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Financial Literacy and High-Cost Borrowing in the United States

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Relevance

Major changes that increase individuals' responsibility for their financial well-being

- **Changes in the pension landscape**
  - **DC pensions and IRAs**
- **Changes in the labor markets**
  - **Divergence in wages – skills are critical**
  - **One of the most important decisions (invest in education) has to be made early in life**
- **Changes in the financial markets**
  - **Increased complexity**
  - **More opportunities to borrow & in large amounts**

Debt and borrowing

Need to look at liability side of balance sheets

- **A lot of research has been done on asset building and wealth accumulation**
  - Precautionary savings
  - Retirement savings
  - Saving for education
- **Need to focus on debt as well**
  - A high proportion of families carry debt and until late in the life-cycle
- **Debt instruments normally charge higher interest than asset instruments**
  - Some are high-cost
  - High-cost borrowing has expanded rapidly in the last 20 years

Expansions of AFS industry

- In 2007 alone, Americans paid an estimated $8 billion in financial charges to borrow $50 billion from payday lenders at annual percentage rates (APR) often well over 400% (Bertrand and Morse, 2011)
- In 2008, rent-to-own businesses and pawnbrokers earned $7 billion and $4 billion in revenue, respectively (Rivlin, 2010)
- Internet-based payday lending experienced yearly growth rates above 30 percent (Center for Financial Services Innovation, 2011)
- AFS industry worth at least 320 billion in transactional services (FDIC, 2009)

New data set to study financial behavior

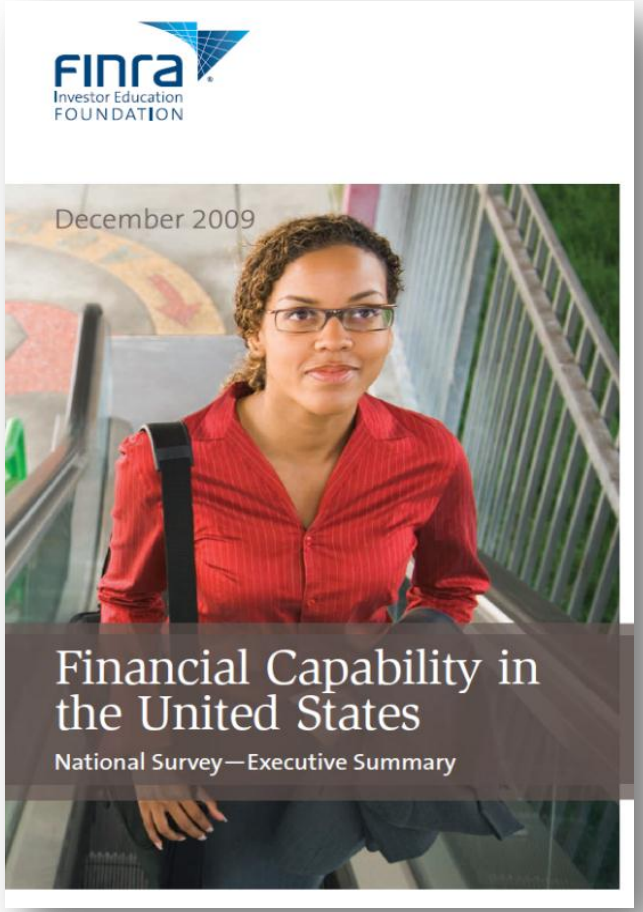
The 2009 National Financial Capability Study (NFCS)

It includes 3 surveys:

1. **National Survey**: Nationally projectable telephone survey of 1,488 American adults
2. **State-by-State Survey**: Online survey of approximately 28,000 respondents (roughly 500 per state + DC)
3. **Military Survey**: Online survey of 800 military personnel and spouses

New wave in 2012

We use State-by-State data



Questions on AFS use in 2009 NFCS

Please tell me if you've done any of the following in the past five years (originally from Lusardi and Tufano, 2009, but different time frame):

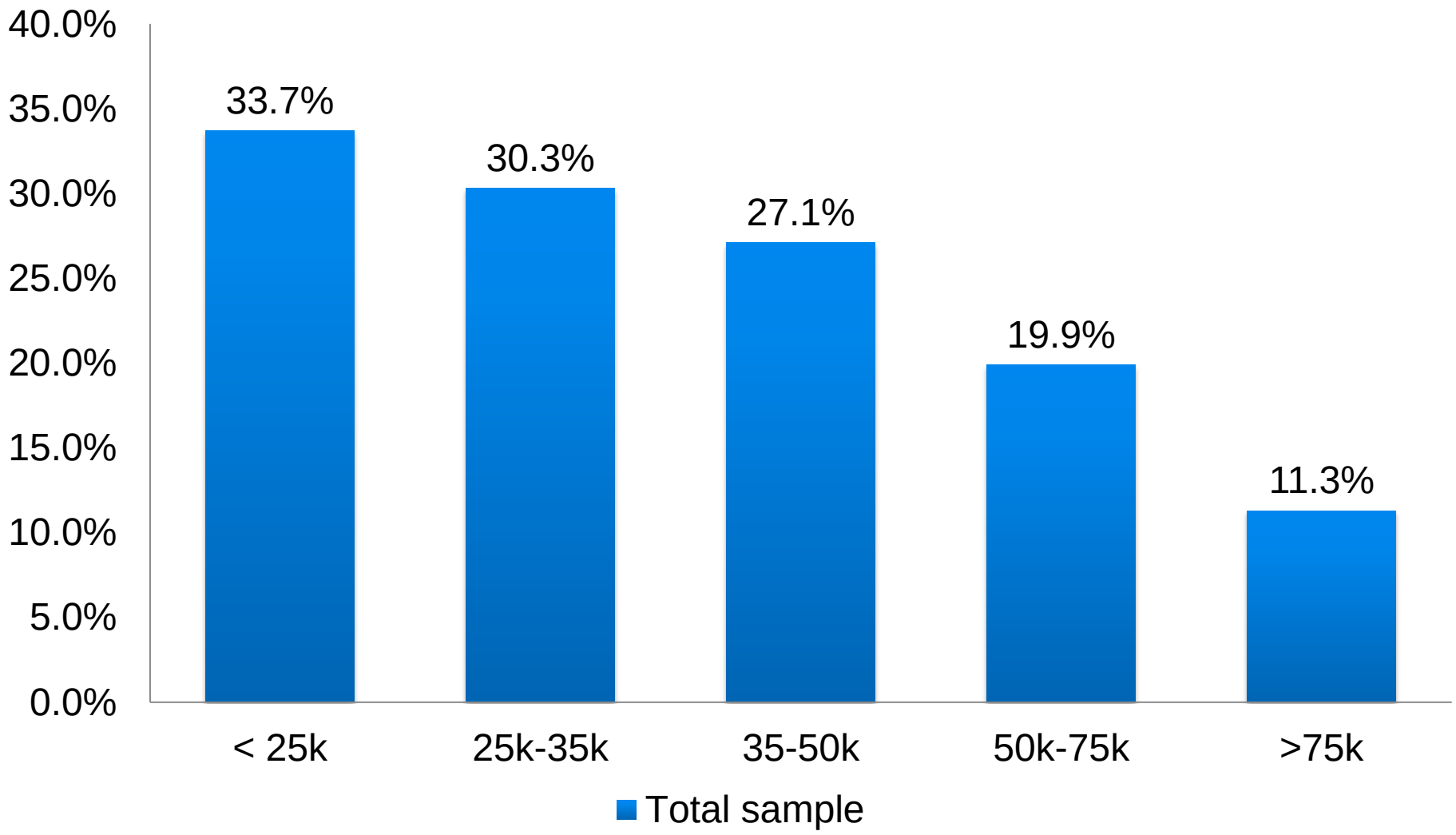
- *Have you taken out an auto title loan?*
- *Have you taken out a short term "payday" loan?*
- *Have you gotten an advance on your tax refund (This is sometimes called a "refund anticipation loan" or "rapid refund")?*
- *Have you used a pawn shop?*
- *Have you used a rent-to-own store?*

High-cost borrowing

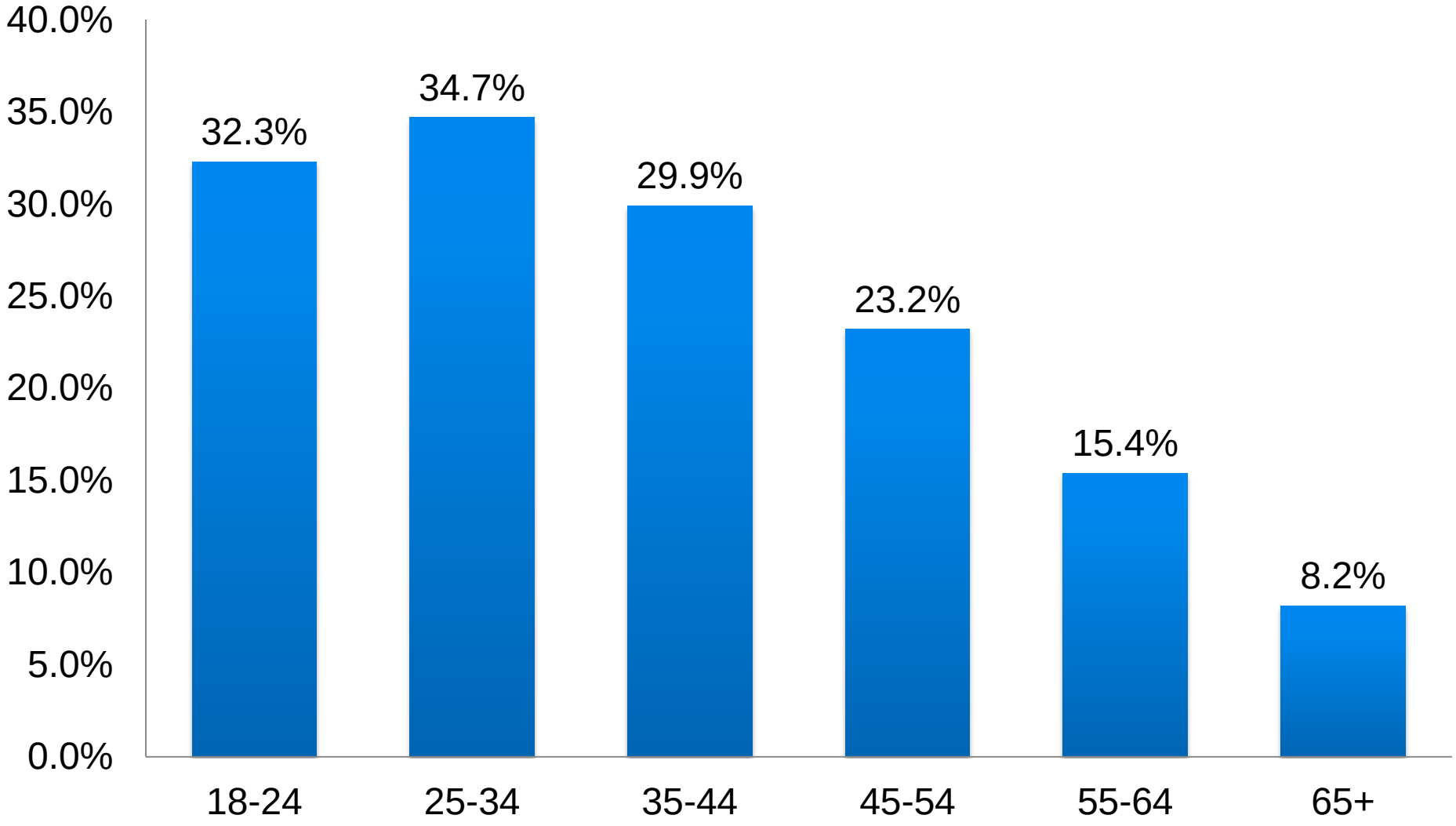
Many Americans use high-cost borrowing—24% have used one of these methods in the past 5 years

- **Pay-day loans (9.3%)**
- **Pawn shops (11.8%)**
- **Refund anticipation loans (5.7%)**
- **Auto title loans (6.3%)**
- **Rent-to-own stores (6.3%)**

Who borrows high-cost? AFS use by income

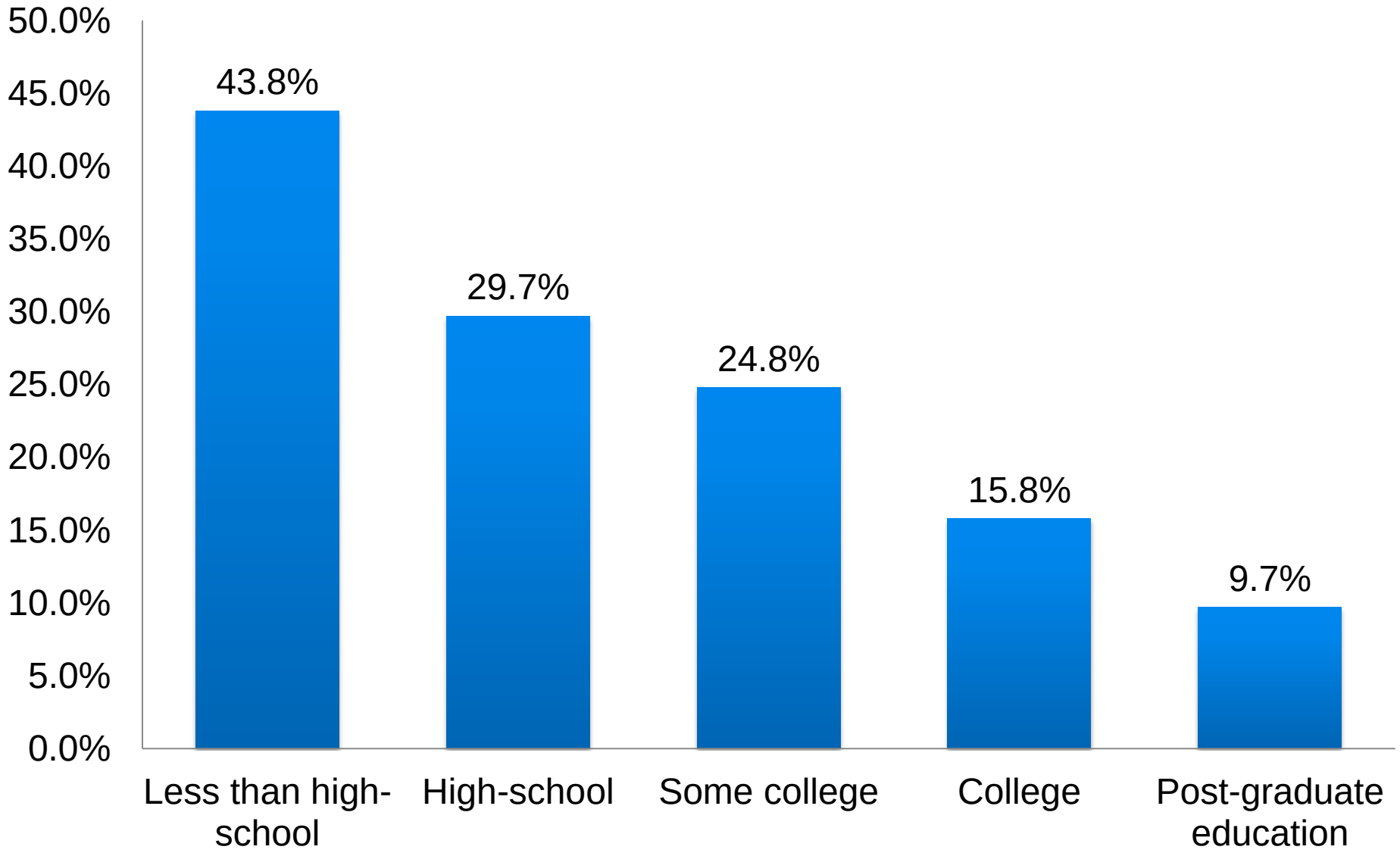


Who borrows high-cost? AFS use by age

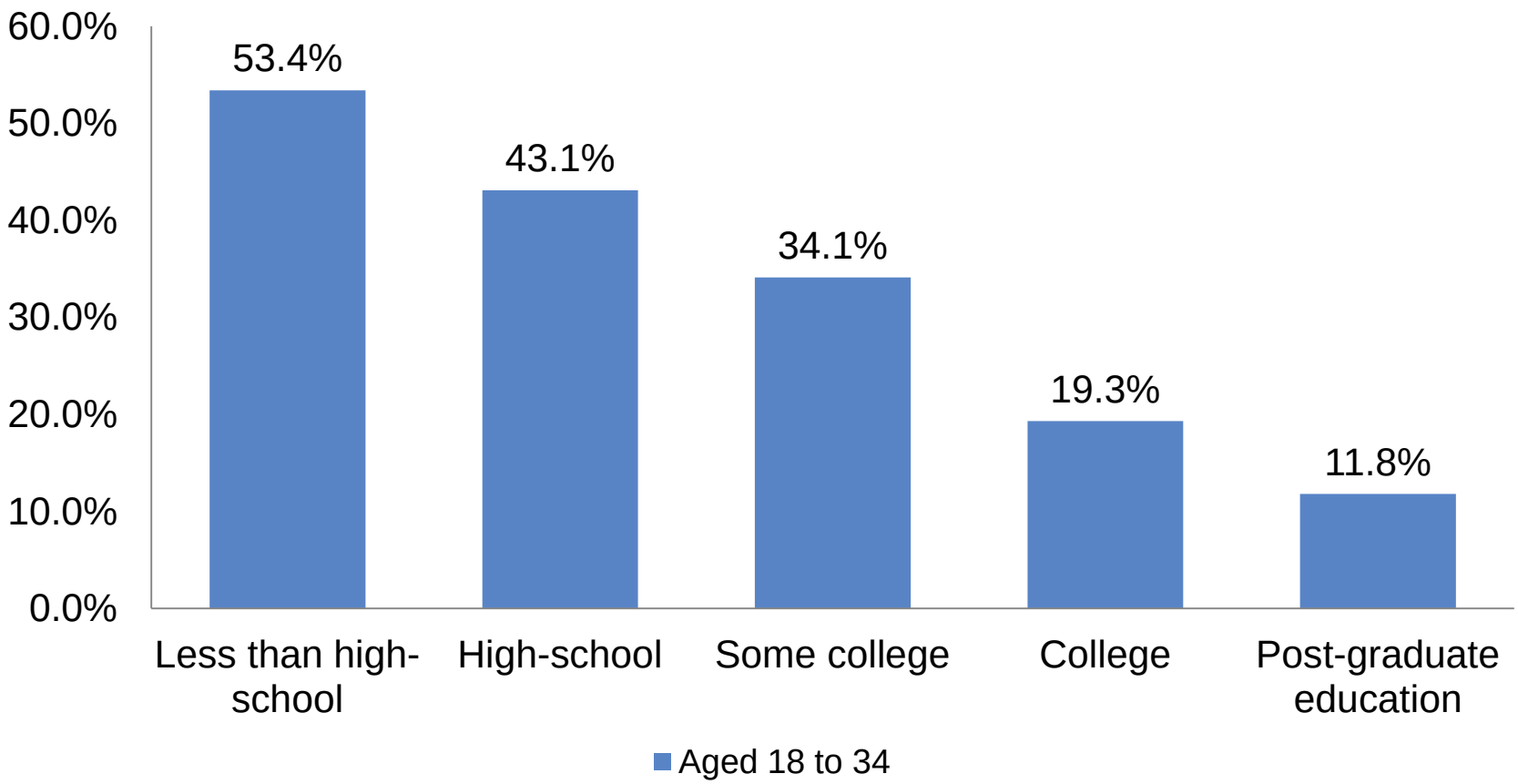


35% of 25-34 years old have used these methods

AFS use by education

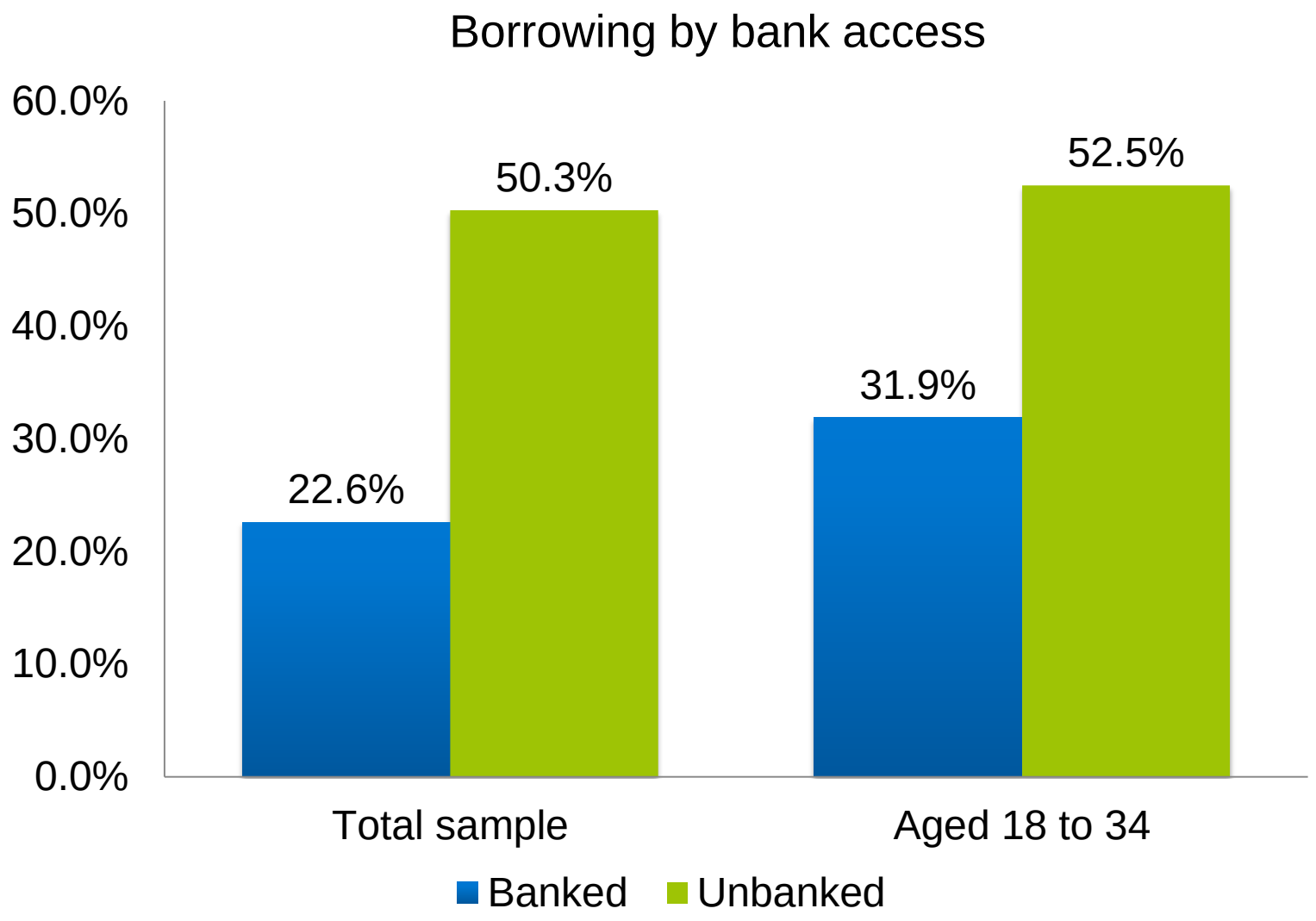


AFS use by education among the young

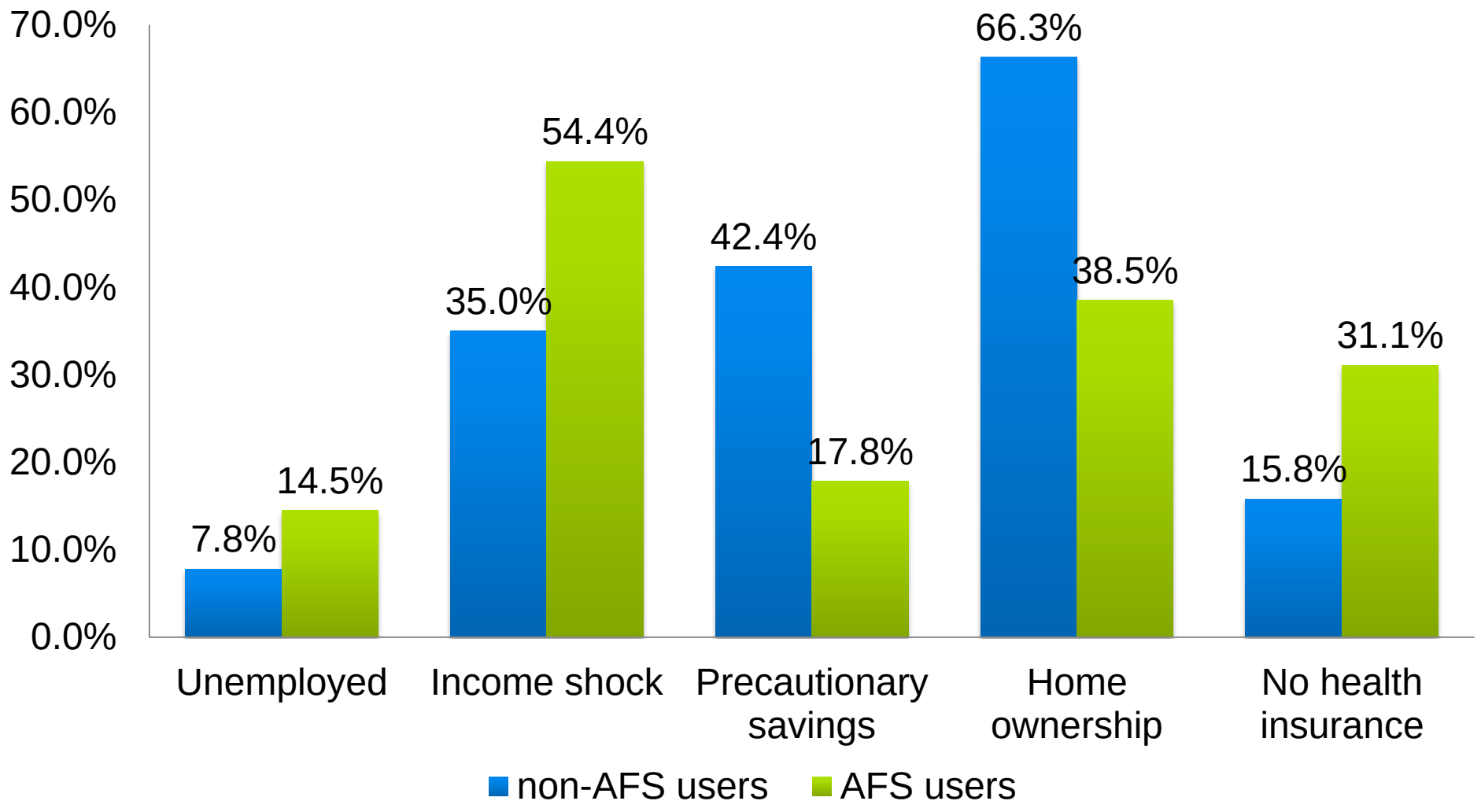


- While only a relatively small percentage (17 percent) of young individuals with a college degree have used high-cost methods of borrowing, a large percentage (45 percent) of young individuals with a high school education or less have relied on high-cost borrowing.

AFS use and bank access



AFS use and financial fragility, total sample



AFS use across products

Most people use more than one AFS product

	Auto Title Loan	Payday Loan	Refund anticipation loan	Pawn shop	Rent-to-own store
Auto title loan	100.0%	32.5%	21.2%	32.9%	23.1%
Payday loan	22.1%	100.0%	25.4%	43.7%	30.3%
Refund anticip. loan	23.5%	41.3%	100.0%	46.2%	34.7%
Pawn shop	17.5%	34.2%	22.3%	100.0%	26.5%
Rent-to-own store	23.1%	44.5%	31.3%	49.7%	100.0%

Several explanations for high-cost borrowing

The literature has offered many explanations

- **Negative shocks and tight budget constraints**
- **Preferences**
  - **Impatience and hyperbolic discounting**
- **No easy access to banking**

We would like to add another explanation:

- **Lack of financial literacy**
- **Low education attainment**

Measuring financial literacy (I)

To test numeracy and understanding of interest rates, we asked:

"Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?"

i) more than $102
ii) exactly $102
iii) less than $102
iv) don't know (DK)
v) refuse to answer

Measuring financial literacy (II)

To test understanding of inflation, we asked:

"Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy…"

i) more than today

ii) exactly the same as today

iii) less than today

iv) DK

v) Refuse to answer

Measuring financial literacy (III)

To test understanding of risk diversification, we asked:

"Do you think the following statement is true or false? *Buying a single company stock usually provides a safer return than a stock mutual fund.*"

i) true

ii) false

iii) DK

iv) Refuse to answer

High-cost borrowing and financial literacy

The widespread lack of financial literacy

	Total sample	Non-AFS users	AFS users
Interest Q correct	79.3%	81.1%	73.5%
Inflation Q correct	66.3%	70.0%	54.5%
Risk Q correct	55.2%	58.9%	43.1%
All 3 Qs correct	40.7%	45.2%	26.4%
No of obs.	26,364	20,060	6,304

Empirical estimates: Explaining high-cost borrowing, Total sample

	(1)	(2)	(3)	(4)	(5)
3 Qs correct	-.151*** (.006)	-.077*** (.006)	-.058*** (.006)	-.053*** (.006)	-.053*** (.006)
College	-	-	-0.196*** (0.017)	-0.180*** (0.017)	-0.162*** (0.017)
Post graduate	-	-	-0.210*** (0.019)	-0.194*** (0.019)	-0.177*** (0.019)
Demographics + state dummies	no	no	yes	yes	yes
Add risk preferences & financial fragility indicators	no	no	no	yes	yes
Add banked	no	no	no	no	yes
R-squared	.028	.124	.132	.165	.167
N	22,464	22,464	22,464	22,464	22,464

Empirical estimates:
Explaining high-cost borrowing, Young adults (age: 18-34)

	(1)	(2)	(3)	(4)	(5)
3 Qs correct	-.159*** (.012)	-.102*** (.012)	-.071*** (.012)	-.069*** (.012)	-.068*** (.012)
College	-	-	-0.206*** (.029)	-0.190*** (.028)	-0.168*** (.028)
Post graduate	-	-	-0.248*** (.034)	-0.234*** (.033)	-0.211*** (.033)
Demographics + state dummies	no	yes	yes	yes	yes
Add risk preferences & financ.fragility indicators	no	no	no	yes	yes
Add banked	no	no	no	no	yes
R-squared	.023	.121	.134	.171	.174
N	7,475	7,475	7,475	7,475	7,475

Sensitivity analysis with different measures of financial literacy

	(1)	(2)	(3)
Interest question correct	-0.019*** (.007)		
Inflation question correct	-0.046*** (.007)		
Risk question correct	-0.045*** (.006)		
Five questions correct		-0.076*** (.008)	
Self-assessed math knowledge			-0.009*** (.002)
Demographics + state dummies	yes	yes	yes
R-squared	.124	.121	.119
N	22,464	22,464	22,297

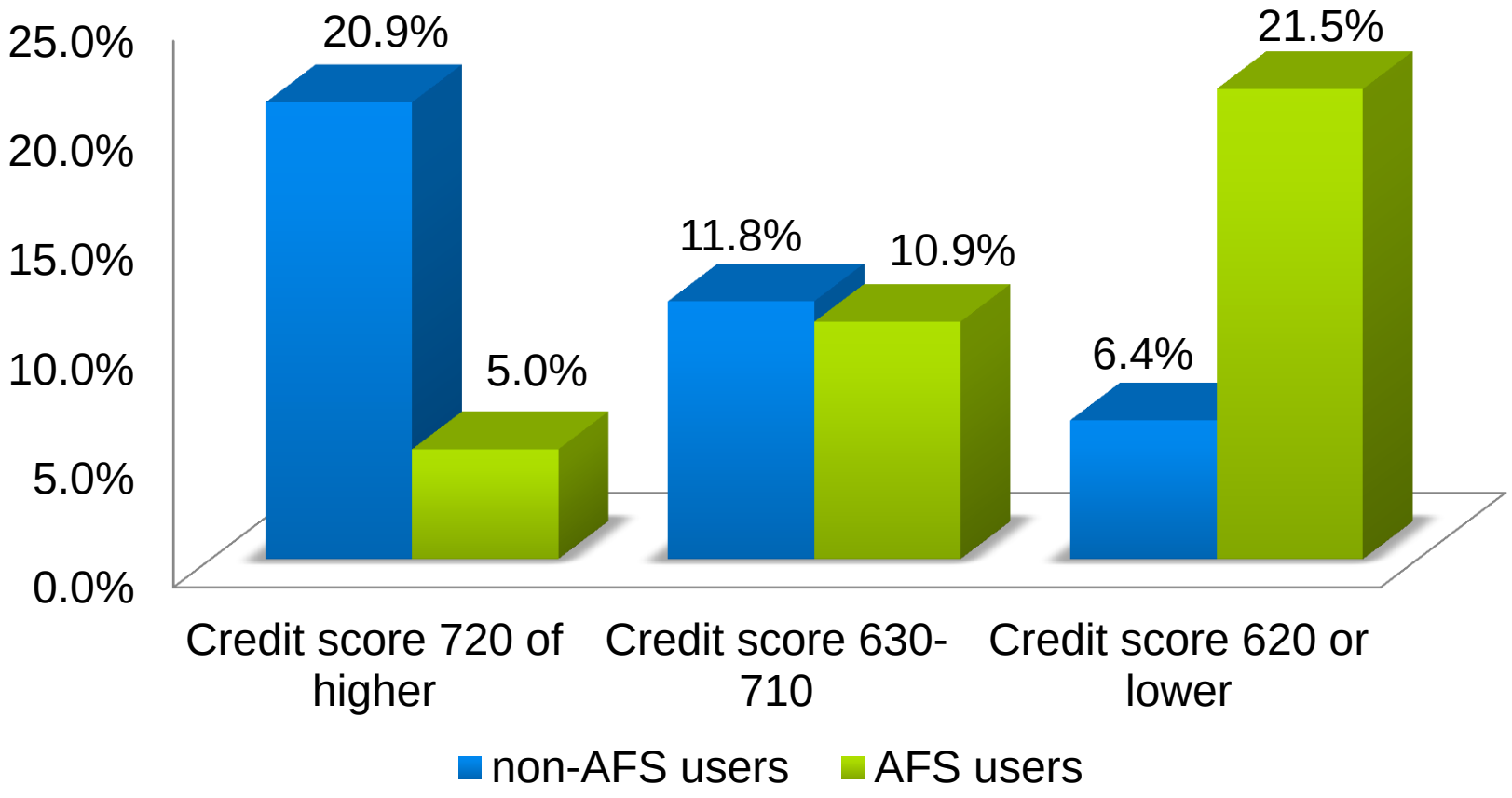
Sensitivity analysis with different measures of financial literacy, Young adults (age: 18-34)

	(1)	(2)	(3)
Interest question correct	-0.011 (.013)		
Inflation question correct	-0.075*** (.012)		
Risk question correct	-0.040*** (.011)		
Five questions correct		-0.109*** (.019)	
Self-assessed math knowledge			-0.010*** (.003)
Demographics + state dummies	yes	yes	yes
R-squared	.122	.116	.115
N	7,475	7,475	7,426

Controlling for credit score

- Financial illiteracy is more common among individuals with worse credit risk profiles
- If these individuals are not able to borrow via, for example, banks or credit cards, they may turn disproportionately to AFS
- We do not have information about the full set of financial transactions that people have made and that could have affected their AFS use, for example reaching the limit on a credit card
- NFCS provides information on credit scores, which is often the best summary of an individuals' financial standing

Credit score distribution



Unfortunately, missing data for this item is very high (about 60 percent).

Sensitivity analysis, Controlling by credit score

	(1)	(2)	(3)
3 Questions correct	-0.077*** (.006)	-0.066*** (.006)	-0.050*** (.009)
Credit score 630-710	-	0.083*** (.011)	0.102*** (.010)
Credit score 620 or lower	-	0.308*** (.011)	0.348*** (.011)
Credit score missing	-	0.109*** (.008)	-
Demographics + state dummies	yes	yes	yes
R-squared	.124	.153	.223
N	22,464	22,464	9,182

Caveats

This is still preliminary work

- **Financial literacy could be endogenous**
  - **People choose whether to invest in fin literacy**
- **Financial literacy could be measured with error**
  - **Some evidence it is the case**
- **Unobservables that may affect estimates**
  - **We have only about 100 variables in the data set**

Final remarks

Main findings

- **High-cost borrowing is used by many individuals**
  - **Young**
  - **Those with low education attainment**

- **Financial literacy is strongly linked to high-cost borrowing, even after accounting for many different determinants**
  - The quantitative importance of financial literacy is high; according to our estimates, financial literacy accounts for 20 percent of the reduction in the use of high-cost borrowing

- **Education is a strong determinants of high-cost borrowing**
  - The quantitative importance of education (college or more) is high

Thank you

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