Abstract

Throughout the 19th century, the US Congress appropriated hundreds of millions of dollars for federal projects of internal improvement. These infrastructure development projects and grand public buildings were introduced as tools of national economic and political development. We evaluate the stated purpose of these investments by collecting and analyzing a data set of appropriations and expenditures for internal improvements between 1816 and 1882. More specifically, we test whether the nation-building rhetoric of contemporary political leaders can be corroborated by a systematic look at the distribution of internal improvement funds. We find evidence that suggests money was disproportionately appropriated to those states likely to need, and not resist, nation building efforts by the federal government. These findings contribute to our understanding of American political economy, congressional affairs, and more broadly, the consolidation of power in federal systems.
Federal funding for internal improvements was among the most important and contentious issues in 19th-century American politics. Between 1816 and 1882, the federal government allocated over $200 Million for infrastructure and development. These efforts, ranging from the construction of the national road to the dredging of massive harbors, would be the equivalent of a multi-billion-dollar investment by today’s standards. While these projects were almost universally recognized as politically and economically beneficial for the nascent American state, fears of consolidated federal power drove ideological battles over whether and how the federal government should pay for infrastructure projects within state borders. As a result, systematic plans for nation-wide infrastructure development were never fully enacted, and piecemeal federal and state-level funding became the norm. Nevertheless, the history of federal funding for internal improvements provides a lens through which we can view congresses’ nation-building efforts and how those efforts jarred with the growing impetus for distributive politics in the new republic. As such, we believe further investigation of internal improvements will produce several notable contributions to existing research on federal systems of government, congressional politics, and American political development.

First, investigating internal improvements allows us to link existing research on legislative affairs (Berry and Fowler 2016) with empirical work on nation-building among comparative (Miguel 2004) and American political development scholars (Adler 2012). Most research specific to internal improvements considers the allocation of federal funds from a distributive politics perspective. This trend is particularly surprising, as some of the most prominent political actors in American history viewed internal improvements as a critical component nation-building and a means of connecting citizens to their central government. As early as the Federalist papers, Alexander Hamilton argued that the new constitution’s success depended on federal support for economic development and
transportation infrastructure. Appropriations for these “internal improvements” became a key feature of Hamilton’s agenda as Treasury Secretary, and George Washington supported those efforts both privately with his capital and publicly as president (Larson 2016, 33). Internal improvements served later as one of three central elements of Henry Clay’s “American System” aimed at uniting the country through economic nationalism. Along the way, bills allocating funding for internal improvements, including Calhoun’s Bonus Bill in 1817 and the Maysville Road bill in 1830, shaped national debates over the consolidation of federal power and fundamental questions of constitutional interpretation. Following the theoretical account presented by Minicucci (2001), we take seriously the possibility that nation-building – among other motivating factors – played a significant role in the designation of internal improvement projects.

Internal improvements also represent a rare and observable failure to build a truly national identity. Historians that have chronicled internal improvement projects have generally concluded that they did not produce their intended outcome and consistently emphasize the young country’s inability to properly utilize federal power to overcome localism. John Larson (2001), for example, argues that while the nation-building agenda of internal improvements presented an enormous opportunity to federal lawmakers, an American people who were “tutored constantly on the dangers of big government and public power” resorted to “doctrines of liberal political economy” to support their opposition to the national plans (p. 5). As a result, state and private enterprises proceeded in ways that only reinforced the separate nature of Americans’ personal and material interests. Similarly, Goodrich (1960) claims that the sporadic federal expenditures were dwarfed by state and local efforts. Larson and Goodrich reflect the dominant thinking about both the development of funding for internal improvements and its impact on broader questions of state-building. To be clear, some dissenting historians claim improvements were an effective tool of empire (Malone 1998), particularly in drawing development to western territories. Nevertheless, much of the careful
research on this subject matter both assumes a primacy to the nation-building logic of internal improvements and declares these efforts an informative failure of American political history.

Political scientists, by contrast, are increasingly interested in 19th-century lawmaking as an empirical opportunity to more deeply understand modern distributive politics (Jenkins and Gailmard 2018; Finocchiaro and Jenkins 2015). Much of this research has, in turn, revisited the theoretical and empirical claims made surrounding internal improvements. Wilson (1986) finds that river and harbor legislation generally reflected a universalistic pattern of distribution. More broadly, Minicucci (2004) looks specifically at the pre-war period of internal improvements and concludes that the introduction of national political parties in the 1830s disrupted the tools of distributive politics used prior to that period, forcing an adjustment in the politics of pork-barrel appropriations. Gordon and Simpson (2018) similarly employ an exhaustive dataset on internal improvement appropriations to make a compelling argument that internal improvements follow a familiar pattern of distributive politics, complete with universalistic logrolls, but this trend only emerges in the last quarter of the 19th century. In contrast to these studies, Finocchiaro (2015) detects a distinct majority party advantage after analyzing public building projects at the end of the 19th century. Despite their differences, each of these studies is primarily interested in the distributive nature of internal improvement projects.

We do not treat internal improvements as an applied study for understanding distributive politics. Instead, we evaluate whether appropriations for federal projects in the 1800s adhered to political leaders’ stated goals of nation-building by distributing funds to those states both in need of and receptive to federal investment. In this sense, we revisit the nation-building logic most-often articulated by political leaders in the era to assess whether implementation followed rhetoric. If claims of union and nation-building were truthful, we should be able to identify which states disproportionately benefitted from these projects.
In the following sections, we provide a brief history of federal funding for internal improvements and the rhetoric that surrounded its support. We then describe a newly constructed data set of federal appropriations and expenditures on projects of internal improvements between 1816 and 1882. In short, we find suggestive evidence in support of the logic put forward by proponents of the American System. States at the fringes of the republic appear to have received disproportionate internal improvement funding — even after accounting for the relative influence of congressional delegations, the structural importance of committee assignments, and the anti-consolidation sentiment among slave states. These findings are consistent with the claim that lawmakers funded internal improvements projects to bolster patriotic attachments among the citizens least likely to feel connected to the union. In contrast to existing research, our analyses suggest that a nation-building perspective played a significant role at this critical juncture in the continued development of the American federal system.

HISTORY OF INTERNAL IMPROVEMENTS

The federal government’s efforts to use material interest and national resources to attach citizens to the central government predated the American founding. Alexander Hamilton argued vehemently that the new government needed energy, efficiency, and centralized strength to ensure security, stability, and order. In order to maintain that energy, governments needed the confidence of their citizens and, in particular, for their citizens to recognize the value of union membership. In _Federalist_ No. 17, Hamilton remarked that human nature’s “affections are commonly weak in proportion to the distance or diffusiveness of the object” and that as a result, “the people of each state would be apt to feel a stronger bias towards their local government than towards the government of the Union.” The only way for the federal government to secure the confidence of the people at such a distance was through “better administration,” which meant that the new
national government would require real projects, strong and permanent enough to overcome the natural tendency to attach to that which is closest and most familiar. Later, in *Federalist* No. 27, Hamilton further clarifies that “the authority of the Union, and the affections of the citizens towards it, will be strengthened, rather than weakened, by its extension to what are called matters of internal concern.”

Most American historians trace the origins of specific federal support for internal improvements to the *Report on the Subject of Manufactures* Hamilton issued as Treasury Secretary in December of 1791. While Hamilton outlined broad programs of economic development to undergird the newly minted political nation, he specifically called for federal investment in projects of internal improvement to help facilitate a new national manufacturing economy. Projects of internal improvements – particularly the construction of roads, canals, and bridges – would serve to connect the states, to connect individuals’ material interests to the constitutional union, and to encourage the sense that local and regional interests were well-served by a federal system. On this point, Hamilton wrote that “There can certainly be no object, more worthy of the cares of the local administrations; and it were to be wished, that there was no doubt of the power of the national Government to lend its direct aid, on a comprehensive plan. This is one of those improvements, which could be prosecuted with more efficacy by the whole, than by any part or parts of the Union.”

While internal improvements serve many purposes, one of their benefits is to demonstrate the utility of the union and the federal administrative state. If citizens become attached to a government by recognizing its utility and purpose, projects that are far better and more efficiently administered by the central government than by a network of states are prime fodder for the interested statesman.

Hamilton was remarkably specific, but not unique, in his desire for such projects. For example, he drew heavily on Adam Smith’s *Wealth of Nations* to support his argument. Smith writes
“Good roads, canals, and navigable rivers, by diminishing the expense of carriage, put the remote parts of a country more nearly upon a level with those in the neighborhood of the town. They are upon that account the greatest of all improvements.” Hamilton recognized the utility of roads and bridges in supporting interstate commerce and the development of ligaments connecting the national body. To Hamilton, projects of internal improvement inculcated patriotism and a critical, national perspective. While modern scholars have studied internal improvements as examples of traditional distributive politics, a close examination of the justifications provided for these appropriations suggests that nation-building and developing the “cement of interest” were among the most common.

The next major push for internal improvement came with the authorization of funding for the Cumberland Road, or National Road in 1806. The road, stretching from Cumberland, Maryland to the Ohio River aimed to connect the Potomac River to the Ohio and become the primary route west for settlers and goods. As president, Thomas Jefferson recognized the significant benefits that projects of internal improvement would provide, while maintaining deep reservations about their constitutionality at the federal level. As a result, Jefferson signed the Cumberland Road Bill in 1806 authorizing construction of the “National Road” – but also called for a constitutional amendment to grant broader congressional authority in funding national projects.

Jefferson’s support for projects of internal improvement centered on their ability to unite the interests of peoples in disparate parts of the union. He argued in 1806 “by these operations new channels of communication will be opened between the States; the lines of separation will disappear, their interests will be identified, and their union cemented by new and indissoluble ties” (quoted in Minicucci 2004, 163). Though enthusiastic about the proposed transportation infrastructure projects, Jefferson was also wary of the means by which they would be allocated.
For Jefferson, clarifying the constitutional questions at play would also improve the politics of internal improvements. Jefferson’s “fear of corruption” centered on “the ‘eternal scramble among members’ of Congress ‘who can get the most money wasted in their State’” (Larson 2001, 58). In order to avoid the corrupting influence of the pork-barrel buffet, Jefferson suggested allocating projects of internal improvement on a proportional basis following the federal ratio designated for representation. While Gallatin dismissed the direct proportional allocation as “unworkable,” the logic of proportional allocation survived in other aspects of the nation’s plans for economic development (Larson 2001, 58).

The national road set off a new series of discussions around broader plans for funding transportation infrastructure projects. The best known and most comprehensive of these plans was Treasury Secretary Albert Gallatin’s 1808 “Report on Roads, Canals, Harbors and Rivers” presented to the Senate at their request. The report laid out the first coordinated plan for a system of internal improvements that relied on the synchronization and funding that only the federal government could provide. Jefferson’s apprehension about the constitutionality of such a plan guaranteed its failure, but many of the projects Gallatin proposed eventually came into existence through piecemeal state and federal appropriations.

James Madison shared Jefferson’s fears about the consolidating effects of congressional overreach in funding projects of internal improvement; nevertheless, his 1815 Annual Message to Congress reflected a belief in the ability of this kind of federal spending to foster a broad sense of nationalism and political attachment:

Among the means of advancing the public interest the occasion is a proper one for recalling the attention of Congress to the great importance of establishing throughout our country the roads and canals which can best be executed under the national authority. No objects within the circle of political economy so richly repay the expense bestowed on them; there are none the utility of which is more universally ascertained and acknowledged; none that so more honor to the governments whose wise and enlarged patriotism duly appreciates them…these considerations are strengthened…by the political effect of these facilities for
intercommunication in bringing and binding more closely together the various parts of our extended confederacy.⁴

Congress showed renewed interest in projects of internal improvement following the War of 1812, which highlighted the impact of poor transportation infrastructure and navigability of inland routes on military campaigns. An 1816 congressional Report on Manufactures from the Committee of Commerce and Manufactures argued similarly that:

Different sections of the union will, according to their position, the climate, the population, the habits of the people, and the nature of the soil, strike into that line of industry, which is best adopted to their interested in the good of the whole; an active and free intercourse, promoted and facilitated by roads and canals, will ensue; prejudices which are generated by distance, and the want of inducements to approach each other and reciprocate benefits, will be removed; information will be extended; the union will acquire strength and solidity, and the Constitution of the United States, and that of each state, will be regarded as fountains from which slow numerous streams of public and private prosperity.⁵

John C. Calhoun, arguably one of the strongest congressional advocates for internal improvements, identified similar justifications. Funding these infrastructure projects would more closely bind the union together and ensure that citizens in the far corners of the country would feel adequately connected to its political center in Washington. In 1817, Calhoun proposed the Bonus Bill, which sought to reallocate bonus revenue from the National Bank to a specific fund for internal improvements projects. The “bonus” totaled $1.5 million. Calhoun hoped it would contribute towards something like the Gallatin plan, which would take advantage of the Congress’s strategic advantage in coordinating a national system of improvements across state lines. In an 1817 speech defending his Bonus Bill, Calhoun detailed the “sentimental” reasons for investing in Internal Improvements at the national level:

But on this subject of national power, what can be more important than a perfect unity in every part, in feelings and sentiments? And what can tend more powerfully to produce it than overcoming the effects of distance?...Whatever impedes the intercourse of the extremes with this, the centre of the republic, weakens the union. The more enlarged the sphere of commercial circulation – the more extended that of social intercourse – the more strongly are we bound together – the more inseparable are our destinies. Those who understand the human heart best know how powerfully distance tends to break the sympathies of our
While Calhoun always confined his support for internal improvements to those projects of truly national importance, his purposes in advocating on their behalf remained consistent. A republic covering such a large land area would have to develop a strong transportation infrastructure to support economic and military endeavors, but also to ensure the continued development of national sentiments. John Larson describes the Bonus Bill as part of a “conscious effort on the part of the new nationalists in the Republican party to reverse the effects of this political disintegration” (Larson 2001, 64). Through the Bonus Bill, Calhoun sought to “bind the people to their federal government before state and local politics completely mastered their allegiances” (Larson 2001, 66).

The bill passed the House and Senate, but President James Madison issued a veto on the same grounds of unconstitutionality articulated by prior presidents. The Madison veto made clear that no formal system of internal improvements projects would be deemed constitutional. However, Madison allowed for the possibility of congressional funding for individual projects of a sufficiently national character.

Perhaps the best-known proponent of internal improvements, Henry Clay, repeatedly justified their funding by their utility for constructing the union. For example, Clay addressed the House on January 14, 1824, in response to a proposed bill appropriating thousands of dollars for the survey of roads and canals that the president had deemed militarily and commercially essential to the nation. Congressman Barbour (VA-11) had previously argued that Congress had no power to fund internal improvements within the states. Clay responded with a lengthy speech in which he addressed the constitutional questions – but also argued that “all the powers of this government should be interpreted in reference to its best, its greatest object, the union of these states. And is not the union best invigorated by an intimate, social, and commercial connection between all the parts of the confederacy?” Excoriating his fellow members for their reluctance to appropriate
funds for a western overland route, Webster argued that the road was crucial to “continue and maintain an affectionate intercourse with our friends and brethren – that we might have a way to reach the capitol of our country…to consult and mingle with yours in the advancement of the national prosperity.”

The defense of internal improvement projects arguably peaked with Henry’s Clay’s introduction of the “American System” on the Senate floor in 1832. Containing three central tenants – a protective tariff, preservation of the National Bank, and federal support for internal improvements – Clay’s system sought to strengthen American industry and tie the American people more closely together. Clay had conceived of the idea and advocated for these projects immediately after the War of 1812, but only formally presented them as the American System years later. Remini writes that “most important of all, in view of the near breakup of the Union occasioned by the dispute over the admission of Missouri, Clay’s American System was intended to strengthen the bonds that tied the nation together into a single whole. It was intended to ensure the perpetuity of a united country” (Remini 1991, 225). The American System and the plans for internal improvements it contained become significant points of political and ideological disagreement in the 1824 presidential election and the years that followed.

Clay’s linking of internal improvements with the protective tariff and national bank reinvigorated the nationalist arguments that had undergirded infrastructure development from the beginning. The protective tariff came to fruition first in 1816 and reached its peak in the 1830s. The Second National Bank of the United States was chartered in 1816 and remained in place until it was privatized in 1836. Internal improvements, however, never enjoyed the full weight of congressional backing in anything like Clay’s system.

While President John Quincy Adams was generally supportive of internal improvements and allowed congressional appropriations to pass unrestricted, Jackson took a more restrictive stance,
vetoing the Maysville Road proposal along with a string of other projects he deemed not sufficiently national in character. While federal expenditures on internal improvements reached their highest levels in the late 1870s, the politics of internal improvements became complicated in the 1840s and 1850s by competing efforts at the state and federal level and a reluctance on the part of southern states to support projects in rival northern areas. Appropriations trickled out to states in smaller and smaller amounts as the 19th century waned, and the full list of projects ultimately fell far short of Clay’s ambitious American System. Nevertheless, internal improvements represented a piecemeal, but sustained, political and economic investment campaign in crucial regions of the growing republic.

**EXPECTATION**

Given this historical context, we develop a nation-building hypothesis for the allocation of federal appropriations for internal improvement projects between 1816 and 1882. The strongest advocates of internal improvements routinely employed nation-building rhetoric to mobilize support for federal projects. From Hamilton to Jefferson to Clay and Calhoun, 19th-century political leaders repeatedly cited the opportunity to bind the republic together, to unite the nation, and to demonstrate the utility of union as the central benefit of, and impetus for, projects of internal improvement. If projects served this purpose, lawmakers should have disproportionally invested in states that needed to be more firmly attached to the nation.

**Nation-building Hypothesis:** Congress will allocate a disproportionate share of internal improvement funding to states that lack a strong attachment to the national government.

This hypothesis suggests two assumptions. First, as we have argued previously, that projects of internal improvement primarily represented an attempt at nation building; we argue that lawmakers attempted to “conquer space” by drawing citizens in the peripheries of the union towards the center.
Second, the hypothesis implies that members of congress assess the overall impact of improvements on states. States that most need to be attached may not respond well to interventionist efforts, and those that are most interested in federal activity may be poor candidates for nation building. Internal improvements may have presented an opportunity to unify the nation, but any government that sets out to “conquer space” necessarily suggests a centralizing effect on the federal system. Congress thus had to identify the subset of states that lacked strong anti-consolidation sentiments and also possessed a weak attachment to the union.

This tension between anti-consolidation sentiment and the need for nation-building speaks to a number of relevant questions raised by comparative federalism scholars (Dardanelli et al. 2019). Interestingly, the findings presented in this literature frequently echo Southern fears of consolidation. For example, a robust national fiscal policy often threatens to spill over into other legislative (i.e., less overtly financial) policy domains (Oates 1972). Nation-building efforts may also provoke resentment in sub-national governments by implying the primacy of a singular political community (Telford 2003). Even cooperative efforts between state and national authorities can erode, leading to a more coercive disposition towards local governments (Kincaid 1990). And if the claims of 18th- and 19th-century political leaders were accurate – if these projects promised a more robust attachment to the national government – internal improvements might have succeeded in undermining an essential cultural safeguard against a greater centralization of federal authority (Bednar 2008). In short, the Nation-building Hypothesis claims that lawmakers can strategically deploy federal funds to states with weak attachments to the Union, and the evaluation of this claim has broad implications for the study of federalism both in the United States and abroad.
INTERNAL IMPROVEMENTS DATA

To test this claim, we first compiled a new dataset of appropriations and expenditures for internal improvements in every state between 1816 and 1882. Our original data source was an 1886 government report titled “Statement of Appropriations and Expenditures for Public Buildings, Rivers and Harbors, Forts, Arsenals, Armories, and Other Public Works from March 4, 1789 to June 30, 1882.” From that report, we cleaned and extracted a list of 6,835 expenditures and 5,324 appropriations for 858 unique projects.

We consider four categories of projects specified by the government report. First, we coded 225 (26 percent) of the internal improvement projects in our dataset as public buildings, which include a variety of custom houses, hospitals, courthouses, jails, and penitentiaries. Second, 114 projects contributed to forts, arsenals, and armories, and while this category only makes up 13 percent of all projects, these were among the most expensive improvements in the dataset (see the appendix). Third, about 88 (10 percent) of the internal improvement projects in our records improve roads and canals, which were also the least expensive set of projects. Finally, 431 (50 percent) of the projects in our dataset aim to shore up rivers and harbors across the continent, which became much more common in the later years of our time series. Figure 1 illustrates internal improvement expenditures, in millions of 2018-adjusted U.S. dollars, over the decades we consider in this analysis.

[Insert Figure 1 about here]

To prepare our analysis, we hand-coded every line-item of funding – both appropriations and expenditures – for all 858 projects in our dataset. We also recorded which state was the intended recipient of each federal funding action. Note, however, that we exclude all territories and Washington, D.C. from our analyses. Geocoding military and other public buildings at a more granular level would be relatively uncomplicated, as many of these locations remain standing today.
By contrast, however, rivers, harbors, roads, and canals frequently span several political districts. For this reason, we summarize all internal investments, by state, on an annual basis and create a new dataset with 1,946 state-year observations.¹⁴

Congress generally funded several projects simultaneously throughout our dataset, and projects routinely received multiple installations of federal funds throughout the 19th century. Figure 2 depicts the number of internal improvement projects to receive annual appropriations between 1816 and 1882. The shading of each data point represents the total amount of money appropriated in that year, which typically corresponds to the total number of appropriations. Congressional support for internal improvements generally increased throughout the 19th century, but the trend was far from monotonic.

[Insert Figure 2 about here]

We also notice considerable variation in the distribution of expenditures across American political geography. Figure 3 illustrates the total amount of expenditures, in 2018-adjusted dollars, allocated to each state. New York, Massachusetts, and Illinois received the most money in our data, with massive expenditures for courthouses, post offices, and customs houses in each state. Territories, which we exclude from our analyses (and Figure 3), received fewer funds than almost any state in our dataset.¹⁵

[Insert Figure 3 about here]

Taken together, our internal improvements data spans over a half-century of American politics. These records provide a rare instance of precisely recorded federal funding in the 19th century, which allows us to identify which states disproportionately benefited from internal improvement funding.
ANALYSIS

In the Nation-building Hypothesis, we claim that federal funding will flow towards regions of the Republic that lack a strong attachment to the nation. Prominent politicians – from Hamilton to Calhoun – argued that a national economic investment program would bind the Union together. In this section, we evaluate whether lawmakers allocated federal funds with the intention to develop and unify the American republic.

In contrast to our measure of internal improvements, however, we faced considerable obstacles in identifying states in need of nation-building efforts. The conditions that necessitate greater attachment to the union almost certainly stem from a complex interaction of cultural, materialistic, and participatory factors (Pears 2017). The binding limitations and inevitable shortcomings of 19th-century observational data further compounded the challenge of measuring something as abstract as the demand for nation-building efforts. Cognizant of these limitations, we simply use the rhetoric of internal improvement advocates to guide our measurement strategy.

Proponents of these projects routinely argued that distance – mere physical separation – created a critical barrier to national unity. Advocates of the American System argued that the allocation of federal funds would both bind the nation together and attach citizens to their federal, rather than state, political identities. As such, we measure the distance from the seat of federal power as a rough approximation of a state's weak attachment to the federal government. More specifically, we begin by taking the number of miles, by walking route, between each state’s capital city and the capitol building in Washington, D.C. We argue that the walking route better accounts for historic roads and critical elements of physical geography, but our results are nearly identical if we incorporate an “as-the-crow-flies” measure or the distance between the physical center of each state and D.C. We use this calculation to construct a variable indicating the five most distant states in a given year, which allows for greater comparability across time. States are either coded as a distant...
state (1) or not (0), and while we prefer to identify the top five states, our results are robust to a variety of thresholds (e.g., top three, top four). We also exclude slave states from this coding scheme for reasons discussed below.¹⁶ If lawmakers wanted to more solidly incorporate citizens with weak national attachments, states more proximate to the center of federal power should receive fewer funds than distant states scattered across the fringes of the republic.

Of course, the antebellum American south presents a conspicuous place and time in need of stronger national attachments. Legislators, following the logic of nation-building, may have disproportionately invested in slave states as a means of shoring up attachment to the Union (over the individual state) throughout the 19th century. We argue, however, that the South may have been a risky investment. Put differently, the strength of southern state identity may have blunted the benefits of internal improvements; building an expensive US Custom’s house may have produced a backfire effect in a region hostile to federal intervention in local affairs. Southern states may very well have needed nation-building in the prelude to war and, more overtly, in the reconstruction era. However, once we consider a state’s demand – or willing desire – for these projects, the western frontier states and far-flung, northern border states appear to be a far more secure investment.

Given the importance of slavery to 19th-century politics, we account for the dominant issue of slavery in our analysis. More specifically, we construct a variable to identify which states were slave (1) or free (0) states throughout this period. Given the cost of anti-consolidation sentiment, however, we exclude any slave states from our primary explanatory variable.

Our dependent variable is the per capita internal improvement appropriations received by each state in each year (1816-1882). For ease of interpretation, we continue to measure these funds in millions of 2018-adjusted US Dollars. To construct this variable, we divide each state’s annual internal improvement appropriations by each state’s estimated population.¹⁷ By taking the per capita value of these government projects, we aim to identify those states that received a disproportionate
share of federal dollars. In other words, we place states on a more even footing by adjusting for population and then parse those states that punch above their weight.

Many other factors may be correlated both with geographic distance from the capital and internal improvement appropriations. For example, scholars have provided evidence that constituents represented by influential members of Congress may benefit from greater internal improvement funding (Minicucci 2004; Gordon and Simpson 2018). For this reason, we include a battery of control variables to account for the confounding influence of congressional power. First, we account for each state’s total congressional delegation. This variable captures the capacity to vote as a bloc (i.e., advance or obstruct legislative proposals). Second, we account for the number of majority party legislators in each state’s congressional delegation, as states dominated by the majority party may receive distributive compensation. We proceed to account for each state’s representation on key committees. We indicate whether a state, for example, maintains a presence on traditionally powerful committees: (House) Ways and Means, (Senate) Finance, (House) Rules, and Appropriations (House and Senate). We also construct a series of chamber-specific variables that signal whether members of a state’s congressional delegation serve on committees with relevant policy jurisdiction (i.e., those that affect internal improvements in public buildings, rivers, roads, commerce, and military expenditures). Appendix Table A1 provides a complete list of the committees coded for each of these variables.

We incorporate these variables into a “between effects” linear regression model, which requires a series of year fixed effects (i.e., dichotomous indicators for each year in our analysis). These fixed effects account for temporal shocks that may impact the nation as a whole, such as shifts in macro-level economic or security conditions. We argue that this specification is particularly well-suited to isolate the cross-sectional variation in internal improvement funding among American
states. By taking each of these factors into account, we can more confidently investigate whether geographically remote states received the lion’s share of internal improvement appropriations.

Table 1 provides the full results of our statistical model. In short, we find that the most distant free states received a disproportionate share of internal improvement appropriations. These results are robust to alternative specifications of our explanatory variable (e.g., top three or top four most distant state indicators). By contrast, we fail to find clear support for the importance of representation on key congressional committees. For example, membership on appropriations committees did not correspond with greater federal funding; states with legislators in a position to influence military policy in the Senate did seem to have a small advantage; and states with sizable congressional delegations may experience a modest penalty in appropriations received. The results for the congressional power variables are decidedly mixed. Moreover, slave states do not appear to receive an inordinate amount of federal funding over this nearly seventy-year period, despite many of these states’ eroding relationships with the national government.18

As an additional robustness check, we re-run the analysis using new dependent variables specific to project type (e.g., public building appropriations, per capita, in 2018-adjusted millions of UDS). Distant states correlate positively with a greater share of funding across nearly all project types – only rivers and harbors, a relatively small share of total appropriations, produces a null result. For brevity, we present only the relevant coefficients from the military appropriations model in Figure 4, below. Full results are available upon request. As before, slave states do not appear to receive a boon in military project funding, despite the threat of insurrection looming at various stages in our time series. States with delegates on committees that address military policy may benefit from Senate representation, but representation on similar committees in the House produces no such result. In short, distant states continue to correlate with disproportionate project funding after
disaggregating the internal improvement data to specific policy domains, which is consistent with the Nation-Building Hypothesis.

[Insert Figure 4 about here]

These results provide suggestive evidence in support of the rhetoric advanced by internal improvement proponents. As Figure 5 illustrates, the most distant states in the U.S. received more funding per capita than other states, particularly in the years preceding the American Civil War. The trends presented in the figure below also highlight some of the limitations of our present research design. While the basic bar plot illustrates dynamic shifts in relative funding over time, our analysis employs a simple linear model across this period. Parsing the data to examine the stark spikes in funding is, unfortunately, impractical using our quantitative approach. For these reasons, we believe that qualitative research is well-equipped to illustrate the significance of various nation-building mechanisms. While we lack the space to implement a full-fledged qualitative analysis, we turn next to the substance of a few key projects with the hope that future researchers will further address questions raised by our approach.

[Insert Figure 5 about here]

**CALIFORNIA PROJECTS (1853-1857)**

California received an inordinate amount of internal improvement funding between 1953 and 1957. The Golden State experienced five of the ten most generous per capita appropriation years in our dataset, and while the state clearly exists in one of the most distant corners of the republic, a closer investigation of internal improvement projects allows us to more fully consider the complex historical context lost in our quantitative analysis.
Historians of the American West have frequently pointed to the unique role of the federal government in pioneer life. On the American frontier, citizens were governed directly by their federal government before local or state institutions formed and that direct governance presented unique opportunities and challenges for nation building. Following the Treaty of Guadalupe Hidalgo in 1848, California was governed by federally appointed military governors and troops. Unlike other states that endured long periods of territorial governance, the Gold Rush fast-tracked California’s path to statehood, requiring the creation of a constitution, legislature, and local governance structure in just a few short years. That Gold Rush also created enormous demand for governmental infrastructure and internal improvement in and around the San Francisco Bay.

Without competing state and local governments, federal authority reigned supreme in the minds of western settlers, including those in 1840s California. Richard White writes the American West “is a creation not so much of individual or local efforts, but of federal efforts” and a “dependency of the federal government.”¹⁹ Despite this dependency, or perhaps in part because of it, Western settlers, and particularly those in California, frequently express frustration with federal policy and lament their dependence on distant, gridlocked institutions.

Robert Chandler suggests, “during the pioneer period, when resident quickly needed the most rudimentary federal services, the national government did not provide” for California.²⁰ In the years following the 1849 gold rush, San Francisco’s population boomed to 25,000 and demand for imports of commercial goods soared. Citizens called for local mint facilities to turn gold bullion into dollars. Congress’s delay in establishing a mint on the west coast resulted in the proliferation of a barter economy and transactions that utilized Dutch, English, Mexican, and Indian currency.²¹ Private mints began printing their own currency whose value was hard to track. Customs and taxes both required payment in federal currency, and without any significant supply, collectors struggled to carry out their jobs. Just as private coinage stepped in where the federal government was found
lacking, Wells Fargo began providing fast and efficient overland mail service throughout the American west and in California in particular. The San Francisco post office was marred in patronage and incompetence, and private industry seemed a much better alternative to accepting largess from a federal government that seemed to care only about supporting patrons.\textsuperscript{22} Imports similarly overwhelmed the small existing customs office, which generated the bulk of the government’s revenue. In short, gold rush San Francisco badly needed internal improvements and transportation infrastructure, and the federal government remained the only authority capable of providing such resources.

After years of providing too little too late, Congress began to take notice and facilitate the infrastructure and fortifications required to preserve a booming economy at a great distance.\textsuperscript{23} Senator John Weller, in particular, petitioned Congress for wagon roads, mail subsidies, railroad subsidies and funding for an overland telegraph line.\textsuperscript{24} In each case, California sought greater connection to the nation’s economic and political capitols – integration that would allow the gold economy to facilitate a new national economic expansion.

Elsewhere, federally funded projects frequently faced opposition from (particularly southern) citizens and state governments wary of intervention and consolidation. By contrast, the American West provided a clean slate for nation-building through infrastructure development. By 1850, the federal government had invested for years in internal improvements across eastern and southern states. The success of the postal system, roads and canals, and the burgeoning nationalization of impressive, architecturally consistent public buildings all bolstered the bureaucracy undergirding investment in internal improvement. But fears of federal consolidation blunted the effect of improvement projects. Investment in San Francisco, however, offered Congress an opportunity to “conquer space” not only without opposition, but in a place where citizens cried out for the services the federal government might best provide. The result was a significant increase in federal
investment in distant states, and California in particular, between 1850 and 1860.

In particular, Congress appropriated funds for two highly visible, imposing projects in San Francisco – a customs house and a series of coastal fortifications. Between 1853 and 1856 Congress appropriated a total of $339,672.39 for construction of a customs house in San Francisco that ultimately housed the city’s post office and federal courthouse as well. Congress also appropriated limited funds for the construction of a four-story brick building completed in 1850 that was described as “one of the most imposing edifices in town” and “the object of considerable civic pride.”

That building burned in 1851, necessitating a larger and more fire-proof structure. In response, the federal government commissioned Boston architect Gridley J.F. Bryant to design a combination Post Office, Custom House, and Courthouse in a new, larger location. It was the first major federal public building constructed on the West Coast of the United States. Featuring a portico of Doric columns and Massachusetts granite, the building was described as “the grandest public building in the state.”

The San Francisco Customs House exemplified federal building styles of the era, which sought to place grand, imposing structures of the “federal style” in cities across the country. By the middle of the 19th century, the San Francisco Customs House employed 120 people and dominated the downtown business district. The building provided a visible reminder of the federal presence in the city, while patronage jobs and everyday interactions with customs officers and postal employees ensured that a distant federal government touched the daily lives of citizens across the city. The building was, however, “designed in Boston without regard for the local context of wooden architecture” and ultimately suffered significant earthquake damage in the decades to follow.

The 1850s also saw significant congressional appropriations for two major fortifications on the San Francisco Bay, Fort Point and Fort Alcatraz. When California was governed by military officers between 1846 and 1849, one of their primary responsibilities was to provide protection for
both Indians and white settlers from one another, and to thwart filibustering missions into Mexico. Following the gold rush, leaders shifted their resources towards the protection of the commercially vital Bay from foreign invasion and the guarantee of safe passage for ships importing goods. When California achieved statehood in 1850, San Francisco bay stood completely defenseless. Constructing fortifications in prominent positions at the mouth and center of the bay allowed the federal government to clearly and visibly remind citizens of its presence in the state. Fort Point, for example, exemplified the “Third System” fort style originally developed following the War of 1812. An impressive and imposing structure, Fort Point is described on the National Park Service website as “the pride of the Pacific,” “the Gibraltar of the West Coast,” and “one of the most perfect models of masonry in America.” It is easy to see how the presence of such a fort would serve to remind San Francisco residents of the protection afforded them by their membership in the federal union and their connection to eastern brethren.

The fort on Alcatraz Island similarly received $700,000 in congressional appropriations between 1854 and 1857. Cannons and other fortifications were first installed on Alcatraz Island in 1853 on orders of General John Wool who feared French threats. In 1855, threats of war with Spain led to increased appropriations for coastal fortifications across the country. While the fortifications on Alcatraz remained limited, citizens in San Francisco could certainly see the guns and ringed armaments encircling the island, ready to defend the Bay should the fortification at Fort Point fail. Ultimately, investment in both Fort Point and Fort Alcatraz proved fruitful when southern sympathizers and western secessionists threatened to attack the city of San Francisco during the Civil War. Troops and guns stationed at each fort ensured that citizens were not lured into rebellion given the physical distance separating them from their sovereign protectors.

Internal improvement projects in California thus illustrate the various mechanisms by which federal investment can strengthen a citizen’s attachment to the central government. In some cases,
appropriations produced grand, imposing structures that assisted the local economy and reoriented
the commercial center of major cities. Other projects provided fortifications that protected grateful
citizens and reinforced a sense of nationalism. Despite their remote location, Californians were full
members of the union, and internal improvement offered both material benefits and symbolic
reminders of that affiliation.

DISCUSSION

Throughout the 19th century, American legislators struggled over the benefits of federal
infrastructure investments and the costs of federal consolidation. To advocates, internal
improvements offered a sweeping promise of national unity. Federally funded enterprises, from
public buildings to arsenals, were believed to overcome “the problem of space for a republic,” as
political cohesion was expected to follow from economic integration (Minicucci 2001, 248).
Opponents, however, argued that these expenditures risked corruption and threatened the balance
of powers in a delicate federal system. The rhetoric surrounding internal improvements was bold,
ambitious, and constitutionally controversial, as the nation’s economic development policy would set
the foreground for pitched sectarian conflict and partisan politics in postbellum America (Bensel
2000).

Nevertheless, much of the research on internal improvements has primarily focused on the
presence, or absence, of distributive legislative behavior. In contrast to much of this research, we
present a simple test of the motives put forth by internal improvement advocates. Using a new
dataset of appropriations and expenditures from 1816-1882, we find that patterns in federal
appropriations are consistent with a nation-building strategy. States at the fringes of the Republic
received disproportionate support from the federal government, even after accounting for the
oppressive issue of slavery and the relative power of congressional delegations.
These findings contribute to a growing body of research in American political development and economy, with broader implications for nation building among comparative scholars. More work is needed, however, to bridge our legislature-centered perspective with new work that incorporates the calculations of executive branch officials (Rogowski 2016a, 2016b). Moreover, a district-by-district test of anti-consolidation resistance to internal improvements might be possible after extensive archival work (Mulcare 2008). Future researchers should also consider the approach taken by comparative politics scholars to evaluate the balance of political power within federal systems (Dardanelli, et al. 2019). For example, it might be possible to evaluate asymmetric, centralizing shifts in political authority among those states that disproportionately benefitted from internal improvement projects (Kincaid 2019). Finally, few scholars have systematically analyzed the political consequences of internal improvements. While we find suggestive evidence that projects were funded according to a nation-building perspective, the effectiveness of these projects remains an open question. It is possible, in other words, that a “cement of interest” was applied, but did not hold, at a critical time in the American republic.
Figure 1. Internal Improvement Expenditures, by Project Type (1816-1882)

Note: Data compiled by authors. Original source: “Statement of Appropriations and Expenditures for Public Buildings, Rivers and Harbors, Forts, Arsenals, Armories, and Other Public Works from March 4, 1789 to June 30, 1882.”
Figure 2. Annual Number of Internal Improvement Projects to Receive Congressional Appropriations (1816-1882)

Note: Each dot indicates the total count of appropriated projects in a given year. Darker colors indicate greater total funds appropriated across all projects.
Figure 3. Total Internal Improvement Expenditures from 1816-1882, by State

Note: Territories and Washington, D.C. are excluded from the analysis. Darker shades indicate greater total expenditures received by a given state. White regions indicate federal territories, which we exclude from our analysis.
Figure 4. Distant States Received Greater Military Investment

Note: Relevant coefficients, with 95% confidence intervals, from a “between effects” that is identical to that presented in Table 1 in all but the dependent variable.
Figure 5. Distant States Received Greater Investment in the Prelude to Civil War

Note: Bar chart indicating annual appropriations, per capita in 2018-adjusted USD, for the top five most distant states, as measured by walking routes between state and federal capitals.
Table 1. The Most Distant States Received Greater Investments

*DV*: Internal Improvement Appropriations, Per Capita (2018-adjusted USD)

<table>
<thead>
<tr>
<th>Distant State</th>
<th>Coefficient (SE)</th>
</tr>
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<tbody>
<tr>
<td>Delegation Size</td>
<td>-0.29**</td>
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<tr>
<td>(0.14)</td>
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</tr>
<tr>
<td>Majority Party Lawmakers (House)</td>
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<tr>
<td>(0.18)</td>
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<tr>
<td>Majority Party Lawmakers (Senate)</td>
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<tr>
<td>(0.52)</td>
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<tr>
<td>Rules (House)</td>
<td>4.30</td>
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<td>(2.70)</td>
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<td>Appropriations (House)</td>
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<td>(1.87)</td>
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<tr>
<td>Appropriations (Senate)</td>
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<tr>
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<tr>
<td>Ways and Means (House)</td>
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<tr>
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<td>(1.54)</td>
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<tr>
<td>Public Buildings (Senate)</td>
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<tr>
<td>(1.56)</td>
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<td>(1.36)</td>
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<td>Military (Senate)</td>
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<td>(1.10)</td>
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<tr>
<td>Slave State</td>
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<td>(1.20)</td>
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<tr>
<td>Constant</td>
<td>-9.14</td>
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<tr>
<td>(17.56)</td>
<td></td>
</tr>
</tbody>
</table>

Year Fixed Effects | Yes
Observations       | 1,175
R-Squared           | 0.19

Note: Distant states is a binary measure using the total miles it would take to walk from the state to the federal capital. We use the top five states here; alternative specifications that use the top three or top four states are even more strongly correlated with internal improvement appropriations.
References


### Table A1. List of Relevant Committees

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Chamber</th>
<th>Committee</th>
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<td>House</td>
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<td>House</td>
<td>Expends., Commerce</td>
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<td>Roads and Canals</td>
</tr>
<tr>
<td>Rules</td>
<td>House</td>
<td>Rules</td>
</tr>
</tbody>
</table>

*Note: Variables in our analysis indicate representation on the above committees for each state’s congressional delegation. Source: Swift, et. al. (2009) - ICPSR03371*
Figure A1. Comparison of Internal Improvement Expenditures and Appropriations

correlation = 0.78 (p<0.001)
Figure A2. Ranking of Least and Most Expensive Internal Improvement Project Types

![Diagram of project types ranked from least to most expensive]

5 Quoted in Peterson, *The Great Triumvirate*, also available in original form p.448 of Niles register, volume 9, 1816, here: https://babel.hathitrust.org/cgi/pt?id=iau.31858045135351;view=1up;seq=460
7 Annals of Congress, 18th Congress, 1st Session, p.1035 available here: https://memory.loc.gov/cgi-bin/ampage?collId=llac&fileName=041/llac041.db&recNum=507
9 Critics argued that such a program was fundamentally redistributive. In response, Clay simply scoffed, claiming that without redistributive spending, “we should restore to each man’s pocket precisely what was taken from it” (Larson 2001, 142).
10 One might also connect this research to existing theories of the origin of federal systems. For example, the conditions of peripheral infrastructural capacity and moderate secession risk may allow scholars to bridge this period in American political history with the "holding-together" federalism to emerge in multiethnic Asian states (Breen 2017).
11 Our data begins a few years earlier, but the earlier years of internal improvements included very few investments in singular states. From 1816-1882 we have a continuous time-series for our analyses.
12 We rely upon a formula provided by the *Federal Reserve Bank of Minneapolis* to adjust 19th century dollars to 2018 values. Their consumer price index estimates incorporate five distinct data series from 1800 to the first quarter 2018.
Note that the U.S. dollar experienced considerable deflation between 1816 and 1882. Expenditures are adjusted for comparability and ease of interpretation.

13 It would be interesting to analyze territorial politics in future iterations of this project. Unfortunately, we lack border continuity for many pre- and post-state political units, complicating our analysis significantly. We believe that a careful, stand-alone GIS analysis is needed for these fascinating regions.

14 There are, of course, other reasons to prefer a state-level analysis. From a nation-building perspective, states – not congressional districts – were the operative and competing geopolitical unit. Moreover, the supermajoritarian nature of the Senate made the welfare of states, rather than districts, a critical barrier for any public policy change.

15 This must, in part, reflect their short existence in our dataset. States (and territories) incorporated later in American history had fewer opportunities to receive congressional expenditures, relative to colonial states like New York.

16 Note that our findings remain the same if we include distant slave states in this variable. However, we prefer to separate these categories of states for the theoretical reasons provided above.

17 Here we use the most proximate census data available:

18 Results remain the same if we exclude Civil War years from the analysis.


26 ibid, p.7.


28 See Rogowski and Gibson (2016) for an example of this approach applied to post offices.