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ABSTRACT

We investigate the extent to which conflicts between Native American tribes and U.S. Army troops were caused by poor economic conditions in Europe from 1869 to 1890. We hypothesize that contractions in economic activity pushed many Europeans to move to the western United States in search of better economic opportunity. The empirical analysis demonstrates that immigration, interacted with US railroad access, caused the probability of a Native American conflict to increase by approximately 46 percent.

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We investigate the impact of European recessions on Native American conflict from 1869 to 1890. Our analysis is motivated by the fact that contractions in economic activity often pushed Europeans to cross the Atlantic Ocean and migrate to the United States in search of better economic opportunities (Sequeira, Nunn, and Qian, 2020). Many European migrants settled in the western United States. This was especially true during the 1870s when the trans-continental railroads such as the Northern and Central Pacific reduced the cost of moving to the western United States and California. Immigrants no longer had to cross the Rockies using horses and wagons. Absent the railroad, the journey was often dangerous given the rugged terrain and could take months to complete before settlers reached their final destination. With the construction of the transcontinental railroads, settlers could often move west in a matter of weeks. Overall, our analysis points to the role of recession driven European immigration to the U.S. and access to railroads as more important determinants of Native American conflict than mining and/or military explanations.

We contribute to the literature on economic shocks and conflict by examining the impact of European recessions on Native American conflict in the western United States during the late nineteenth century from 1869 to1890 (Bazzi and Blattman, 2014; Miguel et. al, 2004; Besley and Persson, 2008).[1] The study also follows from the well-known study by Acemoglu et al. (2001) that emphasizes the role of institutions in economic development. In the case of Native Americans, European migrants defeated the indigenous population and established different institutions in the U.S. that dramatically altered the

[1] There is also a literature on bargaining and conflict in the ante-bellum period in the United States. As noted by Anderson and McChesney (1991), the bargaining model of "raid or trade" does not apply to the post-bellum period. Rather, settlers and Native Americans fought over land in the post-bellum period.

path of development in the west and throughout the country. Our findings also contribute to the literature that examine the link between immigration and conflict (Salehyan, 2008; Fearon and Laitin, 2011)

Our analysis of the impact of European recessions on immigration and Native American conflict have a causal interpretation given that European settlers made the decision to move to the United States based on current and expected future economic conditions in Europe and the United States. The empirical analysis uses European recession dates for England to instrument for European immigration to the United States to address the problem that immigration is an endogenous variable (Burns and Mitchell, 1947). Our results show that there is a strong first stage effect and F-statistics above conventional thresholds. With respect to the second stage regression, we find that a collective increase in immigration interacted with railroad miles significantly increased the probability of a Native American conflict after three, six, nine, twelve, and fifteen months after the onset of a European recession. The time delay likely reflects how long it took for a European to decide whether to move, and actually move, to the western United States. The empirical analysis also demonstrates the importance of railroads for Native American conflict. Railroad access combined with recession driven immigration caused the probability of a Native American conflict to increase by approximately 46 percent from 1869 to 1890.

As for the other control variables in the empirical specifications, we find that higher commodity prices only negligibly raised the probability of a Native American conflict. The analysis also suggests that gold and silver mining discoveries and the size of the U.S. Army did not have a significant impact on the probability of a Native American conflict. Overall,

we interpret the results as evidence of a strong causal link between the timing of European recessions and Native American conflict in the post-bellum period.

We begin the analysis with a brief history of Native American conflict in the post-bellum period (1865-1897). This is followed by a discussion of the history of U.S. government policy towards Native Americans. We then introduce the data and then analyze the determinants of Native American conflict. We conclude with a discussion of the implication of our results for studies that examine the link between economic conditions and conflict.

I. A Brief History of Native American Conflict

Post-bellum Native American conflicts often took place in areas where there were territorial disputes over transportation routes such as a road or railroad. In the Midwest, for example, the Bozeman trail was an important route for settlers traveling between the east and west coasts. The trail passed through several Native American reservations in present day Wyoming and Montana. American settlers using the Bozeman Trail violated treaties between the Native Americans and the U.S. government that prohibited movement across tribal lands. The Sioux, Cheyenne, and several other Native American tribes responded to the violation of their territories by attacking settlers on the Bozeman Trail. In turn, the American army dispatched forces to the region that led to the outbreak of two major conflicts: "Hancock's War" (1865-1867) and Red Cloud's War (1866-1868). The Native Americans successfully defended their reservations as the military campaigns were poorly executed by American troops (despite their numerical superiority and superior weapons).

The two sides signed a peace treaty in 1868 that granted Native American tribes complete control over their reservations. The U.S. army was willing to cede control over these areas, in part, because newly completed railroads had eliminated the need for the Bozeman Trail (Utley, 1973).

In Texas and Kansas, a lack of resources led to two wars by the U.S. Army against the Kiowas, Comanches, and Cheyenne. The United States government violated treaties with the Native American tribes by failing to provide agreed to supplies such as guns, ammunition, and food. The treaty violations led several tribes to raid off the reservation to obtain needed provisions that prompted a military response by the War Department. The "Kiowa/Comanche War" (1868-69) and "Red River War" (1874-75) were long and violent struggles that led to the use of "total war" that had the goal of destroying Native American property and resources to force tribes onto reservations.

The Sioux were the largest tribe in the Midwest and their way of life was threatened by the completion of new railroads that disrupted the seasonal migration of the buffalo. The Native American tribe relied on the buffalo as a source of food and supplies. During the 1870s, the Grant administration spread rumors that there were gold deposits in the Black Hills, located in Sioux territory. When the tribes responded to the violations of their territory and property rights, the U.S. government started the "Great Sioux War" (1875-1881) by sending troops to the region. Sitting Bull, the leader of the Sioux, destroyed General Custer's forces at the Battle of the Little Big Horn in 1876. It took several years before the government under the leadership of General Miles successfully defeated the Sioux. Sitting Bull and his Native American tribe fled to the U.S.-Canadian border and surrendered to U.S. forces in 1879 (Utley, 1973).

In the Northwest, increased migration and settlement from the Bozeman and Oregon trials and later by the railroads led to a large number of settlers violating Native American territory as they crossed the Continental Divide. The Native American tribes would sometimes respond to the intrusions into their territory by attacking settlers. The U.S. Army would then come to the region and subdue the tribes, often forcing them onto smaller and more remote reservations. This was the fate of several Native American tribes in the Northwest including the Piutes, the Bannocks, the Yashkin and the Walpapi. When the same cycle threatened the Modocs in 1873, the tribe fled to a rocky area and successfully repelled attacks by the U.S. Army for over a year in a conflict known as the "Battle of the Stronghold". The U.S. Army ultimately overwhelmed the Native Americans by amassing a much larger force equipped with superior weapons (Utley, 1973).

The Nez Perce, another Native American tribe located in the Northwest, experienced a similar fate as the Modocs. This Native American tribe was forced to move onto smaller and smaller reservations as the number of settlers in the Northwest region increased. Following the murder of a Nez Perces in 1877, the Native American tribe raided a number of local settlements. In response, the U.S. government sent the U.S. Army to the region. American troops chased the Nez Perce from Oregon to Montana until the Native American tribe surrendered in 1879 (Howard, 1993).

In the Southwest, Native American conflict was based primarily around three tribes: the Kickapoos, Lipans and Apache. On the Texas and New Mexico section of the Mexico border, Generals Ord and Shafter were responsible for protecting settlers from Native American raids on the border with Mexico. Following a raid, the two generals

would often chase the Native Americans across the border and violate Mexican sovereignty. Tensions at the border would eventually subside as the Mexican and American authorities would force the Native Americans onto reservations. A couple of the Apache tribes defied the treaty with the U.S. government and raided local U.S. settlements for property and supplies. Apache Chief Victorio, for example, raided settlements because the Apache reservation was moved to a region with less fertile land. American forces under the leadership of General Crook eventually killed Victorio and most of his warriors. The survivors returned to the reservation in 1880. Nevertheless, Native American raids continued for many years because of poor economic conditions on the reservation. Geronimo, one of the last major Native American warriors, raided U.S. settlements until 1886, when he finally signed a peace treaty with the United States government (Utley, 2012).

II. U.S. Policy towards Native Americans

In the post-bellum period, treaties made with Native American tribes were not respected. Nevertheless, the United States continued to make treaties throughout this period. Although Congress was supposed to ratify these treaties before they became law, the U.S. government rarely did so and rarely informed the tribes of the legal status of an agreement. The Native Americans who signed the treaties, on the other hand, often did not speak for their entire tribe. Despite the uncertainty regarding the legal status of treaties, Native American tribes generally respected the borders established by treaties. The Peace Commission of 1867 came to the decision that tribes were no longer sovereign states and

couldn't make treaties although many treaties were still made after this decision (Oman, 2002).

In 1869, the U.S. Army established a doctrine of "total war" based on the strategy employed by General Sherman (the head of the U.S. Army during the period), in his March-to-the-Sea campaign across Georgia during the American Civil War in 1864 (Utley, 1973). The scorched earth policy called for the destruction of all Native American property including food, horses and tents. Kit Carson successfully used this strategy to force the Navajo onto a reservation in 1864. The new policy was designed to replace the army's "converging columns" strategy that was supposed to trap Native American tribes between two large U.S. forces. The "converging columns" strategy had proven not to be very successful given that Native American tribes were generally faster than U.S. forces and could evade an American army that was closing in on their position. The total war policy was not without its own problems, however. Since it was often difficult to determine friend from foe, U.S. forces would sometimes destroy the camps of friendly Native American tribes. The action could incite peaceful tribes to go on the warpath against local settlements and the United States (Utley, 1973).

Elected in 1869, President Grant established a new Native American policy that was designed to clear up some conflicts between the Bureau of Indian Affairs that was under jurisdiction of the Department of the Interior and the Army (Rushmore, 1914). The military accused the Bureau of Indian *Affairs* of corruption and claimed that their actions led to Native American raids and ultimately conflict with U.S. forces. The "Peace Policy" stated that Native Americans on reservations were the responsibility of the Department of the Interior while Native Americans off the reservations were the responsibility of the War

Department. The new peace policy created an incentive for tribes to raid off the reservation, and then to return to the reservation where the Army was not allowed to follow. President Grant appointed Quakers and members from other religious groups to oversee Native American reservations because he believed that "God-fearing" officials were less corrupt (Utley, 1973).

III. The Determinants of Native American Conflict

We now turn to the empirical specification to control for several other factors that may explain the initiation and escalation of Native American conflicts in the post-bellum period. While there were many reasons for this increase in conflict, we believe that there are four major hypothesis that might explain Native American conflict in the post-bellum period: (1) the flow of immigrants into the Western regions of the United States was important during economic recessions as settlers moved west in search of better economic opportunity, (2) greater economic opportunity proxied by higher agricultural prices for farmers, (3) mining discoveries such as the Black Hills of South Dakota and other areas in the west, and (4) the size and technological superiority of the U.S. Army.

Our main hypothesis is that European recessions were an important determinant of Native American conflict. Migration from poor economic conditions was aided by the construction of new railroads that brought a large number of settlers into sparsely populated regions. The new settlements often violated Native American/U.S. government treaties that sometimes led to raiding by local Native Americans. The proximity of Native Americans to local settlements also decreased the cost of raiding by reducing the distance between the

two warring parties. Another effect of westward expansion was to lower the cost to U.S. forces from a conflict with Native American tribes. In the ante-bellum period, for example, long supply lines meant that United States troops might have to discontinue a military campaign against a tribe because they depleted their supplies and provisions. This was no longer the case given that local settlements could be used as a base to supply U.S. forces. The prospect of U.S. government forces and contracts might have created an incentive for settlers to attack and provoke a strong retaliation from the Native Americans. In response, the United States would send forces to destroy or relocate the tribe even if the local settlers did not have a legitimate claim to the land or property in question (Utley, 1973).

Alternatively, higher commodity prices may have pulled people west looking to boost their income as farmers. This may have been especially important after the Homestead Act of 1862 allowed western settlers to purchase 160 acres for a small filing fee. Farmers were also aided by the construction of western railroads that made it easier to get their crops to market. We also hypothesize that mining discoveries played an important role in post-bellum Native American conflicts. Clay and Jones (2008) show that gold discoveries in 1848 increased migration to California and that economic outcomes were generally small for miners but positive and large for non-miners. Speculators searching for gold, silver, and other valuable commodities cared little about treaties made with Native American tribes. The miners often violated Native American territory to look for precious metal deposits. The discovery of gold in the Black Hills in the 1870s, for example, brought hundreds of speculators to western South Dakota that was part of the Sioux reservation (Donovan, 2009). The speculators were usually better armed than Native American tribes and their presence contributed to the outbreak of the Great Sioux War in 1876. The

discovery of gold in Idaho contributed to the outbreak of Nez Perces War of 1877 which was also characterized by the appropriation of Native American lands by thousands of settlers (Howard, 1993).

The final hypothesis that we consider is that the U.S. Army had a large technological advantage over Native American warriors. Native American tribes were unprepared for the use of breach loading guns and repeating rifles used by U.S. forces. Native American tribes lost several battles, for example, including the Wagon Box Fight which took place after the disaster at Fort Phil Kearney even though they outnumbered U.S. forces by a ratio of more than 10 to one. As pointed out by Anderson et al. (1994), the number of Native American conflicts after the Civil War increased in part because the U.S. government could defeat the tribes at relatively low cost given their superior weaponry.[2] The small amount of resources required to defeat Native American tribes meant that the U.S. government would engage in conflict rather than negotiations to resolve land and territorial disputes.

[2]The United States government had also developed rifled canons and other large artillery pieces that were much more sophisticated than the weapons of the Native American. Artillery proved not to be very useful in offensive campaigns against Native American tribes, however, given that they were slow moving and required significant logistical support to operate.

IV. Empirical Analysis

We employ Friedman's (2015) conflict database to test the impact of recessions on Native American conflict.[3] A Native American conflict with the U.S. Army is defined as a conflict that took place in one of the six Military Departments (Columbia, Dakota, Missouri, Platte, Texas, and California) in the western United States between 1869 and 1890. Our sample begins after the conclusion of the American Civil War that brought the end of slavery in the United States as well as important economic and social changes. We then construct the indicator variable CONFLICT that takes a value of one if there is a Native American conflict with deaths at month *t* in the West, and zero otherwise. Table 1 shows the number of months in a given Military Department when there was a Native American conflict with the U.S. Army. California had 98 Native American conflicts during the sample period. Texas was second with 84 and Missouri was third with 72 conflicts between 1869 and the closing of the frontier. The remaining departments (Columbia, Dakota, and Platte) had less than 60 conflicts.

For the IMMIGRATION variable, we use quarterly data that are taken from the Department of the Treasury, Bureau of Statistics (1903). Due to the lack of monthly data on the number of European immigrants to the U.S., we proxy for the inflow of European immigrants with quarterly aggregate immigration inflows to the U.S. We believe aggregate immigration is a good proxy for European immigration given that European immigrants accounted for more than 75 per cent of the total number of immigrants to the U.S. in each

[3]See Data Appendix for details about the construction of our conflict dataset.

decade from 1870 to 1890 (Wilcox 1929). We normalized the quarterly data by dividing the number of immigrants by the total U.S. population at the beginning of the corresponding decade. We constructed the cumulative summation of immigration flows at twelve months to capture the dynamic effect of immigration over time as well as to remove seasonality in the quarterly data. Figure 1 shows that immigration flows fluctuated over time and reached a peak in 1883. In addition, railroads lowered the cost of moving to the western United States and may have increased the probability of conflict with Native American tribes. We calculate the number of railroad miles per capita (RRMILES) for each military department by dividing the number of railroad miles by the non-military population in each military department.[4] Figure 2 shows railroads miles per capita by military department. The graph shows that railroad expansion started in 1870 and varied across military departments. These data are taken from various issues of the *Poor's Manuals of Railroads*, *Handbook of the United States of America*, and *Our Country's Wealth and Influence*.

With respect to economic conditions, we use monthly reference dates for the 1872-1879 and 1882-1886 recessions in the United Kingdom.[5] We hypothesize that the 1872-1879 recession had the largest impact on conflict through its effect on immigration as it is widely regarded as one of the most severe economic downturns in world history and because the majority of Native American conflicts also occurred during the 1870s. [6] The

[4] We follow Nunn *et. al* (2020) approach in normalizing our key variables by population at the beginning of the decade.

[5] We exclude from the analysis recession dates for France and Germany as they overlap with recession dates for the U.K. Also, given that the U.K. was the world's richest country in the 19th century, recessions in the U.K. are a better proxy of economic conditions in Europe during our period of study. There are not additional recession dates for relevant countries in Burns and Mitchell (1947).

[6] Friedman and Schwartz (1963) argue that the six most severe recessions in the U.S. were the 1873-1879,1893-1894, 1907-1908,1920-1921, 1929-1933 and 1937-1938 contractions. We also hypothesize that

data are taken from Burns and Mitchell (1947). The economic recession variables, $RECESSION_{UKt}$, are equal to one if there is an economic recession in the United Kingdom at month *t,* and zero otherwise. We also specify lagged values of the recession indicator variables (at the three, six, nine, twelve-, and fifteen-month frequencies) as it may take several months before the onset of an economic downturn leads to people moving west in search of greater economic opportunity. The immigration variables may also capture the movement of people from the eastern United States to the west. The correlation between native-born and foreign-born white population net intercensal migration for western states from 1870 to 1890 is 29.4 percent.[7] The correlation suggests that internal migration might have responded to domestic economic conditions in the eastern United States. Sequeira et. al (2020) find with limited data that there is a weak relationship between foreign and domestic migration.

We also include several other additional covariates to control for other determinants of Native American conflict. PRICES is a monthly commodity price index. MINING is the annual sum of silver and gold discoveries in Western states. The ARMY variable is the annual number of troops of the U.S. Army in Military Departments in the West. This covariate is designed to capture the fact that a larger U.S. Army is likely to lead to less negotiation with Native Americans given that the United States could overwhelm tribes in a conflict with greater numbers and superior military technology.

the 1882-1886 recession had a smaller effect on immigration as the contraction occurred during the surge in immigration in the 1880s.

[7] Authors' calculations based on data from Carter et. al (2006)

Table 2 reports descriptive statistics for the variables employed in the empirical analysis. Conflict occurs in 21 percent of the months in the sample. The average number of casualties is 4.25.[8] The average sum of immigration flows over the previous year is 0.88 percent of the total U.S. population. The average number of railroad miles per capita is 0.005. The United Kingdom experienced a recession 47 percent of the time from 1869 to 1890. The average number of mining discoveries in a given year was slightly higher than 14. The price index has an average value of 106.[9] The size of the U.S. Army averaged about 3,163 soldiers per year from 1869 until 1890. Our empirical strategy is similar to the one employed by Nunn et. al (2020). They exploit the cross-county variation in immigration that occurs from the interaction of aggregate immigrant flows from Europe to the U.S. with access to the U.S. railway network from 1860 to 1920 to examine the long-run effects of immigration on economic prosperity.[10] The linear probability model can be written as follows:

$$\Pr(CONFLICT)_{y,t,i} = \alpha_0 + \beta_1 IMMIGRATION_{y,q} + \beta_2 RRMILES_{y-1,i} + \beta_3 IMMIGRATION_{y,q} * RRMILES_{y-1,i} + \beta_4 PRICES_{y,t} + \beta_5 MINING_{y-1,i} + \beta_6 ARMY_{y-1,i} + \theta_i + \gamma_t + \mu_y + \varepsilon_{t,i} \quad (1)$$

where CONFLICT takes a value of one in month *t* in year *y* in military department *i*. IMMIGRATION is the cumulative summation of immigration flows over the previous four quarters in quarter *t* in year *y*. RRMILES is the number of railroad miles per capita in year

[8]Casualties is defined as the number of Native American and U.S. soldiers killed, captured, or mortally wounded in military engagements. In contrast to modern wars, Native American Wars were characterized by small-scale conflicts.

[9] The empirical results are robust to using inflation instead of the level of prices.

[10] Nunn et. al (2020) employs an Instrumental Variable strategy in which counties' share of foreign born population during census year *t* is instrumented with the interaction between total number of European Immigrants to the U.S. during decade *t* and an indicator variable that measures whether a county was connected to the railway network in decade *t-1*.

y-1 in military department *i*. PRICES is the monthly commodity price index in month *t* in year *y*. MINING is the annual sum of silver and gold discoveries in year *y-1* in military department *i*. The ARMY variable is the annual number of troops of the U.S. Army in year *y-1* in military department *i*. The regression model is also estimated with military department fixed effects, θ_i, as well as monthly (γ_t) and yearly (μ_y) fixed effects, so that the residual is measured at month *t* and Military Department *i*. We standardize the immigration variable and railroad miles per capita to have a mean of zero and a standard deviation of one to simplify the interpretation of the interaction terms.

Our empirical strategy is to estimate equation (1) using two-stage least squares to control for the potential endogeneity of immigration. We first regress the one-year cumulative immigration variable on the U.K. recession dummies that are lagged by either three, six, nine, twelve, or fifteen months to instrument for Europeans moving to the United States. Clearly, lagged European recession variables are exogenous to current European immigration to the United States as well as to native American conflict. Furthermore, the recession dummies are stationary and do not have a unit root problem since the variables are bounded by zero and one. We also instrument the interaction of immigration and railroad miles with the interaction of the lagged recession dummies with railroad miles.

The baseline empirical results are reported in Tables 3 and 4. Coefficients are reported with robust standard errors. The first stage estimates reported in Table 3 indicate that U.K. recessions predict immigration to the United States. The results show that the first stage estimations are strong, the Sanderson-Windmeijer F-statistics are above the conventional threshold of 10 in all specifications, so we reject the null hypothesis of weak instruments on the two endogenous variables. The sum of the instrument coefficients in the

first stage regressions of the one-year cumulative immigration variable are positive and statistically significant at one percent level in all the specifications except one. The coefficients of the 1872-1879 recession instruments are bigger than the coefficients of the 1882-1886 recession instruments in all specifications except one, indicating that the 1873 recession had a larger effect on immigration.[11]

We next estimate the second stage regressions where the U.K. recession instruments are lagged three, six, nine, twelve, and fifteen months to account for the transaction costs associated with moving from Europe to the western United States. Before moving to America, Europeans probably based their decision on current and expected economic conditions in Europe and the United States. The regressions are estimated with robust standard errors as well as year, month, and military department fixed effects. The results are reported in Table 4.[12] Several interesting results emerge from the empirical analysis. There is a positive and statistically significant relationship between railroad miles and Native American conflict across all specifications. The coefficients of the 1-year cumulative immigration variable are not significant at the five or ten percent level of significance. However, the interaction between immigration and railroad miles is large and statistically significant at the one percent level in all regressions.[13] A one-standard

[11] In all specifications, the Hansen J tests fail to reject the null that the instruments are uncorrelated with the error terms. For the 15-month lag instruments the coefficient of the 1872-1879 recession is 0.05 but is not statistically different from zero.

[12] The OLS estimate of the interaction term of equation (1) is 0.028 and is statistically significant at 5 percent level. To save space, these estimates are not reported but are available from the authors upon request.

[13] To test whether our results are robust to alternative standard errors and address the concern of clustering with a small number of military departments, we apply Conley standard errors adjusted for spatial and time dependency. We assumed a distance cutoff for spatial correlation of 250 km and a time cutoff of 6 months, which is approximately equal to 1584^0.25 as recommended by Greene (2003). We find that the estimates of the interaction terms remain significant at one percent level in all specifications. We also estimated Conley standard errors using different distance cutoffs between 250 km and 3000 km and find similar standard errors to the baseline estimates. We approximated the latitude and longitude of military department's centroids by calculating the average latitude and longitude of military forts in each military department. Conley standard errors were estimated using the spatial_hac_iv command for Stata.

deviation increase in the interaction variables increases the probability of Native American conflict by 9.3 to 10.5 percentage points in a given month. The magnitudes of the estimated effects are sizable when compared to the average probability of conflict of 21 percent. According to our preferred estimates using the 12-month lag instruments, a one-standard deviation increase in the interaction term increases the probability of conflict by 46 percent of the mean incidence of conflict. [14]

As for the other variables in the panel regression, the number of gold and silver mining discoveries and the size of the army are statistically, but not economically significant. The Warren-Pearson commodity price index is not statistically significant.[15] In addition, we also ran a battery of robustness checks. First, we estimated the IV regression using alternative conflict indicator variables with deaths greater than the 25 percent and 50 percent level of casualties in Native American conflict. The results reported in Appendix Tables 1 and 2, show that the coefficients of the interaction variable of immigration and railroad miles are statistically significant at the five or one percent level and smaller in magnitude than the baseline estimates.[16] As an additional check, we used alternative measures of conflict as the dependent variable. In Appendix Table 3, the dependent variable is the log of 0.1 plus the number of military engagements. The results show that a one-standard deviation increase in the interaction variables increases the number of military engagements by 23 to 27 percent.[17] In Appendix Table 4, the dependent variable

[14] Although not reported here, the results are similar if we use alternative measures of the cumulative summation of immigration flows at six and nine months.
[15] We also tested the sensitivity of the results to the omission of the control variables and we find that the interaction terms are statistically significant at one percent level and slightly smaller in magnitude than the baseline estimates.
[16] The average number of casualties is 22 and the median is 9.
[17] The estimated effect was calculated as $(e^{\beta} - 1)$. In the baseline regression we control for lagged number of engagements, however the estimates remain similar without the inclusion of the lagged dependent variable. Also due to the length of our panel the presence of Nickell bias is not a major concern.

is the log of 0.1 plus the number of total casualties. The estimated effect of a one- standard deviation increase in the interaction variables is in the range of 34 to 40 percent.

Next, we tested the robustness of the results to the use of alternative instruments using only the recession variables for Germany. The results, reported in Appendix Table 5, show that the interaction terms are statistically significant and slightly larger in magnitude than the baseline estimates.[18] We then examine the sensitivity of the results to the use of an alternative two-stage method to estimate the endogenous interaction. In the first step, we predict immigration flows using the instrument coefficients from the baseline first stage of the 1-year cumulative immigration variable. In the second stage, we use as instruments of the endogenous variables the first stage fitted values and their interaction with RRMILES. The results, reported in Appendix Table 6, show that the effects are similar in magnitude to the baseline estimates and statistically significant at the one percent level in all specifications except for the 9-month lag instruments.

Finally, we tested the robustness of our estimates to the use of annual immigration flows from Europe.[19] We find that the 2SLS estimate of the interaction term is significant and positive, so a one standard deviation increase in the interaction term increases the probability of conflict by 36 percent of the mean probability of conflict. Overall, the empirically analysis indicates that European recessions led many to migrate to the US in

[18] The Sanderson and Windmeijer (2016) F- statistics reject the null of weak instruments in all specifications except for the 12-month lag instruments. We use monthly reference dates for the 1879 and 1882-1886 recessions in Germany. We exclude from the analysis recession dates for France because the number of French immigrants to the U.S. accounted for less than two percent of the total of European immigrants to the U.S. in each decade from 1870 to 1890 (Wilcox 1929) .

[19] Immigration data by sending country is only available at the annual level. Data are from Nunn et. al (2020). These results are not shown but are available from the authors upon request.

search of better economic opportunity. Immigrants with access to railroads often moved out west which led to a significant increase in conflict with Native American tribes.

IV. Conclusion

Is there a causal link between poor economic conditions in Europe and Native American conflict in the post-bellum period from 1869 until the closure of the frontier in 1890 ? We believe so. Recessions in western Europe pushed people to migrate to the United States in search of greater economic opportunity. Migration and access to railroads pushed European settlers west which caused unavoidable conflict with Native American tribes as the two sides often fought over valuable land. We find a large and robust relationship between conflict and the interaction between immigration and railroad access where immigration is instrumented with European recessions in the UK and Germany. The empirical analysis shows that the interaction variable generally increased the probability of a Native American conflict by 46 percent three to fifteen months after the onset of a European recession. We also find little support for other factors that may have increased the probability of a conflict with Native Americans. Higher agricultural prices had a positive, but insignificant impact on the probability of a Native American conflict. We also do not find strong evidence that mining discoveries or the size of the American army played an important role in explaining the onset of a Native American conflict. Overall, our analysis identifies a strong and robust causal link between economic conditions in Europe and Native American conflict in the late nineteenth century.

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Figure 1

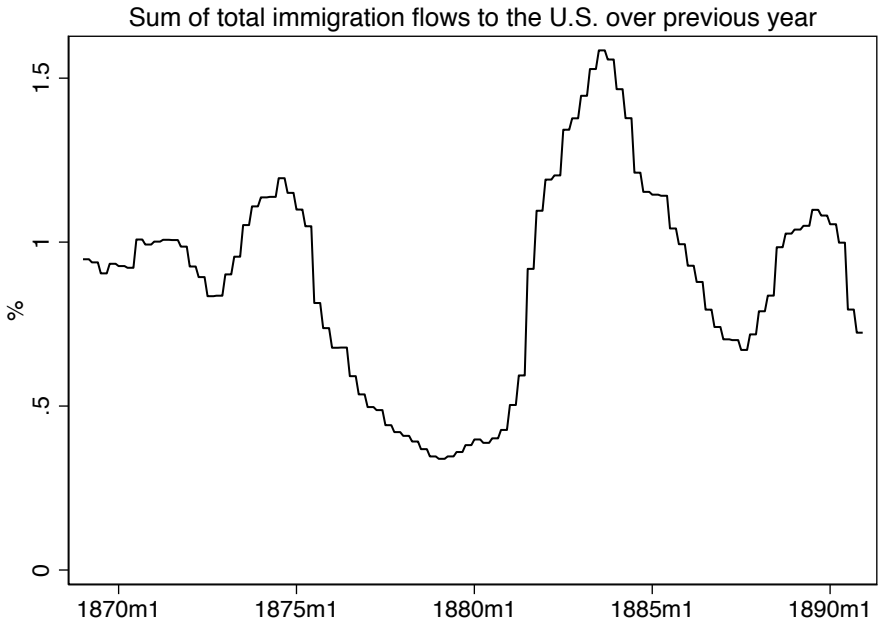

Figure 2

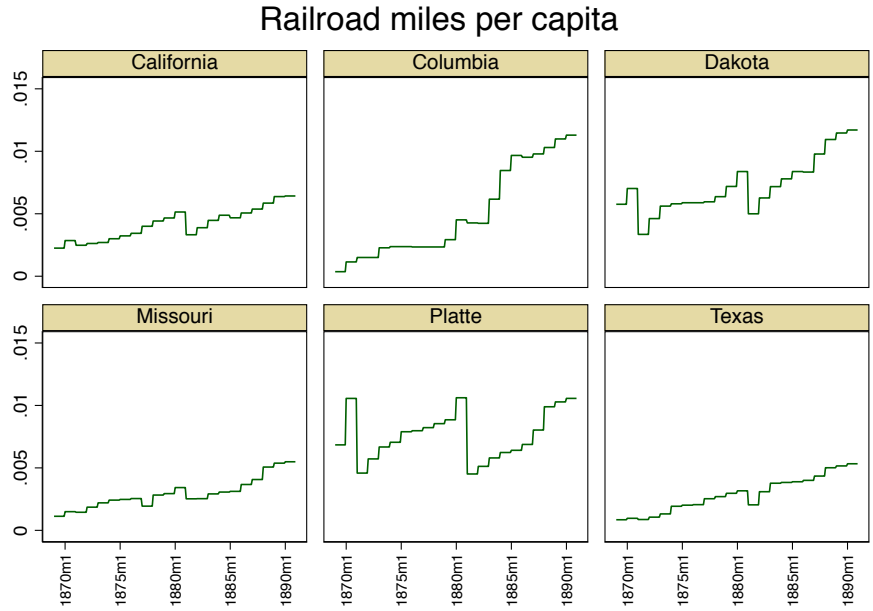

Table 1. Number of Months with Conflict, 1866-1890

Department	Months of Conflict
California	98
Columbia	9
Dakota	56
Missouri	72
Platte	16
Texas	84

Source: See text

Table 2. Descriptive Statistics

Variable	Mean	Std. Deviation	Min	Max	Obs.
Conflict	0.2115	0.4085	0	1	1,584
Casualties	4.2556	18.652	0	341	1,584
Sum of Immigration over previous year	0.0088	0.0031	0.0034	0.0158	1,584
Railroad Miles Per Capita	0.0050	0.0028	0.0004	0.0117	1,584
Recession 1873-1879	0.3106	0.4628	0	1	1,584
Recession 1882-1886	0.1628	0.3693	0	1	1,584
Number of Silver and Gold Discoveries	14.1288	16.9846	0	108	1,584
Number of Troops	3163.41	1222.42	935	6314	1,584
Warren Pearson Commodity Price Index	106.21	21.12	79	157	1,584

Source: See text

Table 3. First Stage estimates of the relationship between immigration and U.K. recessions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
First Stage Estimates. Dependent Variable:	Sum Immigration over previous year	Sum Immigration over previous year x Lag RRMILES	Sum Immigration over previous year	Sum Immigration over previous year x Lag RRMILES	Sum Immigration over previous year	Sum Immigration over previous year x Lag RRMILES	Sum Immigration over previous year	Sum Immigration over previous year x Lag RRMILES	Sum Immigration over previous year	Sum Immigration over previous year x Lag RRMILES
3-Month Lag Recession 1872-1879	0.000	-0.145								
	(0.044)	(0.214)								
3-Month Lag Recession 1872-1879 x Lag RRMILES	0.005	-0.540***								
	(0.019)	(0.073)								
3-Month Lag Recession 1882-1886	0.405***	-0.272*								
	(0.024)	(0.145)								
3-Month Lag Recession 1882-1886 x Lag RRMILES	0.002	0.978***								
	(0.028)	(0.066)								
6-Month Lag Recession 1872-1879			0.451***	-0.353***						
			(0.048)	(0.122)						
6-Month Lag Recession 1872-1879 x Lag RRMILES			0.000	-0.656***						
			(0.019)	(0.073)						
6-Month Lag Recession 1882-1886			0.403***	-0.084						
			(0.034)	(0.219)						
6-Month Lag Recession 1882-1886 x Lag RRMILES			-0.000	0.789***						

	(0.028)	(0.068)						
9-Month Lag Recession 1872-1879			0.283***	-0.115				
			(0.041)	(0.147)				
9-Month Lag Recession 1872-1879 x Lag RRMILES			-0.026	-0.790***				
			(0.019)	(0.071)				
9-Month Lag Recession 1882-1886			0.214***	-0.259				
			(0.030)	(0.163)				
9-Month Lag Recession 1882-1886 x Lag RRMILES			-0.016	0.508***				
			(0.026)	(0.072)				
12-Month Lag Recession 1872-1879					0.192***	-0.049		
					(0.038)	(0.181)		
12-Month Lag Recession 1872-1879 x Lag RRMILES					-0.030	-0.962***		
					(0.018)	(0.070)		
12-Month Lag Recession 1882-1886					0.104***	-0.241		
					(0.030)	(0.165)		
12-Month Lag Recession 1882-1886 x Lag RRMILES					-0.013	0.268***		
					(0.026)	(0.069)		
15-Month Lag Recession 1872-1879							0.053	0.124
							(0.064)	(0.317)
15-Month Lag Recession 1872-1879 x Lag RRMILES							-0.011	-1.178***
							(0.019)	(0.066)
15-Month Lag Recession 1882-1886							-0.312***	-0.187
							(0.048)	(0.183)

15-Month Lag Recession 1882-1886 x Lag RRMILES									0.007	-0.020
									(0.024)	(0.065)
Lag RRMILES	-0.001	-0.211***	0.000	-0.165***	0.009	-0.078	0.010	0.021	0.001	0.155***
	(0.016)	(0.052)	(0.017)	(0.053)	(0.017)	(0.052)	(0.018)	(0.050)	(0.018)	(0.045)
Lag MINING	-0.000	0.003**	-0.000	0.003*	-0.000	0.001	-0.000	-0.000	0.000	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Lag ARMY	-0.000	-0.000***	-0.000	-0.000***	0.000	-0.000***	0.000	-0.000***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.021***	-0.017***	0.023***	-0.014**	0.024***	-0.013**	0.022***	-0.010*	0.019***	-0.012**
	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)
Constant	-3.076***	2.702***	-3.253***	2.184**	-3.438***	2.003**	-3.111***	1.696*	-2.764***	1.933**
	(0.637)	(0.968)	(0.600)	(0.952)	(0.608)	(0.949)	(0.597)	(0.902)	(0.594)	(0.861)
First Stage Sanderson-Windmeijer F-stat	138	135.1	71.69	108.6	32.92	87.25	12.82	61.05	15.70	92.82
Sum of Lagged Recession Instruments	0.405		0.854		0.497		0.296		-0.259	
(p-value)	0		0		0		3.68e-09		0.00211	
Sum of All Instruments	0.412		0.854		0.455		0.254		-0.263	
(p-value)	7.45e-11		0		0		4.76e-07		0.00127	
Observations	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 4. Instrumental Variable estimates of the relationship between immigration and conflict

Panel A. Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Conflict Indicator				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Sum Immigration over previous year	-0.070	-0.207	0.043	0.355	0.153
	(0.110)	(0.159)	(0.200)	(0.336)	(0.164)
Sum Immigration over previous year x Lag RRMILES	0.096***	0.105***	0.099***	0.097***	0.093***
	(0.023)	(0.025)	(0.027)	(0.026)	(0.023)
Lag RRMILES	0.070***	0.072***	0.071***	0.071***	0.070***
	(0.017)	(0.017)	(0.017)	(0.019)	(0.018)
Lag MINING	0.002**	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lag ARMY	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.001	0.004	-0.001	-0.008	-0.004
	(0.004)	(0.005)	(0.005)	(0.008)	(0.005)
Constant	0.442	0.022	0.765	1.675	1.099
	(0.619)	(0.693)	(0.775)	(1.143)	(0.767)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.258	0.242	0.254	0.189	0.244
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y
Panel B. First Stage Estimates					
Hansen J- test p-value	0.247	0.507	0.971	0.444	0.385
First Stage Sanderson-Windmeijer F-stat. Immigration	138	71.69	32.92	12.82	15.70
First Stage Sanderson-Windmeijer F-stat . Immigration x Lag RRMILES	135.1	108.6	87.25	61.05	92.82
Sum of Lagged Recession Instruments	0.405	0.854	0.497	0.296	-0.259
(p-value)	0	0	0	3.68e-09	0.00211
Sum of All Instruments	0.412	0.854	0.455	0.254	-0.263
(p-value)	7.45e-11	0	0	4.76e-07	0.00127

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Tables

Table 1. Instrumental Variable estimates of the relationship between immigration and conflict 25th percentile of casualties

Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Conflict Indicator (>25th percentile of casualties)				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Sum Immigration over previous year	-0.088	-0.031	0.085	0.231	0.190
	(0.102)	(0.128)	(0.173)	(0.296)	(0.149)
Sum Immigration over previous year x Lag RRMILES	0.058***	0.065***	0.058**	0.052**	0.055***
	(0.020)	(0.022)	(0.023)	(0.022)	(0.020)
Lag RRMILES	0.051***	0.052***	0.051***	0.050***	0.050***
	(0.015)	(0.016)	(0.016)	(0.016)	(0.016)
Lag MINING	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lag ARMY	0.000*	0.000**	0.000*	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.006	0.004	0.002	-0.001	-0.000
	(0.004)	(0.004)	(0.005)	(0.007)	(0.005)
Constant	-0.224	-0.075	0.279	0.716	0.593
	(0.568)	(0.599)	(0.681)	(0.994)	(0.695)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.231	0.232	0.231	0.206	0.215
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2. Instrumental Variable estimates of the relationship between immigration and conflict 50th percentile of casualties

Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Conflict Indicator (>50th percentile of casualties)				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Sum Immigration over previous year	-0.007	-0.078	-0.018	0.236	0.179
	(0.069)	(0.112)	(0.135)	(0.253)	(0.136)
Sum Immigration over previous year x Lag RRMILES	0.059***	0.060***	0.055***	0.052***	0.046***
	(0.015)	(0.017)	(0.018)	(0.017)	(0.016)
Lag RRMILES	0.021*	0.021*	0.020	0.020	0.019
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)
Lag MINING	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lag ARMY	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.002	0.004	0.002	-0.003	-0.002
	(0.003)	(0.003)	(0.004)	(0.006)	(0.004)
Constant	0.052	-0.156	0.029	0.775	0.625
	(0.467)	(0.518)	(0.576)	(0.873)	(0.630)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.156	0.151	0.158	0.112	0.135
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3. Instrumental Variable estimates of the relationship between immigration and military engagements

Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Ln(0.1+Number of Military Engagements)				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Lag Ln(0.1+Number of Military Engagements)	0.219***	0.218***	0.219***	0.219***	0.219***
	(0.034)	(0.034)	(0.034)	(0.035)	(0.034)
Sum Immigration over previous year	-0.295	-0.448	0.205	0.905	0.538
	(0.280)	(0.412)	(0.559)	(0.957)	(0.420)
Sum Immigration over previous year x Lag RRMILES	0.217***	0.237***	0.214***	0.221***	0.218***
	(0.065)	(0.071)	(0.076)	(0.074)	(0.066)
Lag RRMILES	0.150***	0.153***	0.149***	0.150***	0.150***
	(0.048)	(0.048)	(0.049)	(0.052)	(0.050)
Lag MINING	0.003	0.003	0.003	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Lag ARMY	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.005	0.008	-0.005	-0.019	-0.012
	(0.011)	(0.013)	(0.015)	(0.022)	(0.014)
Constant	-1.062	-1.556	0.401	2.416	1.358
	(1.694)	(1.900)	(2.194)	(3.278)	(2.141)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.305	0.298	0.303	0.255	0.286
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Instrumental Variable estimates of the relationship between immigration and casualties

Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Ln(0.1+Number of Casualties)				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Lag Ln(0.1+Number of Casualties)	0.213***	0.213***	0.213***	0.212***	0.212***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
Sum Immigration over previous year	-0.400	-0.533	0.281	1.295	0.885
	(0.484)	(0.624)	(0.837)	(1.530)	(0.758)
Sum Immigration over previous year x Lag RRMILES	0.314***	0.342***	0.302**	0.307***	0.294***
	(0.102)	(0.111)	(0.119)	(0.115)	(0.103)
Lag RRMILES	0.219***	0.223***	0.217***	0.218***	0.216***
	(0.073)	(0.074)	(0.075)	(0.079)	(0.077)
Lag MINING	0.007**	0.008**	0.007**	0.007**	0.007**
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
Lag ARMY	0.000**	0.000**	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.011	0.014	-0.003	-0.024	-0.016
	(0.019)	(0.020)	(0.023)	(0.036)	(0.025)
Constant	-0.982	-1.437	1.025	3.953	2.797
	(2.863)	(3.068)	(3.455)	(5.314)	(3.656)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.288	0.284	0.287	0.247	0.269
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, *

Table 5. Instrumental Variable estimates of the relationship between immigration and conflict . German Recessions

Panel A. Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Conflict Indicator				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Sum Immigration over previous year	0.209	0.032	-0.067	0.912	-0.433**
	(0.149)	(0.146)	(0.189)	(1.758)	(0.213)
Sum Immigration over previous year x Lag RRMILES	0.086***	0.096***	0.102***	0.084**	0.175***
	(0.023)	(0.025)	(0.026)	(0.043)	(0.037)
Lag RRMILES	0.069***	0.070***	0.071***	0.069***	0.082***
	(0.017)	(0.017)	(0.017)	(0.023)	(0.019)
Lag MINING	0.002**	0.002**	0.002**	0.002*	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lag ARMY	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	-0.005	-0.001	0.001	-0.019	0.009*
	(0.005)	(0.005)	(0.005)	(0.036)	(0.006)
Constant	1.279*	0.741	0.440	3.324	-0.800
	(0.759)	(0.680)	(0.750)	(5.166)	(0.848)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.235	0.257	0.256	-0.139	0.142
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y
Panel B. First Stage Estimates					
First Stage Sanderson-Windmeijer F-stat. Immigration	37.99	47.28	32.33	3.115	21.55
First Stage Sanderson-Windmeijer F-stat . Immigration x Lag RRMILES	477.7	371	279.6	384.7	355.3
Sum of Lagged Recession Instruments	0.360	0.385	0.194	-0.120	0.237
(p-value)	0	0	0.000511	0.0132	7.23e-06
Sum of All Instruments	0.360	0.360	0.167	-0.120	0.226
(p-value)	0	0	0.00257	0.00655	6.07e-05

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6. Instrumental Variable estimates of the relationship between immigration and conflict. Alternative two stage method

Panel A. Second Stage Estimates. Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Conflict Indicator				
	3-Month Lag Instruments	6-Month Lag Instruments	9-Month Lag Instruments	12-Month Lag Instruments	15-Month Lag Instruments
Sum Immigration over previous year	-0.055	-0.205	0.044	0.372	0.124
	(0.111)	(0.164)	(0.201)	(0.340)	(0.173)
Sum Immigration over previous year x Lag RRMILES	0.073***	0.196*	0.093**	0.092***	0.128***
	(0.022)	(0.108)	(0.047)	(0.032)	(0.041)
Lag RRMILES	0.067***	0.085***	0.070***	0.070***	0.075***
	(0.017)	(0.025)	(0.019)	(0.019)	(0.018)
Lag MINING	0.002**	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lag ARMY	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PRICES	0.000	0.005	-0.001	-0.008	-0.002
	(0.004)	(0.005)	(0.005)	(0.008)	(0.005)
Constant	0.544	-0.191	0.781	1.737	0.929
	(0.615)	(0.768)	(0.780)	(1.158)	(0.802)
Observations	1,584	1,584	1,584	1,584	1,584
R-squared	0.266	0.177	0.257	0.185	0.230
Year F.E.	Y	Y	Y	Y	Y
Month F.E.	Y	Y	Y	Y	Y
Department F.E.	Y	Y	Y	Y	Y
Panel B. First Stage Estimates					
First Stage Sanderson-Windmeijer F-stat. Immigration	378	212.9	79.79	31.37	44.53
First Stage Sanderson-Windmeijer F-stat . Immigration x Lag RRMILES	318	11.59	53.59	100.4	74.51

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Data Appendix

The price index is from the National Bureau of Economic Research, Index of Wholesale Prices, Variable Group Weights for United States, 1850-1894. Mineral discoveries data is from The Mineral Resources Data System (MRDS). Our measure of mining discoveries is the sum of silver and gold discoveries for which year of discovery is available. We restricted the data to mining discoveries for which gold and silver were mine's primary commodities. Number of troops is from various issues of the Report of the Secretary of War.
Conflict data is from Friedman (2015). The dataset contains information on casualties from military engagements between U.S. Forces and Native Americans that occurred between 1776 and 1890. The dataset codes each conflict by date, state, region, and tribes involved in battles. We aggregate the data at the military department level, which was the smallest administrative formation of U.S. Military Divisions. We restricted the sample to the military divisions in the West: The Division of the Missouri, Pacific and Gulf [Utley (1973), Wooster (1988)]. Table 1, shows the states that constitute the military departments in our data.[20]

Table 1. Military Divisions and Departments in The West

	Military Division					
	South	Missouri			Pacific	
Military Department	Texas	Dakota	Platte	Missouri	California	Columbia
State	Texas	Dakota	Nebraska	Missouri	California	Washington
		Minnesota	Iowa	Kansas	Nevada	Oregon
		Montana	Utah	New Mexico	Arizona	Idaho
		Wyoming		Oklahoma		
				Arkansas		
				Colorado		

Source: (Utley, 1973) and Wooster (1988) . Note: Arkansas was included in the department of Missouri due to the small number of battles. Dakota and Montana were included in the department of Dakota even though some parts of these states belonged to the department of Platte. Wyoming and Oklahoma were included in the departments of Dakota and Missouri respectively.

[20] We dropped conflicts in the East region and engagements classified in the pacific and west regions that occurred in Mexico, Illinois and Wisconsin as they were outside the military department geographies. Also, we excluded from the analysis conflicts that have missing data on the date of the conflict and number of casualties.