

# The Effects of Financial Education on Short-term and Long-term Financial Behaviors

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# Motivation of the Study

- Financial education → positive financial behaviors
  - More research is needed to address this
- Researchers have added a time dimension to their definitions of financial literacy (Remund, 2010; Carlin and Robinson, 2012)
- Hilgert, Hogarth, and Beverly (2003) suggest that some financial behaviors may be more affected by financial knowledge or financial education
  - Differences between basic, short-term financial behaviors and more complex, long-term financial behaviors.
- This paper estimates how financial education, offered in HS, college, through an employer, or some combination, affects short-term and long-term financial behaviors.

# Description of the Data Set

- 2012 National Financial Capability Study (NFCS) was funded and commissioned by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation and conducted by Applied Research and Consulting.
- State-by-state survey (n=25,509) is a nationally representative survey of people's attitudes and use of various financial tools.

# Short-term Behaviors

- Short-term behaviors have immediate feedback
  - Regular and timely feedback (usually monthly)
  - May be less affected by financial education because they are learned through experience (Hilgert, Hogarth, and Beverly, 2003; Agarwal et al., 2013)
  - Covering bills each month, having a checking account, paying their credit card in full each month, and not having late mortgage payments
- For Example, credit card statements come monthly and interest charges accrue right away if the person does not pay in full each month

# Short-Term Behavior Descriptive Statistics

Short-term Financial Behaviors	Count	Prop.
Not Difficult to Cover Bills	24995	0.4101
Has Checking Account	25099	0.9031
Pays Credit Card Bill in Full	18356	0.4999
No Late Mortgage Payment	9413	0.7923
Observations	25410	

# Long-term Behaviors

- Long-term behaviors do not have immediate feedback
  - Irregular timing and inconsistent feedback
  - May be more affected by financial education and less through experience (Hilgert, Hogarth, and Beverlyly, 2003; Campbell et al., 2010)
  - Having an emergency fund, having a savings account, having non-retirement investments, figuring out how much they need for retirement, having non-employer retirement accounts, and obtaining a credit report
- For example, planning for retirement happens far into the future and once—failure to plan or save enough can have negative effects

# Behavior Descriptive Statistics

Long-term Financial Behaviors	Count	Prop.
Emergency fund	24497	0.4164
Has Savings Account	25012	0.7403
Has Non-Retirement Investments	23030	0.3636
Has Non-Empl. Retirement Account	24260	0.2907
Figured Retirement Amount	25509	0.3985
Obtained Credit Report	24948	0.4007
Observations	25509	

# Financial Education Combinations

- Questions about financial education taken either in high school, college, through an employer, or through the military
- HS course only
- College course only
- Employer course only
- HS and College course only
- HS and Employer course only
- College and Employer course only
- HS, College, and Employer course only
- No financial education course

**Course combinations  
are mutually  
exclusive—people can  
only fall into one of  
these categories**

# Descriptive Statistics

	Count	Mean	Std. Dev.
Financial Literacy Score	25509	2.8781	1.4656
HS Course Only	22858	0.0415	0.1994
College Course Only	22858	0.0406	0.1973
Employer Course Only	22858	0.0272	0.1628
HS & College Course Only	22858	0.0270	0.1621
HS & Employer Course Only	22858	0.0179	0.1327
College & Employer Course Only	22858	0.0242	0.1536
HS, College, & Employer Course	22858	0.0291	0.1680
No Fin. Lit. Course	22858	0.7926	0.4055
Observations	25509		

# Financial Literacy Questions

- Five financial literacy questions in the survey about interest, inflation, bond pricing, mortgages
  - Widely used (Lusardi and Mitchell, 2014; Hastings, Madrian, and Skimmyhorn, 2013; Allgood and Walstad, 2016).
- Financial education and financial literacy score are not highly correlated
- The variables have independent effects on the financial behaviors

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	Count	Mean	Std. Dev.
Financial Literacy Score	25509	2.8781	1.4656

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# Main Results

- Financial Education has mixed effects on ST behaviors—some are positive and other are negative
- Financial Education has stronger, positive effects on LT behaviors

# Model

$$P(Y = 1) = \Phi(\beta'x)$$

- The  $Y$  variable is a financial behavior to be studied
- $X$  are dummy vars. of the demographic characteristics (gender, ethnicity, marital status, employment, age, income, education, and children)
- *Financial Education* are the financial education courses to the specific person
- *Fin. Lit. Score* is the number of correct answers to the five financial literacy questions
- $Z$  are dummy variables for the respondent's current state and controls for state variation

# Short-term Financial Behavior Results

	Pays Bills each Month	Has Checking Account	Pays Credit Card in Full	No Late Mortgage Payment
HS Course Only	0.0260 (0.018)	0.0081 (0.009)	0.0129 (0.024)	0.0238 (0.026)
College Course Only	0.0091 (0.017)	0.0063 (0.012)	-0.0529**	-0.0082 (0.026)
Employer Course Only	0.0579**	0.0232 (0.016)	-0.0246 (0.025)	-0.0497 (0.030)
HS & College Course Only	0.0004 (0.021)	0.0446**	0.0111 (0.025)	0.0144 (0.028)
HS & Employer Course Only	0.0324 (0.027)	0.0101 (0.016)	0.0369 (0.031)	0.0050 (0.036)
College & Employer Course Only	0.0282 (0.021)	-0.0233 (0.019)	-0.0098 (0.025)	0.0134 (0.027)
HS, College, & Employer Course	0.0257 (0.020)	0.0006 (0.015)	0.0808***	-0.0441 (0.027)
Financial Literacy Score	0.0133*** (0.003)	0.0157*** (0.002)	0.0059 (0.004)	0.0224*** (0.004)
Pseudo R <sup>2</sup>	.1536	.2512	.0877	.1128
Observations	22545	22634	16748	8589

# Long-term Financial Behavior Results

	Emergency Savings Account Fund		Non- Retirement Investments	Figured Retirement	Non-Employer Retirement	Obtained Credit Report
HS Course Only	0.0307* (0.018)	0.0222 (0.014)	0.0103 (0.019)	0.0958*** (0.019)	0.0170 (0.019)	0.0361* (0.020)
College Course Only	0.0122 (0.018)	0.0011 (0.016)	0.0166 (0.016)	0.0544*** (0.018)	0.0067 (0.015)	0.0433** (0.019)
Employer Course Only	0.0215 (0.021)	0.0476** (0.021)	0.0423** (0.021)	0.1145*** (0.023)	0.0430** (0.020)	0.0543** (0.023)
HS & College Course Only	0.0571*** (0.022)	0.0226 (0.020)	0.0384* (0.020)	0.0409* (0.021)	0.0183 (0.018)	0.0538** (0.023)
HS & Employer Course Only	0.1060*** (0.027)	0.0738*** (0.022)	0.1048*** (0.028)	0.2103*** (0.027)	0.1198*** (0.028)	0.1444*** (0.029)
College & Employer Course Only	0.0560** (0.022)	0.1080*** (0.020)	0.0738*** (0.021)	0.1625*** (0.024)	0.0863*** (0.020)	0.1108*** (0.024)
HS, College, & Employer Course	0.1221*** (0.020)	0.0459** (0.019)	0.1332*** (0.020)	0.1837*** (0.021)	0.1079*** (0.019)	0.1198*** (0.022)
Financial Literacy Score	0.0153*** (0.003)	0.0239*** (0.002)	0.0358*** (0.003)	0.0386*** (0.003)	0.0322*** (0.003)	0.0176*** (0.003)
Pseudo R <sup>2</sup>	.1703	.2016	.2088	.1460	.2330	.0480
Observations	22178	22572	20865	22858	22027	22517

# Extended Analysis

- Other ST Behaviors estimated with similar results
  - Not carrying CC balance, not being charged CC limit fees, paying CC minimum and living within means
- Sample splits
  - Education
  - Income
  - Financial literacy
- Still few significant results for the ST financial behaviors
  - More positive and larger marginal effects of financial education on ST behaviors compared to “higher” groups
- Financial education is still effective for the LT financial behaviors regardless of how the sample is split

# Conclusions

- Financial Education has mixed effects for the ST financial behaviors
  - ST behaviors have regular feedback and are more likely to be learned through experience
- Financial Education has strong positive effects for the LT financial behaviors
  - LT behaviors require more planning and thought and are less likely to be learned by doing
- Results from this research may be useful for people developing financial education programs—this research may assist with developing topics the programs should focus on
  - Education related to ST behaviors may be included but programs may want to devote more time to LT behaviors that are more complex, with less feedback, and adverse consequences

# Thank you

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