High School Financial Literacy Mandate Could Boost Texans' Economic Well-Being

By Camden Cornwell and Anthony Murphy

ABSTRACT: National surveys suggest Texans have a relatively low level of financial literacy that can adversely affect decision-making. Since state lawmakers mandated high school financial coursework in 2007, consumer credit measures of young Texas adults have improved.

Financial literacy—the "ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt and pensions"—is strongly correlated with an ability to make wiser choices and realize better outcomes, research has shown.[1] Household finances should strengthen as people improve their financial literacy.

Making financial choices involves a range of factors, including cognitive ability, personality and attitudes toward risk as well as the context in which decisions are made.

Education also plays a role. Mandated high school financial literacy coursework in Texas—a state that ranks low on a variety of financial health indicators—appears to have significantly improved the financial profiles of high school graduates in recent years.

Measuring Texans' Knowledge

The Financial Industry Regulatory Authority, the industry's private self-regulatory organization, commissioned National Financial Capability Study (NFCS) surveys in 2009 and 2012 to better understand household financial literacy and behavior.[2] The findings, which include breakdowns by age, sex, ethnicity, education and income, incorporate responses to five standard financial literacy questions (*see the box, "Test Your Financial Literacy"*).

Literacy scores based on these five questions ranged from 0 (no correct answers) to 5 (all correct). The 2012 national average was 2.88; Texans scored 2.73. Individual responses show that nationally, most respondents understand interest rates, inflation and mortgages. However, many do not fully grasp portfolio diversification and how bond prices respond to changes in interest rates (*Table 1*). Compared with the national average, Texans are less likely to comprehend all of these financial concepts except mortgages.

Low Financial Literacy

The average Texas test score ranked 45th among the 50 states and the District of Columbia (*Chart 1*). Demographic factors and education levels largely account for Texas' poor performance. Financial literacy scores are tied to age, education, gender and ethnicity, which particularly affect Texas because it is younger and less educated.[3]

Age is strongly correlated with financial literacy.[4] Younger households tend to have less financial experience

Table 1 Texans Score Below National Averages on Financial Literacy Questions

Question	Correct (%)		Incorrect (%)		Don't know or refused (%)	
	U.S.	Texas	U.S.	Texas	U.S.	Texas
1. Interest rates	74.9	73.0	13.0	13.6	12.1	13.4
2. Inflation	61.3	53.7	17.2	20.3	21.5	26.1
3. Bond prices	28.1	26.0	33.3	33.3	38.6	40.7
4. Mortgages	75.0	75.0	9.0	8.2	15.9	16.8
5. Diversification	48.5	45.3	8.7	9.9	42.9	44.8

NOTES: The percentages are weighted to reflect the age, sex, ethnicity, and education composition of the adult population of the U.S. and Texas.

SOURCES: Financial Industry Regulatory Authority, 2012 National Financial Capability Survey; authors' calculations.

and less wealth to manage, and they are less concerned with the prospect of retirement. As people age, they gain financial experience, which tends to improve financial literacy. Texas is the third-youngest state, with a median age of 43 after excluding children under 18 (consistent with the survey sample). Consequently, its average financial literacy score is lower than the scores of states with older populations.[5]

Educational attainment also is important to financial literacy. At the national level, adults without a high school diploma scored 1.81 correct answers on average, while adults with a high school diploma or equivalent scored 2.47. By comparison, college-educated respondents scored well above the national average, with 3.32 correct answers. Texas ranks relatively poorly in terms of educational attainment and has the highest share of adults 25 years and older with no high school diploma or equivalent (16.7 percent).[6]

Even after accounting for education and age, ethnicity remains correlated with financial literacy. About 34.3 percent of Texans 18 years and older are Hispanic—the second-highest percentage in the U.S.[7] The average financial literacy score was 2.56 among Hispanics in 2012, which weighs on the Texas average. Hispanic scores reflect that many residents are foreign born or children of immigrants. Language and cultural barriers make it more difficult for individuals to seek financial advice or use more formal financial services.

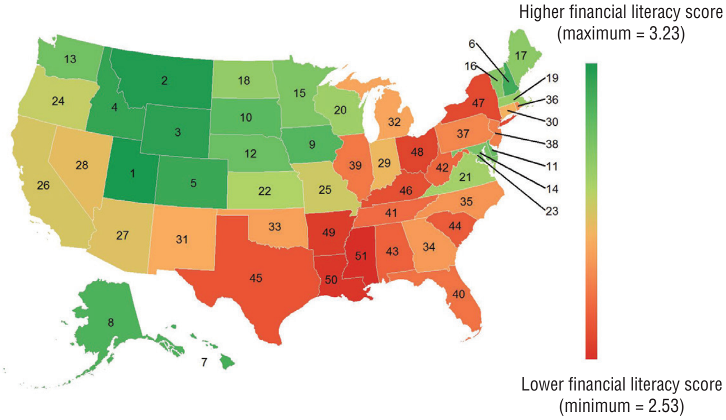
Impact on Financial Behavior

Financial literacy is strongly correlated with financial ability and behavior. One comprehensive measure of financial health is credit scores, which are important because they indicate an individual's borrowing power. State average credit scores, collected from large random samples, are strongly correlated with the NFCS financial literacy scores (*Chart 2*).[8] Texas' average credit-score ranking was 47th in 2012—two spots lower than its financial literacy ranking.

The NFCS survey included questions on financial behaviors, such as debt management and financial services (*Chart 3*). Consistent with lower credit scores and financial literacy, Texas' results again rank toward the bottom among states. Though the differences between the Texas and U.S. averages are small in some cases, raising the state's ranking by 10 places, for example, would imply reducing adverse outcomes by 1 to 4 percentage points.

Texans rank near the bottom for outstanding medical debt, dependence on high-interest financial services ("non-bank borrowing") and preparation for retirement. Nearly 30 percent of

Chart 1 Texas Ranks Low in Financial Literacy in 2012



NOTE: Rankings are based on average financial literacy scores weighted by state age, ethnicity, sex and education composition.

SOURCES: Financial Industry Regulatory Authority, 2012 National Financial Capability Survey; authors' calculations.

Test Your Financial Literacy: Questions from the National Financial Capability Study

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

(a) More than $102 (b) Exactly $102 (c) Less than $102

2. Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After one year, how much would you be able to buy with the money in this account?

(a) More than today (b) Exactly the same (c) Less than today

3. If interest rates rise, what will typically happen to bond prices?

(a) They will rise (b) They will fall
(c) They will stay the same (d) There is no relationship

4. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.

(a) True (b) False

5. Buying a single company's stock usually provides a safer return than a stock mutual fund.

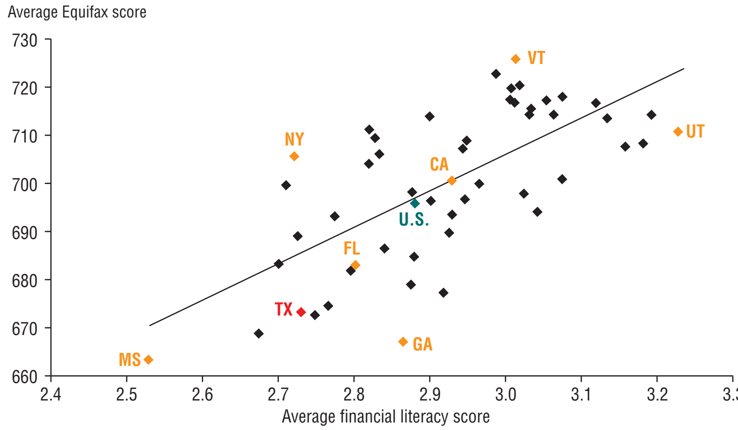
(a) True (b) False

ANSWERS: 1) a; 2) c; 3) b; 4) a; 5) b.

SOURCE: Financial Industry Regulatory Authority, 2012 National Financial Capability Survey.

> *More than 60 percent of Texas respondents haven't planned for retirement. Texans also fare poorly when it comes to having a bank account.*

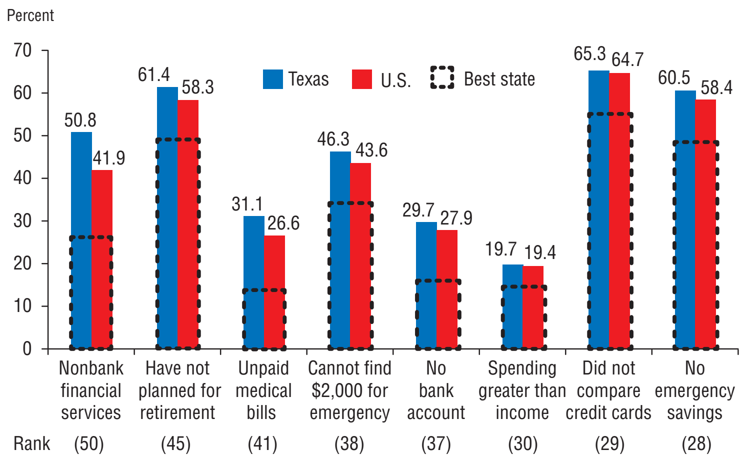
Chart 2 State Average Credit Scores Correlated with Financial Literacy



NOTE: The R^2 measure of correlation is 0.47 (a reading of 1 is perfect correlation).

SOURCES: New York Fed/Equifax Consumer Credit Panel; Financial Industry Regulatory Authority, 2012 National Financial Capability Survey; authors' calculations.

Chart 3 Texans Have an Opportunity to Improve Financial Outcomes



NOTES: The Texas state ranking is in parentheses (51 = worst). The percentages are computed using state weights in the case of Texas and national weights in the case of the U.S. and after dropping "don't know" and "refuse" responses from the sample.

SOURCES: Financial Industry Regulatory Authority, 2012 National Financial Capability Survey; authors' calculations.

Texas respondents indicated having unpaid medical bills, which also reflects Texas' high rate of uninsured residents.[9] Texans frequently use forms of nonbank borrowing such as payday loans, auto title loans, pawnshops and independent check-cashing services. More than 60 percent of Texas respondents haven't planned for retirement.

Texans also fare poorly when it comes to having a bank account, comparing credit card rates and fees, having an emergency fund and spending within their means—indicating a substantial level of financial vulnerability.

Financial Literacy Mandate

In 2007, Texas began requiring high school students to take personal financial literacy coursework for graduation.[10]

Most of the material was incorporated within an existing mandated economics curriculum. Topics included interest, debt management, buying and renting a home, investment and retirement planning.[11]

The regulation's implementation provided researchers with a so-called "natural experiment" that helps identify the causal effects of financial literacy.[12] Similar to experiments in the natural sciences in which there are treatment and control groups for comparison, the outcomes in Texas can be contrasted with those in similar states lacking such a literacy requirement.

Many studies of financial literacy have attempted to measure its impact on behavior by simply controlling for a wide variety of factors. However, omitted factors (such as ability) can affect financial literacy and how people behave. Thus, the studies may identify a correlation—but not causation—between greater financial literacy and better outcomes.

The authors of a recent meta-analysis—a review that looked at results from 168 research studies—concluded that attempting to improve financial literacy explains little of the variation in financial behavior.[13] The authors found that the estimated effect of financial literacy is much smaller in studies that control for personality traits and account for omitted variables.

However, one study found that the effect of the Texas program appeared to be substantial.[14] It looked at credit scores and credit card and auto loan delinquency rates of Texans for the four years after they graduated from high school. The research covered 2000 to 2009; the mandate affected the 2007, 2008 and 2009 graduating classes.

Changes in the credit scores and delinquency rates of young Texans before and after the requirement were compared with the corresponding credit score and delinquency rate data for young adults in New Mexico and other states without a similar state program. The approach allowed the assessment to exclude, for example, the effects of changes in unemployment rates and other relevant factors.

As a result of implementing the mandate, researchers found "notable improvements in credit outcomes for young adults who take personal finance courses in high school."

After the mandate, the credit scores of young Texans rose significantly and their loan delinquency rates fell. Compared with New Mexico residents, Texans who graduated from high school in 2009 averaged 32 points higher on their credit scores (a 5 percent increase). Their 90-day delinquency rates on credit accounts—auto loans, credit cards, etc.—decreased 6 percentage points, a one-third reduction.

More Work to Do

While greater educational attainment and financial literacy courses at school will contribute to better financial outcomes, the shortfall in adult financial literacy should also be addressed.

One possible approach is to provide consumers with additional just-in-time financial coaching before they make major financial decisions. Unlike broader educational initiatives, well-designed coaching can be tailored to the specific behaviors it intends to help.[15]

Such initiatives will aid the financial behavior and outcomes of Texans over the medium term.

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Notes

[1] See "The Economics of Financial Literacy: Theory and Evidence," by Annamaria Lusardi and Olivia S. Mitchell, *Journal of Economic Literature*, vol. 52, no. 1, 2014, pp. 5–44, and "Financial Well-Being: The Goal of Financial Education," Consumer Financial Protection Bureau, Jan. 27, 2015.

[2] See "Financial Capability in the United States: Report of Findings from the 2012 National Financial Capability Study," Financial Industry Regulatory Authority Investor Education Foundation, May 2013. The authors thank the foundation for granting them access to the detailed survey data. The survey is a quota survey, as opposed to a random survey. Survey responses were collected to satisfy an appropriate mix of individuals on the basis of race, age, sex, education and income. This means that, for example, standard statistical tests can't be used to judge the significance of differences in financial literacy scores between states. The quota design needs to be taken into account in any analysis—for example, by including the quota selection variables as explanatory variables in any regressions. In addition, the state-level surveys used a common sample size of about 500 respondents from each state for a total sample of 25,509 individual observations.

[3] Individual financial literacy scores across the nation were regressed on sex, age and age squared, ethnicity, highest level of education and state indicators.

[4] More accurately, the effect of age is nonlinear. Average financial literacy scores increase with age until the early 70s, after which scores begin to fall.

[5] See the Census Bureau's 2012 American Community Survey (ACS) one-year estimates, and IPUMS-USA, University of Minnesota, www.ipums.org. Utah is the youngest state, followed by Alaska. However, Washington, D.C., was the youngest jurisdiction reviewed.

[6] See note 5. Low educational attainment in Texas is mainly due to the large population of immigrants from countries with low levels of formal education.

[7] See note 5.

[8] Credit scores are computed from a random sample of credit scores from 2012 Equifax reports.

[9] At the state level, the correlation is strong between the share of the population reporting unpaid medical bills in 2012 and the state population share that is uninsured, based on data from the Census Bureau's 2012 ACS and IPUMS-USA. Also see "Texas Health Coverage Lags as Medicaid Expands in U.S.," by Jason Saving and Sarah Greer, Federal Reserve Bank of Dallas *Southwest Economy*, Fourth Quarter, 2015.

[10] See Section 28.0021 of the Texas Education Code.

[11] See the Texas Education Agency's personal financial literacy list of approved materials, http://tea.texas.gov/Curriculum_and_Instructional_Programs/Subject_Areas/Social_Studies/Personal_Financial_Literacy_List_of_Approved_Materials/.

[12] A natural experiment is an observational study in which the assignment of individuals to a program is determined by nature or by other factors outside the control of the investigators, yet the assignment process arguably resembles random assignment. A natural experiment is often possible where there is a divergence in law, policy or practice between states.

[13] See "Financial Literacy, Financial Education and Downstream Financial Behaviors," by Daniel Fernandes, John G. Lynch Jr. and Richard G. Netemeyer, *Management Science*, vol. 60, no. 8, 2014, pp. 1,861–83.

[14] See "State Mandated Financial Education and the Credit Behavior of Young Adults," by Alexandra Brown, J. Michael Collins, Maximilian Schmeiser and Carly Urban, Finance and Economics Discussion Series no. 2014-68, Federal Reserve Board, 2014. The study looks at changes in high school financial education mandates in Georgia and Idaho as well as Texas.

[15] See note 13.