

Anticipating Independence, No Premonition of Partition. The Lessons of Bank  
Branch Expansion on the Indian Subcontinent, 1939 to 1946

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We examine investment in bank branches on the Indian subcontinent in 1939 and 1946. In 1947, the states of India and Pakistan were created from the erstwhile colony of British India. Partition was destabilizing to both economies. We use branch expansion as a proxy for entrepreneur's pre-partition predictions of the future of these regions. Our results indicate there were no premonitions of economic dislocation. Banks tended to deepen their presence in regions which were already developed. But controlling for the level of 1931 development, branch placement was highest in exactly those regions, Bengal and the Punjab, which were to experience the greatest negative consequences from political division. After 1947, multiple banks failed; most failing banks were registered in the Punjab or Bengal region. In united India, businessmen saw as much promise in regions which were to become Pakistan as in regions which were to become India. After partition, the Pakistan regions were immediately more economically fragile. This event provides a general lesson. Economic integration had intensified over the years of British rule. The abrupt stop to integration harmed especially the smaller, less diversified region. Politicians should be wary of politically dividing regions which have evolved to function as integrated economic units.

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In the modern period, politicians are advocating dividing up economically integrated regions into their component, national elements. President Trump of the United States wishes to cut back on the integration of North America, and has renegotiated NAFTA. The British have voted for Brexit, which would cut them off from the European Union. The Italians have shown an unwillingness to obey the strictures of European Union Membership. In all cases, the politicians advocating these divisions argue that if their countries had independent sovereignty, politicians would be in a better position to enact growth enhancing policies.

Will the future bring evidence to support this argument? For insight, we can look to the past. On August 15, 1947, the British colony of India was partitioned into the independent states of the Indian Republic and the Federation of Pakistan. The demand for independence came from all parts of the subcontinent. But the partition into two states was largely at the behest of Moslem leaders. These leaders insisted the British create a separate Moslem state at the time the British gave up their rule of the Indian subcontinent. Among other concerns, Moslem leaders believed Moslems could not advance economically in a Hindu dominated state (Talha 2000). The Moslem leaders' arguments were not unlike those of modern politicians supporting political division. The division of the Indian subcontinent, however, since it is in the past, affords us the opportunity of analyzing its impact.

The purpose of this paper is to assess one important economic aspects of that division: the pre-partition investments of entrepreneurs. While there is some concern among modern businesses about the potential divisions being advocated by nationalist politicians, there is also some enthusiasm. Can entrepreneurs accurately anticipate the extent of disruption that will accompany political divisions? The past cannot predict the future; no two events are ever identical. As modern entrepreneurs anticipate these new divisions, however, it is worth learning

how well historical entrepreneurs envisioned the economic consequences of a past similar incident. With hindsight, we know that the Partition of the Indian subcontinent was difficult for both economies. Is there evidence that entrepreneurs anticipated that disruption?

Bank branch expansions in the period leading up to partition are an unexploited source of information on entrepreneurs' expectations of regional economic growth. If entrepreneurs doubt the economic viability of a region, or are concerned for the potential for political disruption, *ceteris paribus*, they will not locate there. While bank branch openings do not tell us about the actual economic prospects of a region, they do tell us of the expected prospects. There was a significant acceleration of bank branch expansion in the pre-Partition years which touched every region of the subcontinent. The reason for the acceleration is not clear. Muranjan (1952) argues that due to the war and restrictions on shipping, capital could not be put into industrial growth, and thus went into banking. The Reserve Bank of India (1970) suggests it was the opportunity presented by the expansion of government debt. The differential between interest paid on deposits and the safe return on government bonds spurred a search for deposits. But whatever the reason for the general expansion, entrepreneurs' choice to locate a bank branch in an area is a vote of confidence in that location.

We constructed a rich new dataset to explore the link between political prospects and bank expansion in pre-Partition India. We first translated the 1951 districts of the Federation of Pakistan and the Republic of India into the 1931 administrative units of the subcontinent. We then examine the placement of bank branches in 1939 and 1946 in what would become 1951 districts, controlling for conditions in that area in 1931. We included controls for initial economic development (district bank branches, number of factories and industrial employment, all measured in 1931), agricultural potential proxied by average district rainfall, and

transportation access (miles of railroads in the district and distance of the district center to the nearest large port).

Specifically, we test whether the regions that would become Pakistan were attractive locations for branch locations, or entrepreneurs were avoiding those regions. We find that after controlling for initial conditions, banks are at least as likely to locate in an area which will subsequently be a district of the Federation of Pakistan as in an area which will subsequently be a district of the Republic of India. Further, banks appear to have shown a preference, again conditioned on initial conditions, to locate in the provinces of the Punjab and Bengal- the provinces which were to be the sites of the most extreme partition associated violence. Interestingly, though bank expansion in general was greater in 1946 than in 1939, there was no change at the later date in the relative likelihood of locating in an area that would become a district of the Federation of Pakistan. Even at that late date, future districts of Pakistan appeared to entrepreneurs to be as attractive as future districts of India.

We then examine bank growth and contraction in the years following Partition, to 1955. Bank expansion virtually ceased. Bank failures intensified. The failures were concentrated in banks which had concentrated their branches in regions subject to the economic disruption of partition, the Punjab and Bengal. Bank failures existed, but were much less pronounced, in banks which pre-partition had concentrated their branches in other regions of British India. We test whether this vulnerability of banks with branches concentrated in districts affected by Partition was due to unsound banking in the years leading up to Partition. We find that in terms of aggregated financial variables, banks vulnerable to Partition did not operate any differently than banks which were not vulnerable to Partition. This supports the hypothesis that the banks failed due to the disruptions of Partition.

Post-partition, bank integration declined across the subcontinent. There were fewer branches of Indian banks in the cities of Pakistan than there had been in 1946. Moreover, there were fewer branches in total in the cities of Pakistan than there had been in 1946, and fewer Pakistan towns with banks.

How do we interpret these results? Most obviously, the data suggest there was no negative expectation associated with potential partition. Entrepreneurs appear to have been sanguine with regard to the future. Districts which had not been developed in the past were catching up. The economy was integrating even further despite the political discussions of division. If we believe that entrepreneurs' investment is a good measure of perceived economic potential, then it is clear that areas that would become the districts of the Federation of Pakistan were viewed pre-partition as just as promising as comparably developed areas which would become districts of the Republic of India. An integrated India presented entrepreneurs with exciting business prospects, signaled by significant new bank expansions. There were no premonitions of partition, or at least of the economic dislocation that would accompany it. But when the subcontinent actually divided, investment stopped. At least in the short run that we studied, approximately the first decade of independent sovereignty, autonomy did not substitute in Pakistan for the unforced economic cooperation of an absence of national borders.

The lesson we can draw from this incident is that modern politicians and entrepreneurs should be wary of dividing geographic units the economies of which have evolved to be integrated units. Under the approximately 100 years of British government rule, British India had formed one economy. Comparative advantage had dictated business locations and connections. The sudden emergence of a political barrier on the subcontinent altered the structure of the, now, two economies, in ways that the data suggest entrepreneurs did not

anticipate. It is possible modern entrepreneurs would be just as unsuccessful in anticipating the disruptions they will face.

The paper has five sections. The next section gives background on the Indian subcontinent and Indian banking. The second section discusses what the data are, and how the data were linked to districts in the years considered. Section III discusses the econometric strategy for assessing entrepreneur's willingness to locate banks in districts. Section IV discusses the results of our analysis, and various extensions. The fifth section discusses the experience of banks after Partition.

### ***Section I. Background: Politics, the Economy and Banking***

Up until 1947, the ultimate authority on the Indian subcontinent was the British. The British ruled directly in the "provinces"- large regional divisions, and had indirect rule in those parts of the subcontinent which were directly controlled by native Princes, regions called "Native States". (See Figure 1.) The Indian subcontinent was not just divided politically. It was divided "communally". There were multiple religions represented. The largest of these "communities" were the Hindus, the Moslems, and the Sikhs. Moslems were concentrated in the Northwest, especially, the Punjab, which also had the largest concentration of Sikhs, and in Bengal. But Moslems made up a sizable minority in many regions. (See Figure 2.) The British considered themselves responsible for maintaining peace between these divisions.

The First World War created a momentum to give Indians greater autonomy. This momentum had brought about the Act of 1935, which established that the provinces of India would be controlled by legislatures elected by Indians. The Center, controlled by the British, after the 1935 act was to have jurisdiction only over certain, prescribed policy areas. The plan

for the future in 1935 was that the Center would gradually cede power to the Provinces, or that the British would gradually cede the Center to Indians. A united India was to have a federal form of government. Both British and Indian statesmen believed in 1935 that such a structure would allow Indians to reconcile an undivided India with the two great impediments to peaceful autonomy: the mutual resistance of Hindus and Moslems to control by the other; and the resistance of the native Princes to a loss of sovereignty (Coupland, 1944). Though the idea of an independent Moslem state had been put forth for the first time by major Moslem organizations in the Lahore Resolution of 1940, up until 1946, some type of federation was still thought possible (Wilcox, 1964).

Ultimately, however, a United India did not appear. Partition created two new states, the Republic of India, and the Federation of Pakistan, composed of West Pakistan (modern Pakistan) and East Pakistan (modern Bangladesh). This creation was associated with enormous destruction. Hindus left what were now the regions of Moslem dominated Pakistan, and Moslems left the regions of Hindu dominated India. Movement in either direction was not peaceful. Older estimates are that about half a million people were killed (Wilcox, 1964). Newer analyses suggest an estimated 17.9 million minorities (Hindus and Sikhs in majority Moslem regions, and Moslems in majority Hindu regions) migrated from one country to another, and 3.4 million “disappeared”, or are missing from the projected population values, perhaps due to mortality associated with partition (Bharadwaj and Quirolo, 2016).

The economies of both regions suffered. There had been no “India” before the British. There were many separate countries. The unity of British control had brought about an integrated economy. The railroad network created with British investment had strengthened regional economic ties (Donaldson, 2018). The fertile areas of the Punjab were irrigated by

systems of canals which crossed multiple regions, including those which were dominantly Moslem, Sikh and Hindu (Wilcox, 1964). Punjabi cotton was shipped to be made into cloth in Bombay, a city dominated by Hindus. Jute, a fiber used to make gunny cloth, was grown in predominantly Moslem areas of Bengal, then shipped to the Hindu dominated city of Calcutta to be processed.<sup>1</sup> Cotton and jute not processed in India was exported from Bombay or Calcutta. Pre-1947 regions had developed according to comparative advantage. Post-1947, both nations worked to cut these long-forged links (Bose, 1982).

There were significant economic differences across regions even in British India. All regions of British India were poor. Nonetheless, on the eve of partition, the economy of British India was one of the largest industrial economies of the world. Indians, representatives of a united India, were present at the founding of the United Nations. An Indian chaired the United Nations committee on Industrial Labour (Coupland, 1944). Industrialized areas were concentrated, however, in just a few areas, primarily the major colonial cities of Bombay, Calcutta and Madras, all areas which would remain in the Republic of India. On the other hand, the main agricultural producing areas were in what would become the Federation of Pakistan.

Wilcox notes:

The effect of partition was to deprive India of 75 percent of its important foreign exchange earning crop, jute; 40 percent of its raw cotton; and a primary source of its wheat. Pakistan found itself with very little more than these three agricultural products. (Wilcox, 1964, p.193.)

Bank branch expansions are a good tool to indicate how well entrepreneurs anticipated the disruptions that followed partition. This is because of the nature of banking in India, and the

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<sup>1</sup> Bharadwaj and Fenske (2012) examine the effect of partition on the jute market.

great extent of the expansion in the years leading up to Partition. In this analysis, we mostly restrict attention to what by 1939 were called “scheduled banks”. These banks met the requirements of the Reserve Bank of India Act of 1936. While they were less than a quarter of all banks in India, they furnished the bulk of paid up capital and reserves. The main reason for focusing on these banks is data availability. All scheduled banks’ branch locations are listed in the publications of the Reserve Bank of India. The list of non-scheduled banks is incomplete.<sup>2</sup> We do, however, also include in the analysis large banks (paid up capital and reserves greater than 5 lakhs) which were not eligible for the schedule as they did not have branches in British India, only in the area of a Native State. This latter category of banks were frequently sponsored by the government of their respective Native Ruler. The year 1931 predates the Reserve Bank’s schedule. To determine comparable banks, we included all banks with paid up capital and reserves greater than 5 lakhs, or 500,000, rupees.<sup>3</sup> One of the requirements to meet the 1936 schedule was to have paid up capital and reserves greater than 5 lakhs. Figures 3 and 4 are maps indicating the location and density of large banks in 1931 and scheduled banks plus Native State banks in 1946.

Pre-partition, banks were present on all parts of the subcontinent. Though there were bank branches scattered across the subcontinent, in both maps, branches were concentrated in “5 big up-country centres of trade and commerce, and the 4 great ports of India”, in which a third of bank branches had been located as late as 1916 (Muranjan, 1952, p. 39). The big inland commercial cities were Karachi, Lahore, Amritsar, Delhi and Kanpur. The ports were Calcutta, Bombay, Madras City and Rangoon in Burma. Note that while the ports, other than Rangoon,

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<sup>2</sup> This statement of completeness for scheduled banks and incompleteness for non-scheduled is given in the notes to the list in every year’s edition of the branch list.

<sup>3</sup> A lakh is an Indian unit of measurement equal to 100,000. One lakh would be written 1,00,000.

were in cities that would be, under any scenario, part of Hindu India, Karachi and Lahore would ultimately be Pakistani cities, and Amritsar is on the western border of the Indian Republic, as well as being located in a district with a large Moslem population in 1947. Thus, the large banking concentrations were distributed between the parts of the subcontinent that would be India, and the parts that would be the Federation of Pakistan.

Though there were large concentrations in certain areas, bank branches were scattered across the subcontinent. This scattering was because the customers banks served were scattered across the subcontinent. Muranjan (1952) made an exhaustive study of bank records, which he published for the first time in 1940, and updated with new documentation in 1945 and 1952. His study is a great resource as he utilized documents which are no longer available. He had access to detailed balance sheet data which included extensive information on bank assets. He writes that, "The creation of banking facilities in any place is largely determined by the volume of deposits or scope for investment which it may furnish," (p. 39). The business of banks in these decades were to support agriculture through mortgages, as well as supporting commerce, and manufactures. Agriculture dominated the economy of British India. But Muranjan notes that bank assets, other than for the Imperial Bank, did not follow a seasonal pattern. Thus, it is likely that the banks tended to be more important in the support of commerce and industry. The large businesses of British India included jute and cotton manufacture, iron and steel, sugar production, cement, coal and engineering construction. Banks also served smaller industries, which Muranjan lists as including, "rice, flour, and [seed] oil milling, sugar refining, lac manufacture [a varnish made from insect bodies], mica mining, cigarette and silk manufacture, cotton ginning and cleaning, tea growing and manufacture, glass manufacture, brass and copper vessel industry, tanning and leather industry, blanket weaving and embroidery industry, etc.," (p.

175). Banks also located branches in centers where the main goal was to absorb deposits to be used in other locations. There is no evidence that any bank was tied exclusively, or even predominantly, to any one industry.

Another important point was that bank branches could be set up with minimal capital. Many branches of the period were set up with just a local representative and a small number of clerks (Kamath, 2006). Comparing the bank directories published by the Reserve Bank of India across years, it appears branches were opened and closed frequently. Perhaps bank managers were experimenting with locations. This characteristic of Indian bank branch networks will contribute to geographic variation and allow us to infer entrepreneurs' expectations.

As we noted in the introduction, there was a large increase in investments in banking in the years before Partition. This is obvious by comparing Figures 3 and 4. This expansion included additional branches of existing banks, and multiple new banks. In 1931, there were 25 large joint stock banks in India. By 1939, there were 39, and by 1946, there were 81. There were a total of 605 branches of large banks in 1931, 1,467 in 1939, and 3,633 in 1946. Of the 81 large banks in 1946, 42 were founded after 1931. The remainder had been founded by 1931, but were not large at that point. Of the newly founded banks, 11 were registered in the east of India, including 8 registered in Calcutta, 12 were registered in the west of India, including 9 registered in Bombay, 15 were registered in the north of India, including seven in Lahore, and four were registered in the south of India. Two banks had larger branch networks than the others. The Imperial Bank, headquartered in Calcutta, had 443 branches in 1946. It operated as the government's bank even past 1947. The Central Bank of India, headquartered in Bombay, had 361 branches in 1946. The Imperial Bank had a large network in order to serve the government, and the Central Bank had a policy of prioritizing geographic expansion (Muranjan, 1952, p.56).

There were several other banks that were nearly as large. The Punjab National Bank, headquartered in Lahore, had 282 branches. The Bharat Bank, headquartered in Delhi, had 214. A further six banks had between 50 and 100 branches. Four were headquartered in the east, and two in the south. Ten banks had between 39 and 49 branches. Four were headquartered in the east, two in each of the other regions (east, west and north). Other than the Imperial Bank and the Central Bank of India, banks tended to cluster their operations in the same region as their head office. Both the number of new banks, and the geographic spread of the head offices of these banks is important for our purpose as it ensures there was bank branch expansion all over India. Again, this will contribute to the variation we need in order to determine the relative attractiveness of different districts, at least in terms of branch placement.

## ***Section II. Data***

In order to evaluate the impact of potential partition choices on the expansion of banks in 1939 and 1946, we construct a rich dataset on the characteristics of the districts in India and the Federation of Pakistan. In this section, we lay out the sources of the data and the creation of variables used in the regressions. Many of the variables are computed using ESRI's ArcGIS software. The Appendix contains a more detailed description of the construction of these variables. Table 1 displays the summary statistics for all variables used in the analysis.

The data cover the areas of modern India, Pakistan and Bangladesh. All data are assigned to the administrative unit of a district in 1951. We work with a panel of 369 geographic units of analysis (namely districts), including 305 districts from India and 64 districts from the Federation of Pakistan (modern Pakistan and Bangladesh). Further details on the construction of historical administrative boundaries in 1951 are provided in the Appendix.

The main variables are the count of branches of big banks in 1931, 1939, and 1946. These data were obtained and digitized from lists of banks and their branches included in the annual publication of the British Government in India, *Statistical Tables Relating to Banks in India*. This publication was subsequently continued by the Republic of India. These lists in 1939 and 1946 include all towns in which there is a scheduled bank branch, the names of banks present in that town, and the number of branches present for each bank.

Among the control variables, there are two separate sets: the geographic set and the historical census set. The geographic set includes the total miles of railway in each district, the distance from the district's centroid to the nearest port, and rainfall data. If banks supported commerce and small industry, the ability to move goods produced should matter. Rainfall is included as an exogenous measure of potential agricultural production (Donaldson, 2018, and Shah and Steinberg, 2017), another important source of bank investment.

Calculating miles of railways required constructing a geo-referenced historical railway spanning British India in 1931. The colonial India railway in 1931 is constructed from the modern shapefiles of the railways of India, Pakistan, and Bangladesh. We use ESRI's ArcGIS software and historical maps with detailed illustrations to recapture the different tracks, segments, and train station nodes of the historical network in a consistent manner. Details for the construction of the railway in 1931 are provided in the Appendix.

The distance from the district centroid to the nearest port is calculated in ArcGIS using the 1951 district boundaries to get the district centroid and the Near feature in the software to calculate the distance to the port. A list of ports is included in the Appendix.

To obtain the average rainfall data by 1951 district, we use monthly rainfall data collected from Willmott and Matsuura (2001) by the University of Delaware. The data we obtained runs from 1900 to 1941. We average 12 months of each year, and then average the whole set of years to get the average rainfall data for each of the meteorological stations scattered throughout British India. These stations are identified by longitude and latitude in the original data. We geo-code them into ArcGIS and assign the rainfall data to each district by using the average value of the station closest to the 1951 district's centroid.

The historical census set includes the area of districts in 1951 using the 1951 Census of India and Census of Pakistan, the district's total and Moslem population from the 1931 Census of British India, and the number of factories as well as average number of workers employed daily in those factories using the annual publication *Large industrial establishments in India* from 1931. The industrial data are included as controls to account for Muranjan's (1952) assessment that the banks supported industry. We assign the 1931 district data to 1951 districts. A full explanation of the matching system used to assign the 1931 population and industrial data is given in the Appendix.

### ***Section III. Econometric Strategy***

We wish to see if there is any relationship between the areas of India which were at risk to separate from a United India and investment in banks. We view new branch placement as a vote of confidence in a district's economic future. To isolate the effect of political issues, we control for the *a priori* economic development in the district. Our estimating equation is below. Partition is a dummy variable. It is 1 if a district is at risk for political dislocation due to partition, and zero otherwise.

Equation (1)

$$\begin{aligned} \text{branches}_{dy} = & \beta_0 + \beta_1 \text{Branches } 1931_d + \beta_2 \text{Factories } 1931_d \\ & + \beta_3 \text{Average Industrial Employment } 1931_d + \beta_4 \text{Average Rainfall}_d \\ & + \beta_5 \text{Railroad Miles } 1931_d + \beta_6 \text{Centroid Distance to Port}_d \\ & + \beta_p \text{Partition}_d \end{aligned}$$

It is easy to write down the estimating equation. What is more complicated is defining the “Partition” variable. The desire for an independent Moslem area was put forth in the Lahore Resolution in 1940. But no specific statement was made about what would constitute that area. Coupland (1944), however, writes, “it is generally understood that Mr. Jinnah [leader of the Moslem League] and his colleagues of the League ‘high command’ have a fairly definite map in their minds” (Coupland, 1944, vol. III p. 81). The map Coupland suggests Jinnah had in mind is depicted as option “j” on Figure 3, Schwartzberg’s (1992) map illustrating the different potential Moslem states which were suggested at various times. Note that most of these include areas greater than the actual boundaries of the Federation of Pakistan (modern Pakistan and Bangladesh).

It is unclear what entrepreneurs in 1939 or 1946 would have considered were areas at risk of being split off from united India. In the regressions that follow, we will consider two possibilities: (1) the ultimate actual districts of the Federation of Pakistan, denoted as Partition 1; and (2) all districts in which the share of Moslems in the population in 1931 is greater than 50 percent, Partition 2. The latter variable should be thought of as a “risk factor” for being split off into a separate nation. This variable should not be thought of as a conventional “instrument”. We are not “instrumenting” for which districts will become the Federation of Pakistan. We are

attempting to construct a reasonable measure of what contemporaries may have perceived were districts at risk.<sup>4</sup> The left hand variable for all regressions will be the branches of a district in a year, either 1939 or 1946.

Though India had modern joint-stock banks since the mid-19<sup>th</sup> century (Muranjan, 1952), banking was still so undeveloped in India that even in 1946 many districts had no banks. With so many observations of the number of scheduled banks in a district truncated on the left at zero, we used count regressions. There are two common types of count regressions: Poisson and Negative Binomial. The Poisson distribution assumes that the variance of the distribution is no greater than the conditional mean. The variance of the count of district bank branches is much greater than the conditional mean, and therefore we estimate Negative Binomial regressions. In a count regression, the estimated coefficients are interpreted as the difference in the log of the expected counts if the right-hand variable were to increase by one unit. As the magnitude of the effect can be difficult to interpret, it is common to transform the estimated coefficients and report Incidence Ratio Rates (IRR). In the tables which follow, results are presented both as the regression coefficient, and as IRR. IRR should be interpreted relative to 1.0. The reported rate for each right-hand variable is the estimated rate ratio for a one unit increase in the right-hand variable, given the other variables in the model are held constant. If the number is above 1, e.g. 1.10, the left-hand variable is expected to increase by 10% if the right-hand variable increases by 1 unit, *ceteris paribus*. That is standard. But if the number is below 1, e.g. 0.90, the left-hand

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<sup>4</sup> There were 6 districts of what would become the Federation of Pakistan which had Muslim population shares in 1931 of below 50 percent. These were all in “Tribal” areas which were included in Pakistan because of their close proximity to majority Muslim districts. There were 7 districts in what would become the Republic of India, but which had Muslim population shares in 1931 of greater than 50 percent. This is a small number of districts relative to our sample, which always included over 360 districts.

variable is expected to decrease by roughly 10% if the right-hand variable increases by 1 unit, *ceteris paribus* (Piza, 2012).

### ***Section III. Results.***

The results reported in Table 2 indicate that a district which would be partitioned away from a united India in 1947, after controlling for conditions in 1931, had no difference in bank branch locations in 1939 or 1946 than a similar district which would ultimately be part of the Republic of India. This is true whether we model districts subject to partition as the actual districts which will become the Federation of Pakistan (Partition 1), or we proxy political risk with a measure which indicates whether or not the district was majority Moslem in 1931 (Partition 2). The coefficients on these variables are insignificantly different from zero. This result supports our contention that entrepreneurs' treated districts which would be part of the Federation of Pakistan exactly as they treated districts which would be part of the Republic of India. There is no evidence of a concern with potential political or economic dislocation.

The estimated coefficients on the controls are interesting. First, they are remarkably stable across specifications. (Coefficients for controls are only reported in panels A and B of Table 1.) The two variables which have the greatest effect on branch placement in a district are the existence of bank branches in the district in 1931 and miles of railroads in 1931 (the unit of the latter is 100 miles). The existence of bank branches in 1931 is the single most important district characteristic in determining the attractiveness of a district for later bank placement. According to the estimated IRR, a unit increase in the number of branches in 1931 would increase branches by about 18 percent, regardless of year and regardless of how partition is modelled. A one unit increase in 1931 branches is only about two-thirds of a standard deviation. Thus a full standard deviation increase in branches in 1931 would have a very large effect on the

number of branches in later years. For every additional 100 miles of railroads, which would be about 72 percent of a one standard deviation increase, branch placement in the district rose by about 20 percent both in 1939 and 1946, regardless of how “partition” is modelled. This is consistent with Donaldson (2018), who found the railroads of India had a strong positive impact on the regional economy. The effect of factories is also quite strong. The estimated IRR suggests that a one unit increase in factories would have a small, about 1 percent, but statistically significant effect on branch placement. Note, however, that the standard deviation of factories across districts is 41.1. Thus, a one standard deviation increase in factories in a district would have a very large impact on bank branches. It is a bit surprising that average number of industrial workers has a negative impact. For every 1 unit increase in average workers, or an increase of 1,000 workers, the number of bank branches in a district declines by about 2 percent, regardless of specification. This counter-intuitive result is likely due to the fact that both the number of factories and the number of workers are entered into the regression. It suggests that there is some attenuation in the attractive effect of more workers per factory at larger numbers. Factories recorded by the government could have from 10 to 10,000 workers. Population has a positive effect, while area has a negative effect, suggesting that density is attractive for bank placement. Surprisingly given the dependence on agriculture of the Indian economy at this time, rainfall has no statistically significant effect on the number of bank branches. Distance to ports is only significant in some specifications.

We chose to analyze the years 1939 and 1946 in part due to data availability. The year 1946 is the year immediately preceding partition. The year 1939 is an interesting one to study as the expansion in bank branches had begun, and it is the year before Jinnah announced the Lahore Resolution. It was, however, also the first year in which the full set of scheduled bank locations

is available. Before that, branch locations are given only for the more important towns in the country.<sup>5</sup> Given that we have the option of examining a year at the beginning of the period, when partition would have been thought unlikely, and compare it to a year very late in the period, we wished to determine if there was evidence that attitudes toward the placement of branches had changed with regard to political uncertainty. Therefore, we pooled the data for 1939 and 1946, introduced a year dummy for 1946, and interacted the year dummy and the partition variable. The estimating regression is now equation 2.

Equation (2)

$$\begin{aligned}
 branches_{dy} = & \beta_0 + \beta_1 Branches\ 1931_d + \beta_2 Factories\ 1931_d \\
 & + \beta_3 Average\ Industrial\ Employment\ 1931_d + \beta_4 Average\ Rainfall_d \\
 & + \beta_5 Railroad\ Miles\ 1931_d + \beta_6 Centroid\ Distance\ to\ Port_d \\
 & + \beta_7 Year\ 1946 + \beta_p Partition_d + \beta_l Year\ 1946 * Partition_d
 \end{aligned}$$

We did not allow all variables to have different coefficients in 1946 because they had been stable across years in previous regressions. The results of this exercise are reported in Table 3. The coefficient on the interaction term,  $\beta_l$ , is statistically insignificant regardless of how partition is modelled. This suggests that there was no change between 1939 and 1946 in the attractiveness of districts which were at risk to be partitioned. This result is consistent with the visual comparison of the coefficients on “partition”,  $\beta_p$ , in columns 1 and 2 of Table 2, panels A and B. There are many more bank branches in 1946 as indicated by the positive sign of the estimated

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<sup>5</sup> Note that implies that we have measurement error in our count of bank branches in 1931. There is no reason, however, to believe this error is more severe for districts which will become part of the Federation of Pakistan.

coefficient on the 1946 year dummy. The attractiveness of districts in regard to political risk, however, appears to have been stable.

Partition is the defining event of the creation of independent states in what had been British India. But the British faced two problems when they left India. The first was what to do about the hostility between Moslems and Hindus. The second was how to protect the sovereignty of the Native Princes, who largely had supported the British Raj (Coupland, 1944). Thus, if there was uncertainty with regard to districts which might be partitioned away from united India to form a Moslem state, there was also certainty with regard to the ultimate political outcome of districts which were until 1946 part of these Native States and not part of British India. We explore this issue by adding a dummy variable for Native State to our regression equation, which becomes equation 3.

Equation (3)

$$\begin{aligned}
 branches_{dy} = & \beta_0 + \beta_1 Branches\ 1931_d + \beta_2 Factories\ 1931_d \\
 & + \beta_3 Average\ Industrial\ Employment\ 1931_d + \beta_4 Average\ Rainfall_d \\
 & + \beta_5 Railroad\ Miles\ 1931_d + \beta_6 Centroid\ Distance\ to\ Port_d \\
 & + \beta_p Partition_d + \beta_{ns} Native\ State_d
 \end{aligned}$$

The coefficient of interest is  $\beta_{ns}$ .

Table 3 reports the results of this exercise. The regression suggests that while there is still no difference between districts that will ultimately be part of Pakistan, and districts which will ultimately be part of India, the districts which were administered by Native Princes before 1947 were significantly less attractive locations in which to locate branches, whether we measure this effect in 1939 or 1946. The estimate of  $\beta_{ns}$  generates a statistically significant IRR of about

.67 in 1939 (regardless of how partition is modelled), and .58 in 1946. That suggests that in 1946, a district which is administered as part of a Native State has about 40% fewer bank branches than a similar district in British India, regardless of the nation state affiliation of the district in 1951. A full examination of this issue is beyond the scope of this project. It is interesting, however, in the context of our examination of partition as it further emphasizes the distinction between areas which had been part of British India, and those which had not. Regardless of the communal makeup of a district, and the prospects for the future, entrepreneurs in 1946 appear to have treated British India as an integrated economy. Muranjan (1952) had noted the “general avoidance of Native State areas by responsible British Indian banks,” (p. 40). He attributed this to the difficulty of repatriating assets in the event there was need.

The Native States appear to have been somewhat separate economies in other aspects. Figure 6 overlays the map of Native States with the map of the railroads. Note that the Native States have a much less dense network. This is visual evidence of the relative lack of integration of the Native States.

As a robustness check on our result, we re-estimated equations 1 and 3 replacing the number of branches in a district as the left hand variable with the number of banks operating in a district. As we noted earlier, banks tended to cluster their branches in the same region as their head office. It is possible that the attractiveness of banking we noted in Partition vulnerable districts was due to just a few aggressive banks headquartered near those regions. Many branches were located there, but that could be the result of the decisions of relatively few bank managers if those bank managers were responsible for locating a disproportionately large number of branches. Replacing bank branches with banks will give each bank manager an equal weight in the regression, regardless of the size of that bank’s branch network. The results of this

exercise are reported in Table 4. The relative unattractiveness of the Native States for bank location remains virtually unchanged (see Panel B). On the other hand, while most of the estimated coefficients for the Partition variables remain statistically insignificant, the coefficient on Partition2 for 1939 is positive and significant. It is insignificant for the 1946 regression. This result reinforces the notion that the districts that were at risk of Partition remained certainly no less attractive than the districts that were not at risk right up until the year before the Partition actually occurred.

#### ***Section IV. The Aftermath of Partition***

Following partition, there was a large contraction of banking in what was now the Federation of Pakistan. There was also a collapse of multiple scheduled banks. Most of those which collapsed had their head office in the two districts most affected by partition: the Punjab and Bengal. The regression results presented in the previous section suggested that entrepreneurs' were sanguine with regard to bank placement even as late as 1946. The evidence presented in this section suggests that the entrepreneurs' faith in the smooth continuity of the subcontinent's economy was misplaced.

Table 5 shows the geographic distribution of scheduled bank branches in 1946. The subcontinent was integrated, at least in regard to banking. About half the banks had both a presence in districts which would be the Federation of Pakistan, and in districts which would be the Republic of India.

After 1947, this situation changed abruptly. The first official statistics available from the new country of Pakistan appear in 1958 (Pakistan State Bank, 1958). Instead of half of scheduled banks headquartered on the Indian subcontinent having branches spread east to west

over the subcontinent, banking was sharply divided along national lines. There were in 1957 only 17 Indian scheduled banks which had branches in Pakistan, and only three scheduled banks headquartered in Pakistan which had a branch in India. The Pakistani banks had one branch each in India (this last point can be seen in *Statistical Tables Relating to Banks in India, 1955*).

There were fewer scheduled banks in total operating in Pakistan and India post partition than had been operating in the districts which would ultimately become these states in 1946. There were 27 scheduled banks operating in Pakistan in 1957, only 7 of which were Pakistani (including the Pakistan State Bank). We compare these data to India in 1955 even though the earliest Pakistani data are for 1957. The Imperial Bank became the nationalized State Bank of India in 1955 with a mandate to expand bank accessibility. We wish to make comparisons before this change had a great effect on the number of branches and banked locations in India. In 1955 in India, there were 72 Indian scheduled banks operating, and a further 6 Native State sponsored banks.

The new state of Pakistan saw an absolute decline in the spread of banks after partition. Among other information, the Pakistan State Bank publication lists the location of all scheduled bank branches on the 30<sup>th</sup> of June, 1957. In 1946, 174 towns in districts which would be Pakistan in 1951, had bank branches. Those same districts had only 116 towns with bank branches in 1955. Of the 85 towns which were listed in both 1946 and 1957, 73 had fewer branches of scheduled banks in 1955 than they had in 1946. For comparison, the total number of branches of scheduled banks and Native State sponsored banks in India in 1955 was 2,521.

Comparing these numbers with those in Table 4, there was a decline in banks and branches in India as well as Pakistan, but the decline was about double in Pakistan.<sup>6</sup>

Of the seven scheduled banks operating in Pakistan in 1958, five had come into being since the creation of the State. Only two, the Australasia Bank and the Habib Bank, had existed previously. The Habib Bank, the largest bank in Pakistan after the Pakistan State Bank, had been headquartered in Bombay City, but moved its registration after partition. The Habib Bank had been the only Moslem owned bank in British India (Talha, 2000).

What happened to the rest of the banks which had done business in future Pakistan districts, but were run by non-Moslem entrepreneurs? Table 6 lists all the scheduled banks which were headquartered in either the Punjab or Bengal in 1946. These were the districts which were geographically split at partition; they experienced most of the mortality and migration (Bharadwaj and Quirolo, 2016). The table gives details about the administrative changes to the banks for all cases in which they were listed in the various years of *Statistical Tables Relating to Banks in India*, and the status of the bank in 1955 according to the same publication. By 1955, few of these banks survived intact. Bengal district banks fared worst. Of the 18 scheduled banks headquartered in Bengal cities in 1946, two, the Allahabad Bank and the United Commercial Bank, were thriving. In 1946, alone of all these banks, the Allahabad Bank had little business in districts that would become Pakistan. The United Industrial Bank was still a going concern, but had lost a third of its branches. A new bank, the United Bank of India, had been created under the sponsorship of the Reserve Bank of India from four banks which otherwise would have

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<sup>6</sup> Ideally, we would explore branch locations in the Federation of Pakistan and Republic of India in a manner similar to that described in section 4. We leave this, however, to future research.

failed. All other Bengal banks had either failed, or were operating under arrangements with the courts.

It is possible that the failures in Bengal were primarily due to over expansion during the war years. Mallick and Marjit (2008) attribute the Bengal bank problems both to partition and to wartime over expansion. The most spectacular failure was that of the Nath Bank, which in 1946 had been the fifth largest bank headquartered in the Bengal district. (The third and fourth largest banks, the Comilla Union Bank and the Comilla Banking Corporation, would have failed if they had not combined with two other, smaller banks to become the United Bank of India.) The Nath Bank only had 18 percent of its branches in districts which would become Pakistan. It was, relatively speaking, underexposed to the problems brought by partition.

On the other hand, it is hard to completely discount the relevance of partition for the difficulties faced by the Bengal banks as those headquartered in the Punjab did almost as poorly. There were 14 banks headquartered in the Punjab in 1946. As mentioned before, the Australasian Bank kept its head office in Lahore, and shifted its business to Pakistan, closing its Indian offices. Five other banks were closed, or working under court supervision. One, the United Sind-Punjab Bank, had its assets taken over by a Calcutta Bank, the United Commercial Bank.

Banks not headquartered in either Bengal or the Punjab also failed in India between 1946 and 1955, but proportionally, not nearly as many. About three-fourths of the banks from Bengal closed, or had to merge. About half of the banks from the Punjab closed or had to merge. Fourteen banks out of the 70 registered in 1946 in areas of India other than Bengal or the Punjab closed or had to merge, about 20 percent. And two of those, Tripura Modern Bank and the National Saving Bank, were very exposed to the danger of partition. They had 39 and 27

percent, respectively, of their branches in districts which would become Pakistan. These two, along with the Punjab and Bengal headquartered banks, were the most exposed to partition dislocation, measured in this manner.

The merger of the United Sind-Punjab Bank and the United Commercial Bank makes an interesting sidenote to our analysis. The United Commercial Bank was part of the business empire of G. D. Birla. The Birla investment house was considered, along with the Tata investment house, to be one of the richest and most forward looking in India. Both investment houses are still operating, and still important. G. D. Birla was politically well connected. He was close both to Gandhi, and to Sardar Patel, who, along with Nehru, was one of the architects of independent India (Kudaisya, 2003). Few could have been more astute at business and politics than Birla. Birla initially did not believe partition would occur. He published a pamphlet entitled, “Basic facts relating to Hindustan and Pakistan”, arguing that Pakistan would not be economically viable (Talha, 2000, p. 147). By the summer of 1947, he must have been aware that partition would occur. His faith in the future of both economies, however, is indicated by his acquisition at that time of the United Sind-Punjab Bank, with all of its 7 branches in what would be Pakistan. At least initially, this was a troublesome acquisition. All of these branches ceased to function post-Partition, and for several years subsequently, because of this acquisition, the United Commercial Bank did not declare dividends while its competitors issued increased dividends (Muranjan, 1952, p. 235).

This anecdote and the data which preceded it raises the question of the attractiveness specifically of the districts of Punjab and Bengal for bank branch placement. We explore this question with our data. The estimating equation is 4.

Type equation here.Equation (4)

$$\begin{aligned} \text{branches}_{dy} = & \beta_0 + \beta_1 \text{Branches } 1931_d + \beta_2 \text{Factories } 1931_d \\ & + \beta_3 \text{Average Industrial Employment } 1931_d + \beta_4 \text{Average Rainfall}_d \\ & + \beta_5 \text{Railroad Miles } 1931_d + \beta_6 \text{Centroid Distance to Port}_d \\ & + \beta_I \text{District in BP, India}_d + \beta_P \text{District in BP, Pakistan}_d \end{aligned}$$

The coefficients of interest are  $\beta_P$  and  $\beta_I$ . *District in BP, Pakistan* and *District in BP, India* are dummies which take on the value of 1 if the district is in the province of Bengal or the Punjab in 1931, and Pakistan or India, respectively, in 1951. These districts all had substantial Moslem populations in 1931. The results of this exercise are displayed in Table 7. Far from entrepreneurs shying away from these districts which were most at risk of political dislocation, these districts appear to have been unusually desirable locations for branch expansion, at least in 1946. The estimated IRR is large in both years and statistically significant at conventional levels in 1946. The estimates suggest these districts attracted about 60 percent more bank branches, *ceteris paribus*, than similar districts on the subcontinent. Entrepreneurs, like Birla, were not just sanguine, but enthusiastic.

Perhaps this very enthusiasm led to overexpansion, along the lines suggested by Mallick and Marjit. If this were the case, the collapse we observe after 1947 may not have been due to Partition, but rather may have been due to a credit boom-bust cycle operating in the Punjab and Bengal districts. We cannot directly test whether branches exposed to Partition operated in a risky manner. Branch level financial data are not available. But we can test the correlation of partition risk, measured as the share of branches at risk of Partition, and risky financial strategies by banks. The aggregate spreadsheet of each bank was published in the same annual document as the bank directories, *Statistical Tables Relating to Banks in India*. We construct two measures

to proxy the risk taking strategy of a bank. Strategy variable one measures the total deposits relative to risky assets. Risky assets are defined as bills discounted and purchased plus loans and overdrafts. Strategy variable 2 is the ratio of risky assets relative to safe assets. Risky assets are defined as before; safe assets are defined as cash in hand, cash held at the bank, and the value of government securities and deposits at other banks. If the banks exposed to Partition risk were more likely to engage in risky behaviors, then we would expect there to be a negative correlation between partition risk and the ratio of deposits to risky assets, and a positive relationship between partition risk and the ratio of risky to safe assets. In our test for these correlations, we included the number of years since founding, and the level of paid up capital and reserves as control. Muranjan (1952) noted that banks which had been in operation multiple years were unlikely to fail, perhaps due to wise management. It also seemed likely that banks with larger reserves might act differently than banks with smaller reserves. The results of this exercise are reported in Table 8. Experience and size have mixed effects on these strategy variables. On the other hand, there is a consistent result that banks' exposure to Partition risk has no measurable effect on their risk taking behavior as measured with these aggregate financial accounts. If anything, the sign of the estimated coefficients suggest that there is a negative correlation between risky behaviors and exposure to partition risk.

### ***Conclusion.***

This paper analyzes the placement of bank branches on the Indian subcontinent in 1939 and 1946. We use the expansion of banks branches in these years in order to assess the expectations and concerns of entrepreneurs with respect to the potential independence and division of British India.

The bank expansion which occurred in these years suggests entrepreneurs were excited at the prospect of native sovereignty. Both the Congress, the secular but Hindu dominated political organization, and the Moslem League had issued plans for post-independence economic development. Both were calling for industrial tariffs and government assistance for at least some industries (Talha, 2000 and Talbot, 1994). It must have seemed likely that industry would expand with independence. And, as intuition would suggest and our results indicate, entrepreneurs located more bank branches in areas with industrial activity.

Our results indicate the entrepreneurs were at least as willing to locate branches in 1939 and 1946 in areas which would, in 1951, be districts of the Federation of Pakistan as in areas that would be part of the Republic of India. In their placement of bank branches, entrepreneurs indicated no concern over the potential for political and economic dislocation which might come with independence. Interestingly, they did show a disinclination to locate bank branches in areas which were administered by Native Princes. On the eve of partition, the economy of British India appeared to be integrated. The economies of the Native States appeared to be separate.

The paper also looks at the aftermath of partition in regard to bank branch placement. By the mid-1950s, bank integration across the subcontinent had retracted. Many of the banks which concentrated their branches in the regions of the Punjab and Bengal, the two British Indian provinces which were geographically divided at partition, had collapsed. Other Bengal and Punjab banks had seen a reduction in the number of their branches. Entrepreneurs in 1939 and 1946 seemed to have approached the potential division of the subcontinent with sanguinity, but they were mistaken. As noted by several scholars (Bose, 1982; Wilcox, 1964 and 1967), it was

possible that the two countries created from British India could have worked cooperatively to jointly expand their economies. In fact, however, they were hostile competitors.<sup>7</sup>

These results are of obvious interest to scholars of the economic history of the Indian subcontinent. They also have wider implications. The Moslem leaders advocated an independent Moslem state in order to give Moslems expanded economic opportunities (Talha, 2000). Similar concerns spur the nativist sentiments heard frequently and loudly in today's economic and political environment. Our results show that in the case of the division of the subcontinent of India, at least in terms of banking and for the decade post-independence, division of a formerly unified political and economic area led to an absolute decline in resources. In 1946, there had been a growing, integrated economy. In the mid-fifties, there were two sets of banking facilities, with the sum of the two less than the size of the original, unified one. The entrepreneurs of British India should have been, and modern politicians should be, more concerned.

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<sup>7</sup> Senqupta (2014) shows that, contrary to most perceptions, bureaucrats from the newly created states did work cooperatively to divide assets. It is unfortunate that this civility did not extend to all areas.

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## ***APPENDIX***

### ***SAMPLE OF DISTRICTS***

Between 1931 and 1951, there are extensive changes in the administrative boundaries in India, first due to the Partition in 1947 and second due to the integration of Princely states into the India subcontinent from 1948 to 1951. Thus, given the scope of the project, we use the administrative boundaries of the Republic of India and of the Federation of Pakistan in 1951 for assembling the dataset. The geo-referenced administrative boundary data of the Republic of India for the year 1951 were obtained from the GIS Data Collection at George Mason University in Fairfax, Virginia, USA. For the administrative boundary data of the Federation of Pakistan in 1951, we geo-referenced the data from the maps created by the Pakistan Bureau of Statistics (PBS) as well as the 1951 Census of Pakistan using the shapefiles of modern Pakistan and Bangladesh from Hijimans, Guarino and Mathur (2012) as the base shapefile. These data provide district-level geographical information system (GIS) data including 316 districts in India and 64 districts in Pakistan. Of the 64 districts of Pakistan in 1951, there are 47 districts located in modern Pakistan and 17 districts located in modern Bangladesh. Of the 316 districts of India, there were 5 districts belonging to foreign governments, including the Portuguese territories of Dadra & Nagar Haveli, Daman, and Goa; and French territories of Pondicherry and Karaikal. There were four districts that were in territory disputed with China, including Abor Hills, Balipara Frontier Tract, Mishmi Hills, and Tirap Frontier Tract. Further, there were two districts that are not relevant and very peripheral to our analysis: Naga Tribal Hills and Lakshdweep Islands. We could not get complete information on these last two districts, and dropped all 11 districts from our sample. Further, we treated the whole Jammu and Kashmir as one single district, following the same approach as in the maps in Singh and Banthia (2004). Regarding the areas which belonged to Azad Kashmir in Pakistan, we merged all those with the single district

of Jammu and Kashmir of India for the sake of simplicity of analysis. In the end, we have a total of 369 districts.

#### *RAILROAD IN 1931*

Meyer (1931) provides several details of the railways of British India in 1931. In order to create a historical GIS railway in ArcGIS, we first obtained the shapefile for the modern railways of India, Pakistan, and Bangladesh from Hijimans, Guarino and Mathur (2012) as the base shapefiles. Since most of the railway segments in 1931 still exist with functionality today, we recreated the historical railways from the modern day ones based on historical maps in *The Imperial Gazetteer of India, Atlas 1931*. We first identified all the nodes and train stations in the historical maps, then we geocoded these stations to display on the layer of modern railway shapefiles. We then geo-referenced the historical maps into ArcGIS in order to have a reference to compare the historical network with the modern one. We used ArcGIS software to merge, add, and drop the segments that did not exist in 1931. Once we finished, we used ArcGIS to calculate the length of railway in each district. Figure 1A provides an illustration of how we created the historical railway with the historical maps being geo-referenced and the red dots being train stations displayed on the maps as well as geo-coded in ArcGIS.

#### *LIST OF MAJOR PORTS IN 1951*

Bombay City, Calcutta, Calicut, Calingapatam, Chittagong, Cocanada, Cochin, Cuddalore, Cuttack, Gopalpur, Karachi, Karwar, Kakinada, Madras City, Malvan, Mandvi, Mangalore, Marmagao Harbour, Masulipatam, Negapatam, Pondicherry, Porbandar, Ratnagiri, Tellicherry, Tuticorin, Veraval, Vizagapatam.

### *PRE-PARTITION DATA MATCHING*

Our analysis uses 1951 district-level boundaries. Much of our data, as mentioned above, were compiled originally using 1931 district-level boundaries. There were major changes in the boundaries between 1931 and 1951, and thus we create a matching system to assign the 1931 data to 1951 districts. Our approach is to use maps of India in 1931 and 1951 of Singh and Banthia (2004) to visually compare district by district, and to decide which 1931 districts did not change boundaries up to 1951, which 1951 districts were merged to or split from or bifurcated from multiple 1931 districts. Once we are able to identify all the districts case by case, we confirm our visualization further with detailed provincial maps from *The Imperial Gazetteer of India, Atlas 1931*. For the districts that changed boundaries significantly from 1931 to 1951, we separate each case into different types of problems. There are easy cases where a 1951 district is a combination of several 1931 districts, and tough cases where a 1931 district split into several small districts in 1951. Assigning historical data for the former would not be a problem but for the tough ones, we look into the sub-district data to compare the sub-district units in 1931 and 1951 to be able to assign population data. However, there are cases in which the population data is not available at the sub-district level in the 1931 Census of British India. We then estimate the 1931 population for the potential matches of 1951 districts using the area ratio in which the 1951 district's area is divided by the 1931 district's area. These special cases account for only 12 out of 305 districts of India in 1951. We use the same approach for the 1951 districts that belong to modern Bangladesh. For the 1951 districts that belong to modern Pakistan, we follow the detailed instructions of mapping districts generously provided by Prashant Bharadwaj and Rinchan Mirza. They constructed the mapping for Bharadwaj and Mirza (2017).

We used the same matching guide for assigning the 1931 industrial data to 1951 districts. The industrial data is given as a list of all factories in a district. For the tough and special cases, we used the names of factories to identify the towns where those factories were located, then tracked down the location of these towns in 1951 to assign the factory to a 1951 district. Since the industrial data is available up to a sub-level of a sub-district unit, we did not have to utilize the area ratio method.

Also, the bank data are available in the same manner as the industrial data- e.g. by town. Hence, we followed the same approach to assign the 1931, 1939, and 1946 bank data to the 1951 district boundaries.

Figure 1. Indian Subcontinent Districts, 1951, Indicating whether the administrative unit in 1931 was British India or a Princely State.

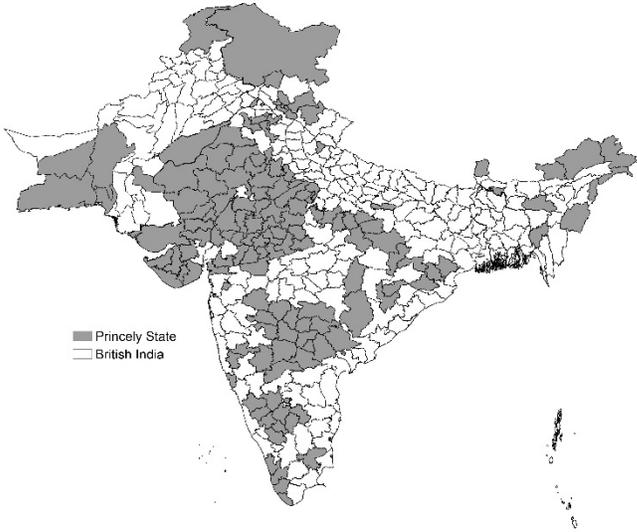


Figure 2. Indian Subcontinent Districts, 1951, Indicating the administrative unit's share of Moslems in the 1931 Population Census.

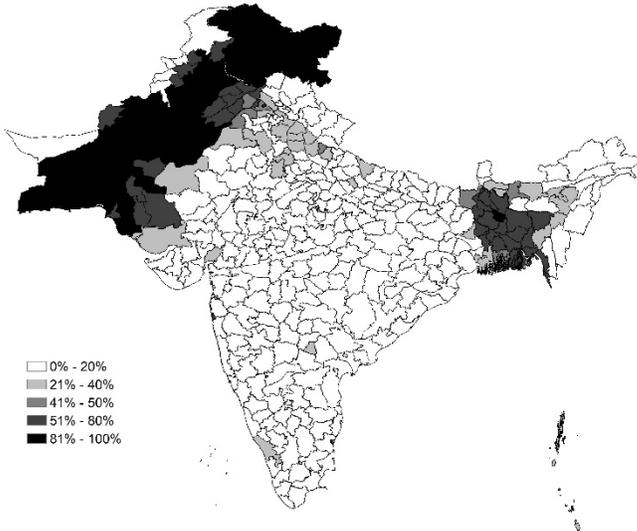


Figure 3. Density of Large Bank Branches in 1931

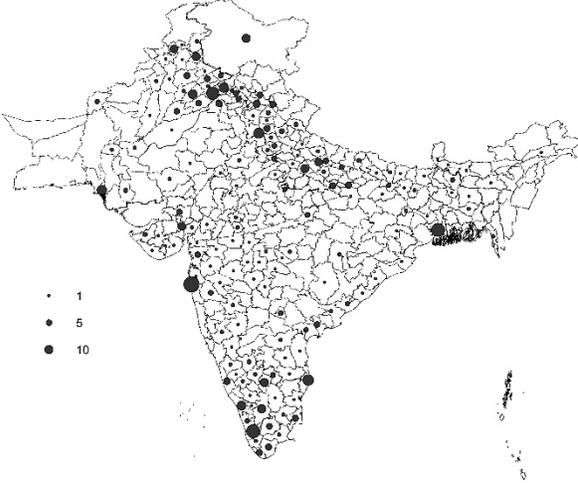


Figure 4. Density of Large Bank Branches in 1946

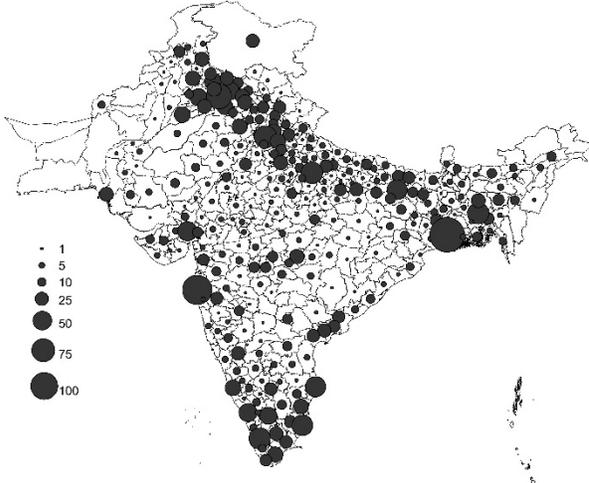


Figure 5. Proposals for Partition from Historical Atlas of South Asia

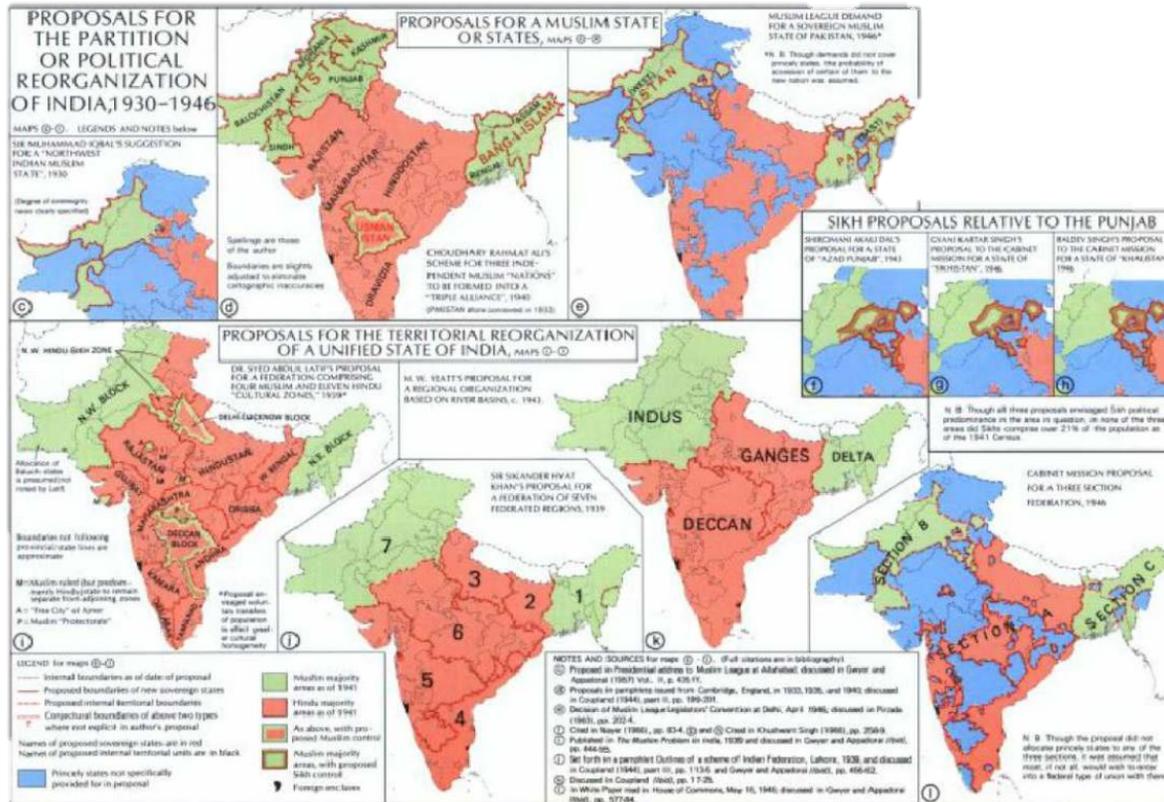


Figure 6. Railway Network of 1931 Overlaid on a Map Indicating the Sovereignty of an Area, British India or a Native State.

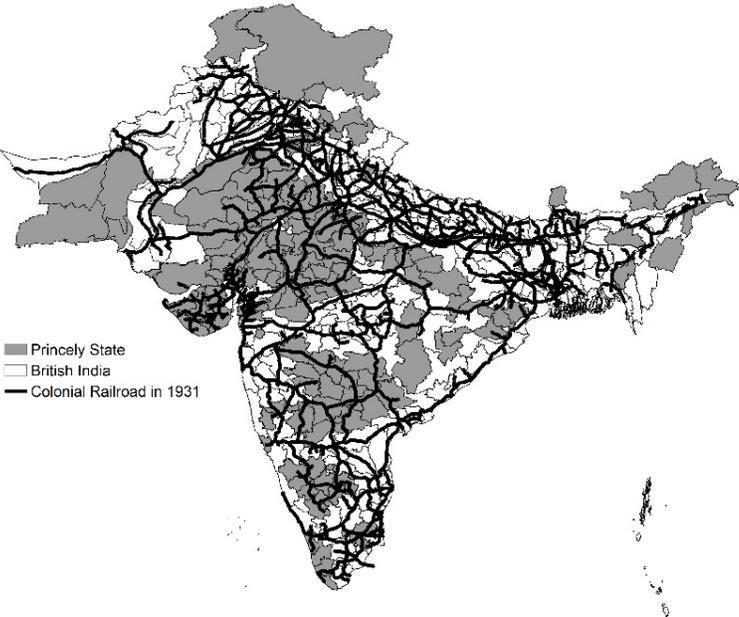


Figure 1A. Illustration of Method of creating 1931 Railway from Modern Railway

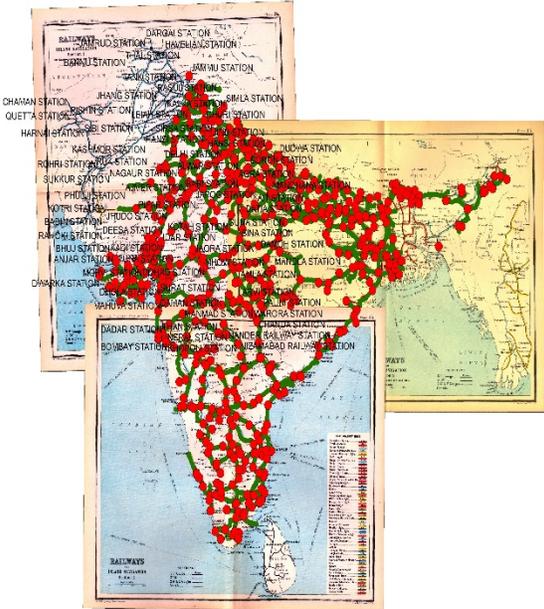


Table 1. Summary Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Miles of railroads in district (100 miles)	369	1.977	1.4	0	7.224
Distance of district centroid to port (1000 miles)	369	102.078	274.513	.005	1288.422
District average rainfall, 1900-41 (centimeters)	369	91.762	62.016	6.68	377.918
District area 1951 (1000 square miles)	369	4.334	5.663	.009	92.78
District population 1931 (1000 persons)	369	931.194	714.942	3.278	5130.262
Number of factories in district 1931	369	20.737	41.16	0	416
District average industrial workers 1931 (1000)	369	4.074	17.522	0	246.665
Number of branches of large bank in district 1931	369	1.631	3.682	0	34
Number of branches of large bank in district 1939	369	3.989	7.631	0	82
Number of branches of large bank in district 1946	369	10.038	16.264	0	167
Number of bank networks in district 1931	369	1.211	2.526	0	24
Number of bank networks in district 1939	369	2.192	3.409	0	37
Number of bank networks in district 1946	369	4.997	6.003	0	45
Banks ratio of deposits to risky assets 1939	39	1.447	0.119	0.161	3.602
Banks ratio of deposits to risky assets 1946	81	2.355	0.269	0.018	19.932
Banks ratio of risky to safe assets 1939	39	3.184	1.049	0.120	39.388
Banks ratio of risky to safe assets 1946	81	1.227	0.282	0.042	22.633
Share of bank's branches in districts of future Pakistan 1939	39	20.103	4.096	0	80
Share of bank's branches in districts of future Pakistan 1946	81	16.370	2.495	0	100
Bank's paid up capital plus reserves 1939 (1000 Rs.)	39	5,651	2,941	222	112,250
Bank's paid up capital plus reserves 1946 (1000 Rs.)	81	6,843	1,700	505	118,000
Bank's average years of operation 1939	39	20.744	2.144	1	58
Bank's average years of operation 1946	81	19.235	1.850	1	81

Table 2. Panel A. The Placement of Bank Branches on the Subcontinent of India in 1939 and 1946. Partition risk modeled as the actual areas which will comprise the Federation of Pakistan

	Bank Branches 1939 (1)	Bank Branches 1946 (2)	Bank Branches 1939&1946 (3)
Partition1	0.03025 (0.2523) 1.0307	-0.3256 (0.2209) 0.7221	-0.04574 (0.1937) 0.9553
Interact Year 1946 & Partition1			-0.1813 (0.1828) 0.8342
Miles of Railroads 1931	0.1980*** (0.0453) 1.2189***	0.2134*** (0.0394) 1.2379***	0.2098*** (0.0301) 1.2334***
Distance To Port	0.0004524 (0.0003) 1.0005	0.0006486* (0.0003) 1.0006*	0.0005519* (0.0002) 1.0006*
Population 1931	0.0007031*** (0.0001) 1.0007***	0.0006411*** (0.0001) 1.0006***	0.0006696*** (0.0001) 1.0007***
Number of Factories 1931	0.009949*** (0.0022) 1.0100***	0.007770*** (0.0020) 1.0078***	0.008869*** (0.0015) 1.0089***
Industrial Workers 1931	-0.01950*** (0.0050) 0.9807***	-0.01633*** (0.0046) 0.9838***	-0.01784*** (0.0035) 0.9823***
Branches 1931	0.1662*** (0.0171) 1.1808***	0.1704** (0.0163) 1.1857***	0.1694*** (0.0120) 1.1846***
Average Rainfall	0.002292* (0.0010) 1.0023*	-0.001271 (0.0008) 0.9987	0.0003722 (0.0006) 1.0004
Area 1951	-0.02427** (0.0081) 0.9760**	-0.02276*** (0.0063) 0.9775***	-0.02313*** (0.0050) 0.9771***

Table 2A continued.

Year 1946 Dummy			1.0512*** (0.0771) 2.8611***
Observations	369	369	738
Alpha	0.5083	0.5457	0.5516

Notes to table. The first line for each variable is the estimated coefficient. Standard errors are in parentheses. The third line is the exponentiated coefficients, or IRR. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . All alpha's are significantly greater than zero, suggesting the negative binomial model is appropriate.

Table 2. Panel B. The Placement of Bank Branches on the Subcontinent of India in 1939 and 1946. Partition risk modeled as areas with more than 50 percent Moslem population

	Bank Branches 1939 (1)	Bank Branches 1946 (2)	Bank Branches 1939&1946 (3)
Partition2	0.2763 (0.2125) 1.3183	0.1328 (0.1899) 1.1420	0.2722 (0.1723) 1.3129
Interact Year 1946 & Partition2			-0.09401 (0.1794) 0.9103
Miles of Railroads 1931	0.2085*** (0.0448) 1.2318***	0.2309*** (0.0394) 1.2597***	0.2241*** (0.0299) 1.2512***
Distance To Port	0.0002135 (0.0003) 1.0002	0.0001717 (0.0003) 1.0002	0.0001762 (0.0002) 1.0002
Population 1931	0.0006740*** (0.0001) 1.0007***	0.0005958*** (0.0001) 1.0006***	0.0006319*** (0.0001) 1.0006***
Number of Factories 1931	0.01011*** (0.0022) 1.0102***	0.007908*** (0.0020) 1.0079***	0.008869*** (0.0015) 1.0091***
Industrial Workers 1931	-0.01949*** (0.0050) 0.9807***	-0.01608*** (0.0046) 0.9840***	-0.01769*** (0.0035) 0.9825***
Branches 1931	0.1664*** (0.0170) 1.1811***	0.1723*** (0.0165) 1.1880***	0.1706*** (0.0120) 1.1860***
Average Rainfall	0.002210* (0.0009) 1.0022*	-0.001353 (0.0008) 0.9986	0.0002921 (0.0006) 1.0003
Area 1951	-0.02597** (0.0081) 0.9744**	-0.02305*** (0.0064) 0.9772***	-0.02419*** (0.0050) 0.9761***

Table 2B continued.

Year 1946 Dummy			1.0398*** (0.0774) 2.8286***
Observations	369	369	738
Alpha	0.5033	0.5475	0.5500

Notes to table. The first line for each variable is the estimated coefficient. Standard errors are in parentheses. The third line is the exponentiated coefficients, or IRR. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . All alpha's are significantly greater than zero, suggesting the negative binomial model is appropriate.

Table 3. Bank Branch Placement with Political Risk from Communities and from Native States

	Bank Branches 1939 (1)	Bank Branches 1946 (2)	Bank Branches 1939 (3)	Bank Branches 1946 (4)
Partition1	-0.06502 (0.2418) 0.9370	-0.4089 (0.2127) 0.6644		
Partition2			0.1770 (0.2044) 1.1936	0.02060 (0.1831) 1.0208
Native State	-0.6798*** (0.1310) 0.5067***	-0.5878*** (0.1074) 0.5556***	-0.6660*** (0.1310) 0.5137***	-0.5707*** (0.1083) 0.5651***
Observations	369	369	369	369
Alpha	0.4377	0.4798	0.4347	0.4850

Notes to table. The first line for each variable is the estimated coefficient. Standard errors are in parentheses. The third line is the exponentiated coefficients, or IRR. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. All alpha's are significantly greater than zero, suggesting the negative binomial model is appropriate. All the control variables included in the regression but not reported here.

Table 4. Re-estimation of Equation 1 and Equation 3 with Banks Operating in a District as the Left Hand Variable, Replacing Number of Branches in a District

Panel A. Re-estimation of Equation 1

	Banks 1939 (1)	Banks 1946 (2)	Banks 1939 (3)	Banks 1946 (4)
Partition1	0.3289 (0.1989) 1.3895	-0.09955 (0.1708) 0.9052		
Partition2			0.4023* (0.1703) 1.4953*	0.1902 (0.1425) 1.0210
Observations	369	369	369	369
Alpha	0.1276	0.1888	0.1264	0.1875

Panel B. Re-estimation of Equation 3

Partition1	0.2311 (0.1953) 1.2600	-0.1704 (0.1690) 0.8433		
Partition2			0.3153 (0.1676) 1.3706	0.1227 (0.1414) 1.0208
Native State	-0.4527*** (0.1196) 0.6359***	-0.3171*** (0.0875) 0.7283***	-0.4422*** (0.1195) 0.6426***	-0.2963*** (0.0878) 0.7436***
Observations	369	369	369	369
Alpha	0.1121	0.1762	0.1107	0.1763

Notes to table. The first line for each variable is the estimated coefficient. Standard errors are in parentheses. The third line is the exponentiated coefficients, or IRR. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. All alpha's are significantly greater than zero, suggesting the negative binomial model is appropriate. All the control variables included in the regression but not reported here.

Table 5. Geographic Distribution of Bank Branches in 1946

Total Bank Branches in 1946	3,726
Bank Branches in Districts which will be in India 1951	3,037
Bank Branches in Districts which will be in Pakistan 1951	689
Total number of Banks	102
Banks with Branches in districts which will be in Pakistan 1951	52
Banks with Branches in districts which will be in Pakistan in 1951 and in districts which will be in India in 1951	49
Number of Banks with more than 25% of their branches in districts which will be in Pakistan 1951	24

Table 6. Panel A. Banks with Headoffices in the Bengal District, 1946.

<b>Bank Name</b>	<b>Head office 1946</b>	<b>Branches in Pakistan (%)</b>	<b>Aftermath of Partition</b>
Allahabad Bank	Calcutta	4	Branches 73 in 1946, to 82 1955.
Bank of Commerce	Calcutta	40	Excluded from schedule April 1948. Granted moratorium 20 Jan, 1950
Calcutta Commercial Bank	Calcutta	23	Ordered wound up by Calcutta High Court Sept. 1947
Calcutta National Bank	Calcutta	17	closed 1955.
Comilla Banking Corp.	Comilla, EP	38	Moved head office to Calcutta. Merged with United Bank to avoid failure
Comilla Union Bank	Comilla, EP	62	Merged with United Bank to avoid failure
Dass Bank	Howrah	33	Working under a scheme arranged by Calcutta High Court May 10, 1949. Refused license for banking business May 15, 1954.
Dinajpore Bank	Dinajpore, EP	40	Moved head office to Calcutta. Not allowed to take new deposits from 3 Oct., 1950. Suspended payment the same day. Resumed 12 December 1950. Granted moratorium by Calcutta High Court May 14, 1951. Scheme of arrangement with Calcutta High Court Feb 11, 1952. Closed 1955.
East Bengal Bank	Narayanganj, EP	67	closed 1955.
Nath Bank	Calcutta	18	Requested help from the RBI Sept. 1948. Liquidation by May 1950. The resulting panic nearly caused bank failure in West Bengal. Led to the creation of the United Bank.
Noakhali Bank	Calcutta	33	Ordered wound up by Calcutta High Court June 1949. Excluded schedule March 1950.
Pacific Bank	Calcutta	13	closed 1955.
Overland Bank	Calcutta	50	closed 1955.
Pioneer Bank	Comilla, EP	31	Moved head office to Calcutta. Wound up by Calcutta High Court July 1949. Excluded schedule April 1950
Rangpur Banking Corp.	Rangpur, EP	100	closed 1955.
Southern Bank	Calcutta	14	closed 1955.
United Commercial Bank	Calcutta	25	Branches 69 in 1946, to 84 1955. Acquired United Sind-Punjab Bank.
United Industrial Bank	Calcutta	44	Branches 10 in 1946, to 7 1955.

Note: EP indicates East Pakistan.

Table 6. Panel B. Banks with Headoffices in the district of the Punjab, 1946.

<b>Bank Name</b>	<b>Head office 1946</b>	<b>Branches in Pakistan (%)</b>	<b>Aftermath of Partition</b>
Australasia Bank	Lahore	40	No longer operated in India. 6 out of 10 branches had been in (now) Indian districts
Bolaki Mal & Son	Lahore	100	closed 1955.
Lakshmi Commercial	Rawalpindi, WP	82	Moved head office to Ludhiana. Moratorium 27-9-1947. Branches from 22 in 1946, to 7 1955.
Narang Bank of India	Lahore, WP	50	Moved head office to Amritsar. Branches from 6 in 1946, to 5 1955.
National Bank of Lahore	Lahore, WP	62	Moved head office to Ludhiana. Branches 35 in 1946, to 13 1955.
New Bank of India	Lahore, WP	54	Moved head office to Amritsar. Moratorium 27-9-1947. Branches 39 in 1946, to 5 1955.
Oriental Bank of Commerce	Lahore, WP	37	Moved head office to Amritsar. Branches 30 in 1946, to 8 1955.
Prabhat Bank	Lahore, WP	44	Moved head office to Delhi. Working under a scheme of arrangement Sept. 9, 1949.
Punjab & Sind Bank	Amritsar	80	Branches 10 in 1946, to 13 1955.
Punjab Cooperative Bank	Amritsar	63	Branches 8 in 1946, to 4 1955.
Punjab National Bank	Lahore, WP	33	Moved head office to Delhi. Branches 282 in 1946, to 324 1955. (Took over assets of failed Bharat Bank)
Traders' Bank	Lahore, WP	52	Moved head office to New Delhi. Working under a scheme of arrangement, June 3, 1948.
National Bank of Lahore	Ludhiana, WP	62	Moved head office to Delhi. Branches 35 in 1946, to 13 1955.
United Sind-Punjab Bank	Karachi, WP	100	Amalgamated with the United Commercial Bank, Calcutta, on 19th April, 1947.

Note: WP indicates West Pakistan.

Table 7. Measuring the Attractiveness of Punjab and Bengal Districts by Branch Placement.

	Bank Branches 1939 (1)	Bank Branches 1946 (2)
Bengal or Punjab 1931, India 1951	0.1793 (0.1902) 1.1964	0.4854** (0.1636) 1.6248**
Bengal or Punjab 1931, Pakistan 1951	0.4547 (0.2424) 1.5758	0.4846* (0.2201) 1.6236*
Observations	369	369
Alpha	0.4934	0.5167

Notes to table. The first line for each variable is the estimated coefficient. Standard errors are in parentheses. The third line is the exponentiated coefficients, or IRR. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . All alpha's are significantly greater than zero, suggesting the negative binomial model is appropriate. All the control variables included in the regression but not reported here.

Table 8. Financial Strategies and Exposure to Partition Risk

	1939		1946	
	deposits/ risky assets	risky assets/ safe assets	deposits/ risky assets	risky assets/ safe assets
Share of branches at risk	0.009519 (0.0058)	-0.06269 (0.0343)	-0.008031 (0.0101)	-0.004561 (0.0072)
Years since founded	-0.01484 (0.0085)	0.1108* (0.0481)	-0.01156 (0.0112)	0.05361 (0.0426)
Paid up capital + reserves	0.000006109* (0.000)	-0.00002453* (0.000)	0.000002931 (0.000)	-0.00002459 (0.000)
constant	1.5290*** (0.2627)	2.2854 (1.6644)	2.6889*** (0.4665)	0.4389 (0.4839)
N	39	39	81	81
R-sq	0.17	0.1	0.01	0.14

Notes to table: Robust standard errors in parentheses

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001