The Big March: The Nature of Migratory Flows during the 1947 Partition of British India

May 2006

PRELIMINARY DRAFT: DO NOT CIRCULATE

Prashant Bharadwaj

Asim Ijaz Khwaja

Atif Mian[1]

The partition of the Indian sub-continent along religious grounds in 1947 into India, Pakistan and what eventually became Bangladesh, resulted in one of the largest and most rapid migrations in human history. This paper makes use of Indian and Pakistani census data, compiled at the district level by the authors, to quantify the size and nature of this migration. We estimate total inflows of 14.49 million and outflows of 16.7 million and 2.2 million "missing" four years after the partition, with much larger flows along the western border. Exploring the determinants of migratory flows, we find that while distance to the border matters, outflows depend heavily on the size of minority religious groups. Districts along the western border see an almost complete exodus of such groups. For inflows, we find evidence of a "replacement effect" – migrants move into districts that experienced greater outflows. Migrants also differ along gender, education and occupational lines. Migrants are more likely to be men, educated and choose non-agricultural professions. This has significant demographic consequences. By 1951 Indian districts with large migratory flows have lower male ratios and fewer people in agricultural professions, whereas in Pakistan, districts with large migratory flows have higher literacy levels. These findings suggest that while the partition led to greater homogenization in terms of religion, this may not have translated into greater cohesion since the migrants differed substantially from the residents along other dimensions such as education and occupation.

[1] Yale University, Harvard University, and University of Chicago respectively.

I. Introduction:

The partition of the Indian sub-continent along religious lines into India and Pakistan in August 1947 resulted in one of the largest and most rapid migrations in human history with an estimated 14.5 million people migrating within four years. Despite the extraordinary size and pace of the Indian migration, there is little analytic work that examines the nature or consequences of this rapid movement. The overall objective of our research study is to address both gaps: First, to systematically quantify the size and nature of this migration and second, to estimate the impact of these flows on sending and receiving communities along a variety of socio-economic outcomes. This paper focuses on the first objective by providing a detailed description of these migratory flows. In subsequent work we hope to start examining some of the consequences of these flows.

Using 1931 and 1951 population census data we estimate that by 1951, 14.49 million people had migrated into India, Pakistan and what later became Bangladesh. In comparison we estimate total outflows from these countries of 16.7 million people during the same period, suggesting 2.2 million people "missing" or unaccounted for during the partition. While both the western (between India and Pakistan) and eastern border (between India and Bangladesh) regions had large populations, migratory flows along the western border were almost three times as much by 1951. These flows were not just large in absolute numbers but also relative to the existing population: Pakistani Punjab saw 19.7% of its population leave while by 1951 25.5% of its population was from across the border – In Indian Punjab, 40.4% of the population left and in 1951 18.8% of the population were migrants. While these flows did result in changes in overall population, given the flows were along religious lines, the compositional changes were likely to be much more substantial.

We extend our analysis of the nature and compositional consequences of migratory flows both by examining the gender, education and occupation of migrants and by mapping census data over time at the lowest feasible administrative unit – the district. Going to the district-level allows us to exploit variation in flows across districts and ask the following three questions: Where did migrants move to? Where did migrants leave from? How did migrants compare with the resident population and were the migratory flows large and different enough to have changed the overall demographics in the receiving districts?

While distance to the border plays a significant role with migrants both more likely to leave from and migrate to closer places, distance is by no means the primary factor, with even close by districts often experiencing very different flows. Given the partition was on religious grounds it is not surprising that the dominant factor determining out-migration, especially along the western border, was religion. Indian districts with greater numbers of Muslims and Pakistani/Bangladeshi districts with greater number of Hindus and Sikhs, saw greater outflows. For expositional convenience we will refer to these religious groups as "minorities". Along the western border this minority exit is quite stark: The percentage of Muslims fell from 32 percent in 1931 to 1.8 percent by 1951 in districts that were to end up in Indian Punjab. Similarly, in the districts that became part of Pakistani Punjab, the percentage of Hindus and Sikhs fell from 22 percent to 0.16%!

What is perhaps surprising is that there is a large "replacement effect" in determining where migrants went – migrants move proportionately more into the same areas/districts that saw greater outflows. For example, Delhi had 0.45 million people moving out to be replaced by 0.5 million people from across the border (about 28% of the population of 1951). This replacement effect is all the more remarkable given that it is over and above any distance effect i.e. even when comparing close by districts we find that those with greater outflows are precisely the ones with greater inflows. For example, Ajmer district, approximately same distance from the border as Delhi, had about 72,500 people move out and 71,300 people move in (only about 10% of the population). Whether these in-migrants were allotted the property of those leaving is a much harder question to answer in the overall data, but at least our results do suggest some evidence for replacement out-migrants with in-comers.

We also find that the migratory flows differed along gender, educational and occupational lines: Migrants were more likely to be men, educated and choose non-agricultural professions. However, the manner and extent to which these migrant differences changed district demographics depended both on the relative size and composition of migratory inflows into and outflows from a district and the pre-existing demographics of the district. This leads to fairly different changes across India, Pakistan and Bangladesh.

In India, migratory flows were associated with changes towards a more balanced gender ratio, decreased agricultural employment and slightly increased education levels in districts experiencing greater migratory flows. An Indian district with a third of its population moving out and an equal number of migrants moving in, saw a two-thirds percentage point lower growth in the percentage of men between 1951-31 as compared to districts experiencing no migratory flows. The former "migrant" districts also had 6.2 percentage points lower growth in the percentage engaged in agricultural professions as compared to districts with no migratory flows.

In contrast, in Pakistan, districts experiencing large migratory flows saw substantially higher growth in educational levels, with little or no gender and occupational changes. Districts which saw a third of their population moving out and being replaced by an equal number, saw a 11 percentage points greater gain in literacy rates between 1951-31 as compared to districts experiencing no migratory flows. The case of Karachi perhaps best exemplifies this: By 1951 it had received 600,000 migrants, more than half of whom were literate. However, what is striking is that existing literacy rates were so low that by 1951 nearly 91% of the total literates in Karachi were migrants!

The major body of work dealing with partition has been qualitative. General texts (Bose & Jalal 1998, Brass 1990, Sarkar 1993, Kudaisya & Yong Tan 2000), anecdotal accounts (Butalia 2000, Shahid et al 1993), urban sociological work (Bopegamage 1957, Qadeer 1957) and fiction (Ghosh 1988, Manto 1997) form the large body of such work. Vinay Lal (Dept of History, UCLA, 2002) sums up the research on partition thus:

> "The bulk of the scholarly literature on the partition has focused on the political processes that led to the vivisection of India, the creation of Pakistan, and the "accompanying" violence. Numerous people

> have attempted to establish who the "guilty" parties might have been, and how far communal thinking had made inroads into secular organizations and sensibilities. Scholarly attention has been riveted on the complex negotiations, and their minutiae, leading to partition as well as on the personalities of Gandhi, Nehru, Jinnah, Azad, Patel, and others, and a substantial body of literature also exists on the manner in which the boundaries were drawn between India and Pakistan, on the western and eastern fronts alike"[2]

Our work, along with recent work (Hill et. al., 2005, Leaning et. al. 2005). hopes to complement the existing literature by taking a quantitative approach that relies on analyzing disaggregated census data from the pre and post partition period. Hill et. al. (2005) undertake a detailed demographic analysis of Bengal and Punjab during the partition. Their work focusing on Bengal discovers a major slowdown in population growth between 19431-1951 that cannot be explained completely by partition and probably reflects mortality due to the Bengal Famine. Leaning et al (2005), in ongoing work examine partition and its impact on public health outcomes.[3] Our current study, by examining most of British India, intends to present a complete picture of the migratory flows during partition. By focusing on the district level, we develop a more detailed understanding of these flows and in particular, examine where the flows were more likely and how they impacted the demographics of sending and receiving communities. In subsequent work we also hope to examine socio-economic and longer term consequences of these flows. Moreover, the broader goals of our project are to compile and make available comparable demographic and socio-economic data for the pre and post partition period that would make analytic work on the partition more feasible and attractive to the research community. In turn, such empirical analysis can both be driven by and add to the existing rich qualitative literature on the partition.

Before presenting our results on the nature of migratory flows due to the partition, it is useful to emphasize a couple of features about the partition that are relevant to the subsequent results.[4] First, the partition of British India, particularly the drawing of actual boundaries, was by all accounts rather sudden and its details unanticipated to some degree. Second, the basis of the partition and therefore the subsequent migratory flows was along religious lines. Finally, given that the partition was accompanied by substantial violence, migrants moved fairly rapidly and the first few years after partition saw large migratory flows. The large scale violence along religious grounds meant that the decision to delay migrating was not without potentially high costs and so the majority was likely to have moved soon after partition. The latter is relevant since we will be using the 1951 national censuses to examine migratory flows. Slower migratory flows would therefore not be captured in our analysis but given the context, this seems to be less of an issue.

The paper is organized as follows: Section II describes the data and some of the important variables used. Section III presents all our results, and Section IV concludes.

---

[2] http://www.sscnet.ucla.edu/southasia/History/Independent/partition.html

[3] https://cfserver.hsph.harvard.edu/cfdocs/worldmap/view_faculty.cfm?ID=892

[4] For comprehensive accounts on the Indian partition see Kudaisya & Yong Tan (2000), Lawrence James (1997), Sherwani (1986), Wallbank (1966) et cetera. Also see Appendix I for a quick summary of the history of partition.

II. Data:

The primary source of data used to compare pre and post-partition demographics are the 1931 census of British India and the 1951 censuses of India and Pakistan.. Since there is controversy regarding the quality and coverage of the 1941 census, with most demographers not considering it to be reliable, we use the 1931 census instead to obtain pre-partition demographics.[5] The censuses contain a wealth of information relevant to this study. In addition to basic population demographics separately tabulated for residents and migrants, we use literacy, religion and occupation information. An important issue in using the two censuses however, is identifying comparable enumeration areas. We describe how we address this issue and the construction of primary measures below.

Census Comparability: District Mapping

British India was divided into states which in turn were subdivided into districts.[6] In order to be able to present a detailed analysis, an important consideration for this study was to compile data at the lowest feasible geographical unit - the district. The district is the lowest administrative unit at which we are consistently able to find demographic data. Moreover, identifying the same geographical units over time becomes nearly impossible if one were to try and use lower administrative units such as *tehsils*.

Mapping districts pre and post partition is a challenging task. Not surprisingly, the boundary creation that accompanied partition was accompanied by substantial reorganization of state and district boundaries not just for those regions that were split across the two countries, but even within these countries. This was particularly true in areas where there were a lot of Princely states since such princely states were by and large integrated into the provinces and districts of the new countries. At times a district was split into two, or smaller districts merged into one for administrative or political reasons. Thus, district names need not match up between the two censuses and even if they do, there is no guarantee that they represent the same geographical area. An important contribution of our work has been constructing district level mappings between the two censuses. We did so by using detailed administrative maps from the two census periods to identify comparable areas and then comparing census data on reported land areas to ensure that our visual match was accurate. In several cases, the only feasible comparison entailed combining (typically adjacent) districts in 1931 and/or 1951. The matching process is described in more detail in Appendix I. Only a few districts could not be mapped: We were able to map 462 of the 472 districts and Princely states of British India in 1931 and 363 of the 373 districts in India and Pakistan in 1951. Since some

[5] The introduction to the 1941 census itself raises concerns about quality and coverage of the census with the census commissioner admitting that "There was a tendency in the more communal quarters to look on the census enumerators as the ready tools of faction" (pg. 9) and that "The main point [about completion of enumeration] which emerges at once is that the great population regions of the Indus and Ganges systems in which nearly half the total population of India lies have only a limited representation in the census figure (pg 11). More details are in Appendix I.

[6] For more on the British spatial system, see Kant (1988).

districts had to be merged we obtain a total of 287 comparable "districts" between the two census years.

Main variables

There are two main variables used in our analysis. Inflows – the number of people moving into an area due to partition and outflows – the number of people moving out. We describe how both are obtained.

Inflow:

An important variable we use in our analysis is the number of people who migrated into a district due to partition – the *inflow* of migrants into the district. These numbers are obtained directly from the census since both the 1951 censuses of India and Pakistan explicitly asked census respondents whether they had migrated during the partition. In the Indian census the term used for such migrants was "displaced persons", while the Pakistani census uses the term "muhajir". Displaced and muhajir specifically measure people that moved from India/Pakistan *due to partition*. Internal migration is not measured by this variable and therefore it provides a good measure of the number of people who moved into both countries due to the partition.[7]

Outflow:

Equally important is a measure of the number of people who left a district due to partition. Unfortunately, the census data provides no direct way of estimating this number.[8] However, the fact that the migratory flows were essentially entirely along religious lines, provides us with a methodology to estimate such outflows. While the methodology is admittedly rough, it does provide us with a sense of the magnitude and variability of outflows.

The methodology we use exploits the fact that the migratory flows were almost entirely along religious lines. Outflows are therefore considered to be Muslims leaving India (for Pakistan/Bangladesh) and Hindus and Sikhs leaving Pakistan and Bangladesh (for India). To simplify terminology we abuse notation slightly, by henceforth referring to these groups as "minorities". Hindus and Sikhs are minorities in Pakistan and Muslims are minorities in India. The remaining groups in both countries will be referred to as the "majority". Note that we do not include other religious groups such as Christians, Buddhists etc. as minorities since these groups were not thought to have been as affected in either country.[9] In order to compute outflows we need to estimate how many minorities left a district. The main issue in arriving at this number is to estimate the counter-factual of how many minorities *would there have been* in a district had partition

[7] These numbers could be inaccurate if individuals misreported their migrant status. However, we have little reason to suspect that there were significant incentives to do so.

[8] Unlike migrants *into* a district than can be directly ascertained by asking a persons status in 1951, there is no simple way to ask how many people left. Perhaps the easiest way would have been to ask the migrants in 1951 which district they migrated *from*, but, to our knowledge, no such information was solicited in the census.

[9] http://www.ishr.org/activities/religiousfreedom/pakistan-india-bangladesh.htm. Consistent with this assumption we find that the percentage of Christians in India and Pakistan stayed relatively constant in 1931 and 1951.

not occurred. Once this counter-factual, *expected minorities*, is estimated, outflows can be computed by subtracting the actual number of minorities in a district in 1951 from the expected minorities estimated for that district. So the main challenge is estimating the expected minorities in a district.

An example will illustrate. Suppose that an Indian district had 100 Muslims in the 1931 census. The 1951 census shows that this district had 50 Muslims. Suppose the expected growth rate for Muslims in the twenty year period between 1931 and 1951 was a doubling of the population. Given the 1931 numbers, the expected number of Muslims in 1951 is therefore 200. This gives total outflows in the district as 150 (i.e. 200 – 50).

The accuracy of this calculation primarily relies on two assumptions. First, that flows due to partition from a district were indeed religion specific (i.e. Muslims were unlikely to leave Pakistan or migrate to India). Second, that we have correctly imputed the minority growth rate. Both the anecdotal evidence and data suggests that the first is likely to be true with the exception of maybe a few districts particularly in Bengal (i.e. along the eastern border).[10] However, estimating the counterfactual minority growth rate is a harder task and of particular concern as even small differences in growth rates can lead to large differences in absolute numbers.

To compute the minority growth rate from 1931 to 1951 we clearly cannot use 1951 minority numbers directly as these numbers changed due to the partition. However, since the 1951 census reports numbers of the majority separately for residents and migrants, we can calculate the a growth rate for the majority group that is not directly affected by the partition flows. This is not enough though since imposing the majority growth rate on the minority population is likely to be problematic since the minority and majority groups typically had different growth rates prior to partition. To address this problem we develop a "scaling factor" which is the ratio of minority to majority growth rates from the previous twenty year period - 1901 to 1921. The 1931-1951 majority growth rate is then rescaled by this factor to obtain the desired 1931-1951 minority growth rate. An alternate and apparently simpler method would have been to directly use the 1931-1941 (or 1901-1921) growth rate[11] of *minorities* to determine the 1931-1951 minority growth rates. While we construct this measure and also present outflow estimates using it in Appendix I, we prefer not to use it, since it makes what turns out to be a much stronger assumption in the data - that population growth rates did not significantly change over time. While this is truer for states along the western border (where the two methods in fact give similar outflow numbers), the high mortality due to the Bengal famine in 1943-44, meant that this was not true for the Eastern States. We discuss these issues in more detail in Appendix I.

[10] Unfortunately since the census does not ask the religion of migrants there is no direct way to test this in the data.

[11] One major reason to not use this growth rate is that the Bengal famine occurred in 1943-44 and reportedly killed about 4 million people. Hence our estimates for expected minorities would then *include* people that died due to the famine, which makes mortality estimates due to partition more difficult to calculate. By using 1931-1951 growth rates of majorities, we do assume that majority and minority groups had an equal probability of dying during the famine.

III. RESULTS

A. Overall Flows

Inflow

The total inflow into all three countries combined, measured in 1951 was 14.49 million or about 3.3% of the total population at the time. However, this percentage hides substantial differences in the relative importance of flows. The absolute number of migrants into India was 7.3 million, into Pakistan 6.5 million and into Bangladesh around 0.7 million. As a percentage of their populations these numbers are 2.04%, 20.9% and 1.66% respectively – migrants into Pakistan were clearly a very substantial presence.[12]

Outflow

While necessarily more tentative given the assumptions needed to construct them, we estimate that there was a total outflow of 16.8 million from all three countries combined.[13] The numbers for the three countries are 8.5 million out of India, about 5.4 million out of Pakistan and 2.9 million out of Bangladesh. For numbers obtained under different methods of computing outflows, please see Appendix I.

Interestingly, while outflows are in similar proportions to the total population as inflows were in India and Pakistan (2.36% and 17.4 % respectively) with Pakistan experiencing relatively large outflows (and inflows), in Bangladesh outflows were much larger than inflows both in absolute and relative terms. As a percentage of Bangladesh's population, outflows were a sizeable 7.03% (as compared 1.6% for inflows).

"Missing" People

Since outflows represents people who left and inflows those who eventually arrived, by subtracting total inflows from this total outflows we can obtain an estimates of the total number of "missing" people. We estimate a total of 2.2 million missing due to the partition. To the extent that the outflow measures are estimated accurately, this missing number includes people who died during partition and those who migrated to another country (apart from India, Pakistan or Bangladesh). While precise numbers are not available for the latter, it is likely that it was not that significant suggesting that, to the extent that the outflow calculations are accurate, the greater part of the missing number is likely to reflect mortality during partition.

[12] To put the number for India in perspective, we calculate from Srivastava and Sasikumar (2003) that internal migration rate in India was around 11% in 1992. Hence an impact of 2% in migration in 1951 is a potentially large effect.

[13] These numbers are estimated in terms of 1951 population levels i.e. given our construction they also include any children born between 1947 and 1951, for the out-migrating families. We do so because the numbers for inflows are also in 1951 and therefore also include children born to the in-migrants. One could convert these numbers into 1947 numbers by discounting by the population growth rate between 1947 and 1951. However, we prefer not to do so both because such accurate birth and mortality rate data is not available and also because these flows did not only occur in 1947 but continued for a few years.

These estimates are fairly large but consistent with accounts in the literature. James (1997, pg 636) notes that "Sir Francis Mudie, the governor of West Punjab, estimated that 500,000 Muslims died trying to enter his province, while the British High Commissioner in Karachi put the full total at 800,000. …This makes nonsense of the claim by Mountbatten and his partisans that only 200,000 were killed". Our estimate for the number of missing Muslims who left western India but did not arrive into west Pakistan is 0.66 million, close to the number cited by James above. The corresponding missing Hindus/Sikhs along the western border (i.e. this arriving in western India) is 0.85 million. Along the eastern border, our estimates are 0.59 missing Muslims in Bangladesh (those Muslims who left India but were not accounted for in arrivals into Bangladesh) and 0.24 million missing Hindus and Sikhs in the eastern Indian States.

B. Differences in Flows across Regions

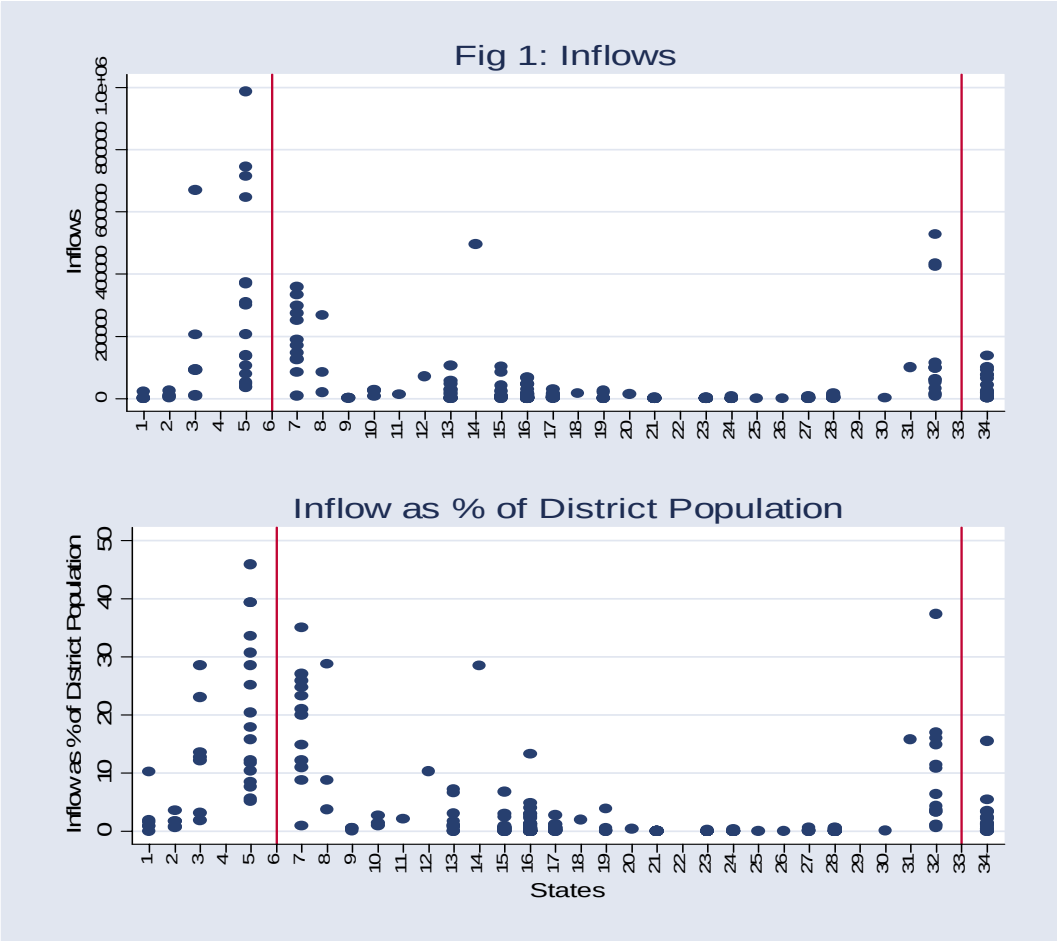
Not surprisingly, migratory flows vary significantly across states with those closer to the borders both sending and receiving greater flows. However, what is somewhat surprising is that there is a substantial variation in these flows across districts *within* the same states suggesting that distance was not the only factor.[14] While we will try to determine the factors that influenced migration, in this section we simply illustrate the differences across districts in migratory flows.

Inflows

Figure 1 shows inflows into each district in terms of absolute numbers and as a percentage of the district population. Since we will make use of such figures subsequently as well, it is important to explain it more carefully. Each point on the figure represents inflows into a particular district. The X-axis of this graph labels that state these districts belong to (thus all districts in a given state are plotted along the same vertical line). States are roughly organized from west to east within each country so the graph is roughly akin to converting a map of the region into a single line "map".[15] The western and eastern borders are plotted as vertical lines for reference. Note that the distance between states in the figure does not reflect actual distance between them. We will provide graphs that show actual distance later.

[14] The distance to border within each state does not differ by much.

[15] The west to east sequence is not always preserved. For example Assam is to the east of East Bengal but since the former is in India and the latter in Bangladesh we distort this single-line "map" slightly in order to keep all states in a country together by putting Assam before East Bengal.



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

Given the compressed scale it appearsas if there are many districts with zero inflows – however, this is not the case. In fact, there are no districts with zero inflows.

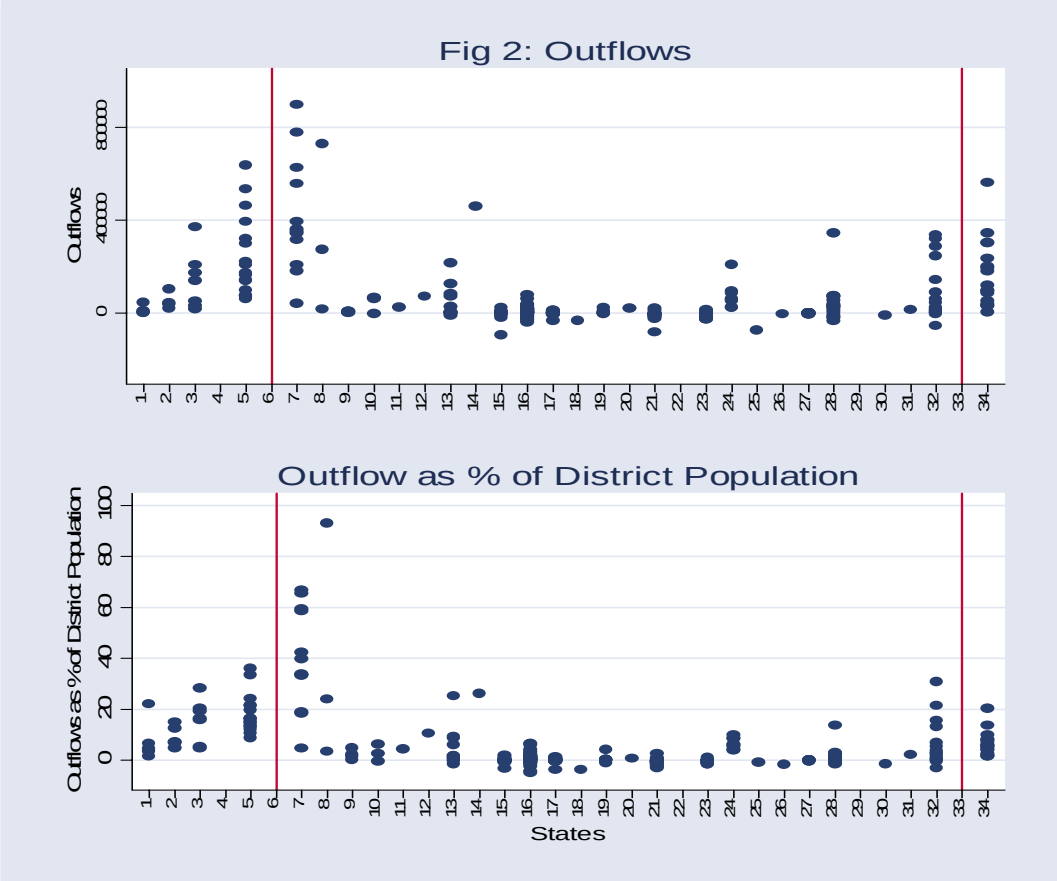
The graphs above illustrate several patterns. First, the migratory inflows that took place in the aftermath of partition were primarily centered around Punjab (Indian and Pakistani), West Bengal and Bangladesh. The separation of over 2000 kms between Punjab and Bengal made for 2 centers of partition. Other states in India, Pakistan or Bangladesh played a minor role in receiving displaced persons.

Second, the western border and the eastern border experienced different dynamics of partition. Till 1951 the flows on the western border were almost 3 times the size of the flows on the eastern border. The west in general received about 10.7 million people while the east received about 3.2 million. Moreover, while there was greater movement *out of* India than into it along the western border (Pakistani Punjab received about twice the number of migrants as compared to Indian Punjab), it was the opposite along the eastern border - West Bengal received about twice the number of migrants as compared to Bangladesh.

Third, despite these large differences across states, there are significant differences in flows across districts. For example, in Indian Punjab, the district of Amritsar received about 332,000 people, while Gurgaon received only 84,000. In Pakistani Punjab, Lyallpur now Faisalabad) received nearly a million migrants while Rawalpindi received about 106,000. Moreover, as the lower panel in Figure 1 makes it clear, these differences are not due to districts in a given state having different populations but also hold if we consider inflows as a percentage of the districts population.

Outflows

The picture for outflows is similar to inflows and the same three patterns emerge (Figure 2).



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

First, people moved out from the same two centers that saw the most inflows – Punjab and Bengal – both in absolute terms and relative to the population of these states. The rest of the states saw substantially lower outflows

Second, as before the western border saw more people moving out than the eastern border although the outflows out of Bangladesh were fairly sizeable.

Third, there was a lot of difference in outflows across districts within the states that had large outflows. For example, in Indian Punjab district outflows vary from 17,000 (Kohistan district) to almost 900,000 (Amritsar district). In Bangladesh, Bogra saw an outflow of only 33,500 while 560,000 people were estimated to have left Dacca.

C. Where did migrants go?

What determined where the migrants moved to during partition? Our analysis reveals three important factors. First, migrants moved to places closer to the border – a distance effect. Second, they moved to the places vacated by those who were migrating out – a "replacement" effect. Third, large cities were more likely to attract migrants.

While we will employ multivariate regression analysis to establish these findings, Figure 3 illustrates their importance for the three countries. The Y-axis is the inflows into a district as a percentage of total inflows into the country. We also display "fitted lines" in the figures which depict the bivariate relationship between percentage inflows and our factors of interest.

The fact that most of the movement took place around the border regions is clear from the graphs 1-3. Moreover, we see in the data that districts within a 20 mile radius of the borders received about 12% of the total inflows. Districts within a 50 mile radius received almost 50% of the total inflows. This is a rather small radius for India and Pakistan where the furthest district was 1225 and 425 miles from the closest border. In Bangladesh, this radius is relatively large since the furthest district was only 75 miles from the border. In terms of districts, this 50 mile radius captures 7.8% of the total districts in India, 20% and 64% in Pakistan and Bangladesh respectively. However, these graphs also show that distance does not explain a lot of the variation across districts.

Graphs 4 to 6 show that at least for Indian and Pakistan, the replacement effect is very significant. The fitted line for Pakistan, and to some extent for India as well, is almost a 45 degree line, implying a one to one replacement effect i.e. migrants moved into districts in almost perfect proportion with out-migration in these districts. This close relationship between people moving out and moving in is suggestive of reallocation of evacuee property to those migrating in. Interestingly, in Bangladesh this replacement effect is less important. As Kudaisya and Tan (2000) note, "while in Punjab the Indian government had facilitated an 'exchange of population', in Bengal it wanted to prevent precisely such an exchange, and took a number of initiatives to this end".

Table 1 examines these effects in multivariate regressions. The dependent variable is the same as that on the Y-axis in Figure 2, inflows as a percentage of total inflows in the country. We run separate regressions for the three countries. All regressions also include the district's population as a percentage of country population to take into account whether migrants may simply have moved to larger districts. We also include a "big city" dummy variable which captures whether the district included a large city in 1931.[16] In addition we also include state level fixed effects to ensure our results are not just driven by comparing different states. Note when we include state fixed effects it is likely that most of the distance effects are unlikely to matter as much since distance does not vary as much across districts within a state. So our primary interest in looking at the regressions with state fixed effects is how robust are the results for the variables which in fact do vary within a state, like outflows from a district.

Intuitively, distance would have a mostly negative effect on where people move; however, this result is only statistically significant in India and generally of small size. Inflows fall with distance to the border though at a decreasing rate (the distance –squared term is positive albeit small) and shows that for the first 100 miles inflows drop by around 0.23%. However, beyond 600 miles from the border (the maximum distance in our data is 940 miles) the additional effect of distance is slightly higher inflows.

[16] Larges cities are the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978).

In contrast, the replacement effect is very large and holds for all three countries though it holds with less statistical significance in Bangladesh. Pakistan shows that this replacement effect to be very important since the regression coefficient is close to one suggesting a one-to-one mapping between those moving and those moving in i.e. for everyone one person leaving in a district they are replaced by (slightly more than) one person entering the district. It also matters in India but not as closely. Since these regressions include the district's relative population and state fixed effects, we can be assured that the replacement effect is indeed capturing replacement and not simply that larger districts saw more in-migration or that certain states were more important. In fact, the insignificant coefficient on district population suggests that this was not an important factor at all.

Finally the results show that large cities attract more migrants. The effect holds strongly for India – having a large city in a district leading to 0.5% more migrants. This variable is not statistically significant for Pakistan and Bangladesh. Part of the problem is however that there were very few big cities in these two countries (for example, Dhaka was the only 'big-city' in our dataset for Bangladesh). Examining large cities in these countries does suggest that they mattered as well. For example Karachi in Pakistan received more migrants than all of the districts in Sind put together. In fact large cities often overcame distance barriers. The Indian city of Madras, a very distant 800 kilometers form the closest border, still received about 4,000 migrants as compared to roughly the same number for the rest of the *entire state* of Madras with 13 other districts and an area almost 1000 times that of Madras city.

D. Where did migrants come from?

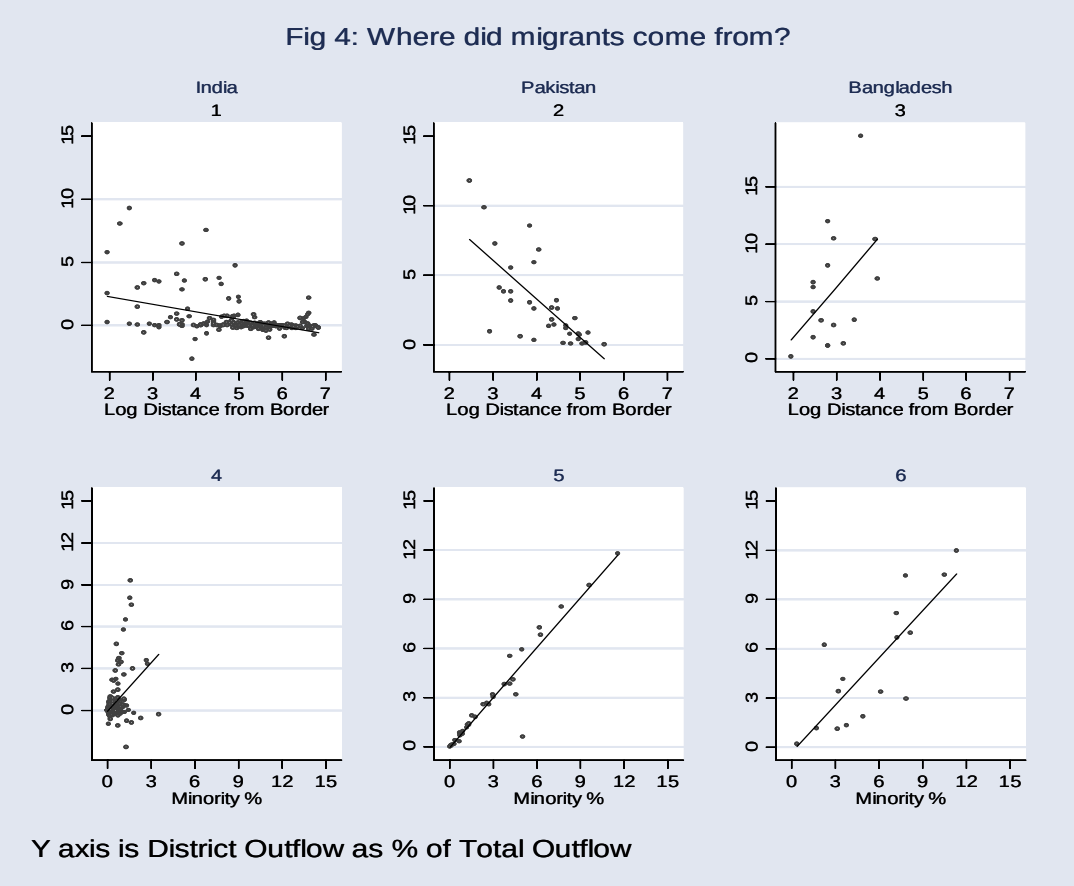
As in the decision of where to go, we find that while migrants typically came from places closer to the border, there was an important "unwelcome" effect analogous to the replacement effect: Outflows were far more likely to come from areas which had a greater proportion of minorities to begin with. Not surprising, since these minorities were likely to be under threat in the newly created countries.

Figure 4 illustrates these relationships. The Y-axis is the outflows from a district as a percentage of total outflows from the country and provides a measure of where the migrants came from.

With the exception of Bangladesh, we can see in Graphs 1-3 that distance had a negative effect on outflows. Migrants were more likely to come from places closer to the border. Nearly 34% of India's outflows were from regions that were within a 20 mile radius of the border, while the analogous number for Pakistan is about 22%. However, as before, the graphs also show that distance is not the only factor.

Graphs 4 to 6 show that outflows from Pakistan and India were determined in large part by the relative importance of minorities. Places with greater minorities saw greater

outflows. The relationship is dramatic in Pakistan where it seems almost one to one suggesting an almost complete exodus of Hindus and Sikhs.



A striking feature of the migration on the Western border was an almost complete "switching" of populations from Indian Punjab to Pakistani Punjab and vice versa. In Indian Punjab, the number of Muslims in 1931 was around 3.5 million and this had reduced to 0.2 million in 1951. In terms of percentages of populations we see a drop from 32 % in 1931 to 1.8% in 1951. In Pakistani Punjab, the numbers are even more drastic – the percentage of Hindus and Sikhs in the population drops from 22% to a mere 0.16%. At the district level the numbers reveal the same movement, in a more dramatic fashion. Amritsar in India, had more than half a million Muslims in 1931, and in 1951 only 4000 Muslims remained. Gujrat district in Pakistani Punjab had over 130,000 Hindus and Sikhs, but after partition only a 100 remained in 1951.

Table 2 presents the multivariate regression results for these factors and confirms the above relationships.

Distance matters as before, and is significant for India. Outflows fall with distance to the border though at a decreasing rate (the distance –squared term is positive albeit small) and shows that in India those areas next to border had 0.36% higher outflows than those regions 100 miles from the border. While this distance effects is still relatively small, it is

larger for outflows than inflows. Thus distance mattered somewhat more when leaving as compared to migrating in

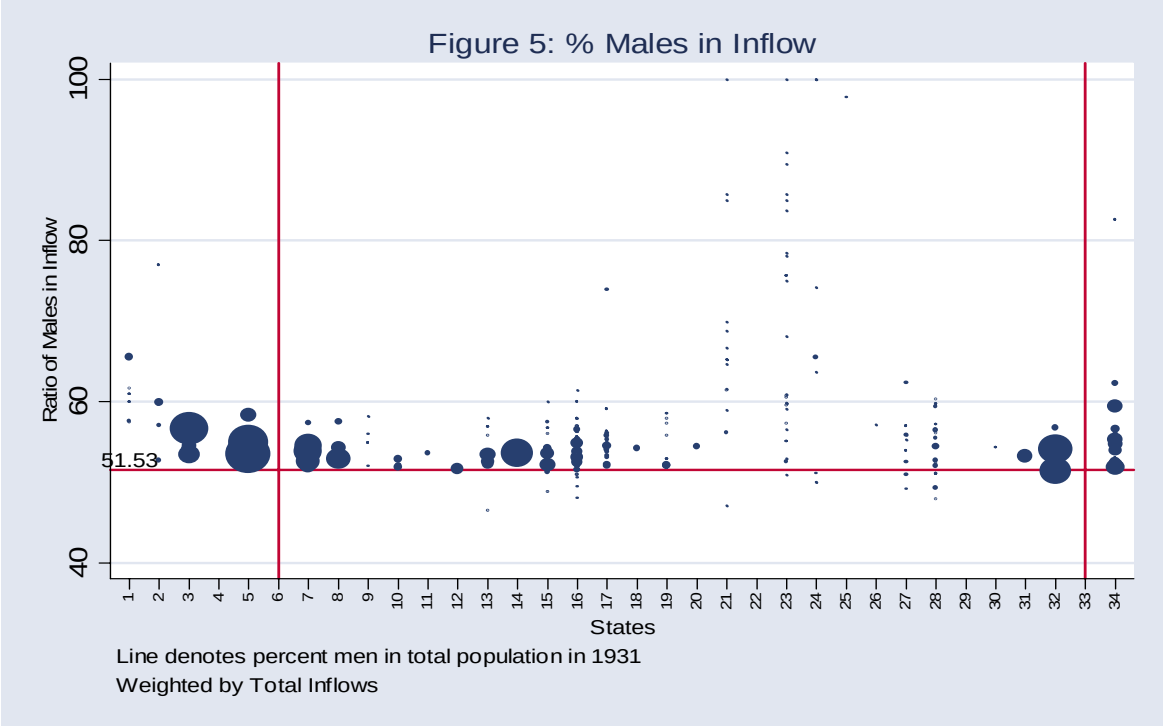
The relative proportion of minorities in the district matters strongly in both India and Pakistan even after controlling for the relative population of the district. In India, for every 1% increase in the minority ratio in 1931 we see a 0.78% increase in the outflows. In Pakistan the analogous number is 0.67% for every 1% increase in the minority ratio.

While Graph 6 for Bangladesh suggested similar population changes on the Eastern side, ib fact it is mis-leading since the same districts with large minority fractions also were large. Once we take this into account in the regression analysis in Table 2 we see no dramatic population exchanges. In fact, the proportion of Hindus and Sikhs went from about 30% in 1931 to 22% in 1951 in Bangladesh. In West Bengal the numbers are similar – Muslims accounted for about 30% of the population in 1931 and feel to 19% in 1951. The fact that neither distance not percentage of minorities seems to matter much in Bangladesh suggests that, as suggested by Kudaisya and Tan (2000, pg 144-161) and others, the decision to migrate in Bangladesh was fairly different from that along the western border.

E. Migration and Gender Differences

Did migrants have different gender composition compared to the general population? If so were these differences large enough to have changed overall gender ratios in a district? Anecdotal evidence suggests that women may have faced greater difficulties in moving and also have been more at risk and the data supports this - migrants were more likely to be men.

Figure 5 plots the percentage of males amongst migrants into each district and shows that in most districts men were indeed more common amongst migrants. The horizontal line gives the gender ratio (men/women) for all of India in 1951 (51.53%) and shows that for the most part the gender ratios for migrants lies above this line.. Districts with larger overall inflows are represented by larger circles. This is important as some districts in south India received very few migrants, but with a high percentage of men. For example, the districts of Hassan, Karimnagar and Chitaldurg in modern Karnataka (Hyderabad in our dataset) received 1, 11 and 2 migrants respectively, and they were all male. This could simply reflect migrant men who had to be in such districts for professional reasons such as government officials.



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

Figure 6 presents a somewhat different comparison. Rather than examining the relative gender ratios for migrants it asks whether the migrants were different from the residents of places where they migrated to (in terms of gender ratios). The Y-axis is the percentage of males in inflows less the percentage of males in the resident (i.e. those who did not migrate) population. Each point therefore illustrates whether migrants moving into that district had relatively more males than the district's residents. As before, in order to get a sense for the overall impact of inflow on gender composition, one should focus more on the larger circles.

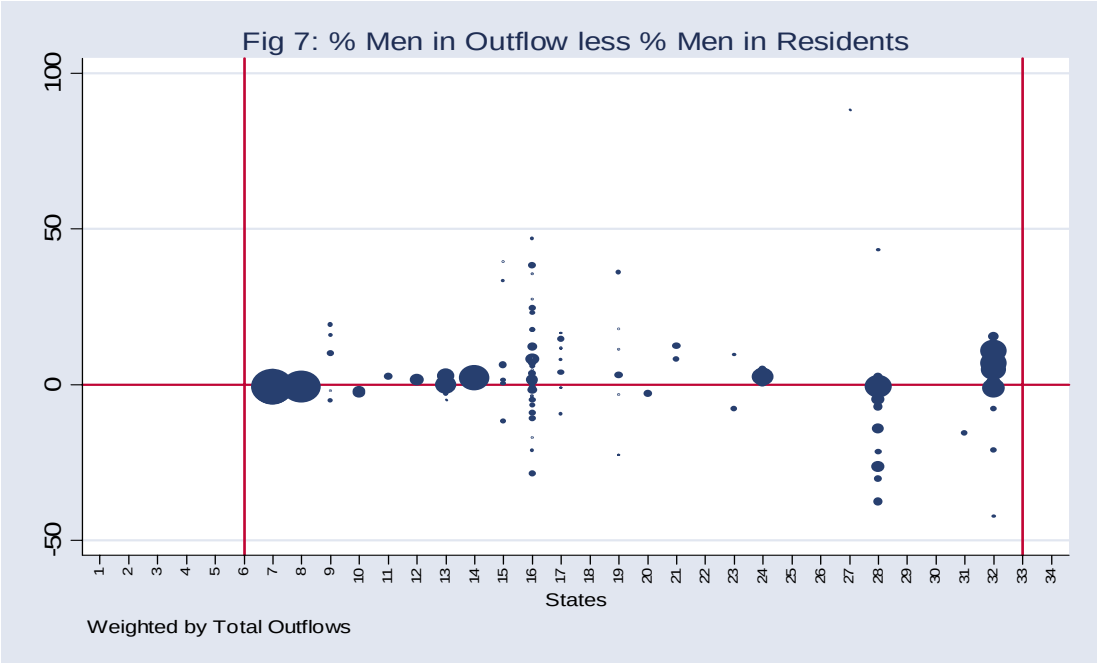
X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

Interestingly now the picture is slightly different. While migrants were indeed more likely to be men, in some districts the male ratios amongst residents was even higher so that the migrants were in fact relatively *less likely* to be male. Figure 6 shows that this is particularly the case in some Indian districts. The 2 large negative outliers above are Calcutta and Bombay.

In fact, statistical tests (Table I, Appendix II) reveal that on average in India percentage men in inflows was 1.09% percentage points *lower* than residents.[17] In comparison, in Pakistan migrants are slightly more likely to be male (0.35%) than residents (this is substantial given that Pakistan districts already had fairly high male ratios) and for Bangladesh this is even starker with migrants being 2.6% more likely to be male as compared to the residents in the districts they migrated to.

While we can present gender ratios for inflows, we generally cannot do it for outflows since in order to do so we would need to have information on religion by gender – this information is not present in the Pakistani 1951 census. However, the 1951 Indian census does have this information so we can look at the percentage of males in outflows for Indian districts. Figure 7 plots the analogous graph to Figure 6 and shows that there were relatively greater men in outflows from India.

[17] These differences are calculated by giving more weight to districts that received larger inflows. This ensures that our results are not driven by those districts that are unusual in the sense that they had very high percentages of male in inflows but a very small number of inflows.



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

Using outflows (where positive) as weights, we see that there were 17% more men in outflows than among the residents. This suggests that the inflows into Pakistan and Bangladesh are predominantly male and this seems true (54% men in inflows for both countries). Again, as for outflows, we should treat these numbers with some caution. See Table 2, Appendix II for details.

Did the districts that experienced greater inflows and outflows also see a change in their overall gender ratios due to these flows? If outflows and inflows were balanced in terms of number and gender ratios we would not expect such an effect. However, such imbalances were quite likely. Moreover, the examination of outflows from India suggest that they had higher males than the districts they were migrating from whereas the inflows coming into India in fact had lower males (both could be explained if Muslim (migrant) populations were more likely to be male than Hindu/Sikh populations). Thus for Indian districts both forces would tend to lower male ratios in 1951 as compared to 1931.

In attempting to answer this question one has to be careful since there may have been changes over time (i.e. between our census years 1931 and 1951) in gender ratios due to other reasons not related to migratory flows. However, one can take this into account by asking whether a district which faced greater flows (whether in or out) was more likely to show a *greater* change than those districts that saw little flows. Assuming both high and low inflow districts experienced the same gender changes due to factors other than the

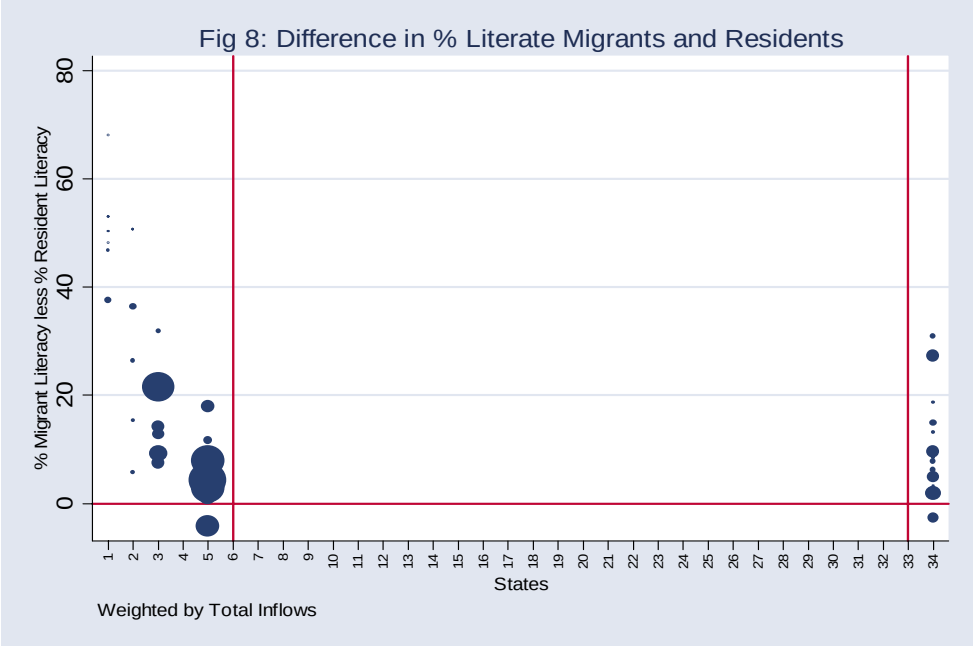
partition, any difference in the changes in gender composition between the two is attributable to the partition induced changes.

Table 3 presents the results of doing so. The dependent variable used in the multivariate analysis is the percentage of men in the district in 1951 less the percentage of men in the district in 1931. The variables of interest are the coefficients on percentage inflows and outflows. The result are extremely interesting for India as they suggest that indeed areas which experienced greater inflows and outflows were for both these reasons likely to see a drop in male ratios: Compared to a district which experienced no inflows or outflows, a district which saw 50% inflows and 50% outflows would see the percentage of men in 1951 drop by around 1 percentage points as compared to what it was in 1931 (column 3)! This is a substantial effect. In contrast the results on Pakistan suggest that districts that were affected by partition flows were more likely to see increases in the male ratios – while this effect is large in magnitude it is not statistically significant. Moreover, once we adjust for outflows inflows seem to weakly lower male ratios – it is really outflows from a district that lead to an increase in male ratios. Bangladesh also seems to display statistically weak and similar effects as Pakistan.

As an aside, we can also examine whether men were more likely to move to different places then women. In order to do so we conduct a similar multivariate analysis as we did for answering where migrants went to except this time we do so for percentage men inflows. The details of this analysis are relegated to the appendix (Table III in Appendix II) but what is worth highlighting here is that men (as compared to women) were generally more likely to migrate to more distant districts and to larger cities.

F. Migration and Educational Differences

How did migrants compare to residents in terms of their educational background? The anecdotal evidence from Pakistan, especially accounts of Karachi, suggest that migrants were more educated. . Figure 8 illustrates this for each district using the same "linear" map of British India we did before. Since data on migrant literacy for India was not tabulated in the 1951 census, we can only provide results for Pakistan and Bangladesh. The Y-axis is the difference in 1951 literacy rates (in percent) between the migrants into a district and the residents (i.e. those who had not migrated). Since we are comparing literacy rates at the same point in time for both, we are not concerned about our differences being confounded by changes in literacy over time. Each point illustrates whether migrants moving into that district were relatively more literate than the district's residents. Districts with larger overall inflows have larger circles on the graph. This is important since at times areas with very few migrants had very high literacy rates. For example Baluchistan in Pakistan had an average migrant literacy of around 63%. But the total number of migrants in Baluchistan was less than 28,000, a relatively small number given the large inflows in other states. So in order to get a sense for the overall impact of inflows on literacy rates, one should focus more on the larger circles.



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

The Figures show that for the most part migrants into Pakistani and Bangladeshi districts were indeed significantly more literate than the resident population and in fact in some cases the differences were quite large. A case in point is Larkana district which received more than 600,000 migrants and the difference in the literacy rates between migrants and residents was a startling 21%. Statistical tests reveal that these differences are statistically significant and relatively large: For Pakistani districts the literacy rate was 7.1 percentage points higher than residents. The corresponding difference for Bangladesh is 8.1 percentage points.[18] See Table IV, Appendix II for details.

In fact these differences were not only for basic educational measures such as literacy rates, but also for educational quality in general. If we categorize educational achievement as either attainment of primary and middle education (upto class 8) or even matriculation (10th class) and higher, we find that migrants were more educated than residents in Pakistan. In Bangladesh, the differences hold for basic literacy and higher education but primary and middle school education was not significantly different between migrants and residents. Together these results suggest that for the most part not only were the migrants in Pakistan and Bangladesh substantially more educated than residents, they also had a higher *level* of education. See Table IV, Appendix II for details.

Were these literacy differences and migration levels large enough to change the overall literacy rates in a district? If those moving out were also more literate then one would not

[18] These differences are calculated by giving more weight to district that received larger inflows. This ensures that our results are not driven by those districts that are unusual in the sense that they had relatively high literacy rates in inflows but a very small number of inflows.

expect this, i.e. literates leaving from area are replaced by literates entering it. However, if the inflows and outflows into a district were not balanced in terms of literacy rates, this could result in migration producing overall changes in the districts occupational choice. In attempting to answer this question one has to be careful since there are changes over time (i.e. between our census years 1931 and 1951) in literacy rates gender due to reasons not related to migratory flows. However, as we did when examining changes in district gender ratios accounted for by the partition, we can take this into account by asking whether a district which faced greater flows (whether in or out) was more likely to show a *greater* change in literacy rates than those districts that saw little flows.

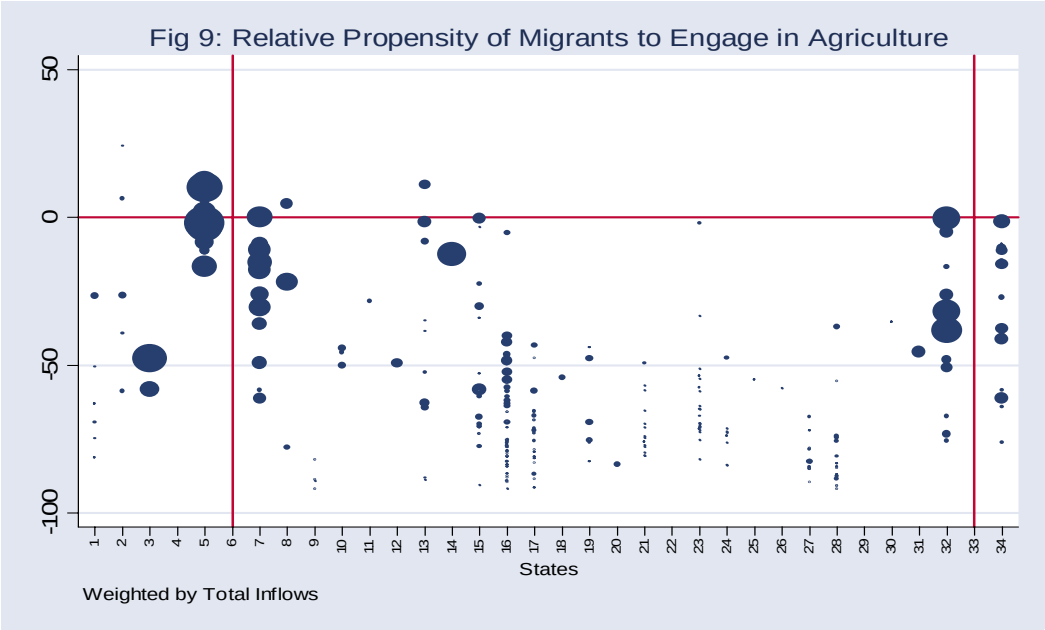
Table 4 presents the results of doing so and shows that for Pakistan districts that experienced greater migratory flows indeed saw higher changes in literary over time. The effects are very large and statistically significant and suggest that (column 6 Table 4) compared to a district which experienced no inflows or outflows (whose literacy rate increased by 2.8 percentage points between 1931 and 1951), a district which saw 50% inflows and 50% outflows would see its literacy rate go up by an *additional* 16 percentage points between 1931 and 1951. In comparison, India sees less literacy change (though still positive and significant) in districts that experienced greater flows. For Bangladesh the effects are if anything negative, suggesting that districts that received greater inflows actually had slightly lower literacy gains. This is supported by the anecdotal evidence provided by Kudaisya and Yong Tan in their discussion of Dacca in the aftermath of partition: "The very high rate of population growth was also due to the fact that, with the drawing of trans-national boundaries, the traditional destination of the rural poor which used to be Calcutta now became Dacca." (2000: pg 168). They add that, "emigrating Muslims [from West Bengal] were also relatively poor and did not possess substantial immovable properties of land" (2000: pg 173).

As an aside, we can also examine whether literate migrants were more likely to move to different places then the illiterate. In order to do so we conduct a similar multivariate analysis as we did for answering where migrants went to except this time we do so using literacy rate in district inflows as the outcome of interest. The details of this analysis are relegated to the appendix (Table 5 in Appendix II). Not surprisingly, the literate are significantly more likely to move to further (from the border) and more educated districts and to larger cities.

G. Migration and Occupational Differences

Did migrants differ in what occupations they took up after migrating? Were these occupational differences large enough to affect the overall occupational distribution of a district? Our results show that migrants were more likely to enter non-agricultural professions. Figure 9 illustrates this result by plotting the relative propensity of migrants to enter agricultural professions i.e. the percentage of migrants in agricultural professions less that percentage of residents in agriculture in the district in 1951. Since we are comparing occupational choices at the same point in time for both, we are not concerned

about our differences being confounded by changes in occupations over time. Each point illustrates whether migrants moving into that district were relatively more (positive values) or less (negative values) likely to be in agriculture. Districts with larger overall inflows are displayed as larger circles on the graph.



X-axis State Names Key **- Pakistan:** 1=Baluchistan, 2=NWFP, 3=Sind, 4=Bahawalpur, 5=Punjab (Pakistan), 6=Western Border **India:** 7=Punjab, 8=Pepsu, 9=Himachal Pradesh, 10=Saurashtra, 11=Kutch, 12=Ajmer, 13=Rajasthan, 14=Delhi, 15=Bombay, 16=Uttar Pradesh, 17=Madhya Pradesh, 18=Bhopal, 19=Madhya Bharat, 20=Vindhya Pradesh, 21=Hyderabad, 22=Andhra, 23=Madras, 24=Mysore, 25=Travancore Cochin, 26=Coorg, 27=Orissa, 28=Bihar, 29=Assam, 30=Manipur, 31=Tripura, 32=West Bengal, 33=Eastern Border. **Bangladesh:** 34=East Bengal

The Figure shows migrants in all three countries were significantly less likely to be in agricultural professions although this difference is largest for Indian and Bangladeshi districts. This is not surprising given that "While the 'exchange in population' had almost been even between the two parts of the Punjab, there existed a wide disparity in the land that became available for cultivation in East Punjab [Indian Punjab]. The Hindu and Sikh refugees had left behind forty-three lakh acres of irrigated land, against which existed only thirteen lakh acres of irrigated land evacuated by the Muslims of East Punjab. (Tan & Kudaisya, 2000, pg 127). Statistical tests (Table 6, Appendix II) reveal that these differences are indeed large and significant: For Indian and Bangladeshi districts migrants propensity to be in agricultural professions was about 28% percentage points lower respectively. The corresponding difference for Pakistan is only 7 percentage points.[19]

In India, we can explore these relationships even further as the Indian census in 1951 provides more detailed classification of occupation (Table 7, Appendix II). Migrants had a greater propensity to engage in all non-agricultural professions, except the production of raw materials. Moreover, while migrants were less likely to be in agricultural

[19] These differences are calculated by giving more weight to district that received larger inflows. This ensures that our results are not driven by those districts that are unusual in the sense that they had relatively high literacy rates in inflows but a very small number of inflows.

professions, those migrants that did go into agriculture, were much more likely to own their land or cultivate on un-owned land, rather than cultivate on land owned by someone else.

Did the districts that experienced greater inflows and outflows also see a change in their overall occupational rates due to these flows? If those moving out were also non-agriculturists then one would not expect this i.e. non-agriculturists from one region simply replace non-agriculturists in another. However, if migration induced people to change professions or the inflows and outflows into a district were not balanced, this could result in migration producing overall changes in the districts occupational choice.

In attempting to answer this question one has to be careful since there are changes over time (i.e. between our census years 1931 and 1951) in occupational choices due to reasons not related to migratory flows. In particular countries typically over time show a decline in agricultural occupations. We account for this by asking whether a district which faced greater flows was more likely to show a *greater* change in agricultural occupations than those districts that saw little flows.

Table V presents the results of doing so. The dependent variable used in the multivariate analysis is the percentage of those in agriculture in the district in 1951 less the percentage in agriculture in 1931. The variables of interest are the coefficients on percentage inflows and outflows. The data for 1931 occupation is incomplete for parts of India and Pakistan. This is due to non-availability as well as some reshaping problems. While this leads to low sample sizes and therefore lower statistical precision, the districts that experienced the largest inflows such as those in Punjab and Bengal are included.

The results show that migratory flows affected agricultural propensities primarily in India. As compared to a district that experienced no migratory flows (such a district saw a 4.4 percentage points increase in individuals in agricultural professions from 1931 to 1951), a district which saw 10% inflows actually saw an additional *drop* of 9.2 percentage points in individuals choosing agriculture (so overall for such a district there was a fall of 4.8 percentage points in agricultural propensities between 1931 and 1951). However, a district which experienced 10% outflows actually saw agricultural propensities rise by an additional 3 percentage points. Together these two effects suggest that *both* those who left India and those who entered it were less likely to be agriculturists/choose agricultural professions. Anecdotal evidence suggests that apart from just constrained choice due to relative shortage on land vacated in India, those leaving Pakistan may have also been more likely to have non-agricultural vocations. Kudaisya and Tan (2000: pg 179) note that “The economic consequences of partition for the city [of Lahore] were severe. Many institutions, banks and corporate organizations relocated from the city. The majority of factories closed down and their plant and buildings were destroyed or abandoned in the disturbances. The bulk of the skilled manpower left, banks and financial institutions ceased functioning, and there was a massive flight of capital.”

Finally, as an aside, we also examine the mobility of agriculturists vs. non-agriculturists. A-priori reasoning suggests that agriculturists would have lesser mobility than non-agriculturists. In order to do so we conduct a similar multivariate analysis as we did for answering where migrants went to except this time we do so using the percentage of migtants in agriculture in district as the outcome of interest. The details of this analysis are relegated to the appendix (Table 8 in Appendix II). Distance and large cities are important factors with migrants entering non-agricultural professions more likely to migrate further distances and to larger cities.

IV. Conclusion

Our preliminary analysis has shown that the partition of the Indian subcontinent resulted in large migratory flows that differed not only in their influence of even neighboring districts but also in how they affected each country.

While these migratory flows generally meant a greater homogenization of population across religious lines, the migrants and residents in the receiving areas differed substantially along gender, educational, occupational lines.

In India these changes affected a much lower fraction of the population simply because several large states were too far from the borders to be affected. However, the areas that were closer to the border did see significant changes with greater declines in male ratios, increases in non-agricultural professions and moderate increases in literacy rates. Apart from the educational changes, the gender and occupational changes led to more "balanced" outcomes i.e. a lowering of both the male and agricultural employment ratio from already high (above 50% levels).

However, in Pakistan, not only was a much larger fraction of the population affected due to partition but our results suggest that the migrants differed significantly from the resident population in terms of educational background. Kudaisya & Tan (2000: pg 185) note that "the top leaders in the initial years of Pakistan had all been Muhajirs [migrants]. …With…their higher levels of education and skills, their representation in the bureaucratic and political systems, and their assertions of cultural superiority the Muhajirs could not assimilate themselves with the original inhabitants of Karachi." Interestingly in Pakistan the migrant identity issue is still salient more than 5 decades after the partition and by many accounts, this conflict has had several political economy implications. It is not surprising that such large and sudden demographic changes may have had substantial and lasting social, economic and political consequences. In subsequent work we hope to begin examining such consequences.

APPENDIX I

A Brief History of Partition:

This partition of British India has been an extensive studied subject. Our intent here is only to provide a summary of the events close to partition. For a more thorough treatment refer to Kudaisya & Tan (2000).

The actual partition was by all accounts sudden. While the possibility that British India would be partitioned once it gained independence from Britain was present several years prior to the actual event, with the Muslim League formally calling for a separate Muslim state by 1940, its details weren't worked out till a few months prior to partition and the actual plan was not made public till a few days *after* the two countries had been declared independent.

The partition plan of June 3rd, 1947 laid the foundations for the redrawing of the boundaries of the Punjab and Bengal. Sir Cyril Radcliffe chaired both the Bengal and Punjab Boundary Commissions. Radcliffe was a lawyer by profession and unfamiliar with boundary making – his selection as chairman of the boundary commission was based on his impartial relations with India. Along with this impartiality, however, came a lack of intimate knowledge of the people and the land he was about to carve up (Kudaisya & Yong Tan, 2000: 84). His first meeting with the then Viceroy, Lord Mountbatten took place on June 8th and Radcliffe was reportedly shocked when he was told that he had only five weeks to draw the lines.

The ambiguities associated with the terms that would determine the boundary making process further complicated Radcliffe's task. While the political parties had agreed on partition, they had vaguely laid down that boundaries would be demarcated by contiguous majority areas of Muslims and Non-Muslims as well as considering "other factors". This clause – "other factors" – probably caused the most controversy during the entire process of boundary making. The idea of 'contiguous areas' was also vague as it was not certain whether this meant districts or tehsils.

The boundary decisions were kept secret until the last minute and this heightened speculation regarding Radcliffe's methods of demarcating the border. It was also alleged that Radcliffe used the 1941 census to calculate religious majorities in various districts. Since the decision for a separate Muslim state was released in 1940, many feared that the 1941 census was rigged and under reported the presence of certain religious groups.

In a hasty 2 months, British India was carved into the independent states of India and Pakistan. The Radcliffe Award, as the boundary commission's reports were called, caused more controversy than the peace they were intended for. In some ways, "no man made boundary has caused so many troubles and effectively impeded the advent of peace in South Asia as the Punjab boundary resulting from the Commission's verdict"

(Cheema, 2000: pg 1). The Commission's report was made public on August 17th, 1947, two days after Indian independence.

When the Radcliffe award was finally made public, there were voices of dissent everywhere. Radcliffe, well aware of the criticisms he would face, admitted:

> The many factors that bore upon each problem were not ponderable in their effect upon each other. The effective weight given to each other was a matter of judgment, which under the circumstances threw it upon me to form; each decision at each point was debatable and formed of necessity under great pressure of time, conditions, and with knowledge that, in any ideal sense, was deficient. (Kudaisya & Yong Tan, 2000: pg 93)

The myriad factors that Radcliffe had to consider in a short period of time, made the boundary decision process illogical and inconsistent at times. He later lamented, "Nobody in India will love me for the award about the Punjab and Bengal and there will be roughly 80 million people with a grievance who will begin looking for me" (Khilnani 1997: pg 201). In short the boundary decisions were bound to cause problems.

As a result, on August 17th, 1947 when the award was made known, thousands found themselves on the wrong side of the border, particularly in the state of Punjab. There were neither provisions nor preparations for the affected populations to be evacuated, until it was too late (Kudaisya and Tan, 2000: pg 98). The widespread violence, migrations and human suffering was unprecedented. Even before the declaration of independence, the violence in Punjab had started to take its toll. In March 1947 the scale of rioting was such that several thousand villagers in Lahore and Rawalpindi districts were forced to leave their villages.

Together these factors meant that the majority of migratory flows took place under a relatively short span of time. Since the boundaries were not declared till later and there was a lot of uncertainty regarding them, it was unlikely that people moved much before partition.

Census of India, 1941

As we noted in the main text, our decision not to use the 1941 census of India is based on various significant concerns regarding the quality and coverage of this census.

This is perhaps best illustrated by a series of statements by the Census Commissioner of the 1941 census, MWM Yeats, in his introductory remarks in the 1941 census itself.

Yeats starts off by noting that "The war has laid its hand on the Indian census as on every other activity of the India Government and people. ... It was considered however that financial conditions did not permit the completion of the tables and as I write this brief introduction I am no longer, and have not been for a year, a whole-time Census Commissioner." (pg 2) and goes on to lament that "One of the last things to be desired in a census is uncertainty; yet that pursued us to the end. It was till February 1940 that the

Government of India decided to have a census at all. A still greater difficulty was caused by the delay in deciding how far to go with the tabulation." (pg. 2).

In addition, Yeats talks about lack of tabulation facilities, buildings and officers. He talks about problems with come provincial tables that had to remain unresolved because provincial census officers were removed from their jobs as soon as the tables went to press - hence they were not available for further clarifications. He states that "The main point [about completion of enumeration] which emerges at once is that the great population regions of the Indus and Ganges systems in which nearly half the total population of India lies have only a limited representation in the census figures" (pg 11) and also points out his concern regarding biased estimates and mis-measurements since "There was a tendency in the more communal quarters to look on the census enumerators as the ready tools of faction..." (pg 9) and "At that time Mr. Gandhi's civil disobedience campaign was in full swing and all over North India the census, as a governmental activity, incurred hostility"(pg 24).

The 1951 Pakistan census also starts (pg 1) by noting that the 1941 census "had not been tabulated in full owing to the war, and their accuracy has been prejudiced by the efforts of different communities to inflate their figures for political purposes"

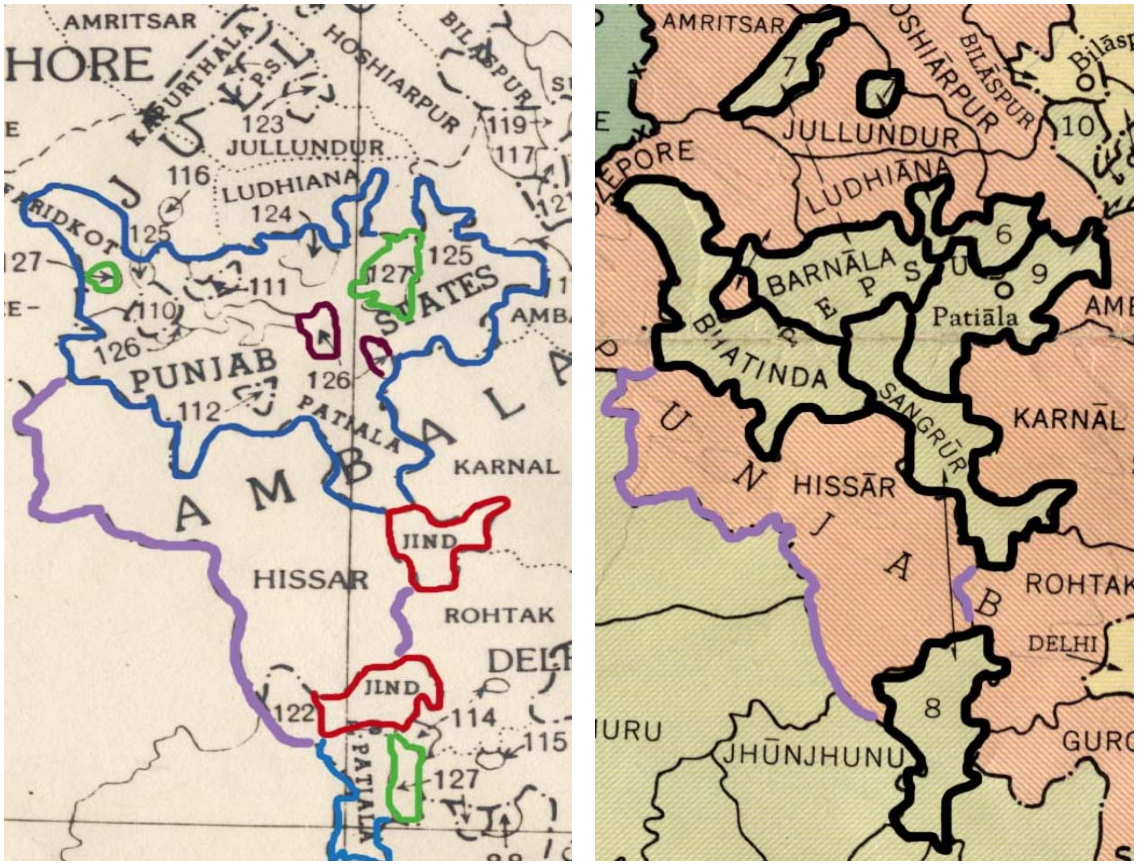
On a somewhat less serious note even a poem entitled Partition by British poet WH Auden, alludes to the faulty 1941 census numbers used by Radcliffe while drawing the boundary lines !

"*He got down to work, to the task of settling the fate*
Of millions. The maps at his disposal were out of date
And the Census Returns almost certainly incorrect,
But there was no time to check them, no to inspect…"

District Mapping:

Unlike later censuses, the 1951 census does not provide a comprehensive mapping of the districts in 1951 to those in previous census years. As such our approach is to use detailed maps in 1951 and 1931 and start by visually identifying mappings between districts in the two time periods. Once the visual exercise reveals potential matches between the two census years, we use census data for land areas of these regions and only consider a mapping to be permissible if the land areas of the two units is within 10 percent of each other. We also perform robustness tests with lower thresholds. If two areas do not meet these criteria we attempt to map them at higher levels of aggregation (for example by combining adjacent districts). In the majority of cases we are able to map regions over time and only a few districts could not be mapped. Thus for the 472 districts and Princely states of British India in 1931we are able to map 462. The equivalent number for the 1951 districts was 373 mapped out of a total of 363. Since some districts had to be merged this gives us a total of 287 comparable "districts" between the two census years.

The map below provides and example of the difficulty in trying to compare areas across time. This problem is heightened due to Princely states.



The map on the left is from 1931 and shows Patiala (blue border), Jind (red border), Malerkotla, Faridkot, Nabha (green border). The one on the right is from 1951 and shows Patiala, Barnala, Bhatinda, Sangrur, Mohindergarh (8), Fatehgarh Sahib (6)

In the 1951 map, we see that Mohindergarh (number 8 on that map) was composed of various bits of princely states in 1931. When we examine the census of 1931, we *don't* see individual pieces of Jind (the state in red), instead we only have information for all of Jind (both parts). As one can tell from the two maps, the northern part of Jind belongs to Sangrur in 1951, while the southern part belongs to Mohindergarh. Hence while finding an appropriate "match" for Mohindergarh in 1931, we have to take into account a piece of Jind, a piece of Nabha (the green state), and a piece of Patiala. This problem is prominent in the case of Nabha (the state with green border in the 1931 map). One can see how scattered Nabha was. There are 3 corresponding states in 1951 that contain a section of Nabha. Therefore to construct comparavle areas we have to collapse all the 1931 states in our example, except Hissar (purple border) and map them to the combined areas formed by collapsing Bhatinda, Barnala, Sangrur, Mohindergarh and Patiala in 1951. In comparison, Hissar is easier to map over time since its area does not undergo any changes.

Another type of district merging issue occurs when districts are split by a country border. We cannot merge these districts because the 2 halves are in different countries. In this case we do a *tehsil* level merge. Recall that a tehsil is the next lower administration unit below a district. We have tehsil level information for 1931 and we re-create the district in 1931 that matches to the district in 1951. A good example to illustrate this type of mapping is the case of Dinajpur district in West Bengal. Dinajpur was split by the Radcliffe award into Dinajpur (Bangladesh) and West Dinajpur (West Bengal, India). In order to use these two districts in 1951, which were formerly one district in 1931, we "created" the two districts in 1931 using tehsil level data. Hence, in our dataset, we have a Dinajpur and a West Dinajpur in 1931 as well.

Districts not in dataset:

These districts are not in our data set because of lack of information in a certain year or merging issues. These district are as follows:

NWFP Frontier Areas (only British areas were censused in 1931)

- Chitral
- Malakand
- Swat
- Dir
- North & South Waziristan
- Khurran
- Khyber

Baluchistan (one area was not censused in 1951)

- Dera Ghazi Khan

Gilgit Agency (was not censused)

- Yasin
- Kuh Ghizar
- Punial
- Tangir & Darel
- Ishkuman
- Gilgit
- Chilas
- Astor
- Hunza & Nagir

Assam Hill/Tribal Areas (were not censused in 1951)

- Sadiya Frontier Tract
- Khasi and Jaintia Hills

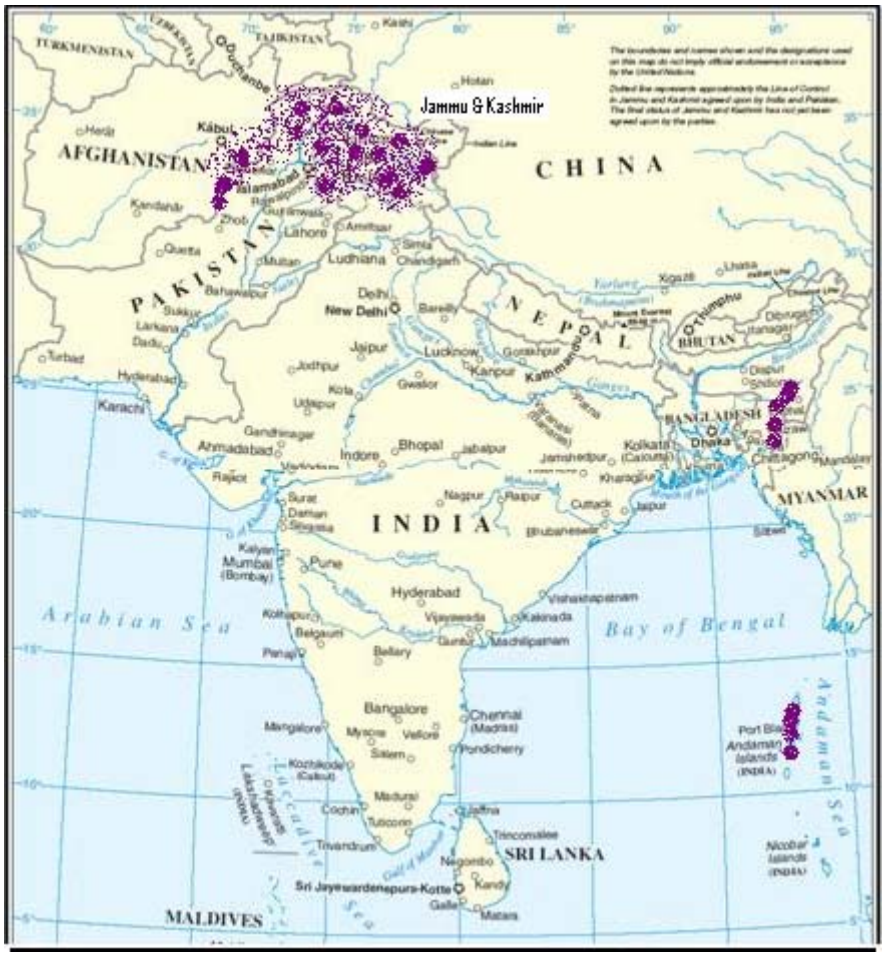
Jammu and Kashmir (was not censused in 1951)

- Baramula
- Anantnag
- Riasi
- Udhampur
- Chamba
- Kathua
- Jammu
- Punch
- Mirpur
- Muzaffarabad

Andaman and Nicobar Islands (have missing information in the 1931 census)

Sikkim (Its status was uncertain in 1951 and was only inducted into state of India in 1975).

The purple dots below show approximately where these missing districts are (Sikkim and Dera Ghazi Khan not shown) and show that apart from Sikkim, they were unlikey to have been affected by the partition given their distance from the borders,



Outflows:

We construct two different measures of outflow. The first one is our preferred measure that is used in the main text.

Outflow 1
Our main method of computing outflows determines minority expected growth rates by rescaling the growth rates of the majority population during the relevant perion (1931-1951):

The Majority growth rate = Resident Majority population in 1951/Majority population in 1931

The Resident Majority population in 1951 is calculated as the total population of the majority group in 1951 *less* the population of incoming migrants (incoming migrants belonged to the majority). Recall that minorities in India are the Muslims and minorities in Pakistan/Bangladesh are Hindus and Sikhs. Majority is defined as the population minus minority populations.

Next we construct the scaling factor to adjust the majority growth rate to reflect minority growth rate from 1931-1951. We need a scale because, as is clear in the table below Muslims tended to grow faster than Non Muslims in British India.

Table A : Growth rates in British India

Years	Non Muslim growth rate	Muslims growth rate
1901-11	1.057221667	1.092016935
1911-21	0.994479553	1.046731039
1921-31	1.096331849	1.11690726
1931-41	1.137561756	1.19091872

The scaling factor is defined as
Scale = [growth rate of minorities (1901-1921)/growth rate of majority (1901-1921)]

We use a 20 year scale because our majority growth rate is measured over 20 years as well. It is obvious that we cannot use 1931-1951 growth rates of minorities as a scale, since minorities were on the move by 1951. We need to look to previous years for a scale. As we detailed above the 1941 census is of suspect quality.. Our next choice was using 1911-1931 growth rates to compute the scale. However, these growth rates are likely to be very different from those in 1931-51 due to large internal migrations that took place in the 1920's. These migrations were primarily located in the East, with people moving from Bengal into Assam to work on the tea estates (Davis, 1951). In comparison we are aware of no significant criticism of 1901-1921 censuses as far as religious enumeration is concerned. To avoid problems of countering massive internal migrations and census accuracies, we therefore use the 1901-1921 growth rates to compute our scale.

Given the above, the imputed minority growth rate (1931-1951) = Majority growth rate (1931-1951) * Scale

Finally, Expected Minorities in 1951 = Minorities in 1931 * Minority growth rate (1931-1951)

and therefore Outflow 1 = Expected Minorities (1951) – Actual Minorities (1951)

The above analysis is computed at the district level with one exception. We do not have 1901 census figures at the district level. Hence, we just use the country wide scale on the 1931-51 majority growth rate at the district level.

Outflow 2

The departure in this method of computing outflows is in the way we compute minority growth rates:

Minority growth rate = Minority population in 1931/minority population in 1921

In other words rather than rescaling the 1931-1951 majority growth rates we instead use the minority growth rate from 1931-1941.

Therefore, expected Minorities in 1951 = Minorities in 1931 * [growth of minorities (1921-1931)] ^{2}

and Outflow 2 = Expected Minorities (1951) – Actual Minorities (1951)

The problem with this measure is that the Bengal famine occurred in 1943-44 and its effect is hard to separate at the country level – i.e. we do not have information on how many Muslims or Hindus died as a result of it.[20] Hence, once we compute expected Minorities in 1951, we need to subtract the deaths due to famine to get at the number missing due to partition. Given that this measure would be heavily dependent on estimates of numbers of people that died due to the famine, it is likely to be less accurate than the first method.

There are additional problems in using this measure along the eastern border. Bengal saw large out migration of people moving into Assam until the 1930's. As a result, 1921-31 growth rates are in fact lower than the actual growth rates in 1931-51 (when there was no longer this migration into Assam) and this in turn would lead to *underestimates* of outflows from Bangladesh. In fact for exactly the same reason we would predict that estimates of outflows from the eastern part of India would be *overestimated* if we use the 1921-31 growth rates of non-natives (Muslims) in India. Examining these estimates shows that this is indeed the case.[21]

This method also suffers from the fact that growth rates of religious populations are far from stable over decades. A glance at Table A above confirms this.

Comparing outflows:

Comparing aggregates we find that while the results for India and Pakistan are about the same, Bangladesh's outflow is severely underestimated using the second measure.

Table B: Comparing Outflows (in millions)

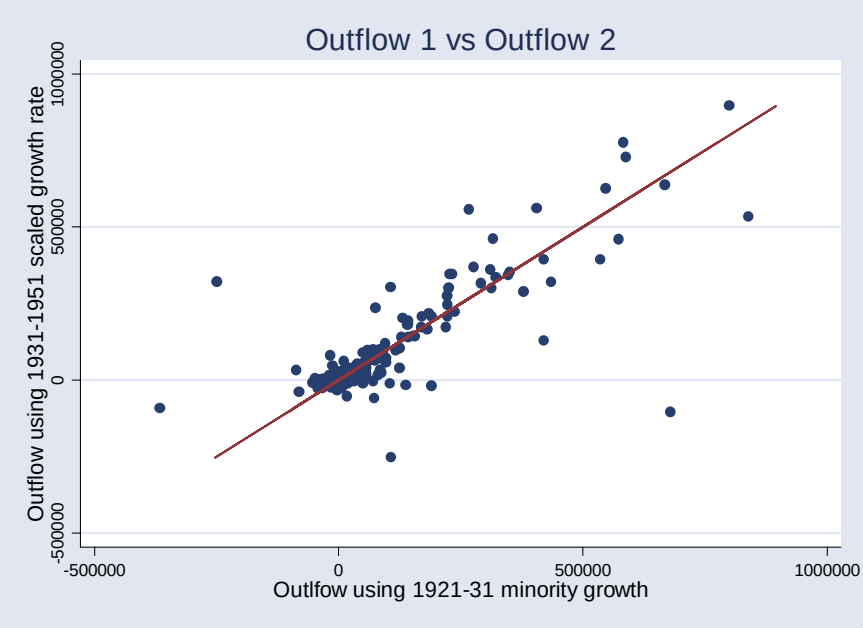
	Outflow 1	Outflow 2
India	8.4	8.7
Pakistan	5.4	5.5

[20] However, there is evidence of differential mortality between the rural and urban populations– see Amartya Sen's *Poverty and Famines* (1981) for more.

[21] Outflows out of Eastern India are estimated to be 2.2 million if we use the 1921-31 measure. In contrast using the 1931-51 scaled measure (which does not suffer from across time comparisons) gives us an outflow of 1.8 million. For the reasons described in the text (pre 1931 migrations from Bengal into Assam) we believe that the former is an overestimate. The fact that outflows from Bangladesh are underestimated is also true – using the 1921-1931 measure we estimate outflows from Bangladesh to be around 1.7 million, which is *lower* than the total inflow received by the eastern part of India. Using the scaled measure for outflow, we obtain a more reasonable 2.96 million outflow from Bangladesh.

Bangladesh	2.9	1.7

For reasons stated above we believe that outflow 1 captures the out migration more accurately. We can also compare outflows obtained at the district level using these two methods. We will see that they are essentially the same, except for the eastern region estimates. Most points are on or near the 45 degree (red) line. The outliers are, not surprisingly are districts in Assam and Bengal, which we suspected there were problems with over and under estimations of growth rates.



REFERENCES

Auden, W H. *Collected Poems: Auden*, London: Vintage (1991).

Bopegamage, A. *Delhi: A Study in Urban Sociology*, University of Bombay Publications, Sociology Series No. 7 (1957).

Brass, P. *The Politics of India since Independence*, London: Cambridge University Press (1990)

Butalia U. *The Other Side of Silence: Voices from the Partition of India*, Duke University Press (2000).

Cheema, P I. 'The Politics of the Punjab Boundary Award', *Heidelberg Papers in South Asian and Comparative Politics*, Working Paper (1), 2000.

Davis, K. *The Population of India and Pakistan*, Princeton: Princeton University Press (1951).

Ghosh, A. *The Shadow lines*, Bloomsbury (1988).

Government of India, *Census of India 1931*, India: Central publication branch (1933).

Government of India, *Census of India 1941*, Delhi: The Manager of Publications, (1941-1945).

Government of India, *Census of India 1951*, Delhi: The Manager of Publications, (1952).

Government of Pakistan, *Census of Pakistan 1951*, Karachi: The Manager of Publications, (1954-56).

Hill, K et al. 'The partition of India: new demographic estimates of associated population change' *International Union for the Scientific Study of Population, International Population Conference*, France, 2005.

James, L. *Raj: the making and unmaking of British India*, New York: St. Martin's Press (1998).

Kant, S. *Administrative Geography of India*, Jaipur : Rawat Publications (1988).

Kudaisya, G & Yong Tan, T. *The Aftermath of Partition in South Asia*, London: Routledge (2000)

Manto, SH. *Mottled Dawn; Fifty Sketches and Stories of Partition,* Penguin Books India (1997).

Sarkar, S. *Modern India 1885-1947*, Basingstoke: Macmillan (1993).

Schwartzberg, J E. (ed) *A Historical Atlas of South Asia,* Chicago : University of Chicago Press (1978).

Sen, A. *Poverty and famines : an essay on entitlement and deprivation,* Oxford : Clarendon Press (1981).

Sherwani, L A. *The partition of India and Mountbatten*, Karachi: Council for Pakistan Studies (1986).

Shahid, S & Major General Hamid. *Disasterous Twilight: A Personal Record of the Partition of India,* Trans-Atlantic Publications (1993).

Singh A, Moon P, & Khosla D. *The Partition Omnibus*, London: Oxford University Press (2001)

Srivastava, R & Sasikiran SK. 'An Overview of Migration in India, its Impacts and Key Issues', www.livelihoods.org.

Sugata,B & Jalal, A. *Modern South Asia: History, Culture, Political Economy,* London: Routledge (1998)

Qadeer, MA. *Lahore: Urban Development in the Third World*, Lahore: Vanguard Books Limited (1983).

Wallbank, T W. (ed) *The partition of India: causes and responsibilities,* Boston: Heath (1966).

TABLE I

WHERE DID INCOMING MIGRANTS GO?

Dependent Variable: District Inflow as Percent of Total Inflow in Country					
	(1)	(2)	(3)	(4)	(5)
	India		Pakistan		Bangladesh
		State fixed effects		State fixed effects	
Distance (in miles)	-0.00252	-0.00005	0.009	0.02201	0.26262
	[0.00073]**	[0.00115]	[0.02258]	[0.03175]	[0.72430]
Distance Sq	0.00000213	-0.00000022	-0.00002185	-0.00006202	-0.00763656
	[0.00000085]*	[0.00000111]	[0.00009031]	[0.00010609]	[0.01161380]
District Outflow as % of Total Outflow	0.539	0.548	1.145	1.169	0.954
	[0.036]**	[0.052]**	[0.290]**	[0.351]**	[0.507]+
City Dummy	0.496	0.186	0.112	-0.501	-1.001
	[0.167]**	[0.152]	[1.691]	[2.019]	[5.495]
District Population as % of Country population (1931)	0.06	0.166	0.221	0.38	-0.87
	[0.129]	[0.131]	[0.470]	[0.543]	[0.725]
Constant	0.539	0.544	-1.54	-2.178	4.59
	[0.128]**	[0.601]	[1.479]	[1.657]	[7.904]
Observations	233	233	35	35	17
R-squared	0.63	0.76	0.81	0.81	0.33

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of distance from border, % outflow from a given district and the existence of a large city in the district on the inflows into that district. Columns 2 & 4 include state fixed effects for India and Pakistan. Bangladesh does not have state fixed effects since it has only 1 state. Regressions for Pakistan do not include the population variable as this is highly correlated with Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out. Distance is measured as the straight line to the border from the center of a district. Minorities in India are Muslims. In Pakistan and Bangladesh minorities are Hindus and Sikhs. City dummy was created from the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978). There are 25 states in India and 4 states in Pakistan.

TABLE II

WHERE DID INCOMING MIGRANTS COME FROM?

Dependent Variable: Outflows as % of Total outflows in Country	(1)	(2)	(3)	(4)	(5)
	India		Pakistan		Bangladesh
		State fixed effects		State fixed effects	
Distance (in miles)	-0.005	-0.005	-0.003	-0.018	-0.151
	[0.001]**	[0.002]**	[0.011]	[0.012]	[0.398]
Distance Sq	0.000005	0.000004	0.000029	0.000055	0.003126
	[0.000001]**	[0.000001]*	[0.000040]	[0.000040]	[0.006326]
Minorities in district as % of total minorities 1931	1.192	0.784	0.764	0.675	0.758
	[0.191]**	[0.150]**	[0.130]**	[0.123]**	[0.504]
City Dummy	0.639	0.482	0.091	0.846	3.492
	[0.280]*	[0.202]*	[0.746]	[0.752]	[2.865]
District Population as % of Country population	-0.915	-0.346	0.558	0.486	0.445
	[0.257]**	[0.217]	[0.174]**	[0.183]*	[0.490]
Constant	0.977	1.136	-0.833	-0.478	-0.299
	[0.215]**	[0.807]	[0.721]	[0.699]	[4.295]
Observations	233	233	35	35	17
R-squared	0.31	0.71	0.94	0.95	0.73

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of distance from border, % minorities in a given district, population size of the district and the existence of a large city in the district on the outflows from that district. Columns 2 & 4 include state fixed effects for India and Pakistan. Bangladesh does not have state fixed effects since it has only 1 state. Computation of outflow is discussed in the Appendix. Outflows are those moving out of a district due to partition. Distance is measured as the straight line to the border from the center of a district. Minorities in India are Muslims. In Pakistan and Bangladesh minorities are Hindus and Sikhs. City dummy was created from the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978). There are 25 states in India and 4 states in Pakistan.

TABLE III

IMPACT ON GENDER AT DISTRICT LEVEL

Dependent Variable: Percent Men (in District population) in 1951 minus Percent Men (in District population) in 1931									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	India			Pakistan			Bangladesh		
Inflow as % of district population	-0.031		-0.007	0.012		-0.01	-0.076		-0.129
	[0.009]**		[0.016]	[0.021]		[0.030]	[0.084]		[0.114]
Outflow as % of district population		-0.018	-0.015		0.037	0.049		-0.004	0.063
		[0.004]**	[0.008]+		[0.033]	[0.047]		[0.067]	[0.089]
Constant	-0.01	-0.022	-0.015	-1.68	-2.052	-2.078	0.805	0.652	0.518
	[0.058]	[0.056]	[0.058]	[0.397]**	[0.543]**	[0.555]**	[0.360]*	[0.539]	[0.547]
Observations	234	234	234	35	35	35	17	17	17
R-squared	0.05	0.06	0.07	0.01	0.04	0.04	0.05	0	0.08

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of inflows into and outflows from a given district on the change in gender ratios from 1931-1951 in that district. Computation of outflow is discussed in the Appendix. Inflows are people moving *into* a given district due to partition, outflows are those moving *out*.

TABLE IV

IMPACT ON LITERACY AT DISTRICT LEVEL

Dependent Variable: Percent Literate in 1951 minus Percent literate in 1931									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	India			Pakistan			Bangladesh		
Inflow as % of district population	0.14		0.168	0.274		0.184	-0.422		-0.408
	[0.042]**		[0.076]*	[0.041]**		[0.056]**	[0.275]		[0.380]
Outflow as % of district population		0.054	-0.017		0.401	0.196		-0.227	-0.017
		[0.022]*	[0.039]		[0.069]**	[0.087]*		[0.223]	[0.295]
Constant	7.467	7.62	7.46	5.402	3.324	3.791	13.281	13.782	13.357
	[0.282]**	[0.276]**	[0.283]**	[0.775]**	[1.153]**	[1.023]**	[1.177]**	[1.786]**	[1.820]**
Observations	234	234	234	35	35	35	17	17	17
R-squared	0.04	0.03	0.05	0.57	0.51	0.63	0.14	0.06	0.14

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of inflows and outflows in a district on the change in that district's literacy rate between 1931-1951. Literacy rate is computed for the entire population. Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out.

TABLE V

IMPACT ON AGRICULTURAL OCCUPATION AT DISTRICT LEVEL

Dependent Variable: Percent in agriculture in 1951 minus Percent in agriculture in 1931									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	India			Pakistan			Bangladesh		
Inflow as % of district population	-0.394		-0.923	0.195		0.007	0.2		0.143
	[0.158]*		[0.287]**	[0.165]		[0.236]	[0.528]		[0.524]
Outflow as % of district population		-0.07	0.307		0.48	0.471		-0.276	-0.27
		[0.078]	[0.139]*		[0.287]	[0.424]		[0.226]	[0.236]
Constant	4.218	3.386	4.346	0.334	-4.1	-4.082	6.107	8.009	7.745
	[1.109]**	[1.085]**	[1.099]**	[3.870]	[5.344]	[5.529]	[1.151]**	[1.494]**	[1.830]**
Observations	187	187	187	21	21	21	15	15	15
R-squared	0.03	0	0.06	0.07	0.13	0.13	0.01	0.1	0.11

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of inflows and outflows in a district on the change in % engaged in agriculture in that district from 1931-1951. Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out. Percent agriculture in India in 1951 includes dependents of the workers, while for Pakistan & Bangladesh they are exluded. It is not possible to separate out dependents in the Indian figure, or include dependents in the Pakistani figure. In 1931 the % agriculture figure includes dependents for India, but not for Pakistan and Bangladesh. Observations are fewer in these regressions as occupation data was collected only for some states in 1931. States included are Ajmer, Assam, Baluchistan, Bihar & Orissa, Bengal, Gwalior, Central India Agency, Hyderabad, Madhya Bharat, Madras, Mysore, NWFP, Punjab, Rajputana, UP and Western Agencies.

APPENDIX II TABLE 1

MEN IN INFLOW vs RESIDENT MEN

Dependent Variable: Percent men in inflow minus percent men in residents

	(1)	(2)	(3)	(4)	(5)	(6)
	India		Pakistan		Bangladesh	
Constant	5.708	-1.092	2.54	0.353	4.661	2.593
	[0.688]**	[0.225]**	[0.912]**	[0.218]	[1.696]*	[0.703]**
Observations	234	234	35	35	17	17
R-squared	0	0	0	0	0	0
Weight	None	Inflow	None	Inflow	None	Inflow

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%
This table tests whether there were more men in inflows than in the receiving resident population. Inflows are people moving into a given district due to partition. We weight by inflows to give more importance to those areas where there were more migrants. For example some areas in South India received 100% males in inflows; however, the total number of migrants in such districts was 3 or 11 or some small number like that. The weight gives little importance to such districts.

APPENDIX II TABLE II

MEN IN OUTFLOW

Dependent Variable: % Men in outflow minus % Men in residents

	(1)	(2)
	India	
Constant	99.481	17.931
	[36.164]**	[7.521]*
Observations	234	177
R-squared	0	0
Weight	None	Outflow

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table tests whether there were more men in the outmigrating population as compared to the resident population from where migrants left. Regressions are weighted by outflow as some districts sent very high proportion of male migrants, but the total number of men from these districts was extremely small. Weights give districts with greater outflows more importance. Regression column (2) has fewer observations as some outflows are negative and cannot be used as weights. Outflow computation has been discussed in the appendix.

APPENDIX II TABLE III

WHERE DID MEN GO?

Dependent Variable: Percent Men in Inflow						
	(1)	(2)	(3)	(4)	(5)	(6)
	India		Pakistan		Bangladesh	
Distance (in miles)	0.013	-0.011	0.073	-0.026	-0.425	0.411
	[0.009]	[0.002]**	[0.055]	[0.023]	[1.006]	[0.409]
Distance Sq	0.00001574	0.00002738	-0.00008678	0.00037139	0.00639919	-0.00625098
	[0.00000993]	[0.00000474]**	[0.00019668]	[0.00015189]*	[0.01608074]	[0.00740578]
District Outflow as % of Total Outflow	0.142	0.06	-0.023	-0.092	0.005	-0.053
	[0.471]	[0.037]	[0.402]	[0.093]	[0.479]	[0.134]
Minority-Majority Ratio	-0.003	-0.026	0.032	-0.006	-0.093	0.064
	[0.057]	[0.009]**	[0.112]	[0.038]	[0.229]	[0.075]
City Dummy	-4.458	0.523	2.483	2.416	6.165	4.764
	[1.919]*	[0.208]*	[3.713]	[0.512]**	[7.660]	[2.587]+
Constant	52.577	54.414	50.244	54.677	63.887	47.38
	[1.678]**	[0.340]**	[4.499]**	[1.462]**	[11.891]**	[5.463]**
Observations	233	233	35	35	17	17
R-squared	0.34	0.17	0.35	0.58	0.08	0.64
Weights	None	Inflow	None	Inflow	None	Inflow

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of distance, outflow, minority-majority ratio and the presence of a city in a district on the proportion of men in the inflow population. Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out. Distance is measured as the straight line to the border from the center of a district. Minorities in India are Muslims. In Pakistan and Bangladesh minorities are Hindus and Sikhs. The remaining populations in each country is considered the majority while computing the minority-majority ratio. City dummy was created from the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978).

APPENDIX II TABLE IV

DIFFERENCES IN EDUCATIONAL ATTAINMENT

Dependent Variable: Incoming migrant minus Resident educational attainment

	(1)	(2)	(3)	(4)	(5)	(6)
	Pakistan			Bangladesh		
	Overall Literacy	Primary and Middle	Matriculation and Higher	Overall Literacy	Primary and Middle	Matriculation and Higher
Constant	7.103	5.057	2.332	8.066	-0.253	3.861
	[1.199]**	[1.497]**	[0.651]**	[2.401]**	[1.276]	[0.899]**
Observations	35	35	35	17	17	17
R-squared	0	0	0	0	0	0

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table test whether incoming migrants differed in educational quality from the receiving residents. Literacy rates are calculated for the entire population. Migrant education data was not tabulated for India.

APPENDIX II TABLE V

WHERE DID LITERATES GO?

Dependent Variable: % Literate in Incoming Migrants				
	(1)	(2)	(3)	(4)
	Pakistan		Bangladesh	
Distance	-0.238	-0.166	-0.457	1.14
	[0.177]	[0.130]	[0.843]	[1.145]
Distance Sq	0.001	0.001	0.007	-0.017
	[0.001]+	[0.001]	[0.013]	[0.020]
District Outflow as % of Total Outflow	-0.555	0.059	-0.639	-0.435
	[1.299]	[0.569]	[0.415]	[0.366]
Minority-Majority ratio 1931	-0.368	0.1	0.411	0.395
	[0.365]	[0.220]	[0.206]+	[0.211]+
% Literate in majority population, 1931	0.694	-0.158	2.716	1.787
	[1.128]	[0.703]	[1.038]*	[1.064]
% Literate in minorities, 1931	0.908	0.739	1.689	0.618
	[0.388]*	[0.367]+	[0.501]**	[0.747]
City Dummy	5.961	5.157	27.364	23.439
	[11.594]	[4.665]	[6.386]**	[6.939]**
Constant	29.621	17.05	-13.217	-16.784
	[14.630]+	[8.755]+	[11.945]	[15.387]
Observations	35	35	17	17
R-squared	0.57	0.52	0.88	0.9
Weights	None	Inflows	None	Inflows

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of distance, outflow, minority-majority ratio, % literates among majority and minority population and the presence of a city in the district on the proportion of literates in the incoming migrant population in that district. Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out. Distance is measured as the straight line to the border from the center of a district. Minorities in India are Muslims. In Pakistan and Bangladesh minorities are Hindus and Sikhs. The remaining population is the majority in each country. City dummy was created from the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978). Migrant education was not tabulated for India.

APPENDIX II TABLE VI

INCOMING MIGRANT AND RESIDENT OCCUPATIONAL DIFFERENCES

Dependent Variable: Propensity of incoming migrants to engage in agriculture minues propensity of residents to engage in agriculture

	(1)	(2)	(3)	(4)	(5)	(6)
	India		Pakistan		Bangladesh	
Constant	-61.361	-28.935	-21.518	-7.992	-35.533	-28.167
	[1.536]**	[1.399]**	[5.406]**	[3.552]*	[5.906]**	[5.494]**
Observations	234	234	30	30	16	16
R-squared	0	0	0	0	0	0
Weight	None	Inflow	None	Inflow	None	Inflow

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%
This table tests whether incoming migrants were more likely to enter agriculture than residents. Propensity of a certain group in occupation x is simply defined as (people of a certain group in occupation x)/(total number of labor force particiapants in that group)

APPENDIX II TABLE VII

DETAILED OCCUPATION (INDIA)

Dependent Variable: Incoming migrant propensity minus resident propensity (regression title headings)

	(1) Agri on owned land	(2) Agri on un-owned land	(3) Cultivating Laborers	(4) Ownership of Land	(5) Production of raw materials	(6) Commerce	(7) Transport	(8) Misc
Constant	-36.755	30.792	1.188	4.446	-13.197	10.282	0.754	2.161
	[1.612]**	[1.927]**	[0.604]	[0.695]**	[0.783]**	[0.790]**	[0.322]*	[0.870]*
Observations	234	234	234	234	234	234	234	234
R-squared	0	0	0	0	0	0	0	0

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table tests whether migrants were more likely to enter various occupations compared to residents. This detailed information was not collected for Pakistan. Propensity of a certain group in occupation x is simply defined as (people of a certain group in occupation x)/(total number of labor force particiapants in that group). To the best of our knowledge, one can imagine "Agri on owned land" as workers working on land that they are responsible for, but that which is not self owned. "Agri on un-owned land" implies people working not on self owned lands, but lands whose ownership is unclear. "Cultivating laborers" implies day laborers on farms. The other categories are self explanatory. All regressions are weighted by inflows to account for areas with very low migrants by very high percentage of migrants engaging in any one occupation. Weighting gives more importance to those areas with more migrants.

APPENDIX II TABLE VIII

WHERE DID INCOMING MIGRANT AGRICULTURISTS MOVE?

Dependent Variable: % Displaced Engaged in Agriculture						
	(1)	(2)	(3)	(4)	(5)	(6)
	India		Pakistan		Bangladesh	
Distance	-0.083	-0.126	0.306	-0.208	-0.782	-1.242
	[0.016]**	[0.025]**	[0.241]	[0.268]	[1.936]	[2.385]
Distance Sq	0.0000746	0.00018306	-0.0016692	0.00159152	-0.0094839	-0.00217878
	[0.0000181]**	[0.00005798]**	[0.0009283]+	[0.00192986]	[0.0310085]	[0.04319989]
District Outflow as % of Total Outflow	4.797	3.836	4.429	3.505	0.905	1.135
	[0.782]**	[0.420]**	[2.009]*	[1.158]**	[0.923]	[0.801]
City Dummy	-9.594	-27.916	-48.056	-44.872	-42.529	-42.826
	[3.587]**	[2.635]**	[18.996]*	[6.820]**	[14.623]*	[15.416]*
Constant	21.921	30.213	26.638	44.959	70.819	76.466
	[2.512]**	[2.353]**	[16.134]	[12.629]**	[21.574]**	[26.166]*
Observations	233	233	35	35	17	17
R-squared	0.37	0.57	0.34	0.61	0.73	0.78
Weight	None	Inflow	None	Inflow	None	Inflow

Std Errors in brackets. * significant at 5%; ** significant at 1%, + significant at 10%

This table examines the impact of distance, outflows and the presence of a city in that district on the proportion of agriculturists in the inflow in that district. Computation of outflow is discussed in the Appendix. Inflows are people moving into a given district due to partition, outflows are those moving out. Distance is measured as the straight line to the border from the center of a district. City dummy was created from the 24 largest cities (in terms of population) from 1931. This data was obtained from the Historical Atlas of South Asia (Schwartzberg, 1978). Weights are used to give more importance to those areas with more migrants. Some areas that receive few migrants who are all engaged in agriculture (say) could affect results even though they are not important in terms of overall inflows. Weighting takes care of this problem.