

# **The Affordable Housing Shortage: Considering the Problem, Causes and Solutions**

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## **Abstract**

Many observers claim that we are in the midst of an “affordable housing shortage” or, even worse, an “affordable housing crisis.” The primary concern is that too many households live in “unaffordable” rental units. We hope to clarify the current debate by first measuring the size of the problem, then diagnosing its underlying causes and, finally, discussing treatments that policymakers should consider. While our review is hardly exhaustive, we conclude that a shortage of income is largely behind the housing affordability problem despite the current focus on housing. Policymakers should recognize that government financing of new housing units is unlikely to be a cost-effective response to low household income.

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## SUMMARY

Many observers claim that we are in the midst of an “affordable housing shortage” or, even worse, an “affordable housing crisis.” The primary concern is that too many households live in “unaffordable” rental units. We hope to clarify the current debate by first measuring the size of the problem, then diagnosing its underlying causes and, finally, discussing treatments that policymakers should consider. While our review is hardly exhaustive, we conclude that a shortage of income is largely behind the housing affordability problem despite the current focus on housing. Policymakers should recognize that government financing of new housing units is unlikely to be a cost-effective response to low household income.

Measuring the number of unaffordable housing units first requires a definition of affordability. In this debate, a unit is considered unaffordable if a household has to spend more than 30 percent of its income on it. We use this standard to measure the size of the “shortage” because of its public prominence, even though we recognize that such a standard must be subjective. We also restrict our analysis to the rental-housing market; the owner-occupied market remains affordable by the commonly used standards. We find that the housing “crisis” is heavily concentrated among one subset of the population—poor renters.

We then examine two of the most likely potential causes. First, low incomes lead households to spend most of their income on necessities, like housing. Second, government regulation, in part designed to improve quality, can increase the cost of housing so that it is unaffordable. The costs imposed by land-use regulation can be particularly pronounced for the lowest-cost units.

After examining the data for the United States and for the Twin Cities, a metropolitan area reputed to have a severe affordable housing shortage, we find that low incomes are the primary reason why the poor live in unaffordable rental units. Even if costs fell significantly—by an amount roughly equal to estimates of the increase in cost due to regulation—the vast majority of the poor living in the United States and the Twin Cities would still live in rental units considered unaffordable. Again, we note our review is limited in its scope and sophistication. In some areas of the country, such as California

and greater New York City, regulation may play a large role in explaining high housing cost-to-income ratios. However, others have come to similar conclusions that these select areas are the exception rather than the rule (Glaeser and Gyourko 2002).

Because of our diagnosis, we focus our discussion of policy responses on the link between low incomes and high housing expenditures. If policymakers believe that housing cost-to-income ratios are too high for low-income households, they should provide low-income households with additional cash or federal support, such as food stamps, for accessing other basic necessities such as food and medicine. After all, concern about a high housing cost-to-income ratio for low-income households only makes sense if housing costs prevent those households from buying other basic necessities. Concerns about affordability would assumedly disappear if households could spend over 30 percent of their income on housing and still acquire all the food, clothing and other necessities they need. Cash or federal subsidies for nonhousing necessities offer a more cost-effective way of increasing access to nonhousing necessities than subsidies that must be used for housing. There are surely some households or individuals for whom it makes sense to allocate public subsidies for housing (for example, the homeless), but they constitute a small part of the population.

Despite the reasoning showing that limited income is the primary problem and that public subsidies that can be used outside of the housing market are generally the reasonable response, some policymakers will support government subsidies only for housing. These policymakers will have to choose between programs that build new units and those that provide households with the equivalent of cash for housing (that is, vouchers). During that decision process, policymakers must address the evidence that housing vouchers appear to put households into affordable housing units at a significantly lower cost than production programs. Housing vouchers might prove less effective than production programs where government restrictions significantly impede the market supply of housing. In these cases, policymakers should consider the removal of regulations, a challenging task that will require the balancing of competing interests, including the desire to increase housing quality.

We make no claim of addressing all concerns raised about housing affordability in the United States in coming to these conclusions. We do not address data on rural

housing markets, for example. Nor do we claim to highlight novel solutions. Instead, we hope this essay contributes to the more modest goal of framing the issues and encouraging the use of economic and policy analysis in future discussions. In that vein, we hope that the continued debate on housing affordability stays focused on specific failures in housing markets, the effects of existing government intervention—particularly land-use regulation—in housing market outcomes, and the central role that income appears to play in generating concerns about housing affordability.

## THE DATA ON HOUSING EXPENDITURES

Those calling current conditions an affordable housing crisis rely on community or social standards to determine that a unit is “unaffordable” even when a household has the resources to live in it. This approach has been rightly criticized for several reasons, including its obvious subjective nature (see Appendix 1). Despite these reservations, we use the “30 percent of income” definition because it is the most frequently cited standard and one used by the U.S. Department of Housing and Urban Development (HUD). Specifically, this standard focuses on rental units and defines a unit as unaffordable if a household would have to spend more than 30 percent of its gross income on rent and utilities. Analysts have used the fixed standard method in many ways, all of which suggest that the affordability problem is confined to households with very limited financial resources. (We focus on the rental market because the owner-occupied market, discussed in Appendix 2, seems affordable based on frequently used social standards.)

Before we review these data in detail, we have to define the geographic boundaries for the housing market under examination. Much analysis and data describe national trends in housing supply, demand and prices. But consumers and producers make decisions based on conditions in much smaller local housing markets. To address both perspectives while keeping our discussion focused, we review data for the United States and for a metropolitan area reportedly suffering from one of the worst affordable housing shortages in the country, the Minneapolis-St. Paul metropolitan statistical area (MSA).

According to recent congressional testimony from a HUD economist, the traditional approach to identifying a housing shortage compares the number of units affordable to households whose income falls between predefined amounts to the number of households that fall into that income group (Nelson 2001). Incomes are generally expressed as a percentage of the median income for an area. So, for example, such analysis might compare the number of units affordable to those households with incomes at or below 80 percent of area median income to the number of households that have that income. On the national level in 1999, Nelson (2001) finds that the only group of renters for whom a shortage existed were those considered by HUD to have “extremely low

incomes” (defined as at or below 30 percent of area median income). Households with extremely low incomes typically fall below the official poverty line. In the Twin Cities, a shortage of rental units is also limited to those households with extremely low incomes as of 1998 (HUD 1998). (Note that these 1999 and 1998 data from U.S. Bureau of the Census (2000) and U.S. Bureau of the Census (2000b) are the most current.)

Some object to this approach because it does not differentiate between existing affordable units and those affordable units actually available. A household with an income at the median for an area could decide to occupy a unit that is affordable to a household with an extremely low income. While the low-cost unit is affordable to the lower-income household, it is not actually available. To provide a more comprehensive view of affordability, we also examine the total number of rental households that spend more than 30 percent of their income on housing.

This second approach yields the same answer as the first: Virtually all those living in unaffordable units have very low incomes. In the Twin Cities, the most recent data show that 69 percent of all renting households in unaffordable units had extremely low incomes (another 25 percent had incomes between 30 and 50 percent of the area median). The national figures were generally comparable, although a smaller percentage of renters living in unaffordable housing had extremely low incomes (see Tables 1 and 2).

## INCOME AS A POTENTIAL UNDERLYING CAUSE OF THE HOUSING CRISIS

The fact that households in unaffordable units have very low incomes should naturally lead policymakers to consider low income as one of the potential causes of the “shortage.” Very low-income households might have only enough money to pay for the basics. The most expensive basics will consume a greater share of their income. Housing is typically the largest expenditure for most households. Higher-income households spend less of their of income on housing, on average, than lower-income households. As a result, housing ends up consuming a very large share of expenditures for low-income households, especially relative to higher-income households. (See Graph 1 for data on household expenditures and income for 2000.)

Looking to income as a source of a social concern is not a novel proposition for policymakers. The current measure of poverty has its roots in the amount of income a household needs to buy an adequate amount of food. But when the poverty level rises, policymakers and the public do not typically consider it evidence of an “affordable food crisis” that requires the planting of additional crops. There is no formal connection between the amount of subsidies that farmers receive and the number of households below the poverty level, nor do policymakers typically scrutinize agricultural processors and grocery stores to find a cause of high poverty rates.

Likewise, widely available data indicate that those with low incomes allocate eight percent of their expenditures to utilities, twice the percentage of those with the highest incomes. Yet few have called on the government to build new generators to address excessive utility expenditures by the poor. Instead, policymakers typically view such data as evidence that some households have too little income and respond by, for example, providing more income to spend on energy (for example, the Low-Income Home Energy Assistance Program and “lifeline” programs).

Before we can surmise that the housing crisis has its roots in income, we must examine an alternative explanation for the affordability crisis. The alternative explanation is that government land-use regulation raises housing costs and therefore could be the underlying cause of unaffordability for the poor. After reviewing this explanation, we examine data on how a change in housing costs would affect the affordability statistics

we discussed. If lower costs would not lead to a reduction in the affordability problem, than we can more firmly conclude that income, not regulation, drives affordability problems.



## ANOTHER POTENTIAL UNDERLYING CAUSE: GOVERNMENT REGULATION

The private market can and does produce low-cost housing. Low-cost housing is usually produced through a process called filtering, where existing housing units drop in cost as their relative quality falls, rather than through construction of new, lower-cost units. But left on their own, markets could produce units that society believes are of inferior quality and which, some of the time, reflect failures in the market. Local government regulation, in theory, could address this failure. In doing so, however, regulation will curtail the market method for producing low-cost housing by setting a minimum standard on quality. The result is less housing and higher prices. In exploring the trade-offs between housing costs, quality and regulation, we will first discuss how regulation responds to market forces and then discuss efforts to quantify the effects of regulation.

### **Private Market Production of Low-Cost Housing**

To understand how government regulation can increase the cost of housing, we must first understand how an unregulated market can produce low-cost housing. A defining characteristic of housing is its long life. Over time, the quality of units can fall. Older units meeting basic quality standards will tend to provide less-desirable housing because of outdated structural features or amenities. For example, virtually no rental units had central air conditioning in the Twin Cities in the 1960s. By 1998, about one quarter of all rental units had central air (author's calculations based on data from U.S. Bureau of the Census (2000b) and U.S. Bureau of the Census (1960)).

When households with relatively higher incomes demand better units, they often acquire a new unit with its enhanced features at a lower cost rather than trying to retrofit their smaller, older unit. The construction of new units increases supply and leaves the older, less-desirable housing to those with less income. Prices on older units face downward pressure. The same process takes place for the houses vacated by the middle-income households. Economists call the process by which existing units drop in value "filtering."

We have clearly oversimplified filtering, which is a complex topic. Nonetheless, the key observation is that depreciation can increase the supply of units to households

with relatively lower incomes. This means that building new units—even if they are high quality/high cost and occupied by those with high incomes—increases the supply of housing for those with low incomes. The most direct test of filtering suggests that this process captures the workings of the real world. Malpezzi and Green (1996, p. 1811) find that “High quality new construction is associated with a growth in the low quality stock. ... In 1995 ... new units led to an increase of nearly 2.5 percent in sub-standard rental units.”

Although the private market appears capable of providing units that would meet affordability standards for the very poor, this solution has an important drawback. In particular, housing markets suffer from what is called a market failure. In housing markets, the actions of one household or firm can strongly influence the quality of life of neighboring households. For example, the decision of the owner of an apartment complex to let the building fall in quality also has a negative effect on the value of the units nearby (a new building of very low quality could have the same effect). The owner of the building whose value is depressed might have less incentive to maintain its units, which, in turn, reduces the value of other units in the vicinity. Owners do not bear all the costs imposed by their actions and do not fully incorporate these costs into their actions. The result is that a private market might produce housing units that are cheap but have too low a quality level. This same type of market failure manifests itself in other ways as well. A builder can keep adding units to a community even if the congestion caused by this planning reduces the quality of life for those already in the community.

We have emphasized that market failure can lead to inferior quality. However, we doubt that society’s concern about the quality of housing is restricted to times of market failure. Even in a perfectly functioning market, quality of housing units can range from very high levels to units about to collapse. Based on social standards, observers might seek to limit the prevalence of the lower-quality units even if the production of these units was economically efficient.

Whether market failure leads to low-quality housing or not, governments regulate the quality and planning of housing units to limit the prevalence of low-quality units. Raising the quality of housing would naturally have the effect of raising its cost. In fact, governments can regulate so aggressively that they raise the quality of units beyond the

level that most households prefer. In that case, the costs of government regulation to society as a whole can exceed the benefits to society that the regulation provides, even if the benefits to a given household exceed the costs to that household. The fact that regulation can benefit some households even if it hurts society as a whole suggests that households might support regulation for reasons other than quality. For example, by limiting housing supply, local land regulation can increase the value of land and houses. We review how government action can increase housing costs, particularly low-cost housing, in greater detail next.

### **The Potential Effect of Local Government Regulation on Low-Cost Housing**

Local governments regulate land use in many ways. Government can specify the types of materials used in construction, the method of construction and the features of the housing unit, such as the number of garages it must have. Government also issues macro land-use regulation governing the total amount of land available in a community for certain types of housing—say, multi-unit apartments—and housing units allowed per acre. Local governments also influence housing production by assessing fees on development and requiring that projects go through a potentially lengthy approval process. Some of these regulations can increase the quality of housing by reducing crowding, increasing the quality of building material and building practices, and coordinating the design of a community.

At the same time, these regulations can have a particularly deleterious effect on low-cost housing. They can reduce the total number of housing units produced in a community. Producing fewer total units effectively reduces the supply of low-cost housing because it inhibits filtering. In addition, regulation can reduce the supply of units that have the lowest cost, such as apartment buildings. Standards for building materials, methods of construction and maintenance also raise costs because they require the builder or owner of the unit to buy more expensive materials or drop building methods that keep costs low. As McFate (1999, p. 172) summarized, “We have regulated substandard housing out of existence—the result is that the poor have safer but more expensive

housing, and less money available for other goods.” (See Appendix 3 for a discussion of quality trends in rental markets.)

### **Quantifying Regulatory Effects**

We know regulation can increase the costs and reduce the supply of housing. The relevant questions are (1) how large is the increase? and (2) how do the benefits of regulations compare to the costs? A number of analysts in the Twin Cities and the nation have documented the prevalence of local government regulations that they believe raise costs. (See for example, the Builders Association of the Twin Cities 2001 and Advisory Commission on Regulatory Barriers to Affordable Housing 1991). However, coming up with empirically sound estimates of the cost of local land-use regulation is quite difficult. Analysts must first measure the intensity of the regulation. In one example, researchers devised an index of regulatory intensity by rating seven aspects of local government regulation, such as months between application and permit approval, on a scale of 1-5. Metro areas were then ranked by their scores, which ranged between 35 (most onerous regulation) and 7 (least onerous regulation). Table 3 reports those areas with the highest and lowest ratings (note the low ranking of the Minneapolis-St. Paul MSA). (Malpezzi and Green (forthcoming) describe this index and the research based on it)

Those metro areas with the highest regulatory rankings tend to have higher housing costs. Analysts must then determine if the link between regulation and price holds true even after controlling for other factors that could influence housing prices. Such statistical analysis using the regulatory index found that a significant increase in regulation—more specifically, raising regulatory intensity from the levels of metro areas at the bottom of the list to the level of those metro areas closer to the top of the list—would raise rents by 17 percent. These results are generally consistent with other research findings (Fischel 1990).

It is important to emphasize that higher costs are not the same as unnecessary or unjustified costs. As noted, regulation can improve the quality of housing and life for households. Such improvements can justify regulation and increase demand for units in highly regulated jurisdictions. It is therefore possible that the favorable attributes created

by regulation, rather than the regulations themselves, increase housing prices. More simply, the benefits of regulation can exceed their costs.

However, in fact, higher measures of the regulatory index were not strongly associated with several types of alleged benefits of regulation, including a shorter commute and more positive views of the neighborhood. Moreover, the small number of detailed cost/benefit analyses find that regulatory costs exceed the benefits they produce. Finally, empirical work finds that a high degree of regulation in one community produces higher housing costs in adjacent communities. This evidence demonstrates to some analysts that regulation increases housing costs by reducing housing supply rather than by making the units more desirable (Fischel 1991, p. 1141). (Appendix 4 discusses another slightly more complicated justification for regulation, namely, to ensure the efficient provision of government service.)

## INCOME IS THE CAUSE

We have described two possible causes for the fact that most very poor renters live in unaffordable units: too little income or too much regulation. Because unaffordable units are almost all occupied by the poor, our expectation is that income plays a larger role than regulation. This conclusion is consistent with anecdotal information. As one of the most prominent critics of local regulation noted, “It is certainly true that eliminating all regulatory barriers to housing affordability would not come close to ending the existing housing affordability problems of America’s low income households. Those problems are caused more by poverty and low income than by high housing costs” (Downs 1991, p. 1105). Similar sentiments have been expressed in the Twin Cities by committees investigating the affordable housing crisis: “It is important to stress that these cost reductions [from reduced local government regulation] ... will never be sizeable enough to fully eliminate the need for subsidies to produce affordable housing for all income levels” (Mayor’s Regional Housing Task Force 2000, p. 8).

To test this theory, we use the most detailed recent data on housing costs in the Twin Cities to simulate a reduction in rents. We choose a 15 percent reduction in rents because it approximates the amount by which rents are estimated to increase by shifting from a lightly regulated to a heavily regulated environment (as noted earlier this estimate was 17 percent). This reduction in rent drops the number of all renters living in unaffordable housing from 44 percent of all renters to 34 percent of all renters. This reduction in rent drops the number of renters with extremely low incomes living in unaffordable units from 80 percent of all such renting households to 70 percent (see Table 4). National data show similar results. The percentage of renters living in unaffordable units falls from 44 percent to 35 percent while the percentage of extremely low income households living in unaffordable units falls from 85 percent to 78 percent (see Table 5).

Certainly, this analytical exercise is more illustrative than definitive. Using another methodology, analysts have identified regulation as having particularly deleterious effects on housing prices in certain parts of the country, especially California and New York City (see Fischel 1991 and Glaeser and Gyourko 2002). Moreover, the

declines in the number of renters in unaffordable units produced by the decrease in rents were not trivial. Nonetheless, this exercise suggests that even a significant reduction in cost would not shift the vast majority of renting households currently in unaffordable units to affordable units. As a result, the simulation suggests that low incomes play the dominant role in explaining current affordability concerns in the country as a whole and in an area reputed to suffer from a severe affordability problem.

In fact, to the degree it is biased, this calculation probably overstates the role of regulation for much of the nation. It assumes a fairly large shift from a heavily regulated environment to one that is lightly regulated. A number of observers have called for a relaxation of housing regulations that they consider unnecessary and burdensome. But it is unclear if those concerned about affordability in heavily regulated areas would support a substantial drop in the level of regulation. Society no longer appears tolerant of the environment that encouraged the private sector to produce new low-income housing in previous periods, such as maximization of density and minimization of amenities (Linneman and Megbolugbe 1992, p. 370). Because low incomes seem to drive the distress of policymakers, we now turn to some options for addressing this concern.

## POLICY RESPONSES

Since we view low income as the primary cause of our concerns about affordability, we focus our discussion on policies that address it. Issues policymakers face in reforming regulation in housing markets are discussed in Appendix 4. As a general rule, we believe that policymakers should respond to the high housing cost-to-income ratios by facilitating the ability of low-income households to acquire nonhousing necessities like food and medicine. Assumedly, we only care about high housing costs because they prevent households from acquiring these other goods and services. The provision of cash or cash-like subsidies is the most cost-effective way of assisting low-income households in acquiring the necessities that high housing costs crowd out. If policymakers provide subsidies that can be used only in the housing market, then they must address the fact that building new housing units appears to be a relatively expensive method of providing low-cost housing compared to the alternatives.

### **Nonhousing-Related Responses**

Taken literally, a high housing cost-to-income ratio justifies increased nonhousing expenditures by the government. Observers care about high spending on housing by lower-income households because it leads to less spending on other items that observers consider necessary to thrive. The Minneapolis Affordable Housing Task Force (1999, p. 3) starts its report arguing that “children are going without enough food because their families cannot afford both food and rent.” The notion that a high housing cost-to-income ratio justifies increased government support for nonhousing items may still seem counterintuitive and abstract. But simply consider the case of very high-income households paying more than 30 percent of their income on housing that can still afford large amounts of food, clothing, transportation and so on. We cannot believe that policymakers would support legislation to fix this “affordability” problem. This suggests that a high housing cost-to-income ratio in the absence of other nonhousing deprivations cannot be the source of policy concern.

If the problem is too little consumption of nonhousing goods, the government should increase its support for low-income households’ acquisition of food, utilities,



health care, and the other items that high housing costs may limit .(This point is made by Olsen 2002.) Subsidizing housing does not seem to be a cost-effective method for increasing a household's access to nonhousing goods and services. Programs that subsidize housing naturally seek to increase consumption of housing and thus drain away resources from the ultimate goal of increasing the delivery of nonhousing items. To increase a household's consumption of nonhousing goods by a dollar would require the government to spend more than a dollar, maybe much more, if the subsidy is restricted in its use to the housing.

So a logical response to a high housing cost-to-income ratio is to directly increase the income of low-income households. The Earned Income Tax Credit is an example of a program that provides a cash transfer. Cash has the attractive feature of allowing the recipient to determine the highest-value use of the money. Alternatively, the government could provide these low-income households with additional food stamps, health insurance and similar benefits that make nonhousing items more attainable.

We emphasize that our argument for a nonhousing response to a supposed housing problem would not apply to households whose resources are so limited that they have no shelter. Food could not replace housing for these households. However, the number of households that would fall into these categories is a very small part of the population.

Some might object to policies that address the income aspect of the housing crisis through cash or other nonhousing transfers. For example, these policies address immediate concerns but may not provide a longer-term means of increasing household income. Others may want to force low-income households to consume more housing even if those households would otherwise decide to make alternative consumption decisions with the additional resources they acquire. We now turn to policy responses that would seek to subsidize the consumption of housing.

### **Housing-Related Responses: Vouchers vs. Production Programs**

Some policymakers would support only policies that direct government funds to expenditures on housing. A particularly important question for policymakers is if they want to subsidize specific new units or tenants. In the former case, the tenant receives the

subsidy by living at a specific site. In the latter case, the renter can use the subsidy, in the form of a housing voucher (using the term generically), to pay for the majority of the rent at units that meet minimum quality standards and whose owners agree to accept the voucher. The number of renting households receiving assistance through tenant-based means has doubled over the last 15 years. Even with this trend, the vast majority of federally assisted renters receive assistance through production programs (U.S. Ways and Means Committee 2000, p. 15-30).

Policymakers should consider efforts made by analysts for several decades, and President Clinton more recently, to shift housing subsidies from production programs to voucher delivery systems. A summary of available research on housing assistance aimed at low-income households, albeit often limited and dated, offers several reasons to support vouchers:

- Vouchers provide affordable units at a much lower price than new production programs by relying on older, already existing housing units (the kind of housing that nearly all households live in). The General Accounting Office (2001, p. 2) recently found that after controlling for unit size and general location, “total per-unit costs for housing production programs are from 32 to 59 percent greater than for housing vouchers in the first year and from 12 to 27 percent greater over 30 years.”
- Vouchers have the smallest difference of all the programs studied between the cost to the government to support a household and the fair rent for the unit. Vouchers exceed market rents by the administrative cost of the program while production programs have costs far greater than the fair rent (Olsen 2001, p. 21).
- Vouchers have the most favorable subsidy-to-benefit ratio of government programs studied (Olsen 2001, p. 31).
- Subsidizing new construction may displace the production of private-market housing that would have occurred (DiPasquale 1999). Even analyses finding that both vouchers and production programs displace private housing to some extent conclude that vouchers displace less (Sinai and Waldfoegel 2002).

A shift to vouchers is also consistent with the view that the “housing” problems for low-income households represent “income” problems. The voucher system relies on

private markets to provide low-cost housing. Vouchers increase housing consumption by increasing the income of households. By relying on existing units, private markets can provide lower-cost housing more cost effectively than can new production programs. As the case of filtering revealed, and Quigley (1999, p. 48) summarizes: “It is far more expensive to create low-income housing through new construction than through depreciation.” A wide range of economists argue that increased income for poor households represents the most effective policy solution for an affordability problem. (See Rosen and Dienstfrey 1998, pp. 37-38 for example).

There are several questions that policymakers might have about vouchers relative to production programs. We do not attempt an exhaustive review of the production and voucher debate. But the following questions and answers should help start future conversations on the topic.

*If vouchers rely on private-market production, could they end up concentrating low-income and minority-led households in small areas of metro areas?*

As production programs have shifted from public housing to subsidies delivered through means such as the tax code, the record of production programs with regard to concentrated poverty may have improved. However, the existing evidence suggests that vouchers have a better track record than production programs with regard to geographic concentration of poverty. Pendall (2000) finds that voucher recipients have a smaller chance of living in distressed neighborhoods, defined by concentrations of poverty, low work attachment, and so on, than equally poor unassisted renters. Turner (1998) finds that a smaller percentage of voucher recipients live in concentrated poverty than those households subsidized through most production programs. Finally, providing vouchers to residents of distressed, privately owned but publicly subsidized housing units improved their housing and neighborhood conditions (Varady and Walker 2000).

*Why should policymakers consider vouchers, given that their funding is not guaranteed in the future and past funding has been inadequate?*

While funding uncertainty should be considered when analyzing vouchers, this type of uncertainty also affects production programs. Some types of production programs, for example, might need government funds in the future for rehabilitation. Some newly constructed, publicly subsidized units generate sufficient cash flow only because some residents receive vouchers. Finally, government could change policies in the future that could affect the solvency of existing production units.

More generally, arguing against vouchers because there are waiting lists to receive them seems misplaced if vouchers are a more cost-effective means of getting low-income households in affordable units. If vouchers are the most cost-effective means, policymakers could reduce the number of households in unaffordable units by switching all production funds into vouchers at current funding levels. Ultimately, it seems unlikely that policymakers will appropriate enough funds for either vouchers or production programs to put all households in affordable units. The best outcome would seem to be using allocated funds in the most cost-effective manner, all else equal.

*Should policymakers support production programs because vouchers, while better in theory, have been implemented ineffectively?*

Some have expressed concern about voucher programs because of perceived ineffective administration. Vouchers could too heavily limit the choice of units for participants. Others argue that voucher programs do not properly screen tenants who might damage units, which reduces the number of owners willing to accept vouchers. To us, these complaints provide the basis for reforming voucher programs. They do not provide a clear rationale for producing new units.

*Can't production programs "turn around" a neighborhood better than vouchers?*

Just as a deteriorating building reduces the value of nearby buildings, a new building can increase the overall quality in an otherwise low-amenity neighborhood. The benefits of a new building spill over to the entire block. However, it is not clear that such spillovers rationalize production programs (Olsen 2001, pp. 6-7). If the new building improves the

quality of a neighborhood, the price of all the housing in the area should rise.

Government-induced higher housing prices would lead to an increase in rent-to-income ratios for neighborhood households. Moreover, to the degree that governments want to produce housing outside of areas with a high concentration of low-income households, there may not be much need for “revitalization.”

*Might vouchers prove ineffective if private markets do not respond to increased demand with more units?*

The responsiveness of private markets to increased demand is perhaps the thorniest issue that policymakers must address when considering vouchers. The problem is as follows: Vouchers will increase demand for housing and therefore increase housing prices and decrease vacancy rates. If the higher prices do not encourage new supply, some or all of the vouchers will end up lining the pockets of those who own rental units.

As a general matter, private markets are responsive to signals of higher demand. For example, according to the Census Bureau, the Twin Cities had one of the lowest vacancy rates among the 75 largest MSAs in 1999 and 2000 (ninth lowest in 1999 and tenth lowest in 2000). A private firm’s survey of units in major cities put the vacancy rate in the Twin Cities area at around 1.5 percent for the same period. This falling rate should send a signal to market participants to increase production, and this response appears to have occurred in the Twin Cities. More formally, changes in the multi-unit building permits and changes in the vacancy rate show a very strong negative correlation for the Twin Cities from 1986 to 2001.<sup>1</sup> In fact, the U.S. Census Bureau reports that the vacancy rate for the Twin Cities rose from 3.9 percent to 5.1 percent from 2000 to 2001 (vacancy rates are available at <http://www.census.gov/hhes/www/hvs.html>). The vacancy rate in the private firm survey rose from 1.5 percent to 3.4 percent during the same period. In a similar vein, changes in the real price of rental units and changes in the vacancy rates also exhibit a strong negative correlation in the Twin Cities for the period

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<sup>1</sup> The vacancy rate is lagged by a year to capture the delay between these rates and the decision to file a building permit. The correlation coefficient is -.43.

from 1986 to 2001.<sup>2</sup> Table 6 reports data on permits, vacancy rates and real rental prices. These examples are consistent with more general research on housing supply (DiPasquale 1999).

Yet simply because the market supply moves in the right direction does not mean it is adequate. We know that higher prices and lower vacancy rates will not spur an immediate increase in supply because of the time needed to build housing units. The number of households can increase faster than the number of housing units in an area. From 1990 to 2000, the increase in the number of households in the Twin Cities was larger than the increase in the number of housing units by about 20,000 (author's calculations based on the decennial census data for 2000 and 1990 available from <http://www.census.gov/main/www/cen2000.html>). Yet the inherent difficulty in forecasting changes in the number of new households in an MSA makes it hard to devise a system to avoid such temporary imbalances. We do not think those building subsidized units will be better forecasters of future trends or faster builders than those building unsubsidized units. Olsen (2001, p. 6) argues that vouchers would likely work better than production programs even in markets with low vacancy rates (because of the time needed to build new subsidized units). A potentially more serious problem is regulation, which could dull the private market response to increased demand.

The evidence on vouchers and the adequacy of supply is somewhat mixed. Some experts reassure policymakers, pointing to research on supply in general and a large social experiment that tested the effect of vouchers on the price of rental units. This experiment did not find an increase in prices. However, others argue that the experiment had some potential flaws that make its findings irrelevant for more broadly based programs. In a recent review of vouchers, Susin (2002) found that they did increase prices and rental costs beyond the level of the subsidy. It identified regulation as a potential cause of these results. In these cases, policymakers should consider attempts to reduce regulation, although as discussed in Appendix 4, such changes will be challenging to make.

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<sup>2</sup>The vacancy rate was lagged here as well. The correlation coefficient is -.46.

## **Appendix 1. The Pitfalls of Defining Affordability with Cost-to-Income Ratios**

There are at least five concerns with using housing cost-to-income ratios as a way of determining if housing is “affordable.” (See Bogdan and Can 1997 for additional discussion of affordability definitions.)

First, a high ratio could simply reflect low income rather than housing costs that are, in some sense, “too high.” Thus, the ratio runs the risk of leaving the public with the impression that housing markets suffer from failures when, in fact, they operate efficiently.

Second, the ratio is subjective. A unit is considered affordable for a household if the household spends less than 30 percent of its income on housing. Affordability could just as well be defined at 20 percent or 40 percent of income. And these subjective differences matter. In the Twin Cities, the “30 percent of income” definition of affordability puts 36 percent of all renters in unaffordable units. The “20 percent of income” definition means that 62 percent of all renters live in unaffordable units, while the “40 percent of income” definition means that 24 percent of renters live in unaffordable units (author’s calculations based on U.S. Census (2000b)).

Third, defining affordability with a constant housing cost-to-income ratio could produce hard-to-explain results. For example, the ratio might show that virtually all residents of a community live in “unaffordable” units. Such an outcome prompts the question: Why do any households remain in the area? Moreover, the constant ratio is inconsistent with the actual relationship between a household’s level of income and how much it spends on housing. Higher-income households spend a smaller percentage of their income on housing on average than do lower-income households (Peach and Orr 1999, p. 5).

Fourth, by focusing on current income, the measure does not differentiate between households in vastly different circumstances. For example, the measure treats households with low incomes on a temporary basis (for example, students) the same as households that will have a much longer stay at the bottom of the income distribution.

Finally, this measure discounts individual preferences. Some households may consider their housing a good deal even if they spend more than 30 percent of their

income on it. Some households may prefer to live in amenity-rich locations, with nice weather, for example. In such locations, the greater demand for housing would boost its cost.



## Appendix 2. The Owner-Occupied Market

Two types of data suggest that recent affordability concerns about the housing market do not generally apply to owner-occupied housing. First, homeownership is rising, especially in the Twin Cities. Second, affordability standards typically applied to the owner-occupied market suggest that units remain affordable by historical standards. Housing in the Twin Cities remains more affordable by these standards than in the rest of the nation.

Homeownership. Examining homeownership rates offers a subjective test of affordability. A falling or stagnant homeownership rate might indicate that becoming an owner has become more difficult, perhaps due to rising cost. However, homeownership has risen nationally, particularly over the last five years. The homeownership rate in the Twin Cities grew much more rapidly with an 11 percentage point gain from 1990 to 2001 (see Graph 1). To put this extraordinary growth in context, one would have to compare the current U.S. homeownership rate to one nearly 50 years ago to find a gain on the order of 11 percentage points (author's calculations based on decennial census data available at <http://www.census.gov/hhes/www/housing/census/histcensushsg.html>).

This increase in homeownership has occurred at a time when the price of owner-occupied housing has increased. Existing single-family house prices, adjusted for quality and inflation, have risen to a recent high point. This price rose by 15 percent nationally from 1995 to 2000 and by 35 percent in the Twin Cities from 1996 to 2001.<sup>3</sup> These prices, along with the interest rate on the owner's mortgage, make up part of the cost of owner-occupied housing.

Just as analysts have developed affordability standards for the rental market, they have devised affordability measures for the owner-occupied market. These measures try to capture costs of ownership that include both prices and interest rates. As was the case in the rental market, we rely on these subjective and sometimes conceptually weak measures because of their prominence in the public debate rather than their analytic soundness. (For example, some analysts have criticized owner-occupied affordability

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<sup>3</sup> The national percentage increase is based on price data reported in the Joint Center (2001, p. 28). We construct a series for the Minneapolis-St. Paul metropolitan area using similar data and the same methodology as the Joint Center.

measures for relying on prices and interest rates that do not account for inflation). None of these frequently cited measures suggests a material weakening in owner-occupied housing affordability over the last several years. Moreover, these types of calculations suggest that the Twin Cities remains a very affordable location relative to other MSAs in the United States.

Affordability Measures. Affordability measures in owner-occupied housing are market-based on standards in the mortgage industry. If a household can qualify for a mortgage on a representative house—the average-priced house in a community, for example—the house is considered affordable. This method requires the analyst to estimate the amount of down payment the borrower makes, the financial resources of the borrower and the prevailing interest rate. Three organizations that implement this methodology include (1) the National Association of Realtors, (2) the National Association of Home Builders and (3) the Census Bureau.

*National Association of Realtors.* The National Association of Realtors produces a well-known affordability index that compares the median income of a family to the amount of income necessary to qualify for a mortgage on the median-valued existing house. (See [onerealtorplace.com/Research.nsf/Pages/HAMeth](http://onerealtorplace.com/Research.nsf/Pages/HAMeth) for more details on the index). An index value of 100 means the family with the median income has 100 percent of the income necessary to qualify for a mortgage on the median house. A value of less than 100 means the family has less than the necessary income to qualify, while a value greater than 100 means the family has more than enough income to qualify. This measure remains far above 100 nationally, as it has for the last decade and a half (see Graph 2 for data from 1980 to 2001). Similar calculations for the Twin Cities metro area follow the national pattern and suggest that the metro area remains much more affordable than the nation as whole.

*National Association of Home Builders.* The National Association of Home Builders uses a slightly different approach, reporting the percentage of all homes sold in an area for which a family at the median income level could have qualified for a mortgage. (See [nahb.com/facts/economics/housingopindex.html](http://nahb.com/facts/economics/housingopindex.html). for more details on the index.)

The national index has fluctuated between 66 and 60 with a median value of 63 (the most recent index value was 64). This index indicates that housing in the Twin Cities is much more affordable than in the rest of the nation (see Graph 3 for data from 1992 to 2001). Typically, the Twin Cities ranked as the 26<sup>th</sup> most affordable metro area among roughly 180 metro areas during the 1992 to 2001 period. Its most recent rank was 55<sup>th</sup>.<sup>4</sup>

*Census Bureau.* The Census Bureau provides the most comprehensive mortgage-based affordability measure, although it comes out infrequently and on a delayed basis. The Census Bureau reported in Savage (1999) that as of 1995, 56 percent of all U.S. families could qualify to purchase a “modestly priced” house (that is, the house that is less expensive than 75 percent of all owner-occupied units in an area). This figure is down slightly from the 1991 and 1993 figures of 58 percent.

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<sup>4</sup> More precisely, the median national ranking value for the Twin Cities was 25<sup>th</sup>. In addition, conversations with NAHB staff suggest that data reported for the third quarter of 2000 for the Twin Cities could be erroneous.

### Appendix 3. Quality Trends in Rental Markets

Data on a wide array of quality factors, such as complete plumbing, indicate that the overwhelming number of rental housing units in the United States and in the Twin Cities meet basic, widely used quality standards. Crowding has fallen considerable (see Table 1). More sophisticated analysis of housing data indicates that the gap in quality and crowding that used to exist between high-income and low-income households has largely vanished. This suggests that much of the recent quality progress has come from improvements in units occupied by those with relatively low incomes (Peach and Orr 1999, p. 7).

Housing prices also provide a clear indication of the improvements in housing quality. Analysts have developed a number of techniques to try to hold the quality of a housing unit constant when examining prices. We use quality-adjusted rental price data from the Bureau of Labor Statistics' "Rent of Primary Residence Price Index." (See McCarthy and Peach 2000 for a discussion of this index.) Analysts can thereby attribute changes in housing prices to quality changes, inflation and other factors. Rental prices, adjusted for inflation and quality, for the Twin Cities and the United States as a whole have fluctuated within a relatively narrow band (see Graph 1).<sup>5</sup> The adjusted rental price for the Twin Cities as of year-end 2000 was virtually the same as it was as of year-end 1990.

Price data that do not hold quality and inflation constant show larger increases in rental prices. Unadjusted rental prices (from Apartment PROfiles, various years) for a large portion of the Twin Cities metro area have increased over the last decade (about a 50 percent increase over the last decade in nominal terms, translating into a 15 percent increase in real terms). The comparison of price data suggests that a substantial portion of the increase in prices in the Twin Cities occurred because of overall increases in prices and improvements in the quality of housing.

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<sup>5</sup> The national data on this chart are from the Joint Center (2001, p. 31.) We construct the series for the Minneapolis-St. Paul metropolitan area using similar data and the same methodology as the Joint Center.

#### **Appendix 4. Responding to Local Government Regulation**

It appears as if policymakers have an easy choice with regard to local government regulation of land use: Pare it back. We already know, however, that regulation can yield benefits by raising the quality of housing and promoting better-planned communities. Regulation can also provide a benefit that is nearly impossible to pick up in statistical analysis. Specifically, local government regulation can facilitate the ability of local governments to provide the level of service that is consistent with residents' preferences. Regulation can allow households to sort themselves into communities characterized by similar demands for government services. Such sorting can lead to an "efficient" level of local government production and taxation. (This phenomenon is certainly more complicated than described here. It is sometimes referred to as "Tiebout" sorting after Tiebout (1956) who modeled it, and it has been the subject of extensive study, such as Hamilton (1975))

Regulation plays a role in household sorting by ensuring that households pay relatively equal amounts for government services. Local governments fund much of their activity by taxing housing units. The larger the housing unit and the more expensive the inputs (e.g., building materials) used in its construction, the more valuable the unit. Households living in units that are worth more typically pay higher property taxes. Generally speaking, a household that occupies a very small unit or a unit that is of relatively low quality, will pay a lower property tax than it would if it occupied a larger unit or one of higher quality. If rental units are 900 square feet, for example, and the typical house in a community is 3,000 square feet, the occupant of the rental unit will pay less in property taxes than the occupant of the large house if the tax rates are equal. Given the potential discrepancy in physical size, the household in the rental unit would likely still pay a smaller amount even if the tax rate were much higher on rental units.

Some communities have decided to provide themselves with a high level of public services, and they pay for these services, in part, through the property tax revenues on housing. As described above, those living in smaller units could pay less for the excellent service than those living in larger units even if they received the same level of public service. The household in the smaller property would get at least a partial "free

ride” on the efforts of others. Households in the larger houses would bear the costs of the free riders. If the subsidy from those in large houses to those in smaller units gets too large, the large-house residents will either move or seek to lower their taxes and thus receive less service than they prefer. Governments might decide to head off the threat of free riding by using land-use regulation to ensure that those living in the community have houses of roughly the same value (and thus the same tax payment). In this way, regulation helps ensure that one of the conditions needed for efficient service delivery remains in force. Eliminating local government regulation without considering the payment for local services could lead to a disconnect between service provision and household demand.

Even if one discounts the observations just made, policymakers will still face tough trade-offs in responding to local regulation of land use:

- Regulations that reduce total supply deserve the most scrutiny because they prevent filtering. However, policymakers may not know which rules to attack, and even if they do, they do not know by how much the rules should change. Cutting back the wrong rule or the right rule by too much might eliminate net benefits.
- Because a lack of information makes it difficult for policymakers to cut regulation by fiat, policymakers may consider making payments to communities to reduce their incentive to enact excessively onerous regulation. Such payments could reduce some of the outright costs of local regulation. But coming up with enough cash to induce communities to limit their regulation might strain government budgets. The payments would also be regressive if they flowed from all taxpayers to those with higher incomes.
- Reforms that require suburban communities to include low-income housing in private developments could very well backfire. Communities could respond to the “inclusionary zoning” by rationing or even eliminating new development (Fischel 1990). And, of course, someone has to pay for housing units that do not earn a market return for developers. This means the other, non-low-cost units produced by the developer will have a higher price, potential larger size and all the other undesirable features of excessive land-use regulation.

- Lowering taxes on rental units could also lower prices. State of Minnesota (2001, p. 61) found that equalizing the effective tax rate between rental and owner-occupied housing in Minnesota would reduce rents by 7 percent (assuming a competitive market). At the same time, policymakers may find the reduction in one source of revenue difficult to implement because it will require an increase in another source, assuming the same level and methods of service provision.

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# Table 1

Minneapolis/St.Paul Metropolitan Statistical Area (MSA)  
Total Renting Households 1998\*

<b>Income of Renting Households</b>	<b>Number of Renting Households</b>	<b>Percent of Total Renting Households</b>
Greater than 0% and less than or equal to 30% AMI	112,846	38
Greater than 30% and less than or equal to 50% AMI	83,370	28
Greater than 50% and less than or equal to 80% AMI	58,819	20
Greater than 80% and less than or equal to 100% AMI	17,547	6
Greater than or equal to 100% AMI	22,179	8
	<b>294,762</b>	<b>100</b>

Renting Households with Rental Costs  
Greater Than or Equal to 30 Percent of Income

<b>Income of Renting Households</b>	<b>Number of Renting Households</b>	<b>Percent of Total Renting Households</b>
Greater than 0% and less than or equal to 30% AMI	89,832	69
Greater than 30% and less than or equal to 50% AMI	33,159	25
Greater than 50% and less than or equal to 80% AMI	7,476	6
	<b>130,467</b>	<b>100</b>

Percent of Renting Households with Rental Costs Greater Than  
or Equal to 30 Percent of Income by Household Income

<b>Income of Renting Households</b>	<b>Percent</b>
Greater than 0% and less than or equal to 30% AMI	80
Greater than 30% and less than or equal to 50% AMI	40
Greater than 50% and less than or equal to 80% AMI	13
All	44

(a) \*AMI = Area Family Median Income

(b) Author's calculations based on data from the *American Housing Survey for the Minneapolis-St. Paul Metropolitan Area, 1998*

## Table 2

United States  
Total Renting Households 1999\*

<b>Income of Renting Households</b>	<b>Number of Renting Households</b>	<b>Percent of Total Renting Households</b>
Greater than 0% and less than or equal to 30% AMI	9,508,981	30
Greater than 30% and less than or equal to 50% AMI	5,880,125	18
Greater than 50% and less than or equal to 80% AMI	7,923,143	25
Greater than 80% and less than or equal to 100% AMI	2,765,585	9
Greater than 100% and less than or equal to 120% AMI	2,043,283	6
Greater than 120% AMI	4,060,299	13
	<b>32,181,416</b>	

Renting Households with Rental Costs  
Greater Than or Equal to 30 Percent of Income

<b>Income of Renting Households</b>	<b>Number of Renting Households</b>	<b>Percent of Total Renting Households</b>
Greater than 0% and less than or equal to 30% AMI	8,063,754	56
Greater than 30% and less than or equal to 50% AMI	3,586,431	25
Greater than 50% and less than or equal to 80% AMI	2,126,731	15
Greater than 80% and less than or equal to 100% AMI	264,376	2
Greater than 100% and less than or equal to 120% AMI	113,361	1
Greater than 120% AMI	136,937	1
	<b>14,291,591</b>	

(a) \*AMI = Area Family Median Income

(b) Author's calculations based on data from the *American Housing Survey for the United States, 1999*

## Table 2, continued

Percent of Renting Households with Rental Costs Greater Than or Equal to 30 Percent of Income by Household Income

Income of Renting Households	Percent
Greater than 0% and less than or equal to 30% AMI	85
Greater than 30% and less than or equal to 50% AMI	61
Greater than 50% and less than or equal to 80% AMI	27
Greater than 80% and less than or equal to 100% AMI	10
Greater than 100% and less than or equal to 120% AMI	6
Greater than 120% AMI	3
All	44

(a) \*AMI = Area Family Median Income

(b) Author's calculations based on data from the *American Housing Survey for the United States, 1999*

### Table 3

Rank of 56 Metropolitan Statistical Areas (MSA)  
by Intensity of Land Use Regulation

Rank	MSA	Regulatory Intensity*
1	San Francisco	29
2	Honolulu	29
3	San Diego	26
4	Sacramento	26
5	New York	26
6	Boston	26
51	St. Louis	16
52	Minneapolis-St. Paul	16
53	Dallas	15
54	Gary-Hammond	14
55	Dayton-Springfield	14
56	Chicago	13

(a) \*Index runs from 7 to 35 and is based on a 1 through 5 rating for seven regulatory factors such as length of permitting process

(b) Source: Stephen Malpezzi and Richard Green, "A Primer on U.S. Housing Markets and Housing Policy," October 2000, Table 4.3

### Table 4

Effect of Reducing Rental Costs by 15 Percent  
Minneapolis/St. Paul MSA—1998

Percent of Renting Households with Rental Costs Greater Than  
or Equal to 30 Percent of Income by Household Income

<b>Income of Renting Households</b>	<b>With Cost Reduction</b>	<b>Without Cost Reduction</b>
Greater than 0% and less than or equal to 30% AMI*	70	80
Greater than 30% and less than or equal to 50% AMI	21	40
Greater than 50% and less than or equal to 80% AMI	5	13
Greater than or equal to 80% AMI	0	0
All	34	44

(a) \*AMI = Area Family Median Income

(b) Author's calculations based on data from the *American Housing Survey for the Minneapolis-St. Paul Metropolitan Area, 1998*

### Table 5

Effect of Reducing Rental Costs by 15 Percent  
United States—1998

Percent of Renting Households with Rental Costs Greater Than  
or Equal to 30 Percent of Income by Household Income

<b>Income of Renting Households</b>	<b>With Cost Reduction</b>	<b>Without Cost Reduction</b>
Greater than 0% and less than or equal to 30% AMI*	78	85
Greater than 30% and less than or equal to 50% AMI	44	61
Greater than 50% and less than or equal to 80% AMI	14	27
Greater than 80% and less than or equal to 100% AMI	4	10
Greater than 100% and less than or equal to 120% AMI	3	6
Greater than or equal to 120% AMI	2	3
All	35	44

(a) \*AMI = Area Family Median Income

(b) Author's calculations based on data from the *American Housing Survey for the United States, 1999*

## Table 6

### Permits, Vacancy Rates, and Rental Prices Minneapolis/St.Paul MSA

<b>Year</b>	<b>Multi Family Permits</b>	<b>Rental Vacancy Rate (Percent)</b>	<b>Real Rental Prices</b>
1986	10,809	3.9	\$660
1987	10,419	5.3	666
1988	6,874	6.5	649
1989	4,997	6.3	639
1990	3,267	6.5	629
1991	1,592	6.7	624
1992	2,086	5.5	617
1993	2,550	5.2	607
1994	2,641	4.7	598
1995	3,706	4.9	600
1996	2,903	3.9	601
1997	2,854	3.9	608
1998	3,698	3.9	614
1999	4,582	4.2	618
2000	5,316	3.9	628
2001	5,599	5.2	640

(a) Vacancy Rates -- Bureau of the Census Housing Vacancies and Homeownership Annual Statistics: 2001

(b) Permits -- Author's calculations based on data from the Bureau of the Census Building Permits by Metropolitan Area

(c) Prices -- Author's calculations based on data from the Bureau of Labor Statistics Rent of Primary Residence Price Series and the American Housing Survey using the methodology in the Harvard University Joint Center for Housing Studies, "The State of the Nation's Housing": 2001



### Table 3-1

#### Improvement in Rental Unit Quality

<b>Quality Measure</b>	<b>United States</b>	<b>Twin Cities</b>
Lack of Complete Plumbing		
1960	22%	23%
1970	8%	6%
Current	2%	1%
Crowding (greater than 1 person per room)		
1960	16%	10%
1970	11%	5%
Current	5%	2.5%

(a) Source: American Housing Survey, Various Years

(b) Current = 1999 for U.S. and 1998 for Twin Cities



