
			(-4.69)				(-4.27)	
Education(years)				-0.026***				-0.025***
				(-7.36)				(-3.69)
IQ 4 Element Measured				-0.034**				-0.080**
				(-2.33)				(-2.24)
Premium	-0.034*	-0.033*	-0.032*	-0.030*				
	(-1.75)	(-1.71)	(-1.67)	(-1.66)				
Max Rating	0.008	0.009	0.007	0.015				
	(0.37)	(0.42)	(0.38)	(0.79)				
Max-Min Rating	0.009	0.009	0.010	0.011				
	(0.64)	(0.61)	(0.69)	(0.77)				
Maturity(years)	-0.022	-0.021	-0.020	-0.000				
	(-1.26)	(-1.20)	(-1.15)	(-0.02)				
#Reference Entity	-0.032*	-0.032*	-0.030	-0.038**				
	(-1.73)	(-1.69)	(-1.63)	(-2.17)				
Coupon Freq.	0.244	0.244	0.213	0.053				
	(1.11)	(1.11)	(0.99)	(0.26)				
Currency	0.047*	0.047*	0.054**	0.061**				
	(1.83)	(1.85)	(2.16)	(2.51)				
Buy Lottery	0.000	-0.002	-0.014	-0.009	0.007	0.013	0.014	0.025
	(0.01)	(-0.06)	(-0.49)	(-0.34)	(0.12)	(0.22)	(0.27)	(0.49)
Age	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.005*	-0.004*
	(0.24)	(0.22)	(0.00)	(-0.66)	(-0.55)	(-0.68)	(-1.72)	(-1.69)
Retired	0.017	0.021	-0.005	-0.012	0.005	0.021	-0.012	-0.013
	(0.48)	(0.60)	(-0.15)	(-0.37)	(0.08)	(0.35)	(-0.21)	(-0.23)
Income	-0.023**	-0.024**	-0.011	-0.008	-0.000	0.008	0.004	0.013
	(-1.98)	(-2.06)	(-0.95)	(-0.71)	(-0.00)	(0.35)	(0.15)	(0.66)
Own House	-0.082	-0.077	-0.057	-0.032	-0.080	-0.021	-0.125	-0.028
	(-1.64)	(-1.54)	(-1.15)	(-0.67)	(-0.36)	(-0.09)	(-0.46)	(-0.14)
Male	-0.046	-0.043	-0.033	-0.026	-0.121*	-0.112*	-0.142**	-0.099*
	(-1.59)	(-1.49)	(-1.17)	(-0.96)	(-1.94)	(-1.82)	(-2.35)	(-1.75)
Married	0.006	0.007	-0.000	-0.003	-0.014	-0.012	-0.043	-0.037
	(0.17)	(0.19)	(-0.01)	(-0.09)	(-0.21)	(-0.17)	(-0.63)	(-0.60)

Table IX - *Continued*

Independent Variables	Dependent Variable = Investment Proportion							
	Credit-linked Note Investors				Equity-linked Note Investors			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Consideration	0.066*	0.064*	0.067*	0.065*	-0.146*	-0.129*	-0.095	-0.102
	(1.76)	(1.68)	(1.81)	(1.85)	(-1.87)	(-1.67)	(-1.27)	(-1.42)
10 year Relation	0.003	0.003	0.003	-0.004	0.004	0.001	-0.004	-0.006
with Bank	(0.13)	(0.12)	(0.12)	(-0.17)	(0.08)	(0.03)	(-0.08)	(-0.14)
Trust in Distributor	-0.036	-0.040	-0.046	-0.025	-0.231	-0.114	-0.212	-0.096
	(-1.02)	(-1.11)	(-1.33)	(-0.75)	(-1.13)	(-0.54)	(-0.98)	(-0.50)
Familiar with Sales	-0.057	-0.060	-0.069*	-0.074**	0.059	0.023	0.082	0.064
	(-1.42)	(-1.49)	(-1.77)	(-1.97)	(0.46)	(0.18)	(0.54)	(0.56)
Bank of China	-0.015	-0.017	-0.009	-0.019	-0.037	-0.038	-0.062	-0.053
	(-0.56)	(-0.65)	(-0.35)	(-0.76)	(-0.40)	(-0.41)	(-0.68)	(-0.62)
HIBOR	0.005	0.006	0.008	0.013	-0.017	-0.017	-0.033	-0.024
	(0.34)	(0.37)	(0.54)	(0.90)	(-0.38)	(-0.38)	(-0.76)	(-0.60)
HSI Quarterly	0.000	0.001	0.001	0.001	-0.001	-0.001	0.000	0.000
Return	(0.37)	(0.52)	(0.60)	(0.91)	(-0.33)	(-0.27)	(0.13)	(0.03)
Constant	1.151***	1.165***	1.242***	1.430***	2.018*	1.467	2.450**	2.082**
#Obs.	493	493	493	493	126	126	126	126
Adj. R²	0.032	0.033	0.085	0.151	-0.047	-0.022	0.084	0.174

Table X
Investment Decision by Different Age Groups

This table reports the effects of all the variables we tested previously on the investment decision making of investors with age equal or above 50 and with age below 50. "Literate" equals 1 if investor's expectation to Hong Kong stock annual return lies between 5.1% and 50%. All investors with age below 50 can report the name of security they purchased or/and the month they purchased the security, so we do not keep the "Cannot Recall" variable in the right regression since it is constant.

Independent	Dependent Variable = Investment Proportion							
Variables	Age 50 or above				Age below 50			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Literate		-0.112**	-0.106**	-0.123***		-0.003	-0.037	-0.051
		(-2.39)	(-2.28)	(-2.71)		(-0.04)	(-0.49)	(-0.71)
Education(years)			-0.017***	-0.015**			-0.022**	-0.017
			(-2.68)	(-2.45)			(-2.10)	(-1.61)
IQ 4 Element				-0.086***				-0.092*
Measured				(-3.14)				(-1.73)
Premium	-0.022	-0.020	-0.020	-0.014	-0.018	-0.018	0.002	-0.006
	(-0.98)	(-0.87)	(-0.87)	(-0.64)	(-0.38)	(-0.36)	(0.05)	(-0.12)
Max Rating	-0.009	-0.010	-0.001	-0.011	-0.013	-0.013	0.019	0.035
	(-0.25)	(-0.26)	(-0.04)	(-0.30)	(-0.24)	(-0.23)	(0.33)	(0.62)
Max-Min Rating	0.030	0.027	0.024	0.029	0.039	0.039	0.008	-0.012
	(1.06)	(0.98)	(0.86)	(1.08)	(0.78)	(0.76)	(0.17)	(-0.24)
Maturity(years)	-0.004	-0.003	0.005	0.015	-0.038	-0.038	-0.005	-0.034
	(-0.14)	(-0.09)	(0.16)	(0.49)	(-0.64)	(-0.63)	(-0.09)	(-0.56)
#Reference Entity	-0.042	-0.037	-0.040	-0.032	0.044	0.044	0.028	0.014
	(-1.31)	(-1.17)	(-1.30)	(-1.06)	(0.75)	(0.74)	(0.49)	(0.24)
Coupon Freq.	0.257	0.241	0.123	-0.021	0.589	0.586	0.331	0.439
	(0.79)	(0.75)	(0.38)	(-0.07)	(0.84)	(0.82)	(0.48)	(0.62)
Currency	0.035	0.040	0.036	0.029	0.168**	0.168**	0.171**	0.192**
	(0.98)	(1.12)	(1.02)	(0.85)	(2.07)	(2.04)	(2.16)	(2.53)
ELN Dummy	-0.137	-0.138	-0.074	-0.065	0.285	0.285	0.309	0.300
	(-0.79)	(-0.81)	(-0.44)	(-0.40)	(0.81)	(0.80)	(0.90)	(0.87)
Buy Lottery	0.003	-0.005	-0.022	-0.031	0.082	0.082	0.078	0.046
	(0.06)	(-0.10)	(-0.41)	(-0.59)	(1.07)	(1.06)	(1.04)	(0.62)
Income	-0.018	-0.017	-0.012	-0.007	-0.067**	-0.067**	-0.049*	-0.038
	(-1.58)	(-1.55)	(-1.04)	(-0.67)	(-2.52)	(-2.49)	(-1.80)	(-1.44)
Own House	-0.061	-0.051	0.020	0.017	-0.037	-0.037	-0.056	-0.094
	(-0.98)	(-0.83)	(0.31)	(0.27)	(-0.46)	(-0.45)	(-0.70)	(-1.20)
Male	-0.060	-0.043	-0.036	-0.007	-0.078	-0.078	-0.040	-0.059
	(-1.24)	(-0.89)	(-0.73)	(-0.15)	(-0.96)	(-0.95)	(-0.49)	(-0.73)
Married	-0.021	-0.014	0.021	-0.008	-0.122	-0.122	-0.106	-0.047
	(-0.27)	(-0.17)	(0.26)	(-0.10)	(-1.07)	(-1.06)	(-0.95)	(-0.43)
Cannot Recall	-0.065	-0.103	-0.077	-0.147				
	(-0.37)	(-0.59)	(-0.45)	(-0.89)				

(To be continued)

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Table X - *Continued*

Independent Variables	Dependent Variable = Investment Proportion							
	Age 50 or above				Age below 50			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Consideration	-0.011	-0.031	-0.043	-0.083	0.049	0.049	0.078	0.054
	(-0.17)	(-0.47)	(-0.63)	(-1.24)	(0.64)	(0.63)	(1.02)	(0.73)
10 year Relation	-0.010	0.007	-0.005	-0.006	0.148**	0.147*	0.112	0.089
with Bank	(-0.18)	(0.13)	(-0.10)	(-0.11)	(2.06)	(1.94)	(1.51)	(1.24)
Trust in Distributor	-0.090*	-0.094**	-0.082*	-0.098**	-0.099	-0.099	-0.072	-0.110
	(-1.96)	(-2.06)	(-1.81)	(-2.25)	(-1.33)	(-1.31)	(-0.98)	(-1.54)
Familiar with Sales	-0.076	-0.087*	-0.091*	-0.109**	-0.108	-0.108	-0.147**	-0.143**
	(-1.53)	(-1.77)	(-1.86)	(-2.29)	(-1.56)	(-1.53)	(-2.09)	(-2.04)
Bank of China	-0.048	-0.055	-0.067	-0.064	-0.087	-0.087	-0.095	-0.063
	(-1.08)	(-1.24)	(-1.52)	(-1.49)	(-1.14)	(-1.12)	(-1.27)	(-0.87)
HIBOR	-0.005	-0.006	-0.005	-0.021	0.001	0.000	0.009	0.019
	(-0.22)	(-0.29)	(-0.26)	(-0.99)	(0.02)	(0.01)	(0.25)	(0.54)
HSI Quarterly	-0.002	-0.002	-0.001	-0.002	-0.002	-0.002	-0.001	-0.001
Return	(-1.03)	(-0.75)	(-0.63)	(-0.71)	(-0.58)	(-0.50)	(-0.19)	(-0.42)
Constant	1.515***	1.517***	1.528***	1.860***	1.010	1.010	0.997	1.496*
#Obs.	176	176	172	168	63	63	63	61
Adj. R²	0.020	0.049	0.091	0.159	0.178	0.158	0.223	0.294

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Table XI
Investment Decision of Different Financial Affluent Investors

This table reports the effects of all the variables we tested on the investment decision of investors in different wealth and income groups. "Literate" equals 1 if investor's expectation to Hong Kong stock annual return lies between 5.1% and 50%.

Independent Variables	Dependent Variable = Investment Proportion								
	Top Wealth Quartile		Wealth Above Median		Income below 20,000		Income 20,000-99,999		Everyone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Literate	-0.175**	-0.165**	-0.119*	-0.135**	-0.103**	-0.108**	-0.096	-0.082	-0.103***
	(-2.34)	(-2.22)	(-1.89)	(-2.25)	(-2.24)	(-2.44)	(-1.22)	(-0.99)	(-2.82)
Education		-0.018		-0.016**		-0.018***		-0.010	-0.017***
(years)		(-1.59)		(-2.10)		(-3.09)		(-0.72)	(-3.33)
IQ 4 Element		-0.017		-0.070**		-0.086***		-0.077	-0.071***
Measured		(-0.27)		(-2.00)		(-3.25)		(-0.89)	(-3.07)
Buy Lottery	0.111	0.134	0.019	0.021	-0.047	-0.068	0.197**	0.187*	-0.009
	(1.16)	(1.38)	(0.29)	(0.34)	(-0.90)	(-1.32)	(2.16)	(1.93)	(-0.21)
Age	0.000	-0.002	0.002	-0.000	-0.002	-0.002	0.007	0.005	-0.001
	(0.07)	(-0.39)	(0.52)	(-0.03)	(-0.70)	(-0.89)	(1.48)	(0.88)	(-0.68)
Retired	0.026	0.051	0.034	0.042	0.040	-0.001	-0.126	-0.074	-0.007
	(0.27)	(0.48)	(0.47)	(0.61)	(0.72)	(-0.01)	(-1.31)	(-0.67)	(-0.16)
Income	-0.026*	-0.022	-0.021*	-0.013	0.127*	0.175***	-0.048*	-0.037	-0.013
	(-1.75)	(-1.46)	(-1.67)	(-1.09)	(1.95)	(2.81)	(-1.80)	(-1.22)	(-1.34)
Own House	-0.135	-0.099	-0.106	-0.103	-0.073	-0.028	-0.053	-0.067	-0.038
	(-1.08)	(-0.80)	(-1.11)	(-1.15)	(-1.37)	(-0.55)	(-0.34)	(-0.38)	(-0.81)
Male	-0.231**	-0.219**	-0.069	-0.047	-0.042	-0.007	-0.022	-0.026	-0.033
	(-2.67)	(-2.53)	(-1.15)	(-0.81)	(-0.85)	(-0.15)	(-0.24)	(-0.27)	(-0.84)
Married	0.123	0.153	0.006	-0.007	0.003	-0.015	-0.038	0.058	-0.024
	(0.78)	(0.94)	(0.06)	(-0.06)	(0.04)	(-0.24)	(-0.15)	(0.20)	(-0.41)
Cannot Recall	-0.315	-0.280	-0.296	-0.361*	-	-	0.115	0.102	-0.100
	(-1.50)	(-1.32)	(-1.40)	(-1.82)	-	-	(0.68)	(0.58)	(-0.64)
Consideration	0.193*	0.199*	0.027	0.033	0.014	0.003	0.099	0.117	-0.010
	(1.97)	(1.96)	(0.37)	(0.47)	(0.25)	(0.05)	(0.72)	(0.80)	(-0.20)
10 year Relation	-0.134	-0.149	-0.002	-0.044	0.020	0.021	0.093	0.069	0.022
with Bank	(-1.42)	(-1.60)	(-0.03)	(-0.71)	(0.41)	(0.46)	(1.23)	(0.87)	(0.57)
Trust in	-0.087	-0.100	-0.121**	-0.124**	-0.067	-0.059	-0.069	-0.075	-0.101***
Distributor	(-1.04)	(-1.17)	(-2.10)	(-2.28)	(-1.36)	(-1.24)	(-0.97)	(-1.00)	(-2.81)
Familiar with	0.010	0.019	-0.020	-0.029	-0.071	-0.107**	-0.084	-0.047	-0.092**
Sales	(0.09)	(0.19)	(-0.30)	(-0.46)	(-1.57)	(-2.47)	(-0.96)	(-0.49)	(-2.45)
Bank of China	-0.217***	-0.212***	-0.139**	-0.140***	-0.032	-0.023	-0.099	-0.072	-0.050
	(-2.94)	(-2.86)	(-2.46)	(-2.65)	(-0.74)	(-0.56)	(-1.29)	(-0.85)	(-1.43)
Control for									
Product Character	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for									
Market Condition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.650	1.294	1.260**	1.719***	1.208***	1.553***	0.465	0.294	1.657***
#Obs.	61	60	113	108	183	175	50	49	228
Adj. R²	0.369	0.394	0.111	0.240	0.019	0.161	0.333	0.276	0.193

Table XII
Determinants of Financial Literacy

This table shows the possible determinants of investors to be financially literate. We run probit regression on the two proxies for financial literacy. In the regressions at the left side, the dependent variable "Literate" equals 1 if investor's expectation to Hong Kong stock market annual return lies between 7% and 17%. In the regressions at the right side, the dependent variable "Literate" equals 1 if investor's expectation to Hong Kong stock market annual return lies between 5.1% and 50%. Z statistics are in parentheses, *, ** and *** represent that $p<0.1$, $p<0.05$ and $p<0.01$, respectively.

Independent Variables	Dependent Variable = Literate					
	Literate Proxy: Stock Expectation 7%-17%			Literate Proxy: Stock Expectation 5.1%-50%		
	(1)	(2)	(3)	(4)	(5)	(6)
Calculation	1.209***	0.838***	0.696***	1.375***	0.915***	0.745***
	(8.14)	(4.80)	(4.01)	(10.07)	(5.74)	(4.68)
Education		-0.022	-0.017		0.014	0.025
		(-0.96)	(-0.66)		(0.67)	(1.10)
Comprehension		0.028	0.089		-0.256	-0.214
		(0.15)	(0.44)		(-1.48)	(-1.17)
Buy Lottery		-0.246	-0.145		-0.255	-0.136
		(-1.38)	(-0.76)		(-1.60)	(-0.80)
Age		-0.011	-0.010		-0.006	-0.005
		(-1.53)	(-1.31)		(-0.94)	(-0.62)
Retired		0.358*	0.365*		0.420**	0.428**
		(1.77)	(1.74)		(2.27)	(2.24)
Income		0.049	0.030		0.042	0.029
		(1.18)	(0.70)		(1.10)	(0.74)
Own House		0.768***	0.250		0.952***	0.397**
		(4.29)	(1.25)		(6.07)	(2.20)
Male		0.239	0.259		0.247*	0.251
		(1.47)	(1.49)		(1.69)	(1.62)
Married		-0.017	-0.120		0.199	0.103
		(-0.08)	(-0.51)		(1.01)	(0.47)
Trust in Distributors			0.271***			0.259***
			(4.36)			(5.16)
Constant	-1.726***	-1.571***	-2.317***	-1.470***	-2.030***	-2.799***
#Obs	783	783	783	783	783	783
Pseudo. R²	0.1471	0.2209	0.2766	0.1685	0.2822	0.3335

Table XIII
Heckman Selection Model with Comparative Sample

This table reports the results of Heckman Selection Model test. We randomly asked 75 Hong Kong citizens and obtained their information of all the demographic characteristics we asked before, also their relationship with the bank where they save money, their self-reported trust towards the banks, and their familiarity with their client managers. All these investors did not purchase credit-linked notes or equity-linked notes. We took this sample as comparative sample and ran Heckman two step regressions. z statistics is in parentheses. *, ** and *** represent that $p<0.1$, $p<0.05$ and $p<0.01$, respectively.

Table XIII - *Continued*

Independent Variables	Selection Regression	(1)	(2)	(3)	(4)	(5)	(6)
		Dependent Variable = Investment Proportion					
Literate		-0.091*		-0.094***			-0.097***
		(-1.717)		(-2.596)			(-2.806)
Comprehension	-0.139		-0.122***	-0.133***			
	(-0.394)		(-2.944)	(-3.272)			
Calculation	-0.426*		-0.054	-0.025			
	(-1.761)		(-1.324)	(-0.603)			
Education(years)	-0.078**				-0.014**	-0.015***	-0.015***
	(-1.991)				(-2.103)	(-2.577)	(-2.690)
IQ 4 Element Measured						-0.058**	-0.061***
						(-2.462)	(-2.724)
Buy Lottery	-0.949***	0.105	0.070	0.062	0.076	0.062	0.046
	(-4.043)	(1.386)	(1.341)	(1.210)	(1.209)	(1.183)	(0.891)
Age	0.004	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002
	(0.333)	(-0.464)	(-0.569)	(-0.746)	(-0.715)	(-0.756)	(-0.900)
Retired	0.542**	-0.051	-0.066	-0.046	-0.059	-0.059	-0.036
	(2.141)	(-0.724)	(-1.434)	(-1.009)	(-1.056)	(-1.283)	(-0.798)
Income	-0.074	-0.005	-0.006	-0.006	-0.004	-0.005	-0.005
	(-1.642)	(-0.283)	(-0.558)	(-0.525)	(-0.273)	(-0.426)	(-0.453)
Own House	0.564**	-0.130*	-0.087*	-0.077	-0.105*	-0.089*	-0.070
	(1.988)	(-1.782)	(-1.692)	(-1.539)	(-1.736)	(-1.749)	(-1.432)
Male	-0.457**	-0.007	-0.023	-0.016	-0.015	-0.020	-0.015
	(-1.974)	(-0.109)	(-0.537)	(-0.390)	(-0.303)	(-0.468)	(-0.371)
Married	0.703*	-0.068	-0.053	-0.046	-0.058	-0.050	-0.038
	(1.942)	(-0.685)	(-0.804)	(-0.706)	(-0.741)	(-0.757)	(-0.595)
Cannot Recall		-0.103	-0.076	-0.124	-0.047	-0.076	-0.122
		(-0.487)	(-0.537)	(-0.877)	(-0.280)	(-0.534)	(-0.859)
Consideration		0.004	-0.010	-0.014	0.008	-0.006	-0.011
		(0.062)	(-0.225)	(-0.304)	(0.147)	(-0.139)	(-0.240)
10 year Relation with Bank	-0.745***	0.094	0.066	0.067	0.084	0.071	0.063
	(-2.871)	(1.408)	(1.432)	(1.472)	(1.568)	(1.598)	(1.447)
Trust in Distributor	0.776***	-0.208***	-0.170***	-0.168***	-0.174***	-0.161***	-0.154***
	(4.802)	(-3.155)	(-3.743)	(-3.760)	(-3.158)	(-3.483)	(-3.401)
Familiar with Sales	0.486**	-0.132**	-0.109**	-0.120***	-0.115**	-0.113***	-0.118***
	(2.089)	(-2.084)	(-2.523)	(-2.817)	(-2.298)	(-2.703)	(-2.897)
Bank of China		-0.014	-0.027	-0.028	-0.035	-0.036	-0.035
		(-0.262)	(-0.742)	(-0.789)	(-0.795)	(-0.984)	(-0.977)
HIBOR		-0.017	-0.018	-0.019	-0.016	-0.018	-0.018
		(-0.704)	(-1.098)	(-1.189)	(-0.820)	(-1.143)	(-1.144)
HSI Quarterly Return		-0.000	-0.001	-0.000	-0.001	-0.001	-0.000
		(-0.161)	(-0.598)	(-0.239)	(-0.399)	(-0.517)	(-0.169)
Premium		-0.006	-0.003	-0.000	-0.005	0.000	0.001
		(-0.239)	(-0.150)	(-0.027)	(-0.255)	(0.010)	(0.072)
Max Rating		0.001	-0.004	0.003	0.002	0.005	0.008
		(0.013)	(-0.145)	(0.110)	(0.058)	(0.188)	(0.281)
Max-Min Rating		0.017	0.022	0.017	0.015	0.014	0.013
		(0.501)	(0.967)	(0.762)	(0.590)	(0.658)	(0.608)
Maturity(years)		-0.002	-0.001	0.003	0.005	0.007	0.010
		(-0.062)	(-0.041)	(0.135)	(0.165)	(0.297)	(0.403)
#Reference Entity		-0.000	-0.002	-0.001	-0.005	-0.003	-0.002
		(-0.013)	(-0.102)	(-0.030)	(-0.175)	(-0.116)	(-0.066)
Coupon Freq.		0.245	0.153	0.127	0.150	0.088	0.077
		(0.621)	(0.576)	(0.485)	(0.474)	(0.330)	(0.298)
Currency		0.067	0.054*	0.054*	0.061*	0.054*	0.053*
		(1.465)	(1.767)	(1.817)	(1.689)	(1.760)	(1.814)
ELN Dummy		0.044	0.038	0.057	0.074	0.081	0.081
		(0.218)	(0.282)	(0.426)	(0.465)	(0.607)	(0.624)
Constant	-2.072*	1.955***	1.825***	1.783***	1.910***	1.945***	1.897***
Mills λ		-0.402**	-0.261**	-0.242**	-0.319**	-0.256**	-0.207*
		(-2.526)	(-2.228)	(-2.089)	(-2.348)	(-2.200)	(-1.778)
#Obs	301	301	301	301	301	301	301
Pseudo R²	0.4685						
χ²		30.379	72.697	81.900	47.355	73.497	85.979

Appendix I
Definition of Main Variables

This table reports the definition the key variables we used in the analysis. The data comes directly from the survey we conducted from February 22 to June 18, 2009. The questions addressing monthly income, monthly expense, estate, familiar with sales, calculation are added after March 15, 2009. The setting of Literate Proxy1 is inspired by the fact that the average annual return of Hang Seng Index is around 12% in the past three years (2006, 2007, and 2008); the setting of Literate Proxy2 is inspired by the fact that the average risk premium of structured products in our sample is 5%. The products can be purchased in both Hong Kong dollar (HKD) or in U.S. dollar (USD). We convert USD to HKD at the exchange rate of 8.0, and measure all capital in HKD.

Variable Name	Unit	Definition
Investment Characteristics		
InvestProportion	0-1	Proportion of the investor's asset invested in the structured product.
Investment	$mm	Amount of investment in millions of Hong Kong dollars.
Literate Proxy1	Dummy	=1 if the investor's expectation to stock market return lies between 7% and 17%.
Literate Proxy2	Dummy	=1 if the investor's expectation to stock market annual return lies between 5.1% and 50%.
Buy Lottery	Dummy	=1 if investor claims buying lottery more often than once half a year.
Reconsider	Dummy	=1 if the investor consider did not buy the product the day he was approached by the salesman.
10yrRelation	Dummy	=1 if the investor's relationship with distributing bank is longer than 10 years.
Trust Distributor	1-5	Measure of the investor's trust in the distributing bank. 1 means completely doubt, and 5 means completely trust.
Familiar with Sales	Dummy	=1 if the investor is familiar the salesman of the structured product.
Bank of China	Dummy	=1 if the investor buys structured products from Bank of China.
Product Characteristics		
Premium	Number	The difference between the product's coupon rate and fixed deposit rate at the product's issuing date; premium for ELN is given as 10.
Max Rating	Number	The maximal rating of the reference obligations of each structured product.
Max-Min Rating	Number	The difference of the maximum and minimum of the reference obligation.
Maturity	Year	The maturity of the structured product that the investor purchased.
#Ref Entity	Number	The amount of reference entity or amount of linked companies.
Coupon Freq.	Number	The frequency of coupon payment. 1/2=semi-annually, 1/4=quarterly, 1/12=monthly.
Currency	Dummy	=1 if the product is U.S. dollar type.
#Ref Entity	Number	The amount of reference entity or amount of linked companies.
ELN Dummy	Dummy	=1 if the investor buy ELN.
Financial Characteristics		
Wealth	$mm	The investor's total financial assets.
Income	$10,000	The investor family's current monthly income.
Own House	Dummy	=1 if the investor owns house.
SavingProportion	0-1	Proportion of the investor's asset allocated in saving.
StockProportion	0-1	Proportion of the investor's allocated in buying stock.
BuyStock	Dummy	=1 if the investor buys stock.
BuyRisky	Dummy	=1 if the investor buys risky assets.
HIBOR	Number	HIBOR when the investor purchased the security.
HSI Quarterly Return	Number	Hang Seng Index quarterly return when the investor purchased the security.
Demographic Characteristics		
Education	Years	=6, 12, or 16 if the investor has finished all or some primary school education, all or some high school education, or all or some college education.
Age	Years	Age of the investor.
Male	Dummy	=1 if the investor is male.
Retired	Dummy	=1 if the investor is retired or unemployed.
Married	Dummy	=1 if the investor is married.
HighSchool	Dummy	=1 if the investor finished or finished some high school education.
College	Dummy	=1 if the investor finished or finished some college education or more advanced education.
Comprehension	Dummy	=1 if the investor can read traditional or simplified Chinese characters well.
Calculation	Dummy	=1 if the investor can do simple or compound interest rate calculation.
Cannot Recall	Dummy	=1 if the investor cannot recall the name of security and the month when he/she purchased the security.

Appendix II
Detailed Information of Credit-Linked Notes

This table shows the detailed information of two main credit-linked notes in our sample: Minibond and Constellation. "Hang Seng Index" is reported as of the issue date. "Fixed Deposit Rate" and "Current Deposit Rate" are reported as of the month before the issue date. In panel A, The second period interest rate for Minibond Series 11A is 8% minus six month LIBOR, and 7.6% minus six month HIBOR for Minibond Series 11B. During the time we conduct the survey from January 2009 to June 2009, there are 28 series of Minibond and 40 series of Constellation outstanding in the market. In our sample, there are 464 Minibond investors and 80 Constellation investors.

Panel A: Minibond										
Series No.	Issue Date	#Investor (sample)	Interest Rate Period1	Interest Rate Period2	Currency	Maturity Date	#Reference Entity	Max Rating	Min Rating	Coupon Frequency
5	2003/07/02	3	3.8	-	USD	2005/07/02	1	A-	A-	Semi-Ann
6	2003/09/24	2	5	8	USD	2005/09/25	150	AA-	A-	Annually
7A	2003/12/03	3	4.2	-	USD	2008/12/03	6	AA-	BBB	Semi-Ann
7B	2003/12/03	10	4.2	-	HKD	2008/12/03	6	AA-	BBB	Semi-Ann
8	2004/03/03	0	7	-	HKD	2009/03/03	5	A-	BBB	Semi-Ann
9A	2004/03/25	2	3.7	4.3	USD	2009/09/25	6	A+	A-	Semi-Ann
9B	2004/03/25	20	3.5	4.1	HKD	2009/09/25	6	A+	A-	Semi-Ann
10A	2004/05/28	4	4.25	4.75	USD	2009/11/28	7	A+	A-	Semi-Ann
10B	2004/05/28	17	4	4.5	HKD	2009/11/28	7	A+	A-	Semi-Ann
11A	2004/07/06	5	8	8 - LIBOR	USD	2010/01/06	1	A-	A-	Semi-Ann
11B	2004/07/06	15	7.6	7.6 -HIBOR	HKD	2010/01/06	1	A-	A-	Semi-Ann
12A	2004/09/08	6	4.65	5.4	USD	2010/03/08	6	A+	BBB	Semi-Ann
12B	2004/09/08	23	4.1	5.1	HKD	2010/03/08	6	A+	BBB	Semi-Ann
15A	2004/12/28	7	4.3	5	USD	2010/06/28	6	A+	BBB+	Semi-Ann
15B	2004/12/28	8	3.3	4	HKD	2010/06/28	6	A+	BBB+	Semi-Ann
16A	2005/02/07	10	4.2	4.75	USD	2010/08/07	6	A+	A-	Semi-Ann
16B	2005/02/07	10	3.2	3.75	HKD	2010/08/07	6	A+	A-	Semi-Ann
17A	2005/03/09	9	4.35	5	USD	2010/09/09	7	A+	A-	Semi-Ann
17B	2005/03/09	10	3.6	4.2	HKD	2010/09/09	7	A+	A-	Semi-Ann
18A	2005/04/06	6	4.5	5.5	USD	2010/10/06	7	AAA	A-	Semi-Ann
18B	2005/04/06	9	3.7	4.7	HKD	2010/10/06	7	AAA	A-	Semi-Ann
19A	2005/05/26	18	4.75	4.15	USD	2010/11/26	7	AA-	A-	Semi-Ann
19B	2005/05/26	0	5.75	5.15	HKD	2010/11/26	7	AA-	A-	Semi-Ann
20A	2005/07/20	3	4.8	6	USD	2011/01/20	7	A+	A-	Quarterly
20B	2005/07/20	3	4.2	5.4	HKD	2011/01/20	7	A+	A-	Quarterly
21A	2005/09/15	3	5.2	6.1	USD	2011/03/15	7	A+	A-	Quarterly
21B	2005/09/15	15	4.8	5.6	HKD	2011/03/15	7	A+	A-	Quarterly
22A	2005/11/25	1	4.65	5.65	USD	2011/05/25	7	AA-	A-	Quarterly
22B	2005/11/25	2	4.4	5.4	HKD	2011/05/25	7	AA-	A-	Quarterly
23A	2006/02/03	2	5.35	6	USD	2011/08/03	7	A+	A-	Quarterly
23B	2006/02/03	18	5.1	5.75	HKD	2011/08/03	7	A+	A-	Quarterly
25A	2006/04/26	1	5.5	6.5	USD	2011/10/26	7	AA-	A-	Quarterly
25B	2006/04/26	11	5.3	6	HKD	2011/10/26	7	AA-	A-	Quarterly
26A	2006/06/30	0	5.5	6.5	USD	2011/12/30	8	AA-	A-	Quarterly
26B	2006/06/30	2	5.3	6	HKD	2011/12/30	8	AA-	A-	Quarterly
27A	2006/09/15	10	7	8.3	USD	2009/09/15	7	A+	A+	Quarterly
27B	2006/09/15	30	6.3	7.5	HKD	2009/09/15	7	A+	A+	Quarterly

Appendix II *-Continued*

				Panel A: Minibond						
Series No.	Issue Date	#Investor (sample)	Interest Rate Period1	Interest Rate Period2	Curre ncy	Maturity Date	#Refer ence Entity	Max Rating	Min Rating	Coupon Frequency
28A	2006/10/27	9	6.5	8	USD	2009/10/27	7	A+	A	Quarterly
28B	2006/10/27	11	5.5	7	HKD	2009/10/27	7	A+	A	Quarterly
29A	2006/12/21	9	6	7.5	USD	2009/12/21	7	A+	A	Quarterly
29B	2006/12/21	10	5	6.5	HKD	2009/12/21	7	A+	A	Quarterly
30A	2007/01/31	2	6	7.5	USD	2010/02/01	7	AA-	A	Quarterly
30B	2007/01/31	7	5	6.5	HKD	2010/02/01	7	AA-	A	Quarterly
31A	2007/04/19	3	6	7.6	USD	2010/04/19	8	AA-	A	Quarterly
31B	2007/04/19	8	5.5	7.1	HKD	2010/04/19	8	AA-	A	Quarterly
32A	2007/07/16	1	6.1	7.8	USD	2010/07/16	8	AA-	A	Quarterly
32B	2007/07/16	1	5.5	7.1	HKD	2010/07/16	8	AA-	A	Quarterly
33A	2007/08/31	2	7	9.1	USD	2010/08/31	8	AA-	A	Quarterly
33B	2007/08/31	12	6.3	8.1	HKD	2010/08/31	8	AA-	A	Quarterly
34A	2008/01/07	16	6	-	USD	2011/01/07	7	AA-	BBB+	Quarterly
34B	2008/01/07	50	5.6	-	HKD	2011/01/07	7	AA-	BBB+	Quarterly
35A	2008/02/22	19	6	-	USD	2011/02/22	7	AA	A-	Quarterly
35B	2008/02/22	116	5.6	-	HKD	2011/02/22	7	AA	A-	Quarterly
36A	2008/05/15	14	5.5	-	USD	2011/05/15	7	AA	A-	Quarterly
36B	2008/05/15	49	5	-	HKD	2011/05/15	7	AA	A-	Quarterly

Appendix II *-Continued*

Panel B: Constellation

Series No.	Issue Date	#Investor (sample)	Interest Rate Period1	Interest Rate Period2	Currency	Maturity Date	#Reference Entity	Max Rating	Min Rating	Coupon Frequency
34	2006/03/28	2	6	6.2	USD	2009/03/28	8	A+	BBB	Quarterly
35	2006/03/28	5	5.5	6	HKD	2009/03/28	8	A+	BBB	Quarterly
36	2006/03/28	0	5	5.2	USD	2008/03/28	8	A+	BBB	Quarterly
37	2006/03/28	9	4.5	5	HKD	2008/03/28	8	A+	BBB	Quarterly
39	2006/05/26	3	5.75	7	USD	2010/05/26	8	AA-	BBB+	Quarterly
40	2006/05/26	2	5.35	6.5	HKD	2010/05/26	8	AA-	BBB+	Quarterly
41	2006/05/26	0	4.5	5.5	USD	2008/05/26	8	AA-	BBB+	Quarterly
42	2006/05/26	1	4.1	5.1	HKD	2008/05/26	8	AA-	BBB+	Quarterly
43	2006/07/28	9	6.8	8	USD	2010/07/28	8	A+	BBB	Quarterly
44	2006/07/28	13	6.3	7.6	HKD	2010/07/28	8	A+	BBB	Quarterly
45	2006/07/28	3	5.5	6	USD	2009/10/28	8	A+	BBB	Quarterly
46	2006/07/28	2	5	5.5	HKD	2009/10/28	8	A+	BBB	Quarterly
47	2006/09/28	0	6.3	8	USD	2010/09/28	8	AA-	BBB	Quarterly
48	2006/09/28	0	6	7	HKD	2010/09/28	8	AA-	BBB	Quarterly
49	2006/09/28	0	5	6	USD	2009/03/28	8	AA-	BBB	Quarterly
50	2006/09/28	1	4.75	5	HKD	2009/03/28	8	AA-	BBB	Quarterly
55	2006/11/22	7	6.6	8	USD	2011/11/22	8	A	A-	Quarterly
56	2006/11/22	6	6	6.3	HKD	2011/11/22	8	A	A-	Quarterly
57	2006/11/22	13	6	7	USD	2010/05/22	8	A	A-	Quarterly
58	2006/11/22	12	5.2	6	HKD	2010/05/22	8	A	A-	Quarterly
59	2007/01/10	4	5.75	6.75	USD	2012/01/10	8	A+	BBB+	Quarterly
60	2007/01/10	5	5	6	HKD	2012/01/10	8	A+	BBB+	Quarterly
61	2007/01/10	1	5.1	6.1	USD	2010/07/10	8	A+	BBB+	Quarterly
62	2007/01/10	0	4.5	5.25	HKD	2010/07/10	8	A+	BBB+	Quarterly
63	2007/02/08	5	6.2	8	USD	2013/02/08	8	A+	BBB+	Monthly
64	2007/02/08	2	5.2	6.8	HKD	2013/02/08	8	A+	BBB+	Monthly
65	2007/02/08	2	5	5.5	USD	2010/02/08	8	A+	BBB+	Monthly
66	2007/02/08	3	4	5	HKD	2010/02/08	8	A+	BBB+	Monthly
67	2007/03/22	1	6.3	8.3	USD	2013/03/22	8	A+	A-	Quarterly
68	2007/03/22	0	5.6	7	HKD	2013/03/22	8	A+	A-	Quarterly
69	2007/03/22	0	5.6	6.6	USD	2011/03/22	8	A+	A-	Quarterly
70	2007/03/22	2	5	5.6	HKD	2011/03/22	8	A+	A-	Quarterly
71	2007/05/23	1	6.6	8.8	USD	2013/05/23	8	AA-	A-	Quarterly
72	2007/05/23	2	6	8	HKD	2013/05/23	8	AA-	A-	Quarterly
73	2007/05/23	0	5.6	6.8	USD	2011/05/23	8	AA-	A-	Quarterly
74	2007/05/23	0	5.2	6	HKD	2011/05/23	8	AA-	A-	Quarterly
78	2007/07/23	2	7	9	USD	2013/07/23	8	AA-	A-	Quarterly
79	2007/07/23	0	6.5	8.5	HKD	2013/07/23	8	AA-	A-	Quarterly
80	2007/07/23	0	6.2	7.3	USD	2011/07/23	8	AA-	A-	Quarterly
81	2007/07/23	4	5.7	7.2	HKD	2011/07/23	8	AA-	A-	Quarterly