

“*Historical Statistics of the U.S., Millennial Edition: Internal Migration*”

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Introduction

Americans are an unusually peripatetic people, as both historical and contemporary observers have noted. Before the arrival of permanent European settlers at the start of the seventeenth century, the indigenous population roamed the North American continent after themselves having arrived from Asia more than ten thousand years before.¹ Soon after the arrival of Europeans, migration was of such concern that permission was required for travel among the early colonies; the ease with which obligations could be escaped through migration led to capital penalties for runaway indentured servants.² Two centuries later, de Tocqueville described Americans’ comparative rootlessness: “[M]illions of men are marching at once toward the same horizon; their language, their religion, their manners differ; their object is the same. Fortune has been promised to them somewhere in the west, and to the west they go to find it.” In the twentieth century, Americans are twice as likely to relocate during their lives as the British or Japanese.³

¹ Russell Thornton, “Population History of Native North Americans,” in Michael Haines and Richard Steckel (eds.), *A Population History of North America* (New York: Cambridge University Press, 2000), p. 9. Unfortunately, we know little more about the native population’s geographic mobility, except for its forced removal from the path of advancing settlement to lands farther west and, eventually, to reservations.

² Abbott Emerson Smith, *Colonists in Bondage: White Servitude and Convict Labor in America, 1607-1776* (Chapel Hill: University of North Carolina Press, 1947), p. 265-70.

³ Michael J. Greenwood, “Internal Migration in Developed Countries,” in M. R. Rosenzweig and O. Stark (eds.), *Handbook of Population and Family Economics* (Amsterdam: Elsevier, 1997), pp. 647-720.

High rates of geographic mobility have had important consequences for American economic development. They facilitated the exploitation of natural resources at locations distant from the narrow band of initial settlement on the Atlantic coast. Farmers moved to more productive land in the Ohio River Valley in the late eighteenth century and on to the Great Plains by the middle of the nineteenth century. And mineral and timber resources were worked by migrants to the West and the Northwest. High rates of mobility also spurred the rapid integration of labor markets as transportation improvements—initially canals and river boats and later railroads—lowered the cost of migration. By the Civil War, much of the gap in wages between the West and the East in the Northern states had been erased.⁴ The possibility of migration to cheaper western lands may have also overturned long-standing family support patterns, as children sought their fortunes far removed from parents who were forced to invest in resources other than their children to provide for their support in old age.⁵ And migration from farms to towns and cities in the late nineteenth and early twentieth centuries provided much of the labor for America’s mills and factories and offices. The migration out of central cities toward suburban counties made possible by streetcars, commuter railroads, and highways has spawned whole new communities that in many places now compete with nearby central cities for economic supremacy.

Migration’s impact can be seen well beyond these economic effects, however. The pressure of population growth in older regions and the need for new territory to which migration could be directed have caused conflict with the indigenous population since colonial times, and conflict with other colonial powers (France, Britain, Spain) over territorial expansion. Since the time of Frederick

⁴ Robert A. Margo, *Wages and Labor Markets in the United States, 1820-1860* (Chicago : University of Chicago Press, 2000), p. 154.

⁵ Roger Ransom and Richard Sutch, “Did Rising Out-Migration Cause Fertility to Decline in Antebellum New England? A Life-Cycle Perspective on Old-Age Security Motives, Child Default, and Farm-Family Fertility,” *Working Papers on the History of Saving* 5 (April 1986).

Jackson Turner, historians have debated the role of easy migration to the west in forging peculiarly American institutions. Though the importance of the frontier as a “safety valve” relieving pressure on eastern labor markets has been debated for more than a century now, the role of migration generally and of the occupational mobility by which it was often accompanied in preventing the radicalization of the American labor movement has been remarked upon since the time of Marx. High rates of mobility have also influenced rates of civic participation and voting patterns: out-migration has left political power in the hands of a small number of persistent residents, while in-migration has tipped the balance in close elections.⁶ The shift in population from the Northeast and Midwest to the South and West in the second half of the twentieth century fundamentally re-aligned American national politics.

Measuring Migration

Conceptually, the measurement of migration is straightforward.⁷ Ideally, data would identify where individuals were located at some date t , and where they were located at some subsequent date $t+n$, making it possible to calculate how many had changed locations in the interval $(t,t+n)$ and which places had lost and received population. For example, if the population of locations A and B at time t and time $t+n$ are known, along with how many people moved from A to B and from B to A in the interval $(t,t+n)$, we can easily calculate the gross rates of in-migration and out-migration for each location. Complication arises in the definition of a “location,” of the interval between dates, and of the populations at the two dates.

⁶ Kenneth J. Winkle, *The Politics of Community : Migration and Politics in Antebellum Ohio* (New York : Cambridge University Press, 1988).

⁷ Many of these issues are addressed in Henry Shryock, Jacob S. Siegel, and Associates, *The Methods and Materials of Demography* (Washington, D.C.: U.S. Government Printing Office, 1980).

The choice of what sorts of places among which migration will be measured will have a large influence on measured rates of migration. For example, if a great many individuals move very short distances (within the same county, for example), but we are able to examine only moves that cross state boundaries, we will substantially underestimate migration. As long as some moves are over only short distances, the choice of progressively larger geographic units into which to partition the population will result in greater and greater understatement of the extent of migration.⁸

Similarly, the choice of the time interval $(t, t+n)$ over which to measure migration will influence how much of the actual migration that occurs will be captured in measured migration. This can occur for two reasons. The first is return migration: suppose that among the population of individuals who move from location A to location B in the interval $(t, t+n)$, some fraction return to location A before time $t+n$. If individuals' locations are not observed continuously but are only observed at discrete dates (like time t and time $t+n$), this will result in an undercount of both migration from location A and migration from location B. Use of smaller and smaller increments n between the initial and terminal date can reduce this problem. The other difficulty in the choice of the interval is that it may be defined imprecisely. For example, it may be possible only to compare each individual's location at their date of birth time t with their location at some later date $t+n_i$, where n_i is the individual's age and differs across individuals in the population. If we compare the rate of "lifetime" mobility calculated in this way across two populations, we may get very misleading results if the age structures of the populations differ substantially: the younger population will have had fewer years over which to migrate than the older population.

⁸ This chapter focuses on migration among units within the boundaries of the United States. International migration into the U.S. is treated elsewhere.

Finally, the population for which migration information is available may be unrepresentative of the general population, so the migration behavior observed may not accurately reflect overall migration. Also, information on the population may be inadequate to calculate separately how many have moved in and how many have moved out of each location even if the geographic units and time intervals are not a problem. For example, if it is not possible to identify where the population of a geographic unit was located at a previous date, but it is known that the geographic unit's population has increased since a previous date, net migration can be calculated as the difference between observed population growth and the natural increase of the population (the excess of birth over deaths). This will not reveal precisely how many people moved out and how many moved in, but only how the numbers moving in and out compare.

Data Sources

For the colonial period, the calculation of migration rates is limited by the available data. Only a handful of sources provide information on the location of individuals at more than one point in time. For example, colonial militia muster rolls from the French and Indian War and the Revolutionary War describe the place of birth and of enlistment for men of age for military service.⁹ But this population may be unrepresentative of the entire colonial population, so inferences based upon its experiences must be made with caution. Genealogies are another source of information on migrants, though their coverage, too, is narrow.¹⁰ For the period through 1790, rates of net migration can be calculated by comparing each colony's population with the predicted excess of births over deaths; the difference measures net total (domestic and international) migration.

⁹ Georgia C. Villaflor and Kenneth L. Sokoloff, "Migration in Colonial America: Evidence from the Militia Muster Rolls," *Social Science History* 6 (Fall 1982): 539-570.

¹⁰ John Adams and Alice Kasakoff, "Wealth and Migration in Massachusetts and Maine: 1771-1798," *Journal of Economic History* 45 (June 1985): 363-368.

For 1800-1860, similar techniques have been used to calculate net migration, but for this period it is possible to separate domestic and international migration.¹¹ Applications for land promised in exchange for service in the War of 1812 provide information on the state of enlistment and the state of residence later in life for men who served in the war.¹² But the best information on nineteenth century migration comes from the Seventh Census of the United States in 1850 which asked for the first time that each respondent give his or her state of birth. Together with the information on the respondent's state of residence, this made it possible for the first time to examine patterns of internal migration for the U.S. population. "Lifetime migration" (i.e. the migration undertaken between the individual's birth and the date at which the individual is observed in the census) could now be calculated (Series JF1.1-1.42 and JF2.1-2.10). By examining the change in the native-born population in each state together with information on births and deaths (from either separate counts of vital events or the data by age in the census itself), net migration could now be estimated as well (Series JF3.1-3.153 and JF4.1-4.208). Until the end of the Second World War, this was the only source of information on internal migration for the entire nation. The introduction of the Current Population Survey (a joint project of the Bureau of the Census and the Bureau of Labor Statistics) in 1947 provided additional information: questions were included in most years that asked whether the respondent had moved to a different house, county, or state over a specified interval (Series JF6.1-6.9 and JF7.1-7.9).

The greatest shortcoming generally in the nation's statistics on internal migration is the lack of pre-1935 data on migration over specified intervals. Thus, for example, we do not know how

¹¹ Peter D. McClelland and Richard J. Zeckhauser, *Demographic Dimensions of the New Republic: American Interregional Migration, Vital Statistics, and Manumissions, 1800-1860* (New York: Cambridge University Press, 1982).

¹² James W. Oberly, "Westward Who? Estimates of Native White Interstate Migration After the War of 1812," *Journal of Economic History* 46 (June, 1986): 431-440.

many people made inter-county or inter-state moves over the course of a year or five years or ten years for any time before 1935. All we can say for the nineteenth century is how many people had moved by the time of a given census out of the state in which they were born. Using new micro-level data from most of the federal census from 1850 onward, which report each individual's age, place of birth, and place of residence, we can do better. It is possible to create what demographers refer to as "synthetic cohorts" and follow their internal migration. For example, we could use the 1850 census to note the distribution of people born in New England between 1820 and 1830 (these people would show up in the 1850 micro-level data with ages between 20 and 30). We could then look for the same birth cohort in 1860 (when they would be between 30 and 40) and in 1870 (when they would be between 40 and 50). In this way, it is possible to say how the distribution of locations for these individuals who all started their lives in New England changed at regular ten year intervals.¹³

Several studies centered on particular communities have attempted to identify out-migrants by comparing census manuscripts or census-like enumerations (city directories, tax lists, voter lists) at different dates.¹⁴ These studies, however, cannot distinguish out-migrations from deaths, as they do not observe individuals who do not appear in the second enumeration. Three studies have linked individuals across successive census manuscripts and made possible examination of migration

¹³ This approach is taken in Patricia Kelly Hall and Steven Ruggles, "Moving Through Time: Internal Migration Patterns of Americans, 1850-1990," unpublished (November 1999), and Joshua Rosenbloom and William Sundstrom, "Long-Run Patterns of Interstate Migration in the United States: Evidence From the IPUMS, 1850-1990, unpublished (November 2000).

¹⁴ Several of these studies are summarized in Stephen Thernstrom, *The Other Bostonians* (Cambridge: Harvard University Press, 1973).

patterns over a ten year period that explicitly distinguish the experiences of out-migrants from those of decedents.¹⁵

General Trends

For the colonial period, only a few broad generalizations are possible. By the end of the seventeenth century, New England was already sending more of its population to other places than it was receiving from other colonies and from abroad: from 1680 to 1780, the region saw a net loss of 52,000 people.¹⁶ It appears that geographic mobility rates increased over the last quarter of the eighteenth century. Between 1771 and 1798, the fraction of men in a sample of Massachusetts genealogies who had not moved from their place of birth fell from half to a third, as the fraction moving 100 miles or more rose from an eighth to a third.¹⁷ In militia muster rolls from the French and Indian and Revolutionary Wars, migration rates also seem to have increased over time: in the four colonies for which muster rolls were examined in both wars (New York, Pennsylvania, Maryland, and Virginia), the fraction of native-born recruits who enlisted in the county where they were born fell from the French and Indian War (1754-63) to the Revolutionary War (1776-83). Mobility was generally higher in the South, and a substantial urban-to-rural migration among the native-born can be seen.¹⁸

¹⁵ Richard Steckel, "Census Matching and Migration: A Research Strategy," *Historical Methods* 21 (Spring 1988): 52-60; Donald Schaefer, "A Statistical Profile of Frontier and New South Migration: 1850-1860," *Agricultural History* 59 (October 1985); Joseph P. Ferrie, "A New Sample of Americans Linked from the 1850 Public Use Micro Sample of the Federal Census of Population to the 1860 Federal Census Manuscript Schedules," *Historical Methods* 29 (Fall 1996): 141-156.

¹⁶ Henry A. Gemery, "The White Population of the Colonial United States," in Michael Haines and Richard Steckel (eds.), *A Population History of North America* (New York: Cambridge University Press, 2000), p. 171.

¹⁷ Adams and Kasakoff (1985), p. 367.

¹⁸ Villafior and Sokoloff (1985), pp. 542 and 562.

Between 1800 and 1860, migration rates appeared to increase further. The predominant trend was movement from east to west, with the Middle Atlantic states (New Jersey, and the eastern portions of New York and Pennsylvania) providing most of the migrants to the Northwest. East-west migration was greater in volume in the northern states than in the southern states, and there is evidence of some south-north migration in the decades prior to the Civil War.¹⁹

Despite their shortcomings, the data on internal migration over the century and a half since the first questions on place of birth were included in the 1850 Census of Population document several important general trends in internal migration. Figure 1 shows the fraction of the native-born population residing in the state of birth at each census from 1850 to 1990. The first regularity is the clear rise since 1900 in the fraction of the population located outside the state, division, and region where they were born. This fraction rises with only one interruption—in the 1930s when it falls slightly. Before 1900, there is a decline, suggesting that before the era of increasing mobility in the post-1900 period, there was a decrease in mobility from the eve of the Civil War to 1900.

This measure of “lifetime” migration is somewhat misleading, however, if the age structure of the population changes over time. And the U.S. was clearly a population with more young people in the second half of the nineteenth century than it was in the second half of the twentieth. If attention is restricted to individuals of a particular age at each census, a somewhat different picture emerges. Among white native-born males age 55 at the time of the census, the fraction residing outside the state of birth was 45 percent in 1850 (those born in 1795). By 1900 (for those born in 1845), this fraction had fallen to 40 percent, and it reached its nadir in 1940 (among those born in 1885) at 30 percent. By 1990, it had climbed to 39 percent, still substantially below its level in the

¹⁹ McClelland and Zeckhauser (1982), pp. 6-7. These findings are supported by Oberly's (1986, p. 433) analysis of military bounty land warrant recipients from the War of 1812. By the 1850s, nearly 20 percent of those born in New York had relocated to the Northwest, a higher rate of migration to this region than from New England.

1850-80 period. Lifetime interstate migration thus seems to be somewhat less common at the end of the twentieth century than it was in the second half of the nineteenth century.²⁰

Table 1 reports net migration by region for three eras (1850-1900, 1900-1940, and 1940-1990) for the native-born white and black population. These were calculated using the “census survivor” technique.²¹ The most striking patterns here are: (1) the persistent population losses among whites suffered by the New England and Middle Atlantic states, and even by the East North Central states (the old Northwest) from 1850 onward; (2) the large flows of white population into both the Pacific and South Atlantic states since 1940; and (3) the onset of the “Great Migration” out of the South seen in the data for blacks, with out-migration doubling in volume for the South Atlantic states and tripling in volume for the East South Central states between 1850-1900 and 1900-1940, and then nearly tripling again for the East South Central states and rising by a factor of six for the West South Central states between 1900-40 and 1940-90.

Since 1920, the U.S. Department of agriculture has followed migration from farms to non-farm locations (Series JF5.1-5.5). The rate of net migration away from farms in Figure 2 shows a great deal of year-to-year fluctuation that reflects economic conditions in agriculture. In only three years—1932, 1933, and 1946—is the rate negative. The former reflects back-to-the-farm migration in the depths of the Depression, while the latter reflects the return of World War Two veterans and those employed in wartime industries to the farm. The average rate of migration away from farms

²⁰ Hall and Ruggles (1999), Figure 3a; see also Rosenbloom and Sundstrom (2000), Figure 4.

²¹ This technique relies on the relationship $P_{t+n} - P_t = (B-D) + (M-X)$ where P is the population at each date, B and D are the numbers of births and deaths between those dates, and M and X are in-migration and out-migration. With information on P, B, and D, it is possible to estimate net migration, M-X.

rises sharply from two to three percent per year before World War Two to roughly five percent per year following the war.²²

The Current Population Survey (from 1947 onward) and the Census of Population (from 1940 onward) provide more detailed information on short-distance migration. The percentages changing county since 1935 shown in Figure 3 show remarkably little trend over time. The only substantial difference is between the 1940 figures for migration over five years (which report pre-World War Two migration between 1935 and 1940) and the entire post-war period. If anything, the American population seems to have become slightly less mobile since the mid-1980s.

A large number of studies have been completed for specific communities in the U.S. that give us a sense of geographic mobility in the nineteenth century that is similar conceptually to that contained in the Current Population Survey and the censuses from 1940 onward. The ten-year non-persistence rates (the fractions of individuals not located in the same county over a decade) for mid-nineteenth century communities was 56% in eleven cities (1850-80) and 64% in nine rural counties (1850-80). Higher rates were observed for lower class workers before World War I, but higher rates were then observed for high white collar workers after World War I.²³ These studies are unable to distinguish out-migration from deaths, however, and tell us nothing about where out-migrants have gone.

An alternative approach is to create data like that in the contemporary Current Population Survey by linking individuals across successive censuses. In one study, this has been done for 4,938 native-born males linked 1850-60.²⁴ Of the nearly five thousand males located in both 1850 and

²² Migration into urban places is described elsewhere in this volume.

²³ These studies are surveyed in Thernstrom (1973).

²⁴ See Ferrie (1996).

1860, 47 percent changed counties between these dates.²⁵ Unfortunately, none of the intervals in the Current Population Survey series is as long as 10 years. But there are intervals of one and five years reported as shown in Figure 3. Based on these rates, over a ten year interval in the post-World War Two period, roughly 37 percent of those present in the U.S. in both years would have changed county.²⁶ Another comparison is possible: among males age 20-29 in the 1850-60 linked sample, 56% changed county over a decade; in the Young Men cohort of the National Longitudinal Survey, the rate of inter-county mobility among males age 20-29 was only 49% over the period 1971-81. This suggests that inter-county migration rates may have been more than 25% higher in the 1850s than they were from the 1950s onward.

The availability of linked data for the nineteenth century makes possible a final comparison with more recent data: rates of *gross* migration among regions. Table 2 shows inter-regional flows for the 1850-60 decade and inter-regional flows in the five years preceding the 1970, 1980, and 1990 censuses. In both the 1850s and in the last third of the twentieth century, New England is a region of low population turnover: though it loses a tenth of its native-born adult male population in the 1850s and a fifth of it over a typical five year period between 1965 and 1990, it experiences very little in-migration. The East North Central and West North Central states experience high turnover in the 1850s (with a quarter departing the East North Central states, for example, but large in-flows from the Middle Atlantic states and the West North Central states). By the twentieth century, these regions experience much lower turnover. In the 1850s, in both the north and the south, rates of out-

²⁵ Ferrie (1996), Table 5. Oberly (1986, p. 435) finds that a much higher fraction—85 percent—of those born in Virginia had made an inter-county move by the 1850s.

²⁶ This extrapolation is based on a linear regression using the years in which both one and five year migration rates are reported, with the inter-county migration rate as the dependent variable and the number of years in the migration question (one or five) as the independent variable. The estimated intercept is 3.6 and the coefficient on the number of years is 2.9. If the micro-level data from the CPS are made comparable to that in Ferrie (1996), these differences remain.

migration increased from east to west; by the twentieth century, this pattern is no longer apparent (e.g. New England loses more population over five years than the Middle Atlantic or West North Central states; the South Atlantic region loses more than any region except the Mountain/Pacific). Finally, gross flows reveal a somewhat surprising flow from south to north in the decade before the Civil War: a substantial fraction of those who begin the 1850s in the East South Central and West South Central regions have moved by 1860 into the East North Central and West North Central states. In the late twentieth century, this flow reverses direction: population moves from the Middle Atlantic to the South Atlantic, from the East North Central to the East South Central, and from the West North Central to the West South Central, though this latter flow is smaller than it was in the 1850s.

Table 1
Net Migration of the Native-Born Population, By Region (thousands)

	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
White									
1850-1900	(283.5)	(1034.8)	(753.9)	1137.2	(614.8)	(1022.3)	1018.3	414.6	638.4
1900-1940	(346.7)	(587.7)	(2.3)	(2190.1)	73.6	(1344.6)	38.7	403.6	3954.6
1940-1990	(753.7)	(7208.5)	(5621.2)	(3058.6)	7544.0	(1059.7)	934.0	2670.2	6604.2
Black									
1850-1900	32.8	170.0	128.5	39.9	(498.9)	(221.8)	325.5	0.0	0.0
1900-1940	32.6	764.5	677.4	114.3	(957.7)	(658.5)	(105.2)	21.9	111.3
1940-1990	160.7	562.1	999.0	91.8	(1015.0)	(1717.4)	(642.2)	210.0	1321.5

Source: Calculated from Series JF4.53 through JF4.104 and JF4.157 through JF4.208.

Table 2
Gross Migration of the Native-Born Population, By Region (percent)

Origin Region	Destination Region								
	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain and Pacific	Obs.
1850-60									
New England	88.65	4.43	4.20	1.02	0.11	0.11	1.48	0.00	881
Middle Atlantic	3.52	78.96	12.34	2.75	0.96	0.51	0.70	0.26	1,564
E. North Cent.	1.94	6.91	76.85	9.82	0.73	0.85	2.18	0.73	825
W. North Cent.	1.87	6.54	11.21	65.42	1.87	2.80	7.48	2.80	107
South Atlantic	1.31	2.25	2.43	1.87	87.27	3.56	0.94	0.37	534
E. South Cent.	0.39	0.78	6.64	7.81	3.13	74.22	5.86	1.17	256
W. South Cent.	2.94	4.41	7.35	10.29	0.00	4.41	69.12	1.47	68
Mountain/Pacific	11.11	7.41	14.81	3.70	0.00	7.41	3.70	51.85	27
1965-70, 1975-80, and 1985-90									
New England	81.10	9.64	2.71	0.98	2.96	0.65	0.63	1.34	56,580
Middle Atlantic	2.12	86.94	2.54	0.74	5.28	0.89	0.61	0.88	165,416
E. North Cent.	0.66	3.65	79.31	3.39	3.54	6.21	1.92	1.32	205,844
W. North Cent.	0.49	1.66	6.47	81.69	1.29	1.62	3.68	3.12	88,536
South Atlantic	2.40	9.48	6.70	1.91	70.83	4.79	1.88	2.01	169,185
E. South Cent.	0.46	1.70	4.62	1.29	5.33	82.66	2.76	1.18	69,678
W. South Cent.	0.74	2.45	4.63	4.46	2.87	3.88	76.92	4.04	113,488
Mountain/Pacific	2.07	6.37	10.79	3.24	2.28	8.15	8.15	56.91	204,797

Source: Integrated Public Use Microdata Series (1965-70, 1975-80, 1985-90) and Linked 1850-60 Census Sample described in Ferrie (1996).

Note: Native-born males age 15 and over in the base year.

Residence Outside State of Birth 1850-1990

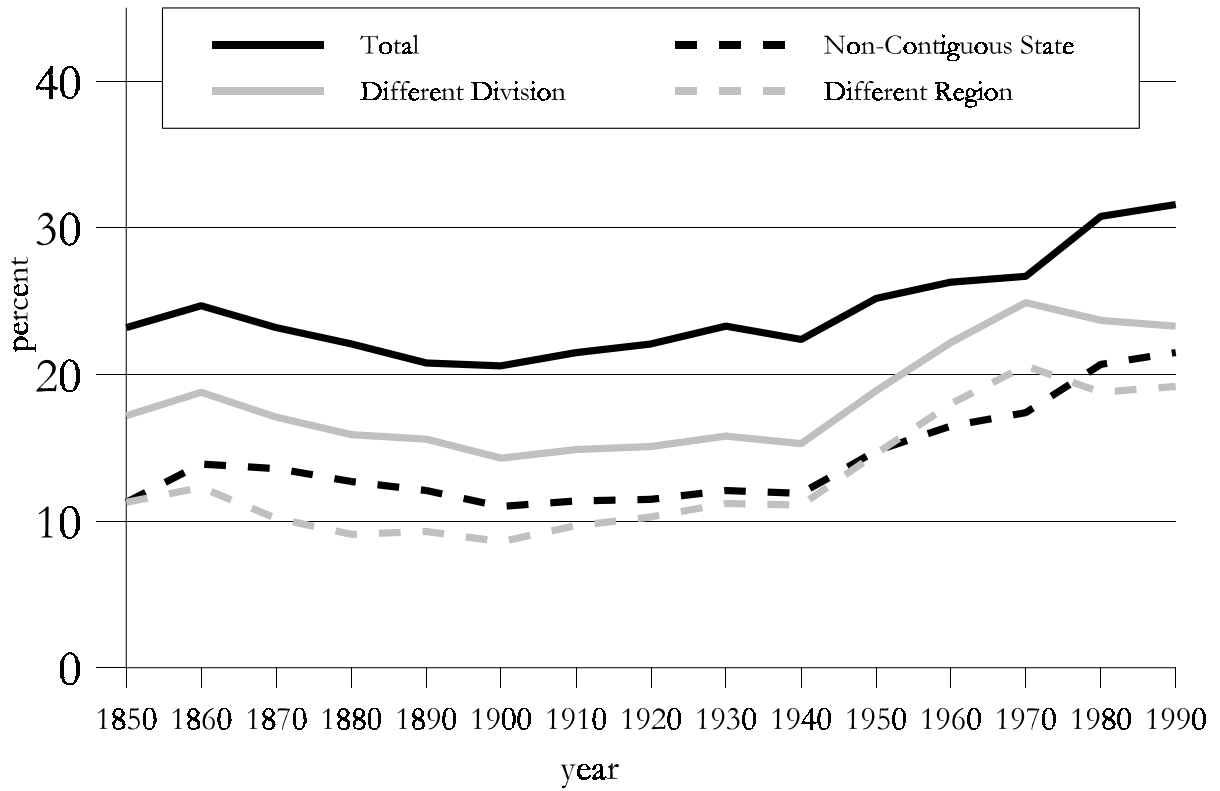


Figure 1

Net Migration from Farms, 1921-70

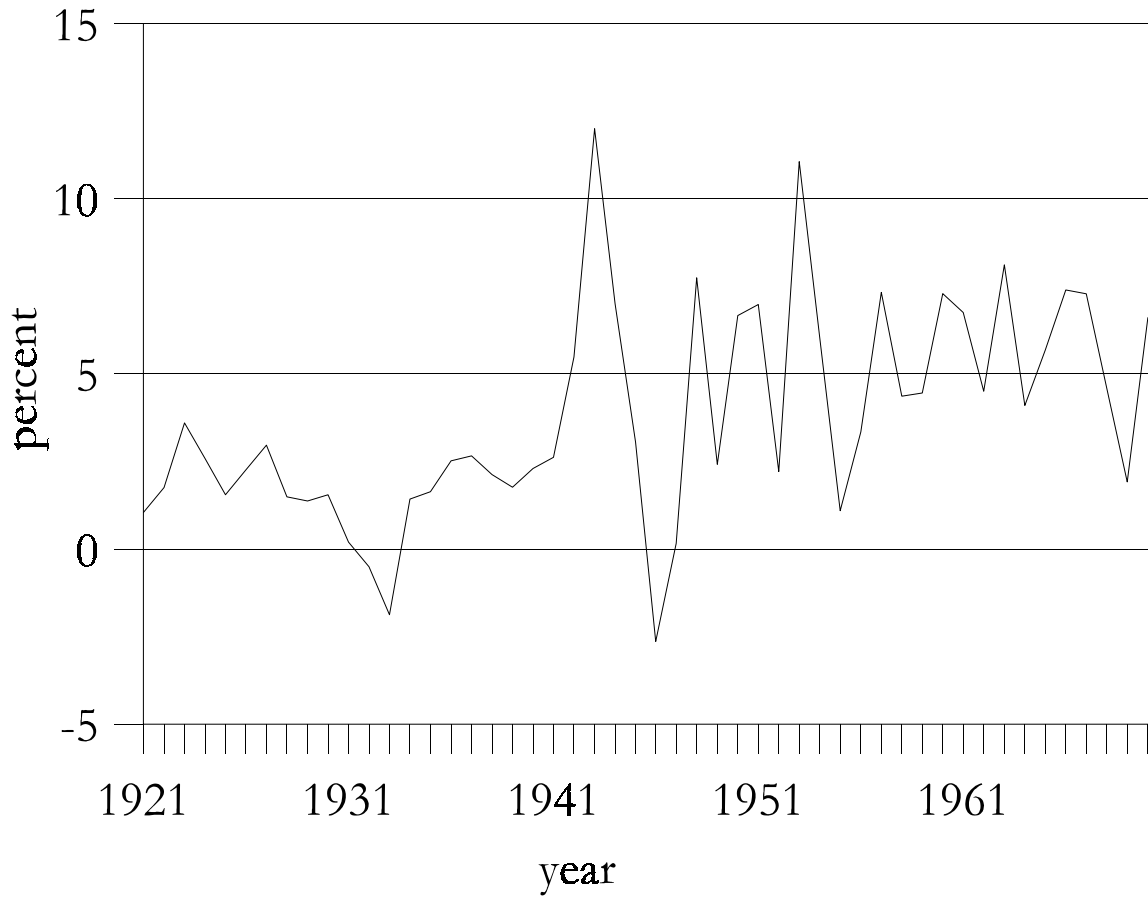


Figure 2

Inter-County Mobility, 1935-2000

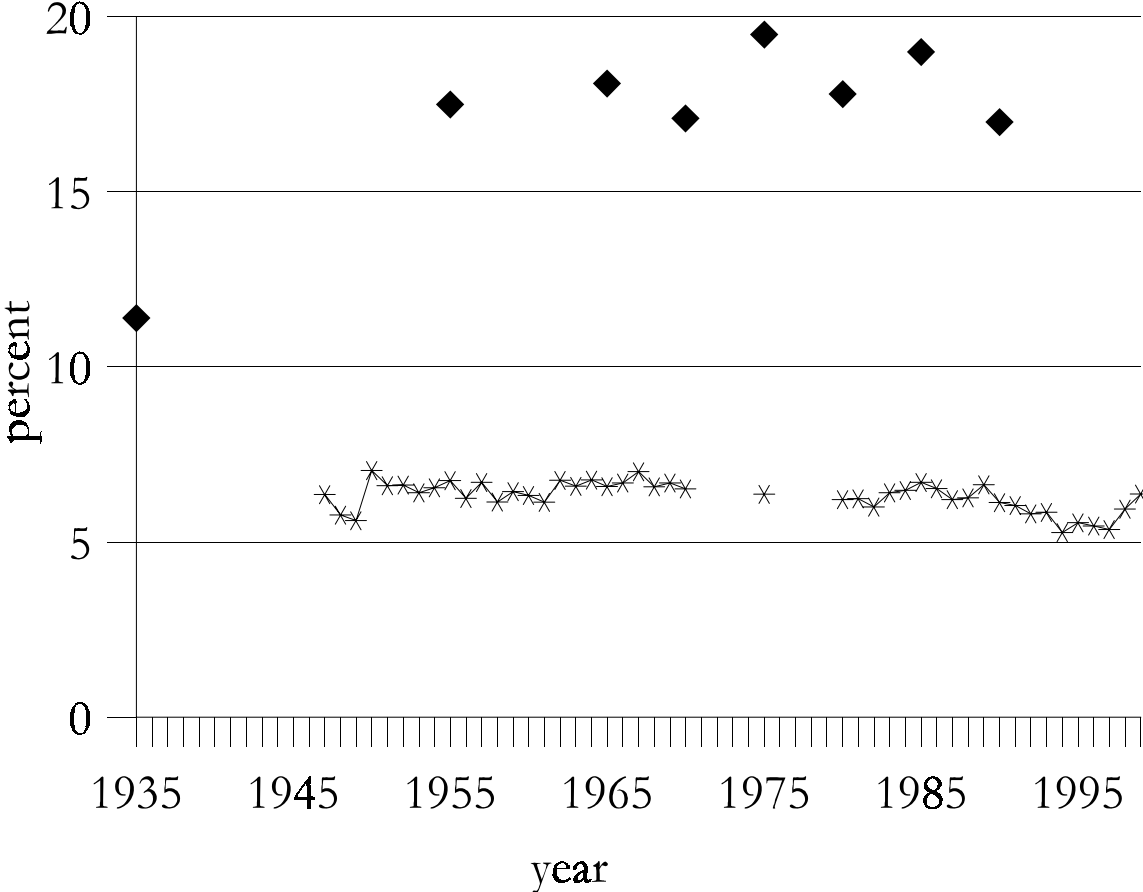


Figure 3