# *"How Ya Gonna Keep 'Em Down on the Farm [When They've Seen Schenectady]?: Rural-to-Urban Migration in 19th Century America, 1850-70"*

Joseph P. Ferrie
DEPARTMENT OF ECONOMICS AND INSTITUTE FOR POLICY RESEARCH
NORTHWESTERN UNIVERSITY
AND
NBER
ferrie@nwu.edu

Financial support was provided by the National Science Foundation (Grant No. SBR-9730243) and Northwestern University's Institute for Policy Research. Research assistance was provided by Shannon Holsinger, Blythe Sudweeks, and Courtney Sudweeks. Comments on an earlier draft were provided by participants at the 1998 NBER/DAE Summer Institute.

## I. Introduction

In 1920, the U.S. Census reported that, for the first time, a larger share of the nation's population was living in urban places (with more than 2,500 inhabitants) than was living in rural places. Though it can be said that we had become an urbanized economy by this date, the process of urbanization both began considerably earlier, in the first half of the nineteenth century, and continued down through the end of the twentieth century. Though we know the general outlines of the nation's urbanization, we know very little about the forces at work at the individual or household level that resulted in these broad patterns. This essay offers some evidence of how those forces operated. It employs data on several thousand native-born males linked across the 1850-60 and 1860-70 decades and provides the first micro-level analysis of the causes and consequences of migration to America's small town and cities for the nineteenth century.

## II. What We Know From Previous Work

The decennial federal censuses of population have collected information on the number of urban places and the fraction of the population residing in urban places since

1790.[1] Figure 1 shows that there were few urban places before 1830 and few Americans living in urban places before then. Both the number of urban places and the share of the population in them began to rise in the 1830s. The rate of urban growth by either of these measures increased from decade to decade until 1860; the rate of growth in the share urban then remained constant until the 1930s, while the rate of growth in the number of urban places continued to grow from decade to decade. These patterns were not exclusively the result of the large influx of European immigrants in the years before the Civil War. Though immigrants were more likely to settle in cities and towns than the native-born population, natives also were increasingly drawn to urban places.[2] Figure 2 shows that even when we restrict attention to the native-born, the share living in urban places rose dramatically over the 1850s and grew at a more or less constant rate thereafter until the Great Depression.[3]

These figures suggest that though absolute magnitudes in the process of urbanization were much larger in the late nineteenth and early twentieth centuries than in the antebellum period, the most rapid changes in the rate of urbanization took place in the 1830-50 period. At the same time, the towns and cities established in that earlier period were among the places that grew so rapidly in later years. Finally, to the extent that subsequent migrants from farm to city often followed those who had gone before them from the same places, migration from rural to urban places in the antebellum era can help us understand much of the quantitatively greater migration that occurred over the 120 years following the Civil War. Taken together, these considerations suggest a closer look at patterns in rural to urban

---

[1] The census definition of "urban" – all territory, persons, and housing units in incorporated places of 2,500 or more persons, and in areas (usually minor civil divisions) classified as urban under special rules relating to population size and density – has been employed throughout the following analysis.

[2] For an analysis of the settlement patterns of European immigrants before the Civil War, see Joseph P. Ferrie, *Yankeys Now: Immigrants in the Antebellum U.S., 1840-1860* (Oxford University Press, 1999), Chapter 4.

[3] The more rapid growth of cities and towns after 1830 is also not the result of urban/rural fertility or mortality differences: fertility rates were lower and mortality rates were higher in urban places throughout the nineteenth century. Figures 1 and 2 thus understate the amount of urban growth that was caused by the migration of the rural population to urban places.

migration in the 1850s.

The study of migration from rural to urban places in anything but the broad outlines sketched in Figures 1 and 2 has been hindered by a lack of micro-level data on households and individuals whose locations are known at more than one point in time. The census-to-census changes in the fraction of the native-born population living in urban places shown in Figure 2 is only a measure of *net* rural-to-urban migration; we cannot say with any precision how much results from people located in rural places at one date actually relocating to urban places by another date. New data that follow 4,271 native-born males from the 1850 census to the 1860 census can be used to measure *gross* internal migration flows.[4] Comparable data for 573 native-born males linked from the 1860 census to the 1870 census have also been created and will make it possible to see whether urbanization patterns were interrupted by the Civil War (recall that in Figures 1 and 2, the fraction of the population in urban places grew far less over the 1860s than it had grown over the 1850s).[5] As these data contain information on a variety of personal characteristics, it will be possible to assess the role of individuals' circumstances in their decision to migrate to urban places.

Previous studies of rural-to-urban migration have focused on "wage gaps": the difference between measured farm and urban wages. Even after adjusting for differences in rural and urban costs of living and the provision of in-kind payments to farm workers, such gaps remain and have prompted numerous efforts to explain the apparent premium earned by unskilled urban workers over their rural counterparts, usually using the framework developed by Michael Todaro which emphasizes the probability of urban unemployment.[6]

---

[4] These data are described in 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.

[5] The 1860-70 data were created by locating in the 1860 census index and manuscripts individuals drawn from the 1-in-250 Public Use Microdata Sample from the 1870 census.

[6] Examples include Jeffrey G. Williamson, "Leaving the Farm to Go to the City: Did They Leave Quickly Enough?," in John A. James and Mark Thomas, *Capitalism in Context* (University of Chicago Press, 1994); and Timothy J. Hatton and Jeffrey G. Williamson, "What Explains Wage Gaps between Farm and City? Exploring the Todaro Model with American Evidence, 1890-1941," *Economic Development and Cultural Change* 40 (2), January 1992, 267-94.

For the British case, it has also been possible to say something about the selectivity of migration from rural to urban places.[7] Though the lack of good rural and urban wage data for the antebellum U.S. makes the Todaro type of analysis impossible in the present study, it will be possible to say more about the selectivity of rural-to-urban migration.

## III. Native Gross Migration Between Rural and Urban Places, 1850-60 and 1860-70

Of males located in rural places in 1850, 23% were located in urban places by 1860. But of these, 3% changed classification only because their 1850 location grew. If we ignore these, and examine those who actually changed location, 20% of rural males moved to urban places over the 1850s. This 20% is a far smaller fraction than the 64% who changed location but remained rural, and even below the 24% rate of urban-to-rural migration. The absolute number of rural-to-urban movers exceeded the number of urban-to-rural movers by 5 to 1, though, so *net* migration was clearly *toward* cities and towns during the 1850s. For 1860-70, the rate of rural-to-urban migration was much lower: of 434 males who began the 1860s in rural places, only 28 (6.5%) had moved to urban places by 1870. Over the same decade, 89 of the 195 (45.6%) males who were located in urban places in 1860 moved to rural places. The combination of the drop in rural-to-urban migration and the rise in urban-to-rural migration accounts for the apparent stability in the fraction of the population in urban places between 1860 and 1870 seen in Figures 1 and 2.[8]

Table 1 reveals that most of the migration by those who were in rural places in 1850 was to locations within the same county: 32% of rural residents moved to other rural places in the same county and 9% moved to urban places in the same county. These intra-county rural-to-urban moves deserve closer scrutiny than they will receive here: it is possible that

---

[7] Jeffrey G. Williamson, "Migrant Selectivity, Urbanization, and Industrial Revolutions," *Population and Development Review* 14 (2), June 1988, 287-314.

[8] One explanation for the discrepancy in the rate of urban growth between the 1850s and the 1860s is that the 1870 census was unusually incomplete. If returns for urban places were more inaccurate relative to those for rural places in 1870 than in past years, the observed drop in rural-to-urban movement and rise in urban-to-rural movement can be rationalized without any change in the underlying behavior of the population.

they represent a very different strategy than movement to cities and towns outside the county of origin. For example, such short-distance moves to a small town or city within one's original county might be less permanent – a change in location to take advantage of new employment opportunities that may be undertaken when times of peak farm labor demand have passed. These moves might also represent migration to off-farm locations by farmers who have turned their farms over to their children.

For the 40% of rural residents who moved to a different county over the 1850s, it is possible to calculate how far they moved. These calculations are shown in Table 2. When they changed county and moved to urban places, rural residents moved greater distances than did urban residents who moved to other urban places outside their 1850 county. But when movement to rural places in examined, it was those who began the decade in urban places who traveled the farthest over the 1850s. This suggests that more rural residents were close to urban places than urban residents were close to rural places. In a strictly geographic sense this is implausible. But when we consider the *cost* of making a rural to urban or urban to rural move (which includes the cost of finding work and a place to live for urban-bound migrants and the cost of acquiring a farm for rural-bound migrants), it is likely that the latter were more costly for a given distance from the place of origin.

## IV. Potential Causes of Rural-to-Urban Migration

The data used here make it possible to assess not just the magnitude of rural-to-urban migration but also its correlates at the individual or household level. One possible reason for such moves has already been mentioned: the ability to augment farm income with off-farm employment in town. Such moves might also represent retirement strategies for farmers who have turned the day-to-day operation of their farms over to children. There may be reasons for other household members to make rural-to-urban moves as well. For example, if a farm family has several sons and insufficient farmland to establish each in farming, we might expect to see the younger sons migrating to town if the eldest son is close to inheriting the farm. If the father has several sons but is not yet prepared to turn over the farm, it may

instead be the eldest sons who relocate to town in search of opportunity. More generally, to the extent that migration to town represents an investment in new skills and new location-specific capital, we would expect to see these moves made most often by those with a longer horizon facing them over which they can recoup those investment costs.[9] These considerations suggest that factors such as age and birth order would influence the decision to migrate to urban places.

Figure 3 shows rates of rural-to-urban migration by age in 1850. It reveals a clear pattern of decreasing propensity to migrate to town with increasing age through age 49, but then a sharp increase in the probability of migrating to an urban place. Unfortunately, the cell sizes are to small to assess directly the possibility advanced above that many farm-to-town moves within the same county were made by farmers who had surrendered operation of their farms to children. But this spike in the urban migration propensity is certainly consistent with this scenario.

Other characteristics and their relationship with the probability of moving from farm to city are shown in Table 3. We expect that for a given gross improvement in one's circumstances brought about by migration, such a move will be more likely undertaken by someone who can do so at less cost: those with fewer mouths to feed at the new location (family size), those with better information about alternative locations (the literate and those who have migrated previously), and those with some skills that can be immediately put to use in an urban setting. In fact, those with smaller families, who could read and write, who had made a previous interstate move, and who had a white collar or craft occupation were more likely to move to urban places over the 1850s.

The costs and benefits of moving to town should have been influenced by the characteristics of the individual's county as well: for example, though short-distance moves to nearby towns might be desirable for retiring farmers or for workers who find themselves idle in agriculture, the ease of making such moves will be a function of the proximity of urban

[9] Williamson, "Migrant Selectivity," finds evidence of such age-selectivity in migration from farms to cities in Britain throughout the nineteenth century.

locations (measured here by the number of urban places in each county). Even among those who desire to make an intercounty move, the location of the origin county will have an impact on the cost of migrating: both the South and the West had far fewer urban places (not just cities, but also small and medium size towns) than did the Northeast. Finally, the economic characteristics of one's county should influence the cost of migrating: counties with better access to transportation by water or rail would have been cheaper places from which to make a rural-to-urban move. Counties with opportunities for employment in manufacturing in town were more likely to see rural-to-urban migration. The lower panel of Table 3 presents data that supports these predictions.

## VI. Migration and Its Anticipated Benefits

Perhaps the most important force prompting rural-to-urban movement was the prospect of an improvement in one's economic circumstances. The factors discussed above may have made it more or less likely that an individual with average characteristics was positioned to take advantage of opportunities in towns near or distant. When we get down to the actual decisions made by individuals, they were no doubt influenced by the perception of how they themselves would fare in an urban setting, given their own particular circumstances. Differences between rural-urban movers and those who remained in rural places over the 1850s are shown in the first column of Table 4. At first glance, migration to town seems to hold little appeal: migrants and non-migrants end the 1850s with virtually the same real estate wealth and the same chances of moving up in occupation from unskilled worker to farmer, white collar worker, or craft worker. At the same time, despite the cost of migration they have borne, migrants to towns have seen a smaller increase in their real estate holdings than those they left behind on the farm. If they began the 1850s with a better occupation than unskilled laborer, they were also nearly twice as likely to end up doing unskilled work after their move to town than were those who remained in rural places. Given the apparent deterioration in the circumstances of migrants to town, we might wonder why so many made such moves.

One explanation is that urban-bound migrants were consistently mistaken in their expectations: the lure of the city lights blinded them to the harsh conditions they would face there. But we would be surprised if generations after generations of farm sons were fooled in this way. A better explanation for the patterns seen in Table 4 is the recognition that migration to town was not some laboratory treatment, randomly assigned to participants with no choice in the matter. Instead, potential migrants assessed the net benefits of migrating, *given their own circumstances*, and chose whether to move based on that calculation. If we examine a particular economic outcome such as wealth accumulation, we can formulate this decision problem in a way that takes account of the fact that the outcomes generated in urban and rural places reflect potential migrants' assessments of the likelihood of those outcomes.

The framework employed in this exercise is the "mover/stayer" model. It allows for the individual to imagine two "regimes," one rural and one urban. Given the individual's characteristics, each regime generates a potential outcome. The individual then evaluates which regime produces the best net outcome and chooses accordingly. The resulting estimates make it possible to say how much of the observed outcome is the result of self-selection and how much is genuinely the result of the interaction of individuals' characteristics and the circumstances in the rural and urban settings.

The analysis begins with a regression equation for each of the two possible locations (rural or urban):

$$\begin{aligned} \Delta y_i^s &= y_{int'} - y_{int} \\ &= \beta_s' X_{it} + \nu_i^s \end{aligned} \qquad (1)$$

The change in the log of wealth among those who stay in rural places is a function of their characteristics, the rural price of those characteristics, and an error term. The change in the log of wealth among those who migrate to towns is

$$\begin{aligned} \Delta y_i^m &= y_{ift'} - y_{int} \\ &= \beta_m' X_{it} + \nu_i^m \end{aligned} \tag{2}$$

The individual then projects his change in wealth if he stays in a rural place and if he migrates to town, and makes a decision whether to migrate based on the net gain and any other relevant factors:

$$\begin{aligned} M_i^* &= \delta_1 C_i + \delta_2(\Delta y_i^m - \Delta y_i^s) - \nu_i \\ M_i^* &= \delta Z_i - \nu_i \\ M_i &= 1 \quad iff \quad M_i^* > 0 \Rightarrow \delta Z_i > \nu_i \\ M_i &= 0 \qquad otherwise \end{aligned} \tag{3}$$

We can now re-write Equations 1 and 2 to take account of the fact that we will only observe an individual living in the location that he perceived to be likely to produce the best outcome for him:

$$\begin{aligned} \Delta y_i^s &= \beta_s' X_i + \nu_i^s \quad iff \quad \delta Z_i \leq \nu_i \\ &= \beta_s' X_i + \rho_s \sigma_s \left[ \frac{-\phi(\delta Z_i)}{1 - \Phi(\delta Z_i)} \right] + \mu_i^s \end{aligned} \tag{4}$$

$$\Delta y_i^m = \beta_m' X_i + \nu_i^m \quad \textit{iff} \quad \delta Z_i > \nu_i$$
$$= \beta_m' X_i + \rho_m \sigma_m \left[ \frac{\phi(\delta Z_i)}{\Phi(\delta Z_i)} \right] + \mu_i^m \qquad (5)$$

The joint estimation of Equations 3, 4, and 5 will tell us both the outcomes that would be generated if we could assign a particular individual to a rural or urban place, and the direction and extent of the selectivity that results from individuals endogenously choosing the locations they perceive to be the best for them.[10] The observations used are all individuals observed in rural places in 1850.

The results presented in the first two columns of Table 5 reveal that the model's explanatory power with respect to the change in real estate wealth over the 1850s comes from both the individual and county characteristics. Under both regimes, the change in real estate wealth over ten years is greater at older ages, but the rate of increase is decreasing with age. Eldest sons see a more rapid growth in their real estate holdings than their siblings if they remain in rural places, but see the same growth in real estate as their siblings if they move to urban places. This suggests that one lure of urban places for a household's younger sons is the opportunity to accumulate wealth at a faster rate than on the home farm if it passes into the hands of an elder sibling. In both urban and rural places, household heads accumulate wealth less rapidly than others, probably because they are transferring wealth to their sons whether or not they themselves choose to stay on the farm.

The third column of Table 5 shows the correlates of the migration decision. Here, most of the explanation comes from the county characteristics. Though most of the individual characteristics are of the anticipated sign, their standard errors are quite large. All of the county characteristics (access to transportation, proximity to urban places, employment opportunities in manufacturing), however, are associated with a higher

[10] For references describing the "mover/stayer" approach, see Ferrie, *Yankeys*, Chapter 8.

propensity to migrate from rural to urban places. Of the individual characteristics, note that the predicted gain in wealth from making a rural-to-urban move ($\Delta\hat{y}$) has a positive impact on the probability of making such a move: an increase of 10 log points in the anticipated gain in wealth from migrating to an urban place results in an increase of 8 percentage points in the probability of moving to an urban place (nearly doubling the 19 percent probability for the baseline case), though this parameter is measured very imprecisely.

The "mover/stayer" framework also allows us to say whether those who migrate to urban places are positively or negatively selected from the entire rural population. The sign of the product of the parameters $\sigma$ and $\rho$ reveals the direction of the selection. In the first column of Table 5, this product is negative and statistically significant. This reveals that rural-to-urban migrants are negatively selected: they add less to their wealth after migration than those who remained in rural places would have added to their own wealth if they had migrated to urban places instead of remaining in rural places. Though the product $\sigma\rho$ is also negative in the second column of Table 5, suggesting that rural-to-urban migrants would have done worse had they remained in rural places than did those who actually remained in rural places, this product is measured imprecisely.

## VII. From the City's Perspective

Up to this point, we have considered the migration decision from the migrant's perspective. But there is another perspective that matters: that of the cities and towns that received the migrants. Much of the debate over rural-to-urban migration has revolved around the question of whether enough migration occurred, where "enough" is defined in terms of the size of the income lost to the economy because of the mis-allocation of labor across its rural and urban sectors.[11] What can we say about how easily cities were able to attract workers? Figures 4 through 7 show the counties from which four cities drew migrants over the 1850s in the data used here. Three of the cities are large (New York, Philadelphia, and Boston), and one (Albany) is of more modest in size. Perhaps surprisingly, all four drew their

[11] See Williamson, "Leaving the Farm."

in-migrants from only a small number of generally adjacent counties. Only New York and Philadelphia drew migrants from other states (in New York's case from as far away as Ohio). Both Boston and Albany drew migrants from closer locations. If we were to rank these cities in terms of size and the distances from which migrants traveled to them, there would be a clear positive correlation, which suggests a gravity-like process of migrant attraction: cities with larger populations were able to attract migrants from greater distances. Although smaller places could attract migrants, they could draw on those only in the nearest counties. These smaller cities were then placed at a disadvantage relative to larger places when competing for industries that employed large numbers of workers.

We can also compare the performance of rural-to-urban migrants with that of males who were located in urban places in both 1850 and 1860. This is done in the second column of Table 4. Along every dimension except upward occupational mobility, those who moved to towns and cities did worse over the 1850s than those who remained in towns and cities over the 1850s. And unlike the comparison between rural-to-urban migrants and those who remained in rural places (in the first column of Table 4), these comparisons are for the most part statistically significant. In terms of wealth accumulation, some of the differences between those arriving in urban places and those already there may reflect the capital gains made on land in urban places as they grew over the decade. But there are substantial differences in personal wealth as well as real estate wealth which indicate that there is more to the performance difference than rising land prices in towns and cities. We do not know when migrants left rural places, so it is possible that some of the poor performance they exhibit occurred before they left their rural origins, and that they viewed their urban destinations as places of greater opportunity.

## VIII. Conclusions

Migration from America's farms to its cities began in earnest in the decades preceding the Civil War. In this era, those who made rural-to-urban moves tended to be younger in general and the younger sons within farm households. About 20% of individuals located in

rural places made such moves over the 1850s, though perhaps only half as many did so over the 1860s. Though these moves were associated with little improvement in wealth holdings and some significant deterioration in occupational status on average, they were consistent with the expectation of better opportunities in urban places. Such moves were made more often when the cost of migration was lower, either because of individual characteristics associated with better information about alternative locations or county characteristics associated with lower transportation costs. Migrants were of somewhat lower quality than those they left behind in rural places. Cities drew migrants from areas roughly proportional to their size. Though these findings suggest the responsiveness of rural-to-urban migration to economic forces, it remains to be seen whether the migration produced by those forces was sufficient from the perspective of economy-wide efficiency.

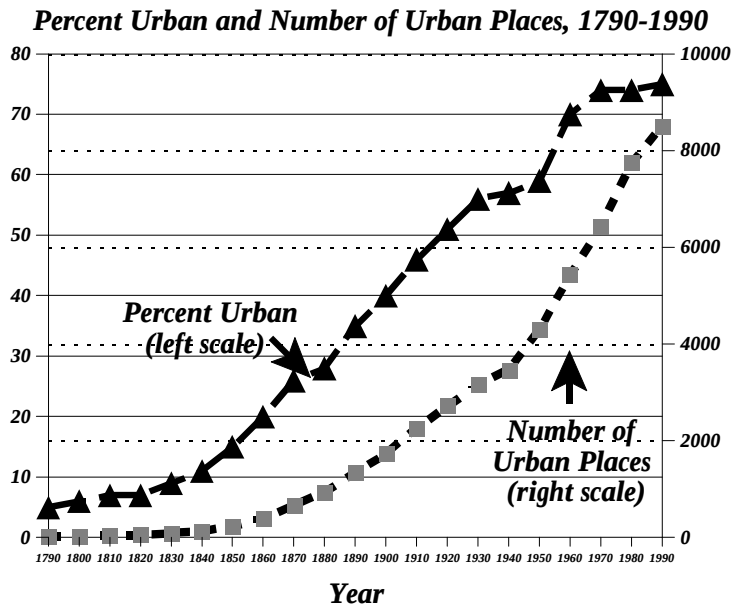


Figure 1: Percent Urban and Number of Urban Places, 1790-1990. "Urban" is a minor civil division (city, township, or town) with a population of 2,500 or more persons. *Source:* U.S. Census Bureau, *Historical Statistics*, Series A43, A57, and A69 (Washington, DC: 1976); U.S. Census Bureau, *1990 Census of Population and Housing*, "Population and Housing Unit Counts," CPH-2-1, Table 4.

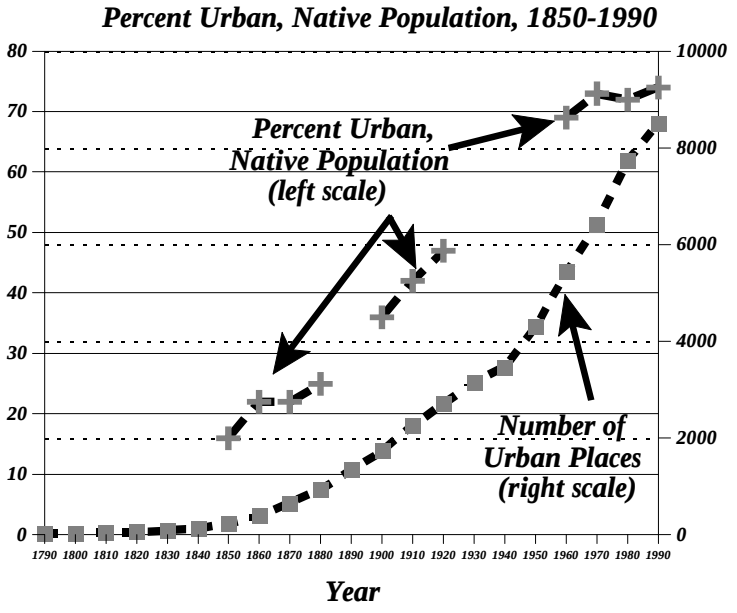


Figure 2: Percent Urban, Native Population, 1850-80, 1900-20, and 1960-90. "Urban" is a minor civil division (city, township, or town) with a population of 2,500 or more persons. *Source:* Ruggles, et al., *Integrated Public Use Microdata Samples* (University of Minnesota: 1998).

Table 1: Change in Rural/Urban Classification, 1850-60.

| 1860 | In Rural Places 1850 | | In Urban Places 1850 | |
|---|---|---|---|---|
| Location | N | Percent | N | Percent |
| Same town | | | | |
| rural-rural | 479 | 13.4 | | |
| urban-urban | | | 117 | 17.6 |
| rural-urban | 120 | 3.3 | | |
| urban-rural | | | 3 | 0.5 |
| Different town | | | | |
| Same County | | | | |
| rural-rural | 1,130 | 31.5 | | |
| urban-urban | | | 223 | 33.6 |
| rural-urban | 318 | 8.9 | | |
| urban-rural | | | 42 | 6.3 |
| Different County | | | | |
| Same State | | | | |
| rural-rural | 514 | 14.3 | | |
| urban-urban | | | 79 | 11.9 |
| rural-urban | 248 | 6.9 | | |
| urban-rural | | | 45 | 6.8 |
| Different State | | | | |
| rural-rural | 647 | 18.0 | | |
| urban-urban | | | 79 | 11.9 |
| rural-urban | 131 | 3.7 | | |
| urban-rural | | | 75 | 11.3 |
| Total | 3,587 | 100.0 | 663 | 100.0 |

Table 2: Distances Traveled by Inter-County Migrants, 1850-60, by Rural/Urban in 1850.

| 1860 | In Rural Places 1850 | | In Urban Places 1850 | |
|---|---|---|---|---|
| Location | N | Miles | N | Miles |
| Different County | | | | |
| Same State | | | | |
| rural-rural | 514 | 59.60 | | |
| urban-urban | | | 74 | 62.50 |
| rural-urban | 248 | 73.40 | | |
| urban-rural | | | 50 | 69.29 |
| Different State | | | | |
| rural-rural | 647 | 504.16 | | |
| urban-urban | | | 77 | 289.89 |
| rural-urban | 131 | 371.86 | | |
| urban-rural | | | 77 | 663.74 |

*Note:* "Miles" is the straight-line distance from the center of the 1850 county to the center of the 1860 county.

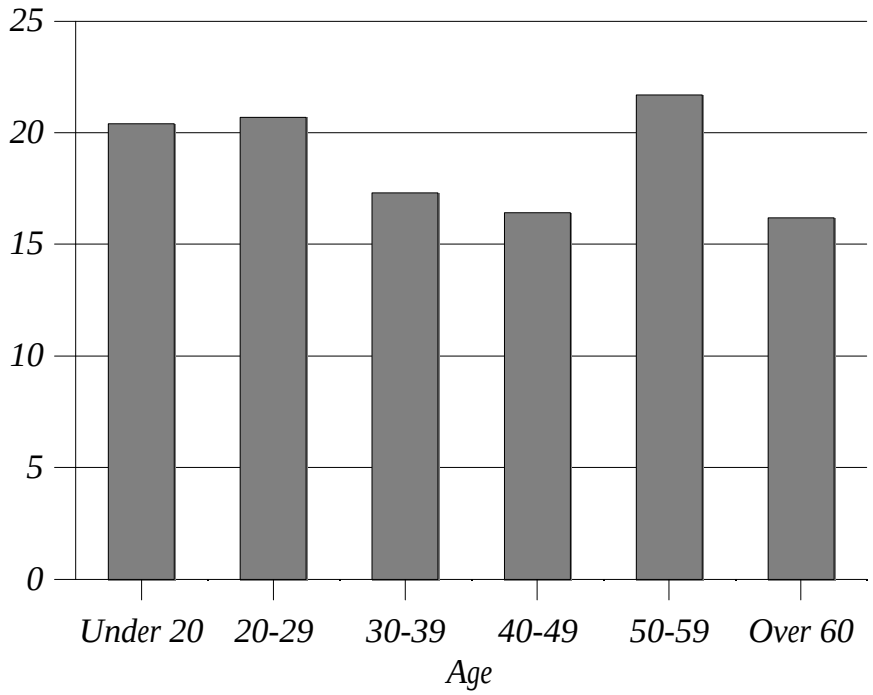


Figure 3: Rate of Rural-to-Urban Migration 1850-60 by Age in 1850. Individuals whose location did not change but whose urban classification did change because of population growth are *not* classified as migrants.

Table 3: 1850 Characteristics of Urban Migrants and Those Staying in Rural Places, 1850-60.

| | Stayed in Rural Places 1850-60 | | Moved to Urban Places 1850-60 | |
|---|---|---|---|---|
| Characteristic | N | Mean | N | Mean |
| *Personal Characteristics:* | | | | |
| Age | 2,890 | 29.10* | 697 | 28.03* |
| Household Head | 2,890 | 0.49*** | 697 | 0.43*** |
| Eldest Son | 2,890 | 0.22* | 697 | 0.25* |
| White Collar or Craft | 2,890 | 0.13*** | 697 | 0.21*** |
| Farmer | 2,890 | 0.48*** | 697 | 0.31*** |
| Real Estate Wealth | 2,890 | $735.90** | 697 | $990.53** |
| Literate | 2,890 | 0.95*** | 697 | 0.98*** |
| Family Size | 2,890 | 3.03*** | 697 | 2.65*** |
| Previous Migrant | 2,890 | 0.27*** | 697 | 0.19*** |
| *County Characteristics:* | | | | |
| South | 2,890 | 0.30*** | 697 | 0.06*** |
| Midwest | 2,890 | 0.26*** | 697 | 0.11*** |
| Urban Places | 2,890 | 2.13*** | 697 | 5.04*** |
| Water Access | 2,890 | 0.47*** | 697 | 0.78*** |
| Rail Access | 2,890 | 0.57*** | 697 | 0.81*** |
| Cash Value per Farm | 2,890 | $2,586.10*** | 697 | $3,572.73*** |
| Mfg. Emp./Population | 2,890 | 0.03*** | 697 | 0.06*** |

*t*-test for difference in means significant at *** 99% ** 95% * 90%.

*Note:* "Previous Migrant" is an individual living in a state other then his state of birth. "Urban Places" are minor civil divisions with populations greater than 2,500. "Water Access" and "Rail Access" are from Lee Craig, Raymond Palmquist, and Thomas Weiss, "Transportation Improvements and Land Values in the Antebellum United States: A Hedonic Approach," *Journal of Real Estate Finance and Economics* 16 (March 1998): 173-189. "Urban Places" is from ICPSR Study #9424. "Cash Value per Farm" and "Manufacturing Employment/Population" are from ICPSR Study #0003.

Table 4: Characteristics in 1860 of Rural-to-Urban Migrants, Those Who Remained in Rural Places, and Those Who Remained in Urban Places, 1850-60.

| Characteristic and Location | N | In Rural Places 1850 | In Urban Places 1860 |
|---|---|---|---|
| Real Estate Wealth 1860 | | | |
| In Urban Places 1860 | 696 | $2,187.68 | |
| In Rural Places 1860 | 2,876 | $2,125.49 | |
| Δ Real Estate Wealth 1850-60 | | | |
| In Urban Places 1860 | 696 | $1,195.72 | |
| In Rural Places 1860 | 2,876 | $1,388.48 | |
| Personal Wealth 1860 | | | |
| In Urban Places 1860 | 696 | $1,138.77 | |
| In Rural Places 1860 | 2,876 | $1,531.24 | |
| Up From Laborer | | | |
| In Urban Places 1860 | 334 | 0.10 | |
| In Rural Places 1860 | 1,103 | 0.10 | |
| Down to Laborer | | | |
| In Urban Places 1860 | 362 | 0.22*** | |
| In Rural Places 1860 | 1,773 | 0.14*** | |
| Real Estate Wealth 1860 | | | |
| In Urban Places 1850 | 480 | | $3,011.71 |
| In Rural Places 1850 | 696 | | $2,184.54 |
| Δ Real Estate Wealth 1850-60 | | | |
| In Urban Places 1850 | 480 | | $2,302.28* |
| In Rural Places 1850 | 696 | | $1,194.00* |
| Personal Wealth 1860 | | | |
| In Urban Places 1850 | 480 | | $2,305.14* |
| In Rural Places 1850 | 696 | | $1,137.13* |
| Up From Laborer | | | |
| In Urban Places 1850 | 185 | | 0.57 |
| In Rural Places 1850 | 335 | | 0.57 |
| Down to Laborer | | | |
| In Urban Places 1850 | 295 | | 0.17* |
| In Rural Places 1850 | 362 | | 0.22* |

*t*-test for difference in means significant at *** 99% ** 95% * 90%.

Table 5: Mover/Stayer Analysis of ΔReal Estate Wealth and Migration to Urban Places, 1850-60.

| Characteristic | Mean | Movers $\frac{\partial \Delta \text{Real Estate}}{\partial X}$ | Stayers $\frac{\partial \Delta \text{Real Estate}}{\partial X}$ | $\frac{\partial \text{Prob(Move)}}{\partial X}$ |
|---|---|---|---|---|
| *Personal Characteristics:* | | | | |
| Age | 28.884 | 0.180*** | 0.251*** | 0.007 |
| $\text{Age}^2 \times 10^{-2}$ | 10.428 | -0.222*** | -0.350*** | -0.013 |
| Literate | 0.957 | -0.972 | 0.156 | 0.152 |
| White Collar or Craft | 0.147 | -0.044 | 0.039 | |
| Farmer | 0.451 | | | -0.072*** |
| Eldest Son | 0.228 | -0.055 | 0.335** | 0.039 |
| Family Head | 0.480 | -1.827*** | -2.008*** | -0.029 |
| Family Size | 2.958 | | | 0.004 |
| Previous Migrant | 0.251 | | | 0.040** |
| $\Delta\hat{y}$ | -0.962 | | | 0.079 |
| *County Characteristics:* | | | | |
| Urban Places | 2.705 | | | 0.016*** |
| Water Access | 0.530 | | | 0.074*** |
| Rail Access | 0.619 | | | 0.044*** |
| Cash Value per Farm $\times 10^{-3}$ | 2.778 | | | 0.016*** |
| Mfg. Emp./Population | 0.036 | | | 0.354** |
| Eldest Son x (Mfg. Emp./ Population) | 0.007 | | | 0.405 |
| *Selection Parameters:* | | | | |
| $\sigma$ | | 3.475*** | 3.552*** | |
| $\rho$ | | -0.222*** | -0.084 | |
| *Constant:* | | 0.242 | -0.582 | -0.535** |
| *Diagnostics:* | | | | |
| Observations | | 3,572 | 3,572 | 3,572 |
| Log-likelihood | | | -11,039.53 | |
| $\chi^2$ | | | | 455.046*** |

Coefficient significant at *** 99% ** 95% * 90%.

*Note:* "Previous Migrant" is an individual living in a state other then his state of birth. "Urban Places" are minor civil divisions with populations greater than 2,500. "Water Access" and "Rail Access" are from Lee Craig, Raymond Palmquist, and Thomas Weiss, "Transportation Improvements and Land Values in the Antebellum United States: A Hedonic Approach," *Journal of Real Estate Finance and Economics* 16 (March 1998): 173-189. "Urban Places" is from ICPSR Study #9424. "Cash Value per Farm" and "Manufacturing Employment/Population" are from ICPSR Study #0003.

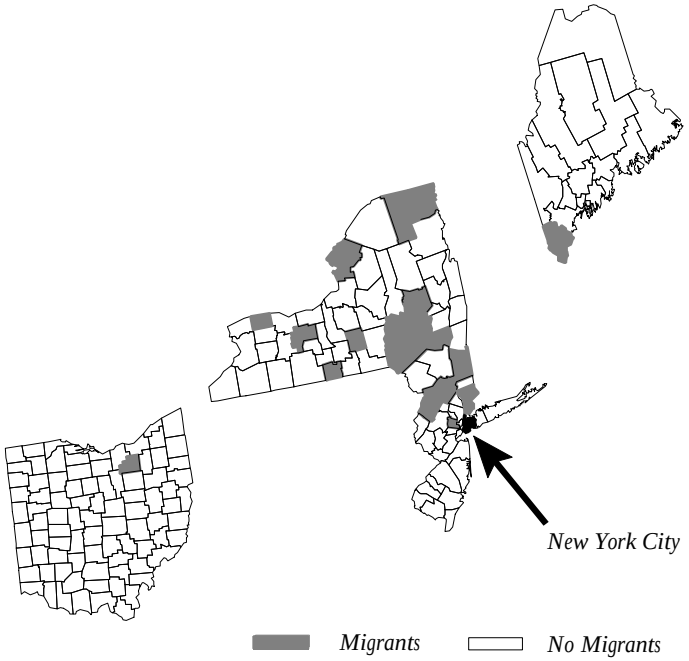


Figure 4: 1850 Location of Rural-to-Urban Migrants from Outside New York, Kings, and Queens Counties Located in New York City in 1860. "New York City" includes New York, Kings, and Queens Counties.

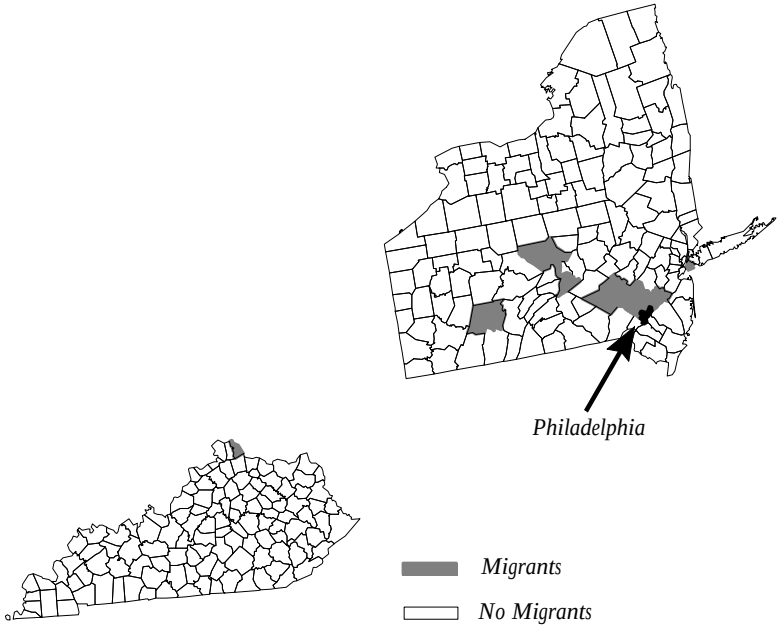


Figure 5: 1850 Location of Rural-to-Urban Migrants from Outside Philadelphia County Located in Philadelphia in 1860.

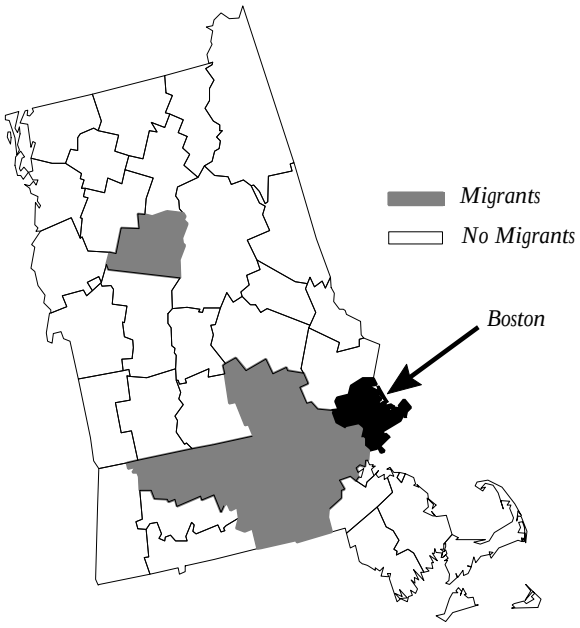


Figure 6: 1850 Location of Rural-to-Urban Migrants from Outside Suffolk County Located in Boston in 1860.

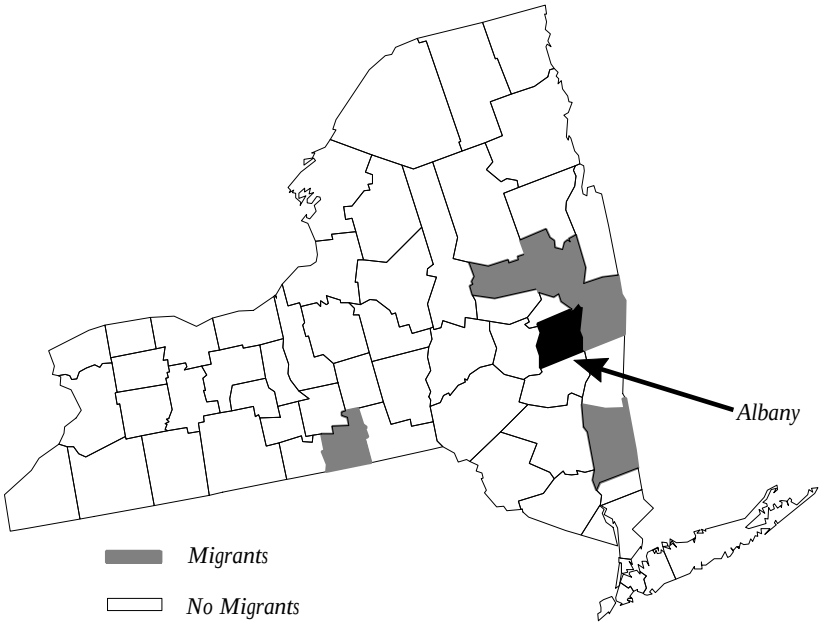


Figure 7: 1850 Location of Rural-to-Urban Migrants from Outside Albany County Located in Albany in 1860.