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## The Housing Stock of the Early United States: Refinement Meets Migration

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Source: *The William and Mary Quarterly*, Jul., 2007, Third Series, Vol. 64, No. 3 (Jul., 2007), pp. 549-590

Published by: Omohundro Institute of Early American History and Culture

Stable URL: <https://www.jstor.org/stable/25096731>

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# The Housing Stock of the Early United States: Refinement Meets Migration

Carole Shammas

I have been at a fine plantation called Hunthill belonging to Mr Rutherford. On this he has a vast number of Negroes employed . . . He makes a great deal of tar and turpentine, but his great work is a saw-mill . . . There is a show of plenty . . . but it is a mere plantation . . . they keep a good house, tho' it is little better than one of his Negro huts, and it appeared droll enough to eat out of China and be served in plate in such a parlour . . . Every body agrees that it [the plantation] is able to draw from twelve to fifteen hundred a year sterling money.

—Janet Schaw, *Journal of a Lady of Quality*<sup>1</sup>

A common theme running through the accounts of British and European travelers to the colonized portions of North America is the disjuncture they observed between colonists' material wealth and the shoddiness of their built environment. Janet Schaw's 1775 journal

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<sup>1</sup> Evangeline Walker Andrews and Charles McLean Andrews, eds., *Journal of a Lady of Quality; Being the Narrative of a Journey from Scotland to the West Indies, North Carolina, and Portugal, in the Years 1774 to 1776* (New Haven, Conn., 1921), 169–78 (quotation, 184–85).

entry furnishes a good illustration. The author was a well-off Scottish woman paying a visit to her brother, who had earlier immigrated to North Carolina. Schaw clearly admired the colony's natural beauty, the wealth being extracted from the forest, and even her host's consumer durables. What mystified her, however, was the indifference of these affluent colonists to the erection and preservation of proper housing. Buildings appropriate to a colonist's social and economic standing, according to her account, remained forever in the planning stage, stood half unfinished for years, or, if finally constructed, often burned down because no one made any serious attempt at firefighting.

Only in the last few years have historians of early America directed their attention to what eighteenth-century commentators considered good housing and when and why different segments of society began to invest in it. Important work on vernacular architecture had appeared earlier, but it had primarily focused on another issue, regional difference. Researchers, relying on evidence from surviving structures, devoted themselves to matching different types of construction—New England timber frame, mid-Atlantic stone, Georgian brick of the Chesapeake, Appalachian log—to the ethnic traditions of Atlantic immigrants and to tracing the evolution of their building techniques and styles as they confronted the challenges of the American environment. Though of great use to those interested in the transmission of culture and folkways, this literature posed a formidable barrier to the integration of research on the built environment with nonregional themes in early American history and to the incorporation of colonial structures into the history of housing and building in the United States. For these reasons historians of colonial America and the United States have enthusiastically greeted the argument that a new linkage of social status with civility, refinement, and comfort gradually worked its way down the social ladder and resulted in an improved domestic environment from the beginning of the eighteenth century to the first half of the nineteenth century, including what contemporaries considered more permanent and well-built dwellings. The titles and subtitles of various works suggest a major architectural change: *The Refinement of America*; “The Transformation of Living Standards in Early America”; *The Invention of Comfort*; and *Beauty and Convenience: Architecture and Order in the New Republic*.<sup>2</sup>

<sup>2</sup> The most notable exception to my generalization about the recent vintage of research on colonial housing standards is Cary Carson et al., “Impermanent Architecture in the Southern American Colonies,” *Winterthur Portfolio* 16, nos. 2–3 (Summer–Autumn 1981): 135–96. Some of the most important work on regional difference is found in Henry Glassie, *Pattern in the Material Folk Culture of the Eastern United States* (Philadelphia, 1968); Abbott Lowell Cummings, *The Framed Houses of*

A long-standing movement for housing improvement across the Atlantic appears to have inspired this American transformation. England's rebuilding process, according to historians of the Tudor and Stuart periods, began in the sixteenth century when people evicted livestock from quarters adjoining houses, replaced earthen floors with wood, substituted fireplaces and chimneys for open hearths and holes in roofs, floored over halls to create full second stories, and glazed windows. In the later seventeenth century, especially after the Great Fire of London, wood and clay construction fell into disrepute while brick and stone became preferred housing materials. Multilevel, compact, and uniform row houses began replacing the jumbled lanes of timber-framed dwellings in English cities and country towns.<sup>3</sup> Brick for permanence, second stories for space, fireplaces and glazed windows for warmth and light, and Georgian or, later, neoclassic facades for symmetry were all part of the program.

Colonial Americans had internalized many of these ideals at least as far back as 1728, when William Byrd of Westover chided North

*Massachusetts Bay, 1625–1725* (Cambridge, Mass., 1979); Allen G. Noble, *Wood, Brick, and Stone: The North American Settlement Landscape*, vol. 1, *Houses* (Amherst, Mass., 1984). David Hackett Fischer makes good use of this regional vernacular literature for the colonies and England in Fischer, *Albion's Seed: Four British Folkways in America* (New York, 1989). Carson has also noted the historiographical neglect of the regional vernacular literature but views the problem from another perspective in Carson, "Material Culture History: The Scholarship Nobody Knows," in *American Material Culture: The Shape of the Field*, ed. Ann Smart Martin and J. Ritchie Garrison (Knoxville, Tenn., 1997), 401–28. Richard L. Bushman develops the idea of a transformation most fully. See Bushman, *The Refinement of America: Persons, Houses, Cities* (New York, 1992). Edward A. Chappell supplies the best coverage of the literature. See Chappell, "Housing a Nation: The Transformation of Living Standards in Early America," in *Of Consuming Interests: The Style of Life in the Eighteenth Century*, ed. Carson, Ronald Hoffman, and Peter J. Albert (Charlottesville, Va., 1994), 167–232. John E. Crowley furnishes an excellent account of the search for warmth and light. See Crowley, *The Invention of Comfort: Sensibilities and Design in Early Modern Britain and Early America* (Baltimore, 2001). Nora Pat Small brings in conflicting notions of improvement in the early national Massachusetts countryside. See Small, *Beauty and Convenience: Architecture and Order in the New Republic* (Knoxville, Tenn., 2003).

<sup>3</sup> The foundational texts on English rebuilding are W. G. Hoskins, "The Rebuilding of Rural England, 1570–1640," *Past and Present*, no. 4 (November 1953): 44–59; M. W. Barley, "Rural Housing in England," in *The Agrarian History of England and Wales*, vol. 4, 1500–1640, ed. Joan Thirsk (Cambridge, 1967), 696–766; Maurice W. Beresford and John G. Hurst, eds., *Deserted Medieval Villages* (New York, 1972); Eric Mercer, *English Vernacular Houses: A Study of Traditional Farmhouses and Cottages* (London, 1975). R. Machin raised important questions about the formulation in Machin, "The Great Rebuilding: A Reassessment," *Past and Present*, no. 77 (November 1977): 33–56. More recent contributions include Matthew Johnson, *Housing Culture: Traditional Architecture in an English Landscape* (Washington, D.C., 1993); Colin Platt, *The Great Rebuildings of Tudor and Stuart*

Carolinians about their chimneyless log dwellings. After independence, as leaders of the early United States began to review what they had fought over and what they were going to do with it, the critiques grew more serious. Thomas Jefferson's famous dictum that building in wood doomed a society to a complete rebuilding every fifty years is one example. Virginians had to use more "durable" materials, in his view, so that every new structure would be "an actual and permanent acquisition to the state." A contributor to the *American Museum*, a leading magazine of the period, put it more personally. "Those who have either children or a wife to leave behind them will build of brick," he advised, "if they wish to leave monuments of kindness, rather than a rent-charge, behind them."<sup>4</sup> More conclusively, the 1798 direct federal tax enumerators received specific instructions for assessing private dwellings. To determine a dwelling's valuation, the government instructed these men to consider not only the structure's state of repair and square footage but also the type of construction (brick, stone, or wood), number of stories, and number of glazed windows and panes. These housing characteristics correlate closely with the rebuilding agenda observed in England and elsewhere in western Europe during the early modern period.

But questions remain. The authors of this refinement thesis are themselves tentative about the chronology. A close reading of texts on the increasing refinement, comfort, and symmetry of early American dwellings indicates a belief on the part of the writers that a transformation was underway, yet they make no firm assertions about the depth of enthusiasm for rebuilding as the eighteenth century gave way to the nineteenth. Also throwing something of a wet blanket over this transformation are the implications of studies on the explosive growth of the backcountry from 1760 through the 1840s. Historians depict an America rapidly moving away from domestic improvement, comfort, and refinement toward a ruder lifestyle. Travelers' accounts after the Revolution by Europeans, easterners, and some settlers vividly describe the miserable living conditions of those who relocated to better their prospects: small, chimneyless, windowless, earthen-floor, vermin-infested log shacks. Though sympathetic to the craftsmanship involved in successive forms

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*England: Revolutions in Architectural Taste* (London, 1994), vii. On Virginia refinement and English housing, see Rhys Isaac, *The Transformation of Virginia, 1740–1790* (Chapel Hill, N.C., 1982), 34–42, 70–74.

<sup>4</sup> Thomas Jefferson, *Notes on the State of Virginia*, ed. William Peden (New York, 1955), 154 ("durable"); "On the Architecture of America" (1790), repr. in Steven Conn and Max Page, eds., *Building the Nation: Americans Write about Their Architecture, Their Cities, and Their Landscape* (Philadelphia, 2003), 9–10 ("build of brick," 10); William K. Boyd, ed., *William Byrd's Histories of the Dividing Line betwixt Virginia and North Carolina* (1929; repr., New York, 1967), 94–96.

of horizontal log construction, Donald A. Hutsler nonetheless labels it the "architecture of migration."<sup>5</sup> Such architecture challenges the refinement thesis and its effect on the total housing stock.

Nor does the refinement thesis really resolve more satisfactorily than the earlier regional approach how the early American housing stock influenced nineteenth-century housing trends. In the past general histories of housing in the United States included a chapter or two on regional types as a prologue to the real action that began after 1830, when modern forms overthrew traditional ones. Unfortunately, the story of trickle-down refinement, in which respectable middle-class society adapted genteel transatlantic building practices and set the norm for the rest of the population, does not lead any more logically to how houses came to be built. Standardized light-frame construction is credited almost universally with "radically" transforming home building in the United States, and its emergence coincided with the appearance of

<sup>5</sup> Donald A. Hutsler, *Log Construction in the Ohio Country, 1750–1850* (Athens, Ohio, 1992), is an abridged ed. of Hutsler, *The Architecture of Migration: Log Construction in the Ohio Country, 1750–1850* (Athens, Ohio, 1986). On the tentativeness of the chronology, Rhys Isaac writes, "Change was slow in coming to the dwellings of poor planters, who continued to live crowded in one-room or two-room houses until well into the nineteenth century" (Isaac, *Transformation of Virginia*, 305). Richard L. Bushman divides *Refinement of America* into two parts; the first is 1700–1790, which concerns increased investment in housing by elites on the eastern seaboard. The second part, 1790–1850, is the spread of refinement promised in the title, which almost exclusively concerns buildings, images, and writings after 1830 directed at the middle classes. At the end of his long review essay, Edward A. Chappell concludes that "even with the increasing consumerism of the early republic, change in quality of housing did not parallel the apparent rise in people's ability and desire to obtain lesser goods. Early American consumers may have lined up for fine earthenwares . . . but not for new housing" (Chappell, "Housing a Nation," 232). John E. Crowley maintains that a domestic comfort revolution took place in eighteenth-century Britain and America but did not affect that many people: "The priority of housing in household consumption had increased but still remained generally low: 'most Americans were still living in small, mean, vernacular houses' . . . In the early nineteenth century, household comfort had not yet become so popular as the display of refinement and gentility" (Crowley, *Invention of Comfort*, 262). Nora Pat Small writes that "in the half-century following the American Revolution rural New Englanders transformed their built environment . . . The rebuilding is undeniable, but its overall effect on housing in the new republic can be overstated if we forget how much poor and substandard housing remained" (Small, *Beauty and Convenience*, xiii–xiv). On the growth of the backcountry, see Richard R. Beeman, *The Evolution of the Southern Backcountry: A Case Study of Lunenburg County, Virginia, 1746–1832* (Philadelphia, 1984); John Mack Faragher, *Sugar Creek: Life on the Illinois Prairie* (New Haven, Conn., 1986); Thomas P. Slaughter, *The Whiskey Rebellion: Frontier Epilogue to the American Revolution* (New York, 1986); Alan Taylor, *Liberty Men and Great Proprietors: The Revolutionary Settlement on the Maine Frontier, 1760–1820* (Chapel Hill, N.C., 1990); Peter C. Mancall, *Valley of Opportunity: Economic Culture along the Upper Susquehanna, 1700–1800* (Ithaca, N.Y., 1991).

architectural pattern books featuring a wide variety of exterior and interior styles for national consumption. Home construction in new areas such as the Midwest deviated from that in the refinement literature. Wood eclipsed brick and stone, and the wood that triumphed was not the mortise-and-tenon timber frame of New England but types more quickly assembled with two-by-four pieces of lumber and nails. Carpenters and contractors erected dwellings with a simplified frame, requiring less artisanal expertise and allowing for lower labor costs. Making the construction even more efficient, cast-iron stoves replaced masonry hearths and in some cases chimneys disappeared as well. This light-frame architecture conquered all classes in the United States and remains the principal method for constructing homes today.<sup>6</sup>

Problems of representativeness and chronology highlight the importance of knowing more precisely the characteristics of the early American housing stock; the 1798 direct tax lists are a good place to start. These

<sup>6</sup> Gwendolyn Wright, *Building the Dream: A Social History of Housing in America* (New York, 1981), 87 (quotation). Rather than having suddenly emerged in Chicago in the 1830s, cost-effective light-frame construction is now seen as having evolved more gradually during the preceding four decades. This gradual evolution of frame building techniques actually made the houses more cost effective from at least the 1790s. A building boom in the Midwest from the 1830s drew attention to the new kinds of construction techniques available. On standardized light-frame architecture, see Carl W. Condit, *American Building: Materials and Techniques from the First Colonial Settlements to the Present* (Chicago, 1968), 40–45; Wright, *Building the Dream*; Dell Upton, “Traditional Timber Framing,” in *Material Culture of the Wooden Age*, ed. Brooke Hindle (Tarrytown, N.Y., 1981), 35–93; Paul E. Sprague, “Chicago Balloon Frame: The Evolution during the 19th Century of George W. Snow’s System for Erecting Light Frame Buildings from Dimension Lumber and Machine-Made Nails,” in *The Technology of Historic American Buildings: Studies of the Materials, Craft Processes, and the Mechanization of Building Construction*, ed. H. Ward Jandl (Washington, D.C., 1983), 35–61; Thomas C. Hubka, *Big House, Little House, Back House, Barn: The Connected Farm Buildings of New England* (Hanover, N.H., 1984), 42–44; Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York, 1985), chap. 7; Upton, *Architecture in the United States* (New York, 1998), 153–55; Joseph C. Bigott, *From Cottage to Bungalow: Houses and the Working Class in Metropolitan Chicago, 1869–1929* (Chicago, 2001), 20–28; Edwin H. Cavanagh, “Who Designed Your House? A Technological and Cultural History of Conventional Wood Construction, 1790–1880” (Ph.D. diss., Lehigh University, 2002), 4; Willie Graham, “Preindustrial Framing in the Chesapeake,” in *Constructing Image, Identity, and Place: Perspectives in Vernacular Architecture, IX*, ed. Alison K. Hoagland and Kenneth A. Breisch (Knoxville, Tenn., 2003), 179–96. On pattern books, see Upton, “Pattern Books and Professionalism: Aspects of the Transformation of Domestic Architecture in America, 1800–1860,” *Winterthur Portfolio* 19, nos. 2–3 (Summer–Autumn 1984): 107–50. The books published prior to 1830 that were discussed by Upton were more builders’ handbooks than pattern books.

lists, which represent the fullest enumeration of buildings in the United States until the Census Bureau incorporated housing questions into the decennial tally in 1940, offer information about typical housing in the last third of the refinement process, from 1790 to 1850. Economic historian Lee Soltow, the first to analyze the 1798 direct tax summary lists, discovered that assessors had deemed slightly more than half the housing in the new nation of insufficient value to be taxed. His analysis, however, did not include a full survey of what kind of housing the dwelling values represented. That type of information is available for thousands of houses in different regions of the country in the 1798 direct tax particular lists. Before and since Soltow's book, numerous local studies drawing on these lists have appeared, yet making statements about the United States as a whole from these individual studies remains difficult. One researcher finds a township's residential stock made up almost exclusively of small log dwellings with no amenities, whereas another investigating other communities in the same state discovers that two-story stone and brick structures constitute a substantial proportion of the housing.<sup>7</sup> In coordination with direct tax particular lists, scholars should also consult census data from 1800 to try to determine how important brick buildings in cities were to largely rural America, how much of the population actually lived in log cabins on the sparsely settled frontier, what fell between these extremes, and how populous the regions with varying housing types were.

The tax lists and other sources not only supply an early benchmark for the housing stock of the nation but also clarify the relationship between the built environment and broader trends in early American history, specifically the rapid migration and high fertility rates of the population from the last third of the eighteenth century to the early decades of the nineteenth century. These population movements appear to be associated with the demand for low-cost construction, principally of log, that dominated the landscape and stood as a major obstacle to

<sup>7</sup> Lee Soltow, *Distribution of Wealth and Income in the United States in 1798* (Pittsburgh, Pa., 1989), 53. On Pennsylvania, see Soltow, "Housing Characteristics on the Pennsylvania Frontier: Mifflin County Dwelling Values in 1798," *Pennsylvania History* 47, no. 1 (January 1980): 57–70; Carole Shammas, "The Space Problem in Early United States Cities," *William and Mary Quarterly*, 3d ser., 57, no. 3 (July 2000): 505–42; Gabrielle M. Lanier, *The Delaware Valley in the Early Republic: Architecture, Landscape and Regional Identity* (Baltimore, 2005), 36–53. For Massachusetts, Michael P. Steinitz notes the differences among the largely one-story structures in his Worcester Co. sample and the much more common two-story dwellings of Essex Co. and the Connecticut River valley. See Steinitz, "Rethinking Geographical Approaches to the Common House: The Evidence from Eighteenth-Century Massachusetts," in *Perspectives in Vernacular Architecture*, III, ed. Thomas Carter and Bernard L. Herman (Columbia, Mo., 1989), 16–26.

any widespread rebuilding along the lines laid out in the prescriptive literature or observed in urban centers. After 1830 the gradual takeover of the mass market by professionally built, less expensive light-frame architecture in town and country coincided with a drop in the rate of new land being settled, a rise in urbanization rates, and a decline in fertility rates. Evidence of changes in the housing stock from later censuses further supports this argument. Though the widespread commitment to permanence in the housing stock had finally materialized, it was not exactly the kind of rebuilding eighteenth-century proponents had envisioned.

This analysis begins with a state-by-state overview of the percentage of 1798 dwellings valued at \$100 or less by enumerators and thus exempt from taxation (Table I). These dwellings, which constituted half the housing stock on the tax list, were too substandard or hastily constructed to last or in such hopeless disrepair that they would or should be replaced. They could be log cabins erected as temporary dwellings, log houses intended for longer use but likely to be replaced when circumstances allowed, or more substantial timber-frame or even brick buildings that had been damaged or neglected. The government's exemption of these houses from taxation meant it did not consider them as capital but impermanent.<sup>8</sup>

The housing stock of states with a large part of their population living in areas settled in the last half of the eighteenth century had the highest proportion of impermanent, low-valued housing; a North-South difference also existed. The long-settled regions of New England came out the best and the southern frontier states the worst. As high as the number of nontaxable dwellings was, the actual proportion of housing at risk to fall down or constructed with the intention of rebuilding probably exceeded it. The direct tax omits the housing of Indian nations living within the boundaries claimed by the United States and does not include the living quarters of slave households as dwellings. It is also likely that the 18 percent of housing that appeared in the lowest taxable category (\$101-99) contained some structures barely distinguishable from their untaxed brethren. Only the higher value of land or particularly numerous domestic outbuildings, which were included in the valuation of houses, boosted them into the taxable category. Thus the actual proportion of impermanent dwellings falls somewhere within the 59 to

<sup>8</sup> Stone, brick, and timber-frame dwellings with brick chimneys and foundations that were not dilapidated were valued at more than \$100 and seemingly qualified as permanent. Log cabins and one-story wooden dwellings of less than six hundred square feet with few or no glass windows usually fell into the nontaxable category.

TABLE I  
PERCENTAGE OF HOUSING STOCK NOT TAXED IN 1798 BY STATE

	<i>Number of dwellings</i>	<i>Percentage not taxed</i>
Massachusetts	53,108	22.0%
Rhode Island	9,249	24.0
Connecticut	34,557	31.8
Pennsylvania	81,848	36.8
New Jersey	31,456	37.6
Maine	16,072	44.0
Delaware	9,183	44.5
Maryland	31,110	45.6
New Hampshire	22,778	51.1
New York	73,180	54.3
Virginia	65,606	57.8
Vermont	13,593	60.0
Georgia	12,461	72.4
North Carolina	47,760	75.4
South Carolina	26,427	75.7
Kentucky	15,882	79.0
Tennessee	11,198	90.8
<b>Total</b>	<b>555,468</b>	

*Notes:* I only altered one estimate, that for total number of houses in Vermont, which seemed excessively large. I substituted a number that projected a 60 percent nontaxable, based on the 54 percent nontaxable in neighboring New York, which in some upstate areas had comparable housing to Vermont but also had a major urban center that would have brought evaluations higher than Vermont's at the time. Checking Soltow's estimates against the results from states that have complete or nearly complete general lists (Maine, Maryland, Massachusetts, and Pennsylvania), the proportions are off no more than 1 percent.

*Sources:* Timothy Pitkin, *A Statistical View of the Commerce of the United States of America* (1816; repr., New York, 1967), 336; Lee Soltow, *Distribution of Wealth and Income in the United States in 1798* (Pittsburgh, Pa., 1989), 78.

74 percent range. As a point of comparison, the U.S. government today classifies only about 12 percent of dwellings as being impermanent or in bad repair.<sup>9</sup>

<sup>9</sup> Included in the valuation of dwellings were domestic outbuildings. In some cases in the South, structures were specifically designated "Negro houses," but more often the outbuildings included in this category were named for their work functions: kitchens, washhouses, milk houses. They may nevertheless have housed slaves. The numbers of impermanent houses are based on an estimation that 100,000 Indians and 576,798 slaves (67 percent of the slave population) lived in impermanent

It is possible to map intrastate variations by focusing on jurisdictions where detailed data exist for all or large portions of the state. Prime examples (from lowest to highest proportion of untaxed dwellings) are Massachusetts, Pennsylvania, Maine, and Maryland. The main early American folk housing traditions—those of New England, the mid-Atlantic, and the Chesapeake—are represented by structures in these states.<sup>10</sup>

Massachusetts had the lowest proportion of untaxed dwellings in the United States (see Table I). Its most highly valued housing was along the Atlantic seaboard; moving inland, the percentage of townships with nontaxable housing stock rose noticeably (Figure I).<sup>11</sup> In Pennsylvania the contrast shows up even more vividly: the valuations in long-established southeastern portions of the state far eclipsed townships to the west and north (Figure II). The western half of Pennsylvania had many townships in which more than 75 percent of the dwellings were valued at \$100 or less, whereas in Massachusetts only a single township in the western part of the state had such a high proportion of poor housing. Southeastern Pennsylvania, though, exhibited a record as good as or better than eastern Massachusetts. What may be surprising to some is the significant portion of Pennsylvania that was either sparsely settled or lacked any known Euro-American habitations at the end of the eighteenth century.

Maine had served as a frontier for Massachusetts since the mid-seventeenth century, but wars kept erasing settlements. At the conclusion of the Seven Years' War in 1763, the area had about twenty

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dwellings in the United States not counted in the direct tax. Assuming a household size of 5.5 people, the 127,038 dwellings represent 18 percent of the housing stock. Table I shows that 50 percent of the remaining 82 percent of the housing stock, or 41 percent, is untaxed and thus impermanent. Adding 18 percent to 41 percent equals 59 percent impermanent dwellings. In addition to this 59 percent, some of the houses valued from \$101 to \$199 were impermanent. The houses that fell into this category were, coincidentally, 18 percent of the 82 percent of all houses taxed, which could increase the 59 percent of impermanent houses by 0 percent if none were impermanent and raise it to 74 percent if all were impermanent. The current-day percentage comes from the American Housing Survey for the United States: 2003, <http://www.census.gov/hhes/www/housing/ahs/ahs03/tabc2.htm>. Impermanence was associated with manufactured/mobile homes and those units identified as having severe or moderate physical problems. They totaled 13,144 out of the 105,842 occupied units in the survey.

<sup>10</sup> Fred Kniffen, "Folk Housing: Key to Diffusion," *Annals of the Association of American Geographers* 55, no. 4 (December 1965): 549–77.

<sup>11</sup> It is useful to remember that a twp. is an administrative unit, not a town or a city. Several hamlets, villages, towns, or even boroughs could coexist in one twp. Twps. could also be completely rural.

thousand inhabitants squeezed into less than twenty-five hundred houses.<sup>12</sup> During the next thirty-five years, with the French threat removed, Maine experienced the most significant in-migration in its history. By 1800 the population had soared to more than one hundred fifty thousand. Even after this influx, however, about 85 percent of the state remained unpopulated and much of the new housing was of the impermanent variety (Figure III). Only a few townships along the coast had 25 percent or less nontaxable housing.

Maryland presents a somewhat different situation. This state, which originally based its economy on tobacco, never had much of a back-country, and whatever western parts Maryland possessed are not among those counties whose tax records survive. The Eastern Shore and the western side of the tidewater, however, are well represented (Figure IV). Southern states used the hundred, or parish, designation rather than township for administrative purposes and the exact boundaries for these jurisdictions are unknown. Consequently, data are available at the county level. All Maryland counties had more than 25 percent of their dwellings valued at \$100 or less, and most had from 51 to 75 percent in that category. Rather than an east-west contrast, the only observable division was between buildings in northern and southern Maryland. The northern counties, nearer the Pennsylvania border, possessed the better housing, despite the fact that Baltimore and Harford counties were settled later than the other counties whose records survived. In the case of Baltimore County, the presence of the city influenced the ranking greatly; without Baltimore, the county would have been at the 51–75 percent nontaxable level. Harford County possessed no important urban center. That northern Maryland housing was superior to southern is in keeping with the theory that impermanent housing existed longer in areas that continued to concentrate on tobacco cultivation rather than crop diversification.<sup>13</sup>

The geographic size of the areas with poor or impermanent housing was large (see Figures I–IV). Some of this land had just been settled, but other territory had been inhabited for a generation and some communities dated back to the seventeenth century. Moreover the numbers living in recently settled (post-1765) areas had skyrocketed to 36 percent of the population of the United States, a greater proportion than those living in either the longer-established rural areas of the Northeast or of the South.<sup>14</sup> Throughout most of the colonial period, almost all colonists

<sup>12</sup> Evarts B. Greene and Virginia D. Harrington, *American Population before the Federal Census of 1790* (1932; repr., Gloucester, Mass., 1966), 21–30.

<sup>13</sup> Carson et al., *Winterthur Portfolio* 16: 173.

<sup>14</sup> This percentage is conservative. Alan Taylor places it at more than 40 percent in 1800. See Taylor, *Liberty Men and Great Proprietors*, 295.

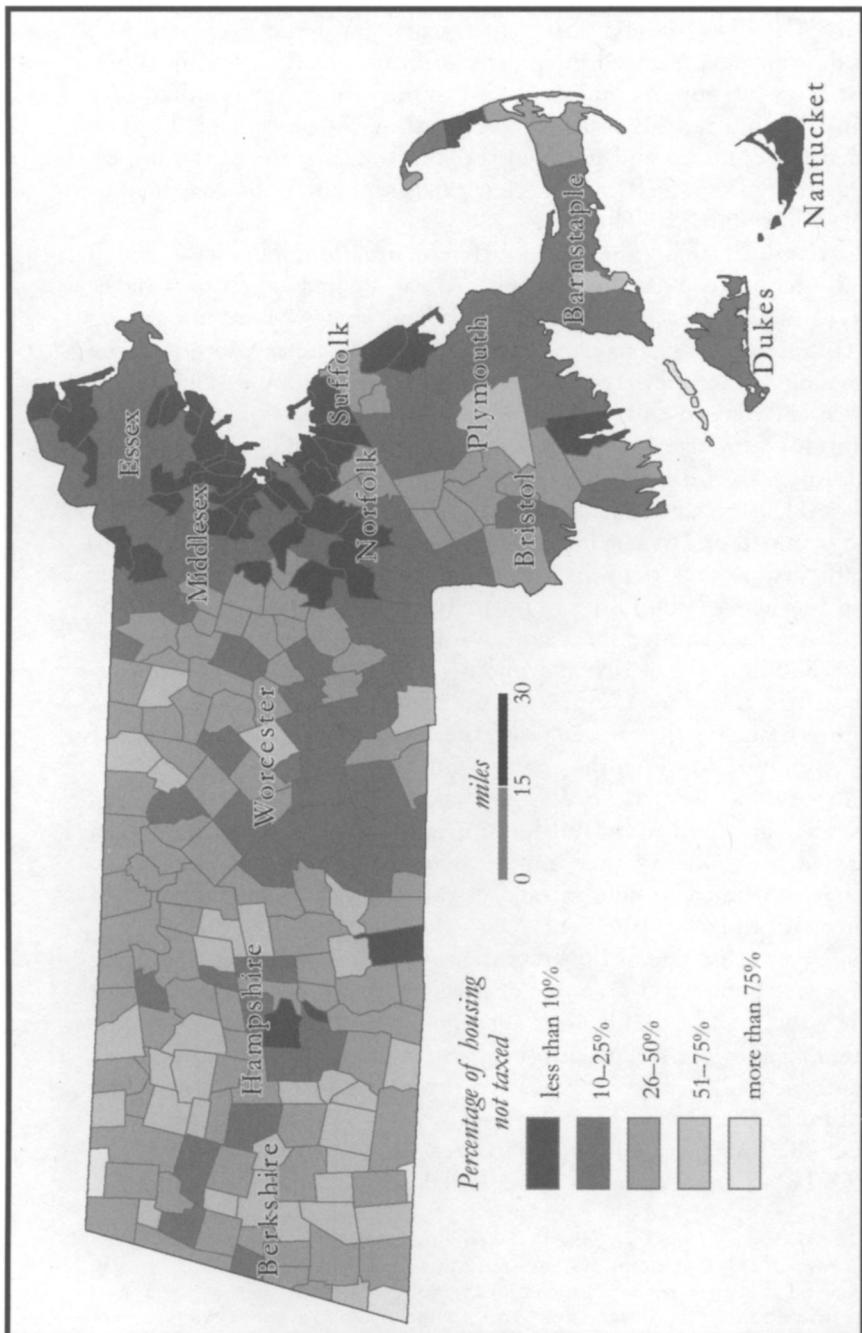


FIGURE I

Percentage of housing not taxed in Massachusetts townships, displayed by county, in 1798. Drawn by Sona Andrews's lab.  
Adapted by Rebecca Wrenn. A color version is available on <http://www.historycooperative.org/journals/wm/64-3/shammas.html>.

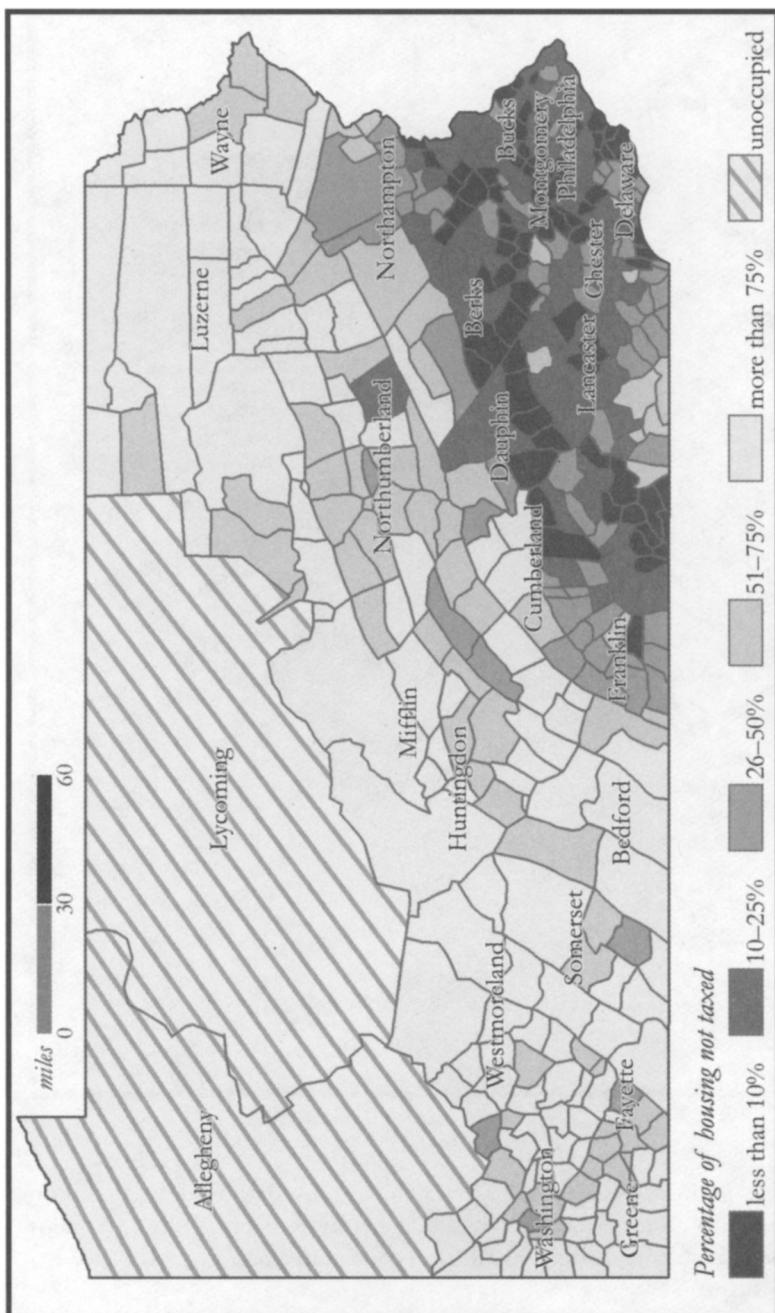


FIGURE II

Percentage of housing not taxed in Pennsylvania townships, displayed by county, in 1798. Drawn by Sona Andrews's lab. Adapted by Rebecca Wrenn. A color version is available on [http://www.historycooperative.org/journals/wm/64\\_3/shammash.html](http://www.historycooperative.org/journals/wm/64_3/shammash.html).

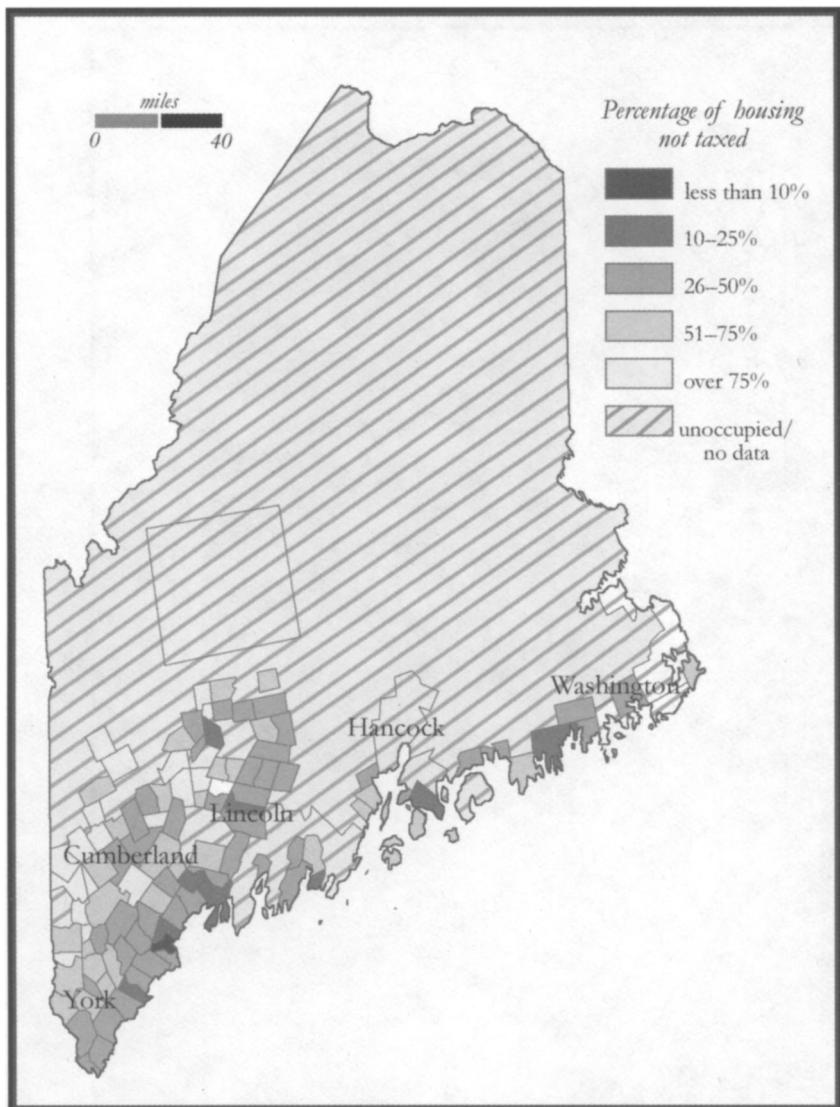


FIGURE III

Percentage of housing not taxed in Maine townships, displayed by county, in 1798. Drawn by Sona Andrews's lab. Adapted by Rebecca Wrenn. A color version is available on <http://www.historycooperative.org/journals/wm/64.3/shammas.html>.

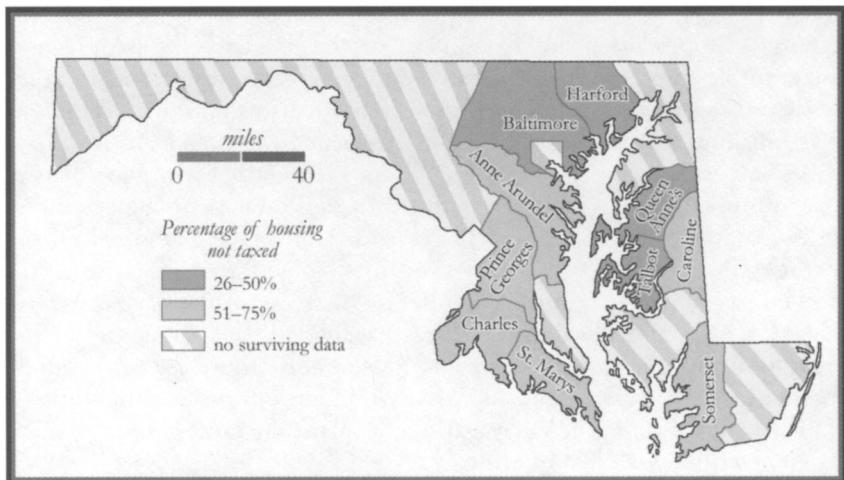


FIGURE IV

Percentage of housing not taxed in Maryland counties in 1798. Drawn by Rebecca Wrenn. A color version is available on <http://www.historycooperative.org/journals/wm/64.3/shammas.html>.

had lived near the Atlantic coast or the numerous rivers that remained navigable fifty or so miles into the interior. Lack of access to markets and conflict with Indian nations awaited those who ventured farther. After the Seven Years' War and the American Revolution, the United States citizenry poured into western lands at a faster rate than ever before or since.

In a series of articles published during the past ten years, geographer Carville Earle and his associates traced the rate of westward migration from 1650 to the end of the nineteenth century. He criticized the perception that settlement of the American continent proceeded at a steady, linear rate from colonial times to the 1890s. Instead he drew attention to the great contrast between the eighteenth-century rate of geographic expansion and the period from 1840 onward, when the rate slowed appreciably. In his view the emphasis Frederick Jackson Turner and the Census Bureau placed on 1890 as the closing of the frontier missed the mark by fifty years. Earle's findings are particularly relevant because of the attention he focuses on the rapid square-mile growth of settled areas after 1720. His data reveal a sawtooth movement, with accelerated expansion during economic recoveries and prosperous times and a drop in the rate during economic depressions. Nevertheless, if one adds

density measures (people per square mile), some long-term patterns emerge. Before 1720 and from 1840 to the present, the people-per-square-mile figure doubled about every fifty years. From 1720 to 1840, however, the rate of population increase, which by European standards was breaking all records, only slightly exceeded the expansion in square miles settled. During that 120-year period, it took 100 years for density to double—that is, to go from nine to eighteen people per square mile—twice the time required in the earlier and later periods.<sup>15</sup> In the decades from 1760 to 1780 and 1800 to 1820, internal migration proceeded at such a fast clip that hardly any increase in density is perceivable. Thus around 1800 frontier areas hardly had time to mature before people moved on to new frontiers. Presumably, these territories drew settlers at least in part from slightly more mature frontier communities. This continual transience may partially explain the large geographic size of areas with low-valued housing.

Up to this point, housing in 1798 has been solely judged by valuations of more or less than \$100 without addressing the range of average values in communities or what housing characteristics were associated with those averages. With federal direct tax particular lists, it is possible to link dollar values of houses and respective lots with descriptions. The lists relate what contemporaries thought gave greatest value to a house: its dimensions, the number of stories, the presence of outbuildings for domestic use, the building material, the number of glass windows, and its condition. These features coincided closely with the criteria embraced by those urging rebuilding of structures according to transatlantic standards. Material culture historians, much more interested in these data than property valuations, have produced a number of local studies of the housing characteristics in communities in Massachusetts,

<sup>15</sup> Carville Earle and Changyong Cao, "Frontier Closure and the Involution of American Society, 1840–1890," *Journal of the Early Republic* 13, no. 2 (Summer 1993): 163–79; Earle, "Place Your Bets: Rates of Frontier Expansion in American History, 1650–1890," in *Cultural Encounters with the Environment: Enduring and Evolving Geographic Themes*, ed. Alexander B. Murphy and Douglas L. Johnson with Viola Haarmann (Lanham, Md., 2000), 79–105; Samuel M. Otterstrom and Earle, "The Settlement of the United States from 1790 to 1990: Divergent Rates of Growth and the End of the Frontier," *Journal of Interdisciplinary History* 33, no. 1 (Summer 2002): 59–85. Using census data, Patricia Kelly Hall and Steven Ruggles also find that the rate of migration began to decline prior to the Civil War. See Hall and Ruggles, "'Restless in the Midst of Their Prosperity': New Evidence on the Internal Migration of Americans, 1850–2000," *Journal of American History* 91, no. 3 (December 2004): 835–36. Settlement rates come from taking the settled area in square miles for a given year and dividing it into the population figure for that year (Earle and Cao, *Journal of the Early Republic* 13: 166 [table 1]). From 1900 onward, the numbers come from the U.S. Census Bureau, *Statistical Abstract of the United States: 2004–2005* (Washington, D.C., 2005), 7 (table 1).

Pennsylvania, and the Chesapeake.<sup>16</sup> This article builds on that research, adding new communities and augmenting existing data sets to offer a profile of U.S. housing around 1800.

Chosen locations reflect as much geographic diversity as possible without overrepresenting sparsely populated regions (Table II). Completeness of reporting explains the selection of one community over another in the same area. For some regions, however, no communities possessed information on number of windows or dwelling condition. The number of observations reflects the proportion of the 1800 population living in each settlement category, except that city residences were oversampled to capture fully their diversity. Following the Census Bureau standard, urban denotes places where twenty-five hundred people or more lived and includes not only central wards in three major cities of the time but also districts in two provincial cities and an artisanal suburb. Fifty-eight percent of the U.S. population lived in older, rural settlements formed prior to the beginning of the westward migration boom of the mid-1760s. Households had occupied many of these rural townships and hundreds much earlier, in the seventeenth or early eighteenth centuries. The communities are arranged geographically from north to south. The Massachusetts, Rhode Island, and Pennsylvania townships collectively represent 31 percent of the population in 1800 living in the parts of Massachusetts, Connecticut, Rhode Island, southeastern New Hampshire, Hudson River areas of New York, New Jersey, eastern Pennsylvania, and Delaware that had been settled by 1765. The 27 percent of inhabitants living in the established areas of the rural tidewater and Piedmont—Maryland and the eastern portions of Virginia, North Carolina, South Carolina, and Georgia—are represented by communities in Maryland and Virginia. Finally, newer settlements, meaning frontier areas where significant numbers of permanent non-Indian settlements sprang up after 1765, cover Maine, Vermont, Kentucky, Tennessee, and recently formed communities in Pennsylvania, New York, Virginia, the Carolinas, and Georgia. Townships in Maine and New York, communities

<sup>16</sup> Not many enumerators carefully specified condition. Did some assessors mislabel houses as dilapidated to help neighbors obtain a lower evaluation? Perhaps, but the way the tax was levied made that strategy problematic. Taxes could only be progressive at the state level because the Constitution only allowed the federal government to levy taxes on a per-head basis. Each state, required to furnish a set amount to the federal government, proceeded to tax according to the value of the property, with more valuable dwellings taxed at a higher percentage. If an assessor undervalued the dwellings in his district, another district had to make up the difference. Reassessments occurred to come up with the full amount owed by the state, but few changes were as dramatic as the one for the city of Baltimore, which saw its tax doubled. Most adjustments for rural districts were minor and done for the whole district. For local studies of housing characteristics, see Data Sources, 588–90.

TABLE II  
HOUSING CHARACTERISTICS IN 1798 BY SETTLEMENT TYPE

	N	Value dwelling only	Value dwelling	More than \$100	Brick or stone	Log	Square footage	Two stories or more	Domestic out- buildings	Glass windows	Bad condition	People per dwelling	Value per square foot per person
<b>Urban areas representing 6 percent of the 1800 population</b>													
<i>Center city wards</i>													
Boston 8th High St. (Philadelphia) Walnut St. (Philadelphia)	126	\$4,779	\$1,827	100%	53%	0%	2,254	99	0.71	20.4	n/a%	9.9	\$0.082
Baltimore 2d-3d	158	2,990	2,235	100	91	0	1,288	1,34	n/a	n/a	n/a	7.7	0.225
<i>Provincial cities</i>													
Providence (R.I.)	97	2,851	2,136	100	94	0	1,383	99	1.1	9.8	n/a	7.7	0.201
downtown	505	2,180	2,121	100	54	0	1,598	84	n/a	n/a	n/a	7.5	0.177
Lancaster (Pa.)	239	1,072	1,051	97	4	0	1,722	84	0.21	20.9	2	8.9	0.069
northeast	165	931	922	100	43	29	1,136	38	1.22	8.7	n/a	7.6	0.107
<i>Artisanal suburb</i>													
West Southwark (Philadelphia Co.)	735	444	368	99	20	20	646	90	0.23	n/a	2	6.4	0.089
<b>Older small towns and rural communities representing 58 percent of the 1800 population</b>													
<i>(North, 31 percent; South, 27 percent)</i>													
Topfield, Essex Co., Mass.	112	248	212	88	0	0	1,725	80	0.11	14.8	10	7	0.018
Upton, Worcester Co., Mass.	106	193	181	75	0	0	951	22	0.07	9.0	n/a	8	0.025
South Hadley, Hampshire Co., Mass.	113	211	194	72	0	0	1,539	45	0.19	10.5	9	7.1	0.018
Richmond, Washington Co., R.I.	194	155	147	71	0	0	904	10	0.18	8.1	45	7.1	0.025
Coventry, Chester Co., Pa.	193	297	269	89	34	58	754	29	0.63	6.0	17	7.1	0.050
Brandywine, Chester Co., Pa.	146	243	228	69	28	67	729	41	0.58	4.2	31	7.8	0.040

Hempfield, Lancaster Co., Pa.	296	478	416	87	28	66	942	21	0.2	6.2	n/a	7.5	0.059
Dublin/Aire, Bedford Co., Pa.	198	129	127	44	4	96	666	24	0.4	3.4	n/a	7.1	0.027
Upper Gunpowder/ Mine Run, Baltimore Co., Md.	368	140	132	37	8	71	567	9	1.14	n/a	45	9.3	0.028
Dividing Creek, Pocomoke, Somerset Co., Md.	208	160	155	49	8	1	541	6	1.67	4.1	4	7.5	0.038
Upper/Lower St. Marys, St. Marys Co., Md.	132	66	63	17	7	12	478	1	0.84	2.8	50	9.8	0.013
Berkeley Parish, Spotsylvania Co., Va.	186	230	224	58	1	27	568	3	1.73	3.8	52	10.1	0.040
<b>Newer small towns and rural communities representing 36 percent of the 1800 population</b>													
Parsonfield, Newfield, Limerick, York Co., Maine	340	65	58	27	0	19	898	7	0.04	4.8	57	8.1	0.008
Champain, Clinton Co., N.Y.	104	33	26	6	0	85	402	0	0.08	0.4	n/a	11.4	0.006
Bald Eagle, Lycoming Co., Pa.	91	33	24	17	0	99	455	14	0.15	2.0	n/a	7.7	0.007
Hanover, Luzerne Co., Pa.	84	86	77	27	2	98	593	11	0	1.7	n/a	7.4	0.018
Salem, Westmoreland Co., Pa.	157	39	33	9	1	99	472	9	0.03	0.6	84	8.4	0.008
Franklin, Greene Co., Pa.	183	46	42	13	0	99	372	8	0.15	0.7	74	6.1	0.019
Shenandoah Valley, Va.	192	35	31	3	1	94	754	13	0.5	n/a	68	6.7	0.006

*Notes:* Values are means unless otherwise indicated. For center city wards, average dwelling-only values were obtained by subtracting the product of average per-square-foot value of vacant lots and total square footage of residential property in a ward. For the rest of the samples, dwelling-only values were obtained by subtracting the product of the per-acre value of nonresidential property and the total acreage of residential lots from the total value of residential property in a community. For all urban areas except West Southwark, people per house is based on citywide averages. Values for dwellings worth \$100 or less were obtained by regression for Berkeley Parish, Champain, and Shenandoah Valley. The numbers of windows for dwellings worth \$100 or less were obtained by regression for Topsfield, Upton, South Hadley, Coventry, Brandywine, Hempfield, Dublin/Aire, and Newfield. The latter twp. is the only one of the three newer Maine communities that has data on glass windows.

*Source:* See Data Sources, 588-90.

in Pennsylvania, and an estate in the Shenandoah Valley collectively represent 36 percent of the 1800 population.<sup>17</sup>

Arranging the communities by settlement type rather than segregating them by regions is a departure from usual practice in material culture studies. Indeed most of the literature on early American housing focuses on one region. In grouping by settlement type, the intent is not to diminish the significance of regional housing differences. Rather the objective is to study both, since it seems apparent that population density and period of settlement had a big effect on the housing stock apart from certain distinctive regional characteristics.

Housing in metropolitan places, regardless of region, had the highest average dollar value, followed by the older settled regions, with locations in the North often higher in value than those in the South (see Table II). The housing of the 36 percent of the population living in more recently settled areas lagged far behind; all were assessed at less than \$101. It is important to look at housing values after deducting the price of land. In certain urban areas, for instance the new wharf section in Boston's eighth ward, the cost of land made a dramatic difference in the value. In other city locations, the value of land was less important, and in older small town and rural communities, land costs normally represented only from 5 to 15 percent of a residence's total value.

After subtracting the value of land, the dollar amounts of the structures themselves in the central wards of the major cities clustered around \$2,000. In provincial cities the dwellings averaged half as much. Urban houses were made of brick and generally bigger due to multiple stories. The number of windows also exceeded the totals in most of the rural areas despite common walls with neighboring dwellings in center cities lowering the available space for such amenities. Cities also had their modest housing. As has been pointed out many times by urban historians, city neighborhoods in early America were more economically diverse than twentieth- and twenty-first-century neighborhoods. But cities, unlike anywhere else, had new, multistory brick buildings. Even in working-class Southwark, 20 percent of the buildings were masonry

<sup>17</sup> Only four 1798 direct tax particular lists of frontier areas exist for Maine; all are from the same area of York Co. Settlements in that co. date back to the seventeenth century, but the Parsonsfield area was not developed until after 1760. Champlain and the two adjoining twps. are among the few particular lists currently known to have survived for New York State. In 1786 sustained settlement in the northern Shenandoah Valley had been going on for about a generation (that is, thirty-three years), though some small settlements had existed as early as the 1740s. See Robert D. Mitchell and Warren R. Hofstra, "How Do Settlement Systems Evolve? The Virginia Backcountry during the Eighteenth Century," *Journal of Historical Geography* 21, no. 2 (1995): 135.

(see Table II). Municipal governments and newly formed insurance companies worked to make brick the building material of choice for safety reasons, and property owners who could afford the change considered brick buildings more durable and stylish. Even in small interior cities such as Lancaster, where log prevailed and where many traditionally looked to stone for permanence, brick gained converts (Figure V). Thirty-one percent of the buildings in the northeastern ward were brick, 12 percent stone, and another 10 percent were a combination of wood and brick or stone. Regional differences were not absent: Boston, older than the other cities, lagged behind in its rate of conversion, and Providence had almost no brick. One of its enumerators, chattier than most, wrote of a mansion house "new and elegant, built of wood," a comment that would have ranked as a non sequitur in Philadelphia. Outside of cities wood reigned supreme. In older settlements the materials of permanence, stone or brick, walled less than 10 percent of homes everywhere except in southeastern Pennsylvania, where stone dwellings appreciably raised the average value of housing.<sup>18</sup>

Wood could mean either frame or log construction or something in-between. Occasionally, the division between timber-frame and log structures became blurred because builders attached clapboard onto logs and employed some timber-frame building techniques, especially when the plans called for an addition or a second story. Mostly, though, the two forms were distinct. Frame construction with large timber pieces and handcrafted mortise-and-tenon joints as well as a central brick fireplace involved more expertise and generally cost more to build. Communities founded in the first half of the seventeenth century, including many in Massachusetts and the Chesapeake, are associated in the literature with frame building and clapboard exteriors, whereas communities in the mid-Atlantic, especially those founded by German immigrants in the

<sup>18</sup> List A, Providence Direct Tax 1798, Rhode Island Historical Society, Providence. The housing characteristics for the twps. in southeastern Pennsylvania are similar to what Arthur C. Lord reports for nine rural twps. in Lancaster Co. and the four wards of the city of Lancaster. See Lord, "Architectural Characteristics of Houses: Lancaster County, 1798," *Journal of the Lancaster County Historical Society* 85, no. 5 (1981): 132–51. His percentages do not include dwellings assessed at \$100 or less, but for most of the twps. that proportion was not large. He finds 32 percent stone or brick houses, 58 percent built of log, 26 percent with two stories, and an average of 6.5 windows per house. Across the Delaware River in New Jersey, one finds much less brick and stone but comparable proportions of two-story dwellings. See Peter O. Wacker, "Relations between Cultural Origins, Relative Wealth, and the Size, Form and Materials of Construction of Rural Dwellings in New Jersey during the Eighteenth Century," in *Géographie historique: Du village et de la maison rurale*, ed. Charles Higouet (Paris, France, 1979), 201–30. I owe this reference to Bernard Herman.

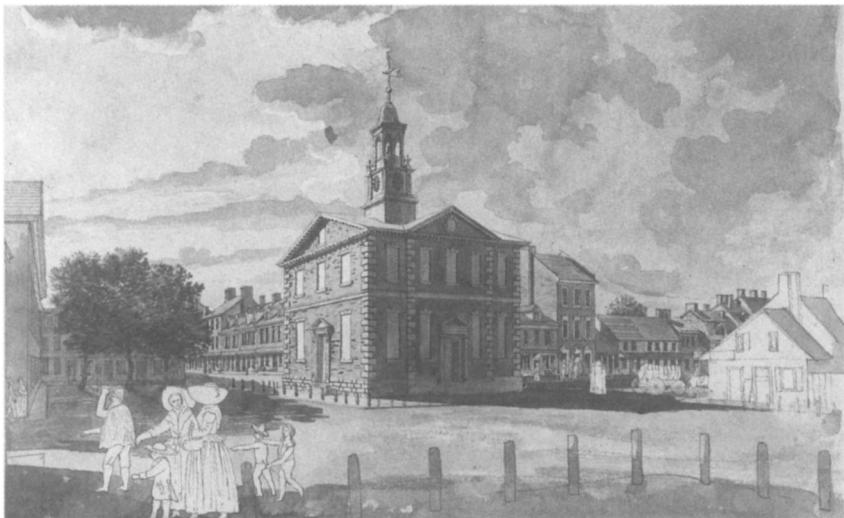


FIGURE V

Benjamin Latrobe, "Lancaster County Courthouse, Lancaster, Pennsylvania," September 1801. Courtesy, Maryland Historical Society. A color version is available on <http://www.historycooperative.org/journals/wm/64.3/shammas.html>.

1700s, are considered to be dominated by log buildings, rounded logs in the first years of settlement and later hewn logs and daub.<sup>19</sup> The 1798 direct tax lists suggest log had attained a strong foothold in all but the older settled regions of New England.

Harold R. Shurtleff's *The Log Cabin Myth* successfully alerted historians to the fact that log construction was not the building form of choice for most seventeenth-century English colonists. An unintended consequence has been a lack of appreciation for how popular log construction became in the eighteenth century almost everywhere in rural America where new building occurred, including the colonies already settled in the 1600s. In long-settled regions of Pennsylvania, if houses

<sup>19</sup> Descriptions in the particular lists sometimes note clapboard or planks put over log construction. On timber-frame techniques combined with log construction, see Noble, *Wood, Brick, and Stone*, 2; Richard M. Candee, "The Architecture of Maine's Settlement: Vernacular Architecture to about 1720," in *Maine Forms of American Architecture*, ed. Deborah Thompson (Camden, Maine, 1976), 15–44. On classic timber-frame construction, see Cummings, *Framed Houses of Massachusetts Bay*. Fred Kniffen and Henry Glassie supply an overview of wood construction by region. See Kniffen and Glassie, "Building in Wood in the Eastern United States: A Time-Place Perspective," *Geographical Review* 56 (1966): 40–66.

were not constructed of stone or brick, they were built of log (see Table II). The practice extended across the border to rural Upper Gunpowder and Mine Run hundreds in Baltimore County, Maryland, where 71 percent of the dwellings were log, nearly the same proportion recorded a generation earlier in an estate survey of the same area. Dividing Creek and Pocomoke in Somerset County, on the Eastern Shore of Maryland, remained predominately frame, but just north in the rural Eastern Shore communities of Queen Anne's County, from one-third to one-half of residents had been building their houses out of logs since the early eighteenth century. Though the tidewater Maryland hundreds in Saint Marys County had few log dwellings, in Virginia log constituted 27 percent of the housing in Berkeley Parish in Spotsylvania, and farther south in Halifax County, a 1780s tax list revealed more than 90 percent of dwellings to be built of log. In the Carolinas and Georgia, log also appears to have been the dominant construction type in rural areas.<sup>20</sup>

Log construction could range from a cabin to a two-story, hewn-log-and-plaster structure with a stone foundation, a chimney, and glass windows. Older townships in Pennsylvania had many of the more substantial types of log dwellings (Table III). The average value of log dwellings in these older townships could go far above the \$100 limit, as demonstrated by the high averages for log houses in Hempfield Township, a heavily German American township in Lancaster County. Several factors contributed to the high price attached to the housing there. Hempfield contained some of the richest farmland in Pennsylvania, and also about one-third of the houses were located in a small town, Columbia, within the township. In addition the dimensions of Hempfield Township's log houses were more than 50 percent larger

<sup>20</sup> Harold R. Shurtleff, *The Log Cabin Myth: A Study of the Early Dwellings of the English Colonists in North America* (Cambridge, Mass., 1939). See Gabrielle M. Lanier's work for more examples of Pennsylvania twps. where log building prevailed (Lanier, *Delaware Valley, 181–83*). For Franklin Co., where 88 percent of houses were log, see Paula Stoner Reed, "Building with Stone in the Cumberland Valley: A Study of Regional Environmental, Technical, and Cultural Factors in Stone Construction" (Ph.D. diss., George Washington University, 1988), chap. 3. On the hundreds thirty years earlier, see Gregory A. Stiverson, *Poverty in a Land of Plenty: Tenancy in Eighteenth-Century Maryland* (Baltimore, 1977), 61. For Queen Anne's Co., see Jennie LaMonte Johnson, "We entered the aforesaid lands and viewed the same": Plantation Development in Queen Anne's County, Maryland, 1708–1798" (master's thesis, Lehigh University, 1992), 57 (table 1). For Halifax Co., see Michael L. Nicholls, "Building the Virginia Southside: A Note on Architecture and Society in the Eighteenth Century," unpublished paper, Utah State University, 7–9. On Georgia, see Wilbur Zelinsky, "The Log House in Georgia," *Geographical Review* 43, no. 2 (April 1953): 173–93; James D. Kornwolf with Georgiana W. Kornwolf, *Architecture and Town Planning in Colonial North America* (Baltimore, 2002), 2: 824, 845, 921–23. Their conclusions are based on surviving structure information and literary evidence.

TABLE III  
CHARACTERISTICS OF LOG DWELLINGS IN  
LONG-ESTABLISHED RURAL TOWNSHIPS IN PENNSYLVANIA

	<i>N</i>	<i>Mean value</i>	<i>Mean square footage</i>	<i>Two stories or more</i>	<i>Mean number of windows</i>	<i>Bad condition</i>
Coventry,						
Chester Co.	109	\$175	489	19.0%	3.8	27.0%
Brandywine,						
Chester Co.	98	127	522	18.0	3.1	43.0
Hempfield,						
Lancaster Co.	195	350	685	10.0	4.4	n/a
Dublin/Aire,						
Bedford Co.	190	102	609	22.0	3	n/a

*Source:* See Data Sources, 588–90.

than the typical log dwelling. Yet even in the townships where better built log dwellings prevailed, this type of housing fell below the average value of a community's stone or brick residences, more often lacked a second floor, and more frequently earned the description old or in poor repair.

Benjamin Latrobe captures the full effect of America's log villages on the refinement sensibility in his written and pictorial account of his visit to the home of quarrier William Robertson in Stafford County, Virginia, a coastal county on the Potomac settled since the seventeenth century. Latrobe, the architect of the U.S. Capitol, clearly found the building practices of his adopted land exasperating. His dry wit emerges not only in his writings but also in his drawing, which situates Robertson's twenty-four-by-eighteen-foot, two-story log house in the center of a barren landscape of stumps, all that was left of the trees used to construct the house and outbuildings (Figure VI). Unfazed by this less-than-picturesque "Virginia style" setting, two people are shown relaxing in chairs in front of the house. Behind the dwelling Robertson had erected a separate kitchen. In Latrobe's rendering highly flammable log chimneys seem precariously propped against the sides of each building. In addition the architect sketched all the other small structures his friend had "sprinkled irregularly" around the property: a stable, smith shop, toolhouse, henhouse, and meat house. His journal relates what it was like to spend a night in this "romantic" (in the sense of fantastic or unreal) setting. The reader learns that "a chasm" between the logs in his



FIGURE VI

Benjamin Latrobe, "Wm. Robertson's house near his quarry on Acquia Creek," August 21, 1806. Courtesy, Maryland Historical Society.

guest room had permitted the insertion of a volume of *Arabian Nights*. The gaps between the wood, however, served as more than shelving, supplying an easy entrée for vermin. A warning by the lady of the house to beware of rats proved prescient. All night rodents disrupted Latrobe's sleep as they scurried about searching for food that had been left in odd places throughout the premises. At more than eight hundred total square feet, this two-story dwelling with its numerous outbuildings would have been considered on the upper end of log-house living, though probably not by the audience Latrobe had in mind as he penned his thoughts.<sup>21</sup>

A striking geographic pattern emerges when comparing house sizes in older rural communities (see Table II). As one goes north to south, square footage shrinks. At first glance the contrast is quite startling, from an average house size of more than 1,700 square feet in Topsfield Township, Essex County, Massachusetts, to 478 square feet in two hundreds of Saint Marys County, Maryland. The variation in the number of

<sup>21</sup> Edward C. Carter II, John C. Van Horne, and Charles E. Brownell, eds., *Latrobe's View of America, 1795–1820: Selections from the Watercolors and Sketches* (New Haven, Conn., 1985), 270–72 (quotations, 270).

multistory dwellings is an important factor. Whereas 80 percent of Topsfield residences were two stories, only 1 percent were in Saint Marys County. In Upton Township, Worcester County, a community located in central Massachusetts, little more than one in five residences had a second story. A study based on a large group of dwellings in that county reports that about one-third had the full extra floor.<sup>22</sup> In the farming community of Richmond Township, Washington County, Rhode Island, the proportion dropped to 10 percent.

The variation in house size among regions is actually less dramatic than it first appears. Part of the discrepancy is an artifact of the method used to calculate total square footage. Multiplying the dimensions of the house by the number of stories favors New England dwellings and disadvantages those in the Chesapeake. Though enumerators usually identified full second-story residences, they did not always indicate the one-and-a-half-story houses that existed in all regions but were particularly plentiful in the older settlements of the tidewater.

Differences in the location of domestic workspace also favored New England. Today a family house is a well-defined structure where sleeping, socializing, eating, preparing and storing food, cooking, and washing are accomplished within and where no more than an inexpensive garage exists as a separate structure. In many early American rural communities, however, domestic tasks often took place in separate outbuildings. These outbuildings were not the barns, artisanal shops, and other occupational structures used for production purposes but domestic outbuildings identified by enumerators as being primarily used for household consumption: kitchens, dairies, springhouses, smokehouses, washhouses, as well as early American counterparts to garages, stables or carriage houses.<sup>23</sup> Enumerators included the value of those buildings in the dollar value of dwellings, though they seldom recorded the square footage.

The geographic distribution of domestic outbuildings follows a regional pattern that is the reverse of the one for house square footage (see Table II). The few domestic outbuildings recorded for New England were usually for storing wood. In the mid-Atlantic, domestic outbuildings became much more common, and in the South they outnumbered dwellings. Plantation slavery in the South clearly contributed to this proliferation of structures surrounding the main dwelling because slaves might have lived in them or in a separate space identified as a slave quarter or Negro house.

<sup>22</sup> Michael P. Steinitz, "Landmark and Shelter: Domestic Architecture in the Cultural Landscape of the Central Uplands of Massachusetts in the Eighteenth Century" (Ph.D. diss., Clark University, 1988), 320.

<sup>23</sup> The 1798 tax assessors made a distinction between buildings used for occupational purposes and those meant primarily for household consumption. The former were evaluated as part of improvements on the land in a separate schedule.

Researchers have speculated as to why domestic outbuildings proved so popular in the states outside New England.<sup>24</sup> Contemporaries cited hot weather and fire danger from open hearths as reasons to move certain tasks outside main dwellings, though some historians have also argued that the desire to separate family members from servants and slaves furnished an incentive to build structures apart from main houses. Moreover householders may have found it easier and more economical to add outbuildings gradually rather than having to erect one big house.

Whatever the reason for the outbuildings, they apparently reduced the size of the house proper in the mid-Atlantic and the South because householders prepared food, washed clothes, and did other chores outside the main house. The New England use of lean-tos and sheds rather than separate outbuildings skewed the numbers in its favor in yet another way. In two-story New England houses, the dimensions of the first floor included the square footage of the attachments, yet more often than not these attachments lacked the additional story. Doubling the total ground floor area, therefore, overestimated total square footage.

A final complication in comparing dwelling square footage arises from the custom in some New England townships of building double houses, in which a lateral addition was attached to the original structure or an existing large timber-frame home was partitioned to create separate residences for more than one family. Sometimes these living spaces were separately enumerated as half houses with the square footage pertaining to each listed, but in other townships the listing of two names as possessors and owners furnished the only clue that two separate households occupied the structure. In the latter case, the per-dwelling square footage was overestimated.<sup>25</sup>

If all these elements are factored into the difference in square footage between the two extremes of Topsfield Township and Saint Marys County,

<sup>24</sup> For a discussion of the various rationales for outbuildings, see Donald W. Linebaugh, "'All the Annoyances and Inconveniences of the Country': Environmental Factors in the Development of Outbuildings in the Colonial Chesapeake," *Winterthur Portfolio* 29, no. 1 (Spring 1994): 1–18.

<sup>25</sup> Bernard L. Herman discusses the household arrangements made for widows in New England cities. See Herman, *Town House: Architecture and Material Life in the Early American City, 1780–1830* (Chapel Hill, N.C., 2005), chap. 5. Charles Parrott discusses double houses largely as a design type between the row house and the detached house in cities. See Parrott, "The Double House in New England," in *Building Environments: Perspectives in Vernacular Architecture*, ed. Kenneth A. Breisch and Alison K. Hoagland (Knoxville, Tenn., 2005), 33–46. A further question is whether this practice of dividing the house among the widow and children helps explain New England's much greater kinship propinquity discovered in Daniel Scott Smith, "'All in Some Degree Related to Each Other': A Demographic and Comparative Resolution of the Anomaly of New England Kinship," *American Historical Review* 94, no. 1 (February 1989): 44–79.

the gap narrows considerably. Assuming an upper floor only covered two-thirds of the ground floor space in Topsfield Township, the other one-third consisted of a one-story lean-to or addition, meaning the square footage would drop to a little less than 1,400. Furthermore almost one-quarter (24.3 percent) of the dwellings had two families in them. Dividing by households rather than by dwellings produces a dwelling size of 1,156 square feet. With Saint Marys County, it is likely that the one-story dwellings were actually one-and-a-half stories, raising the square footage to 717. Adding the average size of a detached kitchen in Saint Marys County (277 square feet) produces a total domestic space per family of approximately 994 square feet, still less than the average square footage in Topsfield Township but much closer than the initial figures suggested.

For those adhering to more cosmopolitan standards of architecture, a couple of outbuildings did not equal a second story. A landscape of small structures clustered around an unimpressive main house excited comment in more than one European travel account. The plantation built environment was described variously as a little village, as a bevy of booths at a country fair, or, most imaginatively, "as a litter of pigs" following "their mother."<sup>26</sup> The surprised reaction of visitors from abroad indicates that the enthusiasm for domestic outbuildings no longer prevailed in many parts of contemporary Europe but that these structures clearly satisfied some American needs.

That New Englanders less frequently cluttered the landscape with domestic outbuildings does not mean their rural built environment represented the epitome of order and regularity. Most dwellings in this period were not the tidy and symmetrical federal or Greek revival structures that line the streets of historic town squares in the region today. Instead the construction resembled that of the first great rebuilding of Tudor-Stuart England, the period during which the region's ancestors had immigrated. The signposts of progress were there—two-story construction around a central cooking hearth with chimney and glazed windows—but so were the awkward additions tacked on at every angle to the wooden frame. The rather low dollar-per-square-foot value of houses in the region hints that though the space under the roof was large by contemporary standards and the central frame sturdy, the attached lean-tos and sheds

<sup>26</sup> Edward C. Carter II, ed., *The Virginia Journals of Benjamin Henry Latrobe, 1795–1798* (New Haven, Conn., 1977), 1: 101 (quotation). Numerous quotations about outbuildings from late-seventeenth- to late-eighteenth-century travel accounts appear in Smith, *American Historical Review* 94: 1; Camille Wells, "The Planter's Prospect: Houses, Outbuildings, and Rural Landscapes in Eighteenth-Century Virginia," *Winterthur Portfolio* 28, no. 1 (Spring 1993): 5; Wells, "Social and Economic Aspects of Eighteenth-Century Housing on the Northern Neck of Virginia" (Ph.D. diss., College of William and Mary, 1994), 6.

measured as part of the dwelling were poorly put together. They gave many New England timber-frame dwellings a rambling, disheveled appearance (Figure VII). The multiple planes of the sides and roofs of the Fairbanks House in Dedham, Massachusetts, look as if the Yankee homeowner had retained the design services of Frank Gehry but carried out the construction himself. An alternative method of household expansion, the double house, where the addition nearly but not exactly replicated the original, offered a cleaner line yet suffered from the same asymmetry as a botched clone.<sup>27</sup>

Not surprisingly, the number of glass windows in older communities followed housing square footage, with one window for every one hundred to two hundred square feet of dwelling space (see Table II). Glazing on the windows supplied light while protecting households from the elements, and houses without such windows were viewed as substandard by enumerators. For a dwelling to be assessed at more than \$100, it had to have some window glass, though glazed windows did not ensure that status. In Richmond Township, Washington County, Rhode Island, 73 percent of dwellings valued at \$100 or less had one or more windows; in Saint Marys County, Maryland, 53 percent had at least one window; and in Somerset County, Maryland, 38 percent had at least one window.

For housing in more recently settled areas, new seldom translated into better. In all communities from north to south, the average assessed values for house and lot fell below \$101 (see Table II). Dwellings were overwhelmingly made of log and cabins abounded. Builders of log dwellings suffered from size constraints because the length of a side was limited by the height of trees. Consequently, most homes were less than five hundred square feet. To obviate the problem of not having enough long pieces of timber, residents erected what were basically two small log houses and connected them with a chimney (saddlebag house plan) or, more commonly, a covered passage (dogtrot). Those strategies explain the relatively high square footage observed in Virginia's Shenandoah Valley. Despite the large size, more than two-thirds of the dwellings were described as cabins or as being old or needing repair. Whether cabin or house, log adorned the exterior of nearly all the dwellings; 36 percent had no chimney and of those that did, one in six chimneys was made of wood covered with clay, a clear fire risk.<sup>28</sup>

<sup>27</sup> See Joseph S. Wood, *The New England Village, with a Contribution by Michael P. Steinitz* (Baltimore, 1997), chaps. 3–5; Small, *Beauty and Convenience*, introd. A photograph taken by Michael P. Steinitz showing one of these cloned dwellings in Topsfield Twp. appears in Wood, *New England Village*, 85.

<sup>28</sup> Barbara Hume Church, "The Early Architecture of the Lower Valley of Virginia" (master's thesis, University of Virginia, 1978), 33; Hutsler, *Log Construction in the Ohio Country*, 93–94. The housing characteristics in the lower



FIGURE VII

Rear view, Fairbanks House, Dedham, Massachusetts, ca. 1900. Photograph by the Halliday Historic Photograph Co. Courtesy, Historic New England (neg. no. H-1476).

Some newer communities in Maine had log dwellings, though not to the same degree as communities of the same vintage elsewhere. The preferences of settlers originally from Massachusetts and the long-term presence of sawmills may have made other types of wood construction more popular and available. The severe winter weather also encouraged people to keep as much of the domestic work as possible in attached rather than detached structures or breezeways. With fewer log cabins, the average value of housing (\$65) in sample townships of York County ranked higher than in many other frontier areas but lower than in all the longer-settled communities. More than two-thirds of dwellings in that county were assessed at or less than \$100. Most of the people in these samples, whether from Maine, upstate New York, western Pennsylvania, or the Shenandoah Valley, apparently lived similarly to those early-sixteenth-century English described by Elizabethan commentators as occupying small, dark dwellings lacking a foundation, glass, interior plaster, and a chimney. The small size of the dwellings and the high ratio

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Shenandoah Valley resemble those found by Michael L. Nicholls in the 1785 tax list for portions of Halifax Co., another Virginia co. formed around the same time as those in the Shenandoah. See Nicholls, "Building the Virginia Southside."

of people to dwellings suggests that they were crowded, especially during cold weather.<sup>29</sup>

By 1798 the log dwelling had emerged as the most common form of housing in the United States, and it should probably appear more prominently in general histories of vernacular architecture. Attractively priced and constructed with little or no professional assistance from readily available materials, it swept over the competition, crossing ethnic, regional, and even class lines. Log construction was ubiquitous among the 36 percent of the population living in the vast areas settled after 1765; 85 percent of homes were one-story log structures usually described as cabins, meaning no foundation, no glazed windows, and no chimney, or as being old or in poor repair. Improvement came slowly because many frontier households moved more than once. Communities, especially in their early years, experienced high population turnover.<sup>30</sup>

This so-called architecture of migration, however, was not just a frontier phenomenon. It also affected the 58 percent of the population living in rural areas settled prior to 1765. The most highly valued housing in such places was not made of log and varied regionally from large timber-frame dwellings in southeastern New England, especially along the coast, to stone houses in southeastern Pennsylvania, to Georgian brick dwellings in the southern tidewater. But each housing type had difficulty spreading beyond the long-established or more affluent segment of society. The New England timber frame was probably the most

<sup>29</sup> For other work demonstrating the presence of log in Maine, see Hubka, *Big House, Little House*, 37; Taylor, *Liberty Men and Great Proprietors*, 81–82, 258, 261. In Limerick Twp. a number of dwellings are specifically identified as lacking chimneys. For the lack of chimneys in many Shenandoah Valley cabins, see Church, “Early Architecture of the Lower Valley,” 28–29. She quotes Thaddeus Mason Harris on this distinction between a cabin and a house (Harris, *Journal of a Tour into the Territory Northwest of the Alleghany Mountains* [Boston, 1805], 15). For additional information on the distinction, see Hutsler, *Log Construction in the Ohio Country*, 76–80. Most likely the extremely high ratio of people to dwellings in places such as Champlain Twp., Clinton Co., N.Y., or the new settlements in York Co., Maine, resulted from enumerators mistakenly counting tenants or inmates as residing in their landlords’ outbuildings rather than in separate dwellings.

<sup>30</sup> Beeman, *Evolution of the Southern Backcountry*, 29, 67, 163; Faragher, *Sugar Creek*, 56; Slaughter, *Whiskey Rebellion*, 223; Tamara Gaskell Miller, “My whole enjoyment and almost my existence depends upon my Friends’: Family and Kinship in Early Ohio,” in *The Center of a Great Empire: The Ohio Country in the Early Republic*, ed. Andrew R. L. Cayton and Stuart D. Hobbs (Athens, Ohio, 2005), 125–26, 141. Based on the travel literature, log was also common north of the United States in Ontario and Quebec. See Mary K. Cullen, “Highlights of Domestic Building in Pre-Confederation Quebec and Ontario as Seen through Travel Literature from 1763 to 1860,” *Bulletin of the Association for Preservation Technology* 13, no. 1 (1981): 16–34.

successful in that regard, yet poorer households did not replicate the two-storied version. Moreover its use of wood and a form that showcased the central chimney and fireplace characteristic of Tudor-Stuart England rebuilding had limited relevance to the standards of construction being touted in the late eighteenth century.

In the mid-Atlantic and the South, log dwellings had infiltrated the countryside by the early eighteenth century.<sup>31</sup> The principal refinements in housing that prosperous residents might undertake were a transition to hewn logs, the plastering of internal walls, the replacement of wooden chimneys with stone, the glazing of windows, and the addition of a second story. Many owners considered such structures permanent dwellings, but those who hoped for a rebuilding revolution to sweep America did not. Though these log houses were improvements over cabins, the 1798 tax samples reveal that construction and repair issues plagued wooden dwellings of all types, whether frame or log, especially in the South.

Though problems of faulty construction and disrepair were found everywhere, they seemed to occur more often in long-established southern rural communities than in communities of a similar vintage elsewhere. The prevalence of modest dwellings of less than six hundred square feet on average that rarely had a full second story as well as the heavy reliance on outbuildings for domestic space furnish further evidence that the region's householders suffered from a shortage of people with construction skills or a reluctance to employ them when indentured or slave labor could suffice. Research on construction outside of urban areas in Virginia and North Carolina describes a system where few professional contractors existed even for expensive projects and much of the physical work fell to indentured convict labor during the colonial period and later to slave laborers "who had little hope of profiting from their work." For higher-end houses or public buildings, the elite often sought out craftsmen from abroad or from northern cities such as Philadelphia. The slower development of urban centers in the South may have hampered the growth of professional building trades and delayed the procurement of building materials, including glass, paint, and lime.<sup>32</sup>

<sup>31</sup> Besides the localities enumerated in Table II, research on the Hudson Valley in New York, western New Jersey, and Delaware indicates that log had a strong presence in these long-settled areas as well. See Wacker, "Relations between Cultural Origins, Relative Wealth," 201–30; Bernard L. Herman, *Architecture and Rural Life in Central Delaware, 1700–1900* (Knoxville, Tenn., 1987); Thomas R. Ryan, "Cultural Accommodations in the Late-Eighteenth-Century Architecture of Marbletown, New York," in *Shaping Communities: Perspectives in Vernacular Architecture*, VI, ed. Carter L. Hudgins and Elizabeth Collins Cromley (Knoxville, Tenn., 1997), 137–49.

<sup>32</sup> See Catherine W. Bishir et al., *Architects and Builders in North Carolina: A History of the Practice of Building* (Chapel Hill, N.C., 1990), 48–129 (quotation, 99);

Variations also appear that hint at another possible cause for the South's troubled dwellings: out-migration without compensating immigration. Tidewater areas such as Saint Marys County, the original site of the colony of Maryland in the seventeenth century, seem to have been more afflicted by a substandard housing stock than other older communities. The value of Saint Marys County's housing stock, with an average of \$66 per dwelling and 50 percent of the housing stock deemed old or out of repair, resembled the frontier more than a long-established township. The theory that the continued reliance on tobacco cultivation diminished the standard of living could apply to Saint Marys County's situation. The failure to find a new economic base manifests itself in the end as an out-migration problem. Saint Marys County lost increasing numbers of people to Kentucky, Tennessee, and other areas even farther west in the postrevolutionary period. A study of the effects of migration on early national and antebellum Virginia reveals how a rapid outflow of population could wreak as much havoc on a community's prosperity as rapid immigration.<sup>33</sup> Some older rural areas in the North also experienced out-migration, but immigrants and city growth kept Northern states and their hinterlands healthier than Southern states, which had fewer cities and less immigration to balance out the loss of rural population.

Those championing a rebuilding achieved their biggest success in cities, where (unfortunately for them) only 6 percent of the population lived. The housing in central portions of American cities—multistory brick buildings filled with windows—exhibited the traits of refinement, comfort, and durability prized by contemporaries. Most likely, municipal governments and insurance companies along with the enlightened self-interest of some property owners tried to push such housing improvements into outlying neighborhoods and smaller provincial towns. Opposition sprang up, however. When municipalities passed laws requiring brick and other construction upgrades after fires, the cost led many residents to campaign against such improvements.<sup>34</sup>

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Marlene Elizabeth Heck, "Building Status: Pavilioned Dwellings in Virginia," in Hudgins and Cromley, *Shaping Communities*, 49; Carl R. Lounsbury, *The Courthouses of Early Virginia: An Architectural History* (Charlottesville, Va., 2005), 199–208.

<sup>33</sup> Bayly Ellen Marks, "The Rage for Kentucky: Emigration from St. Marys County, 1790–1810," in *Geographical Perspectives on Maryland's Past*, ed. Robert D. Mitchell and Edward K. Muller (College Park, Md., 1979), 108–28; Carson et al., *Winterthur Portfolio* 16: 173; David Hackett Fischer and James C. Kelley, *Bound Away: Virginia and the Westward Movement* (Charlottesville, Va., 2000), chaps. 3–4.

<sup>34</sup> Gary Stanton details the spread of insurance to a provincial town in Virginia. See Stanton, "'Alarmed by the Cry of Fire': How Fire Changed Fredericksburg, Virginia," in Hudgins and Cromley, *Shaping Communities*, 122–34. Concerning opposition to municipal mandates on brick structures, see Sharon V. Salinger, "Spaces, Inside and Outside, in Eighteenth-Century Philadelphia," *Journal of*

The quest for more refined, durable, and well-built housing that met some transatlantic standard came up against a different set of priorities held by another segment of the population. But what exactly were these priorities that led to such a frenetic pace of internal migration during the seventy or so years from the mid-1760s to the 1830s? The usual explanation is that people left cities and long-established settlements to find cheaper land to farm, to gain a competency as contemporaries phrased it and as historians like to repeat. This conclusion seems incomplete because it neglects the presence of alternative means to gain a competency. Density levels in longer-established rural and small-town settlements (those settled before 1765) in Massachusetts, Maine, Pennsylvania, and Maryland averaged 43.6 people per square mile. Assuming a household size of about 7 people, that would mean roughly 6 households to divide up 640 acres, a little more than 106 acres each, not exactly crowding by European (not to mention Asian) standards. But land was already taken, one can hear social historians roar. True, but as most of the migrants would find out, so was most of the good land on the frontier, where the only odds that improved were those for foreclosure. Why did not more adult sons go into nonagricultural production of goods and services in their home regions? Two decades of research on consumption have established that American agricultural communities were not self-sufficient. They depended on a mercantile sector to obtain tea, coffee, sugar, tobacco, cloth, dishes, metal tools, and so forth, and they needed the services of artisans. If the community was in economic decline, a youth could also go to a city. Yet a high proportion of young people in these years poured into land with limited agricultural potential, uncertain ownership rights, and questionable market access. Eventually, more would move into nonagricultural pursuits, but the mystery is, why not earlier? Because young men from farming backgrounds often lacked the training or skills for nonagricultural work above that of a common laborer or servant, they would have had to take the time to learn those skills in the shops or households of others. Marriage would have had to be put on hold. Waiting for older farmers to die or retire could postpone household formation as well. Americans had a neolocal marriage system, whereby the norm was for a couple to establish their own household apart from either set of parents immediately or soon after the wedding. They also had a well-established tradition of women marrying on average four years earlier than European

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*Interdisciplinary History* 26, no. 1 (Summer 1995): 1–31; Shammas, *William and Mary Quarterly* 57; Herman, *Town House*, 115–17. For the nineteenth century, see Margaret Garb, *City of American Dreams: A History of Home Ownership and Housing Reform in Chicago, 1871–1919* (Chicago, 2005), chap. 1.

women. Early marriages mostly account for America's high fertility rate. Thomas Jefferson apparently did not pick up on the contradiction between demanding more durable housing and pushing for enough land to be available for young would-be yeomen, but the connection would not have been lost on Thomas Robert Malthus.<sup>35</sup>

That frontier areas had higher fertility rates is a commonplace observation in the economic history literature. Couples living in areas where land was cheap, the argument goes, had more children because they needed the labor and knew they would have enough property to endow all offspring later. Research has cast doubt on just how much children contributed to frontier agriculture and whether any sign of family limitation within marriage in older settler communities can be identified prior to 1850. Apparently, spinsterhood or marriage postponement brought about the decline in fertility rates in long-established communities. Thus men and women who wanted to start families early went to frontier areas despite the lower living standards almost certainly awaiting them. Using 1798 housing data on the aggregate (community, not individual) level and combining it with data from the 1800 decennial census shows that a community's fertility rate was negatively correlated with the dollar value of nonresidential land, density, and period of settlement and that after controlling for these other variables, a higher fertility rate still lowered the average value of dwellings (Table IV). If high fertility was a strategy for success on the frontier, it was a poor one. Rather the results are more consistent with the notion that around 1800 people migrated to the frontier because its lower cost of living enabled them to form households sooner or support an already large household more easily. The trade-off for having a household earlier, though, was substandard housing.<sup>36</sup>

<sup>35</sup> On foreclosure problems, see Terry Bouton, "A Road Closed: Rural Insurgency in Post-Independence Pennsylvania," *Journal of American History* 87, no. 3 (December 2000): 855–87. Michael R. Haines furnishes data on age at marriage. See Haines, "Long-Term Marriage Patterns in the United States from Colonial Times to the Present," *History of the Family, An International Quarterly* 1, no. 1 (1996): 15–39. Even Thomas Jefferson, though, worried about elopements. He rather surprisingly tried to get included in the Virginia Constitution a type of Lord Hardwicke Act allowing parents to void the marriages of their underage children. See Julian P. Boyd, Lyman H. Butterfield, and Mina R. Bryan, eds., *The Papers of Thomas Jefferson* (Princeton, N.J., 1950), 2: 557.

<sup>36</sup> Jeremy Atack and Peter Passell summarize the literature on fertility and frontier settlements. See Atack and Passell, *A New Economic View of American History from Colonial Times to 1940*, 2d ed. (New York, 1994), 213–21. Daniel Scott Smith suggests that migration from New England prior to 1815 accelerated, esp. to places that were not promising. See Smith, "A Malthusian-Frontier Interpretation of United States Demographic History before c. 1815," in *Urbanization in the Americas: The Background in Comparative Perspectives*, ed. Woodrow Borah, Jorge Hardoy, and Gilbert A. Stelter (Ottawa, Ontario, 1980), 20.

TABLE IV  
DETERMINANTS OF AVERAGE DWELLING VALUE IN DOLLARS FOR  
SMALL-TOWN AND RURAL LOCALITIES IN MAINE, MASSACHUSETTS,  
PENNSYLVANIA, AND MARYLAND

	<i>Coefficient</i>	<i>Standard error</i>	<i>Tolerance level</i>	<i>Mean value for variables</i>
Dollars per nonresidential acre	11.05	0.470	0.471	\$8.85
Population per square mile	0.61	0.157	0.429	35.95
Years settled	0.14	0.082	0.503	64.18
Ratio of children less than 10 years old to women 16-45	-36.61	8.843	0.605	1.84
Constant	135.53	20.119	n/a	197.88

*Notes:* Ordinary least squares regression. N = 885 localities,  $R^2 = 0.672$ . Based on the values of the standard errors, all variables are significant at the 0.001 level except for years settled, which, after controlling for all other variables, is only significant at the 0.10 level.

*Source:* See Data Sources, 588-90.

The state of the housing stock after 1800 remains something of a mystery. Unfortunately for the historian, though not for the taxpayer, after the violent protests over the intrusiveness of the 1798 tax, the federal government decided not to renew the direct tax legislation. Fragmentary evidence from other sources offers little support for assuming any widespread change during the early nineteenth century in the dwellings of rural America. An 1810 survey of housing in North Carolina reports little else but log and some wood frame. In 1815 the federal government briefly reinstated a housing tax to help pay for the war with Britain. The only enumerations comparable to the 1798 returns in this tax are for the approximately eight thousand houses of Lancaster County, Pennsylvania. The returns show only modest increases during the seventeen-year period in brick dwellings and two-story houses in older rural communities.<sup>37</sup>

A more comprehensive look at housing is available in 1840, thanks to a question in that year's census concerning the composition and value

<sup>37</sup> The North Carolina reports appear in A. R. Newsome, "Twelve North Carolina Counties in 1810-1811," *North Carolina Historical Review* 6, nos. 1-3 (January-July 1929): 67-99, 171-89, 281-309. Comments on housing are reported for Edgecombe, Greene, Lenoir, Moore, and Rockingham cos. Catherine W. Bishir and her coauthors summarize these comments (Bishir et al., *Architects and Builders*, 54-55). These generalizations are based on comparisons of the 1798 and 1815 direct tax for the city of Lancaster, Hempfield Twp., and Conestoga Twp. as well as the totals for the co. in 1815 in Thomas A. Lainhoff, "The Buildings of Lancaster County, 1815" (master's thesis, Pennsylvania State University, 1981). Gabrielle M. Lanier's statistics on dwelling material for Warwick Twp. follow the same pattern as the other localities. See Lanier, *Delaware Valley*, 185.

of houses constructed during the previous twelve months. Eighty-four percent of the new housing in the thirty states, U.S. territories, and federal district was wooden; that proportion was an underestimate because it only included housing constructed by professional builders, not the self-constructed dwellings that invariably were made from logs, timber, or earthen materials. An 1855 census for the state of New York, one of the older and most prosperous states in the union, confirms the small inroads that brick had made into the housing stock.<sup>38</sup> Only 13 percent of housing in the state consisted of brick or stone structures. More than 80 percent of such buildings were located in New York City, Brooklyn, and the counties containing Albany, Buffalo, Rochester, Schenectady, and Troy. The average values tell why wood won out over brick or stone: \$2,618 for brick houses in rural counties, \$1,505 for stone, \$540 for wood frame, \$152 for plank and board, and \$36 for log.

That the nineteenth-century United States remained largely a wooden built environment seems indisputable, but the question of when log ended its reign remains. Based on the admittedly limited 1815 results for Lancaster County, there is little evidence that people had transitioned from log houses and cabins to lighter-frame structures. In those tax returns, dwellings made of log constituted a similar share of the housing in the borough of Lancaster and preserved their dominance in the countryside. A different picture emerges from the 1855 census covering New York's half-million dwellings. This source implies that the architecture of migration had virtually been obliterated in the Empire State. Most of the area, except for New York City and the eastern counties surrounding the Hudson River, had been settled after 1765. Thus in 1798 log dwellings upstate appeared ubiquitous: 85 percent of the houses in Champlain Township, Clinton County, were made of log. And though not dominant, log houses even showed up in the long-settled county of Dutchess. But by 1855 log dwellings had dropped to 28 percent of the housing stock in Clinton County and 6 percent in all of New York State. Log had been swept away by wood frame, which constituted 78 percent of the state's dwellings. Obviously, frame did not beat out log because of price convergence. The mean value of frame houses was fifteen times that of log houses. The better type of log dwelling had

<sup>38</sup> The 1840 figures are calculated from *United States. Bureau of the Census. Compendium of the Enumeration of the Inhabitants and Statistics of the United States, as Obtained at the Department of State, From the Returns of the Sixth Census . . . [1840]* (Washington, D.C., 1841), 364. The 1855 data set was compiled from Franklin B. Hough, *Census of the State of New-York for 1855 . . .* (Albany, N.Y., 1857). Much though not all of the information is available in summary form in J. H. French, *Gazetteer of the State of New York Embracing a Comprehensive View of the Geography, Geology, and General History of the State, and a Complete History and Description of Every County, City, Town, Village, and Locality* (1860; repr., Port Washington, N.Y., 1969).

apparently disappeared or become so ramshackle that it had almost no value. Instead these northeastern families switched to a carpenter-built wood frame. Changes in technology may have made this switch more economically feasible, but an actual increase in housing investment also seems to have occurred. From 1798 to 1855, housing materials and labor only rose about 39 percent, yet in the rural North, nonlog wooden houses registered a 360 percent increase in average value.<sup>39</sup> Though the transformation in the housing stock envisioned by federal-era refinement advocates may not have materialized in the countryside, the wooden built environment of the North improved.

An analysis of the 1798 direct tax shows that period of settlement, population density, and lower fertility rates all raised the value of a community's housing. Looking at the demographic trends during the first half of the nineteenth century, the slow pace of improvement becomes more understandable. In the United States as a whole, the rate of frontier settlement did not abate and the rate of urbanization did not significantly increase until 1840. In the thirty years after 1840, the population living in cities with twenty-five hundred people or more climbed from 11 to 26 percent; the increase had been only from 6 to 9 percent from 1800 to 1830. The decades around 1800 are believed to mark the nadir in the average marriage age (which correlates inversely to fertility rates) for American women; most likely, the average rose after 1820, thus reducing fertility rates. Not surprisingly, the one place where historians have seen evidence of early-nineteenth-century improvement in the rural housing

<sup>39</sup> Thomas R. Ryan finds in an Ulster Co., N.Y., twp. settled in the seventeenth century that stone dwellings predominated among dwellings worth more than \$100, with log dwellings representing only 5 percent, but estimates that the dwellings valued at \$100 or less were primarily log like those in the adjacent twp. of New Paltz. See Ryan, "Cultural Accommodations," 140. On carpentry, see Wayne Franklin, *A Rural Carpenter's World: The Craft in a Nineteenth-Century New York Township* (Iowa City, Iowa, 1990). According to Franklin, the carpenter profiled in this book did not build balloon-frame structures but in ways such as his substitution of stoves for large masonry hearths was not constructing completely traditional timber-frame houses either. In both North and South, builders were simplifying the carpentry work and relying on milled lumber. See Cavanagh, "Who Designed Your House?"; Graham, "Preindustrial Framing in the Chesapeake," 179–96. On construction costs, see Susan B. Carter et al., *Historical Statistics of the United States: Earliest Times to the Present, Millennial Edition* (New York, 2006), 3: 181–82 (table Cc113–124); Donald R. Adams Jr., "Residential Construction Industry in the Early Nineteenth Century," *Journal of Economic History* 35, no. 4 (December 1975): 794–816. Adams shows that the ratio of material costs and labor costs remained relatively constant throughout the period under discussion. The 360 percent increase is based on a comparison of the average value of 828 houses described as wood or wood frame in the 1798 tax returns from Maine, Massachusetts, Rhode Island, New York, and Pennsylvania and more than 295,000 dwellings (281,000 of them frame; the rest, plank) tabulated in the New York State census of 1855.

stock is Massachusetts, which led the nation in density, urbanization, and spinsterhood.<sup>40</sup> The 1840 census reveals that, more than any variable, a state's density enhanced the average value of its new housing. Yet even with density held constant along with the proportion of houses in brick and stone and the availability of craftsmen, recently constructed dwellings in southern and central states were of lesser value than those in northeastern states. Many factors may account for these two regions having cheaper housing, but one of particular importance is the longer continuation in both regions of lower marriage ages and consequently higher fertility rates.

When the log dwelling lost its status as the most common form of shelter in the United States, probably during the period 1840–60, it assumed an iconic role in the politics and imagination of Americans. Houses afterward remained resolutely wooden, even as later migrants proceeded into lands that lacked not only carpenters but also forests. Though refinement ideals failed to transform the housing stock of the early United States, they exerted enormous influence on the nation's cityscape, a legacy that grew in importance as the urbanization rate increased. When it comes to the U.S. housing stock, demographic changes have always played an important role in setting and reversing trends.

<sup>40</sup> See Table IV. See also Avery M. Guest, "What Can We Learn about Fertility Transitions from the New York State Census of 1865?" *Journal of Family History* 15, no. 1 (1990), 49–69. On marriage ages, see Haines, *History of the Family, An International Quarterly* 1: 35. On Massachusetts's improvements, see Small, *Beauty and Convenience; Wood, New England Village*. Edward A. Chappell and Julie Richter argue that white middle-class housing in tidewater Virginia had improved by 1830. See Chappell and Richter, "Wealth and Houses in Post-Revolutionary Virginia," in *Exploring Everyday Landscapes: Perspectives in Vernacular Architecture*, VII, ed. Annmarie Adams and Sally McMurry (Knoxville, Tenn., 1997), 3–22. They also note, however, that low-valued housing was undercounted, and only one co., Essex, out of the four studied showed notable improvement over Spotsylvania Co. in 1798 in the proportion of housing valued at \$100 or less.

## *Data Sources*

Unless otherwise identified in the footnotes, I have drawn all data on 1798 housing characteristics and values for states and specific localities from the 1798 federal direct tax. Most of the information came directly from microfilm reels: Maryland State Papers (Federal Direct Tax), M3468-3480, Maryland State Archives, Annapolis, Md.; Massachusetts and Maine Direct Tax Census of 1798, New England Historic Genealogical Society, Boston, Massachusetts; and United States Direct Tax of 1798: Tax Lists for Pennsylvania, microcopy no. 372, National Archives, Washington D.C. A few Massachusetts townships (Paxton, Spencer, Leicester, Shrewsbury, and a Worcester ward now named Auburn) are held by the American Antiquarian Society, Worcester, Massachusetts, and that data was incorporated into the aggregate numbers for Massachusetts. Other remnants of tax schedules used in this analysis follow by locality. Most of the initial coding of the aggregate-level data for Pennsylvania, Massachusetts, and Maine was done by Aimee Patrice Myers. Kim Earhart, Kate Fawver, Hisako Matsuo, and Linda Van Ingen assisted with the Maryland aggregate data. The aggregate-level data were the basis for the analysis in Figures I–IV and Table IV. For the following microlevel datasets, I have named the coder when it was not me. In all cases I verified the coding and any errors are my responsibility.

For center city wards and an artisanal suburb in urban areas, tax schedules for Boston 8th came from the New England Historic Genealogical Society, reel 5. For High Street (Philadelphia), see the National Archives, reel 1. Bernard L. Herman of the University of Delaware has also coded these data, which are available on <http://www.math.udel.edu/~rstevens/datasets.html>. Tax schedules for Walnut Street (Philadelphia) came from the National Archives, reel 2. These data, originally compiled by Gabrielle Lanier of James Madison University and edited by Richard E. Stevens of the University of Delaware, are available on <http://www.math.udel.edu/~rstevens/datasets.html>. I augmented the dataset to include more variables. For Baltimore 2d–3d, see the Maryland State Archives, M348. Tax schedules for Providence (R.I.) downtown came from the Rhode Island Historical Society, Providence, microfilm of the 1798 direct tax. Claudia Martinez coded these data. For Lancaster (Pa.) northeast, see the National Archives, reel 6. These data, originally compiled by Bernard L. Herman, are available on <http://www.math.udel.edu/~rstevens/datasets.html>. I augmented the dataset to include more variables. Tax schedules for West Southwark (Philadelphia) came from the National Archives, reel 4. These data, originally compiled and edited by Richard E. Stevens of the University of Delaware, are available on <http://www.math.udel.edu/>

<http://www.math.udel.edu/~rsteven/datasets.html>. I augmented the dataset to include more variables. Bernard L. Herman discusses Southwark's inhabitants and their possessions in Herman, *Town House: Architecture and Material Life in the Early American City, 1780–1830* (Chapel Hill, N.C., 2005), 203–8.

For older, rural townships, hundreds, and parishes settled prior to 1765, tax schedules for Topsfield Township, Essex Co., Mass., came from the New England Historic Genealogical Society, reel 4. For Upton Township, Worcester Co., Mass., see the New England Historic Genealogical Society, reel 14. Michael P. Steinitz has analyzed this data in "Landmark and Shelter: Domestic Architecture in the Cultural Landscape of the Central Uplands of Massachusetts in the Eighteenth Century" (Ph.D. diss., Clark University, 1988). Tax schedules for South Hadley Township, Hampshire Co., Mass., came from the New England Historic Genealogical Society, reel 17. J. Ritchie Garrison has also analyzed this data. See Garrison, *Landscape and Material Life in Franklin County, Massachusetts, 1770–1860* (Knoxville, Tenn., 1991), 188–92. For Richmond Township, Washington Co., R.I., see the Rhode Island Historical Society, 1798 Direct Tax microfilm. Archana Prakash coded this dataset. Tax schedules for Coventry Township, Chester Co., Pa., came from the National Archives, reel 7. The dataset was originally compiled by Cynthia G. Falk and edited by Richard E. Stevens of the University of Delaware, which is available on <http://www.math.udel.edu/~rsteven/datasets.html>. I augmented the dataset to include more variables. Falk has discussed this township in Falk, "Symbols of Assimilation or Status? The Meanings of Eighteenth-Century Houses in Coventry Township, Chester County, Pennsylvania," *Winterthur Portfolio* 33, nos. 2–3 (Summer–Autumn 1998): 107–34. For Brandywine, Chester Co., Pa., see the National Archives, reel 7. Aimee Patrice Myers has studied this township. See Myers, "Developing the Rural Landscape: A Case Study of Two Early National Pennsylvania Communities" (Ph.D. diss., University of California, Riverside, 1995). Tax schedules for Hempfield Township, Lancaster Co., Pa., came from the National Archives, reel 6. The data, originally compiled by Gabrielle M. Lanier of James Madison University and edited by Richard E. Stevens of the University of Delaware, are available on <http://www.math.udel.edu/~rsteven/datasets.html>. I augmented the dataset to include more variables. Lanier has discussed this township in Lanier, *The Delaware Valley in the Early Republic: Architecture, Landscape, and Regional Identity* (Baltimore, 2005). For Dublin and Aire townships, Bedford Co., Pa., see the National Archives, reel 20. The data, originally compiled by the faculty and students of CHAD at the University of Delaware and edited by Richard E. Stevens of the University of Delaware, are available on <http://www.math.udel.edu/~rsteven/datasets.html>. I augmented the

dataset to include more variables. Tax schedules for Upper Gunpowder and Mine Run hundreds, Baltimore Co., Md., came from the Maryland State Archives, M3469. Ted Sousa coded this dataset. For Dividing Creek and Pocomoke hundreds, Somerset Co., Md., see the Maryland State Archives, M3477. David Keenan coded this dataset. Tax schedules for Upper and Lower Saint Marys hundreds, Saint Marys Co., Md., came from the Maryland State Archives, M3475. Edward Garcia coded this dataset. For a portion of Berkeley Parish, Spotsylvania Co., Va., see the Waller Holladay Papers, ms. iH7185a 1529-1531, Virginia Historical Society, Richmond. The list for Berkeley Parish is also available on microfilm: *Records of Ante-Bellum Southern Plantations from the Revolution to the Civil War*, reel 21. An earlier draft that is less complete appears on reel 38. Stephanie Schnorbus coded this dataset. Ashli White has analyzed this data in White, "The Character of a Landscape: Domestic Architecture and Community in Late Eighteenth-Century Berkeley Parish, Virginia," *Winterthur Portfolio* 34, nos. 2-3 (Summer-Autumn 1999): 109-38.

For newer, rural townships and communities settled in 1765 or later, tax schedules for Parsonsfield, Limerick, and Newfield townships, York Co., Maine, came from the contiguous townships in Maine New England Historic Genealogical Society, reel 2. For Champlain Township, Clinton Co., N.Y., see David Kendall Martin, ed., "A 1798 United States Assessment List for Northern New York State," *New York Genealogical and Biographical Record* 113, no. 3 (July 1982): 152-60. Plattsburgh and Peru appear in issue nos. 2 and 4, respectively, of this journal in 1982. Tax schedules for Bald Eagle Township, Lycoming Co., Pa., came from the National Archives, reel 19. For Hanover Township, Luzerne Co., Pa., see the National Archives, reel 13. Tax schedules for Salem Township, Westmoreland Co., Pa., came from the National Archives, reel 22. For Franklin Township, Greene Co., Pa., see the National Archives, reel 24. Information on the northern Shenandoah Valley, Shenandoah and Frederick (later Warren) counties, Va., 1786, is not based on the 1798 federal tax. Instead the data came from a transcription of the 1786 Jonathan Clark notebook found in Peggy Shomo Joyner, comp., *Abstracts of Virginia's Northern Neck Warrants and Surveys: Hampshire, Berkeley, Loudoun, Fairfax, King George, Westmoreland, Richmond, Northumberland, and Lancaster Counties, 1697-1784* (Portsmouth, Va., 1987), 4: 161-85. Kevin Kelly at the Colonial Williamsburg Foundation alerted me to this material and kindly furnished a copy of it. The original notebook is in the Filson Club collection in Louisville, Ky. These data have been studied in Barbara Hume Church, "The Early Architecture of the Lower Valley of Virginia" (master's thesis, University of Virginia, 1978).