EINAUDI INSTITUTE FOR ECONOMICS AND FINANCE

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“Household Finance and the Financial Literacy debate”

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The rise of household finance

- When we think of finance, we think of corporate finance
- Over the past decade, a revolution has taken place
  - Stock of mortgages is as big as long-term corporate lending
  - Consumers credit market is as big as that for private equity
  - Financial intermediaries make more profits on households than on firms
- Judged from size, households finance is today more important than corporate finance

Households use of financial markets

Households use financial markets more than in the past

- Shrinking role of public pension systems → greater role for personal savings
- Great increase in the **menu of assets**
- Larger **number of insurable risks** and insurance contracts
- **Access to credit market** became easier and variety of loans increased (consumers and mortgages)
- Larger set of **payment instruments** and services

Interactions have grown

So fast that, for one of the following reasons…

- A cash withdrawal at an ATM
- The automatic payment of a bill
- A check on line of the value of its investments
- Obtaining a checks book
- A credit or debit card payment
- The investment of extra savings
- The application for a new loan or the payments on an existing one

…almost everyday a households deals with the financial market

Increased welfare...

- Greater availability of financial instruments and services potentially highly beneficial
    - Allows to get resources when needed
        - Buy a house when one sets up a family rather than later
        - Buy durable goods when they are most needed
        - Possibility of financing investment in education
    - Allows to save on time (e.g. payments on line)
    - Greater investments opportunities
        - Better portfolio diversification, larger set of instruments
    - Allows better protection from relevant risks
- Financial innovations and developments should be encouraged

…But has brought also some problems

- Complexity of transactions, instruments and contracts has grown hands in hands with intensity of exposure of households to finance

- Ability to understand new instruments and contracts has not grown so much

- Are households prepared to face the new challenge?

- Partly depends on the measure of their "ignorance"

How big is this “ignorance”?

- Significant progress in measuring financial literacy

- Two strategies:

1. Subjective measures (MIFID)
2. Objective measures based on simple tests

Ex.1. Simple interest calculations

"Suppose you have EUR 100 in a saving account with annual interest rate of 2%. If you leave the money there after 5 years how much will be in your account?"

i. More than 102

ii. Exactly 102

iii. Less than 102

More than half gets it wrong

Ex. 2. Checking account balance

Banca Nazionale del Risparmio
Estratto al 31/05/2006
del conto C/C N. 678 987654 321

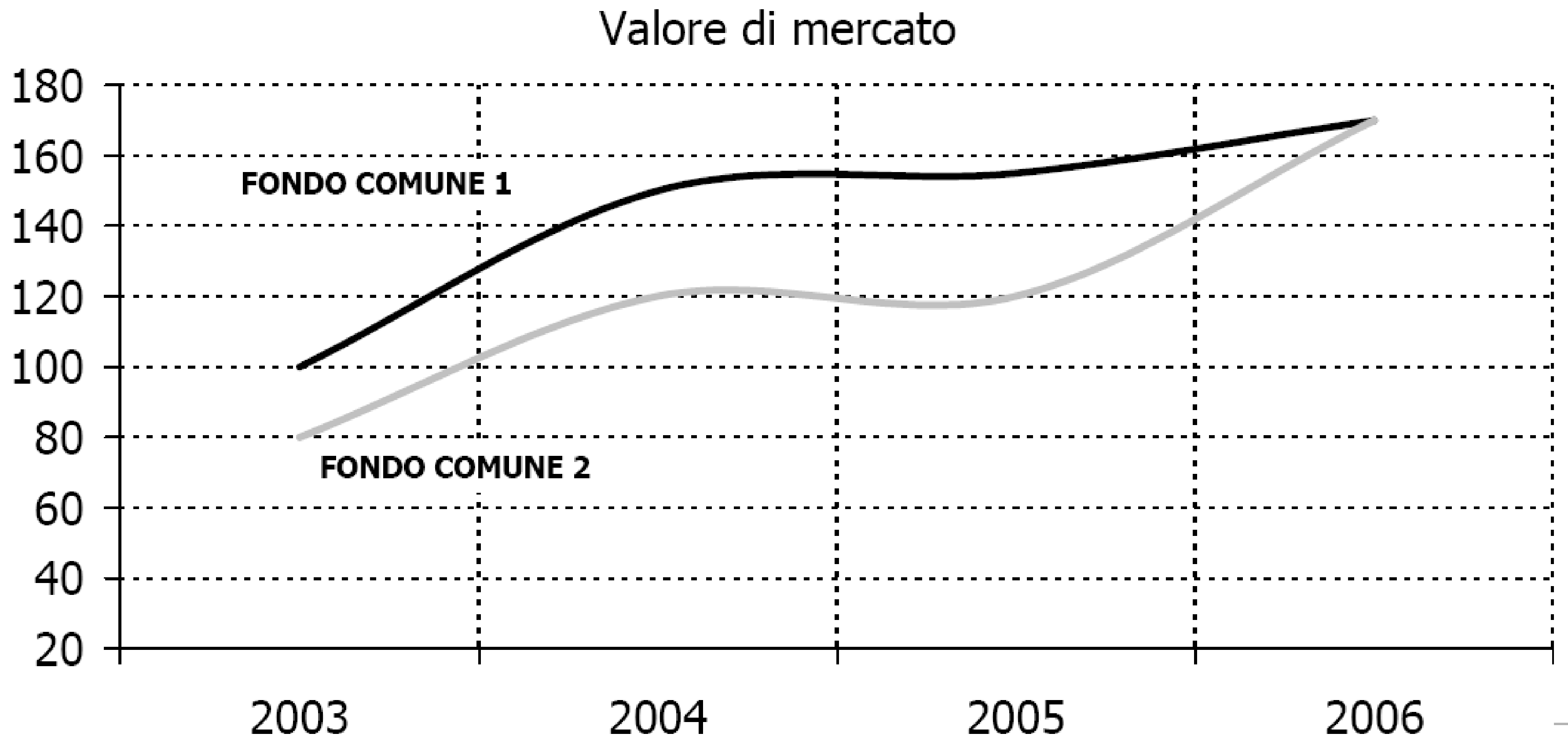
You receive your account balance from the bank; can you tell how much money is available by the end of May?

DATA	VALUTA	N. OPERAZIONE	DESCRIZIONE DELLE OPERAZIONI	MOVIMENTI DARE	MOVIMENTI AVERE
***	***	***	SALDO COME DA COMUNICAZIONE DEL 05/05/2006		320
01/05/2006	30/04/2006	1007	ADDEBITO R.I.D. 06054542 RAPPORTO N. 06054 UTENZE TELEFONICA SPA, PERIODO 01/03/2006 - 30/04/2006	65	
02/05/2006	01/05/2006	1008	PRELEVAMENTO BANCOMAT CARTA N. 10	100	
27/05/2006	28/05/2006	1010	ACCREDITO STIPENDIO		1.100
28/05/2006	27/05/2006	1011	VOSTRO ASSEGNO N. 3036	187	
29/05/2006	28/05/2006	1012	VOSTRA DISPOSIZIONE A FAVORE DEL SIG. PAOLO ROSSI CAUSALE: AFFITTO APRILE	800	
29/05/2006	28/05/2006	1013	ADDEBITO SPESE OPERAZIONE N. 1012	1	
31/05/2006	30/05/2006	1014	PAGOBANCOMAT ADDEBITO CARTA N. 10. ESEGUITO IL 28/05/2006 FARMACIA DELLA SALUTE,	88	
31/05/2006	30/05/2006	1015	ACCREDITO RIMBORSO RETTA ASILO NIDO.		100
***	***	***	SALDO FINALE DOPO LE SOPRAELENCATE SCRITTURE		279

Half of the households is unable to figure out the balance

Ex. 3. Mutual fund return

The figure shows the value of two mutual funds over the past 4 years.
In your view, which funds has yield the highest return over the period?
A) Fund 1; B) Fund 2; C) they are Equivalent; D) I do not know



¼ provides the correct answer

Ex. 4. Compound Interest

"Suppose you have EUR 1,000 debt on your credit card. The interest rate is 20% a year. If you do not repay any sum, how many years will it take for the debt to double?"

i. 2 years

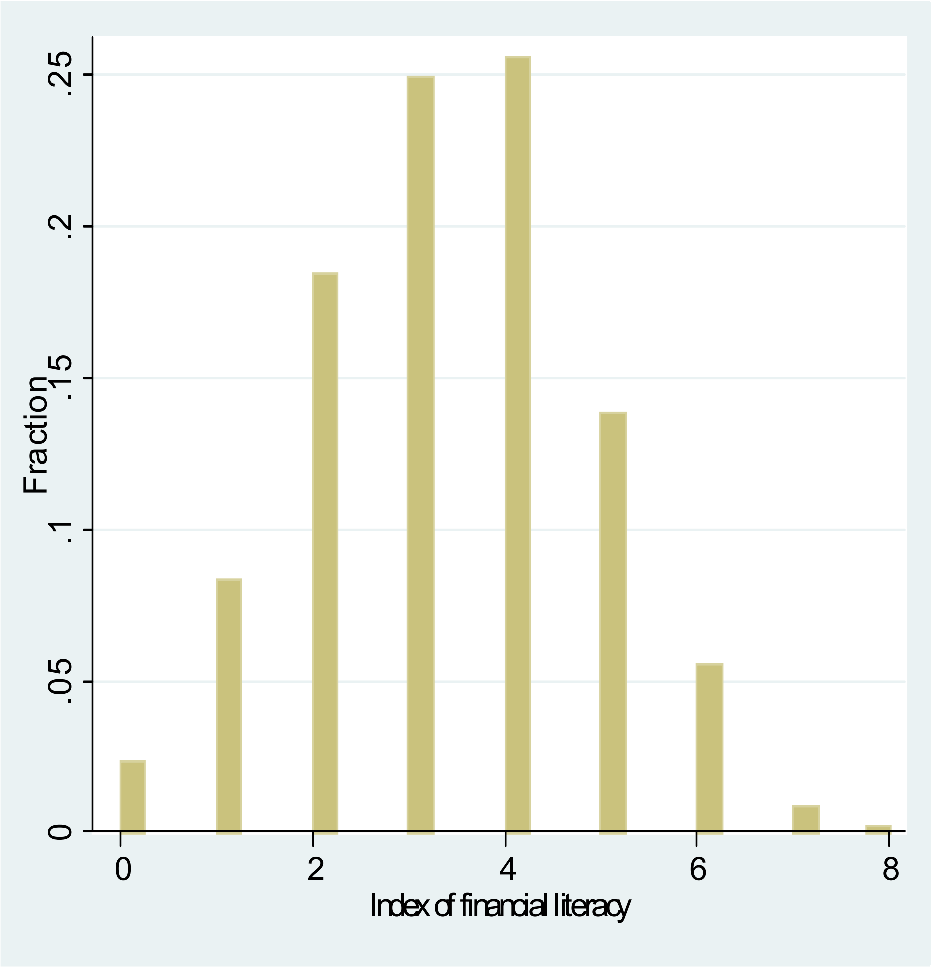
ii. Less than 5 years

iii. Between 5 and 10 years

iv. More than 10 years

Only 1/3 gets it right, 1/3 overstates

A composite index



- 8 tests
- More than 55% at most guesses 3 correctly
- Almost no one gets all right
- Mean is around 40% correct
- => strong evidence of limited financial literacy
- Correlates with levels of wealth and education
- Lower for women, the young and the old
- Self-assessed measures of financial ability orthogonal to objective tests=> concerns for MIFID

Does Financial Literacy matter?

FL is interesting if it helps mitigate financial "mistakes"

- Two types of mistake avoidance:
  - Avoid making the mistake <u>of inappropriate use</u> of financial instruments
  - Avoid making the mistake <u>of not using</u> financial services for fear of lacking the ability to rely on them

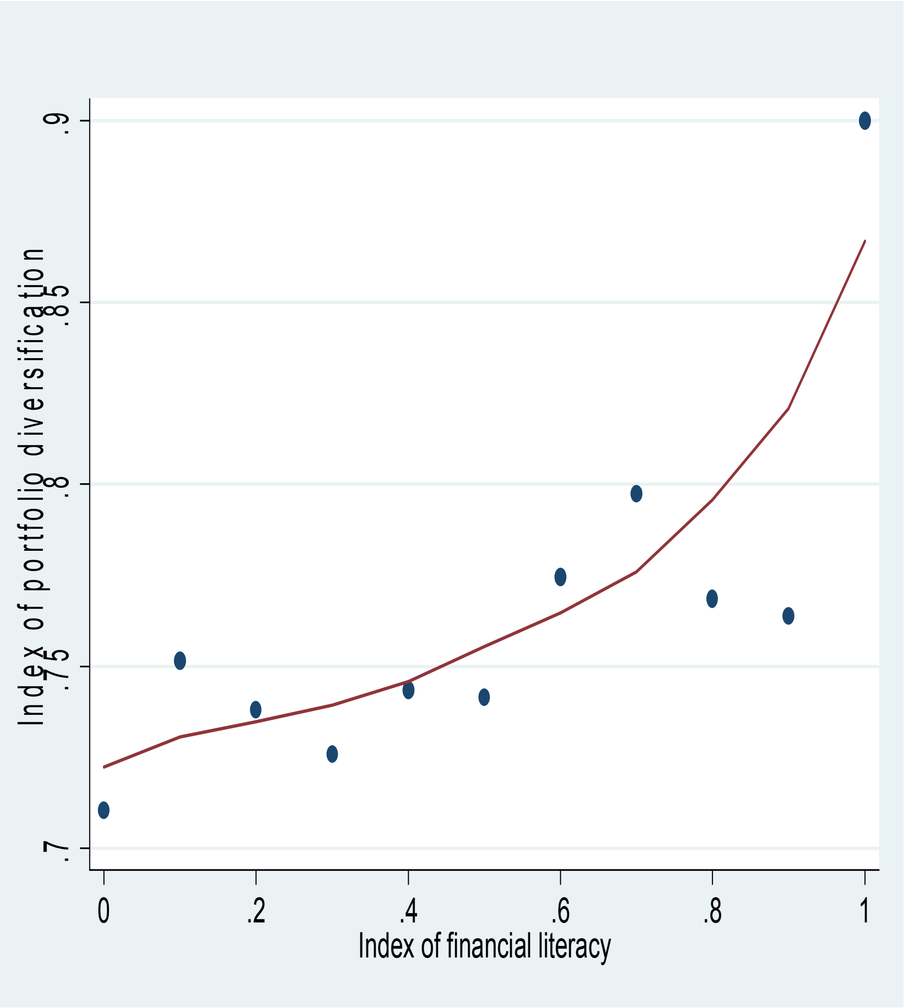
Type 1 mistakes : examples

Investors with higher financial literacy:

- seem to be able to finance at lower rates - Danna Moore (2003)
- are more likely they repay a mortgage when receive large injections of liquidity - Annette Vissing Jorgersen (2000)
- more likely to refinance a mortgage when rates fall substantially - John Campbell (2006)

FL seems to improve households ability to manage debt

FL & portfolio diversification



- Guiso & Jappelli: investors with low literacy hold less diversified portfolios

- Campbell et. al.: Sharpe ratios are lower for low literacy investors

Problems in assessing benefits of FL

- One can test whether FL helps avoiding mistakes if the optimal choice is well defined
    - Can we say for sure that it is optimal to repay a mortgage when one receives an injection of liquidity?
    - Or what the optimal mortgage type is for an individual?
    - Even the idea of diversification may not provide a valid benchmark if investors have some information advantage
- Need a setting where one choice dominates the alternative: look at investor behavior during the crisis

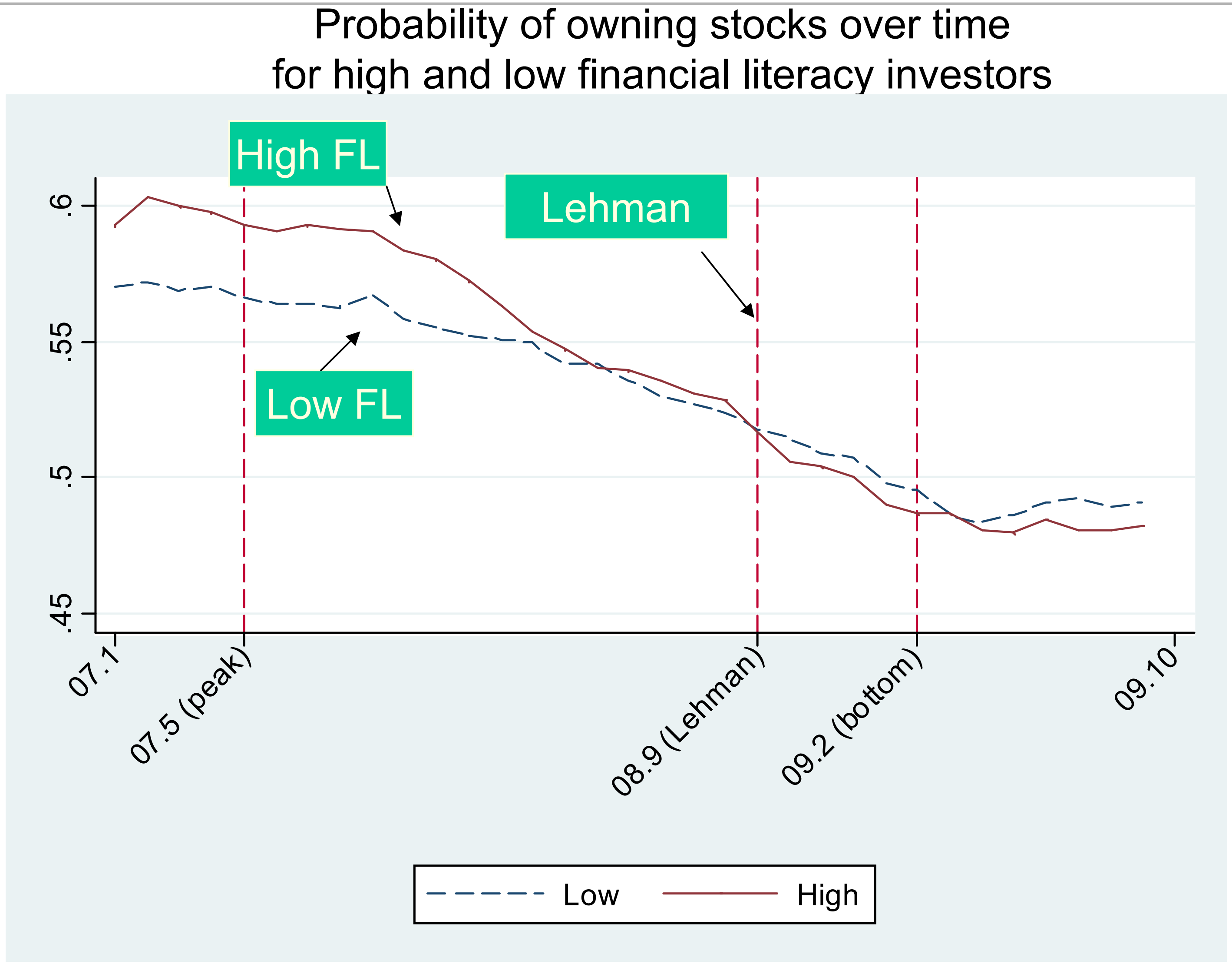
Market timing during the crisis

- Idea: in the face of a stock market crash, conditional on selling stocks or exiting the market, better sell or exit before than after the crash

- Use data on a sample of investors in a large Italian bank:
  - Portfolio transaction are observed over time before, during and after the crisis
  - Investors can be sorted according to levels of literacy

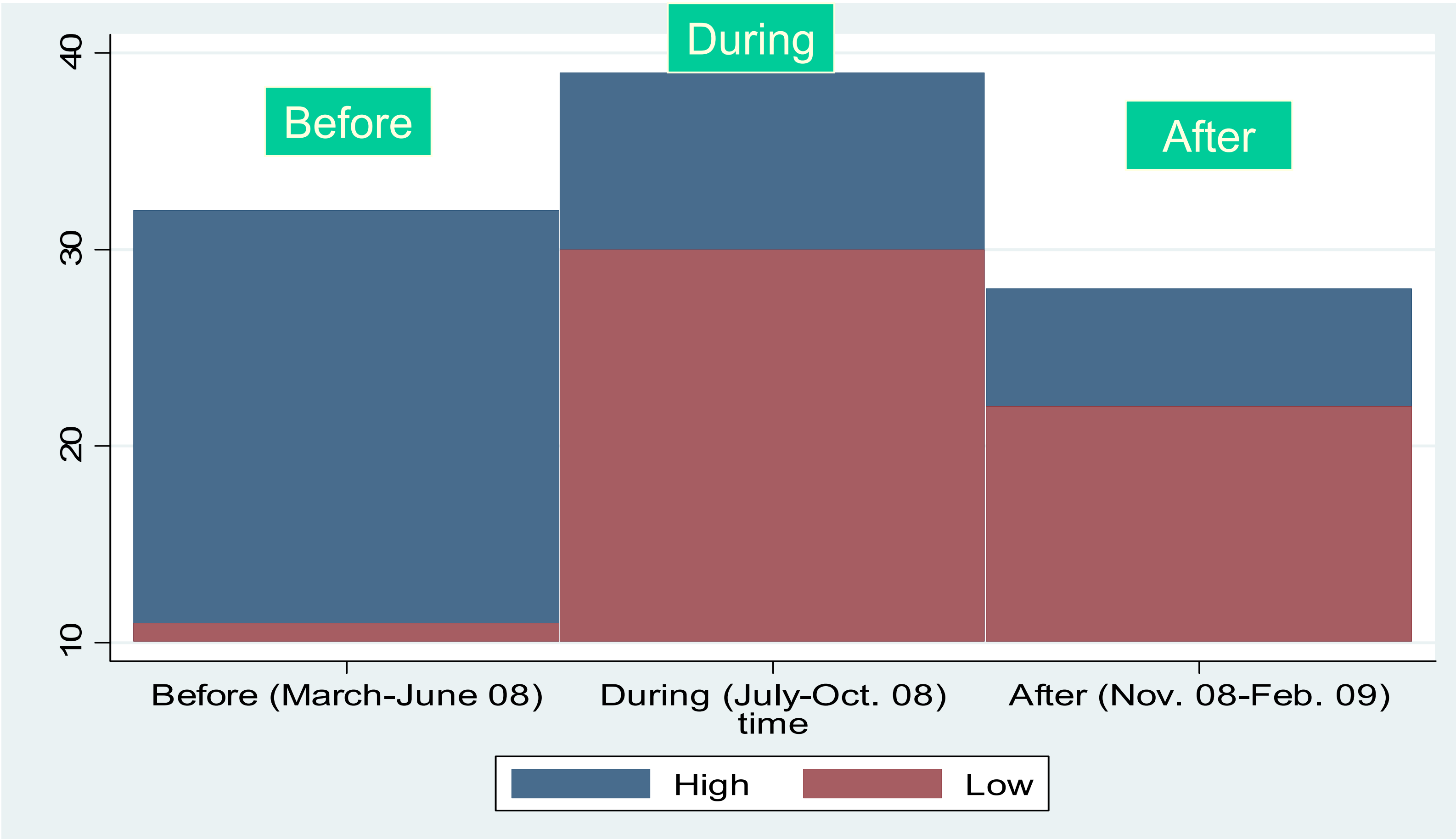
- Does financial literacy help timing the market?

Market timing: 1



Market timing: 2

Share of investors with high and low financial literacy who exited the market during the crisis leaving it before, during and after the Lehman default



Type 2 mistakes

- If one does not know how to behave in an airplane during a turbulence he will tend to avoid flying
- But this is costly too because flying could be the fastest way to get to destination
- Those who have little familiarity with financial markets may decide not to rely on them altogether for fear of making mistakes
- Doing so they also lose the benefits from relying on them

Type 2 mistake: evidence

Less financially literate investors are:

- Less likely to own stocks
  - They avoid the cost of poor diversification but lose the benefits of the equity premium
- Less likely to own a credit card
  - They avoid the cost of a “bad” use (e.g. incurring in large fees) but give up the benefit of not carrying cash with them
- Not participating may for some be the least of the two costs and be individually optimal but….
  - Slows down market development
  - Dampens incentives to introduce new instruments/services

Promoting financial literacy should be in the interest of the industry

Literacy and Financial Advice

Financial Advice

- If one lacks financial knowledge he can rely on the advise of an expert
- Financial advice can be an extremely important alternative to lack of financial expertise
- Investors do rely on advice but there are limitations

Limits to financial advice

- It is costly: many financial transactions are too “small” to cover the cost of personalized advice => difficult for an independent advice to emerge

- Natural solution: it is offered by the seller of the service
  - Is expert
  - No duplication of costs of distribution

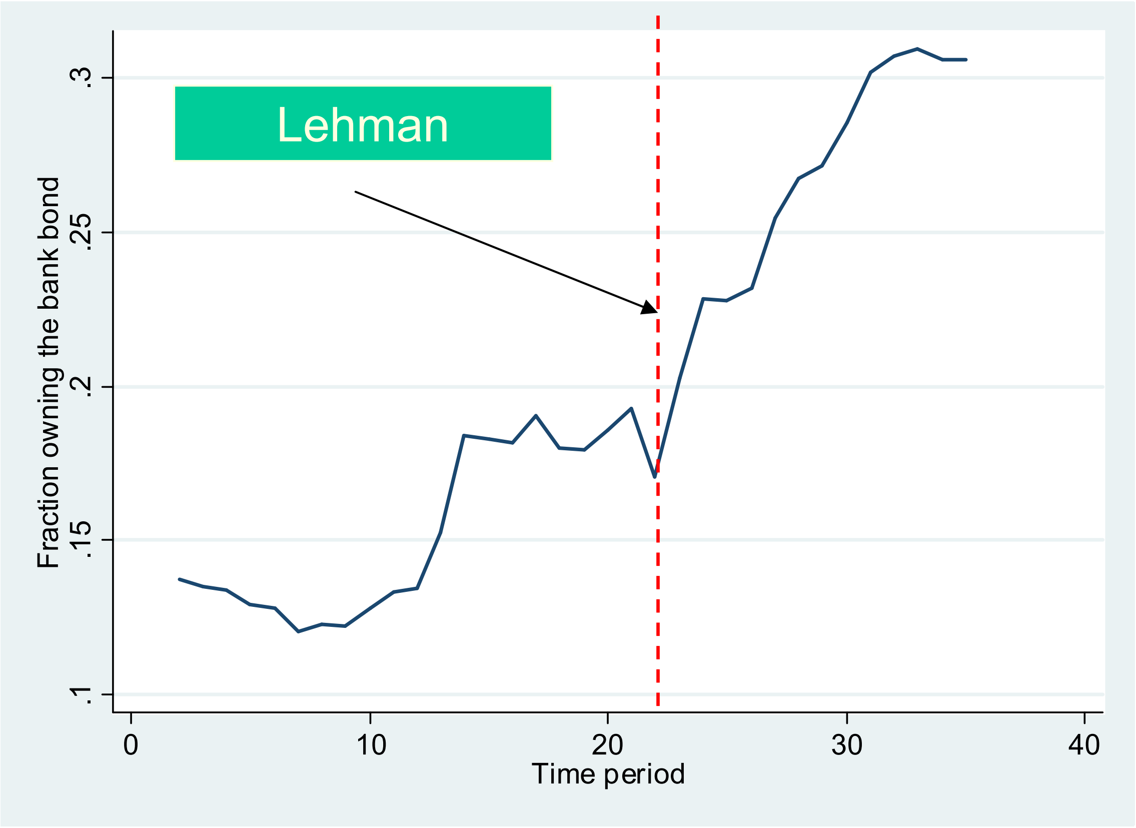
- But because he is also the seller of the product may have an incentive to bias advice

Can FL help recognize biased advice?

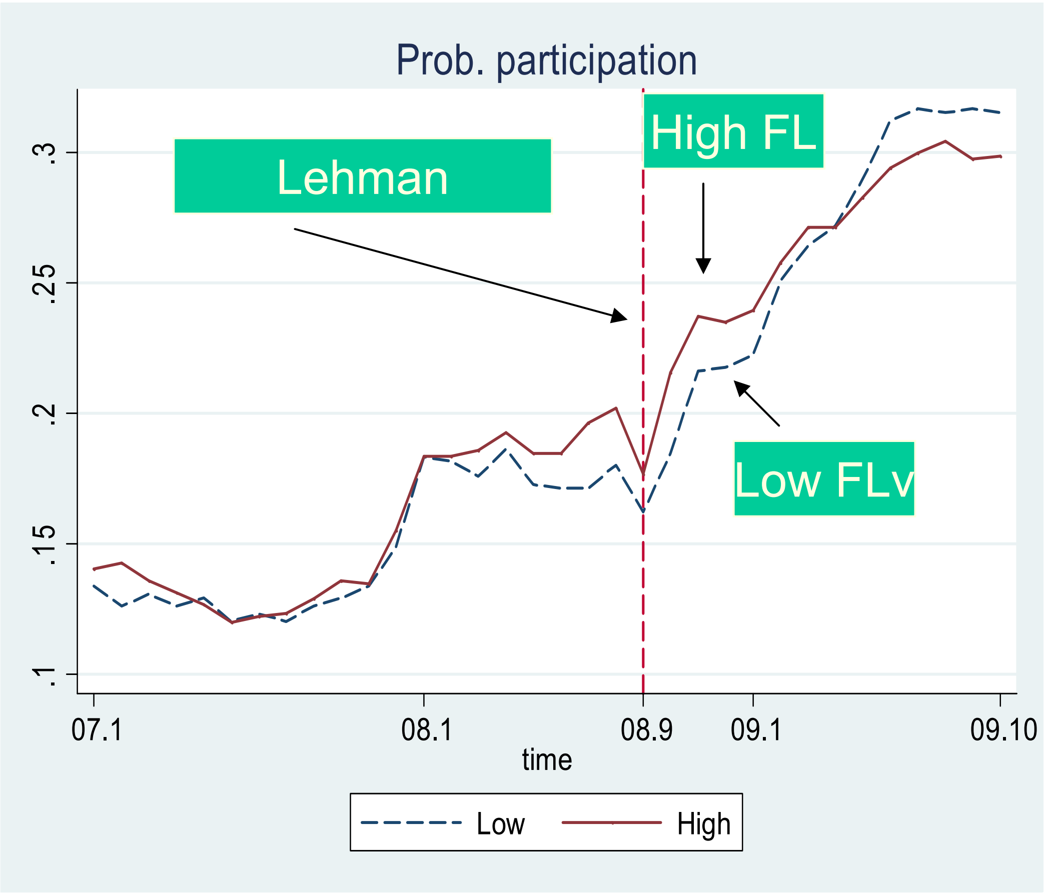
- Hard question to answer: need to identify a situation where a seller has a clear incentive to push choice in a direction which is not in the best interest of the investor
- The crisis helps finding such a situation
- After the collapse of Lehman <u>banks</u> access to liquidity became much harder
- One way to obtain liquidity was to push investors out of mutual funds and advice them to buy banks' own bonds => de facto a transfer of risk
  - Use our Italian bank data to check this
  - Did investors buy more bank bonds after Lehman?
  - Did highly literate buy less?

Exploiting a conflict of interest?

Fraction of bank costumers holding bank bonds



Does Financial Literacy help?



- Holding of the bank bond increases for all investors
- But it increases a bit faster for low literacy investors
- Literacy offers some edge against exploitation of conflicts of interests but it seems limited

Summing up

- Measures of FL document an impressive shortage of basic knowledge
- FL seems to help:
  - Lower type 1 error => make an inappropriate use of financial instruments and services
  - Lower also type 2 error: not using financial markets even if beneficial
  - Enhance somewhat ability to detect distorted advice
- Should we rush to set up <u>mass</u> programs of financial education?

It is probably too early

- We do not know enough about the causal link:
  - Correlations may just be a reflection of differences in IQ, not literacy
  - But while literacy can be increased IQ cannot
- We do not yet know enough *how* FL should be taught to be effective
  - Scope for field experiments
- If targeted to whole population likely to be very costly. Is it worth the cost?
  - Scope for limited reforms on existing school curricula

Improving on advice

- An alternative/complementary policy is to improve on advice
  - Cheaper to train a pool of experts
  - Easier to update their knowledge
  - The same expertise can be used by many
- But one needs to overcome the mistrust problem (T&A)
- Paradox:
  - Need more literacy because of the limitations of credible advice
  - Need better advice because of the limitations of literacy acquisition
- Act on both margins

Trust and reliance on advice