DAE
7/13/06
9:00 AM

Local Educational Investments and Migration:

Evidence from 1940

Thomas A. Mroz, UNC
Paul W. Rhode, UNC & NBER
Koleman S. Strumpf, Kansas School of Business

July 2006

Preliminary: Please do not cite.

Local Educational Investments and Migration:
Evidence from 1940

Several lines of thought regarding the interactions between the extent of geographic mobility and local government's investments in education co-exist in the economic history literature. A commonplace idea is that a local community will be more likely to invest in education, in building human capital, if it recoups more of the returns because the recipients stay put. A community facing a brain drain will be less able and willing to invest in schooling. It is also asserted that communities receiving large migrant inflows may have a school age population including many children of strangers, which the existing base of taxpayers is less willing to pay to educate. In both cases, high mobility environments may be associated with lower investment levels.

Much of the literature on the American South in the period between the Civil War and World War Two reflects the idea that providing education encouraged out migration both by raising a child's horizons and by opening the doors to succeed in the outside world. These ideas were captured in expressions such as "a high school diploma is a ticket out" (see Wright, 1986, p. 79) and "schooling only spoils a good field-hand" (*Atlanta Constitution*, 9 July 1910, p. 4). Not only did the local decision-makers-- the landowning elite-- fear losing the new investment in human capital, but also their existing pool of subservient labor. In a Tiebout-based model developed by Margo (1990, 1991), local elites invest just enough in the schooling of the children of their laborers to prevent their movement to neighboring communities.

An alternative perspective offered by Goldin and Katz (1999, 2000) takes the progressive Prairie States as its point of reference. This perspective views the local community as liberally investing in education even though it is known (and may be hoped) that the recipients will depart. As in the southern case, education is viewed as increasing the propensity to migrate. The difference is that here the electorate is dominated by parents who desire to provide their children with greater opportunities to escape from the local agricultural-based economy.

A final perspective comes from the U.S. Pacific Coast where communities in the early 20th century invested heavily in education under the beliefs that (a) most of the recipients would stay within the area, increasing the share of the investment realized locally and (b) high educational investment would attract in high-human-capital parents who valued the education of their children more. Thus, by providing a year of schooling, communities in the region expected to gain more than a year of schooling through selective migration. (Rhode 1990, pp. 7-9).

Four empirical questions emerge: (1) what effects did education attainment have on a household's propensity to move? (2) were migrants disproportionately attracted to areas investing more in education (relative to other public goods)? (3) were such forces of attraction stronger for educated parents of school-age children? And (4) in light of such selection effects, what characteristics (employment structure, income distribution, composition of the electorate) determined how communities set their educational expenditures as part of an economic development strategy.

To address these questions, we examine population and human capital flows within the U.S. from1935 to 1940 using 1940 IPUMS data (Ruggles et al. 2004). Data from the 1932 Census of Governments linked to the 1930 Census allows us to study the determinants of educational spending across counties. We also estimate a conditional logit model of location choice by individual households using these data sources. We linked the household location data to the information from the 1932 Census of Government, which published the earliest reasonably comprehensive data on local-level spending for education and other public goods. Specifically, we explore (1) whether more highly educated young adults are more likely to move to areas with higher levels of educational investment; (2) whether the propensity to move to areas with relatively high public education expenditures increases with the presence of young children in the household; and (3) whether these propensities to migrate in are higher after controlling for local economic conditions and the provision of other local public goods and amenities.

This paper has the following form. The next section uses data from the 1940 Census to examine the patterns of migration flows, with a focus on the better educated. The following section selectively reviews the large literature relating the provision of public goods to community composition and migration behavior. The next two sections introduce and then empirically investigate the county-level data on spending for schools and other public services in a heretofore under-utilized source, the 1932 Census of Governments. We then link these local spending data to the sending and receiving destinations in the 1% IPUMS sample to analyze a model of micro-level location choices by adult white males (and their children) over the 1935-40 period. The final section concludes.

Education and Migration in 1940

1940 is arguably the first year when anything meaningful can be said about the flows of human capital between the regions of the United States.[1] The 1940 census was the first to inquire in a comprehensive manner about the migration behavior of all Americans, both native and foreign-born. Specifically, the census asked not only where respondents were residing in 1940 but also where they lived five years before.[2] And the 1940 census was the first to include detailed questions about the educational attainment of the nation's residents.[3] Published data in the census cross-tabulated migration and education but the availability of IPUMS data makes the tasks of measuring and analyzing human capital flows vastly easier.

Tables 1 and 2 compile data drawn from the IPUMS 1% sample showing the flows of US residents from their 1935 regions of origin to their 1940 destinations. The top panel of Table 1 includes the entire population while the bottom panel includes only adults aged 25 years and older in 1940. (The figures covers the population that resided in the continental United States in both 1935 and 1940 and ignores the relatively small flows to and from foreign countries.) Essentially equal shares – 3.5 percent – of the adult

[1] For a more general analysis of net migration patterns in the 1930s, Fishback, et al (2006).
[2] The census did not inquire about timing and locations of the respondents' movements in the period between 1935 and 1940. But the five-year migration question went well beyond the earlier queries regarding when the foreign-born had arrived and what was the state of birth of the native-born.
[3] The 1940 education data are not perfect. The question asked about an individual's "highest grade completed" rather than "years of school attended." As Goldin and Katz, (2000) p. 786 note, many older Americans had attended common, ungraded schools and in answer to the 1940 census query many "greatly inflated their completion of the upper secondary-school grades."

and total populations changed regions between 1935 and 1940. Table 2 focuses on inter-regional flows of human capital, by providing two different measures. The top panel traces the migration of adults, aged 25 years and older and reporting a highest grade above 8 years. 4.5 percent of this population changed regions. The bottom panel considers parameterized estimates of human capital stocks and flows. These estimates assume each grade completed generates a rate of return of 7 percent; hence, an individual's stock of human capital equals (1.07)^("highest grade attained"). By this measure, slightly less than 4.0 percent of the nation's human capital stock changed regions between 1935 and 1940. The migration rates are obviously larger if one examines persons who changed states rather than regions. In 1940, 5.5 percent of the total population, 5.4 percent of the adult population, 8.2 percent of the adult population educated above eighth grade, and 6.1 percent of the estimated stock of human capital was in a different state than in 1935.

The data in the bottom panel make clear that the South Atlantic, Mountain and Pacific regions were importers of human capital whereas the other regions were all exporters.[4] One way to see this result is to calculate the new change in the human capital stock – by subtracting the estimated human capital of out-migrants from that of in-migrants – which is presented in the bottom row of the panel. The Pacific region was the big winner; its net change added 8.4 percent of the region's pre-existing stock (as reflected in the total column for 1935). The South Atlantic gained 2.0 percent and the Mountain states 1.9 percent. By way of contrast, the East North Central region lost about 4.0 percent of its stock; the West South Central region 1.9 percent, and the East South Central region 1.7 percent. (The changes for New England, the Middle Atlantic, and East North Central states were each less than one percent.)

A closer examination of the 1940 IPUMS data also reveals that movers possessed substantially more human capita per person than stayers.[5] Table 3 presents regional data

[4] These calculations assume that persons 25 years and older in 1940 who changed regions after 1935 completed their education in the sending region before moving to the receiving region.

[5] In his recent analysis of selective migration, William Collins (2005) uses the IPUMS data for 1940 on to examine the educational attainment of movers (persons born in other states and countries) and stayers in the South and non-South regions. Collins (p. 8) finds that (1) "migrants to the South have always been better educated (on average) than regional native workers" (2) "but migrants to the Non-South (many of whom are foreign born) have always been less educated than regional native workers;" and (3) "the migrants to the South were still better educated than the migrants to the Non-South." This finding suggests that the

on the measures on human capital per adult (aged 25 years and older). The top panel shows the proportion of the adult population reporting a highest grade above 8 years while the bottom panel records the ratio of the parameterized estimate of human capital to the adult population. By either measure, movers from every region had more human capital per person than those who stayed. And with the exception of the migrants from the West South Central region to the Mountain and Pacific states – think Okies escaping the Dust Bowl – the in-migrants had more human capital per person than the stayers residing in the receiving region.[6]

The western flows of human capital during the 1935-40 period have the character of a process with the "rich growing richer and the poor poorer." The data in Table 3 indicate that the Pacific and Mountain states had the highest levels of human capital per person (whether measure by the stock of the initial population, the final population, or in the population that remained over both periods). And the net change data in Table 2 demonstrate these regions imported human capital over this period. By way of contrast, the East South Central and West South Central states had below average levels of human capital per person and yet these regions exported human capital.[7] One way to justify such a pattern would be if better educated parents, who valued the education of their children more highly, selectively migrated to regions providing better educational opportunities.

South's position was a recipient of human capital inflows (the relocated Yankee) in not just a recent phenomenon.

[6] The analysis in the table makes no control for age other than imposing a lower cutoff of 25 years. Thus, it may confound the effects of education with other correlates of mobility such as age. A logistic regression using all 324,256 observations in our sample of whether one moved between 1935 and 1940 generates a coefficient on education of 0.084 (se=0.002) and on age of –0.018 (se=0.006). People with no children and with children under 5 years of age were more likely to move whereas those with older children were less likely to do so.

[7] One exception to the pattern of the poor becoming poorer was the South Atlantic states. These states, like the other regions of the South, had below average levels of educational attainment but they imported human capital. A more detailed analysis of net flows shows the South Atlantic states enjoyed human capital inflows primarily from the Middle Atlantic and East North Central regions; inflows from the East South Central region were substantial but smaller. A state-by-state comparison indicates that Florida, Maryland, Delaware, Virginia, and the District of Columbia accounted for the human capital inflows to the South Atlantic region. (One can readily calculate the net changes between regions taking the flow matrix appearing in the bottom panel and subtracting its transpose.)

Selective Literature Review

A huge literature has explored the relationship between community characteristics, migration behavior, and the provision of local governmental services. These topics are the central to the Tiebout (1956) hypothesis, which states that each individual costlessly sorts himself into the community that provides his most attractive mix of public services. This model has generated an extensive theoretical and empirical literature with some recent contributions including Epple and Romer (1991), Hoxby (2000), Margo (1991), Nechyba (2000), and Rhode and Strumpf (2003).

A key issue in the current strand of research is the importance of jointly modeling the individual mobility choices and the local government policy choices. While many earlier papers sought to estimate the demand for local public goods alone, the non-random composition of residents means the resulting estimates are biased. Selective migration may induce unobserved heterogeneity which is correlated with the observed covariates. For example, free sorting ensures that all residents of a community will prefer a similar level of local services. But these desired levels are driven by both observed components (such as income) and unobserved components (such as tastes). Conditional on the observables, the unobserved components will have non-zero expected value. A high income resident will have a taste for low services, and a low income resident will have taste for high services. Ignoring this correlation yields incorrect estimates of the relationship between the observables and local public services. Goldstein and Pauly (1981) first pointed out the possibility of such "Tiebout bias." There may also be unobserved heterogeneity due to community characteristics. Such factors as within-community racial sorting or non-public amenities might influence an individual's community choice, and this possibility may also result in biased parameter estimates. For example, the demand for public education services may be under-estimated if parents desire both high spending and good peer groups since the latter is endogenously determined by school spending. To overcome the unobserved heterogeneity problem, an equilibrium sorting model must be estimated. Recent examples of this general equilibrium approach include Epple and Sieg (1999), Epple, Romer, and Sieg (2001), Bayer and McMillan (2005), and Bayer, Ferreira, and McMillan (2004).[8]

In recent years, Alberto Alesina and numerous co-authors have investigated the consequences of a set of related forces – ethnic and racial heterogeneity – on the provision of local public goods. Examining 1990 data on a cross-section of localities, Alesina, Baqir, and Easterly (1999) find that expenditures on 'productive' public services such as schools, hospitals, and roads decreased with the city's ethnic and racial fragmentation. Alesina and La Ferrara (2000) show empirically that within-community racial heterogeneity reduces participation of individuals of different races in social activities. Alesina, Baqir, and Hoxby (2004) model the number of jurisdictions as an outcome of a tradeoff between heterogeneous preferences (influenced by social/ethnic background) and economies of scale. Examining liquor control laws following the end of Prohibition, Strumpf and Oberholzer-Gee (2002) find that US states with populations having more heterogeneous preferences tended to decentralize decision-making and allow for greater local options. In an analysis of US states, Poterba (1997) found that the growth in expenditures per child on K-12 education was slower in states with higher shares of the population aged 65 years and older. The effect was larger where non-whites comprised larger share of population aged 5-17 relative to that aged 65 and older. The implication is that the old are less willing to be taxed to educate the young, especially if the young belong to a different racial group.[9]

In a series of publications (1997, 1999, 2000), Claudia Goldin and Lawrence Katz have examined the historical forces driving public educational investments, especially for secondary schooling in the first half of the twentieth century.[10] They argue that spending on high-school education can be best understood as an "inter-generational loan" from a community's older population to its young, to be repaid by each generation to the next.

[8] Even these models could be further enriched with more complicated dynamic analysis. In a fully dynamic general equilibrium sorting model, individuals must consider how their move might influence the future composition in their community and all others and thus (under a democratic decision-making rule) the future policies they will face. For a sense of the complexity of this process, see Wildasin and Wilson (1996) and Kollman et al (1997).

[9] A more comprehensive survey of the effects, both positive and negative, of ethnic diversity on economic outcomes appears in Alesina and La Ferrera (2005).

[10] Among other samples, they examine the determinants of high-school graduate rates using state-level cross-sections for 1910 and 1928; city-level cross-sections for 1910, 1920, and 1930; and county-level data for Iowa in 1915.

They argue making such "loans" was more likely in smaller, wealthier, more stable and homogeneous communities. Examining data on high-school graduation rates across US states and cities and across local areas within Iowa, a leader in the "high school movement," Goldin and Katz find positive effects of wealth levels, of income equality, and of religious/ethnic homogeneity. Specifically, areas with higher population shares which were Catholic or foreign-born tended to have lower investments in secondary education. A finding that is surprising in light of Poterba's analysis was that the fraction of the population aged 65 and older was associated with higher – not lower – investments. Goldin and Katz (1997, pp. 18-19) interpret this effect as reflecting greater community stability, leading to higher levels of the social capital required to make the "inter-generational loans" work.

Two other estimated effects are especially noteworthy. First, a higher share of jobs in manufacturing was associated with lower high-school graduation, presumably because the sector provided relatively high-wage jobs for entry-level workers, raising the opportunity cost of staying in school. Second, Goldin and Katz find extraordinarily strong effects for automobile registrations per capita, which they use as a proxy for the level and distribution of wealth in a period when direct measures are of poor quality. They argue that for the 1910 to 1940 period, the number of autos per capita "summarizes mean wealth and its distribution in a convenient form relevant to voting models of public choice, since it proxies the share of votes likely to be wealthy enough to favor financing an expensive public good such as high schools. (1997, p. 17)" Goldin and Katz (1999, p. 701) observe that "(n)o other variable has as large an effect on the high school graduation rate in the late 1920s and early 1930s as does automobile registrations per capita."[11]

The opportunity to migrate plays a highly complicated role in the analysis of Goldin and Katz. On the one hand, they (1998, p. 10) argue that communities "in which individuals remained for most of their lives, and in which people took more interest in each other would be more likely to provide intergenerational loans." (In stable low-mobility communities, even local property owners might hope to recoup returns from investments in the human capital of the labor force.) On the other hand, Goldin and Katz

[11] They argue that in the United States in this period, automobile registrations per capita reflects both a high level of wealth and a more equal wealth distribution: "At a high enough level of mean wealth, high automobile registrations per capita are likely to indicate a more equal distribution of wealth. (1999, p. 701)"

(1999, p. 692) note that competition between communities for local migrants could induce educational spending. "So important was the provision of secondary schooling to the children to rural America that youths were often sent to live with relatives in towns and cities when their local district did not provide such education, and entire families moved to the closest town when their oldest child graduated from the local common school."[12] In their study of Iowa, Goldin and Katz (2000, p. 785) posit that altruistic parents might educate their children to facilitate their migration away from the rural dead-end areas: "although many farmers would have preferred that their children remain on the land, most knew it would prove impossible. The best they could do was to endow them with education to be mobile."[13]

Historical studies of the American South point to a similarly complicated relationship between education spending and migration opportunities. A crucial difference between the US South and Midwest is that while the local decision-makers (voter/taxpayers) in the Midwest were typically the parents (or close relatives) of the children to be educated, in the South black parents were disenfranchised and decisions regarding education spending on their children were often in the hands of the white land-holding elite. In *Old South, New South*, Gavin Wright argues that a high-school diploma was viewed a ticket out of the South and that many elites saw education as a source of trouble. Wright (1986, p. 79) quotes a planter from Arkansas who noted in 1900 that "when one of the younger class gets so he can read and write and cipher, he wants to go to town. It is rare to find one who can read and write and cipher in the field at work."[14]

---

[12] They (2000, p. 801) note that "If there were no school in the (Iowa) community, those desiring education would leave farming earlier or send their children to the town."

[13] Goldin and Katz (2000) p. 807 observe "Part of the return to education involves a greater ability to migrate to places with higher income potential. Iowa was not only a net exporter of educated labor, but a significant portion of the returns to education in Iowa-born males in 1939 accrued through migration."

A chief receiving areas of the Iowa migrant was the U.S. Pacific Coast, which in this period also invested heavily in education. It is worth recalling that in the first half of the 20th century, Los Angeles-Long Beach was sometimes called the "Capital of Iowa" (instead of the "Capital of Third World" as it is today). The "Iowa Association of Southern California" was the largest and most active of the region's numerous "home state" organizations. Its annual picnic, begun in 1900, regularly attracted 100,000 Iowa transplants to celebrate at Bixby Park in Long Beach in the late 1920s and early 1930s (*Los Angeles Times*, 23 Feb. 1909, 7 Aug. 1927, 11 Aug. 1929, 14 Aug. 1932, 11 Aug. 1940). See also McWilliams (1946) pp. 163, 170.

[14] Lindert (2004), p. 100 notes that similar sentiments were expressed in early nineteenth-century England. In 1807, Tory M. P. Davies Giddy opposed providing mass education by asserting that "giving education to the labouring classes… would … be prejudicial to their morals and happiness: it would teach them to

The white elite in any given area had a greater disincentive to invest in educating the black children if such schooling effectively decreased local supplies of docile labor. The 1896 Plessy vs. Ferguson decision, which allowed segregation by race, combined with the near-total disenfranchisement of African-Americans after 1900/10, largely decoupled spending levels for white and black pupils. As the county-level data mapped in Figure 1 indicates, expenditures per pupil in the South circa 1930 were highly unequal.[15] In the 946 southern counties for which data are reported, the correlation coefficient between expenditures per white and black pupils was only 0.18. In 96 percent of the counties spending per white child exceeded that per black child; the ratio in the median of the sample was 34.9 percent. (In 25 percent of the counties the ratio was below 21.5 percent; in 75 percent, it was below 51.2 percent.) As Gunnar Myrdal (1944) observed, the question was not why spending for black students was low, but why it was not lower, indeed zero.

Building on the Tiebout literature, Robert Margo (1990, pp. 44-51; 1991) has developed a game-theoretic model and supporting empirical evidence to resolve "Myrdal's paradox." Even though black parents could not vote at the ballot box, they could vote with their feet. White elites, who derived their income by combining their capital and land with black labor, faced labor-market incentives to allocate tax-dollars (levied in part on blacks) for education to attract and retain potentially mobile black

---

despise their lot in life….it would render them factious and refractory… (and) enable them to read seditious pamphlets….Beside, … it would go to burden the country with a most enormous expense…."

Comparing the United States with other part of the New World, Engerman and Sokoloff (2005) relate high levels of wealth inequality to the creation and maintenance of institutions that restrict access to economic opportunities, including low rates of public investments in schools. Taking a similar broad view, Galor, Moav and Vollrath (2006) model theoretically and empirically an inverse relationship between land inequality and public expenditures on education. The Galor-Moav-Vollrath treatment of the historical data appears questionable, however. For example, they measure land inequality in across the US states using census data on farm size without acknowledging that census farms were not ownership units but rather operating units (thus the small rented and share-cropped subunits of large holdings were counted as farms). As a result, we have not yet attempted to investigate their land-inequality effects in our data.

[15] Johnson (1941). The Johnson school data tabulate from state education reports for the 1929-30 period public expenditures per enrolled pupil by race. The overall study covers 1104 counties and includes information on population and economics characteristics, education statistics (such as literacy rates and the number of Rosenwald schools/classrooms), and the number of lynching. For 22 counties, no data were available on black education, spending; for 49 counties, there were "no negro schools"; and for 84 counties, there were "less (sic) than 100" black students and no spending data was reported. Useable data were available for 949 counties. In more recent work, Moehling (2004) has carefully developed a set of county-level school quality measures for the South for the period around 1910. Gerber (1986) focuses on explaining white school spending.

families. As narrative support for this argument, Margo (1990 p. 49) quotes J. W. Joyner, the Superintendent of North Carolina Schools, stating in 1910: “There is no surer way to drive the best of them (African-Americans) from the state than by keeping this continual agitation about withdrawing from them the meager educational opportunities that they now have. Their emigration in large numbers would result in a complication of the labor problem. Some of our Southern farms would be compelled to lie untenanted and untilled.”[16] In addition, Margo conducts an econometric investigation using data from Louisiana counties to corroborate the operation of a Tiebout-like mechanism linking potential migration to the provision of local public goods. The literature thus poses a wide range of interesting questions, which we now explore using a heretofore under-exploited source providing data on expenditures on education and other public goods for the 3000 plus counties of the United States.

[16] Joyner was an advocate of universal education, opposing the racial exclusionists who had a powerful voice in North Carolina politics in the 1900s. But Joyner was hardy a race liberal. He argued in this first annual report as superintendent, “With the Negro, it must be elevation through proper education or extermination.” Leloudis (1996), pp. 178-79.

The 1932 Census of Government

The 1932 Census of Government offers the most comprehensive enumeration of the governmental activities to that date.[17] Previous decennial studies had collected statistics on governmental activities "in more or less detail," but the 1932 report was "the first complete one, covering all subjects" concerning public indebtedness, valuation, taxation, and expenditures at every level of government. It surveyed some 182, 548 governmental units having the power to levy taxes or borrow. The coverage included 48 states and the District of Columbia; 3,062 counties; 16,442 cities, towns, villages, and boroughs; 128,548 school districts; 19,978 townships; and 14,572 other civil divisions.[18] It is notable for our purposes that the local school districts were the most numerous unit surveyed, representing over 70 percent of the total. Earlier reports in the Census of Government series did not report statistics on these highly decentralized units in a comprehensive manner. In particular, schools in rural areas were not covered.[19] The 1932 census has the further advantage publishing at the county level statistics for detailed functional activities – general government, protection, health and sanitation, schools, libraries, recreation, and other – compiled from all its political subdivisions (the county itself, cities, towns, and villages, school districts, and other special units).

Given the wide range of governmental units surveyed, the timing and nature of the accounts obviously varied. To standardize the year of coverage, the census reported data for the fiscal year ending on a date between 1 July 1931 and 30 June 1932. Regarding expenditures, the census reported on "governmental-cost payments" which for schools included "payments for operation and maintenance" but excluded interest of

[17] Wallis (1984) investigated the 1932 data at the aggregate level by function and level of government. Wallis (2006), Vol. 5, p. 3 notes that the first complete count of governments in the United States was not taken until 1940, which enumerated 155,116 governmental units including "one national government, 48 state governments, 3050 county governments, 16,220 municipal governments, 18,919 township and town governments, 108,579 school districts, and 8,299 special districts."

[18] U.S. Bureau of the Census (1935), p. v. Total in the text differs from the sum of the individual components. *Historical Statistics* series Bc1 reports 127,531 school districts for 1932.

[19] U.S. Bureau of the Census (1935), p. 5. The 1922 Census did not report data on expenditures. In the 1913 Census of Wealth, "such data were limited to States, counties, and cities, towns, villages, and boroughs, and to incorporated places with a population of 2,500 and over. Data for the incorporated places reported included data for the schools of such incorporated places." But other rural schools were apparently not covered. Note that in 1910, roughly 54 percent of the US population resided in rural areas.

public debt or payments for new land and buildings. This figure provides a relatively standardized measure of local investment in education, a measure that is neither dependent on the methods of finance (taxes versus borrowing) nor is clouded by temporary surges in building activity.[20] The total Census figure for "cost payments for schools" in 1931/32 was $2.453 billion, which was higher than the educational revenues of $2.068 billion for the 1931/32 school year reported in the *Historical Statistics*, total educational expenditures of $2.325 reported for 1932 or the US Office of Education numbers on total public expenditures for elementary and secondary schools of 1932 were $2.174 billion in 1932 and $2.316 billion in 1930 reported in *Statistical Abstract of the United States: 1935* (1935, p. 114). In the latter case, the difference is in the expected direction because the 1932 Census figures appear to include state-funded higher education.[21]

In the Census data, the states differed substantially in the share of school cost payments coming from local and state sources. At the national level, 75.4 percent of spending was from local sources. Delaware anchored the low end, with all of the spending in that small entity coming from state sources. The southern states of Virginia (49.9 percent local), Louisiana (56.7 percent), North Carolina (56.8 percent), Georgia (57.5 percent), Texas (58.0 percent), Mississippi (59.3 percent), and Maryland (59.4 percent) also tended to rely on state as opposed to local sources. By way of contrast, selected states in New England and Midwest – Massachusetts (93.0 percent), Illinois

[20] As a crude check, the total spending data taken the state level have a correlation coefficient of 0.983 with the US Office of Education data for 1932 public expenditures for elementary and secondary schools (appearing is the 1935 edition of *Statistical Abstract of the United States*, p. 114).

[21] National data from *Historical Statistics* indicate that the bulk of state spending in 1932 was devoted to higher education and little went to elementary education. The reverse was true for local spending. In 1932, local schools accounted for 87.4 percent of total government educational expenditures, higher education for 12.3 percent, with other for the remainder (Series Ea 67-70, 5-19; a comparison with Series Ea291-295 shows virtually all these funds came from state and local sources.)

Education Expenditures in 1932, in millions of dollars

	All	State and Local	State	Local
Total	2325	2311	278	2033
Elementary	2033	2033	17	2016
Higher Ed.	251	251	234	17
Other	41	27	27	0
Series Ea	67-70	291-95	402-406	537-540

(91.4 percent), Rhode Island (89.7 percent), Connecticut (88.6 percent) and Ohio (88.4 percent) – relied overwhelmingly on local sources[22]

Table 4 fills out the picture at the level of census region. It shows the fraction of spending coming from State sources, local school districts, and other local entities (such as cities, towns, and townships). In the southern states, close to four-tenths of spending came from the state; in other regions this share was typically less than two-tenths. The table also makes clear that local school districts contributed the vast majority of funds in the North Central states and a large share in the West South Central and Mountain states. They were less important in the South Atlantic and East South Central states and played virtually no role in New England.

The early 1930s was obviously an economically turbulent time. The question arises about how representative are spending data for this period from the Census of Government. Figure 2 places the educational finances of the period in context. It graphs educational revenues by source (local, state, and federal) between 1889 and 1941 using national data from Millennial Edition of the *Historical Statistics of the United States*. As the data indicate, nominal revenues in 1931 were slightly lower than in 1929, but had not declined as far as in 1933. One further point regarding how meaningful the data for 1931/32 is the interpretation put on a high level of spending during a severe economic downturn. For potential migrants concerned about a community's commitment to education, the level of spending in a period of distress such as the Great Contraction should serve as a strong signal.

Our measures of local educational investments differ from the school quality measures used in the literature, which include number of children attending, days of attendance, graduation rates, teacher-pupil ratios, teacher qualifications, among others. Our expenditure figures also make no adjustment for regional differences in the cost of providing schooling (such as teachers' salaries). Our statistics do cover the full range of public schooling, from primary to secondary and state-supported tertiary education, but they exclude the negligible amount that the federal government spent at this time. One

[22] These shares and ranking largely accord with state-level figures of US Office of Education appearing in Foster et al. (1934) p. 19. It is unclear how higher education is treated in the U.S. Bureau of the Census (1935) data.

advantage of examining this period is that local-level choices about educational investments were largely independent of federal guidance or mandates.

The overall patterns of school spending per child aged 7 to 20 appear in Figure 3. The top panel shows spending at the county level only whereas the bottom panel includes state spending allocated across the counties on a per child basis. (The differences are unimportant except in Delaware.) The variation of spending per child across the counties displayed was substantial. The coefficient of variation in county-only spending per child was 0.643 (=38.4/59.7; N=3073) and in the total spending per child was 0.539 (=42.8/79.5; N=3073). Observe that in both panels, state effects on spending are clearly evident. Variation across states in the per child expenditure data appear far larger than variation within states (e.g. state-fixed effects account for 84 percent of the variance in total schooling spending per child). This result has two implications: (1) educational investment is an economic activity where, at least historically, the states of the US were a salient unit of policy formation; and (2) the degree of local variation appearing in the county-level data is not so severe as to lead us to advise disregarding the findings of studies focusing on state-level comparisons. One could imagine that the aggregated data in state-level studies mask all of the important variation; the county-level data suggest otherwise.

Determinants of Local Spending on Schools, Libraries, and Recreation in 1931/32

Building on the literature investigating the provision of local public services, we begin by analyzing the determinants of county-level expenditures on schools, libraries, and recreation in 1931/32. We will focus chiefly on the "usual suspects" among the explanatory variables. These include (a) demographic characteristics of the 1930 population including the percent urban, black, foreign-born, illiterate, male, old (age 65 and above), membership in leading religious denominations (in 1926), and the share of families having different number of young children in the household; (b) economic variables including home ownership rates, manufacturing value added per wage-earner, number of manufacturing wage-earners per capita, farmers per capita, average number of income tax returns per capita (1931 and 1932), automobiles and telephones per capita in

1930, the unemployment rate in 1930; (c) political variables including percent of votes (in presidential elections) for the democratic candidate and estimated turnout;[23] and (d) institutional data related to the state education structure including the number of school districts per child in the state, the number of years of compulsory schooling, and the timing of the fiscal year recorded in the 1932 Census of Government.

Our dependent variables are logs of (a transformation) of spending per member of a relevant population group. For library and recreation spending, we divide by the total population. For school spending, we divide by the population aged 7 to 20 years. (We preferred this denominator to the census data of number attending school because the latter includes persons attending private schools. In addition, we were concerned that if low-quality schools induced higher dropout rates, statistics on spending per enrolled pupil may prove misleading. Given that state spending included money for higher education we included the population aged 18-20 years.) Note there were no meaningful differences in the results for per child and per capita school spending (and the latter results are not displayed). At this point in the analysis, we have made no direct adjustment for the racial disparities in spending levels so vividly illustrated in Figure 1; the regressions, however, do include controls for region and black population share. For school spending, we present results both for county-level spending and for total state and local spending where the state spending is allocated across the counties on a per child basis. The summary statistics for all of our county-level variables appear in Table 5.

The results of our regression analysis of the determinants of local-level spending on schools, libraries, and recreation are presented in Table 6. Note that the regressions take the county as the unit of observation and do not use population weighting. Our discussion will focus chiefly on the regressions explaining school spending.[24] A first set of results related to counties' demographic characteristics. Urbanization is associated with less school spending whereas the share of foreign-born white has a positive effect (at the mean of the observations). The male share of the population has strong positive effect on school spending (at the mean of the observations) whereas the fraction old has a negative effect at its mean value. The home-ownership share has surprising little net

[23] Fleck's(1999) work, in part, inspired the inclusion of turnout data.
[24] For a recent analysis of the secular growth of libraries, see Kevane and Sundstrom (2006).

influence on total school spending. One interesting finding is that the black share and black share squared jointly small positive effect on school spending. This result would be reversed if the political variable reflecting voter turnout were excluded. The turnout variable support a political economy story because regions with high turnout have greater spending and those with low turnout (such as in the South where black parents were disenfranchised) have lower spending.

One truly striking finding is what a powerful predictor automobiles registered per capita is for school spending in 1931/32. The results of Goldin and Katz using state-level data for the United States hold almost equally well for our data on school spending across all US counties. Figure 4 graphs the relationship between the number of passenger automobiles (in July 1930) per capita and the log of county-level school spending per child by county (N=3070). Apart from a very few outliers, the data are tightly clustered; the R-squared in OLS regression is near 0.60. The relationship between school spending and ownership of telephones (R-squared=0.33) is much looser. Why automobiles registered per capita is such as powerful predictor bears further study.

Other results of note are as follows. Income tax returns per capita have a positive effect on spending as one would expect. The prevalence of manufacturing – as measured here by the number of manufacturing wage-earners per capita—does not appear to depress educational investments. This result does not necessarily conflict with the finding in the existing literature of a negative relationship between manufacturing employment opportunities and high school graduation rates because the current analysis is focusing on a different outcome, namely public spending on education at all levels. The unemployment rate in 1930 is associated with higher total school spending.

Another interesting set of results appears in the variables reflecting the 1926 religious composition of the counties. These coefficients indicate that an increase in the Jewish or Congregationalist shares in a county is associated with higher spending on schools and libraries whereas an increase in the Baptist or Catholic share is associated with a decrease. (The excluded group in the regressions is non-members and members of minor/other religious groups.) The inclusion of the religion variables always has jointly significant effects. Much recent work has interpreted the religious variables as capturing the effects of community heterogeneity, suggesting that more homogeneous communities of any denomination would spend more. Supporting this interpretation, the squared term for Baptists does work to offset the linear term (and the sign of the overall effect shifts within the relevant [0,1] interval). The squared terms for Jewish, Congregationalists, and most other groups also offset the linear terms. But this is not true for Catholics. Note especially that if the variables for individual denominations are replaced with single Herfindahl index measuring religious heterogeneity, its coefficient is small and statistically insignificant at conventional levels.[25] The composition of the religious population, not simply its diversity, appears to matter.

The results regarding family structure and population growth suggest a complicated array of effects. The school spending regression include the census data on the share of families in 1930 have one, two, three, and four or more children under 10 years of age in the household. (The share of families having no children under 10 is the omitted category.) Families with one or three children are associated with lower school spending relative to families with no children, while those with two are associated with higher spending. These patterns are difficult to interpret because, for example, families with one child under 10 likely represent a heterogeneous group, including those just starting to raise young children and those who are near completing the process. The results for the variables capturing the population changes between 1920 and 1930 are much clearer. In general, areas with higher rates of population growth (from whatever source) have lower levels of local spending on schools, libraries, and recreation. Disregarding an interpretation based on mere inertia, this finding is consistent with the

[25] The Herfindahl religion index is created by taking the sum of squares of the denomination shares excluding non-members from the analysis. (Including non-members might change the results.) A comparable analysis for income inequality also raises further problems for the heterogeneity hypothesis. We construct a county-level income Herfindahl index based on 1924 income tax data which breaks down tax-filers into three net income categories. We form a fourth category as the residual of the estimated number of families in 1924 (=0.4*1920 families+0.6*1930 families) minus the number of tax-filers. We then take the shares of each of these categories as a fraction of the estimated number of families in 1924 and sum the squares to form the income Herfindahl measure. Note this measure does not exploit the natural ordering of the income categories as a Gini coefficient would. A higher Herfindahl index does nonetheless indicate greater homogeneity. When included in the total school spending regression (with all of the other wealth proxies), the income Herfindahl index has a negative significant coefficient (-0.373, se 0.072) which is inconsistent with the hypothesis that homogeneity raises spending.

notion that the existing population is less willing to tax itself to provide local public goods for newcomers.[26]

We have also included a set of state-level variables – the number of school districts per child, the number of years of compulsory schooling (as measured by the difference between the required entry age and exit age), and the fiscal year coverage – as controls. The variable on the number of school districts in the state per child does not have the sign predicted in the literature, that is, that more decentralization will facilitate higher support for education.[27] (Nor is there direct support for the idea driving the consolidation of school districts over this period, namely that having more districts raises costs.) Our negative effect may simply reflect the way the Census of Government records the number of school districts. The timing of the fiscal year over the 1931-32 period has a negative but small effect on spending. The onset of the Great Depression shows up in the data but it does not steal the party.

The regional effects follow the expected pattern and are statistically significant. Compared to the West (the omitted region), school spending in the Northeast was lower, in the North Central lower still, and in the South, even lower. The results for library and recreation spending are not as sharp. Overall, the results explaining the 1931/32 spending patterns are generally sensible and not widely at variance with earlier studies. These re-assuring findings suggest the 1932 Census of Government data promise to provide useful information about the role of local public services in our analysis of individual migration decisions over the 1935-40 period. We next turn to the question of whether higher levels of school expenditure in a locality, as measured with in the 1932 Census of Government, were attracting more highly educated households.

[26] Regarding the inertia story, note that the spending statistics in the 1932 Census of Government are for operational expenses and not for new construction. If a population influx led to increased schooling building, this new construction may have been financed at the expense of the operational budget.
[27] Goldin and Katz (1999 p. 703) report the "cross-state correlation of school districts per capita in 1932 and high-school graduation rates in 1928 is 0.49." They note that the number of school districts per capita have a "significant positive relationship … in high school graduation regressions that control for population density or the urban share of the population…. But the number of school districts is closely related to wealth, automobile registrations per capita, and agricultural income per farm worker. It is not statistically significant in such regression that include proxies for wealth."

An Empirical Model of Migration Choices

We explore (1) whether more highly educated young adults are more likely to move to areas with higher levels of educational investment; (2) whether the propensity to move to areas with relatively high public education expenditures increases with the presence of young children in the household; and (3) whether these propensities to migrate in are higher after controlling for local economic conditions and the provision of other local public goods and amenities. To address these questions, we estimate a conditional logit model of location choice by individual households using the 1940 IPUMS data linked to the information from the 1932 Census of Government aggregated to the State Economic Area (SEA) level.

This analysis of a sample drawn from the 1940 IPUMS data assumes that each man aged 16 to 50 in 1935 makes a residential location decision for 1940 based upon his own valuation of the characteristics describing each of the possible 468 State Economics Areas he could choose to reside in at the time of the 1940 Census. We assume that his place of residence as of 1935 could influence his decision through at least three mechanisms. First, there may be moving costs associated with the distance of a potential residence and his 1935 location. Second, his information about the characteristics of a potential location could be related to it distance from his earlier residence. Third, there may be a form of inertia in moving from his previous SEA or state of residence.

Unlike some recent models of locational decisions (e.g. Epple-Sieg), this analysis does not take into account the possible equilibrium determination of many of the characteristics of potential places of residence. Instead, this analysis adopts a more partial equilibrium framework where individuals are somewhat myopic about their own possible influences on provision of local amenities describing the locations they could potentially choose. This assumption is driven in part by data availability and in part because of the enormous simplification it allows in the empirical models.

Suppose each individual i perceives an expected utility for each possible location k given by

$$U_i(k) = g(b(i), X(k)) + e_i(k).$$

The parameters â(i) can depend upon measured characteristics of the individual and they reflect individual’s perception of expectation of the marginal utility of location specific characteristic X(k). In particular, some of the â(i) could depend upon characteristics of the individual’s place of residence as of 1935. The error terms $e_i(k)$ are assumed to follow a standard Gumbel distribution, and they are part of the information set the individual uses in making his decision about place of residence. By assumption, these unobserved utility modifiers are independent across individuals and across potential locations for each individual. We assume that individuals maximize expected utility, so any individual specific characteristic that does not affect the individual’s marginal valuation of location specific characteristics has no impact on the choice of place of residence. This fixed effect feature of the estimation procedure can in some instances provide point estimators that have a slightly different interpretation from those in estimation procedures without fixed effects.

Under these assumptions, the probability to the analyst of the individual choosing location k as his 1940 place of residence can be give by a standard conditional logit model. In particular,

$$\Pr ob\left[i \ \ chooses\ location\ \ k \mid b(i), \overrightarrow{X(k')} \right] = \frac{\exp\left[g(b(i), X(k)) \right]}{\sum_{k'=1}^{468} \exp\left[g(b(i), X(k')) \right]}$$

An analysis with hundreds of thousands of observations and nearly 500 possible choices, like that performed here, can be quite computationally burdensome. McFadden (1978), however, demonstrates that the one need not consider all possible alternatives in order to obtain consistent estimators of the parameters of the multinomial logit model (McFadden, 1978). One only needs to sample from the set of possible alternatives for each observation i. Liu, Mroz, and Van der Klaauw (2005) exploit this feature of the logit model in their structural model of migration across counties in the U.S., where families search out good schools and favorable local labor market conditions. For this analysis in particular, we choose as the set of alternatives for an observation that observation’s observed choice plus a set of (N-1) randomly chosen alternatives. Since the probability of this choice of a reduced set of alternatives is the same for each observation, one can use a standard multinomial logit model to obtain consistent estimators of the parameters defining the â(i). There will, however, be a slight efficiency loss by not exploiting all of the information about alternatives not chosen in the estimation, and we present a demonstration of this in Appendix 1. However, because we carried out our logit analyses separately for each of five education groups, we did not need to sample from the set of alternative locations[28].

Data Construction

For each of the 1,351,732 individual-level observations in the 1940 IPUMS 1% Census sample, we ascertained whether their father was in the data set. Then, for each man in the dataset, we counted the number of observations in approximate five year age ranges (0-4; 5-10; 11-15; 16-20; as of the 1940 Census) recording that man as their father. Next, we deleted sequentially 674,165 female observations, 91,157 observations over age 55, and 254,277 observations under age 21. An additional 7,877 were dropped from the analysis because in 1935 (five years earlier) they had been residing outside the U.S or in Alaska or Hawaii, or because their state of residence as of five years ago was unknown. Observations for which we only know a state of residence but not their State Economic Area (SEA) as of five years ago we retained in the sample. For them we assume they moved from their "unknown" 1935 SEA to their 1940 observed SEA. This latter group contains 8,538 observations out of the remaining 324,256 observations in our sample. We assign to this group, for 1935 "SEA" characteristics (including longitude and latitude), SEA population weighted averages of the 1935 SEA characteristics in their state of residence as of 1935.

As our next sample selection, we randomly set aside 25% of this sample (81,064 observations) to use as a cross validation sample after we choose and estimate our final empirical models, leaving a total of 243,192 observations for all of our preliminary empirical analyses. We limit the analysis to White men (23,474 non-whites) and exclude individuals living in-group quarters (9,649). The resulting sample for our preliminary investigations contains 210,069 White men age 21-55 at the time of the 1940 Census. Table 7 contains summary information for place of residence in 1935 and in 1940, age of

[28] Our largest education group contains nearly 100,000 individual level observations. For such large groups and with 468 choices, using STATA fixed effect logit procedure requires over 20Gb of memory.

the man, the presence of children 15 and younger in the household in 1940, and the number of children 15 and younger in 1940.

Table 8 contains summary statistics for the SEA information used in the conditional logit analyses by region of the country[29]. Average per child school expenditures are highest in the West and about one third lower in the Northeast and the North Central. Child school expenditure in the South is only 30 percent that in the West. Average per capita expenditures on libraries is highest in the Northeast, about one half to one third as large in the North Central and the West, and over an order of magnitude lower in the South. Per capita expenditures on recreation follow regional patterns similar to that for libraries.

Total taxes per capita are highest in the Northeast and the West, about 10 percent lower in the North Central states and just barely over half as large in the South. The log rent measures are the SEA specific intercepts from a SEA fixed effect model regressing log of household rents from 1930 IPUMS Census data on the household occupational score [measured as log(10+occ_score)] and its square, household composition variables (number of elderly in the household, number of adults, number of children, number of infants, and the logarithm of the number of families in the household), the age and sex of the household head, a non-White dummy variable, and dummy variables indicating whether the household was not in a metro area or if in a metro area outside the central city. These SEA specific rent measures are on average quite comparable in the Northeast, North Central, and the West, but considerably lower in the South. There appears to be a similar pattern for average hourly manufacturing wages. The unemployment rate (measured as unemployment per capita in 1937) is highest in the Northeast.

For many of these SEA variables we use the transform log(10+variable) to reduce the influence of extreme high and lows of the community measures (i.e., sch, rec, lib, postal_pc , and taxes per capita). For all of the other SEA measures, except the unemployment rate, fraction black, and fraction rural in the SEA, we use a logarthimic transform without a location shift. All of the variables in Table 8 are presented in natural

[29] In those few instances where we did not have information for particular measures for a SEA within a state, we use state-level, population-weighted averages of the measures from SEAs without missing information.

units (except the log(rent) from the SEA fixed effects), i.e., before the logarithmic transforms.

Results from IPUMS Sample

Tables 9 and 10 present estimates of the utility maximization model, separately for each of five education groups. These groups are (1) no education (N=4,703); (2) completed grade 1-7 (N=47,370); (3) completed grades 8-11 (N=96,644); (4) completed grade 12, e.g. high school graduates (N=35,894); and (5) completed 13 or more grades, e.g. some college (N=26,133). Table 9 covers all observations where Table 10 covers only movers[30]. The unit of observation is an individual white male aged 21 to 55 years in 1940. Given their 1935 place residence, these individuals can choose any one of the 468 SEAs to live in 1940. Thus, the model allows an enormous, indeed nearly comprehensive choice set.[31] For example, the computations for the model of the 96,664 individuals with 8-11 grades completed (who can choose among 468 communities) is based on 45 million possible choices. In the conditional logit model, the primary regressors of interest are the characteristic of potential receiving communities and those characteristics interacted with the presence in the family in 1940 of children aged 15 and younger.

Examining the results in Table 9 line-by-line shows that childless white males place a negative value on higher per child school spending in SEAs in the Northeast. The three significant effects for the North Central region also indicate lower utility for school spending. For the South, the effects are negative but statistically insignificant at lower levels of education but become positive and significant for the two highest education groups. For the West, men without children in every education group put a positive value on more school spending. Three of the five coefficients are statistically significant at conventional levels.

[30] The estimator for Table 10 does not condition on any migration, and hence it cannot provide consistent estimators. We include it only to demonstrate that restricting the analysis to only movers does little to change the patterns of results we find in the full sample.

[31] Less computationally-intensive models using random subsets of choices yield similar coefficients, but the precision declines as the size of the choice set shrinks. For example, moving from the comprehensive set of 468 choices to a subset of just 5 choices increases the standard errors by a factor of two to three. See the appendix tables for an example using the education 8-11 group.

Of more interest is whether individuals with a child place higher value on school spending. For SEAs in the Northeast, for three of the five education categories, the effects are negative and none of the five coefficients is statistically significant at conventional levels. For the North Central, the only significant interaction of the presence of kids and school spending is for the education group 8-11. These individuals appear to value school spending more than men without children though the total value they place on such spending remains negative. For the South, only the highest education group has an effect that is statistically significant and it indicates that these individuals value school spending less than men without children. The total effect of increased school spending for them becomes negative. For the West, the lowest three education groups value school spending more highly when they have children, but the highest two groups do not. These latter two negative effects are statistically significant and for the highest two education groups, the total effect is near zero. Note, as pointed out in Liu, Mroz, and Van der Klaauw (2005), that higher quality schools can also substitute for the parents' time and other productive inputs in raising children. It is possible that in many areas better schools might be signaling lower levels of alternative resources for educating children.

It is informative to compare the school spending effects with those for other public services such as libraries and recreation. We find no statistically significant effect for spending in the SEAs on libraries nor are there statistically significant differences in how men with children in their households value libraries. Lower education groups tend to value recreation spending. There is little indication that the presence of children affects this valuation except possibly for the highest education groups (for whom higher school expenditure lowers the perceived utility of the location).

Besides these three public services, we also investigate the effects of taxes and other community characteristics. The results for taxes are surprising (even if one acknowledges the effects of Tiebout biases). For each education group, males are attracted to areas with higher per capita taxes. Each of the five coefficients is statistically significant. Possibly this captures the effect of amenities or public services not included in our model. Men with children, however, always place less value on areas with high taxes., but only one of the five coefficients is statistically significant. The effect of rents is also highly perplexing. Four of the five groups appear to be attracted to areas with higher rents, though only one of the coefficients is statistically significant at conventional levels. Men with children place a lower value on high-rent areas. Turning to other variables, we find that only three of the five education groups appear to value areas paying high manufacturing wages in 1935, though none of the five coefficients is statistically significant. Men with children in the highest education groups do appear to value high wages significantly more and the net effect is positive. All education groups are much less likely to move to areas with high unemployment rates in 1937. Only for the highest education group do men with children dislike high unemployment more than men without children, but none of the five interaction terms is statistically significant at the 5% level.

We also include proxies for community wealth such as the prevalence of telephones, automobiles, and radio. The men appear to dislike areas with more telephones per capita. They like areas with more automobiles (unless they are educated and have kids). We include control for SEA population, land area, average annual temperature and precipitation, and other community characteristics. The men tend to dislike SEAs with higher rural shares. Men in the lowest three education groups tended to dislike areas with higher black population shares while those in the highest two education groups value higher black shares. (Recall the sample includes only white men at this point.) All five coefficients on the fraction black are statistically significant. Only in the highest education group do men with children have a statistically significant difference from men without children. This effect is negative and wipes out the total effect.

Finally, we look at regional effects on migration, at distance, and inertia. Men without children value each of the other three regions more than the West. Lower educated men with children place more value on non-western regions while the more educated men with children value the West relatively more. Not surprisingly men generally preferred living in the same state in 1940 as they did in 1935. The "stay-put" coefficients also indicate strong forces of inertia, especially for the lower four education groups. Those with children in the highest education groups had less attachment to their 1935 SEAs. Younger individuals also placed lower value on their 1935 SEA than older individuals. Member of each of the five education groups placed a lower value on their 1935 SEA if its black population share was higher. The increasing distance of a potential 1940 SEA from the 1935 location also resulted in a higher estimated disutility of moving.

Conclusion

Using data from the population Censuses of 1930 and 1940, in conjunction with detailed community level expenditure data from the 1932 Census of Government, we describe patterns of human capital flows and expenditures on schooling across regions and localities in the U.S. With the same data we attempt to model how individual level migration decisions by adult white males in different educational attainment groups respond to community level expenditures on public schooling and other publicly provided services, local taxes rates, and variations in housing costs.

From 1935 to 1940, the Pacific region considerably increased its human capital stock because of the in-migration of the highly educated. To a much lesser extent the Mountain states and the South Atlantic states experienced human capital inflows during the same period, while all other regions were net exporters of human capital stocks. The more educated were more likely to move, and they even were moving out of those regions with below average levels of education as of 1935.

The results from our analysis of the determinants of the provision of local public goods both support and contradict the findings in the existing literature. For example, as in the work of Goldin and Katz, we find automobile registrations per capita are an extremely powerful predictor of local educational spending circa 1930. (And we intend to exploit more detailed county-level data on the ownership of high- and low-value passenger cars to gain a deep understanding of this relationship.) But unlike much of the literature, we find little evidence supporting greater expenditures of schooling in more homogeneous regions. There is considerable variation, for example, in county -level school expenditures per child associated the population share of various religious groups, but there is no evidence that greater religious homogeneity within counties appears related to higher expenditure. We also find little evidence that increased decentralization of educational decision-making leads, through a Tiebout mechanism, to higher school expenditures (although this may be related to the way "school districts" are enumerated in our data). Surprisingly, we find that urbanization and the percent of the population who are old (65+) appear to reduce school expenditures, while increases in the percent foreign born tend to increase expenditures. Home ownership has a negligible net effect on school spending. The expected depressing effect of the black population share on school expenditures does not appear in the data after we control for voter turnout. Presumably this reflects that disenfranchisement lead to worse schools in those areas with larger black populations. Nearly 85 percent of the county level variation in per child school expenditures appears to be explained by state level factors, but we have little evidence to bear on why this should be the case.

Studying migration at the micro level reveals it is a very complicated process. The decision involves balancing job opportunities, family connections, housing costs, location amenities (including but not limited to school quality), among other issues. Analyzing the outcomes at the individual level can be humbling if one starts with strong priors such as the completely reasonably belief that more educated parents with young children in the household value school spending higher. Our preliminary investigation of the 1940 data does not support such conclusions. It is possible that the turbulent conditions of the Depression decade (as an example, the onset of the Dust Bowl) interfered with "normal" migration patterns. It is also likely that expenditure data for local governments for 1931/32 are imperfect measures of the public goods variables than drove migration between 1935 and 1940. The use of SEA-level data could mask important differences acting at the very local scale. Nor have we yet incorporated directly in our econometric model how characteristics of the wives/mothers in the household could influence the marginal valuations of local amenities, though given assertive mating we think it unlikely that allowing separate effects for the educational attainments of the wives would present a much different picture. Unmeasured differences in the cost of living or the provision of education could be salient. Our model, moreover, appears to exclude certain unspecified but important community amenities or characteristics, leading to some perplexing effects such as men with young children finding areas with higher school expenditures less appealing. Understanding the considerable homogeneity within states of school expenditures, a public good provided and funded mostly at the local level, and the significant heterogeneity in expenditures across states, could yield some key insights about why we have been unsuccessful at finding reasonable and important effects of schools on migration. Clearly there are considerable Tiebout biases remaining in our analyses of individual level migration decisions.

References

Alesina (1999), Alberto, Reza Baqir, and William Easterly.“Public Goods and Ethnic Divisions.” *Quarterly Journal of Economics.* (Nov.) 114(4): 1243-84.

Alesina (2004), Alberto, Reza Baqir, and Caroline Hoxby. “Political Jurisdictions in Heterogeneous Communities.” *Journal of Political Economy.* 112(2): 348-96.

Alesina (2000), Alberto and Eliana La Ferrera. “Participation in Heterogeneous Communities.” *Quarterly Journal of Economics.* (August), 115 (3): 847-904.

Alesina (2005), Alberto and Eliana La Ferrera. “Ethnic Diversity and Economic Performance.” *Journal of Economic Literature.* (Sept.) 43: 721-61.

Bayer (2004), Patrick, Fernando Ferreira and Robert McMillan . “Tiebout Sorting, Social Multipliers and the Demand For School Quality.” working paper.

Bayer (2005), Patrick and Robert McMillan. “Racial Sorting and Neighborhood Quality.” working paper.

Collins (2005), William J. “Education, Selective Migration, and Regional Wage Convergence in American History.” (Oct.) Vanderbilt Univ. paper.

Clubb (2005), Jerome M., William H. Flanigan, and Nancy H. Zingale. *Electoral Data for Counties in the United States: Presidential and Congressional Races, 1840-1972 ICPSR Study No.:8611* [Computer file]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [producer and distributor], 2005.

Eliot (1932), Charles B. *General Consumer Market Statistics: Supplement No. 1 to the Market Data Handbook of the United States*. U.S. Bureau of Foreign and Domestic Commerce. Domestic Commerce Series No. 56. Washington, DC: GPO.

Engerman (2005), Stanley L. and Kenneth L. Sokoloff, “Colonialism, Inequality, and Long-Run Paths of Development” NBER Working Paper 11057 (Jan.)

Epple (1991), Dennis and and Thomas Romer. “”Mobility and Redistribution.” *Journal of Political Economy*. 99: 828-858.

Epple (1999), Dennis and Holger Sieg, “Estimating Equilibrium Models of Local Jurisdictions.” *Journal of Political Economy.* (Aug.) 107(4): 645-81;

Epple (2001), Dennis, Thomas Romer, and Holger Sieg, “Interjurisdictional Sorting and Majority Rule: An Empirical Analysis.” *Econometrica.* (Nov.) 69(6): 1437-65;

Foster (1934), Emery M., David T. Blose, and W. S, Deffenbaugh, “Statistics of State School System, 1931-32, Being Chapter I of the Biennial Survey of Education in the United States, 1930-32.” *Office of Education Bulletin, 1933, No. 2*. Washington, DC: GPO.

Fishback (2006), Price, William Horrace, and Shawn Kantor. “The Impact of New Deal Expenditures on Mobility During the Great Depression.” *Explorations in Economic History*. (2006) 43(2): 179-222.

Fleck (1999), Robert K. “The Value of the Vote: A Model and Test of the Effects of Turnout on Distributive Policy.” *Economic Inquiry*. (Oct.) 37: 609-23.

Galor (2006), Oded, Omer Moav and Dietrich Vollrath “Land Inequality and the Emergence of Human Capital Promoting Institutions.” Brown Univ. Working Paper.

Gerber (1986), James. ”Southern White Schooling, 1880-1940.” UC Davis Ph. D. diss.

Goldin (1997) Claudia, and Lawrence F. Katz. “Why the United States Led in Education: Lessons from Secondary School Expansion, 1910 to 1940.” NBER Working Paper 6144 (Aug.).

Goldin (1999) Claudia, and Lawrence F. Katz. “Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910-1940.” *Journal of Interdisciplinary History*. 29(4): 683-723.

Goldin (2000) Claudia, and Lawrence F. Katz. “Education and Income in the early Twentieth Century: Evidence from the Prairies.” *Journal of Economic History*. (Sept.) 60(3): 782-818.

Goldstein (1981), Gerald S., and Mark V. Pauly. “Tiebout Bias on the Demand for Local Public Goods.” *Journal of Public Economics*. 16: 131-44.

Haines (2005), Michael R., and the Inter-university Consortium for Political and Social Research. *Historical, Demographic, Economic, and Social Data: The United States, 1790-2000, ICPSR 2896* [Computer file]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2005-04-29.

Holleran (1936), Owen Cobb. *Basic Industrial Markets in the United States*. U.S. Bureau of Foreign and Domestic Commerce. Market Research Series No. 14. Washington, DC: GPO.

Hoxby (2000), Caroline. “Does Competition Among Public Schools Benefit Students and Taxpayers?” *American Economic Review*. 90: 1209-1238.

Johnson (1941), Charles S. *Statistical Atlas of the Southern Counties: Listing and Analysis of Socio-Economic Indices of 1104 Southern Counties*. Chapel Hill: University of North Carolina Press.

Kevane (2006), Michael and William A. Sundstrom. “Expansion of Public Libraries in the United States: 1870-1930,” University of Santa Clara working paper, http://lsb.scu.edu/%7Ewsundstrom/papers/publibs.pdf

Kollman (1997), Ken, John Miller and Scott Page. “Political Institutions and Sorting in a Tiebout Model.” *American Economic Review*. 87: 977-992.

Leloudis (1996), James. *Schooling the New South: Pedagogy, Self, and Society in North Carolina, 1880-1920.* Chapel Hill: University of North Carolina Press.

Lindert (2004), Peter. *Growing Public: Social Spending and Economic Growth Since the Eighteenth Century*. Cambridge: Cambridge Univ. Press.

Lleras-Muney (2002), Adriana. “Compulsory Attendance and Child Labor State Laws, STATA format” & “Data Documentation.” http://www.princeton.edu/~alleras/papers.htm

Liu (2005), Haiyong, Thomas Mroz, and Wilbert Van der Klaauw. “Maternal Employment, Migration, and Child Development.” Univ. of North Carolina mimeo.

Margo (1990), Robert A. *Race and Schooling in the South, 1880-1950: An Economic History*. Chicago: University of Chicago Press.

Margo (1991), Robert A. “Segregated Schools and the Mobility Hypothesis: A Model of Local Government Discrimination.” *Quarterly Journal of Economics.* (Feb.) 106: 61-73.

McFadden (1978), Daniel. “Modelling the Choice of Residential Location.” in *Spatial Interaction Theory and Planning Models*. A. Karlqvist, L. Lundqvist, F. Snickars, and J. Weibull, eds. North Holland: Amsterdam, pp.75-96.

McWilliams (1946), Carey. *Southern California: An Island on the Land*. New York: Duell, Sloan & Pearce.

Moehling (2004), Carolyn. “Family Structure, School Attendance, and Child Labor in the American South in 1900 and 1910.” *Explorations in Economic History*. (Jan.) 41(1): 73-100.

Myrdal (1944), Gunnar. An American Dilemma: The Negro Problem and Modern Democracy. New York: Harper and Row.

Nechyba (2000), Thomas. "Mobility, Targeting and Private School Vouchers." *American Economic Review*. (March) 90(1), 130-46.

Poterba (1997), James. “Demographic Structure and the Political Economy of Public Education.” *Journal of Policy Analysis and Management.* 16(1): 48-66.

Rhode (1990), Paul W. “Growth in a High-Wage Economy: California’s Industrial Development, 1900-1960.” Stanford Ph. D. diss.

Rhode (2003), Paul W. and Koleman S. Strumpf. “Assessing the Importance of Tiebout Sorting: Local Heterogeneity from 1850 to 1990.” *American Economic Review*. (Dec.) 93(5): 1648-77.

Ruggles (2004), Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia KellyHall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 3.0*[Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor].http://www.ipums.org .

Stewart (1929), Paul William. *Market Data Handbook of United States*. U.S. Bureau of Foreign and Domestic Commerce, Domestic Commerce Series no. 30. Washington, DC: GPO.

Strumpf (2002), Koleman and Felix Oberholzer-Gee. “Endogenous Policy Decentralization: Testing the Central Tenet of Economic Federalism.” *Journal of Political Economy*. 110: 1-36.

Tiebout (1956), Charles. “A Pure Theory of Local Expenditures.” *Journal of Political Economy*. (Oct.) 64(5): 416-24.

U.S. Bureau of the Census (1935). *Financial Statistics of State and Local Governments: 1932 (Wealth, Public Debt, and Taxation) Revenue Receipts, Governmental-Cost Payments, Public Debt, Assessed Valuations, and Tax Levies for the Governments of the States, Counties, Cities, Towns, Villages, and Boroughs, School Districts, Townships, and Other Civil Divisions*. Washington, DC: GPO.

U.S. Department of Commerce (1935). *Statistical Abstract of the United States: 1935*. Washington, DC: GPO.

U.S. Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions (1994). *Bureau of Health Professions Area Resource File, 1940-1990, ICPSR 9075.* [Computer file]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 1994.

U.S. Internal Revenue Service. *Statistics on Income.* (Various Years.) Washington, DC: GPO.

U.S. Internal Revenue Service. “Number of Individual Income Tax Returns By States, Counties, Cities, and Towns.” Mimeo prepared by Statistical Section, Income Tax Unit. (Various Years.)

Wallis (1984), John J. “The Birth of the Old Federalism: Financing the New Deal, 1932-1940.” *Journal of Economic History*. (Mar.) 44(1): 139-159.

Wallis (2006), John J. “Chapter Ea: Government Finance and Employment.” in Susan B. Carter, et al. *Historical Statistics of the United States: Earliest Times to the Present Millennial Edition* Vo. 5 Pt E. *Governance and International Relations*. New York: Cambridge Univ. Press.

Wildasin (1996), David and John Wilson. “Imperfect Mobility and Local Government Behavior in an Overlapping-Generations Model.” *Journal of Public Economics*. 60: 177-198.

Wright (1986), Gavin. *Old South, New South.* New York: Basic Books.

Table 1: Population Flows from Regions of Origin (1935) and Destination (1940) in the 1% IPUMS sample

From (1935)	To (1940)										
Total Population	NENG	MALT	ENC	WNC	SALT	ESC	WSC	MTN	PAC	Total	Total Out-Migrants
NENG	77086	914	155	35	355	32	28	22	195	*78822*	1736
MALT	997	251405	1287	168	1917	139	143	91	728	*256875*	5470
ENC	184	1094	238743	1259	1145	590	403	313	1362	*245093*	6350
WNC	59	221	2043	120880	333	148	970	1578	3198	*129430*	8550
SALT	166	1365	817	97	158721	808	299	78	311	*162662*	3941
ESC	45	170	1415	255	1618	96638	753	66	231	*101191*	4553
WSC	28	145	723	862	371	575	114253	1022	2277	*120256*	6003
MTN	29	84	213	439	101	40	375	32155	1948	*35384*	3229
PAC	91	253	359	231	294	63	229	705	75213	*77438*	2225
Total	*78685*	*255651*	*245755*	*124226*	*164855*	*99033*	*117453*	*36030*	*85463*	1207151	
Total In-Migrant	1599	4246	7012	3346	6134	2395	3200	3875	10250		
Net Change	-137	-1224	662	-5204	2193	-2158	-2803	646	8025		
25 years and older											
NENG	48718	597	105	30	233	26	20	18	135	*49882*	1164
MALT	700	159912	865	116	1304	100	102	68	496	*163663*	3751
ENC	107	745	151660	853	782	373	270	206	895	*155891*	4231
WNC	38	147	1264	75083	207	88	612	881	1851	*80171*	5088
SALT	101	768	501	70	86516	478	186	49	210	*88879*	2363
ESC	22	97	687	141	836	52029	416	42	135	*54405*	2376
WSC	17	89	442	488	222	334	64369	535	1171	*67667*	3298
MTN	18	55	133	258	65	23	218	18591	1183	*20544*	1953
PAC	66	185	263	157	190	48	159	495	51505	*53068*	1563
Total	*49787*	*162595*	*155920*	*77196*	*90355*	*53499*	*66352*	*20885*	*57581*	734170	
Total In-Migrants	1069	2683	4260	2113	3839	1470	1983	2294	6076		
Net Change	-95	-1068	29	-2975	1476	-906	-1315	341	4513		

Table 2: Human Capital Flows from Regions of Origin (1935) and Destination (1940) in the 1% IPUMS sample

From (1935)	To (1940)										
25 years and older, reporting a “highest grade” above 8.	NENG	MALT	ENC	WNC	SALT	ESC	WSC	MTN	PAC	Total	Total Out-Migrants
NENG	22007	410	82	24	169	21	15	12	94	*22834*	827
MALT	475	58486	602	87	849	72	80	53	329	*61033*	2547
ENC	84	497	60472	524	532	202	192	145	559	*63207*	2735
WNC	27	105	771	29242	157	51	378	527	1012	*32270*	3028
SALT	77	408	291	52	28670	245	146	34	152	*30075*	1405
ESC	18	57	238	60	387	14080	228	24	79	*15171*	1091
WSC	13	65	233	229	164	179	2429	254	481	*25916*	1618
MTN	17	35	88	147	49	14	128	8668	691	*9837*	1169
PAC	48	123	183	90	140	29	109	323	27519	*28564*	1045
Total	*22766*	*60186*	*62960*	*30455*	*31117*	*14893*	*25574*	*10040*	*30916*	288907	
Total In-Migrant	759	1700	2488	1213	2447	813	1276	1372	3397		
Net Change	-68	-847	-247	-1815	1042	-278	-342	203	2352		
“Human Capital” 25 years and older											
NENG	90807	1314	241	71	519	63	46	39	297	*93397*	2590
MALT	1493	290102	1871	265	2744	222	228	155	1057	*298136*	8034
ENC	245	1612	280374	1806	1682	746	592	448	1841	*289346*	8972
WNC	86	330	2650	139941	470	188	1249	1792	3668	*150373*	10433
SALT	229	1552	1010	161	148040	939	412	107	459	*152908*	4868
ESC	51	200	1230	271	1558	86585	803	82	272	*91053*	4468
WSC	36	197	885	931	485	649	111942	1000	2135	*118261*	6319
MTN	43	123	285	527	141	45	437	35067	2352	*39020*	3953
PAC	148	389	573	322	416	93	347	1032	100941	*104260*	3319
Total	*93138*	*295819*	*289119*	*144294*	*156054*	*89530*	*116055*	*39722*	*113022*	1336754	
Total In-Migrant	2331	5717	8746	4354	8014	2945	4113	4655	12081		
Net Change	-259	-2317	-227	-6079	3146	-1522	-2205	702	8762		

Table 3: Measures of Human Capital per Person, by Region of Origin and Destination

From (1935)	To (1940) NENG	MALT	ENC	WNC	SALT	ESC	WSC	MTN	PAC	Total	Total Out-Migrant
Share of Population 25 years and older reporting the “highest grade” above 8.											
NENG	**0.45**	0.69	0.78	0.80	0.73	0.81	0.75	0.67	0.70	**0.46**	0.71
MALT	0.68	**0.37**	0.70	0.75	0.65	0.72	0.78	0.78	0.66	**0.37**	0.68
ENC	0.79	0.67	**0.40**	0.61	0.68	0.54	0.71	0.70	0.62	**0.41**	0.65
WNC	0.71	0.71	0.61	**0.39**	0.76	0.58	0.62	0.60	0.55	**0.40**	0.60
SALT	0.76	0.53	0.58	0.74	**0.33**	0.51	0.78	0.69	0.72	**0.34**	0.59
ESC	0.82	0.59	0.35	0.43	0.46	**0.27**	0.55	0.57	0.59	**0.28**	0.46
WSC	0.76	0.73	0.53	0.47	0.74	0.54	**0.38**	0.47	0.41	**0.38**	0.49
MTN	0.94	0.64	0.66	0.57	0.75	0.61	0.59	**0.47**	0.58	**0.48**	0.60
PAC	0.73	0.66	0.70	0.57	0.74	0.60	0.69	0.65	**0.53**	**0.54**	0.67
Total	**0.46**	**0.37**	**0.40**	**0.39**	**0.34**	**0.28**	**0.39**	**0.48**	**0.54**	**0.39**	
Total In-Migrant	0.71	0.63	0.58	0.57	0.64	0.55	0.64	0.60	0.56		
Human Capital per Person 25 and older											
NENG	**1.86**	2.20	2.30	2.37	2.23	2.44	2.29	2.19	2.20	**1.87**	2.23
MALT	2.13	**1.81**	2.16	2.28	2.10	2.22	2.23	2.28	2.13	**1.82**	2.14
ENC	2.29	2.16	**1.85**	2.12	2.15	2.00	2.19	2.18	2.06	**1.86**	2.12
WNC	2.27	2.24	2.10	**1.86**	2.27	2.13	2.04	2.03	1.98	**1.88**	2.05
SALT	2.26	2.02	2.02	2.30	**1.71**	1.96	2.21	2.19	2.18	**1.72**	2.06
ESC	2.32	2.06	1.79	1.92	1.86	**1.66**	1.93	1.95	2.02	**1.67**	1.88
WSC	2.12	2.21	2.00	1.91	2.18	1.94	**1.74**	1.87	1.82	**1.75**	1.92
MTN	2.40	2.24	2.14	2.04	2.17	1.97	2.00	**1.89**	1.99	**1.90**	2.02
PAC	2.24	2.10	2.18	2.05	2.19	1.93	2.18	2.08	**1.96**	**1.96**	2.12
Total	**1.87**	**1.82**	**1.85**	**1.87**	**1.73**	**1.67**	**1.75**	**1.90**	**1.96**	**1.82**	
Total In-Migrant	2.18	2.13	2.05	2.06	2.09	2.00	2.07	2.03	1.99		

Table 4: Distribution of School Spending by Source, 1932

	State (percent)	School District (percent)	Other Local (percent)
New England	11.0	1.4	87.6
Middle Atlantic	26.5	37.2	36.3
East North Central	19.4	79.2	1.4
West North Central	20.5	77.1	2.4
South Atlantic	39.7	32.9	27.4
East South Central	38.6	27.8	33.6
West South Central	37.0	60.1	2.9
Mountain	20.7	63.8	15.5
Pacific	22.8	54.5	22.7
United States	24.6	50.7	24.7

Table 5: Summary Statistics of County-Level Data

Variable	Obs	Mean	Std. Dev.	Min	Max
Log of transformed spending					
Total School pk	2964	4.38589	.4491785	3.274782	6.012738
County School pk	2964	4.094897	0.5400357	2.302585	5.908412
Total Library pc	2964	2.314284	.0354856	2.302585	3.443971
Total Rec. pc	2964	2.31561	.0318856	2.302585	2.875655
1930 shares					
Urban	2964	0.2138343	0.2485602	0	1
Black	2964	0.1119297	0.1840504	0	0.8582866
Foreign White	2964	0.0473013	0.0588946	0	0.3309166
Home-owner	2964	0.5109354	0.1325376	0.0596377	0.8748702
Illiterate	2964	0.0538403	0.0574792	0.0004784	0.502906
Old (65+)	2964	0.0580836	0.0219218	0.0063035	0.1372435
Male	2964	0.5164834	0.0214621	0.4654957	0.7266697
Turnout 1920-32	2964	0.5130558	0.2263191	0.036	1.723
Democrat vote	2964	0.5018409	0.1990413	0.089	0.99725
Pass. cars pc	2964	0.1722805	0.0753033	0.000836	0.4119766
Telephones pc	2964	0.0843342	0.0607673	0	0.2737901
Inc tax returns pc	2964	0.0115486	0.0116401	0	0.109234
Unemp pc	2964	0.028068	0.0220037	0	0.1623758
Mfg we pc	2964	0.0338877	0.0423228	0.0001365	0.3950756
Farmers pc	2964	0.458894	0.2160296	0	0.9332986
L mfg va per we	2964	0.9365962	0.4684729	-0.630089	2.742682
1926 Religion					
Adventist	2964	0.0003784	0.0018839	0	0.0344585
Baptist	2964	0.0648522	0.0735756	0	0.5974866
Black Baptist	2964	0.0348383	0.07332	0	0.5261676
Catholic	2964	0.0857988	0.1230864	0	0.9743345
Congregational	2964	0.0064185	0.0132096	0	0.1252954
Disc. of Christ	2964	0.0234787	0.0352994	0	0.2794525
Eastern	2964	0.0002309	0.0018194	0	0.0438577
Episcopalian	2964	0.0087298	0.0164866	0	0.3490672
Friends	2964	0.0004999	0.0044356	0	0.1124806
Holiness	2964	0.0002269	0.00114	0	0.0309207
Jewish	2964	0.0014688	0.0079855	0	0.1420987
Lutheran	2964	0.0347004	0.0717809	0	0.5193268
Mennonite	2964	0.0012845	0.0082164	0	0.1531977
Metaphysical	2964	0.0002138	0.0006705	0	0.005801
Methodist	2964	0.0784279	0.0531474	0	0.4588558
Black Methodist	2964	0.0111866	0.0273036	0	0.3226246
Moravian	2964	0.0000596	0.0012259	0	0.0514723
Mormon	2964	0.0103949	0.0799811	0	0.9511568
New Age	2964	0.0000205	0.0007564	0	0.0403946
Pentecostal	2964	0.0001867	0.0010509	0	0.0232855
Presbyterian	2964	0.0183184	0.0196363	0	0.2162893
Reformed	2964	0.0045149	0.0194118	0	0.4469707
Unitarian	2964	0.0001443	0.0012743	0	0.0228973
Share one kid	2964	0.1904847	0.0213452	0.0792952	0.2669626
two kids	2964	0.1276545	0.0238859	0.0374449	0.2031887
three	2964	0.0747693	0.024686	0.019191	0.1763934
four	2964	0.0585818	0.0278487	0.0066079	0.2162585
Log pop3020	2964	0.0662009	0.2693312	-1.189039	4.217574
State Sch. Dist pk	2964	0.0065345	0.0061373	0	0.0225926
Yr Compul. Schooling	2964	8.489879	1.341804	6	12
Fiscal year	2964	-27.78763	0.3585058	-28.5065	-27.50445
Northeast	2964	0.0684885	0.252625	0	1
North Central	2964	0.349865	0.4770076	0	1
South	2964	0.4507422	0.4976517	0	1

Table 6: Determinants of Public Expenditures

	Dependent Variable: Log transform of:			
	Total School Per Child b/se	County School Per Child b/se	Total Library Per Capita b/se	Total Recreation Per Capita b/se
Demographic Characteristics 1930				
Urban	-0.168765	-0.1894424	-0.018242	-0.014949
	(.050833)	(.06968)	(.010667)	(.007454)
squared	0.022521	-0.0369147	0.05082	0.047496
	(.081314)	(.11473)	(.02532)	(.01419)
Black	0.121095	0.0568537	-0.020068	0.009153
	(.11155)	(.1432)	(.01196)	(.009992)
squared	-0.276459	-0.1766882	0.026082	-0.016069
	(.138535)	(.18019)	(.01152)	(.012461)
Foreign White	0.693272	0.2433574	0.024343	-0.026684
	(.350279)	(.39661)	(.084643)	(.04937)
squared	-0.490086	0.6605548	0.237812	0.277519
	(1.540046)	(1.68184)	(.47644)	(.221591)
Home-Owner	0.768185	1.054792	-0.001887	-0.019013
	(.203848)	(.25092)	(.017644)	(.018131)
squared	-0.69014	-1.097394	-0.007865	0.004854
	(.193885)	(.24757)	(.01808)	(.020436)
Illiterate	-0.05658	-0.9829735	0.084633	0.000865
	(.282925)	(.34478)	(.049452)	(.022216)
squared	0.852092	1.880264	-0.258216	0.001319
	(.894429)	(1.21885)	(.123027)	(.055796)
Old (65+)	-5.585907	-7.389803	0.234459	0.224935
	(1.220739)	(1.43132)	(.13152)	(.134839)
squared	37.98191	40.89894	-1.049122	-1.824778
	(7.932159)	(9.3466)	(.972331)	(1.049205)
Male	12.67254	11.45773	0.260334	0.522598
	(9.876061)	(11.64913)	(.86701)	(.357989)
squared	-8.949034	-7.750752	-0.096954	-0.446969
	(9.320566)	(10.97072)	(.79627)	(.311248)
Political variables				
Turnout	0.693927	0.3955838	-0.007061	0.01133
1920-32	(.145175)	(.10661)	(.007592)	(.008123)
squared	-0.431784	-0.1354009	-0.0000735	-0.002581
	(.136096)	(.08412)	(.007111)	(.008426)
Democratic	-0.486034	-0.628157	0.011175	-0.032658
Vote 20-32	(.125039)	(.14482)	(.01692)	(.013869)
squared	0.362745	0.4772871	-0.011335	0.028861
	(.110287)	(.12608)	(.012827)	(.011049)
Wealth Proxies				
Pass Cars	3.329443	2.917731	-0.138601	-0.02511
PC 1930	(.333712)	(.4027)	(.035949)	(.032369)
squared	-3.092115	-2.128084	0.492047	0.171748
	(.803596)	(.96155)	(.106586)	(.091088)
Telephones	-1.636851	-1.464561	-0.047328	-0.04028
PC 1930	(.328766)	(.41264)	(.034463)	(.029561)
squared	5.25406	5.403583	0.131402	0.356103
	(1.189494)	(1.45167)	(.122793)	(.135334)
Income Tax	10.25527	9.775737	0.720769	-0.07102
Returns PC	(1.402482)	(1.86835)	(.154843)	(.22558)

squared	-75.39831 (17.18013)	-69.32562 (21.60602)	-6.00866 (2.57921)	8.223854 (4.342484)
Unempl Rate 1930	1.425167 (.555026)	1.22218 (.64942)	0.08672 (.065458)	0.067073 (.046806)
squared	-6.741213 (5.727352)	-6.100097 (6.4745)	0.242339 (.760738)	-0.674797 (.542206)
Economic Structure				
Mfg Wage-Earners PC 1930	0.122072 (.229813)	-0.1275422 (.29017)	0.056106 (.030899)	-0.0436 (.032246)
squared	-1.057933 (1.063859)	0.2295613 (1.2368)	0.116006 (.15868)	0.015953 (.105692)
Farmers PC 1930	0.154554 (.122716)	0.119766 (.1479)	0.074522 (.027177)	0.0192391 (.01935)
squared	-0.239385 (.112414)	-0.3344879 (.13372)	-0.048962 (.022143)	-0.015125 (.015307)
Log Mfg VA Per wage-earner	0.050421 (.01086)	0.0469802 (.01264)	0.001401 (.001568)	0.001381 (.001063)
Religious Shares 1926				
Adventist	-8.61034 (3.32547)	-11.35332 (3.65312)	-0.229363 (.603158)	-0.8516 (.43858)
squared	285.8422 (141.3421)	302.2653 (152.2705)	7.387347 (21.73255)	19.69872 (14.95908)
Baptist	-0.420966 (.150688)	-0.5751127 (.19537)	0.024526 (.011483)	0.004519 (.011488)
squared	0.502496 (.373291)	0.9398404 (.46868)	-0.044195 (.026094)	-0.021305 (.025816)
Black Baptist	-0.055122 (.194326)	0.0832053 (.25551)	0.017261 (.010132)	0.0155361 (.013836)
squared	0.340909 (.428632)	0.0571246 (.57797)	-0.041852 (.021275)	-0.017045 (.028139)
Catholic	-0.147804 (.094543)	-0.08305 (.12033)	0.015786 (.009007)	0.017969 (.010621)
squared	-0.096463 (.1417)	-0.2606875 (.18918)	-0.021109 (.013182)	-0.024429 (.013961)
Congrega- tionalist	1.658731 (.587347)	1.489948 (.62582)	0.084409 (.107521)	0.088653 (.095516)
squared	-33.45858 (9.554107)	-21.98558 (8.81325)	-1.339183 (1.824308)	-2.869405 (1.503221)
Disciple of Christ	-0.532538 (.282159)	-0.0160027 (.33995)	0.017275 (.043449)	-0.067958 (.024062)
squared	0.196221 (1.815992)	-1.343287 (2.11914)	0.096509 (.189434)	0.3005916 (.107267)
Eastern	-6.718116 (3.90156)	-5.536716 (4.45977)	-2.280793 (1.437408)	-0.694266 (.895227)
squared	134.3941 (127.9613)	165.9729 (155.1287)	45.2995 (37.73405)	33.47988 (30.63192)
Episcopalian	-0.220125 (.621945)	-0.9591126 (.80171)	0.088471 (.075364)	-0.000478 (.058163)
squared	-1.743851 (4.056731)	-0.4206702 (4.85318)	-0.272274 (.254718)	0.062656 (.189846)
Friends	1.426134 (1.084975)	1.572439 (1.07739)	0.262005 (.193605)	-0.063565 (.173978)

squared	-3.738958 (10.91184)	-7.259758 (10.49779)	0.296089 (1.848713)	4.105677 (3.127145)
Holiness	8.120361 (4.657197)	12.61961 (5.17065)	1.281433 (.926365)	2.108778 (.515487)
squared	-221.3984 (189.7726)	-2219.745 (218.591)	-65.78016 (41.32637)	-66.3723 (22.97501)
Jewish	4.091845 (1.389791)	4.464285 (1.8072)	0.571301 (.460759)	1.088044 (.379352)
squared	-16.30487 (10.728)	-15.32769 (13.38375)	-4.341126 (4.161072)	-2.305056 (3.040451)
Lutheran	-0.394369 (.13184)	-0.4080106 (.14777)	-0.014629 (.029005)	0.014056 (.020382)
squared	0.2519 (.292047)	-0.0197037 (.33456)	-0.018186 (.065712)	-0.044361 (.043662)
Mennonite	-0.276644 (.64671)	0.5861568 (.8536)	0.033609 (.092817)	-0.076916 (.077801)
squared	1.240936 (5.753673)	-3.397199 (7.14835)	-0.00378 (.819342)	0.352666 (.709972)
Metaphysical	37.00298 (12.23983)	51.06792 (13.34321)	10.77848 (4.648972)	23.55988 (3.002812)
squared	-8343.649 (2860.776)	-9909.162 (2965.333)	-1311.763 (1139.337)	-3145.635 (797.3684)
Methodist	0.160961 (.236621)	0.460354 (.37441)	-0.017424 (.020842)	-0.046214 (.022784)
squared	0.160541 (.895975)	-0.5492657 (1.66074)	0.153566 (.072841)	0.112171 (.082223)
Black Methodist	0.4071 (.321897)	-0.4006486 (.42031)	-0.0000802 (.019889)	-0.033237 (.025122)
squared	-0.721421 (1.380091)	2.203929 (1.85569)	0.030915 (.092209)	0.199106 (.111907)
Moravian	-15.25684 (5.96563)	-24.8182 (8.9243)	-0.231201 (.247077)	-0.325231 (.186259)
squared	338.3632 (118.2549)	509.3245 (187.3367)	4.734875 (4.849371)	7.471769 (3.541737)
Mormon	0.358571 (.190325)	0.2372746 (.25218)	0.021166 (.026285)	-0.015701 (.011985)
squared	-0.500244 (.231146)	-0.6761249 (.31493)	-0.014612 (.029883)	0.010592 (.012794)
New Age	-29.36042 (19.97325)	20.01067 (21.27587)	-5.091453 (7.077573	0.41535 (6.69392)
squared	777.5306 (482.8493)	-379.2804 (518.5567)	137.554 (171.6587)	-9.057245 (163.6633)
Pentecostal	25.16089 (4.936303)	7.580085 (6.50429)	1.488141 (.506707)	0.315725 (.498795)
squared	-950.6564 (283.9494)	-110.1247 (388.6069)	-56.59578 (35.73397)	-10.88405 (27.39736)
Presbyterian	0.347268 (.349802)	0.4559922 (.40709)	0.045076 (.072953)	0.001978 (.037666)
squared	-4.146595 (2.914499)	-4.388338 (3.03063)	-0.252177 (.536362)	-0.310949 (.307734)
Reformed	-1.210014 (.310472)	-1.273402 (.31661)	-0.065329 (.044833)	-0.0537591 (.043353)

squared	2.344763 (.893878)	2.211736 (.85537)	0.209723 (.131001)	0.104077 (.116128)
Unitarian	-5.212067 (9.056649)	-8.158953 (8.11443)	4.359564 (2.760453)	0.92298 (1.90865)
squared	-244.4433 (431.3939)	260.2635 (477.2029)	-195.3129 (149.5595)	-104.0139 (100.9991)
Family Structure and Pop. Change				
Share One Child Under 10 years	-1.324498 (.36211)	-1.633616 (.43214)	0.040441 (.031058)	0.061906 (.028547)
Two	1.352565 (.416472)	1.435428 (.4989)	-0.002242 (.037756)	-0.015194 (.040365)
Three	-1.642178 (.544463)	-2.081937 (.65945)	0.062432 (.051935)	0.06887 (.056699)
Four	-.048891 (.360906)	-0.4413983 (.4306)	0.004224 (.04424)	-0.0404573 (.035649)
Pop Change 1920-30	-0.050184 (.024658)	-0.0952877 (.02917)	-0.0000235 (.00228)	-0.00055 (.002462)
squared	0.018239 (.008347)	0.0330071 (.01006)	-0.000448 (.000695)	-0.0006979 (.000737)
Education Institutions				
State School Dist Per Child	-2.566067 (0.981496)	-3.10362 (1.21612)	-0.909291 (.161405)	-0.587508 (.096505)
Years of Compulsory Schooling	-0.015794 (.003149)	0.0077654 (.00382)	0.00031 (.000394)	0.001438 (.000302)
Fiscal Year	-0.0428121 (.0012893)	-0.0236056 (.01534)	-0.003396 (.001473)	0.001907 (.001391)
Region				
Northeast	-0.118306 (.030191)	-0.1557645 (.03305)	0.002077 (.009853)	0.020708 (.007606)
North Central	-0.202377 (.019038)	-0.2278029 (.02204)	0.002841 (.002531)	0.002004 (.002049)
South	-0.333095 (.024234)	-0.4586538 (.03191)	-0.012632 (.003051)	0.00114 (.002432)
Constant	-1.010394 (2.648998)	-0.1858454 (3.13158)	2.063812 (.249779)	2.185593 (.108881)
# Obs	2964	2964	2964	2964
R-squared	0.8647	0.8575	0.2316	0.5384

Table 7: Summary Information on Residence in 1935 and 1940

Education: 0 — Moved: N=243 — Stayed: N=3830

Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
educ	0	0	0	0	0	0	0	0
age	39.71605	10.04811	21	55	44.43499	8.824888	21	55
any_k_<_15	0.4855967	0.5008241	0	1	0.5339426	0.4989117	0	1
kid<_15	1.469136	1.992256	0	8	1.431593	1.882524	0	11
NE_1935	0.1399177	0.3476176	0	1	0.4407311	0.4965396	0	1
NC_1935	0.1069959	0.309746	0	1	0.167624	0.3735808	0	1
So_1935	0.617284	0.4870531	0	1	0.3221932	0.4673776	0	1
We_1935	0.1358025	0.3432858	0	1	0.0694517	0.2542539	0	1
NE_1940	0.1193416	0.3248591	0	1				
NC_1940	0.0987654	0.2989626	0	1				
So_1940	0.5884774	0.4931252	0	1				
We_1940	0.1934156	0.3957912	0	1				

Education 1-7 — Moved: N=3955 — Stayed: N=43415

Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
educ	5.435651	1.54746	1	7	5.34138	1.587858	1	7
age	37.6086	9.745706	21	55	39.84164	9.812595	21	55
any_k<_15	0.5383059	0.4985935	0	1	0.542923	0.49816	0	1
kid<_15	1.41871	1.814251	0	11	1.39408	1.778121	0	12
NE_1935	0.1155499	0.3197249	0	1	0.2674191	0.4426179	0	1
NC_1935	0.2273072	0.4191456	0	1	0.2524473	0.4344215	0	1
So_1935	0.5420986	0.4982876	0	1	0.4202465	0.4936041	0	1
We_1935	0.1150442	0.3191157	0	1	0.0598871	0.2372803	0	1
NE_1940	0.1077118	0.3100552	0	1				
NC_1940	0.2078382	0.4058117	0	1				
So_1940	0.505689	0.5000309	0	1				
We_1940	0.1787611	0.3832006	0	1				

Education 8-11 — Moved: N=9574 — Stayed: N=87070

Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
educ	8.885628	1.09077	8	11	8.744401	1.035689	8	11
age	35.06518	9.206348	21	55	37.06327	9.785838	21	55
any_k<_15	0.4934197	0.4999828	0	1	0.4737682	0.4993143	0	1
kid<_15	1.020159	1.413146	0	12	0.9895716	1.408038	0	12

NE_1935	0.1694172	0.3751396	0	1	0.3446308	0.4752505	0	1
NC_1935	0.3824943	0.4860217	0	1	0.3787412	0.4850763	0	1
So_1935	0.2894297	0.4535214	0	1	0.1828414	0.3865387	0	1
We_1935	0.1586589	0.3653768	0	1	0.0937866	0.2915333	0	1
NE_1940	0.1571966	0.364005	0	1				
NC_1940	0.3408189	0.4740093	0	1				
So_1940	0.2596616	0.4384718	0	1				
We_1940	0.242323	0.4285111	0	1				

Education 12	Moved: N=4663				Stayed: N=31186			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
educ	12	0	12	12	12	0	12	12
age	31.91357	8.563265	21	55	32.60104	9.559226	21	55
any_k<_15	0.3999571	0.4899417	0	1	0.3546463	0.4784137	0	1
kid<_15	0.6624491	1.004141	0	7	0.6102418	1.030083	0	10
NE_1935	0.1820716	0.3859449	0	1	0.3224524	0.4674226	0	1
NC_1935	0.3770105	0.4846896	0	1	0.36231	0.4806754	0	1
So_1935	0.2796483	0.4488745	0	1	0.1882896	0.3909495	0	1
We_1935	0.1612696	0.3678189	0	1	0.126948	0.33292	0	1
NE_1940	0.1546215	0.3615822	0	1				
NC_1940	0.3255415	0.4686271	0	1				
So_1940	0.280935	0.449504	0	1				
We_1940	0.238902	0.4264585	0	1				

Education 13 plus	Moved: N=5366				Stayed: N=20767			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
educ	15.22568	1.361	13	17	15.0482	1.358866	13	17
age	33.19251	8.385695	21	55	35.51115	9.708675	21	55
any_k<_15	0.4002982	0.4900044	0	1	0.3976501	0.4894242	0	1
kid<_15	0.6347372	0.9500169	0	8	0.687196	1.050218	0	9
NE_1935	0.2090943	0.4066998	0	1	0.3244089	0.4681648	0	1
NC_1935	0.3514722	0.4774746	0	1	0.3224346	0.4674196	0	1
So_1935	0.2812151	0.4496341	0	1	0.2177012	0.4126931	0	1
We_1935	0.1582184	0.3649797	0	1	0.1354553	0.3422175	0	1
NE_1940	0.1863586	0.389432	0	1				
NC_1940	0.3073053	0.46142	0	1				
So_1940	0.3061871	0.4609514	0	1				
We_1940	0.2001491	0.4001491	0	1				

Table 8: SEA variables used in Conditional Logit Models

	Northeast		(N=68)	
Variable	Mean	Std. Dev.	Min	Max
sch	84.22371	21.43954	51.08562	142.1113
lib	0.640113	1.80651	0.018573	14.68646
rec	0.797093	0.713728	0.059798	3.262901
total_tax_pc	57.41697	14.72045	30.66294	100.3818
lrent	-0.06376	0.279424	-0.93215	0.414992
mfg_w	0.926675	0.148012	0.498159	1.202103
un_rate	0.048351	0.015002	0.025454	0.093852
phones_pc	0.11731	0.027475	0.057473	0.212893
autos_pc	0.187047	0.034004	0.098035	0.297367
radio	0.490646	0.103632	0.142857	0.685185
pop	506280.8	1082277	40936	7975100
landarea	2407.382	2991.356	228	21911
anntemp	49.2273	3.211853	41.83337	54.68919
annprec	3973.737	338.5798	3133	4524
fract_rural	0.411237	0.221698	0.051478	0.818212
fract_black	0.01962	0.027451	0.000771	0.157848

	North Central		(N=146)	
Variable	Mean	Std. Dev.	Min	Max
sch	77.48629	18.68977	11.79754	166.8337
lib	0.233867	0.280154	0.006169	1.619838
rec	0.309829	0.470025	0.013789	2.958306
total_tax_pc	49.71922	11.89361	22.15019	112.5856
lrent	-0.06822	0.303563	-1.10623	0.71247
mfg_w	0.914793	0.192053	0.436107	1.411425
un_rate	0.035926	0.01228	0.014301	0.074503
phones_pc	0.136761	0.038824	0.025196	0.216492
autos_pc	0.224937	0.03829	0.080205	0.304499
radio	0.428177	0.129646	0.034483	0.771429
pop	264343.2	416997.5	10932	4414567
landarea	5174.199	6871.465	239	46234
anntemp	49.89136	4.717039	38.6	59.22718
annprec	3322.945	612.8216	1657.683	4642.532
fract_rural	0.564789	0.261931	0.045917	1
fract_black	0.021788	0.030194	0.000188	0.168882

	South		(N=187)	
Variable	Mean	Std. Dev.	Min	Max
sch	35.29451	17.53543	5.927301	128.9306
lib	0.046211	0.092226	0	0.8832
rec	0.097664	0.362161	0	4.3071
total_tax_pc	30.17618	11.54107	13.1339	71.23759
lrent	-0.43887	0.363059	-1.51519	0.81388
mfg_w	0.660751	0.217065	0.299777	1.484892
un_rate	0.039761	0.015251	0.002989	0.081571
phones_pc	0.05426	0.033045	0.008727	0.176754
autos_pc	0.127661	0.049509	0.036572	0.266375
radio	0.145215	0.123767	0	0.556452
pop	202447.2	121766	40883	984606
landarea	4702.289	5816.24	61	53945
anntemp	61.62764	4.957737	49.63752	75.5
annprec	4547.063	913.0124	777	6698
fract_rural	0.675346	0.258742	0	1
fract_black	0.24649	0.182194	0.002573	0.765604

	West		(N=67)	
Variable	Mean	Std. Dev.	Min	Max
sch	119.8498	42.27856	31.03038	231.3004
lib	0.37189	0.37691	0	1.461571
rec	0.409047	0.537506	0.013516	2.103599
total_tax_pc	56.7853	12.31209	21.53856	85.09704
lrent	-0.06868	0.320379	-0.94808	0.529458
mfg_w	0.950031	0.181314	0.418209	1.467971
un_rate	0.039086	0.012148	0.015471	0.065504
phones_pc	0.099538	0.03765	0.017808	0.191584
autos_pc	0.226819	0.057154	0.068375	0.337074
radio	0.374554	0.145126	0	0.842105
pop	177555.6	314460.2	30776	2327166
landarea	17537.84	20073.55	402	109802
anntemp	52.83868	7.042095	41.06012	71.70757
annprec	2008.164	1387.196	568.0769	7457.339
fract_rural	0.598168	0.212031	0.103321	1
fract_black	0.006293	0.007293	0.000163	0.032318

Table 9: Conditional Logits, All observations, All 468 Choices. By Education Group

	Education 0	Education 1-7	Education 8-11	Education 12	Education 13+
NOB	4,073	47,370	96,644	35,894	26,133
# choices	1,906,164	22,169,160	45,229,332	16,777,332	12,230,244
NE_sch	-0.947	-1.033	-0.825	-0.576	-0.122
	(1.028)	(0.263)	(0.149)	(0.199)	(0.192)
k_NE_sch	-1.649	-0.154	0.313	-0.301	0.419
	(1.517)	(0.378)	(0.216)	(0.318)	(0.304)
NC_sch	0.883	-0.482	-0.474	-0.229	0.076
	(0.580)	(0.144)	(0.073)	(0.098)	(0.091)
k_NC_sch	-1.306	0.049	0.247	-0.009	0.075
	(0.953)	(0.202)	(0.106)	(0.157)	(0.147)
S_sch	-0.232	-0.139	-0.022	0.231	0.203
	(0.430)	(0.115)	(0.077)	(0.096)	(0.084)
k_S_sch	-0.341	0.006	-0.000	-0.149	-0.406
	(0.599)	(0.154)	(0.111)	(0.150)	(0.134)
W_sch	1.009	0.382	0.868	1.236	0.680
	(0.948)	(0.270)	(0.149)	(0.193)	(0.177)
k_W_sch	0.041	1.104	0.078	-0.653	-0.689
	(1.319)	(0.366)	(0.213)	(0.316)	(0.289)
lib	-0.943	0.391	-0.028	0.191	0.485
	(1.115)	(0.363)	(0.190)	(0.260)	(0.251)
k_lib	1.716	0.435	0.233	0.180	-0.188
	(1.722)	(0.510)	(0.274)	(0.432)	(0.407)
rec	2.166	1.441	0.859	-0.398	-0.131
	(2.188)	(0.583)	(0.318)	(0.410)	(0.379)
k_rec	4.393	-1.146	-0.483	0.117	-1.603
	(3.306)	(0.828)	(0.461)	(0.660)	(0.606)
ltax	1.774	1.214	0.868	0.670	0.594
	(0.667)	(0.172)	(0.103)	(0.133)	(0.125)
k_ltax	-0.025	-0.101	-0.314	-0.101	-0.071
	(0.989)	(0.237)	(0.148)	(0.212)	(0.199)
lrent	0.168	0.178	0.085	-0.091	0.066
	(0.277)	(0.071)	(0.045)	(0.060)	(0.058)
k_lrent	-0.006	-0.028	-0.020	0.292	-0.147
	(0.400)	(0.096)	(0.063)	(0.094)	(0.090)
lwage	-0.311	0.152	0.066	-0.128	0.059
	(0.407)	(0.108)	(0.072)	(0.094)	(0.090)
k_lwage	0.586	-0.336	-0.140	0.356	0.326
	(0.596)	(0.144)	(0.101)	(0.148)	(0.142)

un_rate	-14.383	-7.277	-5.917	-8.881	-2.349
	(6.524)	(1.727)	(1.161)	(1.480)	(1.392)
k_un_rate	6.227	2.189	1.577	0.239	-4.208
	(9.210)	(2.359)	(1.658)	(2.364)	(2.217)
phones_pc	-0.979	-0.569	-0.280	-0.193	-0.006
	(0.278)	(0.073)	(0.047)	(0.062)	(0.058)
k_phon	0.252	0.085	-0.009	0.001	0.018
	(0.414)	(0.099)	(0.067)	(0.097)	(0.091)
autos_pc	-0.085	0.147	0.371	0.520	0.318
	(0.460)	(0.122)	(0.080)	(0.105)	(0.097)
k_auto	-0.037	-0.097	0.045	-0.296	-0.388
	(0.665)	(0.166)	(0.115)	(0.166)	(0.154)
radio	-0.340	-0.218	0.335	0.399	-0.094
	(0.920)	(0.235)	(0.139)	(0.183)	(0.176)
k_radio	0.030	0.290	-0.220	-0.300	0.444
	(1.382)	(0.324)	(0.199)	(0.290)	(0.276)
lpop	0.410	0.463	0.463	0.615	0.585
	(0.153)	(0.042)	(0.025)	(0.032)	(0.030)
k_lpop	-0.238	0.065	0.023	-0.131	-0.115
	(0.224)	(0.058)	(0.036)	(0.051)	(0.048)
llandarea	0.064	0.019	0.034	-0.074	-0.048
	(0.147)	(0.041)	(0.024)	(0.031)	(0.029)
k_llandarea	0.173	-0.071	-0.035	0.046	0.056
	(0.215)	(0.057)	(0.035)	(0.050)	(0.046)
ltemp	0.840	1.679	0.789	1.007	0.838
	(1.322)	(0.345)	(0.201)	(0.261)	(0.241)
k_ltemp	2.292	-0.036	-0.268	-0.370	0.076
	(1.993)	(0.483)	(0.291)	(0.424)	(0.387)
lprecip	0.362	0.284	0.468	0.156	-0.110
	(0.415)	(0.111)	(0.062)	(0.082)	(0.075)
k_lprecip	-1.187	-0.033	-0.101	0.046	0.036
	(0.606)	(0.154)	(0.090)	(0.132)	(0.121)
fract_rural	-0.945	0.225	-0.156	-0.445	-0.140
	(0.730)	(0.196)	(0.116)	(0.152)	(0.142)
k_fract_rural	0.460	0.149	-0.035	0.249	-0.160
	(1.105)	(0.271)	(0.166)	(0.240)	(0.225)
fract_black	-1.786	-1.208	-0.409	0.411	0.590
	(0.870)	(0.219)	(0.162)	(0.197)	(0.173)
k_fract_black	1.208	-0.309	-0.096	-0.292	-0.591
	(1.178)	(0.285)	(0.220)	(0.296)	(0.269)

Northeast	6.850	5.260	6.381	7.302	3.071
	(5.917)	(1.596)	(0.882)	(1.161)	(1.096)
k_Northeast	10.113	4.530	-1.335	-2.054	-5.070
	(8.429)	(2.227)	(1.273)	(1.890)	(1.767)
NorthCent	-0.699	2.860	4.798	5.676	2.127
	(5.116)	(1.402)	(0.755)	(0.990)	(0.906)
k_NorthCen	6.923	3.557	-1.110	-3.314	-3.453
	(7.377)	(1.914)	(1.084)	(1.615)	(1.476)
South	4.126	1.457	2.826	3.917	2.069
	(4.666)	(1.319)	(0.738)	(0.954)	(0.863)
k_South	3.448	3.903	-0.028	-2.716	-1.657
	(6.462)	(1.790)	(1.056)	(1.558)	(1.407)
same_state	1.714	1.129	1.237	1.200	1.444
	(0.261)	(0.068)	(0.043)	(0.057)	(0.053)
k_same_state	-0.221	0.175	0.050	-0.075	-0.193
	(0.368)	(0.092)	(0.061)	(0.088)	(0.082)
stay_put	3.049	3.548	3.231	3.690	2.153
	(0.880)	(0.198)	(0.119)	(0.163)	(0.164)
k_stay	0.938	0.218	0.131	-0.476	-0.411
	(1.211)	(0.258)	(0.158)	(0.229)	(0.223)
age_stay_put	0.043	0.019	0.018	0.002	0.028
	(0.008)	(0.002)	(0.001)	(0.002)	(0.002)
fr_b_stay_put	-1.046	-0.336	-0.612	-1.059	-0.254
	(0.609)	(0.145)	(0.117)	(0.151)	(0.143)
dterm1	4.109	1.128	-4.046	-4.716	-11.389
	(13.882)	(3.375)	(2.016)	(2.668)	(2.539)
dterm2	-11.171	-0.025	12.410	20.313	55.901
	(56.672)	(14.083)	(8.256)	(10.715)	(9.997)
dterm3	2.596	-28.879	-35.850	-57.527	-127.033
	(107.130)	(26.713)	(15.389)	(19.625)	(18.065)
dterm4	-1.600	23.018	22.379	38.134	80.902
	(66.519)	(16.544)	(9.435)	(11.899)	(10.867)
k_dterm1	15.274	7.662	7.068	-4.622	-0.476
	(21.132)	(4.770)	(2.908)	(4.162)	(3.885)
k_dterm2	-47.205	-38.262	-26.875	19.928	-3.005
	(87.305)	(19.974)	(11.987)	(17.039)	(15.583)
k_dterm3	61.719	90.952	46.096	-35.006	8.408
	(166.652)	(38.144)	(22.489)	(31.729)	(28.511)
k_dterm4	-30.230	-65.318	-27.400	19.124	-5.920
	(103.952)	(23.753)	(13.846)	(19.430)	(17.258)

Table 10: Conditional Logits, Only Movers, All 468 Choices. By Education Group

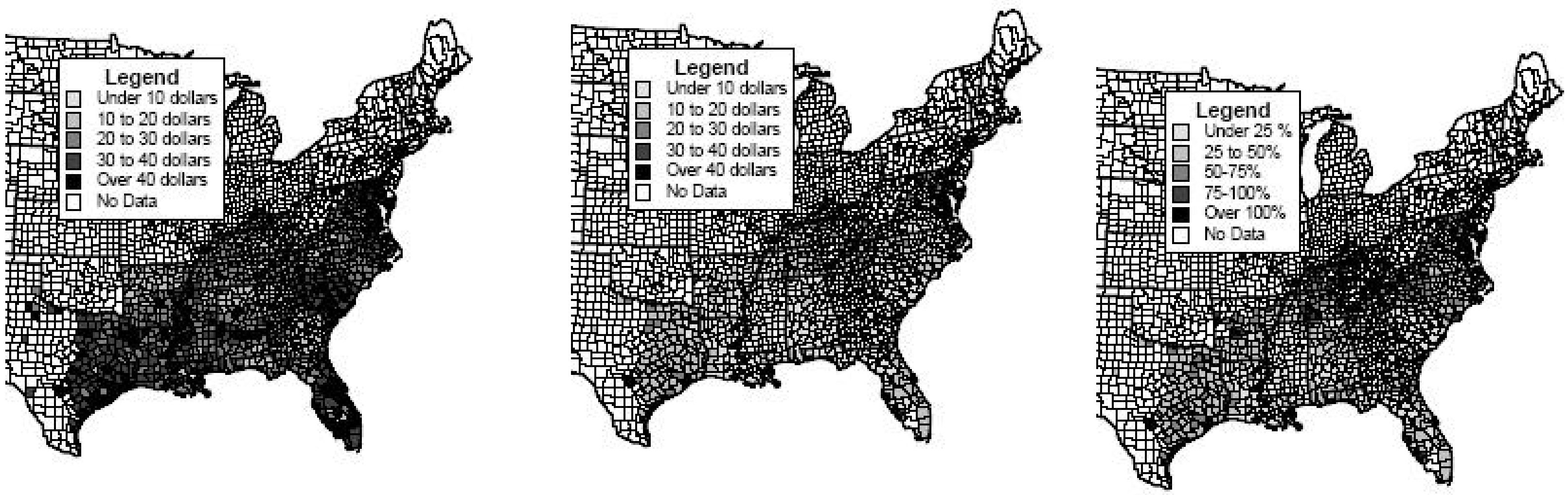
	Education 0	Education 1-7	Education 8-11	Education 12	Education 13+
NOB	243 of 4073	3,955 of 47,370	9,574 of 96,644	4,663 of 35,844	5,366 of 26,133
% moving	5.97%	8.35%	9.91%	13.01%	20.53%
# choices	113,724	1,850,940	4,480,632	2,182,284	2,511,288
NE_sch	-1.871	-0.491	-0.555	-0.437	0.176
	(1.522)	(0.405)	(0.217)	(0.299)	(0.264)
k_NE_sch	-1.776	-0.345	-0.118	-0.976	0.609
	(2.429)	(0.586)	(0.315)	(0.463)	(0.418)
NC_sch	-0.031	-0.853	-0.546	-0.351	-0.085
	(0.963)	(0.180)	(0.087)	(0.115)	(0.119)
k_NC_sch	-3.657	0.326	0.193	-0.055	0.096
	(1.501)	(0.253)	(0.131)	(0.189)	(0.183)
S_sch	-0.501	-0.193	0.037	0.168	0.100
	(0.475)	(0.141)	(0.097)	(0.112)	(0.099)
k_S_sch	-0.393	0.155	-0.070	-0.070	-0.072
	(0.684)	(0.191)	(0.137)	(0.181)	(0.157)
W_sch	-0.089	-0.142	0.070	0.094	-0.005
	(0.951)	(0.242)	(0.143)	(0.197)	(0.192)
k_W_sch	0.094	0.896	-0.070	-0.397	-0.516
	(1.313)	(0.340)	(0.202)	(0.309)	(0.303)
lib	-0.575	0.079	-0.689	-0.116	0.150
	(3.083)	(0.665)	(0.380)	(0.459)	(0.368)
k_lib	3.482	1.356	0.981	0.025	-0.187
	(3.776)	(0.843)	(0.500)	(0.765)	(0.589)
rec	5.177	3.135	1.230	0.282	0.188
	(2.861)	(0.762)	(0.406)	(0.502)	(0.463)
k_rec	6.715	-2.803	-0.288	0.017	-1.507
	(4.788)	(1.112)	(0.599)	(0.820)	(0.750)
ltax	2.427	1.624	1.206	1.143	0.869
	(0.819)	(0.210)	(0.128)	(0.171)	(0.158)
k_ltax	-0.759	-0.400	-0.355	-0.290	-0.193
	(1.230)	(0.290)	(0.183)	(0.269)	(0.247)
lrent	0.288	0.223	0.011	-0.133	0.066
	(0.396)	(0.098)	(0.062)	(0.086)	(0.079)
k_lrent	-0.206	0.027	0.016	0.462	-0.244
	(0.545)	(0.131)	(0.087)	(0.132)	(0.121)

lwage	0.227	0.255	0.047	-0.074	0.041
	(0.561)	(0.144)	(0.099)	(0.135)	(0.124)
k_lwage	-0.052	-0.502	-0.093	0.454	0.190
	(0.789)	(0.192)	(0.138)	(0.208)	(0.193)
un_rate	-17.951	-12.911	-4.891	-8.625	-3.311
	(9.431)	(2.431)	(1.606)	(2.063)	(1.848)
k_un_rate	14.641	5.960	1.256	0.370	-1.489
	(13.211)	(3.293)	(2.270)	(3.223)	(2.869)
phones_pc	-0.960	-0.575	-0.265	-0.076	0.240
	(0.378)	(0.094)	(0.062)	(0.084)	(0.078)
k_phon	0.377	-0.035	-0.071	-0.069	-0.013
	(0.564)	(0.128)	(0.088)	(0.130)	(0.121)
autos_pc	0.098	0.197	0.676	0.731	0.517
	(0.589)	(0.154)	(0.104)	(0.135)	(0.123)
k_auto	-0.132	0.106	0.113	-0.229	-0.212
	(0.854)	(0.211)	(0.150)	(0.215)	(0.194)
radio	-1.645	-0.869	-0.185	-0.131	-0.664
	(1.267)	(0.317)	(0.188)	(0.250)	(0.236)
k_radio	0.098	0.507	-0.012	-0.285	0.517
	(1.897)	(0.438)	(0.266)	(0.391)	(0.364)
lpop	0.742	0.663	0.666	0.766	0.830
	(0.187)	(0.050)	(0.030)	(0.039)	(0.037)
k_lpop	-0.391	0.133	-0.037	-0.064	-0.095
	(0.283)	(0.071)	(0.043)	(0.063)	(0.059)
llandarea	0.113	0.135	0.179	0.111	0.054
	(0.175)	(0.047)	(0.028)	(0.038)	(0.036)
k_llandarea	0.250	-0.129	-0.002	-0.025	0.050
	(0.254)	(0.066)	(0.041)	(0.060)	(0.056)
ltemp	1.969	1.615	0.842	1.021	0.448
	(1.537)	(0.381)	(0.225)	(0.311)	(0.290)
k_ltemp	3.666	0.284	0.168	-0.300	-0.314
	(2.369)	(0.535)	(0.322)	(0.488)	(0.452)
lprecip	0.274	0.222	0.246	0.042	-0.206
	(0.434)	(0.110)	(0.063)	(0.086)	(0.083)
k_lprecip	-0.901	-0.212	-0.123	-0.055	-0.071
	(0.617)	(0.158)	(0.092)	(0.140)	(0.132)
fract_rural	-0.335	0.016	-0.604	-1.220	-0.661
	(0.957)	(0.246)	(0.149)	(0.200)	(0.185)
k_fract_rural	0.379	0.462	0.068	0.644	-0.149
	(1.455)	(0.343)	(0.213)	(0.312)	(0.289)
fract_black	-1.953	-1.452	-0.028	1.038	1.142

	(1.032)	(0.268)	(0.200)	(0.240)	(0.209)
k_fract_black	-0.319	-0.450	-0.420	-0.750	-0.273
	(1.422)	(0.355)	(0.284)	(0.373)	(0.337)
Northeast	5.314	-0.437	0.890	0.520	-2.189
	(7.574)	(1.972)	(1.070)	(1.503)	(1.374)
k_Northeast	10.744	5.336	0.293	2.523	-5.129
	(11.426)	(2.830)	(1.539)	(2.314)	(2.172)
NorthCent	-2.038	1.715	1.226	0.509	-0.845
	(6.055)	(1.321)	(0.737)	(1.017)	(1.018)
k_NorthCen	16.607	2.117	-1.275	-1.768	-2.704
	(8.583)	(1.855)	(1.053)	(1.612)	(1.593)
South	0.253	-0.778	-1.076	-1.238	-0.837
	(4.795)	(1.193)	(0.721)	(0.971)	(0.937)
k_South	3.284	2.984	-0.111	-1.585	-2.015
	(6.485)	(1.674)	(1.014)	(1.523)	(1.474)
same_state	1.366	0.711	0.812	0.883	1.229
	(0.285)	(0.073)	(0.046)	(0.061)	(0.056)
k_same_state	-0.415	0.169	0.051	-0.076	-0.227
	(0.405)	(0.099)	(0.065)	(0.094)	(0.087)
(Stay_put perfectly predicts not there — Only Movers)					
dterm1	47.283	40.178	35.573	34.852	29.533
	(11.240)	(2.735)	(1.632)	(2.156)	(2.060)
dterm2	-167.426	-137.680	-120.779	-111.566	-82.044
	(49.843)	(12.315)	(7.236)	(9.365)	(8.800)
dterm3	261.739	195.255	172.284	148.577	94.222
	(98.689)	(24.342)	(14.084)	(17.930)	(16.677)
dterm4	-149.825	-104.474	-93.126	-76.468	-44.309
	(62.496)	(15.344)	(8.794)	(11.084)	(10.251)
k_dterm1	5.928	4.420	4.043	-3.825	0.445
	(16.703)	(3.849)	(2.354)	(3.391)	(3.197)
k_dterm2	-13.483	-23.332	-17.028	14.720	-9.459
	(74.857)	(17.503)	(10.503)	(15.026)	(13.900)
k_dterm3	3.362	55.601	28.027	-23.360	22.722
	(149.633)	(35.065)	(20.582)	(29.262)	(26.671)
k_dterm4	3.945	-39.816	-15.885	11.617	-15.282
	(95.225)	(22.315)	(12.909)	(18.277)	(16.509)

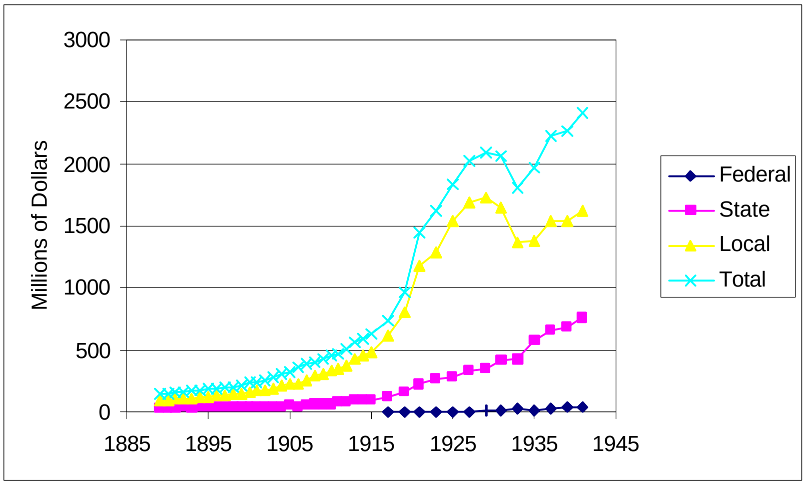
Figure 1: County-Level Data on Southern Public School Expenditures Per Pupil by Race, 1930

White Black Ratio



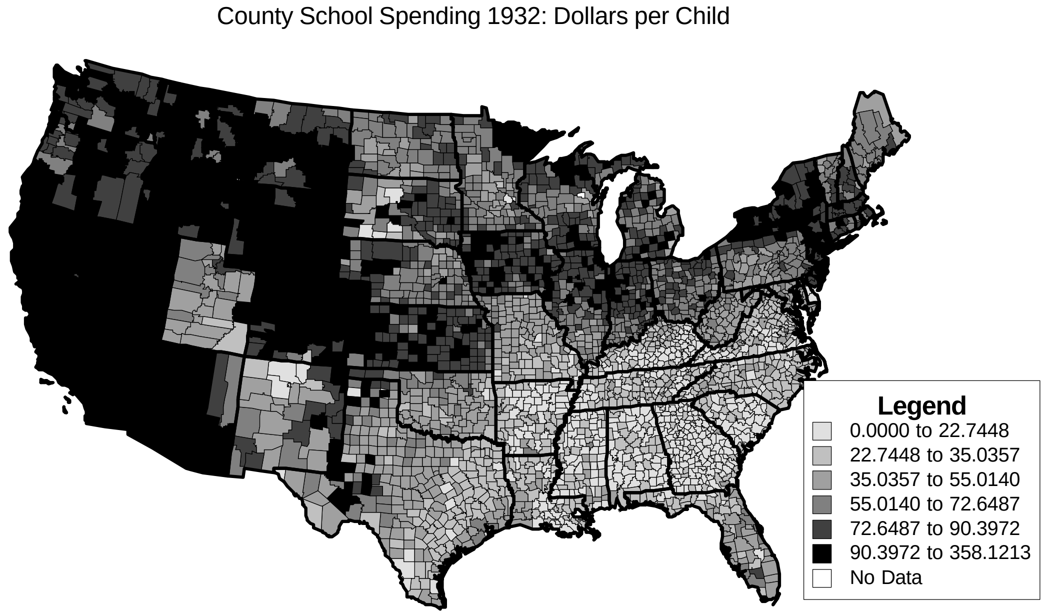
Source: Charles S. Johnson, *Statistical Atlas of the Southern Counties: Listing and Analysis of Socio-Economic Indices of 1104 Southern Counties* (Chapel Hill: Univ. of North Carolina Press, 1941).

Figure 2: Revenues for Public Elementary and Secondary Schools by Level of Government



Source*: Historical Statistics*, Bc 902-908; 1889-1915, 1921-23 includes receipts not distributed by source**.**

Figure 3: Distribution of School Spending Per Child, 1932



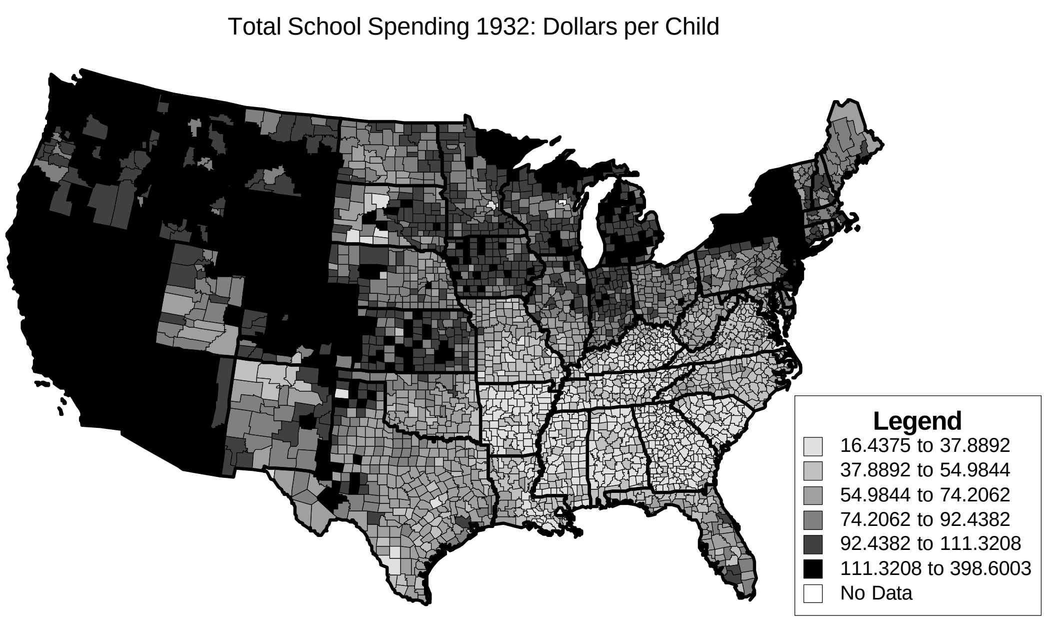
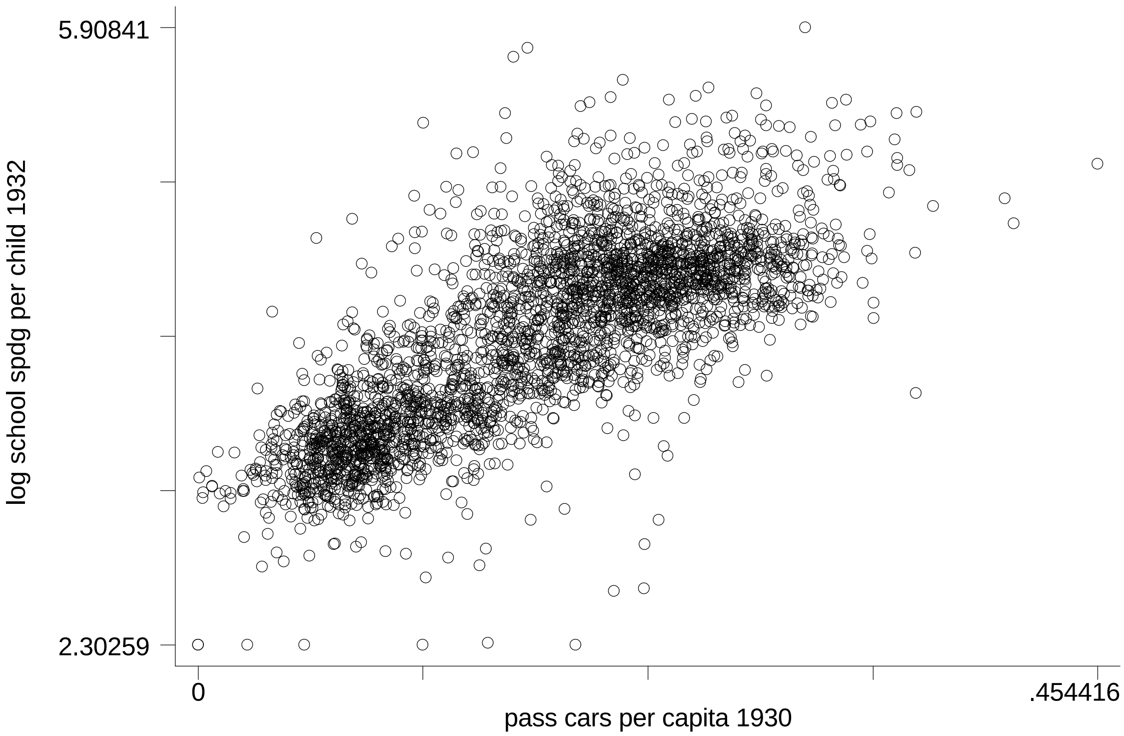


Figure 4: Passenger Cars per capita and School Spending



Appendix 1

Education 10 only. Effect of varying sample with Replacement sizes

	All 468 sampled	250 sampled	100 sampled	50 sampled	20 sampled	10 sampled	5 sampled
	b/se	b/se	b/se	b/se	b/se	b/se	b/se
choice							
NE_sch	-0.825	-1.006	-0.833	-0.909	-0.976	-0.744	-0.920
	(0.149)	(0.168)	(0.198)	(0.223)	(0.264)	(0.316)	(0.384)
k_NE_sch	0.313	0.424	-0.008	0.078	0.231	0.143	0.301
	(0.216)	(0.245)	(0.289)	(0.327)	(0.389)	(0.469)	(0.569)
NC_sch	-0.474	-0.585	-0.492	-0.658	-0.683	-0.762	-0.765
	(0.073)	(0.080)	(0.092)	(0.100)	(0.115)	(0.136)	(0.172)
k_NC_sch	0.247	0.357	0.173	0.158	0.028	0.124	0.260
	(0.106)	(0.119)	(0.138)	(0.149)	(0.174)	(0.206)	(0.257)
S_sch	-0.022	0.044	0.094	0.021	-0.056	-0.009	-0.097
	(0.077)	(0.086)	(0.095)	(0.102)	(0.119)	(0.133)	(0.161)
k_S_sch	-0.000	-0.060	-0.037	-0.028	-0.065	-0.078	0.016
	(0.111)	(0.122)	(0.136)	(0.147)	(0.170)	(0.192)	(0.231)
W_sch	0.868	0.509	0.262	0.128	-0.025	-0.238	-0.330
	(0.149)	(0.146)	(0.149)	(0.154)	(0.173)	(0.190)	(0.227)
k_W_sch	0.078	0.039	-0.013	0.001	-0.188	-0.094	-0.180
	(0.213)	(0.209)	(0.210)	(0.219)	(0.243)	(0.271)	(0.325)
lib	-0.028	-0.375	-0.332	-0.697	-0.655	-0.424	-1.191
	(0.190)	(0.227)	(0.290)	(0.326)	(0.413)	(0.469)	(0.532)
k_lib	0.233	0.595	0.653	0.845	0.674	0.564	1.656
	(0.274)	(0.327)	(0.412)	(0.471)	(0.580)	(0.694)	(0.811)
rec	0.859	1.248	0.890	1.220	1.413	1.209	2.097
	(0.318)	(0.354)	(0.400)	(0.442)	(0.507)	(0.590)	(0.720)
k_rec	-0.483	-0.799	-0.249	-0.303	0.176	0.204	-1.265
	(0.461)	(0.517)	(0.587)	(0.649)	(0.745)	(0.879)	(1.078)
ltax	0.868	1.117	1.041	1.338	1.525	1.554	1.427
	(0.103)	(0.112)	(0.126)	(0.137)	(0.157)	(0.179)	(0.214)
k_ltax	-0.314	-0.421	-0.240	-0.541	-0.413	-0.409	-0.382
	(0.148)	(0.161)	(0.180)	(0.197)	(0.226)	(0.259)	(0.311)
lrent	0.085	0.066	0.018	0.008	0.038	0.043	0.171
	(0.045)	(0.050)	(0.058)	(0.063)	(0.073)	(0.082)	(0.098)
k_lrent	-0.020	-0.010	0.029	0.030	0.023	-0.032	-0.243
	(0.063)	(0.071)	(0.082)	(0.090)	(0.104)	(0.118)	(0.141)

lwage	0.066	0.022	-0.057	-0.055	-0.095	0.097	-0.077
	(0.072)	(0.080)	(0.092)	(0.101)	(0.116)	(0.132)	(0.157)
k_lwage	-0.140	-0.045	-0.026	-0.158	-0.020	-0.173	-0.146
	(0.101)	(0.113)	(0.129)	(0.143)	(0.164)	(0.189)	(0.223)
un_rate	-5.917	-5.777	-3.768	-3.786	-4.167	-1.523	-6.171
	(1.161)	(1.305)	(1.497)	(1.647)	(1.893)	(2.187)	(2.582)
k_un_rate	1.577	2.326	0.560	0.707	0.534	-1.794	6.144
	(1.658)	(1.861)	(2.125)	(2.354)	(2.708)	(3.150)	(3.733)
phones_pc	-0.280	-0.277	-0.261	-0.309	-0.360	-0.401	-0.408
	(0.047)	(0.053)	(0.060)	(0.064)	(0.074)	(0.083)	(0.098)
k_phon	-0.009	-0.103	-0.081	-0.112	0.017	-0.074	0.091
	(0.067)	(0.075)	(0.084)	(0.092)	(0.105)	(0.120)	(0.142)
autos_pc	0.371	0.437	0.644	0.631	0.794	0.903	0.779
	(0.080)	(0.088)	(0.100)	(0.110)	(0.127)	(0.145)	(0.172)
k_auto	0.045	0.181	-0.056	0.285	0.045	0.057	0.050
	(0.115)	(0.126)	(0.143)	(0.158)	(0.183)	(0.212)	(0.254)
radio	0.335	0.165	0.118	0.230	-0.085	0.023	-0.305
	(0.139)	(0.154)	(0.178)	(0.194)	(0.227)	(0.257)	(0.318)
k_radio	-0.220	-0.060	0.046	-0.288	-0.218	-0.271	0.784
	(0.199)	(0.221)	(0.252)	(0.277)	(0.323)	(0.371)	(0.456)
lpop	0.463	0.520	0.642	0.635	0.689	0.680	0.646
	(0.025)	(0.027)	(0.030)	(0.032)	(0.037)	(0.043)	(0.052)
k_lpop	0.023	0.000	-0.090	-0.033	-0.063	-0.040	-0.045
	(0.036)	(0.039)	(0.043)	(0.047)	(0.054)	(0.063)	(0.076)
llandarea	0.034	0.087	0.121	0.174	0.201	0.194	0.209
	(0.024)	(0.026)	(0.029)	(0.031)	(0.035)	(0.039)	(0.046)
k_llandarea	-0.035	-0.021	0.023	0.009	-0.038	-0.013	-0.000
	(0.035)	(0.037)	(0.041)	(0.044)	(0.050)	(0.057)	(0.067)
ltemp	0.789	0.936	0.906	1.024	1.415	1.650	1.597
	(0.201)	(0.210)	(0.227)	(0.240)	(0.269)	(0.303)	(0.356)
k_ltemp	-0.268	0.014	0.107	-0.151	-0.004	-0.007	0.657
	(0.291)	(0.304)	(0.325)	(0.345)	(0.385)	(0.435)	(0.513)
lprecip	0.468	0.364	0.279	0.283	0.382	0.318	0.406
	(0.062)	(0.062)	(0.065)	(0.068)	(0.077)	(0.086)	(0.101)
k_lprecip	-0.101	-0.157	-0.188	-0.126	-0.245	-0.139	-0.207
	(0.090)	(0.091)	(0.095)	(0.101)	(0.111)	(0.125)	(0.147)
fract_rural	-0.156	-0.237	-0.422	-0.556	-0.796	-0.628	-1.181
	(0.116)	(0.127)	(0.144)	(0.157)	(0.182)	(0.208)	(0.250)
k_fract_rural	-0.035	-0.018	-0.031	-0.202	0.269	-0.159	0.483
	(0.166)	(0.182)	(0.206)	(0.225)	(0.260)	(0.300)	(0.357)
fract_black	-0.409	-0.299	-0.057	-0.048	-0.326	-0.104	-0.350
	(0.162)	(0.176)	(0.190)	(0.207)	(0.234)	(0.258)	(0.305)
k_fract_black	-0.096	-0.211	-0.302	-0.459	-0.231	-0.823	-0.652
	(0.220)	(0.243)	(0.268)	(0.292)	(0.330)	(0.372)	(0.441)

Northeast	6.381	5.285	3.083	2.722	1.994	-0.033	0.100
	(0.882)	(0.916)	(1.016)	(1.110)	(1.292)	(1.512)	(1.825)
k_Northeast	-1.335	-1.703	0.129	-0.250	-1.722	-1.045	-2.128
	(1.273)	(1.331)	(1.464)	(1.608)	(1.875)	(2.228)	(2.693)
NorthCent	4.798	3.478	1.798	1.912	1.153	0.516	-0.025
	(0.755)	(0.747)	(0.773)	(0.805)	(0.905)	(1.007)	(1.218)
k_NorthCen	-1.110	-1.503	-0.848	-0.790	-1.033	-1.069	-2.098
	(1.084)	(1.080)	(1.105)	(1.155)	(1.290)	(1.462)	(1.763)
South	2.826	0.858	-0.520	-0.777	-1.332	-2.455	-2.841
	(0.738)	(0.728)	(0.745)	(0.772)	(0.858)	(0.940)	(1.107)
k_South	-0.028	0.306	0.056	0.024	-0.660	-0.279	-0.879
	(1.056)	(1.044)	(1.051)	(1.094)	(1.208)	(1.346)	(1.587)
same_state	1.237	1.081	0.970	0.935	0.889	1.044	0.851
	(0.043)	(0.044)	(0.047)	(0.050)	(0.059)	(0.072)	(0.095)
k_same_state	0.050	0.057	0.043	0.037	0.068	-0.076	0.103
	(0.061)	(0.063)	(0.066)	(0.071)	(0.084)	(0.103)	(0.134)
stay_put	3.231	3.251	3.140	3.139	2.870	3.678	3.260
	(0.119)	(0.130)	(0.164)	(0.205)	(0.308)	(0.417)	(0.579)
k_stay	0.131	0.076	-0.169	0.155	0.260	0.026	0.124
	(0.158)	(0.166)	(0.192)	(0.228)	(0.311)	(0.405)	(0.557)
age_stay_put	0.018	0.017	0.023	0.017	0.020	0.003	0.008
	(0.001)	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)	(0.012)
fr_b_stay_put	-0.612	-0.597	-1.032	-0.799	-0.486	-1.200	-2.208
	(0.117)	(0.151)	(0.215)	(0.312)	(0.530)	(0.686)	(0.781)
dterm1	-4.046	-3.617	-2.129	-3.077	-3.103	-1.358	0.650
	(2.016)	(2.055)	(2.249)	(2.477)	(3.085)	(3.573)	(4.885)
dterm2	12.410	10.703	6.009	8.599	4.620	2.359	-11.003
	(8.256)	(8.378)	(8.992)	(9.692)	(11.567)	(13.215)	(17.462)
dterm3	-35.850	-33.804	-28.887	-33.311	-23.565	-22.225	5.645
	(15.389)	(15.550)	(16.473)	(17.528)	(20.332)	(22.966)	(29.673)
dterm4	22.379	21.065	19.131	21.675	14.931	14.450	-3.364
	(9.435)	(9.500)	(9.993)	(10.567)	(12.088)	(13.568)	(17.350)
k_dterm1	7.068	5.410	4.313	7.130	6.547	6.137	1.860
	(2.908)	(2.977)	(3.245)	(3.587)	(4.378)	(5.328)	(6.983)
k_dterm2	-26.875	-18.365	-14.972	-24.408	-17.939	-23.502	1.509
	(11.987)	(12.198)	(13.052)	(14.112)	(16.579)	(19.698)	(25.143)
k_dterm3	46.096	26.992	21.066	35.626	21.384	33.844	-14.662
	(22.489)	(22.771)	(24.058)	(25.656)	(29.389)	(34.330)	(43.037)
k_dterm4	-27.400	-14.446	-10.878	-18.850	-9.715	-17.228	11.972
	(13.846)	(13.966)	(14.654)	(15.521)	(17.558)	(20.333)	(25.271)

Data Appendix

Regional Definitions:

The regions are defined following the standard conventions: NENG=CN, MA, ME, NH, RI, VT; MALT=NJ, NY, PA; ENC=IL, IN, MI, OH, WI; WNC= IA, KS, MN, MO, ND, NE, SD; SALT=DC, DE, FL, GA, MD, NC, SC, VA, WV; ESC=AL, KY, MS, TN; WSC= AR, LA, OK, TX; MTN=AZ, CO, ID, MT, NM, NV, UT, WY; PAC=CA, OR, WA. NE=NENG+MALT; NC=ENC+WNC; SO=SALT+ESC+WSC; WE=MTN+PAC.

Given the format of the data in the 1932 Census of Government and other considerations, we combined the five boroughs of New York into a single entity and combined the independent cities of Virginia with the county from which they separated.

Regarding the definition of the SEA, http://www.ipums.umn.edu/usa/hgeographic/seaa.html notes: "SEA stands for State Economic Area, a concept described fully in Donald J. Bogue, State Economic Areas (Washington, D.C., 1951). SEAs are generally either single counties or groups of contiguous counties within the same state that had similar economic characteristics when they were originally defined, just prior to the 1950 census.

The Census Bureau first used SEAs in 1950, and the concept was applied retroactively to the 1940 sample. The IPUMS constructed SEAs for 1850-1930 by combining counties to match, as closely as possible, the components of the 1940-1950 SEAs. However, shifts in county boundaries, primarily resulting from the creation of new counties as populations shifted and grew, mean that these earlier SEAs do not always contain exactly the same territory as their 1940-1950 counterparts."

Data Definitions and Sources:

County School Spending per Child compiles local level spending (by the governments of counties, cities, towns, villages, school districts, etc.) on school spending reported in U.S. Bureau of the Census (1935) divided by the 1930 number of children aged 7-20 years as reported in Haines (2005) ICPSR 2896. Total School Spending per Child adds to County School Spending per Child data on school spending by the State government allocated across the counties on a per child basis.

Total Library Spending per Capita combines Local Spending on Libraries by county as reported in U.S. Bureau of the Census (1935) divided by the 1930 county population and State level spending per capita allocated across the counties on a per person basis.

Total Recreation Spending per Capita combines Local Spending on Recreation by county as reported in U.S. Bureau of the Census (1935) divided by the 1930 county population and State level spending per capita allocated across the counties on a per person basis.

As noted in the text, the U.S. Bureau of the Census (1935) publication collected data from the state and local governments for the fiscal year ending on a date between 1 July 1931 and 30 June 1932. The data covered the fiscal year ending 30 June 1931 for 4 states; 31 July for 1 state; 31 Aug. for 1, 30 Sept. for 6; 30 Nov. for 1; 31 Dec. for 4; 31 March 1932 for 1; 31 May for 1; and 30 June for 28 states. This timing corresponds to the school year beginning Sept. 1931 for over one-half of the states. All others are earlier.

Regarding expenditures, the census reported on "governmental-cost payments" which for schools included "payments for operation and maintenance" but excluded interest of public debt or payments for new land and buildings. Specifically, the census questionnaire for schools read, "Report all payments on account of schools, including those for books and supplies furnished free to pupils, and libraries for use of teachers and pupils only. Payments in connection with financial administration of schools, their legal business, elections, general promotion of health, and those in connection with correctional schools should be classified according to the functional activity for which payment was made." The questionnaire for libraries read "Report payments on account of general libraries for the use of the public, even though under control of the board of education, and also payments to private library associations." That for recreation read "Report payments on account of all facilities for recreation both educational an general, including music, zoological collections, museums, art galleries, bathing beaches, golf links, playgrounds, parks, trees, and for such anniversaries as Fourth of July and Memorial Day." U.S. Bureau of the Census 1935, p. Vii).

We create a log transform of the spending data by adding a small constant as follows: log(10+$/pc).

Taxes per capita compile local level taxes by county for 1931/32 from U.S. Bureau of the Census (1935), divide by the county's 1930 population and then add state-level taxes per capita.

State School Districts per Child is derived by dividing the number of school districts in the state as reported in U.S. Bureau of the Census (1935) by the number of children aged 7-20 years.

Fiscal year uses state-level data from U.S. Bureau of the Census (1935) on the end of the fiscal year covered in the report. This date is convertedby Stata into the number of dates before Jan. 1 1960. We then divide by 365.25 days to generate the number of years before Jan. 1 1960

Data on the shares of the 1930 population that are Urban, Black, Foreign-Born White, Illiterate, Old (65+), Male, Unemployment and Farmers are from Haines (2005) ICPSR 2896. The data on 1926 Religious membership are from the same underlying sources but are adjusted as described in the data appendix to Rhode-Strumpf (2003). The data on the

Home-ownership rates, Median rents of non-farm dwellings in 1930, and the Shares of Families with 1,2, 3, 4+ children under 10 years are also from Haines (2005) ICPSR 2896 as is Unemployment in 1937.

Turnout 1920-32 is the ratio of votes to estimated number of eligible voters in the presidential elections, 1920-32 as reported in Clubb et al. ICPSR 8611; Democrat vote share in the presidential elections, 1920-32 are derived from the same source.

Manufacturing Workers and Value Added per Worker 1929 from Haines (2005) ICPSR 2896.with workers and product in counties subject to non-disclosure rules allocated on a state-by-state basis.
Manufacturing Wages Per Wage-Earner 1935 from Holleran (1936)

Data on Passenger Cars (on July 1 1930) and Number of Resident Telephones (on Jan, 1 1930) are from Eliot (1932).

Income tax returns per capita is the average of 1931 and 1932 tax year, divided by the 1930 population. Data from US Internal Revenue Service, Statistics of Income and "Number of Individual Tax Returns." The number used here are reported in Rand McNally *Commercial Atlas and Marketing Guide 1934 and 1935*.

Years of Compulsory Schooling equals the difference between entry and exit year in the Llleras-Muney Compulsory Schooling data set http://www.princeton.edu/~alleras/papers.htm

Annual temperature and precipitation are county-level means for 1941-70 as reported in ICPSR 9075.
Distance is measured from population-weighted average county centroids from the same source.