The Dark Side of Social Capital? Battles and Mortgage Lending*

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Abstract

I investigate the long run effects of the American Civil War on current mortgage lending approval between 2005 and 2011. Using a spatial regression discontinuity design, exploiting the random occurrences of battles during the Civil War, I find that location matters for credit extension: Being located in a county in which a battle took place fosters the probability of loan approval. However, minority mortgage applicants have a significant lower probability to obtain a mortgage loan in counties where a battlefield during the Civil War was located compared to similar applicants in adjacent non-battle counties. Conditional upon approval they also receive lower loan amounts. I show that a channel through which this battle effect persists is culture: Counties in which soldiers actively fought during the Civil War show higher levels of social capital today. Additionally, I find that remembrances of Civil War battles are important for the persistency of local social capital: Those battle counties that actively remember through re-enactment groups have even higher social capital today compared to those battle counties that do not. Moreover, minority applicants have both a significant lower probability to see their application currently being approved and, conditional upon approval, are granted a lower loan amount in these counties compared to minority applicants from battle counties that do not actively remember through such groups, suggesting a possible 'dark side' of social capital.

Keywords: Bank lending, Culture, Mortgage market, Social Capital, Regression discontinuity analysis.

JEL Classifications: G21, J15, Z1, Z13

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1. Introduction

That history can have a long run effect on economic outcomes and culture has gained attention in both the economics and finance literature in the past few years (Acemoglu et. al., 2001; Nunn, 2008). Historical events such as slave trade have been generally linked to negative contemporary economic outcomes such as underdevelopment (Nunn, 2008). Confirming these findings, Dell (2010) shows that Peru's mining mita, an extensive forced labor mining system in effect between the 15th and 18th century, lowers today's household consumption and increases the prevalence of stunted growth in children in those households located in districts that were subjected to the mita. More recently, Voth and Voigtlander (2012) show that the occurrence of plague era pogroms predict anti-Semitic behavior in the same locations centuries later.

That location and current local factors also matter in lending, for instance for local credit availability, is generally recognized in the finance literature (see for example Ghent, 2014; Gilje, 2010). In mortgage lending it is for example known that, before the introduction of the Home Mortgage Disclosure Act in 1975, it was nearly impossible for minorities to secure mortgages for property located in so-called redlined zones. However, whether history can have a long run effect on lending, through its persistent influence on local factors, is something that has been overlooked in the current literature.

This study adds to the existing literature by investigating whether a defining event in US history still matters for local lending. More specifically, I investigate in this paper the long run effect of one of the major historical events in American history, the American Civil War, on individual mortgage lending approval in counties in the Southern US states between 2005 and 2011. Additionally, I investigate a channel of persistence through which the Civil War still has an effect on current credit extension. Looking at individual mortgage applications allows me to not only investigate the average effect of the Civil War on current mortgage extensions,

but also to look at more detailed effects such as whether the effect can differ for different groups of applicants. I employ a spatial regression discontinuity design to address endogeneity problems arising from omitted variables bias and hence draw causal inferences. For this I exploit the random occurrence of battles in US counties in the southern States during the War. At that time the southern states heavily relied on slavery and were against its abolishment. During the Civil War 122 counties experienced a battle whereas other counties did not[1]. Additionally I explore channels of persistence. After the battle counties were usually left devastated, meaning that at least part of the county had to be rebuilt. According to anecdotal evidence the necessary reconstruction of the county lead to a common unity within the county population and a subsequent increase in social capital, suggesting that social capital may be a channel of persistence.

My identification strategy builds on three steps. Firstly, using a spatial regression discontinuity design, I am able to compare mortgage applications of individuals located near the border of a county that was struck by a battle to applications from individuals located at the other side of the border in similar adjacent counties in which no such battle took place. Figure 1 illustrates my regression discontinuity approach for one specific battle county. I find that for mortgage applications there indeed is a discontinuity at the border with respect to approval probability as well as (conditional upon approval) the loan amount granted between individuals from battle and non-battle counties. This discontinuity is far larger for minority applicants. In my empirical analysis I further asses the local effect at the border of a battle county and its similar adjacent counties. Specifically, I examine whether being located in a county in which a battle occurred during the Civil War matters for individual mortgage approval today. My results confirm the conventional agreement that history can have a persistent effect on economic outcomes (Dell, 2010; Nunn, 2008). Contrary to the mostly negative welfare effects Civil War usually is associated with (see for instance Collier et. al,

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[1] Out of the current 3144 county and county equivalents.

2013), battle occurrences have a positive contribution: Being located in a county in which a battle took place fosters the probability of loan approval. However, this effect is mitigated for minority applicants. In fact, minority applicants' mortgage applications are less likely to be approved when the applicant is located in a county that experienced a battle as opposed to applications from minority applicants located in non-battle adjacent counties on the other side of the border. Moreover, conditional upon approval, the loan amount granted is also significantly smaller for minority applicants that are located in a battle county.

Exploring social capital as a channel of cultural persistence, where culture can be defined as "transmission from one generation to the next, via teaching and imitation, of knowledge, values, and other factors that influence behavior" (North, 1990) points out an explanation for these findings: I document, in line with anecdotal evidence, that counties that were hit by a battle indeed showed significantly higher levels of social capital shortly after the Civil War compared to similar adjacent counties in which no such battle took place[2]. This difference in the level of social capital cannot be explained by differing levels of social capital between the two groups of counties shortly before the beginning of the Civil War and suggests a natural discontinuity at the border between battle counties and adjacent non-battle counties.

Moreover, I find evidence consistent with the notion that one of the channels of persistence is indeed social capital: Battle counties have a considerable higher social capital index today compared to similar non-battle counties. These results may suggest that social capital can lead to positive outcomes in the form of a higher mortgage approval probability. The common unity that was created within the population in a county after a battle took place has been transmitted from generation to generation resulting in higher local social capital today and, on average, a higher mortgage approval probability compared to non-battle counties. However, they also suggest in line with Putnam (1996) and Fukuyama (1999), that

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[2] Social capital is measured by total county church value. For an exact definition see section 3.2.

there is a 'dark side' to social capital: On the contrary, 'outsiders', i.e. minority (non-white) individuals benefit negatively from this higher level of social capital.

Additionally, I find that remembrances of Civil War battles are important for the persistency of local social capital: In battle counties in which at least one military unit is present that actively re-enacts battles, both social capital (around 90 percentage points) and the likelihood that a non-minority mortgage application is approved (around 7 percent) are higher compared to battle counties with no such reenactment groups.

This paper relates to and builds on several strands of literature. Firstly, it extends the growing literature that acknowledges that there can be a long term effect of historical events on economic outcomes (Nunn, 2008; Dell, 2010). Secondly, it relates to the current research on the effect of local factors such as discriminatory lending practices on mortgage approval in the US mortgage market (see Ghent, 2014) and the role of culture in lending (Fisman et. al., 2012). Additionally, this paper also is more broadly related to the literature on the persistence of cultural traits (Voth and Voigtlander, 2012) and the general welfare effects of civil war (Collier, 2013). Moreover, it broadly contributes to the literature on group association and social cohesion after civil wars (Gilligan et. al, 2013), that shows that social capital increases after a civil war in those regions that were most heavily hit by the war.

The rest of the paper is organized as follows. Section 2 provides the historical background. Section 3 discusses the theoretical model, whereas the data is touched upon in section 4. The empirical results on the effect of battles during the American Civil War on local mortgage lending as well as a channel of cultural persistence are discussed in section 6. Section 7 concludes.

2. Background: The American Civil War

The American Civil War, also known as the 'War between States" was the bloodiest war in American history. During this war, that started when seven initial southern states seceded themselves from the Union and became the Confederate States of America (during the war four more states followed the initial confederate states and seceded from the Union as well) over 600,000 soldiers died at the battlefield and much of the South's infrastructure was left devastated. The cause of the secessions was a sectional friction over slavery between the Confederacy and the Union (the 'North'). The southern states, which relied heavily upon slavery, supported the possible expansion of slavery into the West, whereas the remaining states in the Union did not. During four years armies from the Confederates fought against the Union. The battles of the American Civil War were fought between April 12, 1861 and May 1865 in 23 states, but the South was most heavily hit (see map 1 in section VI, Appendix)[3]. In my initial analysis I exclude the battles that took place in the 7 Northern states, as at that time the North was already starting to industrialize and hence northern counties were not entirely comparable to their southern counterparts[4].

2.1. To what extent were battle locations random?

Where exactly it came to clashes during the American Civil war was to a certain extent random, especially when conditioning upon counties in close proximity of a battlefield. For example, a current local newspaper documents on the battle of Lynchburg, VA that: '*That the*

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[3] I include all battles in the sixteen southern states as defined by the US Census. Of course, the South and the geographical defined Southern states do not fully coincide. I therefore rerun all my analyses twice, firstly including only the 11 Confederate states and secondly including the states from the Old South, i.e. southern states in which slaves were legally held before 1860. The results remain largely unaltered.

[4] Additionally I rerun the analysis including the few battles from non-Southern states. Again, the results remain largely unaltered.

climactic battle began in Lynchburg on July 1 was as much by accident as design. (..)Lynchburg happened to be where some units under Lee finally engaged Union troops under Gen. George Meade.'

However, several circumstances were taken into account by generals from both sides when determining their optimal war strategy. From historical resources it is known that the War largely followed the lines of communication and supply, i.e. water ways and rail roads were of great importance and therefore also important points of interest for the enemy (Clark, 2004).

Another factor of importance for generals and their soldiers was the elevation of a location. A more elevated location, such as a hill or even mountain, tended to be of great advantage for defenders during the Civil War especially in combination with a so called 'unobstructed field of fire'.

Given that lines of communication, in the form of railroads/train stations and river access as well as elevation were important factors that contributed to the exact location of battles I include three variables that capture and control for these factors in the empirical analysis: A dummy variable, *Rail*, indicating whether a county in which a battle occurred had access to a railroad in the county in 1860, a year before the start of the war. *Water*, a dummy variable indicating whether a main river was present in the county in 1860. And lastly I include a county's elevation in meters, as measured by the elevation of a county's centroid.

3. Method

To investigate the long term effect of the American Civil War on mortgage lending I exploit the random occurrences of battles during the American Civil War. I first test the long run effect of the American Civil War on contemporary local lending practices. In particular I

investigate whether being located in a battle county matters for mortgage approval. Moreover, I examine whether an applicant's race conditional upon being located in a county that experienced at least one battle during the Civil War alters the probability that the mortgage application is approved. Battle treatment is a function of location: the latitude and longitude of an observation, hence suggesting the use of a regression discontinuity approach. Exploiting the random location of battles during the Civil War and the general notion that the reconstruction of the county after a battle created a common unity within the county population I use the following spatial regression discontinuity design to test this effect:

$$A_{ict} = \propto + \beta_1 * BattleCounty_c + \beta_2 * BattleCounty_c * B_i \\ + \beta_3 * B_i + X'_c \beta + f(geographical\ location_{ic}) + \varphi_b + \gamma_s + \delta_y + \varepsilon_{ict}$$

Where A_{ict} is a dummy variable indicating whether a mortgage application from applicant i in county c in year t is approved yes or no. $BattleCounty_c$ indicates whether the application from individual i is from a county that endured a battle during the US Civil War or from one of its neighboring counties, $BattleCounty_c*B_i$ indicates the interaction between the battle indicator and an indicator for the race of the applicant (B_i: Minority (non-white) yes or no) and X'_c includes specific county characteristics: The county land and water area in miles respectively as a battle could only be fought on land (I do not include naval battles, as they are not included in the battles list from the American Battlefield Program). As well as whether a county had access to a railroad or waterway in 1860, county elevation , the number of soldiers that died during battles in a county and a historical measure of inequality: A county's gini coefficient for 1860 as in Nunn (2011). Additionally I control for a county's current urbanization level and applicant characteristics in the form of yearly income and gender. *f(geographical location_{ic})* contains the regression discontinuity polynomial, which is a control function that captures the functional form of an applicant's location and defines the relationship between an applicant's location and the outcome variable, the approval indicator

and loan amount respectively. In line with Dell (2010) and Michalopoulos (2014) I explore several forms: 1. The location (latitude and longitude) of the property[5] 2. The distance to the nearest battle 3. Distance to the border of the county where the nearest battle took place. Φ_b includes battle fixed effects. γ_s captures state fixed effects and δ_y includes year fixed effects. I include these broad sets of fixed effects to control for unobservable constant factors at the state level as well as for possible specific year effects that can influence mortgage approval (following Michalopoulos et al., 2014). Additionally I restrict my sample to those applications that are approved and rerun above specification replacing the approval indicator on the left hand side with a variable capturing the loan amount granted.

3.1. Hypotheses

The general intuition on what long run effect the Civil War can have on local mortgage approval leads to two testable hypothesis, that both are related to the extensive general literature on group association and social cohesion after wars (Gilligan et. al., 2013), social capital and the cultural traits that are part of it (Voth and Voigtlander, 2012) as well as the dark side of social capital (Voth and Voigtlander, 2012). In specific, considering the historical anecdotal evidence that battles resulted in an increase in social capital in those counties affected and hence may be a channel of cultural persistence through which a battle effect still persists today, I expect that mortgage applications in areas that experienced a battle during the Civil War are:

1. *More likely to be approved on average.* The devastating effect of a battle contributed to the local community feeling, thereby positively contributing to the 'within group feeling' and social capital which was passed on to other generations, in line with the formation of a so called 'collective memory' of American Wars

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[5] I use a cubic polynomial in latitude and longitude and also a cubic polynomial for the distance to the nearest battle.

that was passed through to younger generations (Zaromb et al., 2013) and social cohesion after civil wars (Gilligan et. al., 2013). Based upon this hypothesis I therefore expect a positive relationship between a battle and the probability that a mortgage is approved. This expectation is in line with the positive effects of higher social capital in lending due to higher levels of trust it is commonly associated with (see Guiso et. al., 2004).

In addition I expect that, if there indeed is a 'dark side' to social capital:

2. *Less likely to be approved when the applicant is minority, i.e. of non-white race.* The Civil War started because seven Southern slave states seceded themselves from the Union as they opposed the abolition of slavery and supported its expansion into the West. Conditioning upon the Southern States, I therefore expect that applications from minority applicants are less likely to be approved compared to non-minority race applications in counties where a battle took place as opposed to similar applications near the border from adjacent non-battle counties. I expect a possible channel through which cultural persistence exists to be social capital: Because the local community was forced to rebuild a great part of the county because of the devastating effect of the battle, this created a common unity within the local community which was maintained throughout the years, positively contributing to local social capital. However, 'outsiders', i.e. individuals of another race, will be less likely to benefit from this local social capital. Consistent with the social capital channel of cultural persistence, I therefore expect that battle counties also have *higher* levels of social capital compared to non-battle counties.

3. Conditional upon being granted a mortgage, the loan amount granted will be *smaller* for minority applicants compared to non-minority applicants in battle counties as opposed to non-battle counties.

4. Data

Battles

I obtain a list including all battles that took place during the Civil War from the Civil War Sites Advisory Commission (CWSAC). As the county in which a battle took place is known I am able to construct a battle county indicator based upon this information. I code the location (latitude and longitude) of each battle to be the centroid of the county in which it took place.

Mortgage applications

From the Home Mortgage Disclosure Act database (HMDA) I obtain all individual mortgage applications received by financial institutions between 2005- 2011 (including). This rich dataset comprises, amongst others, information on whether the application was denied or approved, applicant and, if any, co-applicant's race as well as the location of the property (its census tract), which allows me to calculate the distance to the nearest battle, border of the battle county and to use these as well as the locations' latitude and longitude as RD polynomials. I focus on all mortgage applications from the 16 Southern states as defined by the US Census. I do this for two main reasons: 1. Southern states as well the southern counties were (and still are) homogenous, a necessary condition in order for my identification strategy to be valid. Additionally this will limit any problems concerning omitted variables 2. Most of the battles took place in the Southern states[6].

I drop all observations with missing data and code my approval indicator to be equal to one if

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[6] When I do include all battles (and hence all states) the results remain largely unaltered as well as when including only the 11 southern Confederate States or the southern states belonging to the 'Old South', i.e. those states in which slavery was common before 1860.

the mortgage application was approved (irrelevant of whether it was accepted by the applicant or not) and 0 otherwise. I construct a dummy variable, B_i, based upon the race of the main applicant and, if present, the co-applicant. I code this variable to be equal to one if both the applicant and (if present) the co-applicant are of non-white race and to be equal to 0 otherwise. The HMDA (Home Mortgage Disclosure Act) data includes public loan data from lending institutions and was enacted by the US Congress in 1975. The approach of the HMDA data is largely local of nature as it was initially set up for the purposes of identifying whether financial institutions are serving the housing needs of their communities, to assist public officials in attracting private investments to areas where it is needed and to identify discriminatory lending practices. One of the requirements for financial institutions that are required to report under HMDA is that an institution should be actually physically based in a certain community with at least one branch office. This local feature of the data allows to validly assuming that the applications as reported in HMDA deal with a lender that is active with a branch or office in the same county as the location of the property.

County controls

I obtain county level data from various sources. Historical data from 1860 and 1870 on churches, rail and water access as well as prosperity and inequality from the US decennial censuses from these years. Elevation is obtained from the Geographic Names Information System database and the level of county urbanization is from the US Census. Data on the total number of soldiers that died during Civil War battles in a county is obtained from the CWSAC.

4.1. Summary Statistics – Corroborating the Identification assumption

For my identification strategy to be valid two identifying assumptions are required (see

Angrist and Pischke (2008)): Firstly, the location of a battle should not have been influenced by local factors that influence mortgage approval and/or economic prosperity, i.e. they should be random. As discussed in section II, anecdotal evidence suggests that this indeed was not the case, except for some important factors, the presence of rail and water ways as well as county elevation. I control for these factor in the analysis. Moreover, counties need to be similar on all dimensions except for treatment (whether there was a battle or not). I explore these issues in more detail in the following tables.

[Table I around here]

I start by exploring whether the counties in my sample were similar a year before the start of the Civil War, in 1860. For this I look at four important factors obtained from the US Census: The number of slaves and white males in a county as a proxy for the extent to which a county relied on slavery, the number of manufacturing establishments as a proxy for the extent of industrialization and the value of real estate as a measure of economic prosperity. The means for each of these factors are reported in Table I for battle and non-battle counties respectively[7]. As can be seen, battle and non-battle counties were similar; all means do not differ statistically at conventional significance levels between both groups of counties. In Table II I further explore whether the counties are still similar nowadays, to rule out that my findings are caused by current observational differences between battle and adjacent non-battle counties. For this I collect data on three relevant factors: county median household income and the percentage of population living in poverty as measures for economic prosperity as well as the number of bank branches in a county as a measure of the availability of credit supply.

[Table II around here]

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[7] I report robust standard errors as well as Conley standard errors that account for spatial correlation.

The results again indicate that both battle and non-battle counties still have similar economic outlooks, household income per capita and the percentage of people living in poverty do not differ significantly. Additionally, my measure for credit supply, the number of bank branches per capita, does not differ significantly between the two groups of counties as well; it is 0.00034 for both county groups.   To be able to use a spatial regression discontinuity design it is also important to know whether there indeed is a discontinuity at the border. I investigate whether there is significant difference between approval rates and loan amounts of mortgage applications for minorities in battle versus non-battle counties in tables IV and V respectively.

[Table III and IV around here]

The results indeed indicate a discontinuity at the border: Minority applicants have a lower approval rate and lower mortgage amount in battle counties compared to their neighboring non-battle counties. Even though the differences are also statistically significant for non-minority applicants, the absolute differences are far larger for non-minority applicants. Additionally, Graph 1 shows that there indeed is a discontinuity exactly at the border for the approval rates and loan amounts granted to minorities for battle and non-battle counties respectively. Both the mean approval rates as well as the loan amounts are significantly lower for minority applicants in battle counties that are located within 5,10,15,20 or 25 kilometers from the border of their county compared to minority applicants from adjacent counties that live in a similar distance to the border of the battle county.

From the descriptive statistics in Table IV-b it can be derived that the total dataset comprises of more than 22 million mortgage applications in the period 2005-2011. Around 75 percent of all applications is approved and the average loan amount is $169 000. From all applications, 21 percent is from counties in which at least one battle took place. The majority of all applicants is male and is located in a county that had access to a water and or railway in 1860.

Mean county elevation is 119 meters. On average counties have a size of 500 km^2.

[Table IV-b around here]

I turn to the testable hypotheses in the next section.

5. Results

5.1. Mortgage Approval Results

I start by estimating the effect of a battle during the American Civil war on the probability that a mortgage application is approved. Following Dell (2010) I explore several forms as regression discontinuity polynomial. Table V reports the results of the specification that uses a cubic polynomial in latitude and longitude to control for a smooth function of an observation's geographical location[8]. Column (1) limits the sample to counties within 10 kilometers of a battle, and columns (2), (3) and (4) restrict the sample to fall within 15, 20 and 25 kilometers to the border of a battle county respectively. To control for unobserved state and year effects I include state and year fixed effects in all specifications as well as battle fixed effects to capture possible differences between battles.

[Table V around here]

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[8] Of course, there is no clear prediction on how the expected relationship between an applicant's location (its longitude and latitude) and the probability of approval should be specified in the RD polynomial. I therefore specify several polynomials, from a single polynomial to a fourth order polynomial. The results are similar and therefore I only report the results on the cubic (third order) polynomial.

Columns (1) – (4) all estimate that the occurrence of a battle in a county during the Civil War increases the probability that a mortgage application is approved by around 4 percentage points or around 6 percent compared to the average approval rate's standard deviation. This result suggests support for the finding that higher social capital increases lending (Guiso et. al., 2004). More interestingly however, the findings in columns (1) – (4) indicate that applicants of non-white race have a more than 3 percentage points lower probability to see their application being approved (5.2 percent) in a county where a battle occurred compared to applicants of another race. The estimated coefficients are always statistically significant at conventional levels. Moreover, the point estimates remain fairly stable when restricting the sample to be within a smaller distance of the nearest battle. These results indicate that the average positive long term effect of the Civil War on mortgage approval is mitigated for minority applicants.

I explore a single dimension RD polynomial (in line with Dell, 2010), distance to the nearest battle in kilometers in Table VI. Again I control for unobserved state and year effects by including state and year fixed effects in all specifications as well as battle fixed effects to capture possible differences between battles.

[Table VI around here]

The results confirm the findings from table V: Applicants of non-white race have a 3 percentage points (or 5.2 percent) higher probability to see their application being declined in counties in which a battle occurred. These results are reinforced when using as a single cubic RD polynomial in the distance to the border, the coefficients can be found in table VII.

[Table VII around here]

5.2. Loan Amount results

Table VIII explores whether location matters for the loan amount granted. The results show that this is indeed the case: Conditional upon approval of an application, minority applicants are granted significantly lower loan amounts compared to non-minority applicants when located in a battle county versus minority applicants that are located across the border in a similar non-battle county. The result, using a cubic polynomial in distance to the nearest battle and the usual county controls, is both statistically as well as economically significant. Minority applicants receive lower loan amounts in general. However, minority applicants from a battle county receive a loan amount that is an extra 7.5 percent lower. Surprisingly, being located in a battle county does not significantly affect the loan amount on average. The coefficient is not statistically significant in any of the specifications.

5.3 Higher ex-post probability of default

To investigate whether the findings may be due to differences in default probabilities between applicants from battle and adjacent non-battle counties, ideally I would like to have information on the mortgage performances of those applications that are approved. Unfortunately, such information is not available. I therefore re-estimate the regressions including the county's yearly change in the percentage home-owners that are of non-white and white race as well as the percentage of mortgages that are in default in a respective year in a corresponding zip code area as proxies for individual mortgage performance. I calculate the yearly percentage change in the number of home-owners that are minority and non-minority (i.e. of non- white race and of white race respectively) using the US Census ACS data and rely on Fannie Mae Loan Perfomance dataset, which includes the performance of their single family mortgage loans, for yearly zip code level mortgage default percentages. The results remain largely unaltered when controlling for this information.

Why would applicants of non-white race have a lower probability to have their mortgage application approved as well as higher loan amounts in counties that experienced a battle 150 years before? I turn to a likely channel of cultural persistence in the next section.

6. Channel of Persistence : Social Capital

In this section I provide a channel of cultural persistence as documented in the historical literature through which a battle effect still persists today: Social capital. Before I turn to the questions of why the occurrence of battles during the Civil War would increase social capital in those counties in which they took place and whether the occurrence of battles really led to an increase in social capital, I first provide a more formal definition of what social capital exactly entails in the following section.

6.1. Social Capital : A definition

I follow Putnam (1995) and Woolcock (2001) by defining social capital as "features of social life—networks, norms, and trust—that enable participants to act together more effectively to pursue shared objectives". This definition suggests, in accordance with most other definitions of social capital that community engagement, in the form of group formation as well as forms of civic activity and collective actions are central elements (Rupasingha et.al. (2006)). I therefore measure social capital by constructing a county social capital index based upon the density of the following horizontal organizations, building on Rupasingha et.al. (2006): Bowling centers, golf clubs, fitness centers, sports organizations, religious organizations as well as county voter turnout. It is this measure of social capital that will be used in the regression discontinuity design in this paper to test whether social capital is one of the channels through which the influence of Civil War battles persist. This measure best reflects

county community engagement as well as the extent to which a community is close knit. Moreover, previous studies have already indicated that community level social cohesion, as measured by voting and community organization increases after a civil war (see Gilligan et. al, 2013). One explanation for this is the 'collective coping mechanism', indicating that individuals band together after violence in order to cope with other threats.

6.2. Battles and the creation of social capital

Why would the occurrence of battles during the Civil War increase social capital in those counties in which they took place? And did the occurrence of battles really lead to an increase in social capital? Already from a very early start, even as early as before the actual end of the war, when the real fighting had not even been terminated, battles were being re-played in so-called battle re-enactments (Hadden, 1999). Counties struck by a battle had to deal with severe devastation of both its infrastructure and buildings. Apparently, the destruction and the subsequent necessary rebuilding of counties (often county courthouses and other important facilities that played a vital role in the county community, were left destroyed as well (see Clark, 2004)) led to a common unity within the community that was being remembered through battle re-enactments. Lauderdale County, Mississippi, for example, was the scene of the Battle of Meridian (its county seat), an event which helped shape the community into what it is today (Putnam, 2011). The battle of Meridian had a destructive effect on Lauderdale County. Railroads were destroyed and much of the area was burnt down to the ground. Although soldiers had not attacked local citizens during the attack, most citizens were without food for some days after the attack. In addition, the destruction was of such a large magnitude that Maj. General Sherman, the commander of the Union forces during the battle reportedly said: "Meridian (Lauderdale County's county seat) with its depots, store-houses, arsenal, hospitals, offices, hotels, and cantonments no longer exists." However, the county community

put everything in her power to rebuild everything that was so brutally destroyed during the battle, as Michelle Putnam, a local Lauderdale County citizen remarks: *'The county flourished as a vital and vibrant hub of railroad commerce until the Civil War brought destruction and devastation. But its resilient citizens rose from the ashes and soon an area once ravaged by war became a home for industry and innovators.'* (Putnam, 2011).

Several studies have already indicated that social capital increased after civil war. For example, community level social cohesion, as measured by voting and community organization increased after a civil war (see Gilligan et. al, 2013). One explanation for this is the 'collective coping mechanism', which suggests that individuals band together after violence in order to cope with other threats. Additionally, a battle created a shared experience within the county community, as the community together rebuilt what was damaged and endured the battle together. This should positively contribute to social capital as measured by civic engagement (Costa and Kahn, 2003). Whether social capital indeed increased in those counties that experienced a battle remains an empirical question. To investigate this one would ideally like to obtain historical data, for both just before and just after the end of the war, on civic engagement to construct a similar social capital index as the contemporary index that is used in the spatial regression discontinuity design. Unavailability of such historical data on a county level however, does not allow for such an analysis. I therefore use as a proxy for social capital one specific factor of civic engagement: churches. In table IX I test whether the value of all churches significantly differs between counties that endured a battle and (neighboring) counties that did not both at the eve of the war in 1860 as well as four years after the termination of the war in 1870[9]. Even though this proxy for social capital is limited to one factor of civic engagement, it is widely considered by many scholars that social capital

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[9] The total value of county churches is obtained from the Census of Religious Bodies and is defined as: "The estimated value of the church buildings owned and used for worship by the reporting organizations together with the value of the land on which these buildings stand and the furniture, organs, bells, and other equipment owned by the churches and actually used in connection with religious services."

is embedded in groups such as churches (see for example Putnam, 1995).

[Table IX around here]

The results in table IX indicate that before the start of the war, in 1860, the total churches value did not differ statistically between counties that later on would be the scene of a battle. In 1870 however, four years after the war, battle counties show significantly higher amounts of social capital, as proxied for by the total value of all churches present in a county, compared to non-battle counties. The empirical evidence therefore indeed suggests that the occurrence of a battle during the war is associated with a higher level of social capital shortly after the end of the war[10].

6.3. A persistent effect of battles on Social Capital

This section examines whether changes in local county social capital brought about by battles may have persisted throughout time. Given the notion that the local (mostly) white community was forced to rebuild a great part of the county because of the devastating effect of the battle, this created a common unity within the local community which was maintained throughout the years, positively contributing to local social capital. I examine this hypothesis in Table X. The dependent variable is a measure of contemporary social capital similar to Ruphasinga et. al (2006). This social capital index is based upon the eigenvalues from the first principal component of the following number of establishments in a county in 2009: (a) civic organizations; (b) bowling centers; (c) golf clubs; (d) fitness centers; (e) sports organizations; (f) religious organizations as well as voter turnout. I control for the usual state, year and battle fixed effects in the analysis.

_____

[10] I rerun the analysis using the total church values instead of scaling it by total county population, to see whether the effect indeed is caused by a change in the numerator (values) as opposed to a change in county population after a battle (denominator effect). Still battle counties show significant higher church values shortly after the Civil War compared to non-battle counties. Before the Civil War there is no significant difference.

[Table X around here]

The results indeed suggest that counties in which a battle occurred during the Civil War have higher local social capital today compared to non-battle counties. The effect is quite significant: A battle county has a social capital index that is around 1.20-1.70 points higher (143 percent) compared to a non-battle county and this effect is statistically significant at conventional levels. Moreover, the effect is similar when I either include as multidimensional RD polynomial a cubic polynomial using the counties centroid latitude and longitude or when using a single dimension cubic RD polynomial in the distance to nearest battle as measured from the county seat location. The effect is quite significant, as the average index is 1.71, meaning that being located in a battle county almost doubles the value of the index.

These findings suggest that the common unity that was created within the white population in a county after a battle took place has been transmitted from generation to generation resulting in higher local social capital today of which applicants of white race benefit in the form of a higher probability of mortgage approval. However, 'outsiders', i.e. non-white individuals benefit negatively from this higher level of social capital as the probability of approval of a mortgage application for them is lower in counties in which a battle occurred .

6.4. Persistency of Civil War effect through collective memory: Battle re-enactments

How can the occurrences of battles during the American Civil War, some 140 years ago, still have a persistent effect on mortgage approval through local social capital? I look deeper into this question next. One of the main ways in which the memory of the civil war has been kept alive is through the yearly reenactments of battles. If the active passing of memories of the Civil War through reenactments indeed results in a collective memory and an accompanying

increase in social capital, I can hypothesize the following:

1. The probability of approval of minority mortgage applications is, conditioning upon counties that experienced at least one battle, *lower* in those counties in which memories of the Civil War are actively passed to other generations through battle reenactments compared to battle counties in which this is not the case. In the same line, the loan amount granted is expected to be *lower* for these applicants as well.

2. Counties that remember their Civil War Battles actively should have *higher* current levels of social capital compared to other battle counties that do not.

To measure counties' active remembrance of the Civil War I construct a variable, *Reenactment Group*, which is a dummy variable that =1 if there is at least one military unit currently located in a county that participates in reenactment battles of the Civil War and =0 otherwise. I obtain information on reenactment groups, also called 'military units' from the Civil War Reenactments headquarters website, on which units and their location are listed. The results can be found in tables XI, XII and XIII respectively.

[Table XI, XII and XIII around here]

Hypothesis 1 is indeed confirmed: The active remembrance of the Civil War matters for mortgage approval and the effect is both statistically and economically significant at conventional levels. Minority mortgage applicants are less likely to see their application being approved. When they live in a battle county in which the war is actively being remembered through reenactment groups, this effect is even 3.5 percentage points larger (5 percent). Moreover, the loan amount granted, conditional upon approval, is around 11 percent lower. For the loan amount, however, an increase in local social capital through re-enactments is

associated with higher loan amounts of on average, 17 percent. Turning to the question whether active remembrance counties also have higher social capital levels, table XIII indicates that this is indeed the case: The presence of a reenactment group is indeed associated with a higher social capital index, indicating that re-enactments matter for the persistence of social capital.

Taken together these results suggest that re-enactments matters for the persistence of social capital and its accompanying dark side in the form of lower probability of loan approval and loan amounts for minority applicants in battle counties compared to similar applicants on the other side of the border in adjacent non-battle counties.

6.5. County Migration during and after the Civil War

A possible concern is that shortly after or even during the Civil War many people migrated from counties that were affected by a battle to other places where they could rebuild their lives and have better prospects. Historical Census Records however, indicate that this was not the case. According to Ferrie (2006), there was a decrease in mobility and internal migration from the eve of the Civil War to 1900. He finds that, for white native male individuals of age 55 at the time of the census 40 percent lived outside the state of birth in 1900, whereas the percentage was considerably higher in 1850 (45%). Additionally, the rate is even lower in 1990, 39 percent, suggesting that lifetime interstate migration was less common at the end of the twentieth century compared to the second half of the nineteenth century. Moreover, current high migration rates should work against finding any effect of an applicants' race and location in a battle or non-battle county on mortgage approval.

7. Channel of Persistence : Discrimination

Another channel through which a battle effect can persist via social capital is discrimination as well as hostile behavior towards minorities (see Durlauf, 2002 and Field, 2008). The exclusion of outsiders can result in a culture of discriminatory practices against minorities. In this section I explore this explanation by looking at whether battles significantly influenced aggressive behavior against blacks in the form of lynchings in 1882, some years after the end of the War. Additionally I investigate whether violence against individuals of black race is also more pronounced today. For this I investigate whether a battle effect significantly influenced the number of reported hate crimes against blacks. The results are reported in Table XIV. Column (1) suggests that discrimination indeed mattered: Counties in which a battle occurred during the Civil War also had a significant higher probability of 20 percent to observe at least one lynching of a black individual in 1882. Moreover, as indicated by the results in column (2), the number of hate crimes against black individuals is also higher today. This finding is statistically significant at conventional levels: Battle counties reported a 9.8 percent higher amount of hate crimes committed against black individuals in 2009 compared to non-battle adjacent counties.

8. Conclusions

In this paper I investigate the long run effects of one the most important events in American history, the American Civil War, on current mortgage lending practices. The random occurrence of battles during the American Civil War provides a natural opportunity to test this effect while taking into account endogeneity by means of the use of a spatial regression discontinuity approach. The results indicate that, contrary to the general accepted notion that Civil War can have negative welfare effects, being located in a battle county fosters the

approval probability of mortgage applications. However, they also suggest that mortgage applicants that are of minority race have a more than 7 percent lower likelihood of obtaining a mortgage in a battle county compared to applicants of non-minority race. In addition, conditional upon approval, minority applicants also receive significant lower loan amounts in these counties (around 13 percent lower) compared to non-minority applicants. I show that a channel through which this effect of battles still persists today is social capital: Battle counties have a considerable higher social capital index today compared to similar non battle counties. This result may suggest, in line with Putnam (1996) a 'dark side' to social capital: The common unity that was created within the white population in a county after a battle took place has been transmitted from generation to generation resulting in higher local social capital today. However, 'outsiders', i.e. non-white individuals benefit negatively from this higher level of social capital. When looking deeper into social capital as the channel of persistence I find that conditioning upon battle counties, those counties that still actively remember Civil War battles through the presence of re-enactment groups, show even higher levels of social capital than those battle counties that do not. Additionally, in these counties non-minority applicants have a significant higher probability to obtain a mortgage compared to their minority counterparts. Also, conditional upon approval, minority applicants receive even lower loan amounts in these counties compared to similar minority applicants from nearby non-battle counties.

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10. Appendix
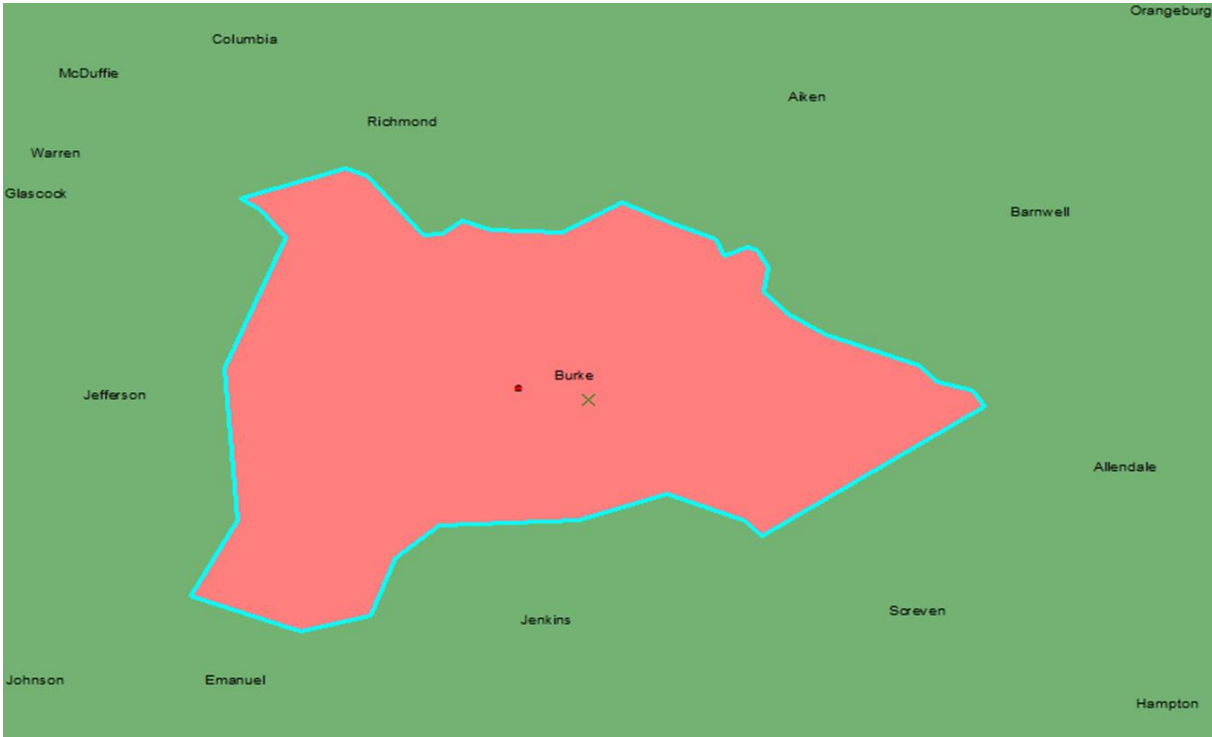
Figure 1. Example of regression discontinuity: Battle county and its corresponding border and non-battle similar adjacent counties. The blue line indicates a bandwidth of maximum 25 km on both sides of the border.
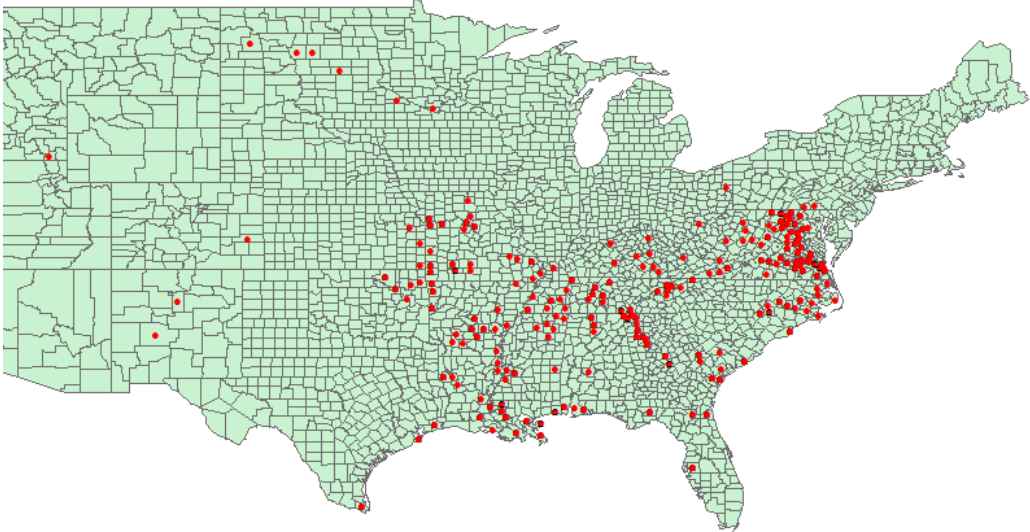
Map 1. All Battle locations during the American Civil War

Table I

Summary Statistics - 1860

Mean	Battle County	Non Battle County	Standard error
Slaves	0.31	0.31	(0.026)
			[0.026]
White Males	771.93	591.52	(193.137)
			[196.769]
Manufacturing establishments	58.24	44.48	(16.791)
			[16.934]
Real estate value	6,096,371	4,628,018	(1128972)
			[1196795.9]
Observations	89	139	

NOTES. The unit of observation is the county. The number of slaves is scaled by total population in a county and the real estate value is expressed in thousands of US dollars. Robust standard errors for the difference in means between battle and non battle counties are reported in parentheses. Conley standard errors, that take into account spatial correlation are reported in brackets. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. The data are taken from the 1860 US Census file through ICPSR.

Table II

Summary Statistics - 2005

Mean	Battle County	Non Battle County	Standard error
Household Income	44721.04	42780.63	(1309.243)
			[1559.213]
Poverty	14.01	14.48	(.603)
			[.709]
Bank branches	0.00034	0.00034	(.000018)
			[.000016]
Observations	92	140	

NOTES. The unit of observation is the county. The household income is the median household income expressed in thousands of US dollars in a county and poverty is expressed in percent, i.e. the percentage of all county population living in poverty. The number of bank branches are scaled by total county population. Robust standard errors for the difference in means between battle and non battle counties are reported in parentheses. Conley standard errors, that take into account spatial correlation are reported in brackets. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

Table III: Percentage of applications approved: Within 20 KM of county border

	Battle County	Non Battle County
Minority	60%	67%***
Non Minority	78%	78%***

Table IV: Mean Loan Amount: Within 20 KM of county border

	Battle County	Non Battle County
Minority	150.82	188.2108***
Non Minority	173.10	186.7477***
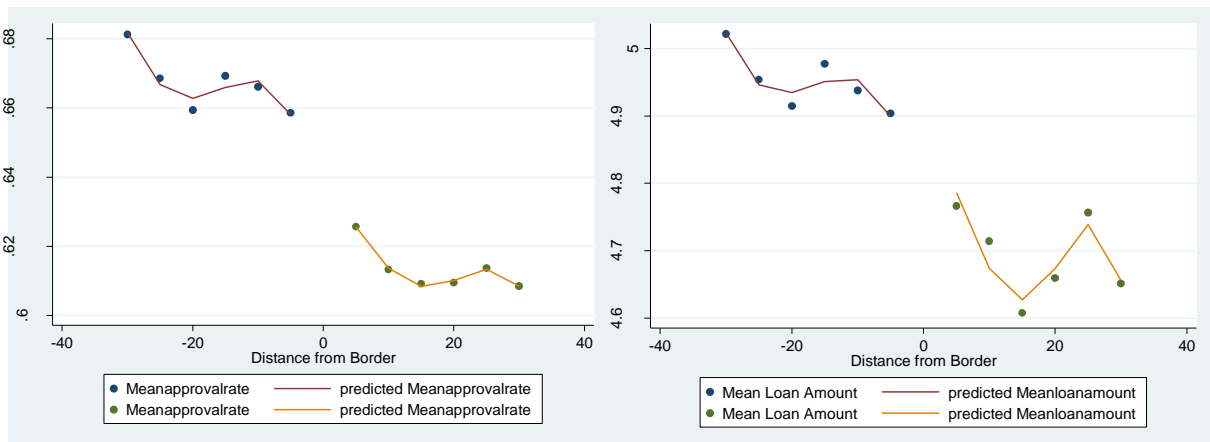
Graph 1. Discontinuity at the border: Approval rate and mean loan amount

Distance from the border is measured in kilometers. Each point represents the mean approval rate/loan amount (measured in natural logarithms) respectively in the corresponding 5km bin. The points with negative distances to the border represent 5km bins from adjacent non-battle counties.

Table IV-b: Summary statistics data sample

	Mean	St.Dev.	Min	Max	p10	p50	p90	Obs.
Approved	.7423277	.4373526	0	1	0	1	1	2.23e+07
Loan Amount	4.813918	.8336369	0	11.51292	3.688879	4.890349	5.799093	2.23e+07
Applicant income	100.8297	148.4097	1	9999	32	72	180	2.23e+07
Applicant gender	.6758279	.4680647	0	1	0	1	1	2.23e+07
County Battle	.217904	.4128218	0	1	0	0	1	2.23e+07
Minority	.2175939	.4126098	0	1	0	0	1	2.23e+07
County Battle * Minority	.0545478	.2270955	0	1	0	0	0	2.23e+07
Land area	21.17143	.7504563	15.4597	22.8873	20.37356	21.24717	22.12654	2.23e+07
Water area	18.08311	1.706449	1.94591	22.25562	16.0369	17.85415	20.5705	2.23e+07
County Minority percentage	76.22035	14.52625	19.4	98.9	56.7	77.6	93.1	2.23e+07
Died soldiers	1.472347	3.171831	0	11.57806	0	0	8.055158	2.15e+07
Urbanization	2.209926	.9584535	1	5	1	2	4	2.23e+07
Railroad access (County)	.5305573	.4990654	0	1	0	1	1	1.71e+07
River access (County)	.5477444	.4977153	0	1	0	1	1	1.71e+07
Elevation	3.489792	2.047118	0	7.110696	0	4.077538	5.686975	2.23e+07

NOTES. Loan amount is the natural logarithm of mortgage loan amount granted in thousands $. Applicant income is measured in thousands of $. Gender equals 1 if the applicant male and 0 otherwise. Minority equals 1 if the applicant's race is non-white and 0 otherwise. Land and water area are both measured in natural logarithms of the area in squared meters. Railroad and river acces equal 1 if an observation is located in a county in which a railroad or waterway is present and 0 otherwise. Elevation is measured as the natural logarithm of the elevation of a county's centroid in metres.

TABLE V
BATTLES AND MORTGAGE APPROVAL: CUBIC POLYNOMIAL IN LONGITUDE AND LATITUDE

Model	(1)	(2)	(3)	(4)
Distance to the border	< 10 KM	< 15 KM	< 20 KM	< 25 KM
Dependent Variable	*Mortgage Approved Dummy*			
Battle County	0.00578	0.0210	0.0296**	0.0341**
	(0.675)	(0.158)	(0.048)	(0.027)
Battle County * Minority	-0.0301*	-0.0308**	-0.0283**	-0.0273**
	(0.088)	(0.027)	(0.032)	(0.034)
Minority	-0.132***	-0.130***	-0.133***	-0.135***
	(0.000)	(0.000)	(0.000)	(0.000)
Landarea	-0.00931	-0.0109*	-0.0123**	-0.0139**
	(0.157)	(0.083)	(0.039)	(0.027)
Waterarea	-0.000563	0.00498	0.00552	0.00752**
	(0.818)	(0.149)	(0.116)	(0.035)
Percentage Non Minority Population	0.000872***	0.000813***	0.000716***	0.000511**
	(0.001)	(0.000)	(0.001)	(0.017)
Soldiers died	0.000458	-0.000399	-0.00169	-0.00238
	(0.795)	(0.838)	(0.367)	(0.205)
Urbanization	-0.00833	0.00289	-0.000577	0.00242
	(0.175)	(0.586)	(0.916)	(0.672)
Railroad access	0.0189***	0.0107*	0.0114**	0.0127**
	(0.005)	(0.067)	(0.042)	(0.028)
River access	0.0117	0.00988	0.00531	-0.00799
	(0.204)	(0.295)	(0.543)	(0.419)
Elevation	0.00245	0.00929**	0.00761*	0.00930**
	(0.517)	(0.025)	(0.054)	(0.023)
Inequality 1860	0.0551	0.0135	-0.000251	0.00635
	(0.323)	(0.773)	(0.995)	(0.882)
Battle Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Applicant characteristics	Yes	Yes	Yes	Yes
Number of Observations	4523803	5730115	6429856	6885294
Clusters	206	217	225	232
R-squared	0.040	0.039	0.039	0.039

NOTES. The unit of observation is an individual mortgage loan application. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is a dummy variable taking on the value of 1 if a mortgage application is approved and 0 otherwise. All models include battle, state and year fixed effects respectively. All models include a cubic polynomial in latitude and longitude from the observation's census tract centroid to the nearest battle (as measured by the centroid of the county in which the battle took place). Model (1) includes only observations within 10 kilometers of a battle, model (2) within 15 kilometers, model (3) within 20 kilometers and model (4) within 25 kilometers. All regressions include county controls to control for land and water area, the percentage of contemporary non minority population, the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in metres. Applicant characteristics included are gender and income. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE VI
BATTLES AND MORTGAGE APPROVAL: CUBIC POLYNOMIAL IN DISTANCE TO THE NEAREST BATTLE

Model	(1)	(2)	(3)	(4)
Distance to the border	< 10 KM	< 15 KM	< 20 KM	< 25 KM
Dependent Variable		*Mortgage Approved Dummy*		
Battle County	0.0138	0.0316*	0.0328**	0.0345**
	(0.388)	(0.063)	(0.047)	(0.037)
Battle County * Minority	-0.0315*	-0.0338**	-0.0304**	-0.0290**
	(0.073)	(0.016)	(0.023)	(0.026)
Minority	-0.131***	-0.129***	-0.132***	-0.134***
	(0.000)	(0.000)	(0.000)	(0.000)
Landarea	-0.00747	-0.0106*	-0.0119**	-0.0147**
	(0.231)	(0.091)	(0.048)	(0.020)
Waterarea	-0.000603	0.00457	0.00423	0.00603**
	(0.804)	(0.147)	(0.165)	(0.048)
Percentage Non Minority Population	0.000779***	0.000669***	0.000595***	0.000390*
	(0.005)	(0.002)	(0.005)	(0.071)
Soldiers died	-0.000213	-0.00154	-0.00214	-0.00235
	(0.898)	(0.403)	(0.222)	(0.177)
Urbanization	-0.00683	0.00128	-0.00213	0.000962
	(0.281)	(0.823)	(0.664)	(0.841)
Railroad access	0.0122**	0.00399	0.00544	0.00907
	(0.041)	(0.452)	(0.298)	(0.103)
River access	0.00618	0.00440	0.00285	-0.00847
	(0.548)	(0.632)	(0.733)	(0.429)
Elevation	0.00343	0.0141***	0.0131***	0.0143***
	(0.379)	(0.002)	(0.001)	(0.000)
Inequality 1860	0.0133	-0.0472	-0.0683*	-0.0606
	(0.796)	(0.291)	(0.088)	(0.159)
Battle Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Applicant characteristics	Yes	Yes	Yes	Yes
Number of Observations	4523803	5730115	6429856	6885294
Clusters	206	217	225	232
R-squared	0.039	0.039	0.039	0.039

NOTES. The unit of observation is an individual mortgage loan application. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is a dummy variable taking on the value of 1 if a mortgage application is approved and 0 otherwise. All models include battle, state and year fixed effects respectively. All models include a cubic polynomial in distance to the nearest battle from the observation's census tract centroid to the nearest battle (as measured by the centroid of the county in which the battle took place). Model (1) includes only observations within 10 kilometers of a battle, model (2) within 15 kilometers, model (3) within 20 kilometers and model (4) within 25 kilometers. All regressions include county controls to control for land and water area, the percentage of contemporary non minority population,the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in metres. Applicant characteristics included are gender and income. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE VII
BATTLES AND MORTGAGE APPROVAL: CUBIC POLYNOMIAL IN DISTANCE TO THE BORDER

Model	(1)	(2)	(3)	(4)
Distance to the border	< 10 KM	< 15 KM	< 20 KM	< 25 KM
Dependent Variable		*Mortgage Approved Dummy*		
Battle County	0.0418**	0.0434***	0.0363**	0.0379**
	(0.013)	(0.008)	(0.024)	(0.017)
Battle County * Minority	-0.0347**	-0.0383***	-0.0369***	-0.0331**
	(0.011)	(0.004)	(0.004)	(0.013)
Minority	-0.125***	-0.122***	-0.123***	-0.128***
	(0.000)	(0.000)	(0.000)	(0.000)
Landarea	-0.0158***	-0.0168***	-0.0151**	-0.0112*
	(0.010)	(0.008)	(0.011)	(0.081)
Waterarea	0.00110	0.000648	0.00159	0.00212
	(0.729)	(0.832)	(0.592)	(0.463)
Percentage Non Minority Population	0.000896***	0.000814***	0.000625***	0.000574***
	(0.000)	(0.000)	(0.001)	(0.005)
Soldiers died	-0.00340	-0.00321	-0.00231	-0.00283
	(0.114)	(0.130)	(0.258)	(0.151)
Urbanization	0.00201	0.00488	0.00737	0.00532
	(0.758)	(0.396)	(0.122)	(0.240)
Railroad access	0.00514	0.00465	0.00135	0.00344
	(0.419)	(0.414)	(0.792)	(0.487)
River access	0.00231	0.00159	-0.00646	-0.00536
	(0.834)	(0.899)	(0.567)	(0.630)
Elevation	0.00810	0.0130***	0.0120***	0.00960***
	(0.103)	(0.002)	(0.001)	(0.008)
Inequality 1860	-0.0591*	-0.0693*	-0.0710*	-0.0634
	(0.093)	(0.065)	(0.063)	(0.131)
Border Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Applicant characteristics	Yes	Yes	Yes	Yes
Number of Observations	4523803	5730115	6429856	6885294
Clusters	206	217	225	232
R-squared	0.040	0.040	0.040	0.040

NOTES. The unit of observation is an individual mortgage loan application. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is a dummy variable taking on the value of 1 if a mortgage application is approved and 0 otherwise. All models include border, state and year fixed effects respectively. All models include a cubic polynomial in distance to the nearest border of a battle county measured from the observation's census tract centroid. Model (1) includes only observations within 10 kilometers of a border, model (2) within 15 kilometers, model (3) within 20 kilometers and model (4) within 25 kilometers. All regressions include county controls to control for land and water area, the percentage of contemporary non minority population,the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in metres. Applicant characteristics included are gender and income. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE VIII
BATTLES AND LOAN AMOUNT: CUBIC POLYNOMIAL IN DISTANCE TO THE NEAREST BATTLE

Model	(1)	(2)	(3)	(4)
Distance to the border	< 10 KM	< 15 KM	< 20 KM	< 25 KM
Dependent Variable		Loan Amount		
Battle County	-0.0562	-0.0409	-0.0267	-0.0193
	(0.445)	(0.617)	(0.732)	(0.810)
Battle County * Minority	-0.0727*	-0.0793**	-0.0660*	-0.0626*
	(0.095)	(0.039)	(0.085)	(0.089)
Minority	-0.0748**	-0.0683***	-0.0803***	-0.0843***
	(0.018)	(0.008)	(0.001)	(0.000)
Landarea	-0.00559	-0.0175	-0.0150	-0.0127
	(0.850)	(0.636)	(0.656)	(0.695)
Waterarea	-0.000415	0.0236	0.0224	0.0254*
	(0.975)	(0.146)	(0.149)	(0.095)
Percentage Non Minority Population	0.00226*	0.00179*	0.00170*	0.000836
	(0.052)	(0.064)	(0.062)	(0.335)
Soldiers died	0.00970	0.0133	0.00906	0.00871
	(0.214)	(0.200)	(0.343)	(0.377)
Urbanization	-0.101***	-0.0273	-0.0494*	-0.0372
	(0.005)	(0.453)	(0.063)	(0.103)
Railroad access	0.0858**	0.0172	0.0218	0.0352
	(0.012)	(0.551)	(0.386)	(0.167)
River access	0.0445	0.0366	0.0275	-0.00122
	(0.401)	(0.444)	(0.488)	(0.976)
Elevation	0.0174	0.0748**	0.0774***	0.0805***
	(0.368)	(0.020)	(0.007)	(0.007)
Inequality 1860	0.0832	-0.309	-0.365	-0.308
	(0.711)	(0.227)	(0.179)	(0.253)
Battle Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Applicant characteristics	Yes	Yes	Yes	Yes
Number of Observations	3014745	3817795	4284577	4586326
Clusters	206	217	225	232
R-squared	0.157	0.167	0.174	0.175

NOTES. The unit of observation is an individual mortgage loan amount. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is the loan amount in thousands of US $. All models include battle, state and year fixed effects respectively. All models include a cubic polynomial in distance to the nearest battle from the observation's census tract centroid to the nearest battle (as measured by the centroid of the county in which the battle took place). Model (1) includes only observations within 10 kilometers of a battle, model (2) within 15 kilometers, model (3) within 20 kilometers and model (4) within 25 kilometers. All regressions include county controls to control for land and water area, the percentage of contemporary non minority population, the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in metres. Applicant characteristics included are gender and income. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

Table IX
Social Capital before and after the Civil War: Church value

Mean	Battle County	Non Battle County	Standard error
Church value 1860	3.42	2.73	(.4456213)
Church value 1870	4.27*	3.36	(.5542734)
Observations	89	139	

NOTES. The unit of observation is the county. The church value is the total value of all church buildings in a county measured in thousands of US dollars and scaled by total county population. Robust standard errors for the difference in means between battle and non battle counties are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE X
CHANNEL OF PERSISTENCE: SOCIAL CAPITAL

Model	(1)	(2)
Dependent Variable	*Social Capital Index*	
Battle County	1.724*	1.202*
	(0.086)	(0.079)
Cubic RD Polynomial in Controls	Latitude and longitude	Distance to nearest battle
	Yes	Yes
Battle Fixed Effects	Yes	Yes
Number of Observations	232	232
R-squared	0.663	0.600

NOTES. The unit of observation is the county. The dependent variable is a county's social capital index from 2009. Standard errors are robust. The dependent variable is a social capital index based upon the first principal component of several variables such as sports membership and the number of civic organizations (similar to Rupasingha et. al, 2006). All models include battle fixed effects and county controls. Model (1) includes a cubic regression discontinuity polynomial in the counties' centroid longitude and latitude. Model (2) includes a cubic polynomial in the distance to the nearest battle as measured from the county seat location. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. When adjusting standard errors for spatial correlation using Conley standard errors the results remain unaltered.

TABLE XI
BATTLES REENACTMENT GROUPS: CUBIC POLYNOMIAL IN DISTANCE TO THE BORDER

Model	(1)
Dependent Variable	*Mortgage Approved Dummy*
Reenactment Group	0.0141
	(0.183)
Reenactment Group * Minority	-0.0350*
	(0.082)
Minority	-0.146***
	(0.000)
Landarea	0.00548
	(0.602)
Waterarea	-0.0142**
	(0.032)
Percentage Non Minority Population	0.00102**
	(0.046)
Soldiers died	-0.00227
	(0.384)
Urbanization	0.0143*
	(0.065)
Railroad access	0.0337*
	(0.092)
River access	0.0489***
	(0.001)
Elevation	0.000264
	(0.876)
Inequality 1860	0.0618
	(0.345)
Applicant characteristics	YES
State Fixed Effects	YES
Year Fixed Effects	YES
Number of Observations	3860318
Clusters	92
R-squared	0.044

NOTES. The unit of observation is an individual mortgage loan application. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is a dummy variable taking on the value of 1 if a mortgage application is approved and 0 otherwise. The model includes border, state and year fixed effects respectively. The model includes a cubic polynomial in distance to the nearest border of a battle county measured from the observation's census tract centroid. The regression includes county controls to control for land and water area, the percentage of contemporary non minority population,the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in meters. Reenactment group is a dummy variable that =1 if there is at least one military unit group present in a county that currently participates in battle reenactments and =0 otherwise. All observations are from counties in which at least one battle took place during the Civil War. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE XII
BATTLES REENACTMENT GROUPS: CUBIC POLYNOMIAL IN DISTANCE TO THE BORDER

Model	(1)
Dependent Variable	*Loan amount*
Reenactment Group	0.160***
	(0.006)
Reenactment Group * Minority	-0.102*
	(0.087)
Minority	-0.0913***
	(0.002)
Landarea	0.110*
	(0.079)
Waterarea	-0.176***
	(0.001)
Percentage Non Minority Population	0.00101
	(0.712)
Soldiers died	-0.0118
	(0.298)
Urbanization	0.00308
	(0.928)
Railroad access	0.250**
	(0.026)
River access	0.231**
	(0.020)
Elevation	0.0462***
	(0.001)
Inequality 1860	0.855*
	(0.057)
Applicant characteristics	YES
State Fixed Effects	YES
Year Fixed Effects	YES
Number of Observations	3860318
Clusters	92
R-squared	0.178

NOTES. The unit of observation is an individual mortgage loan application. Standard errors are robust and adjusted for clustering at the county level. The dependent variable is the (natural logarithm of) loan amount in thousands of $. The model includes border, state and year fixed effects respectively. The model includes a cubic polynomial in distance to the nearest border of a battle county measured from the observation's census tract centroid. The regression includes county controls to control for land and water area, the percentage of contemporary non minority population,the amount of soldiers died during the Civil War battles, the level of contemporary urbanization, county railroad and river access in 1860, county elevation and county inequality in 1860 respectively. Railroad and river access are dummy variables taking a value =1 if a county had access to a railroad or was situated near a river and =0 otherwise. Elevation is measured in meters. Reenactment group is a dummy variable that =1 if there is at least one military unit group present in a county that currently participates in battle reenactments and =0 otherwise. All observations are from counties in which at least one battle took place during the Civil War. All regressions include controls for county land and water area respectively. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

TABLE XIII

SOCIAL CAPITAL: REENACTMENT GROUPS

Model	(1)
Dependent Variable	*Social Capital Index*
Reenactment Group	0.937**
	(0.027)
Cubic RD Polynomial in	Latitude and longitude
Controls	Yes
Number of Observations	92
R-squared	0.638

NOTES. The unit of observation is the county. The dependent variable is a county's social capital index from 2009. Standard errors are robust. The dependent variable is a social capital index based upon the first principal component of several variables such as sports membership and the number of civic organizations (see Rupasingha et. al, 2006). Only counties in which at least one battle occured during the Civil War are included in the analysis. The model includes a cubic regression discontinuity polynomial in the counties' centroid longitude and latitude. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. When adjusting standard errors for spatial correlation using Conley standard errors the results remain unaltered.

TABLE XIV

CHANNEL OF PERSISTENCE: DISCRIMINATION

Model	(1)	(2)
Dependent Variable	*Lynching Dummy 1882*	*Hate crimes 2009*
Battle County	1.328**	0.183**
	(0.048)	(0.028)
Cubic RD Polynomial in	Distance to nearest battle	Distance to nearest battle
Controls	Yes	Yes
Number of Observations	232	232
R-squared	0.491	0.571

NOTES. The unit of observation is the county. The dependent variable is a dummy variable indicating whether one or more lynchings occured in the county in 1882 or not in cloumn (1) and the number of hate crimes reported against blacks in a county 2009 per 10,000 of population. Standard errors are robust. All models include battle fixed effects and county controls. Both models include a cubic polynomial in the distance to the nearest battle as measured from the county seat location. P-values are given in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. When adjusting standard errors for spatial correlation using Conley standard errors the results remain unaltered.