Keeping the Tenants Down: Height Restrictions and Manhattan's Tenement House System, 1885–1930

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Between 1850 and 1930, New York City commonly is believed to have offered its poor citizens the worst housing conditions of any of the world's major industrialized cities. Historians emphasize the following features: high population density leading to extreme overcrowding of tenements; tenement houses packed together as closely as possible to maximize land use; the dark, disease-ridden, poorly constructed, fire-prone tenements; the minimal level of utility services offered; and the failure of 19th-century reform efforts. Unfettered capitalism invariably is put forth as the primary cause of all these social ills.[1]

A kind of morality play emerges from this interpretation emphasizing the awful price allegedly imposed on the poor by 19th-century urban capitalism. And, as befits a morality play, a crusading hero—"Big Government"—rises up early in the 20th century to vanquish capitalism's evil excesses. Viewed in this fashion, the tale of Manhattan's tenements is a classic indictment of capitalist institutions and a powerful endorsement of Big Government as the vital counterweight to business's money-grubbing ways.

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[1]Classic references include Burrows and Wallace (1999), Jackson (1976), Ford (1936), and DeForest and Veiller (1903). Or, see virtually any college text in U.S. history. For an opposing view presenting complementary arguments to those given below, see Montgomery (2001).

Because the verdict of "market failure" is so firmly fixed in both the academic and the public mind, it is not surprising that little has been done to reexamine the evidence supporting the idea that New York's 19th- and early 20th-century housing problems are the product of markets, not government. And yet, evidence of "government failure" is not hard to find once it is looked for.

This article focuses on a little-noticed New York building regulation: building height restrictions. Such restrictions began in New York with an 1885 law banning residential buildings higher than 80 feet. They were tinkered with over the next 30 years before being deeply embedded into, and intertwined with, the comprehensive zoning act of 1916 (the nation's first), where they remained in place at least into the 1930s. I argue that these seemingly innocuous regulations had a severe impact retarding progress at the lower end of the New York City housing market. Specifically, they created an environment in which the worst classes of tenements were spared competition that would otherwise have tended to cause their demolition and replacement early in the 20th century.

Manhattan's Tenement House Problem

Manhattan's tenements were widely regarded by 19th-century commentators as the worst urban housing of their day (e.g., Potter 1889: 158; DeForest and Veiller 1903: 4). This verdict was reached not only because of the sheer scale of the tenement system—hundreds of blocks were given over to unbroken rows of such structures—but also because of the poor quality of living conditions there. Tenements were long, narrow residential buildings, usually from three to five stories in height (DeForest and Veiller 1903: 211), often built specifically for the lower-income groups.[2] Often several hundred people would crowd into a single building, as renters would take in boarders to make ends meet, leading inevitably to conditions that drew the ire of reformers. The first tenement in Manhattan seems to have been built in the 1830s (Burrows and Wallace 1999: 587). By the 1850s, the tenement system was in full swing, as tenements supplanted the ramshackle shanties and carved-up former homes of the well-to-do that formerly had housed Manhattan's poor. Following the Civil War, tenement construction exploded, largely in response to the

[2]It is a largely forgotten feature of 19th-century Manhattan that there was a broad and active market supplying new residential units specifically for the urban poor. Such supply was effectively regulated out of existence by legislation beginning with the 1901 Tenement House Act (Jackson 1976: chap. 10).

tides of immigration coming from southern and eastern Europe. By 1900, the overwhelming majority of the poor lived in tenements.[3] In addition, many well-to-do Manhattanites lived in structures of the tenement type: long, narrow, and dark, but with more amenities and space per person than in the poorer districts (Jackson 1976: 80–81).

Ownership and management of tenements was, by and large, a small-scale "mom-and-pop industry": often the owner of a tenement housing hundreds of immigrants was a former immigrant himself. In these days before well-developed mortgage markets, funding was limited, and the financially strapped owner often was not in a position to build on more than a single lot in Manhattan's expensive real estate market. The minority of owners building on multiple adjacent lots typically chose to build duplicate autonomous structures on each lot rather than gamble on a larger structure that, presumably, would be less liquid in case of sale (presumably, this also was a means of hedging one's bets against the ever-present risk of fire).

Given the strong tendency to build tenements on single lots, difficult quality-of-housing problems emerged in the tenement districts. These problems largely stemmed, remarkably, from decisions made in 1811, when the city imposed a uniform lot size of 25-by-100 feet on all real estate (roughly) north of 14th Street (the approximate extent of development in 1811).[4] As the city expanded northward during the 19th century, all development had to be fitted into the 25-by-100 straitjacket. The lot size was inappropriate from the standpoint of housing the urban poor for three reasons. First, 2,500 square feet was too large a plot of land to be affordable to the typical urban homesteader of small-to-moderate means, an intractable economic fact that promoted the development of the tenement system instead of single-family homes. Second, it was such a large investment for the tenement builder/speculator that economics virtually demanded that as much of the lot as feasible should be covered by one's building (often, lot-coverage well above 75 percent was achieved).

Third, the long, narrow shape of such a lot virtually mandated that a long, narrow building be built. Rooms in the center areas of tenements thus tended to be undersupplied with "light and air"—such

[3]In 1893, a bit above half of the total population of Manhattan was "found to be 'tenement dwellers', as that term is ordinarily construed" (Ford 1936: 187).

[4]The deleterious effect on tenements of New York's rigid lot-size restriction was well understood by many 19th-century commentators, as it was also by the leading reform advocates of the early 20th century. Today, recognition of its impact seems confined mainly to students of urban architecture (e.g., Plunz 1990: chap. 1), although a prominent exception is Jackson (1976: chaps. 7–8).

rooms, in fact, often were windowless. Any light that did exist rapidly disappeared as adjoining lots were built up with other tenements, creating whole blocks where the typical room was dark, damp, poorly ventilated, and (often) disease ridden. This environment must be interpreted in the context of a day when artificial lighting was of poor quality and expensive, and the absence of electricity ruled out artificial means of circulating air. These forces were compounded with remarkable overcrowding of structures, the absence of running water, and the primitive state of sewer systems and toilet facilities (these were few and filthy, and often in the yard where they were used by passers-by as well as residents).

One can argue, as did numerous 19th- and early 20th-century experts, that, in the absence of the 25-by-100 lot-size restriction, New York's housing problems would have been greatly diminished (e.g., Potter 1878a, Olmstead 1876). Prior to about 1865, it is likely that the impact of the lot-size restriction was not substantial. However, as development moved relentlessly up Manhattan Island, the constraint prevented modest single-family houses from being constructed in areas where, with smaller lots, it would have been economical to do so.[5]

Further, the rigid lot-size restriction discouraged experimentation with alternative architectures that might have led over time to a market-based improvement of the standard Manhattan tenement house. For example, one 19th-century architect showed that a block built around shallower lots (say, 25-by-50 feet) would have encouraged Philadelphia-style rows of townhomes similar to modern townhomes—more square-shaped structures allowing light and air to enter from both front and rear, so that every room in the house would receive significant relief from the problems plaguing Manhattan's tenements. Such blocks would have housed as many or more people than a block of tenements, while offering far better conditions (Potter 1878b, 1878c; Plunz 1990: chap. 1). If the uniform lot size had not been imposed in 1811 throughout all of Manhattan, it is likely that some developers in the mid-to-late 19th century would have reconfigured lot sizes in various undeveloped parts of the island and allowed subdivision of lots. Alternative, small-scale, profitable strategies for housing the urban poor could then have emerged quite early and

[5]Philadelphia, the "City of Homes," was a notable counterexample of the era to New York (Ford 1936: 270). Philadelphia was a city where the overwhelming majority of the poorer classes were housed in single-family homes on tiny subdivided lots. However, Philadelphia's poorest citizens lived in slums based on carved-up or shared single-family homes, as did most of the world's poorest urban residents.

been a substantial part of the New York housing environment by 1900. That this did not happen was due in large part to the 1811 mandated uniform lot size of 25-by-100 feet.

Housing and the Rise of "High" Buildings in Manhattan

If lot-size restrictions effectively prevented the building of houses on small lots, what about the alternative of building large multi-unit housing structures on multiple lots? To do this efficiently in Manhattan's expensive real estate market, such buildings needed to be tall or "high," as they often were termed at the time. Prior to about 1870, very few structures in Manhattan were more than five or six stories in height. Higher floors of buildings tended to rent at a substantial discount, due to the need to climb several flights of stairs to reach one's workplace or residence. Otis's invention of the safety elevator at midcentury heralded the end of this constraint on vertical real estate development (Burrows and Wallace: 670, 940–41). Meanwhile, a revolution in building techniques was under way due to steel-frame construction methods, new fire-resistant technologies, and related innovations, paving the way for the construction of far taller buildings.

The development of new technologies for the construction of "high" buildings brought on not only an architectural revolution but an economic one as well. Ground rents in Manhattan were high, pointing to a need to economize on the use of scarce space in those areas of the city most in demand. Tall-building technologies eased this problem, and during the latter part of the 1870s and early 1880s numerous structures greater than 10 stories began to appear in various sections of the city.

While history has focused on the commercial "skyscrapers"[6] of this era, a substantial number of residential tall buildings were built as well. These were aimed at the upper-income groups; indeed, many were financed as condominiums, where those who were to own "flats" in a building would pool their resources and finance the building's construction. Fashionable residences in buildings such as the Dakota, Osborne, and Chelsea began to compete with high-class single-family residences. Large, tall hotels also were built, some with plush apartment units. These buildings were constructed on multiple adjacent lots, often a 200-by-200 foot square. Use of larger sites offered relief

[6]The term, coined early in the 1800s, originally described large sailing ships with high masts.

from the harsh constraints imposed by the 25-by-100 lot—a fact that, while obvious to us today, only gradually was becoming understood by the builders and social activists of the late 1800s.[7]

By the early 1880s, a tall-apartment building boom was under way in New York City. Articles were appearing in the major newspapers, architectural journals, and fashion magazines emphasizing the appeal of the new spaces, the large quantity of new units then coming onto market, and how the well-to-do were leaving older small-scale housing to live in the new "French Flats" (Jackson 1976: 76–77). Since most of these new units were aimed at the upper-income groups, it is easy to argue that they would not have offered much relief to the housing problems of the lower-income groups. This perspective, however, probably is an oversimplification. The connotation of "tenement" today is of housing for the lower-income groups, but in fact many upper-class residences also were officially classified as tenements.[8] Many of these were the same long, narrow, single-lot type as the worst hovels of the Lower East Side. As Jackson (1976: 80) noted, all such housing had the same structural problem of lacking "light and air." The difference was that the well-to-do lived on the more fashionable streets and avenues, did not overcrowd dwellings, demanded higher-quality construction, had first-class amenities such as running water, and maintained units better. "Tenement" life at the top was considered a very urbane lifestyle (structures of such a shape and basic design could be found on some of the most prestigious streets and avenues, and many elsewhere were inhabited by the well-to-do).

Thus, given that many people of all income classes could be found residing in essentially the same building-frame—a long, narrow, structure several stories high built on a single 25-by-100 lot—there is more reason than one might initially think to assume that, as the supply of apartments rose, competition for renters at the higher in-

[7]According to Plunz (1990: 18), only in Potter's (1878a) article, does the idea first appear that "by building on multiple lots, rather than single lots, the restrictions of the twenty-five-foot module could be overcome to increase manyfold the design possibilities for tenement plans." A contemporary builder emphasizes such motives: "You see the great temptation to build apartment houses lies in the fact that you can get as much out of two lots as you would out of six. . . . Builders now buy a lot, not so much with a view as to the kind of house they will be able to build on it, but how *high* a structure they can get on it." Interview with architect George Da Cunha, *Real Estate Record* (1883: 881).

[8]New York City had a very broad definition of a "tenement house," so that virtually any rental unit with more than three units was classified as a "tenement" for city purposes (DeForest and Veiller 1903: 37; Jackson 1976: 76). Late 19th-century studies testified to the fact that many tenements were middle-class housing. In the mid-1880s, "only one-third of the tenement stock, or 7,000 buildings, were considered inferior by one expert's standards" (Jackson 1976: 94). Jackson suggests one-third to one-half as a likely range.

come levels would create pressure that would "filter" down to a degree all the way to the lower income levels. This argument receives some support from the evidence documenting that many lower-income tenement dwellers of this period did leave poorer-quality tenements for higher-quality units when changing economic circumstances made it feasible to do so (Burrows and Wallace 1999: 991–92, 1117–20). Further, neighborhoods in Manhattan changed character quickly and often, so that a ritzy area might be downgraded to middle class within a decade, or middle class to working class, as population movements occurred (Burrows and Wallace 1999: 715–17; Lockwood 1976: chap. 14).

A more fundamental issue, however, involves entrepreneurship and the process of discovery that typically accompanies market forces (Kirzner 1985, Reisman 1998: 176). New technologies, especially radically new and costly ones, usually begin as products purchased overwhelmingly by the wealthy. Over time, as competition promotes the discovery of cost-reducing innovations and as scale economies are exploited, there is a tendency for prices to fall sharply, and so downscale varieties of such goods are made available at prices affordable to those of well-to-do and middle-income levels. First, the basic technological viability of a new type of good is demonstrated—usually this is a phase where the wealthy are nearly the only customers. But once viability is established, new entrepreneurs enter the market by inventing ways to modify the good's features so as to target middle-income groups. The classic example of this market process is the development of the mass market for the automobile.

Over the 1885–1915 period, such a market process would have promoted the building of tall residential buildings for Manhattan's middle-income groups, thereby increasing housing opportunities indirectly for the upper levels of the lower-income groups. As some middle-income renters moved to tall buildings, a softness would have tended to develop in the market for middle-income tenements, placing downward pressure on rents for this class of tenement. In turn, this would have opened up new opportunities for the lower-income groups to rent more attractive dwellings. As they moved, they would have placed downward pressure on rents in the types of structures they previously had been renting. These market forces then would have tended to continue to exert downward pressure on rents in still lower-quality tenements. Through this mechanism, the lower-income groups would have benefited indirectly from the construction of tall apartment buildings.

The further down the income scale one believes tall-building entrepreneurs would have been willing to go in seeking new outlets for

their product, the more direct—and thus probably stronger—would have been the forces benefiting the poorest citizens. It is possible that such forces eventually would have reached the point where tall buildings were being built specifically for the lowest-income groups.[9] However, a sticking point here was the perception of contemporary observers that both fire-risk and disease-risk were greater in tall residential buildings. Although, by the early 1930s, tall residential buildings for the poor were being aggressively built by the federal government, it seems likely that the greater risks of fire and disease posed by the poor's living habits would have sharply limited tall residential buildings for the poor before, say, the 1920s, by which time the necessary technologies to compensate for such factors appear to have been developed. However, given the "filtering" argument, it would not have been necessary for tall residential buildings to have been targeted directly at the lowest-income groups in order for these groups to have benefited markedly from adoption of the tall residential-building model. Thus, it is reasonable to conclude that the widespread development of tall residential buildings would have benefited all income classes during the 1885–1915 period.

Building Height Restrictions of 1885

Manhattan's tall buildings of the late 1870s and early 1880s generated considerable controversy. While some members of the upper-income groups were benefiting from the trend to tall buildings by living and working in tall residential and commercial buildings, other members of the "upper classes" were seeking to curtail such buildings through political means. The main issue of contention came about—as is often the case—due to ambiguities in property rights. Long-standing legal traditions in the common law suggested—but did not clearly indicate—that homeowners enjoyed rights to that sunlight which "naturally" would reach a building lot they owned. Tall buildings threatened this perceived right by casting huge shadows. Leading residents of many upper-class neighborhoods believed that their rights to a certain quality of life were threatened by the prospect of neighboring tall buildings. In the early 1880s, prominent citizen-

[9]Large (though not tall) building projects were built for the poor by private "limited-dividend" philanthropic societies during the 19th and early 20th centuries. These societies were not pure charitable organizations, but instead sought a reduced profit for their investors while passing on more desirable housing features to the poor than was standard in Manhattan at that time. They pioneered the development of large-scale housing for the poorest income groups, and a natural extension to taller such buildings would at first glance seem to have been a natural development.

groups commissioned studies of the "high building question" and petitioned city and state government to impose a moratorium on tall building construction (e.g., Heights of Buildings Committee 1883).

In seeking such legislation, there was less resistance to banning tall residential buildings than there was to banning tall commercial ones. Office buildings were less likely to be built in high-income neighborhoods, so they clashed less with the wealthy's interests. Moreover, the commercial-building interests were larger, better financed, and so stronger politically than interests supporting tall residential buildings; the residential building industry was still at this time mainly composed of many small-scale builders (*Real Estate Record* 1888b: 208). Further, influential health and safety arguments seemed to apply better to residential tall buildings. More populated tall buildings, it was argued, had a higher risk of spreading contagious diseases among people living or working in them. Tall residential buildings, which had people staying in them 24 hours a day and where more biologically sensitive activities went on, thus seemed more susceptible to disease-risk. Opponents of tall buildings also stressed the risk of fire (Burrows and Jackson 1999: 1052). Fireproofing technologies were imperfect, and the upper stories of tall buildings could not be reached by firefighters' ladders and hoses—problems seen as more serious for residential than commercial buildings.[10] Finally, banning residential buildings likely appealed to those with commercial-building interests, who naturally would have welcomed reduced competition from those with residential-building interests for scarce building sites.

After several failed attempts, in June 1885, the New York State legislature passed a bill restricting the height of all residential buildings henceforth to be built in Manhattan to a maximum of 70 feet on the narrower streets and avenues, and 80 feet on the wider streets and on the normal avenues (Ford 1936: 181).[11] No exceptions were

[10] It is far from clear that these arguments made sense. Diseases were a constant threat in the poorer tenement districts, and the threat of fire was omnipresent for all tenements, since fireproofing was expensive and tenement designs made it easy for fires to spread from the basement to the upper floors. Fire escapes often were blocked and sometimes impassable. (Regarding fires and fire escapes, see DeForest and Veiller 1903: 261–89.) While it is true that, given a fire occurred, it was more dangerous to be in the upper floors of a tall building than in a tenement, scale economies in the larger buildings meant that it was economical to adopt the best available fireproofing technology. Many tenement dwellers died or lost all their property due to fires over the 1885–1930 period. Overall, it is far from clear that tall buildings posed the greater fire risk (*Real Estate Record* 1888a: 111–12). Likewise, due to better construction, tall buildings quickly established themselves as superior to tenements in reducing the threat of disease.

[11] The 70-foot limit, interestingly, was the same height as that imposed in ancient Rome in A.D. 64 (Landau and Condit 1996: 112).

granted for corner buildings or for those that fronted parks or other open spaces. The height restrictions allowed apartment buildings of five or six stories but outlawed taller residential structures.[12] By contrast, the height of commercial buildings remained unregulated through 1916 (when zoning came to Manhattan).

The consequences of the new regulation were what economic theory would predict. First, economic rents accrued immediately to owners of existing tall residential buildings due to the restriction of potential competition from the new buildings that would not now be built. There had been moderate overbuilding of tall apartment buildings and condominiums in the early 1880s leading to some rise in vacancies and rent declines in these buildings. This trend reversed sharply and rents firmed quickly over the 1885–87 period (*Real Estate Record* 1888a: 111).

Second, developers of apartment buildings found themselves unable to compete with commercial-building interests for Manhattan building lots offering appeal either as residential or commercial sites. Prior to 1885, "large apartment buildings had been constructed that not only competed with contemporary office buildings in their ground coverage but exceeded them in height" (Landau and Condit 1996: 134). This era now ended. Large apartment-building developers found their development prospects largely constrained to outlying areas of Manhattan—where land was relatively cheap and building height not so important—and unregulated Brooklyn, Queens, and other outlying communities. With the 1898 consolidation that created Greater New York, even these latter options were restricted, as height restrictions that had been developed to address Manhattan's problems became binding throughout the consolidated metropolitan area (Ford 1936: 202). The 1885 regulations thus had a severe inhibiting effect on construction of large apartment buildings in Manhattan.[13]

[12]The link between height and stories can be gleaned from several examples appearing in the contemporary literature. Ford (1936: 953) provides numbers for both heights and stories for several buildings under construction in the 1930s. He states that, for early 1930s technology, the "extreme height limit" of a 90-foot-tall building would be 10 stories. He also describes a building built in the early 1930s that was 120 feet tall and 12 1/2 stories. This translates into about 12 feet per story for this era. The relationship between height and story appears similar for the 1880s. Ford (1936: 170) quotes the Heights of Buildings Committee (1883) who state that a particular building being planned at that time would be 15 stories tall and 182 feet high, implying a rate of 12.133 feet per story. Thus, a seven-story building would be around 85 feet tall, and in violation of the building height restrictions even on the widest streets.

[13]P. G. Hubert, an eminent architect who designed many of the new buildings, reported in 1888 that "at the time that law was passed we had a great many owners of 5th avenue property in communication with us who contemplated tearing down their houses and

After 1898, these effects were extended to all of Greater New York City, except for a brief period (1897–1901) when there was some liberalization of the restrictions.

A third impact of the height restrictions illustrates how regulations can have unforeseen effects due to the "all-or-nothing" character of rule by regulatory diktat. Hotels were a particularly troublesome gray area in the new regulatory regime, in that they were both short-term residences and commercial buildings. What should be their status under height restrictions? It was decided to classify hotels as commercial structures; thus, their heights would not be regulated. The upshot was that apartment hotels—already popular in Manhattan as an alternative to more traditional living arrangements—were built in great numbers and became one of the city's most prominent cultural features in the late 19th and early 20th century. Significantly, apartment hotels were able to compete vigorously with other types of commercial development for prime real estate in midtown and lower Manhattan, suggesting that large apartment buildings and condominiums also could have competed for these building sites, had they not been held back by height restrictions (Landau and Condit 1996: 338–41).

Finally, height restrictions helped prop up the tenement system by inhibiting the development of the tall apartment building as an indirect—and over time a direct—competitor. By preventing the development of tall residential buildings in Manhattan, height restrictions derailed a natural market process that would have lowered rents and increased quality beginning with the middle-class portion of the tenement market. Over time, real estate entrepreneurs would have tended to find ways to develop tall buildings profitably for lower-income groups and would have substantially improved the low end of the tenement market. The height restrictions "short-circuited" that process.[14] It is difficult to tell just how much relief of New York's tenement house problem would have been brought about by free (or even semifree) construction of tall residential buildings in 19th-century Manhattan. But the choking off of this promising alternative

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erecting a high apartment house in its place. But these all dropped off when the law was passed" (*Real Estate Record* 1888b: 208). Two years prior to the act's passage, fellow architect G. W. Da Cunha had predicted that "a great many apartment houses will be built on the west side, and hundreds of brick and frame dwellings torn down on the east side, so as to be utilized for the erection of these great structures" (*Real Estate Record* 1883: 882).

[14]In particular, such entrepreneurs would not have the opportunity to redevelop Manhattan's Lower East Side, where many of the city's poor were housed in intensely crowded tenements through the early 1920s. The very narrow streets in this area meant that residential buildings were limited to a maximum height of 70 feet, making redevelopment unprofitable.

to tenement life seems likely to have been a factor in the extension of New York's tenement system well into the 20th century.[15]

Twentieth Century Developments

The 1885 height restrictions on Manhattan's residential buildings inhibited development through 1896 (*Real Estate Record* 1888b: 208). In 1897, a liberalizing amendment to the 1885 act was passed, allowing apartment buildings to be up to 150 feet high but mandating a maximum of 12 stories (Landau and Condit 1996: 112). That liberalization, however, was short-lived. In 1901, the landmark Tenement House Act was passed: Nestled within a thicket of new restrictions on tenement construction were new limits on residential building heights for virtually all multiunit residential buildings in Greater New York City. The act stated that "heights were not to exceed, by more than one-half, the width of the widest street upon which the tenement house stood" (Ford 1936: 220). Restrictions on the wider 80-foot "cross" streets were tightened as maximum building height dropped from 12 to 10 stories, while on the 100-foot avenues maximum heights were unchanged at 12 stories. Those restrictions remained in place from 1902 through 1916, and continued to make construction of elevator apartments throughout Manhattan unprofitable, except for the avenues and widest streets.

The impact of height restrictions was compounded by new provisions in the Tenement House Act of 1901 that mandated vast new changes to tenement house construction, which made tenements far more costly to build. Poorer citizens were effectively priced out of the market for these "new-law" units (Jackson 1976: chap. 10; Ford 1936: 225). New-law tenements were rented overwhelmingly to middle-income groups, while lower-income groups crowded into the old-law structures built before 1901, which had been grandfathered by the 1901 act. Old-law tenements quickly became excellent investments (Jackson 1976: 146). By 1910, the old-law tenement neighborhoods of Manhattan's Lower East Side were actually more crowded than they had been in 1900 when their density already had occasioned much comment (Jackson 1976: 143).[16]

[15]One should also not overlook the "hand-me-down" argument: Buildings typically pass down the income scale as they grow older. Thus, many of the taller buildings that would have been built in the late 19th century would have been affordable to lower-income groups in the early 20th century. Contemporary experts endorsed the "hand-me-down" argument, even to the point of using it to justify the 1901 Tenement House Act, which priced the poor out of the market for new tenement construction, partly in the hope that the next generation's poor would have access to those units (Jackson 1976: 138).

[16] One spot in the Lower East Side already had been recognized in 1900 as the most densely populated spot on Earth (DeForest and Veiller 1903: frontispiece).

It is likely that many of the expensive reforms to tenement design mandated by the 1901 act would have been more economical in larger buildings, due to economies of scale. Had taller buildings been more prevalent, the resulting broadening of the rental market would have offered more relief to the lower-income groups. Taller buildings would have exerted downward pressure on rents and demolition pressure on old-law tenements.

Another significant feature of the Tenement House Act of 1901 was the tying of building height restrictions to setback and other lot-coverage restrictions, in a way that imposed an additional "tax" on tall residential buildings. Ford summarizes the act's provisions on this issue:

> A rear yard extending across the entire width of the lot was required, and for interior lots its depth was to be not less than 12 feet in every part, for buildings 60 feet in height, and increased by one foot for every additional 12 feet in height of building or fraction thereof. Outer courts on the lot line for 60-foot buildings must be not less than 6 feet wide at the curb level and increased 6 inches for every 12 feet of added height. Between wings their width must be at least 12 feet. Inner courts must be not less than 12 feet at the lot line and 24 feet in length [Ford 1936: 220].

Thus, usable ground acreage diminished as one's building got taller, with the "tax" beginning at a height of 60 feet and increasing for each additional 12-foot story built. These set-aside restrictions adversely affected plans for tall residential buildings that would have been marginally profitable. Since lower rents put greater pressure on profitability, it seems likely that such regulations fell disproportionately on lower-income groups.

The 1901 act was supplanted by the Zoning Act of 1916, the nation's first experiment with explicit zoning. Virtually all residential districts in Manhattan were made "one and one-half times districts," with building heights not to exceed the width of the widest street the building fronted by 50 percent (Ford 1936: 467). Set-aside restrictions thus were at least as severe as those implemented under the 1901 act. The 1929 Multiple Dwelling Act succeeded the 1916 act as the primary law regulating tenements, apartments, and other such units. The 1929 act finally brought apartment hotels under the jurisdiction of height restrictions, ending the late 19th- and 20th-century boom in their construction in Manhattan (Landau and Condit 1996: 113). Binding restrictions on tall apartment buildings continued into the 1930s, when the first massive federally funded housing projects began to bulldoze the tenement districts and set up government substitutes.

Conclusion

One of the features of New York's tenements during the 1900–30 period that has impressed modern-day historians of Manhattan is the extraordinary staying power of the tenement house system as a means of housing the poor. Many, perhaps most, of the tenements housing the poor in 1930 had been built before the Tenement House Act of 1901. Despite their shoddy construction and run-down nature, tenements built before 1901 (old-law tenements) were an excellent investment through at least the first three decades of the 20th century. As the *New York Times* wrote in 1920, "It is the old, unsanitary firetrap tenements that are the slowest of all buildings in the city to yield before the wreckers" (quoted in Jackson 1976: 180). The standard explanation of this extraordinary phenomenon is capitalist exploitation of the poorest citizens. However, in the context of economic theory, it seems clear that what actually was being observed in this era is owners of old-law tenements earning substantial economic rents due to restrictive regulations. Among the most prominent of these regulations were those that banned or restricted the construction of tall residential buildings.

Secure in their niche of supplying housing to the very poorest citizens, old-law tenement owners needed to fear only city and state government initiatives, not the potentially far more threatening private-sector initiatives that might have—but could not by law—come from new types of residential building construction. As Manhattan grew and real estate became successively more expensive, the need to construct tall buildings became ever more pressing if a project were to succeed financially. From 1885 onward, however, legally imposed height limits prevented entrepreneurs from meeting that need. The result, in large part, was that a 19th-century housing mainstay—the tenement house system—survived virtually unchanged well into the 20th century. Markets do fail to develop when governments outlaw them.

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