Buying Schools with Social Capital:
The Role of Equity-Based School Finance Reform and Social Capital in California School Financing

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Abstract:

With the California State Supreme Court ruling against the property-tax-based system of funding schools, 1970 marked the year that California transitioned to state led redistribution. While this system has reduced inequality in spending across districts, differences in per pupil still remain. In analyzing these differences, this paper offers social capital as a potential explanation for the differences in education spending per pupil. This paper finds that associational membership rate correlates with increased local level spending on schools. Furthermore, evidence suggests that this positive relationship between social capital and associational membership rate has been building over time.

Keywords: social capital, democracy, education policy

I. Introduction

The US system of financing education primarily through the state level is a relatively new phenomenon. Up until the 1970's, the majority of US school districts relied primarily on local financing and local control. Schools, under this older system, received a large majority of their funding through local property taxes (Howell and Miller, 1997; Hoxby, 1998). This was possible because local property taxes functioned as mechanism – a microphone – for public goods demands (Bergstrom and Goodman, 1973). Looking at local spending on general municipal operations as well as policing and parks and recreation, Bergstrom and Goodman (1973) find that the local public goods rise in accordance with the median income, relative to the cost of the demand to the municipality. So, public goods' spending becomes a function, largely, of household income and tax revenue generated from that income. Barlow (1970) reaches a similar conclusion when developing a formal model of school financing: education spending functions as a ratio of a voter's benefit/burden. Such scenarios often led to biases toward richer areas in that the individual contributions were higher, which made the shared pot larger. In fact, such was the case in California until state intervention.

More recently, because of this state involvement in school financing, a class of scholars has emerged asserting that the new school funding formulas adopted by states in route to reform largely dictate school spending. Over the past three decades, state supreme courts have overturned school finance systems in a majority of the US states (Jackson, Johnson, and Perisco, 2014). Card and Payne show that after a state supreme court rules its education finance system to be unconstitutional, per pupil state aid to poorer districts increases, which leads to less inequality between districts. This decrease comes from the fact that the legal reforms pressured state legislatures to implement equity-

based reform (and adequacy-based in some instances), which meant equal, or at least close to equal, funding per student for every school district.

At the same time, voter resistance to rising property taxes has led to limits on the local tax revenues funding this reallocation in many states (Figlio, 1997). Supporters of these tax limitations, as in prior tax revolts, champion an argument centered on government inefficiency; tax revenue should be limited to the taxpayers' needs for services, they assert. Thus, by placing limits on the state's revenue, they believe the state government's efficiency - in terms of service provision -will increase. Therefore, while these state supreme courts were pushing redistribution and equality, tax revolt supporters were looking to reduce tax revenue to a level in line with their demands for services. Extending this finding to explore school finance inequality, Figlio, Husted, and Kenny (2002) find that not just the equity-based structure of the state but also the state political structure (state partisanship), explain inequalities in school financing. Whether ideological, partisan, or otherwise, conflict lies somewhere near the center of the school financing story.

Existing research focuses less on this conflict over education spending distribution and more on the effectiveness of the reforms. Scholars indicate that states that undergo these equity-based school finance reforms experience greater school spending equalization (Card and Payne, 2002; Murray, Evans, and Schwab, 1997; Corcoran and Evans, 2008; Jackson, Johnson, and Perisco, 2014). These findings have led to more research on the expansion of school reforms. However, scholars have been paying less attention to non-institutional factors that help explain the funding disparity still in existence in a reformed state. The remaining disparity points to the political conflict between localities happening at the state level. If certain localities are mobilizing around taxation and the new reform system, perhaps the social - more civic – features of a locality can help explain

the post-reform spending inequality. Therefore, this paper examines the potential role of civil society actors in the school financing.

II. Background: California

In the early part of the twentieth century, California, like most other states, financed its schools through local property taxes. States distributed modest amounts of aid based on the number of students or teachers in individual school districts (Augenblick et al., 1991). However, California would soon veer from the rest of the nation. During the 1930's, a wave of school finance reform led many states, not including California, to modify their aid formulas to take account of the property taxes in different districts. Other states also increased the total funds available for elementary and secondary schools. Due to these reforms, the average share of state funding nationally rose to 30 percent by 1940, and it gradually increased to 40 percent by 1970. Since the 1960's the federal government has also played a role in the financing of public education; federal grants contributed to an average of 7 percent of school district revenues in the early 1990s. The federal government, however, allocated education dollars more to the poor southern states. For example, federal money, in 1993, accounted for 17 percent of Mississippi school district revenue and 13 percent for Alabama (Reschovsky, 1994).

California, however, took the lead during the second wave of school finance reform that occurred beginning in the 1970's. The landmark case of the reform movement, *Serrano v. Priest*, emerged out of the California Supreme Court ruling that the property-taxed based local funding method was unconstitutional. Several factors drove this newer reform effort. The most glaring factor was the rise in inequality among family incomes, which resulted in different property tax bases across schools. This rise in inequality led to disparities in spending across districts. However,

the rise also created a backlash: public demands for equalization. Meanwhile, educators and legislators were becoming much more interested in assisting students with "special needs." This new interest caused teachers and lawmakers to champion a new financing system for funding disparities both within and across districts. The basic premise behind the push to reform stated that the previous system violated the constitutional guarantee of basic level education for all children (Picus, 1991). The *Serrano*-driven reforms proved to be effective. The California state legislature imposed revenue limits on how much districts could spend per pupil. Under this system, school districts could retain excess property taxes, but the state decreases its contribution in accordance with the surplus. Consequently, spending inequality between the school districts within the state of California decreased drastically post-1970 (Picus, 1991). The Tiebout (1956) system in which homebuyers could select their district and pay for schools through property taxes and mortgage payments started diminishing. The judicial system weakened the tie between local property taxes and local spending on education.

California was unique from other states in that its voters responded to the reforms from the state legislature by cutting the property taxes in half with Proposition 13 in 1978 (Minorini & Sugarman 1999; Fischel 1989; 2003). Proposition 13 capped property taxes at 1 percent of a home's value. In fact, the effective tax rate actually stood even lower; the constitutional amendment also rolled tax appraisals back to 1975 levels and allowed only 2-percent annual increases in assessments until the property was sold (Sexton, Sheffrin, and O'Sullivan, 1999). This reduction in education spending that resulted from Proposition 13 triggered California voters to respond once again. In 1988, voters passed Proposition 98, which required that a minimum percentage of the state budget be spent on K-14 education (Picus, 1991). Proposition 98 guaranteed an annual increase in education appropriation from the California budget. As a result, the majority of the state general fund, over 50

percent, goes toward public K-14 education. Proposition 98, therefore, made the California

budgeting process the primary battleground for education spending appropriations. Such remains the

case to this day.

So, now that the California State Legislature possesses the majority of the control over how

education spending gets allocated, what does this shift mean for spending appropriation? By law,

California lawmakers and bureaucrats must commit to creating and maintaining equal spending per

pupil. Yet, relatively substantial differences in per pupil spending remain. Why has California been

unable to close the spending gap completely? What factors explain these differences?

Social Capital

The social capital thesis argues that strong social networks are vital to viable and effective

democracy. The theory relies on three components: reciprocity, social trust, and social norms.   The

logic is that, through social networks, people establish relationships based on reciprocity. This

reciprocity, in turn, creates trust, and over iterations of this process, trust stabilizes as a cultural

norm. Sociologist James Coleman (1988) is in large part responsible for the modern popularity of

social capital within the social sciences. He used the term social capital to describe, collectively,

these social structures – developed through reciprocity, trust, and norms – that provide resources to

individuals. The specific set of resources he concerns himself with center around education and

public schooling. He compares dropout rates between religious-based private schools, independent

private schools, and public schools. By doing so he, found that the religious private schools, through

their ability to facilitate social networks and develop social norms experienced more social capital

and, consequently, greater community integration. However, Coleman ultimately argues that social

capital as a whole has a limited effect on education – both in terms of achievement and resources (funding) – on a wide scale due to the property tax school financing system.

Applying the concept of social capital to political science, Robert Putnam (1994) argues that the governmental structure actually plays a primary role in facilitating social capital. More specifically, he activates de Tocqueville's classical notion of voluntary associational behavior in his framing of social capital. Therefore, Putnam looks to civil society, primarily membership associations and organizations mainly functioning through shared interest and volunteerism, for indications of a community's capacity for political participation. He suggests that these organizations and associations should foster norms of civic engagement, which in turn should create a more robust democracy. Under a classic republicanism understanding of democracy, a strong presence of democratic norms should lead to accountability on behalf of policymakers to the public(s) they represent. Thus, greater social capital should lead to more democratic policymaking.

I test the potential impact of social capital, and in doing so I expect a relationship to exist between civil society actors and education spending. I examine education spending because, aside from the inequality dilemma presented in the introduction, education as a policy area carries a unique tie to both civil society and government in ways that no other policy area does. By virtue of the fact that localities have districts just for deciding education policy and (generally) elected boards atop the helm of these jurisdictions, education has its own governmental agency. Furthermore, these school boards tend to have strong ties to at least two prominent civil society actors: Parent Teacher Associations (PTAs) and teacher's unions. In fact, an entire subset of scholarship in the field of education highlights the way in which the emergence of local school governance has led to the professionalization of teachers [into school politics] and the empowering of parents to increase their involvement in the decision-making process as well (Conley, 1991; Malen & Ogawa, 1988; Smylie,

1992; Bauch & Goldring, 1998; 1995; 2000). In sum, education policy brings governance and civil society together in a way that other policy issue areas do not.

This closeness between governance and civil society provides the opportunity for democratic deliberation, particularly between (but not limited to) parents, teachers, and members of school governing bodies. One of the primary issues actors deliberate about is funding appropriation, typically how to secure more. Consequently, school financing should vary with social capital by way of the vibrancy – or at least the presence – of organizations and associations such as the PTA and teachers' unions. This idea of vibrancy merely refers to consistent voluntary activity performed by organizations. I am aware that that volume does not necessarily mean vibrancy, but the two are linked in that areas that have more organizations per person are more likely to be in places that provide the resources needed for organizations to thrive such as: human capital, financial capital, engagement norms, etc. (Skocpol, 2003). Such an acknowledgment opens the door to bias towards areas that benefit from institutionalized privileges or what Pierre Bourdieu (1986) calls "cultural capital." While I attempt to maneuver through this problem, I remain aware that group membership opportunity and activity are not created equal. However, voluntary associational activity can also be a way for members of marginalized communities to improve their conditions by asserting themselves into the larger policy discourse, despite their societal disposition, and school governance has been an area where from such efforts have emerged. Democratic deliberation, while imperfect, is possible.

So, given that the there is reason to believe social capital, which can lead to the deliberation taking place between civil society actors and school governing officials, should play a significant role in how funds are appropriated to schools, I deploy social capital as a predictor of school financing. However, I do so with caution. This study operationalizes social capital two ways: as a

multidimensional concept of different factors combined together and as separate indicators capable of performing differently. The logic for the former posits that social capital can operate as any combination of reciprocity, trust, and norms; each component may play a larger or smaller role even in different communities that mirror one another in aggregate social capital. Thus, this study begins with the unified approach to measuring social capital in order to examine, first, the extent to which differences in aggregate social capital matter, regardless of its form. This notion of aggregate social capital refers to a combining or indexing of multiple measures of social capital, specifically community-wide: associational membership rate, presence of non-profit organizations, voter turnout and census response. Because these factors represent various forms of social capital that can, in theory, coexist, I deploy the aggregate measure first to try and predict differences in school funding.

Next, the components of social capital must also be disaggregated both conceptually and empirically. The second phase of this study follows Paxton (1999), Stolle and Rochon (1998), Knack and Keefer 1997, and Knack (2002) in testing the components of social capital separately as opposed to relying solely on a heterogeneous index. The parsimonious approach allows this study to divide social capital into different ways in which social capital may manifest itself. Here, I test separately the role of the four aforementioned proxies for social capital. For instance, voter turnout by county and the associational membership rate in a county serve as proxies for civic engagement. Membership in an association bases itself on social interaction and interpersonal contact. People are motivated by selective incentives produced by the organizations (Olson 1965). While some of these incentives are material (newsletters and group travel deals), most incentives are social: parties, picnics, seminars, etc. Similarly, a subset of the scholarship on voter turnout suggests that it is best explained by civic, interpersonal interactions (Uhlaner 1989; Morton 1991). Their story is that people vote mostly out of social pressure and not out of material self-interest. Due to the importance

of social interaction and the participatory culture involved with voting and membership association that goes beyond policy interest, these two proxies represent the existence a politically accessible social infrastructure.

The logic for how non-profit organizations fit into the social capital discussion is a bit different. While they typically center themselves around community engagement, eon-profits tend to be motivated most by the specific interest their organization pursues, whether that interest be in education, health care, safety, etc. Scholarship on non-profit organizations indicates how the state largely determines their ability to pursue those interests. Dating back as far as 1975, government has been the largest source of revenue for non-profit organizations (DiMaggio & Anheier, 1990). According to a report by the Urban Institute, government funding accounted for 65 percent of total revenue for non- profits. Because non-profits rely on the state for funding, institutional structure and state policies influence the way in which the organizations behave. For instance, Hunter (1993) describes how expanded federal responsibility led community advocates to shift from neighborhood organizing to national federations. Given that equity-based-school finance reform has endowed the state government with control over education spending, many non-profit organizations work with the state to provide education related resources and services. Therefore, various organizations may be charged with handling bureaucratic duties for the state.

Census response becomes a complex form of social capital. The US Census involves little-to-no activation of reciprocity-based norms between community members. Instead, census response mainly involves public response to the state's (federal government) request for information. However, the process underwent a major shift in 2000 in which the central theme of Census advertising became the direct fiscal impact of undercounting (Vigdor, 2004). In fact, the Census Bureau funded a television advertisement during the 2000 Super Bowl claiming that the Census

"helps determine public spending for schools." By framing census response as individual behavior that produces specific benefits for the participant, census response rate, therefore, falls within the boundaries of the generalized reciprocity aspect of social capital, with the federal government providing goods in exchange for information.

While this approach to conceptualizing social capital is multi-pronged, it is very difficulty to attribute materialized goods solely to social capital. I hesitate to offer the hypothesis that social capital *causes* differences in education spending. I, instead, merely suggest that the idea is theoretically and empirically plausible, particularly with education resources because of the connection between civil society and local governance in education policy. I am aware that the social capital thesis is no automatic solution to the public goods dilemma, and mainly so because scholars have pointed out the weaknesses of the theory. One reproach in particular relates directly to education reform. Marion Orr (1999) challenges the social capital thesis on the grounds of intergroup dynamics and governmental influence. Orr (1999) suggests that the effect of social capital varies based on racial composition as racial heterogeneity leads to strong in-group social capital but weak across-group social capital. Orr contributes the weakness of the latter to the difficulty of achieving compromise across racial lines upon using racial homogeneity as a mobilizing force for in-group social capital. This project, in fact aligns with Orr in that we both consider social capital a modern source of inequality.

Scholars have also challenged Putnam's social capital thesis on the grounds of data measurement (Ladd, 1996), inattention to societal nuances (Minkoff, 1997), and control variable omission (Stoll, 2001). I believe these flaws arise due to more wide scale "one-size-fits-all" attempts at conceptualizing social capital. However, this study attempts to account for these issues as best as possible by narrowing the utilization of the concept; this project focuses solely on social

capital and its relationship to a widely valued public good – education spending – within an environment in which collective action seems to carry the most weight – states that have undergone equity-based school finance reform.

Thus, I anticipate that social capital will help play a significant role in explaining the differences in school financing throughout California, particularly during a modern moment in which the state has undergone school finance reform. More specifically, areas that show greater levels of organizational and associational behavior should show higher levels of education spending. The big assumption here is that all communities want more money for their schools, regardless of where they believe the funding should come from (state, local, private, etc.). Therefore, when it comes to securing more school funding, part of the story should center around how some organized groups, particularly non-profit organizations, may attract state funding to administer public services. Another part should stem from the way in which cultures of civic engagement developed through membership associations can be activated to pressure local level governments into supplying public goods on top of or in place of the state. The vocal methods of engagement – voting and census response – should operate as decries of self-interest, instances where communities vocalize their wants or needs. While there should be responsiveness these forms of social capital, they rely less on the physical presence of groups or publics that should be more likely to generate, or possibly even facilitate, their demands. Associations and non-profits should tell a significant part of the story.

The basic argument in this paper is that social capital helps to explain how much school funding a locality receives. However, the purpose of this project is not to argue for the role of social capital in education spending inequality at the expense of all other factors. Undoubtedly, socioeconomic factors, race, and other factors that I am unable to control for still may play an important role. This project merely pushes back against the idea that the way schools are funded in

the United States is solely about those factors by arguing that social capital should at least receive

consideration as a viable component of the larger explanation. While race and class still matter for

school funding, so too, I argue, does social capital.

V. Data and Methods

Data

I expect to see a strong, positive correlation between social capital and education spending,

both operating at the local level. The closest I have been able to most local level approach I can take

for this study is an analysis as the county level. I draw data from the United States Census Bureau

and the Pennsylvania State University Northeast Center for Rural Development (PSUNRD).   I

merge all data together into one dataset for California, but the lowest level at which these two sets

converge is the county. Nonetheless, I deploy social the social capital variables from PSUNRD.

Meanwhile, from the Census I pull per pupil spending averaged for each county in California for the

2010 – 2011 school year, and I also employ education spending disaggregated by level of

contribution: federal, state, and local. These four variables in my dataset operate as the dependent

variables in my statistical models.

Education spending, while relatively straightforward, required a small amendment. Figure 1

shows a distribution of education spending across counties. However, the histogram plot displays 57

counties instead of 58. I omit Alpine county, which is the smallest county in California, due to the

fact that it poses as a statistical outlier with a reported per pupil spending of over $30,000.

Therefore, any reference to "all counties in this study" excludes Alpine county. As Figure 1 shows,

the education spending distributions looks relatively normal with the omission of Alpine county.

Spatially, this omission makes no substantive difference as well, as shown by Figure 2, displays

California counts mapped and coded by social capital scores. I omit Alpine county for every other variable in the California dataset as well.

The primary independent variables in my models are the aforementioned social capital measures. In order to quantitatively measure social capital, I use the social capital index as calculated by the PSUNRD. Their measure provides a social capital score for each county in the country for the years 2009, 2005, and 1999, respectively. They derive the measure through a principal's component analysis of four measures: the number of membership associations per 100,000 people, voter turnout, census response rate, and the number of non-profit organizations with a domestic focus. The use of the index measure attempts to account for the way in which social capital may vary from place to place. By combining multiple measures of social capital together, the initial measurements do not privilege one proxy for social capital over another. Thus, one county will not be rewarded for high voter turnout only or for having a larger number of membership associations. Instead, the index allows this study to base social capital on the combination of the four components.   The study also uses the disaggregated components of the index measure as separate measures, also from by the PSUNRD. The purpose here is to tease out the correlation between education spending and different proxies of social capital.

The social capital measure is a continuous variable that ranges between negative and positive two, but I multiply the scale by ten in order to make regression coefficients easier to understand. This augmentation in no way affects statistical outcomes – only the interpretation of the data. The same procedure has been applied to associational membership rate, as the measure originally ranges between 1.4 and 3.3. The number of non-profit organizations is a continuous variable ranging from 47 to 12,332. However, I take the log, which creates a scale ranging from 3.8 to 9.4. Also, voter

turnout comes from the 2010 midterm election and is a continuous variable centered around the mean (49); it ranges from -20 to 26.

I also employ a set of control variables that stem from some the previous attempts at explain school financing. Tiebout (1956) envisioned a perfect market for local government services in which people sort themselves into communities with suitable costs and supply of public goods. I use educational attainment by county, specifically the percentage of high school graduates, taken by the Census to measures the variation within the state in permanent wealth and thus the within-state variation across counties in the demand for school spending that would occur in Tiebout's world of perfect sorting. I also control for median income, due to De Bartoleme (1997) finding that state aid increases as median income falls. This due to the relationship between median income and the median voter; as the ratio of median-to-mean income approaches one, the median voter is less able to rely on rich families to help finance better schools. Because I lack the data to fully test the median-to-mean income ration (I have only median income), I also control for income inequality by county using gini coefficients, which largely captures the difference in wealth within a population.

I also control for school enrollment. The school financing literature discusses three factors that directly relate to enrollment. Eberts and Gronberg (1981) and Schmidt (1992) find that there is more within district variation in income in states in which there are fewer districts per student. Retreating back to the Tiebout model, metropolitan areas provide more opportunity for sorting because of the multiplicity of schools and districts. Large concentrations of enrollment, however, should indicate metropolitan areas. School enrollment also enables me to control for the population school age children. As the population of school age children increases, there is greater incentive to make housing decisions based on school considerations. Eberts and Gronberg (1981) indeed find more sorting by income in metropolitan areas in which more families have school age children.

I also control for the presence of minority racial groups, particularly African Americans and Latinos. African Americans tend to attend inferior schools in terms of resources. Consequently, and increase in the African-American population may be associated with an increase in the variance in the quality of schooling received by parents. Thus, the inequality in wealth may rise as the African American population increases, which would lead to more school spending inequality, particularly as families sort themselves according to preferred - and affordable - school quality. The same logic explains the use of the percentage of Latinos as a control variable.

Lastly, I control for political factors. Matsusaka (1995) finds that voter initiative states had higher local spending and lower state spending and relied more on charges for services and less on taxes, which suggests less redistributive activity. With California being a state with direct ballot initiatives (petition driven initiatives can go onto the ballot for popular election), I utilize support by county for an education spending related ballot proposition, California Proposition 1B during a 2009 special election. The proposition, which ultimately failed, aimed to provide an extra nine billion dollars in funding to elementary and secondary schools as well as community colleges. Counties that showed more support for Prop 1B should be more likely to experience redistributive activity, which decrease school spending inequality. I also control for the role of federal funding that tends to be geared towards students in programs with special needs, programs typically found in poor schools. These federal grants, Title 1 Funding, could be responsible for decreasing inequality between schools (Verstegen, 2002).

In order to add more context to this study of California, I also utilize data across time and states. For time, I use the social capital measure of California counties for both 2005 and 1999, respectively, and I compare this with spending data for 2000, 2006, and 2010. The goal here is to analyze the relationship between social capital and school financing over time, with 1999 being as

far back as the data allows. With regard to states, I constructed congruent datasets for Minnesota

and Tennessee to provide a comparison of California's relationship with social capital and school

financing identical to that of these other two. This also allows me to test this relationship across

reform systems in that Tennessee has undergone equity based school finance reform, but Minnesota

has not. So, we should expect the two reformed states – California and Tennessee - to show

somewhat of a similar pattern.

VI. Results

Regressions explaining the variation in per pupil school are reported in Table 1. The

PSUNRD social capital variable correlates, significantly, with spending per pupil. While the model

predicts an average increase of $119 per unit increase in social capital, such a literal reading is

spurious due to the opaqueness of the social capital variable in itself. However, the significant

positive correlation is worth noting as it aligns with the expectations of the theory. The other two

models shown on Table 1 highlight the existing uncertainty that surrounds the performance of the

index variable. The second model on Table 1 supports the Figlio et al hypothesis that income

inequality (partially) drives school financing inequality. However, census response rate (despite

having a negative correlation) indicates that social capital is also playing a significant role.

Furthermore, the logged amount of non-profit organizations becomes significant once I remove

census response rate from the model. Again, I get a negative correlation, but the significance aligns

with expectations of my theory.

The per-pupil spending model is a bit incomplete as it carries an endogeneity problem: the

state funding formula. Table 2 reports models of state and local contributions, respectively, to

schools by county – the first two columns being California.   Controlling for other factors, we see

that local spending on schools is estimated to increase almost 2% per u shift in associational

membership rate, and counties appear to experience a similar difference in the opposite direction –

almost 2% decrease – when estimating funding appropriated by the state government. Thus, even

with income, inequality and other factors held constant, social capital – as captured by county

associational membership rate. Therefore, the story of school spending, when broken down by level

of contribution, seems to be that school funding appears more in counties with more associational

membership activity.

Table 3 also shows a comparison between California and two other states: Minnesota and

Tennessee. These two states in particular provide an interesting point of reference for the school

financing structure in California. First, while Tennessee has gone a similar equity based reform as

California, Minnesota has not, and both states allow to me to test the model on states with more

decentralized populations.[1] While I attempt to account for the heavy concentration of people in

metropolitan areas in California by controlling for school enrollment, a comparison with less

decentralized states augments that control. The results show relative consistency with what I expect:

a form of social capital appears to be significant only for the local contribution only in the Tennessee

model. The major difference between the models for California and Tennessee is that, while the

former experiences significance from associations, the latter has a significant correlation between

local spending and the presence of non-profit organizations.

Despite the fact that the relationship between social capital and school financing appears to

hold up to a pattern existing beyond California, there still remains two major concerns: a potential

bias from intra-county differences and also instability of this relationship over time. I investigate

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[1] Tennessee implements a minimal foundation grant system which provides more state funding to poorer
districts as opposed to redistributing from richer districts to poorer ones

both concerns, and Tables 3 and 4 display the results. Table 3 features the results from a multilevel linear regression model, and see the model still holds: associational membership rate at the county level still shows a significant positive correlation with spending at the local level. The second model in Table 4 says that, with the year 2006 as the baseline between 1999 and 2010, the interaction between associational membership rate and the education spending levels specific to the years 2010 and 1999 predict education spending per pupil over time. More specifically, we see an increase over time in the influence of membership associational rates with a significantly higher estimated effect in 2006 than 1999 and again, but to a lesser extent, from 2006 to 2010.

VII. Discussion

The statistical evidence strongly supports the claim that social capital is interacting with education spending in California during this post-*Serranno* reform moment. This reform moved the school funding allocation process from local control to the California State Government, and that relocation, in theory, created the opportunity for some other new factor to play a role in how schools would get financed. In this new system, household income should lose much of its power over the school funding process, with the opportunity for another factor or other factors to surface. One of those factors may be local deliberation facilitated through social capital.

The statistical model featuring fixed effects for years suggests that the role of associational memberships has been growing over time. In a world with more available data, I would track spending to pre-1988 when California passed Proposition 98, which guaranteed at least 40% of the state budge will be go towards K-14 education. This proposition should mark the beginning of the link between associational membership rates and local spending as the idea is that localities would react to state redistribution by activating local networks to provide resources to their schools.

Furthermore, based on the evidence from Tennessee and Minnesota, there is reason to believe that the implementation of equity-based school finance reform leads *some* sort of civic-based reaction to state efforts at equalization.

Tennessee, of course, conflicts with what one would expect based on how I conceptualize social capital. In this state, the presence of non-profit organizations actually shows a positive correlation with local spending instead of state. The literature thinks of non-profits as informal bureaucratic arms of the state, but in Tennessee we see them functioning more like local civic-based informal institutions (the membership associations). This difference could be due to state ideology. Perhaps in a conservative state like Tennessee, state bureaucracy does not extend itself to non-profit organizations in the same way as a much more liberal California. Thus, non-profit organizations in Tennessee may be more committed to the interests of local level government and donors. Regardless, the evidence points to network-based civic activity playing a role in Tennessee just as in California. The exact cause of the difference in form of social capital is less important because Tennessee just serves as more of a robustness check.

This paper only claims to demonstrate a trend; I do not have the evidence needed to produce a direct causal story. The evidence presented here does prove that the membership associational rate translates into more education spending. Additional modeling revealed that separating local spending into three separate variables – taxes, charity, and contributions from other governments (mainly county) – shows that the model holds up only for taxes. Thus, a higher membership associational rate leads to more tax revenue even controlling for income and other factors. This could be a local public goods demand story where areas with more social capital could be the most vocal about tax increases in effort to better fund schools. It could also be that property taxes are higher in areas with more social capital; the civic culture and better-funded schools could attract a

higher tax base. The control for income makes the latter story less likely, but this paper does not have the evidence to completely rule out such a possibility.

The story being told here is that differences in social capital matter with respect to school spending inequality. While such a claim seems abstract when discussed in purely statistical terms, I conclude with a closer look at the data that adds clarity to the story. Sonoma County and Solano County are both located in northern California near San Francisco. The two counties sit adjacent to one another, separated by Napa County, which tucks itself tightly between the two. They both have populations of slightly over four hundred thousand people, and the individual median income is roughly the same as well: about sixty-five thousand dollars. Politically, both counties lean Democratic, while carrying histories of strong Republican support during the Regan era. Across the board, Sonoma and Solano seem almost identical (even the names sound alike); yet, one thing stands out – in 2010 Sonoma County received about a thousand more dollars in education spending per pupil than Solano County.

Why? The answer appears to be social capital. While Solano County is about five points below the average score on the social capital index scale, Sonoma sits five points above the mean. More substantively, there is a glaring difference in the amount of membership associations existing within the counties. Sonoma County residents operate over forty more religious organizations than the people of Solano County. The former county also stands as home to almost twice as many civic organizations and almost three times as many business organizations. In this comparison of two counties, the advantage that surfaces appears to be primarily associational.

In fact, the counties differed in one other aspect as well, but further probing led back to associations, organizations, and social capital. In terms of racial demographics, Sonoma County, unlike Solano County is majority white. However, the black populations of the counties seem to

explain the 14% difference in the white populations between the two counties. While the black

population in Solano is 15%, blacks only make up one percent of the population in neighboring

Sonoma. So, based on this demographic information one may reason that racial composition may be

complicating the education-spending picture. That alternative story, however, is highly unlikely.

A closer look into the local operations of one of the most popular black organizations in the

US, the National Association for the Advancement of Colored People (NAACP), reveals not a racial

story but one of social capital. Both counties have local branches of the heralded national

organization, but this is where the similarities end. According to their website, the Sonoma County

NAACP meets regularly – the second Tuesday of every month. As for the chapter in Solano

County, it is unclear when they assemble because they have neither a website nor an active

telephone number at which they can be reached.[2] Despite being a much smaller group than the

blacks in Solano County, the social capital advantage appears to lean heavily toward the blacks in

Sonoma County.

How exactly the Sonoma County NAACP played a role in the additional funding their

schools received is speculative, but the pieces are in place. Stories featuring the Sonoma County

NAACP in the local periododical, the *Sonoma County Gazette*, suggest that the local membership

organization plays a role in local deliberation efforts around education. In March of 2015, the

Sonoma County NAACP chapter formed a coalition with several organizations in voicing their

support for a move to break one large community college board district into three as a way to

increase representation in the decision making process around local community colleges (Jones,

2015). In 2014, the chapter released a "Report Card on Race" in which they assigned letter grades to

local political bodies, one of which being the Santa Rosa City School System, which received a "D"

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[2] See "Santa Rosa-Sonoma County NAACP". http://www.santarosanaacp.org/CA-STATE-NAACP.html.

(NAACP, 2014). The report card effort was also done collaboratively, involving participation from: the Sonoma County ACLU, the Peace & Justice Center of Sonoma County, the Latino Democratic Club, the Japanese American Citizens League, and the League of Women Voters of Sonoma County. The work of the Sonoma County NAACP speaks to the use of social capital to facilitate deliberative democracy around education.

Questions still remain of how involved the local chapter is with pushing specifically for school finance both politically and civically. It is also unclear the extent to which they worked with other local organizations to fight for more school spending. What is clear is that Sonoma County's NAACP chapter buys into the culture of civic engagement, which the statistical results suggest interacts with more local support for schools. Because of the larger pattern happening between civic engagement and education spending as well as the stories of democratic deliberation around education surfacing, it seems extremely likely that the civic engagement of the county NAACP and other associations within Sonoma county is helping to secure more of this specific public good. However, qualitative follow up work is needed in order to tease out exactly how the organizational structure links to education spending.

Thus, despite the contributions that this paper makes to the study of social capital, it also carries a set of shortcomings that I aim to address in future work on this topic. The major issues surround this relatively controversial attempt at using quantitative measurements of social capital as a statistical predictor. I acknowledge the difficulty of measuring the collective value an area accumulates through social networks and reciprocity. This problem becomes augmented by the fact that the most local unit of analysis the data allows me to approach is the county level, although the multi-level model allows me to approach the school district level. This constraint forces me to compare counties with multiple school districts (Los Angeles County has 55 school districts) to

counties that only have one school district, an issue I try and account from by controlling for enrollment. Therefore, as I move forward, I will look for even more ways to scale down and explore the relationship between social capital and spending at the school district level, specifically, for the larger counties in California.   My comparative analysis of Solano County and Sonoma County begins that process.

The practical implications of this project are somewhat vexed as well.   Additional tests I ran while conducting this study suggests that education spending and academic achievement are highly uncorrelated. Actually, my analyses, all at the county level, point to adult education level – percentage of adults with high school diplomas – as the strongest predictor of Academic Performance Index (API) test scores. Thus, social capital finds itself in a paradox: it leads to more funding, but that funding does not seem to translate into academic achievement. The social capital-spending-achievement paradox points to the need for more efficient use of the dollars being allocated to schools. Perhaps programs that focus on adult education should take high priority for both localities fighting for funding and California legislatures, who pass that money down to ground level. Regardless of the policies that the state and/or localities undertake to improve spending efficiency, the gap between spending and achievement must be closed.

Race plays a central role in this gap. The spending structure in California is positioned to address the tradition of unequal resource allocation in California on the basis of race. Spending is also meant to address the achievement gap that has been of much concern to the nation over the past two decades. So, if race is central to issues with both education spending and academic achievement but the two are uncorrelated, the question becomes, does the state need a more explicit and efficient racial project to link spending and achievement? If so, what should this look like? Can such a project be facilitated through social capital and social networks? These are the types of questions

that this project leaves dangling for policymakers. As I continue with this work, I hope to join, ultimately, a tradition of scholars asking the ever-important question: how do we go about making our society more effective and more equitable?

Appendix

I. Social Capital Measures

    a. *Social Capital Index Measure* – existing on a scale between negative two and positive two but multiplied by ten to make regression results easier to interpret. Calculated by combining voter turnout, number of membership associations per 100,000 people, response to the Census, and number of non-profit organizations (excluding those with an international influence). Calculated for every county in California for the year 2009. (Reported by the Pennsylvania State University Northeast Center for Rural Development.)

    b. *2010 Voter Turnout*

    c. *Number of Membership Associations per 100,000 people*

    d. *US Census Response Rate*

    e. *Number of Non-Profit Organizations* – In order to account for the skew towards larger more populated counties, I apply a logarithmic function to produce a normal distribution.

II. Education Spending Measures

    a. *Education Spending* – school expenses per average daily attendance averaged by county for the 2010-11 school year. (Alpine County excluded from this and entire dataset). I purposely pick the spending variables at least a year after the social capital variables assuming that social capital takes time to translate into differences in education spending

    b. *Percent Federal*– percentage of school funding per county that comes from the federal government as calculated by the 2010 Census

    c. *Percent State* – percentage of school funding per county that comes from the state government as calculated by the 2010 Census

    d. *Percent Local* - percentage of school funding per county that comes from the city governments, county governments, and local non-governmental sources as calculated by the 2010 Census

III. Control Variables

    a. *Adult Education Level* – percentage of adults in a county with at least a high school diploma. Reported by the 2010 U.S. Census.

    b. *Income* - median income for each county in California

    c. *Income Inequality* – Gini Coefficient scores. Measurements of the area between the Lorenz curve and a hypothetical line of absolute equality

    d. *White* – percentage of the total population in a county who are white. Variable is centered around the average white population in a county.

e. *Black* - percentage of the total population in a county who are black. Variable is centered around the average black population in a county.
f. *Latino* - percentage of the total population in a county who are Latino. Variable is centered around the average Latino population in a county.
g. *Asian* - percentage of the total population in a county who are Asian. Variable is centered around the average Asian population in a county.
h. *American Indian* - percentage of the total population in a county who are American Indian. Variable is centered around the average American Indian population in a county.

IV. Fixed Effects Model

a. Membership Associational Rate- uses the same social capital index measure from the initial model as well as that same variable for the years 1997, 2006, and 2005
b. Education Spending – uses same spending per pupil variable for the 2010-2011 school year as well as that same variable for the 2006-2007 and 1998-1999 school years.

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Table 1:   Social Capital on Education Spending Per Pupil

	California Spending Per Pupil		
	(1)	(2)	(3)
Social Capital	119.310***		
	(31.507)		
Associational Membership Rate		674.790	−228.563
		(690.503)	(883.086)
Census		−11,883.670***	
		(2,051.432)	
Voter Turnout		15.765	−0.231
		(26.979)	(35.232)
Non-Profits		−106.884	−687.915**
		(233.349)	(276.601)
Enrollment	0.018	−0.014	0.052
	(0.041)	(0.037)	(0.047)
Title 1	131.607	3.420	−31.649
	(145.551)	(130.761)	(171.482)
Inequality	−63.534	184.458**	90.194
	(85.996)	(87.680)	(113.109)
Adult Education	−5,709.984	−1,289.965	13,889.730*
	(7,188.441)	(6,809.753)	(8,251.591)
Median Income	−0.017	0.006	−0.019
	(0.018)	(0.018)	(0.023)
Black	−10.119	12.203	−24.267
	(70.351)	(60.514)	(79.013)
Latino	−3.934	−11.561	26.597
	(27.032)	(26.685)	(33.948)
Prop 1B (2009)	39.223	20.413	50.194
	(33.070)	(27.872)	(35.963)
Intercept	16,621.040**	8,627.008	−3,603.436
	(7,195.491)	(7,058.190)	(8,841.867)
Observations	57	57	57
R^2	0.452	0.648	0.379
Adjusted R^2	0.347	0.552	0.228
Residual Std. Error	1,175.351 (df = 47)	973.934 (df = 44)	1,278.599 (df = 45)
F Statistic	4.311***	6.746***	2.500**

Note: *p<0.1; **p<0.05; ***p<0.01

Table 2: Financial Contribution to Schools by Level of Government

	California		Tennesee		Minnesota	
	Local	State	Local	State	Local	State
Associational Membership	2.1623***	−1.6082**	1.417	−1.387	0.336	1.771
	(0.739)	(0.667)	(2.127)	(2.015)	(1.155)	(1.414)
Census Response Rate	−4.430*	3.622*	−4.6463	4.6586	−1.3513	−0.765
	(2.234)	(1.983)	(3.021)	(2.862)	(0.872)	(1.068)
Voter Turnout	−0.059	0.055	1.3790	−1.6710	2.1192	−1.7490
	(0.283)	(0.261)	(1.636)	(1.550)	(2.062)	(2.525)
Non-Profits	−2.227	2.614	5.910***	−5.535***	1.566	−4.207**
	(2.435)	(2.256)	(1.093)	(1.035)	(1.443)	(1.767)
Enrollment	−0.0002	0.00003	−0.0001	0.0001	−0.001	0.002**
	(0.0004)	(0.0004)	(0.0001)	(0.0001)	(0.001)	(0.001)
Title 1	−0.511	0.478	−0.749	−0.846	−2.416**	1.504
	(1.357)	(1.264)	(0.693)	(0.657)	(0.930)	(1.139)
Inequality	3.82	−6.50	7.217**	−5.192*	1.621	−3.6891
	(0.922)	(8.480)	(3.040)	(2.880)	(3.830)	(4.691)
Adult Education	7.9986	−7.4508	5.98**	−4.47	0.019	−0.102
	(7.150)	(6.582)	(2.860)	(2.71)	(0.087)	(0.106)
Median Income	0.001***	−0.001***	0.0001	−0.0001	0.0003***	−0.0001
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0002)
Percent Black	−0.711	0.978	−0.212***	0.138*	0.877	−1.061
	(0.633)	(0.585)	(0.074)	(0.070)	(0.686)	(0.840)
Percent Latino	0.273	−0.140				
	(0.276)	(0.258)				
Prop 1B (2009)	−0.098	−0.010				
	(0.291)	(0.269)				
Intercept	−31.654	13.821**	−50.457*	11.949***	−6.431	11.455***
	(79.074)	(68.230)	(29.955)	(2.837)	(22.922)	(2.807)
Observations	57	57	95	95	87	87
R^2	0.721	0.691	0.763	0.711	0.440	0.356
Adjusted R^2	0.644	0.607	0.734	0.676	0.366	0.271
Residual Std. Error	10 (df = 44)	9(df = 44)	5 (df = 84)	5(df = 84)	6.203 (df = 76)	7 (df = 76)
F Statistic	9.453***	8.218***	27.000***	20.633***	5.960***	4.197***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3: Social Capital on Local Spending W/ Fixed Effects for District-Level Differences

	Dependent varia
	Local Spendin
Associational Membership	1.775***
	(0.151)
Census Response	−2.964***
	(0.427)
Voter Turnout	2.138
	(5.798)
Non-Profits	−0.283***
	(0.044)
Inequality	0.572***
	(0.194)
Adult Graduation	1.035***
	(0.151)
Median Income	0.081***
	(0.004)
Black	−0.960***
	(0.121)
Latino	0.298***
	(0.059)
Prop 1B (2009)	−3.090
	(5.865)
Enrollment (Fixed Effect)	−0.000
	(0.00000)
Title 1 (Fixed Effect)	−0.000
	(0.0001)
Intercept	−9.069***
	(1.658)
Observations	1,059
Log Likelihood	2,668.491
Akaike Inf. Crit.	−5,306.982
Bayesian Inf. Crit.	−5,232.506
Note:	*p<0.1; **p<0.05; **

Table 4: Associational Memberships on Spending Per Pupil Over Time

	Dependent variable:	
	Spending Per Pupil	
	(1)	(2)
2010	893.234***	188.534
	(149.701)	(423.714)
1999	−2,013.400***	−687.267
	(151.112)	(446.970)
Associational Membership	−182.874	54.686
	(600.375)	(688.565)
2010: Associational Membership		993.660*
		(552.435)
1999: Associational Membership		−1,899.287***
		(593.465)
Observations	171	171
R^2	0.781	0.823
Adjusted R^2	0.507	0.524
F Statistic	132.227*** (df = 3; 111)	101.193*** (df = 5; 109)

Note: *p<0.1; **p<0.05; ***p<0.01

Figure 1: California Education Spending by County