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The Solution to Dismantling State-Level Financial Hardship: Financial Education Introduction

Surveys have shown that nearly 75 percent of teenagers do not feel confident about their financial education, with one in five teenagers feeling they lack a basic foundation to build on for financial literacy ("Scary Financial Literacy Statistics for Kids, Teens & Adults (2021)"). An issue that is perpetuating this fact is that only 25 states in the country currently have mandates in place requiring high school students to take a financial literacy course in order to graduate. (Next Gen Personal Finance). While that may sound like a promising start, only eight of these states are fully implemented while the remaining 17 are still in progress and will not go into effect until as late as 2030 (Next Gen Personal Finance). With these statistics in mind, I felt compelled to research this topic and developed the question of "what is the impact of requiring to learn about financial literacy in order to graduate from high school on state populations financial wellbeing." To analyze this question, I first selected four states that have had a financial literacy mandate for ten years, then identified and put into pairs one similar state for each that had no such mandate. Afterwards, I gathered data in five year intervals from ten years before the mandate went into effect through ten years after on each state's poverty rate, unemployment rate, and debt-to-income ratio. I chose these variables because I felt they offered a broad scope on how the populations in each state were doing financially. When people are unemployed, struggle to afford basic necessities, and are burdened by debt, they experience significant financial hardship. With this data, I created a Financial Hardship index and plotted these index values for

all eight states onto a line chart to compare the changes over time to see how the mandate impacted these states. I found that while there isn't a strong relationship between having a financial literacy mandate and decreased financial hardship, there does seem to be a relationship where these state populations are more resilient to economic disturbances compared to their nonmandate counterparts.

Significance

As teenagers grow up into adults, understanding the value, purpose, and uses of money becomes more and more important. Young adults are often left in the dark on how to effectively navigate the complex financial landscape they are thrust into when they graduate from high school. For this reason, financial literacy becomes a vital compass for guiding these individuals on their path while avoiding pitfalls along the way. However, many lack the basic knowledge and skills needed to make informed financial decisions that will benefit them later in life. The lack of this education can potentially lead to a cascade of negative consequences, such as increased risk of being in poverty, becoming or remaining unemployed, and taking on more debt than their income or projected income can handle.

California, despite its economic strength, faces significant challenges regarding financial hardship. The state has regularly sat above the national average in many economic indicators such as poverty rate, unemployment rate, and debt-to-income ratio. Nationwide, the unemployment rate is 3.7 percent, while in California specifically it's at a staggering 5.1 percent (Lee 2024). Nationwide, the poverty rate is 11.5 percent, while in California specifically it's at 13 percent (National Poverty in America Awareness Month: January 2024)(Reyes-Velarde et al 2023). These financial strains can have long-term consequences, negatively impacting

individuals' ability to achieve financial security and contribute to the state's economic wellbeing. It's no mystery that California has a major socioeconomic divide.

California does not currently require high school students to take a financial literacy course to graduate, and the implementation of a financial literacy mandate could hold significant potential in providing relief to future Californian adults and the state's budget. Financial literacy education can potentially lead to a decrease in the number of Californians relying on social safety net programs, such as welfare. By empowering individuals to manage their finances effectively, they might become less vulnerable to financial emergencies that necessitate government assistance. This could, in turn, provide some relief to the state budget which currently has a large deficit (Sheeler and Holden). With fewer individuals receiving government assistance and more being able to comfortably contribute to the economy, this would provide a considerable boost to the funds available to the state.

Background

Financial literacy refers to the ability to understand and effectively utilize various financial skills, including personal financial management, budgeting, and investing (Fernando 2024). Being financially illiterate can lead to many pitfalls, such as becoming burdened with unsustainable debt which in turn can result in poor credit, bankruptcy, and other negative consequences (Fernando 2024). Due to education playing a vital role in success, it's important to prepare students early on how to become financially literate before they become adults so they aren't stumbling in the dark or learning from unreliable third-party sources. Before we spend money on implementing this curriculum, however, it's important to know how reliable this education is in preparing the adult population of states that decide to have this topic taught.

Research on the topic of financial literacy education and its effectiveness has offered a mixed picture. Research done in 2009 by Lewis Mandell and Linda Schmid Klein examined 79 high school students that took a personal financial management course and compared them to students that hadn't taken the course, and found that those who had were no more financially literate than those who hadn't nor did they exhibit better financial behavior (Mandell & Klein 2009). A later study in 2013 done by Shawn Cole, Anna Paulson, and Gauri Kartini Shastry examined the exposure to state-mandated personal finance courses in high school, and likewise found little evidence that education intended to improve financial decision making is successful (Cole et al. 2013).

However, newer studies seem to tell a different story. One study was conducted in 2016 using data from the Jump\$tart Coalition, the Council on Economic Education, and the state law database to determine when each post-2000 mandate was passed. They focused on mandates requiring financial literacy education, looking at the first graduating class affected, and narrowed their sample to 19 to 29-year-olds. The authors found that financial literacy mandates increased the likelihood of having a credit file, and decreased the likelihood of having any outstanding debt and the likelihood of being delinquent on debt (Brown et al. 2016). Another study, this time conducted in 2018, decided to isolate the effect of specific states' requirements on financial behaviors. The researchers examined implemented state mandates in Georgia, Idaho, and Texas which began with the graduating class of 2007 to quantify the effects of financial education on financial behaviors by comparing credit scores of graduates in 2007 to graduates in 2006. The authors then identified a control group for each of those states, and to account for potential differences chose states with similar demographics but without a financial education

requirement. The findings revealed that those who received financial education had improved

credit scores and decreased delinquency rates (Urban et al. 2018).



Figure 1: (Next Gen Personal Finance)

The map in Figure 1, from the Next Gen Personal Finance dashboard, outlines the current landscape of financial literacy requirements across the United States (Next Gen Personal Finance). Currently, there are only eight states, shown in solid dark blue, that have fully implemented a financial literacy education requirement for graduating from high school. The other 17, shown in striped blue, are in the process of having their requirements implemented in the coming years. These states can be used as case studies to measure effectiveness on a much larger scale as the mandates get older. With more concrete analyses, this could decrease the opinion that the mandate isn't worth the cost and result in other states likely introducing similar mandates to benefit their populations. With California having a proposition on the ballot this year to decide on having a financial literacy education requirement, I wanted to examine previous states with financial literacy mandates to see how their populations were later impacted by comparing them against similar state populations without a financial literacy mandate. This would then offer me a general idea as to how California could benefit if the proposition were to pass.

Theory and Argument

Before beginning my research, I theorized financial education to be an obvious solution for states wanting to improve the financial outcomes of their populations. It seemed like a nobrainer, the whole point of education in school is to give you the knowledge and tools necessary to apply what you have learned later in life. As a former high schooler, I still remember concepts such as algebra and how to apply it even though I don't actively utilize it. Therefore, teaching high schoolers about financial literacy should similarly prepare their toolbelt with skills that they could apply on their own as adults. Just like with the basic concepts of math and English, I also argue that incorporating this education into the entire K-12 system would strengthen their financial literacy further. Spreading out the topic through multiple grades, allows students to learn even more concepts and introduces the benefits of repetition in memory retention. For these reasons, I proposed the explanation that having a financial literacy mandate leads to state populations that know how to navigate the complex financial landscape and avoid financial hardship due to having the tools necessary to acquire a job, properly save and spend their income, and not take on irresponsible debts. For my research, my independent variable was whether or not the state has a financial literacy education requirement to graduate from high school. My dependent variable was the Financial Hardship Index score which I was measuring and comparing over time between each pair of similar states. For my Financial Hardship Index, I chose to incorporate the state's poverty rate, unemployment rate, and debt-to-income ratio. I felt these three variables would offer a broad scope of how the populations within each state were doing financially. For my hypothesis, I believed that states that have a financial literacy mandate would result in decreased financial hardship compared to their non-mandate counterparts. When people are unemployed, struggling to afford necessities, and/or burdened by debt, they experience financial struggles aka financial hardship. State populations who do not receive the education in school to avoid and/or deal with these conditions in their future would reasonably have higher levels of financial hardship, while those state populations that are mandated to receive this education should therefore be capable of avoiding and/or dealing with these conditions thus having lower levels of financial hardship.

Several alternative explanations could have an impact on the Financial Hardship Index data besides the presence of a financial literacy mandate or lack thereof. For starters, there are socioeconomic factors that can impact financial hardship with a stronger influence than a singular financial literacy class. Financial hardship can be heavily influenced by factors beyond education, such as the minimum wage, job availability, and cost of living in each state. Another explanation that may result in an inaccurate representation of the mandate's impact is time. Ten years might not accurately capture the long-term impact of financial literacy education, as it might take many graduating classes across the state for the course's effects to affect the overall state averages of the data incorporated into the index. An additional explanation would be the effectiveness of the class itself, each of the four states will naturally have its own way of how they want the course to be taught leading to varying curriculum content, quality of teachers, and student engagement which can all play a role in how well the course translates into real-world behaviors. A final explanation would be varying levels of support systems in each state that could assist those struggling with employment, poverty, or debt, resulting in improved levels of financial hardship unrelated to receiving financial literacy education. To address these alternative explanations, my research focused on comparing paired states with similar demographics and socioeconomic characteristics, allowing for a more isolated analysis of the financial literacy mandate's impact on the Financial Hardship Index.

Research Design and Data

To test my hypothesis, I conducted my research using a small-n comparative case study with time series analysis. This approach aligned well with the nature of my research, as there are only a very limited number of states with mandated financial literacy graduation requirements. The time series analysis was chosen for its suitability in analyzing the trends within my limited number of states. This allowed me to assess changes in my Financial Hardship Index scores for each state within my chosen time frame, enabling me to identify potential correlations between the mandate and financial hardship levels. In terms of conducting a comparative case study, by focusing on pairs of states with similar characteristics and controlling for the presence or absence of a financial literacy graduation requirement, I aimed to isolate the effect of the financial literacy mandate by mitigating external factors that might have influenced the Financial Hardship Index.

To ensure a meaningful comparison, selecting the states for my study involved a multistep and strategic process. First, I began by examining the overall landscape of financial literacy requirements for all 50 states. Using a resource developed by Next Gen Personal Finance, an advocacy group with a collective mission to bring financial education to every high school student in the country, I was able to see a live dashboard of the entire country categorizing each state by whether it had a financial literacy mandate or not (Next Gen Personal Finance). Within each state in this dashboard was a description of how much financial literacy is taught to high schoolers and whether it was required, optional, or lacking entirely. This resource also provided me with details on when the mandate went into effect if there had been one, and when it would go into effect if there was one on the books. After I noted the eight states classified as having a mandate fully implemented, I examined how long the mandate has been active. I then immediately removed three of the eight, leaving only the five states remaining as having a mandate no less than ten years old. This was the largest time frame divisible by five, allowing me to examine the broadest possible period available. This left me with the mandate states of Alabama, Tennessee, Virginia, Utah, and Missouri.

For my comparison, I next had to pair up each of the mandate states with a non-mandate counterpart. To accomplish this, I located a State Similarity Index which organized in a matrix how similar each state is to one another (Jones 2023). This index attempts to quantify how similar each state is to one another, weighting equally five major aspects: their demographic, culture, politics, infrastructure, and geography (Jones 2023). For two pairs, I had to sacrifice the highest level of similarity with a lower level due to the occurrence of the mandate states having their first couple closest states also being mandate states. This occurred when pairing Alabama where I had to skip Mississippi and Tennessee for South Carolina. It also occurred when I wanted to include California as a non-mandate state for my study. The two closest mandate states similar to California were Utah and Missouri, and Utah ended up being the most similar and therefore resulted in that pairing. At that point, I dropped Missouri and stuck with the remaining

four mandate states. To conclude my pairing process, I paired Tennessee with Kentucky and Virginia with North Carolina.

Following the selection of case studies, the next step involved gathering the necessary data to conduct my analysis. Because financial literacy education is intended to make individuals more financially responsible, I needed variables that aimed at measuring how well off the populations in each of the states were doing. To keep things as compact and efficient as possible, I chose to utilize state poverty rates, unemployment rates, and debt-to-income ratios as the basis for my data. These variables formed the foundation for my Financial Hardship Index and allowed me to roughly see if the state populations were equipped with the knowledge and skills to obtain and maintain employment, a well-paying job, and weren't getting themselves in over their heads in debt. To keep myself from gathering data for each year, I chose to simplify things by only measuring in five-year intervals. With that being said, I gathered five sets of data on all three variables for each state for ten and five years before the mandate occurred, the year of its occurrence, and five and ten years after the mandate occurred. This left me with the ranges of 2003-2023 for Alabama and South Carolina, 1999-2019 for Tennessee, Kentucky, Virginia, and North Carolina, and 1994-2014 for Utah and California. Due to data not being available for the year 1994 for Utah and California, they were excluded from the ten-year before mandate implementation period for all three variable categories. To classify the intervals for each variable, I noted them as Y-10, Y-5, Y0, Y+5, and Y+10, where Y represents the years before (-) or after (+) mandate implementation and 0 is the year it was implemented.

For gathering data on each state's poverty rate across all five intervals, I primarily utilized a combination of databases through Wisevoter and Statista. Wisevoter is a resource that provides individuals with information, insights, and tools to explain issues and amplify democracy. Statista is a global data and business intelligence platform with an extensive collection of various statistics, reports, and insights. For Y-10 I noted that 17.1% was the maximum poverty rate across the eight states, in Y-5 it was 17.4%, in Y0 it was 18.7%, in Y+5 it was 19.1%, and in Y+10 it was 16.3% (The Statistics Portal)(Poverty Rate by State 2023).

For gathering data on each state's debt-to-income ratio, I utilized a resource from the Federal Reserve website. The Federal Reserve is the central bank of the United States and provides the nation with a safe, flexible, and stable monetary and financial system. Their website has a dashboard showing a map of the nation with each state labeled by their state-level debt-toincome ratio, and a slider that allows for adjusting the year for what data the map is visualizing up to the present year. For Y-10 I noted that 1.845 was the maximum debt-to-income ratio across the eight states, in Y-5 it was 2.175, in Y0 it was 2.402, in Y+5 it was 2.952, and in Y+10 it was 1.998 (Board of Governors of the Federal Reserve System).

For gathering data on each state's unemployment rate, I utilized a database from the Federal Reserve Bank of St. Louis. The Federal Reserve Economic Data is a database they maintain and contains economic time series from various sources. For Y-10 I noted that 7.3% was the maximum unemployment rate across all eight states, in Y-5 it was 6.9%, in Y0 it was 11.3%, in Y+5 it was 11.7%, and in Y+10 it was 7.6% (FRED Economic Data Since 1991).

To operationalize financial hardship, I combined these three variables into a Financial Hardship Index. To accomplish this, I first had to determine how I would weigh each variable. To maintain simplicity, I decided to make the unemployment rate and poverty rate utilize the same weight. With that in mind, I chose a weight of 40% because I felt they both adequately encapsulated the economic well-being of the state's population. If the population isn't taught how to get a job and properly utilize their income to avoid poverty, it will negatively affect those variables. That left debt-to-income with a weight of 20%, which I felt was adequate for the key reason of debt not necessarily being bad. There is good and bad debt, where good debt can increase your wealth and well-being while bad debt costs you money with interest on purchases for depreciating assets (Smith 2023). For that reason, I didn't want to have too high of a weight and result in potentially punishing states that may simply be utilizing more good debt. Next, I went through each of the five intervals and standardized the units for each variable. I took each measurement and divided it by the maximum for that interval, then multiplied it by its weight. With that done for each variable, for each interval I added the three values together for each state to reveal its Financial Hardship Index score. Finally, I took all of those index scores and plotted them onto a line chart.

There were several limitations I encountered while conducting my data collection. Due to the small number of states I could measure, and relying on a time series analysis with a relatively short horizon in the grand scheme of things, I'm not able to fully capture the long-term impact of financial literacy education. Due to measuring the overall state population for each variable, it will take a lot longer for the population in each state to shift from the majority not having received the financial literacy education to the majority having received it. Therefore, any impacts early on will be tough to quantify. Furthermore, establishing a causal relationship between the financial literacy mandate and the index score is challenging. Other factors not accounted for in this study, like access to financial counseling services or government aid could also influence the measurements contained in the index. There was also the issue of time and data constraints I encountered. I would have liked to include credit score and debt delinquency rates in my index to make it more robust, but couldn't find the data for the periods I was measuring. I also couldn't spend more time searching for this data as time was limited.

Findings and Analyses



Financial Hardship of States with and without FinLit Mandate



My main findings revolve around the line chart in Figure 2. Thanks to pairing each mandate state with a similar non-mandate counterpart state, each of the sets of lines begins at roughly the same place. The one exception to this, however, was between Utah and California due to being limited by California not having a good state similar to it with a financial literacy mandate.

Starting with the Alabama (Mandate) and South Carolina (Non-mandate) pair, both start with the highest Financial Hardship Index score. Alabama slowly decreases from Y-10 to Y+5, signifying improved financial well-being before leveling off and stabilizing to Y+10. South Carolina worsens from Y-10 to Y-5, then improves to Y+5 before worsening again by Y+10. Next was Tennessee (Mandate) and Kentucky (Non-mandate), where both worsened in financial hardship from Y-10 to Y0 before splitting off at Y+5 with Tennessee continuing to worsen slightly and Kentucky improving slightly, then from there Tennessee improved to Y+10 while Kentucky returned to worsening.

Afterward was Virginia (Mandate) and North Carolina (Non-mandate), with a similar trend to the previous pair. Both increase in financial hardship with North Carolina being more severe. Post Y0, North Carolina begins to improve slightly while Virginia is shown to have worsened in Y+5 before decreasing in financial hardship in Y+10.

Lastly was Utah (Mandate) and California (Non-mandate), which didn't begin until Y-5. Utah is shown to have worsened through Y+5 before remaining steady in Y+10. California on the other hand briefly improved in Y0 before sharply worsening through Y+10.

Overall I would say that my findings show that there isn't a strong relationship between having a financial literacy requirement to graduate from high school and the state population experiencing lower financial hardship. However, I would say that there is a potential relationship where the states that do have this mandate have increased resilience to economic disturbances compared to their non-mandate counterparts. From the looks of the graph when focusing on the Y+5 to Y+10 ranges, each of the non-mandate states either increased in financial hardship or remained roughly the same. However, each of their mandate counterparts during that same period either improved or stayed the same.



Figure 3: Financial Hardship Index score of states that mandate FinLit. (Data: Statista, Federal Reserve, St. Louis FED)

My secondary findings revolve around the box-and-whiskers plot I created, shown in Figure 3. It used the same Financial Hardship Index and subsequent variables involved but took a snapshot of the 2023 landscape of all 50 states. I gathered the data in the same way and using the same sources. I also used Next Gen Personal Finance to categorize the states into whether they required taking a financial literacy course to graduate, had it integrated into other courses, had it be an optional course, or didn't have any requirements at all. I found that the average index score for the required category was lower than the integrated and no requirements categories, but the optional category was much lower. It's worth noting, however, that the required category was being punished due to containing 17 states that had recently established a mandate but hadn't yet implemented it. If the categories were rebalanced to only have the currently active mandate states in the required group and distributed the rest to the appropriate group they currently have in operation rather than what is planned, the data may be different.

Conclusion and Implications

My research investigated the potential relationship between having a financial literacy mandate and a state's level of financial hardship. Utilizing a small-n comparative case study design with time series analysis, my research explored financial hardship trends between four states mandating financial literacy high school graduation requirements and comparing them to four counterpart states without such mandate. My study involved a Financial Hardship Index, combining measures of each state's unemployment rate, poverty rate, and debt-to-income ratio. The analysis of the trends revealed mixed results, much like past research. While a direct link between having a financial literacy mandate and lower financial hardship wasn't evidence, states with mandates may exhibit greater resilience compared to their non-mandate counterparts. However, it's important

These findings have significant implications for policymakers, particularly in California as the state has historically faced challenges with financial hardship. Despite its economic strength, California grapples with above-average poverty rates, unemployment rates, and debt-toincome ratios. While my research doesn't strongly support my hypothesis that mandating financial literacy education would decrease financial hardship, it may provide the population with resilience to slow the problem down and add stability while additional solutions are implemented. Financial literacy education still has the potential to empower individuals to manage their finances more effectively, potentially leading to a decrease in reliance on social safety net programs and a more financially secure future for Californians over time, which could translate into relief for the state's budget which currently faces a deficit. By continuing to explore the effectiveness of financial literacy education, policymakers can work towards creating a future where financial literacy empowers individuals and contributes to a more prosperous and financially secure society.

While this study provides a starting point for understanding the potential impact of mandating financial literacy education, further research is needed to solidify my findings and inform policy decisions by examining a larger time horizon and incorporating more variables. In the future, I'd like to reevaluate my study with additional measurements and broaden my focus. My next steps would be to include credit score, debt delinquency, and welfare recipiency into my index, and I would also expand my time horizon to 15 years instead of 10. I'd also make individual graphs for each variable in addition to the index graph, as I'd like to see the changes over time from each on their own. Additionally, when examining the current landscape, I'd properly categorize the states based on what was active in that year, rather than categorizing them based on what was in the works.

Works Cited

"Board of Governors of the Federal Reserve System." *The Fed - Map: State-Level Debtto-Income Ratio, 1999 - 2023:Q2,*

www.federalreserve.gov/releases/z1/dataviz/household_debt/state/map/. Accessed 25 Feb. 2024.

Brown, et al. *Financial Education and the Debt Behavior of the Young*, Sept. 2016, www.newyorkfed.org/medialibrary/media/research/staff_reports/sr634.pdf.

Cole, et al. High School Curriculum and Financial Outcomes - Harvard ..., Jan. 2013,

www.hbs.edu/ris/Publication Files/Cole, Paulson - High School Curriculum and

Financial Outcomes 2016_4a2ce27e-7fa1-4248-8c11-9620f583af4f.pdf.

Fernando, Jason. "Financial Literacy: What It Is, and Why It Is so Important to Teach Teens." *Investopedia*, Investopedia, Mar. 2024, www.investopedia.com/terms/f/financial-

literacy.asp.

"FRED Economic Data Since 1991." *FRED*, Federal Reserve Bank of St. Louis, fred.stlouisfed.org/. Accessed 25 Feb. 2024.

Jones, Jeff. "State Similarity Index Distance Matrix." *OBJECTIVE LISTS*, 25 Mar. 2023, objectivelists.com/2023/03/25/state-similarity-index-distance-matrix/.

Lee, Kurtis. "Unemployment Casts a Shadow over California's Economy." *The New York Times*, The New York Times, 1 Mar. 2024,

www.nytimes.com/2024/03/01/business/economy/california-economy-

unemployment.html

Mandell, L., & Klein, L. *The Impact of Financial Literacy Education on Subsequent* ..., 2009, files.eric.ed.gov/fulltext/EJ859556.pdf.

"National Poverty in America Awareness Month: January 2024." Census. Gov, 4 Jan.

2024, www.census.gov/newsroom/stories/poverty-awareness-month.html.

Next Gen Personal Finance, www.ngpf.org/. Accessed 13 Mar. 2024.

"Poverty Rate by State 2023." Wisevoter, 22 June 2023, wisevoter.com/state-

rankings/poverty-rate-by-state/

Reyes-Velarde, et al. "Year in Review: California Poverty Rises as Aid Ends."

CalMatters, 22 Dec. 2023, calmatters.org/california-divide/2023/12/california-poverty-

2023/#:~:text=According%20to%20the%20California%20Poverty,to%2013%25%20in%

20early%202023.

"Scary Financial Literacy Statistics for Kids, Teens & Adults (2021)." Scary Financial Literacy Statistics for Kids, Teens & Adults (2021),

www.choosefifoundation.org/blog/scary%20financial%20literacy%20statistics. Accessed 13 Mar. 2024.

Sheeler and Holden. *CA Budget Deficit Worse than Expected, Exceeds Newsom's Projection* ..., www.sacbee.com/news/politics-government/capitol-alert/article285710851.html. Accessed 21 Mar. 2024.

Smith, Lisa. "Debt Management Guide." Investopedia, Investopedia, Dec. 2023,

www.investopedia.com/articles/pf/12/good-debt-bad-

debt.asp#:~:text=Good%20debt%20has%20the%20potential,they%20can%20afford%20t o%20lose.

"The Statistics Portal." *Statista*, www.statista.com/. Accessed 20 Mar. 2024.

Urban, et al. *The Effects of High School Personal Financial Education* ..., 2018, www.researchgate.net/publication/323842069_The_Effects_of_High_School_Personal_F inancial_Education_Policies_on_Financial_Behavior.