Friends with Benefits: Social Capital and Household Financial Behavior[†]

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Using friendship data from Facebook, we study the effects of three aspects of social capital on household financial behavior. We find that the most important measure of social capital in explaining stock market and saving participation is Economic Connectedness, defined as the fraction of one's social network with high socioeconomic status. One standard-deviation greater Economic Connectedness is associated with 2.9% greater stock market participation and 5.0% greater saving participation. Compared to Cohesiveness or Civic Engagement, Economic Connectedness explains more than 6 times the variation in stock market participation and more than 4 times the variation in saving participation. Using data on nonlocal friendships, we provide evidence supporting a causal link between household financial behavior and the income of one's friends. Furthermore, we provide evidence that greater opportunities for social interaction with wealthy individuals is associated with increased stock market and saving participation.

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1 Introduction

Over the past three decades, social capital — the quality of an individual's social network — has emerged as an important determinant of various political and economic outcomes (Durante et al. (2023)). In this paper, we apply Facebook friendship data to study the relationship between social capital and household financial behavior. In particular, we focus on household stock market and saving participation.

Our primary finding is summarized in Figures 1 and 2. In these figures, Economic Connectedness is the aspect of social capital most strongly related to stock market and saving participation. Controlling for county demographic characteristics, a one-decile increase in Economic Connectedness is associated with an increase of 0.9% for stock market participation and 1.5% for saving participation.[1] This is more than twice the effect associated with all our other social capital measures combined. These findings indicate that the value of being connected with the *right* individuals is substantially more important in encouraging household investment than having tighter-knit friend groups (Cohesiveness) or a greater sense of community (Civic Engagement).

People with lower socioeconomic status have been found to have more present-oriented investing and saving habits and tend to have little social interaction with the wealthy, resulting in a poverty trap (see Jackson (2022)). Because the wealthy have greater access to resources and more experience investing, it has been argued that creating cross-class friendships is a critical step to break this cycle. Cross-class friendships can result from greater opportunities to interact with wealthy individuals or from higher friending rates with the wealthy.

Facebook data can be used to disentangle the relative importance of opportunities and

[1]The slope of the best-fit line for EC in Figure 1 is 0.0087. The slope for the best-fit line for EC in Figure 2 is 0.015.

friending rates. For example, Facebook group memberships, self-reported information, and friendship networks contain information about schools, workplaces, and even recreational activities to which individuals belong. After identifying group membership, one can use the demographics of the members to differentiate between opportunities and friending rates.

To illustrate, consider an individual who is part of a basketball team with many affluent members. Being a member of this team provides opportunities to interact with High-SES individuals. However, membership does not guarantee High-SES friendships. Conditional on being a member of the team, there may still be barriers to new friendships with wealthy teammates, which results in a friending bias away from high-SES individuals.

To distinguish between these two effects, following Chetty et al. (2022b) we consider two aspects of Economic Connectedness: High-SES Exposure and Friending Bias. High-SES Exposure measures the fraction of high-SES individuals in the groups to which people belong (e.g., schools or athletic teams).[2] Friending Bias measures the rate at which individuals form friendships with low-SES individuals in group settings, relative to the socioeconomic makeup of those groups.

We find that High-SES Exposure is much more important than Friending Bias in explaining household stock market and saving participation. Controlling for county demographic characteristics, the effect of High-SES Exposure is over seven times as large as that of Friending Bias. This finding suggests that providing opportunities to interact with wealthy individuals is especially important for improving financial behavior.

A challenge for research on social capital has been the absence of comprehensive data on the structure of social networks. Such data is crucial as social capital is rooted in human relationships. In the household finance literature, previous studies address such limitations by studying the relationship between particular manifestations of social capital, such as civic engagement, and an outcome of interest, such as stock market participation. This resulted

[2]Chetty et al. (2022b) construct High-SES Exposure and Friending Bias based on six common contexts in which friends are made. This is limited to high schools, colleges, recreational groups, religious groups, workplaces, and neighborhoods.

in social capital proxies ranging from average credit scores to electoral participation, each of which is positively related to stock market participation (Guiso, Sapienza, and Zingales (2004), Bricker and Li (2017)).

Such research establishes trust as being an important community trait that influences stock market participation. However, the role of social networks and social capital in promoting participation is not well understood. Is trust the aspect of social capital most important for stock market participation? Or do other aspects of social networks play a more critical role?

We study the effects of social capital on household financial behavior using extensive social network data from Facebook combined with U.S. household stock market and saving participation data from the IRS. Furthermore, drawing upon the research of Chetty et al. (2022a), we differentiate between three types of social capital to explore which aspects of social capital are most important for household financial decisions.

Various definitions have been offered for social capital in a large and interdisciplinary body of work (Fulkerson and Thompson (2008)). At heart, social capital is a measure of the value that arises from being in a group or by virtue of an individual's position in the social network. Definitions of social capital fall into two broad categories: social networks (e.g., friendships between different types of people or presence of cliques) and societal norms (e.g., civic engagement or trust in institutions). In this paper, as in Durante et al. (2023) and Guiso and Sodini (2013), we perform tests based on proxies that reflect both views of social capital.

We consider three county-level measures of social capital from Chetty et al. (2022a): (1) Economic Connectedness, (2) Cohesiveness, and (3) Civic Engagement. Each has a distinctive meaning and role.

Economic Connectedness measures the fraction of one's social network neighbors who have high socioeconomic status. Especially among low-SES households, Economic Connectedness can be thought of as a type of bridging capital because it reflects (inversely) the

degree of homophily by socioeconomic status.

Cohesiveness captures the likelihood that two friends of a focal individual are friends with each other. Cohesiveness can therefore be thought of as a type of bonding capital. It measures the tightness of a social network.

Lastly, Civic Engagement measures local rates of volunteering. This is not a network-based measure. Instead, as in several previous studies, it captures the sense of community and trust.

A basic implication of classic models of portfolio theory and asset pricing (Merton (1969), Sharpe (1964)) is that all investors, regardless of wealth or risk preferences, invest in risky assets. In reality, a substantial fraction of households do not own stock, suggesting that many households underinvest in this asset class. A large literature has tried to explain this "participation puzzle" (as reviewed in Guiso and Sodini (2013)).

A leading explanation is that investors have fixed participation costs, which could be either pecuniary or psychic (Vissing-Jorgensen (2002)). In models based on this approach, individuals only invest if the expected benefit of stock market participation outweighs the cost. This is more likely to occur if an individual has a greater amount of wealth available to invest , so this approach can explain the observed positive correlations between stock market participation and wealth (Vissing-Jorgensen (2002)), cognitive skills (Grinblatt, Keloharju, and Linnainmaa (2011), van Rooij, Lusardi, and Alessie (2011)), and risk tolerance (Vissing-Jorgensen and Attanasio (2003)).[3]

Empirically, knowing someone who participates in the stock market raises the likelihood of participating (Brown et al. (2008)), consistent with the observation of Shiller (1989) that "Investing in speculative assets is a social activity." A plausible mechanism is that investing friends reduce the fixed costs of participation. Potential channels include reduced information acquisition costs (Hong, Kubik, and Stein (2004)), heightened familiarity and psychological

[3]Many empirical papers have documented other variables that are associated with stock market participation. For example, stock market participation is correlated with peer stock market participation (Brown et al. (2008)), peer stock market performance (Kaustia and Knüpfer (2012)), political beliefs (Kaustia and Torstila (2011)), and trust in institutions (Giannetti and Wang (2016)).

comfort of stock investing (Cao, Wang, and Zhang (2005), Cao et al. (2009)) or even an increase in the social utility from investing (Bursztyn et al. (2014)).

More generally, this argument suggests that social capital may increase stock market participation by reducing fixed costs of participation.[4] For example, people with high-SES status are more likely to participate in the stock market. So social connection to such investors may encourage participation. This implies that the Economic Connectedness measure of social capital will positively predict stock market participation.

From the perspective of the other main definition of social capital, earlier studies, such as Guiso, Sapienza, and Zingales (2004), provide evidence that social capital can increase stock market participation through trust within a community. In communities with low trust, investors are likely to have greater fear of expropriation by their broker or other financial parties. This trust-based mechanism motivates the hypothesis that the Civic Engagement measure of social capital will positively predict participation.

Finally, while cohesiveness has received little attention from the finance literature, there is evidence that cohesiveness promotes the spread of information in a community (Alatas et al. (2016)). In a financial context, if friend networks are more closely linked, friends can more effectively sanction one another for opportunistic behavior. A tight connection allows for uncomfortable topics, such as personal finances, to be discussed more openly leading to better group outcomes.

We use several approaches to test which aspect of social capital is most important for stock market participation. First, we obtain extensive U.S. Facebook data from `www.socialcapital.org` to get a representative picture of household friendship networks. The benefit of this data is that it uses Facebook friendship data, which are associated with non-virtual friendship networks (Bailey et al. (2018), Bailey et al. (2020)). Second, the friendship connections are used to measure social capital along three dimensions – Economic Connectedness, Cohesiveness, and Civic Engagement. Third, we combine this social network data

[4]In this paragraph and the preceding, we focus on the decision to participate in the stock market. However, these arguments can analogously be applied to savings decisions.

with a representative sample of county tax information from the IRS to understand the financial behavior of households in a given county.

We then estimate the univariate relation between household financial decisions and our social capital measures. Our findings indicate the Economic Connectedness is overwhelmingly the aspect of social capital most strongly associated with both stock market participation and the saving participation. Alone, EC explains over 56% of the variation in stock market participation across counties and over 54% of the variation in the saving participation. This is substantially larger than the explanatory power of Cohesiveness and Civic Engagement. Furthermore, we perform multivariate tests using all three social capital measures and find that the effect of Economic Connectedness is nearly three times as large as the other two social capital measures combined.

We next control for demographic characteristics, such as income and education, that have also been shown to affect stock market participation and savings behavior using data from the American Community Survey. While demographic variables account for some of the relation between Economic Connectedness and household financial behavior, the economic magnitude of Economic Connectedness remains large.

In a regression with all county controls and all social capital measures, a one-standard deviation increase in Economic Connectedness is associated with a 2.9 percentage point higher stock market participation rate, and a 5.0 percentage point higher savings rate. While Cohesiveness and Civic Engagement are each also positively associated with financial behavior their magnitudes are much smaller. A one-standard deviation increase in Cohesiveness is associated with a 1.2 percentage point higher stock market participation rate and a 2.0 percentage point higher savings rate. Furthermore, a one-standard deviation increase in Civic Engagement leads to an immaterial 0.08 percentage point higher stock market participation rate and 0.06 percentage point higher savings rate.

We employ two strategies to address the fact that controls are imperfect. First, we perform a reverse causality test similar to Chetty et al. (2022a), which uses childhood EC as

the independent variable of interest. This method exploits the fact that childhood friendships are created before people typically start making their own financial decisions. So such friendships are not influenced by stock market participation or savings behavior. We find broadly similar results, which suggests that these results are unlikely to be driven by reverse causality.

Second, we use a quasi-experimental approach, which exploits changes in the income of non-local friends as a plausibly exogenous shock to Economic Connectedness. We find that the increase in the income of non-local friends is positively associated with the increase in stock market participation and the increase in the saving participation. This evidence supports a causal interpretation of the effect of Economic Connectedness on stock market and saving participation.

The effect of Economic Connectedness on household financial behavior can derive from either greater opportunities for an individual to interact casually with wealthy individuals en route to forming a friendship, or conditional on an individual having such opportunities, from a greater willingness of wealthy individuals to form friendships with that individual. Understanding which mechanism drives our findings is important for policy considerations. Is it enough to provide opportunities for cross-class interactions? Or would such opportunities be ineffective in the absence of interventions that affect friending rates for cross-class encounters?

To understand the mechanism through which Economic Connectedness affects household financial behavior, we use data from Chetty et al. (2022b), which include two aspects of Economic Connectedness: High-SES Exposure and Friending Bias. Chetty et al. (2022b) assign Facebook users to groups (e.g., Lower Merion High School) based on six contexts in which people are most likely to make friends: high schools, colleges, religious groups, recreational groups, workplaces and neighborhoods. Using the socioeconomic makeup of identified groups, the authors measure the extent to which people in a county have the opportunity to interact with high-SES people (High-SES Exposure) and the friending rate

with low-SES individuals, conditional on opportunities (Friending Bias).

We find that High-SES Exposure has a much greater effect on household financial behavior than Friending Bias. This suggests that policies that facilitate interactions with wealthy individuals can be effective in improving household financial behavior.

In our final empirical test, we explore the stock market and saving participation of high-SES and low-SES individuals separately to determine whether our findings are similar for each group. For each subsample, we find that Economic Connectedness is the aspect of social capital most strongly related to stock market and saving participation. This is important because it shows that Economic Connectedness affects the stock market and saving participation of both high-SES and low-SES individuals.

Taken together, these results further suggest that economic connectedness of individuals with different SES may be a crucial determinant of changes in wealth inequality. From 1980 to 2022, the total return on the U.S. stock market was 8,586%. This greatly increased wealth for market participants relative to those who did not participate. Of course, the total benefit of a given return is amplified by a greater scale of investment.

It is well known that high-SES individuals are more likely to participate in the stock market (see Guiso and Sodini (2013)). Therefore, people with higher Economic Connectedness (i.e. those with more high-SES friends) will, all else equal, have more friends who participate in the stock market. Owing to homophily, high-SES individuals have high Economic Connectedness, promoting increased stock market investment and wealth inequality. However, one way to encourage investment among low-SES individuals, potentially reducing wealth inequality, is to encourage friendships across socioeconomic classes.

This paper contributes to four streams of literature. First, it extends the literature on social capital by showing that social capital is positively associated with stock market participation and savings behavior in the U.S.. As such, we contribute to the growing field of social finance (Hirshleifer (2020)). Furthermore, we document that Economic Connectedness is the most important social capital proxy in explaining household financial behavior.

Second, we contribute to the household finance literature on stock market participation. We show that the relationship between Economic Connectedness and stock market participation holds even after controlling for well-known determinants such as education, wealth, financial literacy, and race. We also show that the total county-level dollar amount of stock market investment increases with EC. In other words, both the intensive margin and the extensive margin of stock market participation are positively associated with social capital.

Third, we contribute to the literature on household savings behavior by showing that Economic Connectedness is positively associated with saving participation. This relationship is economically substantial and highly significant even after controlling for well-known determinants of savings behavior. As with stock market participation, the total county-level dollar amount of interest income increases with EC.

Fourth, we extend the literature on intergenerational transmission of poverty and lifetime wealth accumulation. All of the results mentioned previously are true for low-SES individuals. Having wealthy friends increases stock market and saving participation for low-SES households. Additionally, we find that mere exposure to high-SES individuals, as opposed to socioeconomic bias in friending rates, is important in explaining household stock market and saving participation. Therefore, our results suggest that encouraging friendships across socioeconomic classes could improve lifetime wealth accumulation and help break cycles of poverty for individuals with low socioeconomic status.

2 Data Description

A wide variety of proxies for social capital have been used in past research, including cheating on school tests, blood donations, and turnout in elections. Chetty et al. (2022a) argue for the importance of three distinct aspects of social capital – Economic Connectedness, Cohesiveness, and Civic Engagement – and develop geographic measures for each type of social capital using data on friendships from Facebook. We follow Chetty et al. (2022a) in using

these measures, and obtain data on them at the county-level from `www.socialcapital.org`. We next describe these measures briefly; see Chetty et al. (2022a) for more details.

Economic Connectedness measures the fraction of an individual's friends who have above-median income. Specifically, the primary definition is "two times the share of high-SES friends among low-SES individuals, averaged over all low-SES individuals in the county."

Cohesiveness is the tightness of the average circle of friends in a county or how close together the members of a friend group are to one another. More precisely, it is measured as the "average fraction of an individual's friend pairs who are also friends with each other."

Lastly, Civic Engagement is the average level of prosocial involvement of members in the community. It is defined as the percentage of Facebook users who are members of a group which is predicted to be about 'volunteering' or 'activism' based on group title and other group characteristics. This measure is similar in spirit to the blood donations and electoral turnout measures used by Guiso, Sapienza, and Zingales (2004).

We obtain tax return information from the the IRS's Statistics of Income (SOI) database. The SOI breaks down tax returns for each tax season by geographic regions and adjusted gross income. As our measures of social capital are constructed using county-level data from 2018, the SOI data we collect is from Tax Year 2018 and contains information about the cross section of counties from that year.

Within the SOI data, there are 8 AGI categories ranging from "Under $1" to "$200,000 or more". We exclude the "Under $1" group from the sample as it likely contains individuals with artificially low income who are not representative of low-SES individuals. Income under $1 can occur when a capital loss or business loss exceeds other gross income for a given tax year. We also exclude the $50,000 to $75,000 range, as the median income from 2018 falls within this category (the U.S. median household income was $63,179 in 2018, according the U.S. Census Bureau). This leaves us with three low-SES observations and three high-SES observations for each county in 2018.

We assign an Economic Connectedness value to each AGI-county group. For the three

low-SES groups, we define Economic Connectedness as the fraction of high-SES friends among low-SES individuals. This is the primary measure used in Chetty et al. (2022a). For the three high-SES groups, we define Economic Connectedness as the fraction of high-SES friends among high-SES individuals. This is an analogous measure of Economic Connectedness for high-SES individuals, which is also constructed in Chetty et al. (2022a). For our main analysis, we create one observation per county. To do this, we take the weighted average of Economic Connectedness per county where the weights are determined by the number of tax returns in each AGI group.

Using the SOI data, we create variables related to investment and savings behavior. There is no record to indicate if a household participates in the stock market, but tax returns contain several pieces of information relevant to stock market participation. Our first variable of interest is the receipt of dividend income as a proxy for each household's participation in the stock market (Brown et al. (2008)). This variable takes a positive value if the household receives dividends from stocks or taxable equity mutual funds. For each county, we compute the fraction of tax forms that received dividend income. Since there are households holding stocks that do not have dividend income, this can be thought of as a lower bound of the fraction of households participating in the stock market.

We also measure the saving participation at the county level. Analogous to our stock market participation proxy, we use the fraction of households receiving interest income as a proxy for saving participation. This is also a lower bound for saving participation, as there are likely households who save in non-interest bearing accounts or who do not receive enough interest income to be reported on tax forms.

Participation measures are useful to gauge the extensive margin of investments or savings (i.e. the decision to participate), but they do not measure how much of one's income is being allocated to the stock market or to a savings account. To proxy for the intensive margin for stock market participation, we divide total county-level dividend income by total county-level adjusted gross income. Similarly, to proxy for the intensive margin of savings participation,

we divide total county-level interest income by total county-level adjusted gross income.

Several variables other than social capital have been shown to help explain stock market participation and savings behavior across investors. To control for these variables, we collect demographic information for each county in 2018 from the American Community Survey and construct the natural logarithms of median income, total population, and population per square mile. We also include percent male, percent Black, percent Asian, percent Pacific Islander, percent Hispanic, median age, and percent with a high school education as control variables in our analysis. Additionally, using data from Stoddard and Urban (2020) we create a dummy variable for each state that has a state-mandated financial education requirement for high-school graduation. We interact this state dummy with the high-school graduation percentage to proxy for the financial literacy of a county.

Table 1 reports county-level summary statistics for each of our variables of interest. The first two variables, *P(Div)* and *P(Int)* are dependent variables in our regressions and capture the probability that a tax return has dividend income or interest income, respectively. Given that the average value of *P(Div)* is 0.162 and *P(Int)* 0.303, our estimates seem comparable to other estimates of participation rates, especially because our estimates represent lower bounds.

Economic Connectedness is the first aspect of social capital that we study. It measures the fraction of an individual's friend group with high SES. Because this value is slightly below one, we can infer that the average person in the average county has slightly more low-SES friends than high-SES friends. However, as the standard deviation is 0.199, there is a fair amount of variation across counties. *Cohesiveness* is the second aspect of social capital that we study. It captures the fraction of an individual's friend group that are in turn friends with each other. *Civic Engagement* is the third aspect of social capital that we study. It captures the fraction of individuals in a county who are members of 'volunteering' or 'activism' groups, as defined by Chetty et al. (2022a).[5] The variables *Population Density,*

[5]It is worth noting that unlike *Economic Connectedness*, *Cohesiveness* and *Civic Engagement* have much lower averages and standard deviations. In regressions, this likely leads to higher nominal coefficient

Population, Median Income, Percent Male, Percent Black, Percent Asian, Percent Islanders, Percent Hispanic and *Median Age* are county-level control variables that come from the American Community Survey. *Financial literacy* is a dummy variable that equals one if a state had financial literacy high school graduation requirement in 2018. *High School* also comes from the American Community Survey and measures the fraction of a county that has graduated high school.

Table 2 reports correlations for each of our variables of interest. As can be seen from this table, Economic Connectedness is strongly associated with *P(Div)* and *P(Int)*. This is partially due to the power of this explanatory variable and partially due to our construction of *EC*, which depends on the number of tax returns in each IRS AGI bucket for a given county. This makes Economic Connectedness directly related to the county's income distribution. As such, in our regressions, we include control variables such as median income and education.

3 Results

3.1 Stock Market Participation

We first estimate the relationship between social capital and stock market participation. As discussed earlier, since only someone who participates in the stock market can receive a dividend, the fraction of individuals who receive dividends is a lower bound on the rate of stock market participation.

Table 3 reports results for eight regressions of county-level stock market participation on our three measures of social capital. Each of the odd-numbered columns report results with no controls, while the even-numbered columns include controls for population, population density, median income, race, age, gender, education, and financial literacy. The first six specifications focus on an individual measure of social capital (i.e. EC, Cohesiveness, or

estimates, relative to *Economic Connectedness*. In our results, we try to keep this distinction clear and provide a comparable interpretation of economic significance among these social capital variables.

Civic Engagement). The last two specifications include all three measures of social capital. In all specifications, we estimate standard errors adjusted for heteroskedasticity and as a reminder, we standardize all variables by their standard deviations.

The results from the first row of columns (1), (2), (7) and (8) indicate that Economic Connectedness is positively associated with the probability of dividend income. Regardless of the specification, this relationship is highly significant and suggests that having high-SES friends can lead to increased participation in the stock market. In the model with full controls (column (8)), a one standard-deviation increase in Economic Connectedness is associated with an increase of 0.44 standard deviations in stock market participation. Converted to percentage points, this indicates that having 10 percentage points more high-SES friends in a county is associated with 2.9 percentage points higher stock market participation.[6] Economically, the magnitude of this relationship is quite large, an increase of $18\% = 0.03/0.16$ relative to the mean.

The effects are weaker for the other two measures of social capital. While Cohesiveness shows a positive relationship, a one standard-deviation increase in Cohesiveness is associated with a 0.19 standard deviation increase in stock market participation. Furthermore, the point estimate on Cohesiveness only becomes positive once control variables are included. Absent controls, Cohesiveness has a significantly negative relation with stock market participation. Civic Engagement, on the other hand, shows no relationship with stock market participation once controls are included.

Another way to assess the relative importance of these three measures in explaining stock market participation is to compare adjusted R^2 values. Column (1) indicates that Economic Connectedness explains over 56% of the variation in stock market participation. This is more than 11 times the variation explained by Cohesiveness (5.0%), and it is more than 6 times the variation explained by Civic Engagement (8.7%). As such, our results indicate

[6] As described in Chetty et al. (2022a), Economic Connectedness is two times the average share of high-SES friends. Hence, the 0.199 standard deviation of Economic Connectedness is comparable to having 10 percent more high-SES friends.

that Economic Connectedness is the most important aspect of social capital in explaining stock market participation.

3.2 Saving Participation

Next, we run a similar series of tests to study the relationship between social capital and savings behavior. Our proxy for saving participation is the fraction of all tax returns in a county that report interest income. Again, this measure provides a lower bound on average county savings behavior.

Table 4 reports results for eight regressions of county-level saving participation on our three measures of social capital. Each of the odd-numbered columns report results with no controls, while the even-numbered columns include controls for population, population density, median income, race, age, gender, education, and financial literacy. The first six specifications focus on an individual measure of social capital (i.e. EC, Cohesiveness, or Civic Engagement). The last two specifications include all three measures of social capital.

The savings results are remarkably similar to the stock market participation results and suggest that Economic Connectedness is the most important aspect of social capital in explaining saving participation. The results from the first row of columns (1), (2), (7), and (8) show a positive relationship between Economic Connectedness and saving participation. This relationship is highly significant across all specifications and provides evidence that having high-SES friends is associated with increased savings rates.

The economic magnitude of this relationship is large. In the specification with full controls (column (8)), a one standard-deviation increase in Economic Connectedness is associated with 0.57 standard deviations increase in saving participation. This represents an increase of 5.0%, which is more than 16% relative to the mean (0.05/0.30).

The other two measures of social capital are also less important in explaining saving participation. In fact, they show a very similar pattern to the stock market participation results from Table 3. Cohesiveness has a positive and statistically significant relationship

with saving participation. However, its economic magnitude is more than four times smaller than that of Economic Connectedness. A one standard-deviation increase in Cohesiveness is associated with a 0.129 standard deviation increase in saving participation. After including controls, Civic Engagement has no relationship with saving participation.

A comparison of adjusted R^2 values conveys a similar message. Looking at the bottom row of columns (1), (3), and (5) of Table 3, Economic Connectedness explains nearly 54% of the variation in saving participation, while Cohesiveness explains 2% of the variation and Civic Engagement explains roughly 13% of it. Therefore, Economic Connectedness appears to be the most important aspect of social capital for explaining saving participation.

3.3 Causality

Although we use controls, our tests so far do not provide sharp identification. One source of endogeneity is reverse causality—saving or stock market trading could influence social capital. Another source of endogeneity is that factors that influence saving or stock market participation could be correlated with Economic Connectedness.

To address these causality concerns, we perform two sets of tests. Our first tests rely on childhood friendship data to address reverse causality. Our second set of tests uses cross-county social networking data and focus on changes in income to non-local friends to address causality concerns more broadly.

3.3.1 Reverse Causality

An important concern for our tests is that stock market participation or savings behavior might influence an individual's social network, which reverses the causality of our hypotheses. As discussed in the introduction, an individual who invests in the stock market might join investment clubs or attend investing seminars. Because stock market participation increases with wealth, these individuals would be more likely to have high-SES friends. So the positive relationship between Economic Connectedness and stock market participation could occur

even if Economic Connectedness does not cause participation.

To address reverse causality, following Chetty et al. (2022a) we run a series of tests with childhood Economic Connectedness as the independent variable. The results are presented in Table 5.The first three columns present results in which $P(Div)$ is the dependent variable. The final three columns present results in which $P(Int)$ is the independent variable. Columns (2), (3), (5), and (6) include controls, and columns (3) and (6) include all three measures of social capital as independent variables.

The first three columns report a positive and statistically significant relationship between childhood Economic Connectedness and stock market participation. The last three columns report a positive and statistically significant relationship between childhood Economic Connectedness and savings behavior. Taken together, these results show the same basic pattern as the results from Tables 3 and 4. Therefore, reverse causality is not likely to be the main driver of our findings.

3.3.2 Non-Local Income Shocks

We next address endogeneity more broadly by examining stock market and saving participation following income shocks to non-local friends.

As we have discussed, a source of endogeneity in our tests is that there may be variables that affect both Economic Connectedness and our dependent variables. For instance, people who tend to participate in the stock market may simply be attracted to living in regions with high Economic Connectedness. As a result, we could observe high stock market participation rates in regions with high Economic Connectedness even if Economic Connectedness does not cause participation.

To address such endogeneity, we implement a quasi-experimental approach using cross-county friendship data. We test whether the change in stock market participation of a given county increases with the change in income of friends who are non-local to that county. Our identifying assumption is that the change in income of non-local friends affects the stock

market participation or savings of a given county only through friendship linkages.

To conduct this analysis, we collect data measuring the social connectedness of county pairs, $SCI_{i,j}$ Bailey et al. (2018). This data records the relative probability that any two individuals from two given counties are friends on Facebook. We use this data to approximate, for a given county i, the average change in income of its non-local Facebook friends.

Specifically, for county i, we first multiply each social connectedness measure $SCI_{i,j}$ by the population in county j. As the population of county i is still implicitly in the denominator of this value, it is an approximation of the number of Facebook friends in county j for the average person in county i. We then use these friendship values to weight the change in income of all non-local counties from 2016 to 2017. We exclude counties within 250 miles of county i, as well as county i itself, in our computation to detach our measure from potential local economic shocks. Finally, we multiply the weighted average by one minus the fraction of local friends in a given county. This accounts for the fact that some counties may have a greater fraction of local friends than other counties. So, our measure of change in non-local income for each county is:

$$\Delta NonlocalIncome_i = \left(1 - \frac{SCI_{i,i} * Pop_i}{\sum_{k=1}^{N} SCI_{i,k} * Pop_k}\right) * \frac{\sum_{j=1}^{N} SCI_{i,j} * Pop_j * \Delta Income_j}{\sum_{j=1}^{N} SCI_{i,j} * Pop_j} \quad (1)$$

where $j \neq i$ and county j is not within 250 miles of county i.

We then regress the change in a county's stock market participation or saving participation on $\Delta NonlocalIncome$. We measure changes in stock market and saving participation from 2017 to 2018 and include all control variables considered in earlier regressions.

Table 6 indicates that the change in income of non-local friends is positively and significanty associated with changes in stock market and saving participation. In terms of economic magnitude, one standard-deviation greater change in non-local income leads to a 0.04 standard deviation greater change in stock market participation and a 0.05 standard deviation greater change in saving participation. While these numbers appear small, the

variables of interest in our regressions represent county-level changes, which are sticky.

As these findings come from non-local friends, they are immune to effects coming directly from local economic conditions. Furthermore, because these linkages are friendship-based, they highlight the social aspect of Economic Connectedness. Lastly, as the explanatory variable is based on the change in wealth to a "fixed" group of friends, the findings indicate that the *income*, not just the type, of one's friends matters in explaining stock market participation and savings.

3.4 High-SES Exposure and Friending Bias

We next consider whether High-SES Exposure or Friending Bias plays a larger role in the relation between Economic Connectedness and household financial behavior. In Chetty et al. (2022b), the authors break down Economic Connectedness into two components, High-SES Exposure and Friending Bias. For each Facebook user, the authors use self-reported data, liked pages, Facebook group membership and friendship networks to assign users to at most one group for each of six settings in which friendships are commonly made. The settings are high schools, colleges, religious groups, recreational groups, workplaces and neighborhoods.

For example, Facebook information could be used to identify a user that graduated from Glendale High School in California, earned her bachelor's degree from UCLA, and joined a pickleball club near her work with Kaiser Permanente in Los Angeles. This user would be assigned to the Glendale High School group with classmates from high school, the UCLA group with classmates from college, the Los Angeles Pickleball group with her training partners, and the Kaiser Permanente group with her coworkers. Individuals who are members of multiple groups within the same setting are assigned to the group in which they have the largest number of Facebook friends. Once group membership is determined, the fraction of High-SES members in each group is computed, and friendships within the group are identified.

Using this information about friend groups, High-SES Exposure is calculated by taking

the average share of high-SES individuals in the groups for each user in a county, and averaging across county users. This measure provides an indication of how likely the average person in a county is to have opportunities to interact with high-SES individuals.

Friending Bias, on the other hand, measures the propensity toward friending low-SES individuals in a given county conditional on exposure. Based on the friendship groups identified, Friending Bias is calculated as the fraction of high-SES friends made from those groups divided by the average share of high-SES individuals among those groups, all of which is subtracted from one. More details about these measures can be found in Chetty et al. (2022b).

Distinguishing between High-SES Exposure and Friending Bias is important for understanding the mechanism through which Economic Connectedness affects financial behavior. For instance, if High-SES Exposure is driving our results, then insufficient cross-class interactions may be a key limiting factor for participation rates of low-SES households. If so, policies that increase opportunities for cross-class interactions would promote participation among low-SES households.

In contrast, if our findings are driven by Friending Bias, then facilitating cross-class interactions is expected to have a minimal effect on participation. In this case, such opportunities are seldom consummated in the form of cross-class friendships. Increasing such friendships would require a different kind of social change.

To test whether High-SES Exposure or Friending Bias drives the relation between Economic Connectedness and financial behavior, we replicate our main regressions from Tables 3 and 4, replacing Economic Connectedness with High-SES Exposure and Friending Bias. The results are reported in Table 7.

The results from Table 7 show that High-SES Exposure is much more important for financial behavior than Friending Bias. In our specifications with all control variables, a one standard deviation increase in High-SES Exposure is associated with a 0.30 standard deviation increase in stock market participation and a 0.44 standard deviation increase in savings

participation. In comparison, the coefficient on Friending Bias is economically unimportant for savings participation (-0.05) and has a flipped sign (0.04) for stock market participation. Therefore, having the opportunity to interact with High-SES individuals appears to be an important mechanism behind the relation between Economic Connectedness and financial behavior.

3.5 Intensive Margins

We next explore how Economic Connectedness is related to total dividend income and total interest income. While our earlier tables provide evidence that Economic Connectedness helps explain variation in stock market and saving participation, these measures focus on extensive margins. In other words, counties where individuals have more wealthy friends tend to have more stock market participation and higher rates of saving. This leaves open the question of whether, for a given participating individual, having wealthy friends encourages greater stock market investment and greater saving.

On the one hand, counties with greater Economic Connectedness may save or invest more of their income than areas with less Economic Connectedness. If this is the case, then we should observe more total savings and more total investing in areas with greater Economic Connectedness. On the other hand, areas with greater Economic Connectedness may not save more, but instead spread their savings out more between the stock market and interest-bearing accounts. In this case, diversification might be playing a role, and we would not necessarily expect to see more total savings or total investing in areas with greater Economic Connectedness.

To test whether total dividend income and interest income are increasing with Economic Connectedness, we estimate similar regressions to those in Tables 3 and 4, replacing our dependent variables with county-level total dividend income and total interest income, scaled by adjusted gross income. The results are reported in Table 8.

In column (1), we see a strong positive relation between Economic Connectedness and

dividend income. The coefficient on Economic Connectedness indicates that a one standard deviation increase in Economic Connectedness is associated with a 0.31 standard deviation increase in dividend income. Control variables are added in columns (2) and (3), and the effect from Economic Connectedness remains robust. As with our extensive margin results, Cohesiveness and Civic Engagement also show positive point estimates, though economically less important.

Economic Connectedness is also positively related to interest income, as seen in columns (4)-(6). After including all controls and social capital measures, a one standard deviation increase in Economic Connectedness is associated with a 0.48 standard deviation increase in interest income. In comparison, the effect of Cohesiveness is indistinguishable from zero and Civic Engagement takes the opposite sign.

Overall, Table 8 provides evidence that Economic Connectedness is positively associated with the intensive margin of investing behavior and saving behavior. This implies that the higher participation rates are the result of households increasing saving and investing rather than diversifying across multiple investment opportunities.

3.6 Low SES vs. High SES

We next study whether the effect of household social capital on financial decisions depends on the household's SES. As policy is typically directed at improving the financial well-being of lower-income individuals, it is important to test whether our results might be driven exclusively by high-SES households.

In Table 9, we repeat our earlier analysis but create two observations per county; one for low-SES individuals and one for high-SES individuals. We construct our sample, as before, by summing IRS variables for each county. This time, however, we construct separate county-level variables for below-median AGI groups and above-median AGI groups. As the Economic Connectedness measures we obtain from Chetty et al. (2022a) provide values for high-SES and low-SES individuals for each county, we simply use the counties' standard EC

values for the below-median sample and the analogous high-SES Economic Connectedness values for the above-median sample.[7]

Column (1) indicates that among low-SES households, all three social capital measures are positively and significantly related to stock market participation. For Economic Connectedness, a one standard deviation increase is associated with a 0.23 standard deviation increase in the probability of stock market participation. This corresponds to an increase of $11.4\% = 0.11/0.09$ relative to the mean participation rate among low-SES households. Interestingly, Cohesiveness has a similar economic magnitude. Though statistically significant, the economic magnitude of Civic Engagement is quite small.

Moving to column (2), we see that Economic Connectedness and Cohesiveness are positively related to stock market participation among high-SES households while Civic Engagement is not. These large coefficient magnitudes make it seem as if social capital measures matter more for the stock market participation of high-SES individuals, but the magnitude is not actually larger in percentage terms.

Consistent with the fixed cost framework of Vissing-Jorgensen (2002), the mean stock market participation rate of low-SES households (0.09) is far lower than for high-SES households (0.32). Considering these mean participation rates, Economic Connectedness has a similar percentage effect on low-SES and high-SES households.

Furthermore, stock market participation is likely not the first step along the savings path for individuals. Roughly 80% of low-SES households do not have interest income, so the likely first step for most is to save in an interest-bearing account. For high-SES households, where almost 55% already have interest income, transitioning to the stock market is a natural next step.

Consistent with this step-by-step savings process, we see that for low-SES households, the coefficient on Economic Connectedness is nearly twice as large when the dependent variable

[7]For reference, we report summary statistics for low and high SES groups in Appendix Table A2. We also report correlations between variables of interest for the low-SES group in Appendix Table A3 and for the high-SES group in Appendix Table A4.

is savings participation (column (3)) than it is when the dependent variable is stock market participation (column (1)). The coefficient indicates that when Economic Connectedness is one standard deviation higher, the probability of receiving interest income is 0.40 standard deviations higher. Compared to the mean rate of 19.5%, this corresponds to a 14.6% increase. Similar to column (1), Cohesiveness appears with a positive and significant coefficient, though the magnitude is halved. Civic Engagement, on the other hand, is indistinguishable from zero. For the high-SES group in column (4), we see that Economic Connectedness and Cohesiveness have a positive relationship with the probability of interest income.

In the final four columns of Table 9, we consider the intensive margins of investing and saving for both high-SES and low-SES groups. Regardless of socioeconomic status, Economic Connectedness is positively related to total dividends and total interest income. The relationship is statistically significant in all columns.

The relation between the intensive margins and Economic Connectedness is especially pronounced among the high-SES group. When dividend income is the dependent variable, the coefficient on Economic Connectedness is 0.395 (t=12.95). When total interest is the dependent variable, the coefficient is 0.622 ($t = 16.56$). In comparison, the coefficients for the low-SES group are 0.098 ($t = 2.53$) and 0.382 ($t = 11.80$), respectively.

This large gap in the intensive margin is consistent with the step-by-step savings process described earlier. After deciding to open a savings account, the next natural step would be to start investing in the stock market. After a household has opened both a savings account and an investment account, then we might expect an increase in the intensive margins.

Overall, Table 9 suggests that Economic Connectedness is most related to extensive margin decisions for low-SES households – whether to invest (save) or not – and most related to intensive margin decisions for high-SES households – how much to invest (save). This suggests that Economic Connectedness may help households progress through a process that promotes saving first and investing second.

3.7 Robustness Tests

We have used the probability of receiving dividend income as a proxy for stock market participation. Another IRS datum that is informative about stock market participation is capital gain income. In the Appendix, we replicate our analysis of stock market participation using capital gain income as our dependent variable. Each of the results is consistent with our main analysis and interpretation. Indeed, the coefficients are extremely similar.

This is evident is comparing Table 3, where the probability of receiving dividend income is the dependent variable, to Appendix Table A5, where the probability of receiving capital gain income is the dependent variable. With no controls, the coefficient of Economic Connectedness is 0.751 ($t = 60.21$) in Table 3, while its corresponding estimate is 0.774 ($t = 67.01$) in Table A5. With the full set of controls and social capital measures, the coefficient of Economic Connectedness is 0.442 ($t = 15.46$) in Table 3, and its corresponding estimate is 0.591 ($t = 19.77$) in Table A5. The largest difference in the capital gain analysis is that while Cohesiveness appears to matter for some specifications of dividend income, it is almost never significantly positive for capital gains.

In addition to our capital gain analysis, we have replicated our main findings using alternative measures for Cohesiveness and Civic Engagement, as described in Chetty et al. (2022a). In Appendix Table A9, we find that after considering these other measures, Economic Connectedness continues to have a substantial effect on household financial behavior.

For stock market participation, savings participation, and savings intensive margin, the point estimate on Economic Connectedness is largely comparable to our earlier estimates and economically substantial. For the dividend intensive margin, however, the effect of Economic Connectedness noticeably drops, though it remains economically important and statistically significant. This reduction seems to be related to the importance of Civic Organizations, which has the largest coefficient in the dividend intensive margin column. Though Civic Organizations appears to be a critical factor for the intensive margin of dividend income, its importance drops considerably for other financial decisions, where Economic Connectedness

is clearly dominant.

Lastly, we have estimated all of our regressions using each AGI bucket as a separate observation for each county and clustering our standard errors at the county level. In all such tests, we find a positive relationship between Economic Connectedness and household financial behavior.

4 Conclusion

Despite high historical returns to investing in the stock market, many households do not own any stocks. As participating in the stock market is crucial to building wealth over the life-cycle, understanding how to promote stock market participation is important for improving financial well-being.

Social capital has been proposed as a candidate for policy interventions to promote market participation and saving (Ban, Gilligan, and Rieger (2020)). One motivation for this is that social capital has been found to influence many economic and political outcomes. It is plausible that social capital can reduce the fixed costs, whether pecuniary or psychic, to investors of participating in the stock market or of saving for the future. Interacting with members in a community with higher socioeconomic status (who are, in general, more likely to participate in the market and have high rates of saving) can help individuals obtain useful information about how to participate in the stock market or to save for retirement.

In this paper, we apply friendship data from Facebook and financial data from the IRS to test the relationship between social capital and individual investment and savings behavior. Using county-level data from the social networks of 27.2 million Facebook users and financial information from IRS tax returns, we consider three aspects of social capital: Economic Connectedness, Cohesiveness, and Civic Engagement.

Our evidence indicates that Economic Connectedness is especially important for household financial decisions. A one standard deviation increase in Economic Connectedness is as-

sociated with a 2.9% increase in stock market participation and a 5.0% increase in the saving participation. Relative to their mean values, this represents an 18% increase in stock market participation and a 16% increase in savings. Furthermore, while Cohesiveness and Civic Engagement explain, at most, 8.7% of variation in stock market participation, Economic Connectedness explains 56.3%. Using changes in income of non-local friends as exogenous shocks to Economic Connectedness, we provide evidence in favor of a causal interpretation of these results.

The effect of Economic Connectedness on household financial behavior can derive from opportunities to interact with wealthy individuals or because of wealthy individuals' willingness to form friendships. Understanding which mechanism drives our findings is relevant for policy as it clarifies whether facilitating cross-class encounters can suffice to improve outcomes, or whether improving friending rates for existing interactions is required. We test which of these two mechanisms has a greater effect on household financial behavior and find that the importance of High-SES Exposure is over seven times that of Friending Bias.

Undersaving and insufficient stock market risk exposure, particularly among low-SES households, are major problems for lifetime well-being. We provide evidence that greater opportunities for social interaction with wealthy individuals is associated with apparently beneficial effects on household financial behavior. For the average household, having more exposure to high-SES households is associated with increased stock market and saving participation. Massenkoff and Wilmers (2023) find that cross-class interaction is common at casual restaurant chains like Olive Garden and Applebee's. Among publicly funded spaces, libraries and parks provide the most opportunity for low-SES individuals to interact with high-SES individuals. Our findings suggest that the presence of cross-class establishments may increase stock market and saving participation of low-SES households. This topic merits further research.

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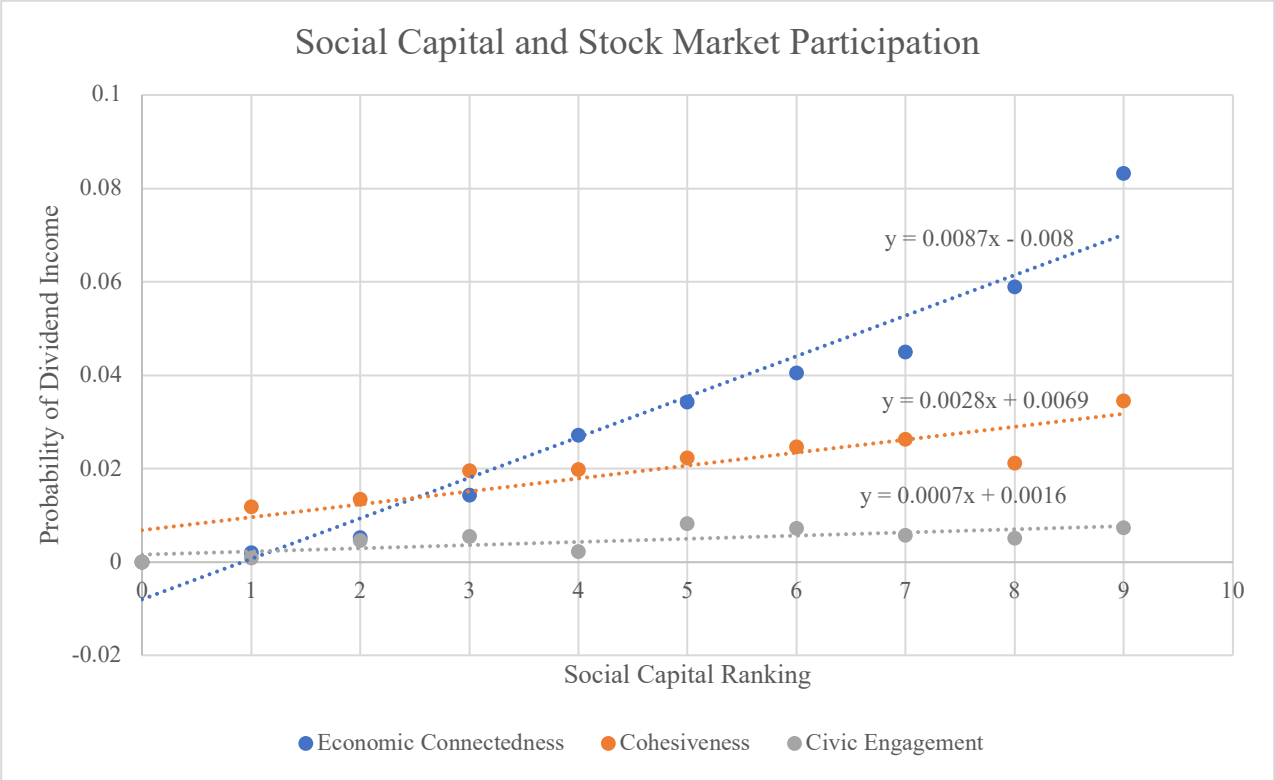


Figure 1: **Social Capital and Stock Market Participation.** This figure reports coefficients from a regression of county-level stock market participation on three facets of social capital: Economic Connectedness (EC), Cohesiveness, and Civic Engagement. We capture stock market participation with dividend income. Each measure of social capital is divided into ten groups. We include a total of 27 indicator variables, 9 for each of the three aspects of social capital. We also include controls for population, population density, median income, race, age, gender, education, and financial literacy. The equations represent best-fit lines from regressions of social capital coefficients on decile ranking. The slopes of these lines represent the average increase in stock market participation that results from a 10% increase in a given aspect of social capital.

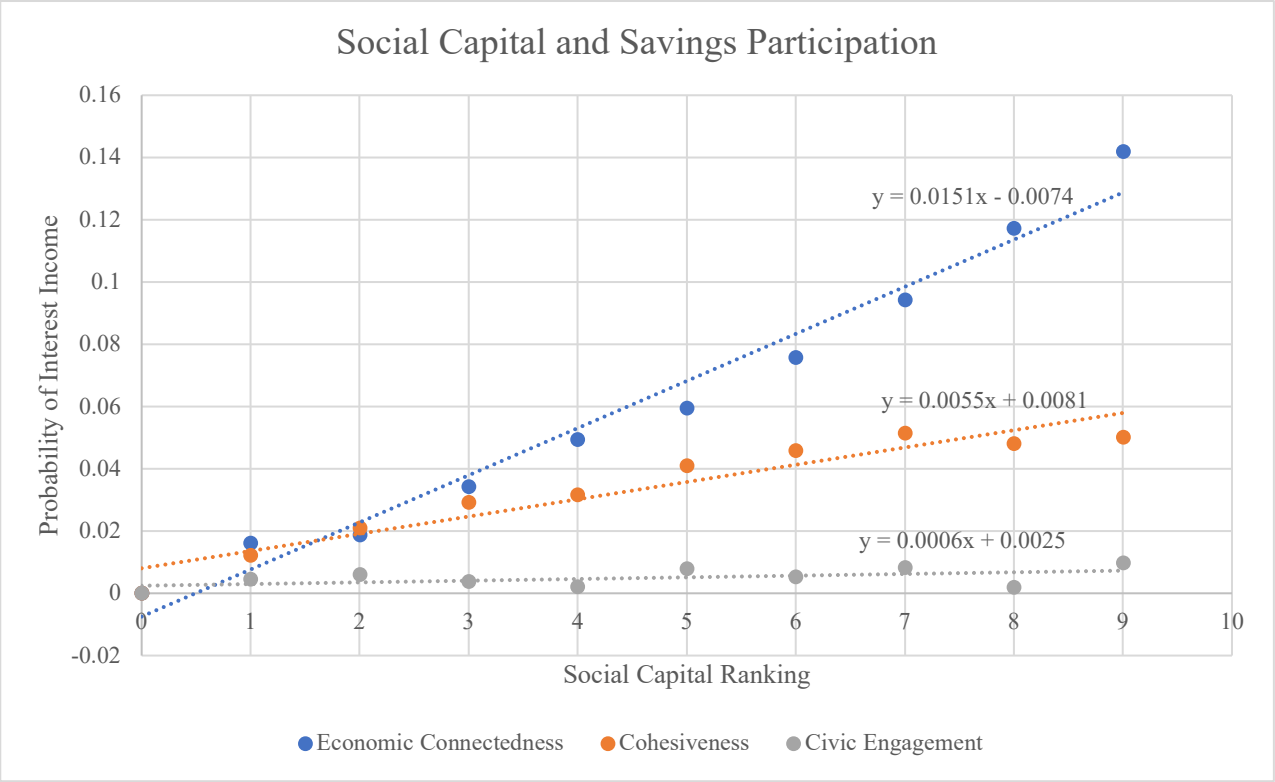


Figure 2: **Social Capital and Savings.** This figure reports coefficients from a regression of county-level savings behavior on three facets of social capital: Economic Connectedness (EC), Cohesiveness, and Civic Engagement. We capture savings behavior with interest income. Each measure of social capital is divided into ten groups. We include a total of 27 indicator variables, 9 for each of the three aspects of social capital. We also include controls for population, population density, median income, race, age, gender, education, and financial literacy. The equations represent best-fit lines from regressions of social capital coefficients on decile ranking. The slopes of these lines represent the average increase in savings that results from a 10% increase in a given aspect of social capital.

Table 1: **Summary Statistics.** This table reports county-level summary statistics. *P(Div)* is the probability that a tax return has dividend income. *Div/AGI* is the total dividends in a county divided by total county AGI. It captures the intensive margin of stock market participation. *P(Int)* is the probability that a tax return has interest income. *Int/AGI* is the total interest income in a county divided by total county AGI. It captures the intensive margin of savings participation. *Economic Connectedness* is the first aspect of social capital that we study. It measures the fraction of an individual's friend group with high SES. *Cohesiveness* is the second aspect of social capital that we study. It captures the fraction of an individual's friend group that are friends with each other. *Civic Engagement* is the third aspect of social capital that we study. It captures the fraction of individuals in a county who are members of 'volunteering' or 'activism' groups. The variables *Population Density, Population, Median Income, Percent Male, Percent Black, Percent Asian, Percent Islanders, Percent Hispanic, and Median Age* are county-level control variables. *Financial literacy* is a dummy variable that equals one if a state had financial literacy high school graduation requirement in 2018. *High School* measures the fraction of a county that has graduated high school.

	Obs	Mean	Std	p25	p50	p75
P(Div)	3088	0.162	0.068	0.111	0.158	0.205
Div/AGI	3088	0.017	0.011	0.010	0.014	0.020
P(Int)	3088	0.303	0.088	0.239	0.294	0.363
Int/AGI	3088	0.008	0.004	0.006	0.007	0.010
Economic Connectedness	3017	0.940	0.199	0.803	0.936	1.079
Cohesiveness	3088	0.116	0.020	0.103	0.115	0.127
Civic Engagement	3088	0.078	0.035	0.055	0.073	0.094
Ln(Population Density)	3087	3.820	1.708	2.868	3.831	4.768
Ln(Population)	3088	10.315	1.444	9.343	10.179	11.143
Ln(Median Income)	3087	10.819	0.249	10.658	10.818	10.961
Percent Male	3088	0.501	0.023	0.489	0.496	0.506
Percent Black	3088	0.090	0.144	0.007	0.023	0.102
Percent Asian	3088	0.014	0.028	0.003	0.006	0.013
Percent Islanders	3088	0.001	0.004	0.000	0.000	0.001
Percent Hispanic	3088	0.092	0.137	0.021	0.041	0.095
Median Age	3088	41.243	5.337	38.000	41.200	44.400
Financial Literacy	3088	0.577	0.494	0.000	1.000	1.000
Percent HS or Higher	3088	0.866	0.062	0.829	0.879	0.912

Table 2: **Correlation Matrix.** This table reports correlations for each of our variables of interest. *P(Div)* is the probability that a tax return has dividend income. *P(Int)* is the probability that a tax return has interest income. *Economic Connectedness* is the first aspect of social capital that we study. It measures the fraction of an individual's friend group with high SES. *Cohesiveness* is the second aspect of social capital that we study. It captures the fraction of an individual's friend group that are friends with each other. *Civic Engagement* is the third aspect of social capital that we study. It captures the fraction of individuals in a county who are members of 'volunteering' or 'activism' groups. *Population Density, Population, Median Income, Percent Male, and Median Age* are county-level control variables. *Financial literacy* is a dummy variable that equals one if a state had financial literacy high school graduation requirement in 2018. *High School* measures the fraction of a county that has graduated high school.

	P(Div)	P(Int)	EC	Clust	Vol	Den	Pop	Inc	Male	Age	FinLit	HS
P(Div)	1.00											
P(Int)	0.75	1.00										
Economic Connectedness	0.75	0.73	1.00									
Cohesiveness	-0.22	-0.14	-0.37	1.00								
Civic Engagement	0.30	0.36	0.35	-0.04	1.00							
Ln(Population Density)	0.02	-0.16	0.03	-0.50	-0.22	1.00						
Ln(Population)	0.07	-0.15	0.06	-0.58	-0.19	0.88	1.00					
Ln(Median Income)	0.63	0.48	0.78	-0.55	0.15	0.32	0.38	1.00				
Percent Male	-0.03	-0.01	0.04	0.10	0.08	-0.32	-0.26	-0.00	1.00			
Median Age	0.27	0.42	0.08	0.19	0.22	-0.30	-0.37	-0.11	-0.04	1.00		
Financial Literacy	-0.07	-0.00	-0.10	-0.06	-0.03	-0.09	-0.12	-0.08	0.01	-0.04	1.00	
Percent HS or Higher	0.68	0.65	0.73	-0.35	0.37	0.09	0.14	0.60	-0.12	0.19	-0.10	1.00

Table 3: **Probability of Stock Market Participation.** This table reports results for regressions of county-level stock market participation on three facets of social capital: Economic Connectedness (EC), Cohesiveness, and Civic Engagement. We capture county-level stock market participation using the probability of dividend income. Columns (1) and (2) report results for Economic Connectedness. Columns (3) and (4) report results for Cohesiveness. Columns (5) and (6) report results for Civic Engagement. In columns (7) and (8), we include all three aspects of social capital in the regressions. In columns (2), (4), (6), and (8) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) P(Div)	(2) P(Div)	(3) P(Div)	(4) P(Div)	(5) P(Div)	(6) P(Div)	(7) P(Div)	(8) P(Div)
Economic Connectedness	0.751***	0.430***					0.759***	0.442***
	(60.21)	(14.56)					(45.86)	(15.46)
Cohesiveness			-0.224***	0.145***			0.056**	0.186***
			(-8.25)	(4.34)			(2.46)	(5.31)
Civic Engagement					0.296***	0.017	0.037**	0.012
					(14.93)	(1.08)	(2.57)	(0.84)
Controls		YES		YES		YES		YES
Observations	3017	3015	3088	3086	3088	3086	3017	3015
Adj. R^2	0.563	0.676	0.050	0.626	0.087	0.617	0.567	0.690

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: **Probability of Interest Income.** This table reports results for regressions of county-level interest income on three facets of social capital: Economic Connectedness (EC), Cohesiveness, and Civic Engagement. Columns (1) and (2) report results for Economic Connectedness. Columns (3) and (4) report results for Cohesiveness. Columns (5) and (6) report results for Civic Engagement. In columns (7) and (8), we include all three aspects of social capital in the regressions. In columns (2), (4), (6), and (8) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) P(Int)	(2) P(Int)	(3) P(Int)	(4) P(Int)	(5) P(Int)	(6) P(Int)	(7) P(Int)	(8) P(Int)
Economic Connectedness	0.732***	0.562***					0.753***	0.571***
	(61.74)	(19.10)					(50.77)	(19.69)
Cohesiveness			-0.141***	0.094***			0.152***	0.129***
			(-6.99)	(3.57)			(6.88)	(5.28)
Civic Engagement					0.362***	0.018	0.102***	0.006
					(17.67)	(1.18)	(6.81)	(0.45)
Controls		YES		YES		YES		YES
Observations	3017	3015	3088	3086	3088	3086	3017	3015
Adj. R^2	0.536	0.690	0.020	0.630	0.131	0.627	0.568	0.697

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: **Childhood Economic Connectedness.** This table reports results for regressions of the probability of dividend income (columns (1) - (3)) or the probability of interest income (columns (4) - (6)) on childhood EC. We include childhood EC instead of our standard measure of EC to address concerns related to reverse causality. In columns (1) and (2) and columns (4) and (5), we only include the focal aspect of social capital in our regressions, namely Childhood EC. In columns (3) and (6), we include all three aspects of social capital in our regressions. In columns (2), (3), (5), and (6) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) P(Div)	(2) P(Div)	(3) P(Div)	(4) P(Div)	(5) P(Int)	(6) P(Int)
Child EC	0.589***	0.194***	0.208***	0.448***	0.257***	0.266***
	(36.43)	(6.78)	(7.77)	(28.81)	(9.89)	(10.37)
Cohesiveness			0.227***			0.151***
			(5.44)			(4.73)
Civic Engagement			0.020			-0.002
			(1.28)			(-0.15)
Controls		YES	YES		YES	YES
Observations	2728	2727	2727	2728	2727	2727
Adj. R^2	0.347	0.660	0.681	0.201	0.643	0.652

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: **Nonlocal Income Shocks.** This table reports results for regressions of the change in stock market participation (columns (1) and (2)) or the change in saving participation (columns (3) and (4)) on the change in income of nonlocal friends. The dependent variables capture changes from 2017 to 2018. The independent variable measures the change in the income of nonlocal friends from 2016 to 2017. Friends are classified as nonlocal if they live more than 250 miles from the focal county. In columns (2) and (4), we include changes in controls for population, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1)	(2)	(3)	(4)
	Δ P(Div)	Δ P(Div)	Δ P(Int)	Δ P(Int)
Δ Nonlocal Income	0.047***	0.036*	0.119***	0.050*
	(2.88)	(1.74)	(5.89)	(1.82)
Controls		YES		YES
Observations	3141	3140	3141	3140
Adj. R^2	0.002	0.002	0.014	0.100

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: **High-SES Exposure and Friending Bias** This table breaks EC into two components: High-SES Exposure and Friending Bias. *High-SES Exposure* measures the fraction of group members who are high SES among groups to which an individual belongs. *Friending Bias* captures the bias for which an individual befriends low-SES people given the SES composition of a group. In all specifications, we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) P(Div)	(2) P(Div)	(3) P(Int)	(4) P(Int)
High-SES Exposure	0.276***	0.296***	0.428***	0.442***
	(9.15)	(10.37)	(16.03)	(16.51)
Friending Bias	0.049***	0.042**	-0.041***	-0.046***
	(2.91)	(2.50)	(-3.12)	(-3.53)
Cohesiveness		0.190***		0.133***
		(5.55)		(5.43)
Civic Engagement		0.022		0.009
		(1.48)		(0.65)
Controls	YES	YES	YES	YES
Observations	3009	3009	3009	3009
Adj. R^2	0.661	0.675	0.667	0.674

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: **Intensive Margin.** This table reports results for regressions of the total county-level dividend income divided by adjusted gross income (columns (1) - (3)) or the total county-level interest income divided by adjusted gross income (columns (4) - (6)) on aspects of social capital. In columns (1) and (2) and columns (4) and (5), we only include the focal aspect of social capital in our regressions, namely Economic Connectedness. In columns (3) and (6), we include all three aspects of social capital in our regressions. In columns (2), (3), (5), and (6) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1)	(2)	(3)	(4)	(5)	(6)
	Div/AGI	Div/AGI	Div/AGI	Int/AGI	Int/AGI	Int/AGI
Economic Connectedness	0.309***	0.216***	0.216***	0.352***	0.475***	0.476***
	(16.43)	(5.91)	(6.03)	(17.56)	(10.86)	(10.90)
Cohesiveness			0.041*			-0.041
			(1.70)			(-1.57)
Civic Engagement			0.033**			-0.056***
			(1.98)			(-2.93)
Controls		YES	YES		YES	YES
Observations	3017	3015	3015	3017	3015	3015
Adj. R^2	0.095	0.259	0.259	0.124	0.272	0.274

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: **Probability of Stock Market Participation: Subsamples.** This table reports results for regressions of various county-level measures of financial behavior on all three aspects of social capital. We split our regressions into two subsamples: below-median SES and above-median SES. Columns (1), (3), (5), and (7) are regressions on the low-SES subsample, and columns (2), (4), (6), and (8) are regressions on the high-SES subsample. The dependent variables are probability of dividend income (columns (1) and (2)), probability of interest income (columns (3) and (4)), total county-level dividend income divided by adjusted gross income (columns (5) and (6)), and total county-level interest income divided by adjusted gross income (columns (7) and (8)). Columns (1) - (3) report results for the low-SES subsample, and columns (4) - (6) report results for the high-SES subsample. Columns (1), (2), (4), and (5) report results for regressions which only include our focal aspect of social capital, namely Economic Connectedness. In all specifications, we include all three aspects of social capital in our regressions, and we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	P(Div)		P(Int)		Div/AGI		Int/AGI	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low	High	Low	High	Low	High	Low	High
Economic Connectedness	0.234***	0.648***	0.404***	0.660***	0.098**	0.395***	0.382***	0.622***
	(8.12)	(24.38)	(16.01)	(20.61)	(2.53)	(12.95)	(11.80)	(16.56)
Cohesiveness	0.221***	0.196***	0.121***	0.175***	0.127**	0.062***	0.027	-0.016
	(4.06)	(7.29)	(4.92)	(5.92)	(2.36)	(2.78)	(1.18)	(-0.62)
Civic Engagement	0.053***	-0.008	0.023	-0.017	0.057**	0.025	-0.027	-0.069***
	(2.67)	(-0.53)	(1.56)	(-0.93)	(2.46)	(1.43)	(-1.53)	(-3.49)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Observations	3015	3015	3015	3015	3015	3015	3015	3015
Adjusted R^2	0.588	0.579	0.690	0.424	0.319	0.253	0.562	0.233

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A1: **Additional Summary Statistics.** This table reports county-level summary statistics for additional social capital variables and for change variables used in our nonlocal income shock tests. *High-SES Exposure* measures the fraction of group members who are high SES among groups to which an individual belongs. *Friending Bias* captures the bias for which an individual befriends low-SES people given the SES composition of a group. *Support Ratio* is the fraction of within-county friendships that share a third mutual friend from the same county. *Civic Organizations* is the number of Facebook Pages estimated to be Public Good pages per 1,000 users. Δ *SMP* is the change in stock market participation in a given county from 2017 to 2018. Δ *Saving* is the change in saving participation from 2017 to 2018. Δ *Nonlocal Income* is the change in the income of nonlocal friends from 2016 to 2017.

	Obs	Mean	Std	p25	p50	p75
High-SES Exposure	3011	0.955	0.219	0.807	0.959	1.110
Friending Bias	3011	-0.004	0.040	-0.030	-0.005	0.019
Support Ratio	3088	0.989	0.015	0.987	0.994	0.997
Civic Organizations	3088	0.020	0.010	0.014	0.018	0.023
Δ SMP	3141	0.001	0.013	-0.002	0.001	0.003
Δ Saving	3141	0.014	0.013	0.006	0.012	0.019
Δ Income	3141	0.018	0.008	0.012	0.016	0.022

Table A2: **Summary Statistics: Subsamples.** This table reports county-level summary statistics for two subsamples: below-median SES and above-median SES. We consider only variables that differ between the Low-SES and High-SES subsamples. *P(Div)* is the probability that a tax return has dividend income. *P(Int)* is the probability that a tax return has interest income. *EC* measures the fraction of an individual's friend group with high SES.

Low-SES						
	Obs	Mean	Std	p25	p50	p75
P(Div)	3088	0.093	0.049	0.059	0.089	0.120
P(Int)	3088	0.195	0.072	0.143	0.186	0.237
EC	3017	0.814	0.177	0.695	0.807	0.936
High-SES						
	Obs	Mean	Std	p25	p50	p75
P(Div)	3088	0.321	0.093	0.256	0.320	0.383
P(Int)	3088	0.543	0.099	0.477	0.543	0.612
EC	3017	1.253	0.177	1.135	1.258	1.384

Table A3: **Correlation Matrix: Low SES.** This table reports correlations among the below-median SES subsample for the following variables. *P(Div)* is the probability that a tax return has dividend income. *P(Int)* is the probability that a tax return has interest income. *Economic Connectedness* is the first aspect of social capital that we study. It measures the fraction of an individual's friend group with high SES. *Cohesiveness* is the second aspect of social capital that we study. It captures the fraction of an individual's friend group that are friends with each other. *Civic Engagement* is the third aspect of social capital that we study. It captures the fraction of individuals in a county who are members of 'volunteering' or 'activism' groups. The variables *Population Density, Population, Median Income, Percent Male, and Median Age* are county-level control variables. *Financial literacy* is a dummy variable that equals one if a state had financial literacy high school graduation requirement in 2018. *High School* measures the fraction of a county that has graduated high school.

	P(Div)	P(Int)	EC	Clust	Vol	Den	Pop	Inc	Male	Age	FinLit	HS
P(Div)	1.00											
P(Int)	0.65	1.00										
Economic Connectedness	0.64	0.64	1.00									
Cohesiveness	-0.05	0.03	-0.27	1.00								
Civic Engagement	0.37	0.41	0.39	-0.04	1.00							
Ln(Population Density)	-0.20	-0.35	-0.10	-0.50	-0.22	1.00						
Ln(Population)	-0.14	-0.36	-0.08	-0.58	-0.19	0.88	1.00					
Ln(Median Income)	0.42	0.25	0.66	-0.55	0.15	0.32	0.38	1.00				
Percent Male	0.05	0.05	0.08	0.10	0.08	-0.32	-0.26	-0.00	1.00			
Median Age	0.35	0.54	0.13	0.19	0.22	-0.30	-0.37	-0.11	-0.04	1.00		
Financial Literacy	-0.11	-0.01	-0.11	-0.06	-0.03	-0.09	-0.12	-0.08	0.01	-0.04	1.00	
Percent HS or Higher	0.59	0.55	0.70	-0.35	0.37	0.09	0.14	0.60	-0.12	0.19	-0.10	1.00

Table A4: **Correlation Matrix: High SES.** This table reports correlations among the above-median SES subsample for the following variables. *P(Div)* is the probability that a tax return has dividend income. *P(Int)* is the probability that a tax return has interest income. *Economic Connectedness* is the first aspect of social capital that we study. It measures the fraction of an individual's friend group with high SES. *Cohesiveness* is the second aspect of social capital that we study. It captures the fraction of an individual's friend group that are friends with each other. *Civic Engagement* is the third aspect of social capital that we study. It captures the fraction of individuals in a county who are members of 'volunteering' or 'activism' groups. The variables *Population Density, Population, Median Income, Percent Male, and Median Age* are county-level control variables. *Financial literacy* is a dummy variable that equals one if a state had financial literacy high school graduation requirement in 2018. *High School* measures the fraction of a county that has graduated high school.

	P(Div)	P(Int)	EC	Clust	Vol	Den	Pop	Inc	Male	Age	FinLit	HS
P(Div)	1.00											
P(Int)	0.66	1.00										
Economic Connectedness	0.65	0.50	1.00									
Cohesiveness	-0.22	-0.07	-0.47	1.00								
Civic Engagement	0.16	0.17	0.28	-0.04	1.00							
Ln(Population Density)	0.18	-0.03	0.17	-0.50	-0.22	1.00						
Ln(Population)	0.20	-0.02	0.22	-0.58	-0.19	0.88	1.00					
Ln(Median Income)	0.48	0.25	0.77	-0.55	0.15	0.32	0.38	1.00				
Percent Male	-0.13	-0.09	-0.03	0.10	0.08	-0.32	-0.26	-0.00	1.00			
Median Age	0.20	0.30	-0.03	0.19	0.22	-0.30	-0.37	-0.11	-0.04	1.00		
Financial Literacy	-0.00	0.08	-0.05	-0.06	-0.03	-0.09	-0.12	-0.08	0.01	-0.04	1.00	
Percent HS or Higher	0.57	0.44	0.71	-0.35	0.37	0.09	0.14	0.60	-0.12	0.19	-0.10	1.00

Table A5: **Probability of Stock Market Participation: Capital Gain Income.** This table reports results for regressions of county-level stock market participation on three facets of social capital: Economic Connectedness (EC), Cohesiveness, and Civic Engagement. We capture county-level stock market participation using the probability of capital gain income (or losses). Columns (1) and (2) report results for Economic Connectedness. Columns (3) and (4) report results for Cohesiveness. Columns (5) and (6) report results for Civic Engagement. In columns (7) and (8), we include all three aspects of social capital in the regressions. In columns (2), (4), (6), and (8) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) P(CG)	(2) P(CG)	(3) P(CG)	(4) P(CG)	(5) P(CG)	(6) P(CG)	(7) P(CG)	(8) P(CG)
Economic Connectedness	0.774***	0.590***					0.769***	0.591***
	(67.01)	(19.70)					(54.94)	(19.77)
Cohesiveness			-0.252***	-0.047**			0.033**	-0.003
			(-14.80)	(-2.14)			(2.03)	(-0.13)
Civic Engagement					0.320***	0.001	0.051***	-0.011
					(15.83)	(0.09)	(3.61)	(-0.80)
Controls		YES		YES		YES		YES
Observations	3017	3015	3088	3086	3088	3086	3017	3015
Adj. R^2	0.600	0.723	0.063	0.637	0.102	0.636	0.603	0.723

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6: **Childhood EC: Capital Gain.** This table reports results for regressions of the probability of capital gain income on childhood EC. We include childhood EC instead of our standard measure of EC to address concerns related to reverse causality. In columns (1) and (2), we only include the focal aspect of social capital in our regressions, namely Childhood EC. In column (3), we include all three aspects of social capital in our regressions. In columns (2) and (3) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1)	(2)	(3)
	P(CG)	P(CG)	P(CG)
Child EC	0.550***	0.189***	0.190***
	(34.57)	(6.79)	(6.83)
Cohesiveness			0.018
			(0.78)
Civic Engagement			-0.014
			(-1.02)
Controls		YES	YES
Observations	2728	2727	2727
Adj. R^2	0.302	0.675	0.675

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7: **Intensive Margin: Capital Gain Income.** This table reports results for regressions of the total county-level capital gain income, divided by adjusted gross income, on aspects of social capital. In columns (1) and (2), we only include the focal aspect of social capital in our regressions, namely Economic Connectedness. In column (3), we include all three aspects of social capital in our regressions. In columns (2) and (3) we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1) CG/AGI	(2) CG/AGI	(3) CG/AGI
Economic Connectedness	0.379***	0.359***	0.350***
	(19.36)	(8.17)	(7.97)
Cohesiveness			-0.130***
			(-5.30)
Civic Engagement			-0.009
			(-0.50)
Controls		YES	YES
Observations	3017	3015	3015
Adj. R^2	0.143	0.245	0.251

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8: **Probability of Capital Gain Income: Subsamples.** This table reports results for regressions two aspects of capital gains income on Economic Connectedness. In columns (1) and (2), the dependent variable is probability of capital gains income. In columns (3) and (4), the dependent variable is total county-level capital gains income. We divide our sample into two subsamples: below-median SES (columns (1) and (3)) and above-median SES (columns (2) and (4). In all specifications, we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	P(CG)		CG/Inc	
	(1)	(2)	(3)	(4)
	Low	High	Low	High
Economic Connectedness	0.391***	0.778***	0.308***	0.498***
	(15.31)	(27.59)	(8.14)	(14.88)
Cohesiveness	-0.002	0.007	-0.117***	-0.107***
	(-0.09)	(0.36)	(-4.02)	(-4.38)
Civic Engagement	0.005	-0.017	-0.014	-0.008
	(0.31)	(-1.16)	(-0.60)	(-0.44)
Controls	YES	YES	YES	YES
Observations	3015	3015	3015	3015
Adjusted R^2	0.682	0.599	0.419	0.244

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A9: **Alternative measures of social capital.** This table compares the explanatory power of economic connectedness and two alternative measures of social capital: support ratio and civic organizations. The dependent variables change in each column and include probability of dividend income, probability of interest income, total dividend income divided by adjusted gross income, and total interest income divided by adjusted gross income. In all specifications, we include controls for population, population density, median income, race, age, gender, education, and financial literacy. All variables are standardized.

	(1)	(2)	(3)	(4)
	P(Div)	P(Int)	Div/AGI	Int/AGI
Economic Connectedness	0.396***	0.556***	0.140***	0.444***
	(13.20)	(19.23)	(4.03)	(10.27)
Support Ratio	0.088***	0.144***	0.119***	0.122***
	(4.38)	(5.78)	(4.63)	(4.30)
Civic Organizations	0.161***	0.082***	0.338***	0.168***
	(8.52)	(5.16)	(11.02)	(6.86)
Controls	YES	YES	YES	YES
Observations	3015	3015	3015	3015
Adj. R^2	0.696	0.707	0.334	0.297

Standardized beta coefficients; t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$