

Public Transit's Impact on Housing Costs: A Review of the Literature

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Building and expanding a fixed rail public transit system is a considerable undertaking for any metropolitan region. Investments on this scale, which can run in the billions of dollars, certainly reshape how people move throughout a region, but their impacts do not end at the turnstile. For residents and businesses that place importance on accessibility, such investments can also essentially redistribute the value of location within a region, making a place more or less desirable than before simply because of its proximity to the transit system. And as we know, a residential location's value is best reflected in how much people are willing to pay to live there.

This brief summarizes research exploring the ways in which public transit has been shown to influence housing costs for owners and renters in the United States.¹

The Theory

In theory, a home located near public transit should command a higher rent or sales price than one that sits farther away. Why? Because public transit allows those living nearby to more easily travel to and from destinations that are important to them. Households with easy access

to public transit are able to spend less on transportation and can thus afford to spend more on housing (Kilpatrick et al. 2007). Economic theory suggests that the value of decreased travel time should also be reflected in home prices (as reviewed in Hess and Almeida 2007).

But the benefits of living near transit can go beyond mere economics. Aside from lower transportation costs, the ability to travel within a large metropolitan area while avoiding traffic congestion is highly valued by some. Others are attracted to the commercial and entertainment options that often cluster around transit stations. And still others choose to live near transit in an effort to shrink their carbon footprint.

However, there can also be drawbacks to living near – or *too* near – certain forms of transit. Alternately called “nuisance effects,” “negative externalities,” and “disamenities,” the noise, traffic, and pollution associated with transit systems can cause homes located in close proximity to certain transit lines or stations (think of a home's backyard abutting a train line) to have lower values than those slightly farther away because they lower the appeal – and thus the market price – of the neighborhood.



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The General Consensus

Although not unanimous,² the general consensus is that the accessibility benefits of living near transit outweigh the potential nuisance effects, and that **proximity to public transit does lead to higher home values and rents in many cases**. However, it is more difficult to agree on the magnitude of the impact than on its generally positive direction. One review of the literature identifies studies in which the premium for home prices ranges from 6 percent to 45 percent (Cervero et al. 2004). Another sets the range between 3 percent and 40 percent (Diaz 1999). A third exploration, involving heavy and light rail systems only, finds a maximum premium of 32 percent, although some studies find no effect and others find negative effects (Hess and Almeida 2007). Summarizing the available research, Duncan (2008:121) laments that generalization is quite difficult owing to different methodologies and contexts and concludes: “The most that one might safely generalize from the body of literature is that properties near stations sell at small to modest premiums (somewhere between 0% and 10%).”

As discussed below, the findings of this review suggest the impact of transit on housing prices depends on a number of mediating factors including housing tenure and type, the extent and reliability of the transit system, the strength of the housing market, the nature of the surrounding development, and so on. In a metro area with a strong housing market and a reliable transit system that effectively connects residents with jobs and other destinations, the price premium may well be much higher than average.

It is also important to underscore that effects may vary for different stations within a single market. Averages can hide a lot of variation, and transit stations may have little or no impact on housing prices in certain neighborhoods but a very large impact in others. Both researchers and policy-makers should be attuned to this possibility.

Comparing Housing Costs Before and After Transit

Many of the studies exploring the impact of proximity to transit on housing costs compare prices near transit with similar homes farther away, using what is known as a “hedonic price model” to separate out the effects of housing characteristics from the impact of location. Others use a “pre/post” methodology, which allows researchers to investigate changes in nearby housing costs after public transit service was added or expanded. Although less common because it requires access to data over a much longer time period, the latter research methodology is “more optimal” (Duncan 2010:5) because it is easier to establish a causal link and can be very informative for areas considering adding or expanding rail lines. A handful of before-and-after studies are summarized here:

- ▶ The Atlanta Beltline project involves the redevelopment of a 22-mile freight rail line into a light rail system encircling the city, linking a system of planned mixed-use projects and green spaces. Immergluck (2009) finds that between 2002 and 2005, as project plans began to take shape and media attention increased, single-family homes within one-quarter mile of the planned loop sold at a 15 to 30 percent premium compared to similar properties located more than two miles away. Price premiums extended one-half mile from the district before falling off. These findings applied only in the southern portion of the planned Beltline district, where property values and incomes were lower than in the more affluent north.
- ▶ Goetz et al. (2010) study the effects of the Hiawatha Line that opened in Minneapolis in 2004, just to the west of an existing highway and industrial corridor. The researchers find a nuisance effect associated with these pre-existing land uses that depressed property



Compared to similar homes in southeast Minneapolis, single-family homes within one-half mile of a station sold for \$5,229 more after 2004 than did homes farther from the station during the same period. The premium for multifamily properties was \$15,755 after the line opened.



values before the line was added. After construction, the nuisance effect persisted, but the authors find a net increase in the value of single-family and multifamily homes west of the line as a result of the improved accessibility. East of the line, accessibility related to the new line diminished the existing nuisance effect but did not erase it entirely. Compared to similar homes in southeast Minneapolis, single-family homes within one-half mile of a station sold for \$5,229 more after 2004 than did homes farther from the station during the same period. This amounts to roughly 4 percent of the average sales price in the station areas over the 10-year study period. The premium for multifamily properties was \$15,755 after the line opened, representing 10 percent of the average sales price.

- ▶ McMillen and McDonald (2004) analyze housing price trends for homes within 1.5 miles of the Midway transit line in Chicago. The line opened in 1993, but when the alignment of the proposed project was announced

in 1984, single-family homes nearby began selling for 4.2 percent more than homes one mile away. This premium rose to as much as 19.4 percent between 1991 and 1996 before correcting to just under 10 percent in later years.

- ▶ Gatzlaff and Smith (1993) analyze sales prices of owner-occupied single-family homes before and after the announcement of the construction of the Miami Metrorail system in 1980. They find only a weak suggestion that property values increased marginally along the southern portion of the line, which runs through higher-priced neighborhoods. Relative to the county trends, sales prices during the study period increased slightly after the announcement, but the difference was within the county's margin of error.
- ▶ In their study of the Portland light rail line, Knaap, Ding, and Hopkins (2001) find that compared to other vacant residential parcels in Portland, vacant parcels

within one-half mile of the planned Westside extension line sold at a 31 percent premium in the two years after plans for the line were announced, and the premium for parcels within one mile was 10 percent. These findings were statistically significant but were based on a relatively small sample.

- ▶ Focusing on 42 fixed rail stations that opened during the 1990s, Pollack, Bluestone, and Billingham (2010) compare demographic and housing trends in the station areas with trends in their broader regions. In 29 of the 42 station areas, the median home value increased by at least 20 percent more than in the region as a whole. Station area median gross rents outpaced the region by a similar margin in about 40 percent of cases. Growth in the number of total and owner-occupied housing units also exceeded regional trends for one-quarter and one-third of the station areas, respectively. Unlike many other studies, however, this research relies on self-reported housing costs from census data and does not control for factors other than proximity to transit that may have influenced these trends. For these reasons, and due to the small sample size, these findings should be viewed as suggestive and as motivation for future research.

- ▶ Kahn (2007) also uses decennial census data to chart the change in home values in neighborhoods located near transit stations that opened between 1970 and 2000. Kahn concludes that, relative to similar but more distant areas, neighborhoods proximate to new walk-and-ride stations generally saw their home values increase more than 5 percent over 10 years, but home values near new park-and-ride stations fell by about 2 percent. The impact of these two types of stations was not consistent across the 14 cities in the study, however.

With only one exception, these studies compare pre-transit home prices and land values to either (1) a period of time after a new line was announced but before it opened, or (2) a period of time after a new line opened, up to but no longer than six years after its opening. It is possible – likely, even – that the effect of public transit access takes more time to fully appear in home prices and rents, as the system matures, the station area develops, and the population gains an understanding of what both have to offer. Although difficult to conduct, research that takes a longer view may be better suited for quantifying the impact of transit on housing costs because generally, “the older a system, the more likely it is for its benefits to be capitalized in property values” (Giuliano and Agarwal 2010:218).



Despite their relatively short time horizons, these examples of “pre/post” studies are nonetheless largely in line with the general consensus: Improving accessibility through the addition of public transit increases housing costs in most, but not all, cases, and it is difficult to generalize the magnitude of the impact. The following section discusses some of the factors that complicate generalization on this topic.

Factors that Influence the Impact

Taken together, the research suggests that transit’s effects on home values and rents depend on a number of mediating factors – some specific to the transit system and others pertaining to the local and regional context.³

▶ **Accessibility benefits:** A home in close proximity to a transit station will be valued more highly than a similar home located elsewhere only if residents value the accessibility the transit system offers. The value residents place on the transit system is based on the extent to which it increases their access to important destinations – such as job centers, cultural amenities, commercial hubs, and health services – in comparison to other forms of transportation. Finding limited price premiums for homes near transit in Buffalo, Hess and Almeida (2007) conclude: “Where access to rail transit is not highly valued, property values do not rise” (1062).

Thus, a transit system that runs frequently and reliably and has considerable geographic coverage throughout an area crippled by traffic congestion is more likely to increase home values than one offering fewer relative benefits (Giuliano and Agarwal 2010). According to Cervero et al. (2004): “Only when transit begins to mimic the network attributes of its chief competitor, the automobile-highway system, will accessibility improvements be significant enough to register through real-estate transactions” (167).

▶ **Type of housing:** As noted above, a significant body of research investigating the impact of transit on property values exists, and most summaries of the literature have estimated the impact at below 10 percent (Duncan 2008). The vast majority of research to date has been based on single-family home sales, however. In their assessment of the scant research into other types of housing, Cervero et al. (2004) conclude the land value premium applies not only to single-family housing but also “especially” (176) to condominiums and apartment buildings.

A recent study by Duncan (2008) directly investigates whether premiums are higher for condominiums than for single-family homes. The author hypothesizes that those attracted to condominium living – typically smaller households with simpler transportation needs – may place a higher value on proximity to transit than larger families in single-family homes, thereby generating a higher premium

for condos. Analyzing sales transactions in San Diego, Duncan (2008) estimates that a condo within one-quarter mile of a station sold for 17 percent more than a similar home one mile away, while the premium for a nearby single-family home was only 6 percent.

Research on the accessibility premium for multifamily rental housing is scarce because current information on rents is more difficult to find than is information on sales transactions. Even when rent data are available, reported rents should be adjusted to control for concessions (e.g., first month free) and to account for occupancy levels, processes that complicate analysis (Cervero and Duncan 2002). However, Cervero et al. (2004) review several studies that compare apartment rents in transit-oriented developments (TODs) with similar properties located elsewhere and find that TOD rents are consistently 10 to 20 percent higher. The review also covers a separate study of the Santa Clara rental market in 1999, in which apartments within one-quarter mile of a transit station were found to have land values 17 to 28 percent higher than those within four miles.

▶ **Type of transit system:** Several studies have compared the housing cost effects of heavy, commuter, and light rail systems. Research suggests that heavy and commuter rail systems have a greater impact on property values, but the apparent differences are likely due to their greater frequency, speed, and scope of service as compared to most light rail networks (as reviewed by Parsons Brinckerhoff 2001; Lewis-Workman and Brod 1997; Landis et al. 1995).

Traditional bus service is rarely considered when discussing the impact of transit on housing costs. In their review of the literature, Hess and Almeida (2007) explain that “...property values near bus routes have only modest gains, if any, from transit proximity, because most bus routes lack the permanence of fixed infrastructure” (1043). However, a study of a 25-year old bus rapid transit (BRT) system in Pittsburgh finds a significant price premium for homes selling near the BRT line (Perk and Catala 2009). The research is more suggestive than conclusive for methodological reasons, but the implication is that where a BRT system can bring lasting improvements in accessibility on par with a fixed rail transit system, housing markets can respond accordingly.

▶ **Nuisance effects:** Some studies have found evidence that homes located too close to certain types of transit stations or lines sell at a discount relative to similar homes farther away. Examples include:

■ Landis et al. (1995) estimate that properties within 300 meters of one above-ground heavy rail line (the right-of-way, not the stations) in California sold at a discount relative to homes farther away, but the

authors observe no nuisance effects for properties located around another above-ground heavy rail line or near three light rail systems.

- In one statistical model, Bowes and Ihlanfeldt (2001) find that properties within one-quarter mile of MARTA stations in Atlanta sold for 19 percent less than homes more than three miles away, but the effect weakened in subsequent models.
- Chen, Rufolo, and Dueker (1998) find evidence that proximity to a light rail *line* in Portland depressed the value of single-family homes, but the results were statistically insignificant and the nuisance effects were much smaller than the positive impact of being located near a light rail *station*.
- An earlier study of home sales surrounding three Portland light rail stations finds that for properties within 2,000 feet, proximity to the station had a negative effect on prices, while those in the 2,500 feet to one-mile band were positively affected by proximity (Lewis-Workman and Brod 1997). The authors note that the transit line runs down the middle of a busy street, which may have been at least partly to blame for the negative effects.

- In Minneapolis, Goetz et al. (2010) find that building a track along an industrial corridor actually reduced the existing nuisance effect for single-family homes west of the track; for multifamily housing, the nuisance effect increased but the line's net effect on property values was still positive.

In general, evidence of nuisance effects is inconclusive (Parsons Brinckerhoff 2001); as with evidence of price increases, part of the difficulty in being more definitive is that each rail line is situated differently with respect to its surroundings. Where a rail line generates a significant amount of noise, is visually unappealing, or represents a barrier to mobility for non-transit riders (e.g., a line that interrupts traffic or pedestrian access), it makes sense that property values could suffer. The same could be said for home values near a park-and-ride station that increases traffic congestion. Future research should take care to investigate potential nuisance effects and positive accessibility effects separately. Failure to do so in the past may lie at the heart of the inconsistent findings concerning price increases (Chen, Rufolo, and Dueker 1998), and studies that do not separate nuisance effects from price increases run the risk of underestimating the latter.





► **Neighborhood profile:** Much of the research into transit's impact on housing costs investigates whether income levels in the area surrounding a station play a role, and the findings are mixed. Several studies suggest that transit accessibility is associated with higher home prices in higher-income station areas, and some even show a dampening effect in lower-income neighborhoods (Hess and Almeida 2007; Bowes and Ihlanfeldt 2001; Gatzlaff and Smith 1993). Supporting these findings, Cervero et al.'s (2004) review of the literature concludes that properties near transit are only likely to sell at a premium "in a neighborhood free from signs of stagnation or distress that has a reasonably healthy real-estate market" (176).

However, these conclusions are inconsistent with evidence from Immergluck (2009) which shows a neutral or negative effect on home prices in higher-income neighborhoods and a 15 to 30 percent premium in lower-income communities near a planned rail line in Atlanta. Further, Kahn (2007) finds that home prices in lower-income neighborhoods near a new transit station were affected positively or not at all (depending on the type of station), but home prices in higher-income communities fell slightly. Supporting these findings, other studies suggest that during the 1990s, home prices rose in lower-income neighborhoods located

near transit stations (Chapple 2009; Weissbourd, Bodini, and He 2009) and characterized by a high rate of public transit ridership (Chapple 2009).

Diaz (1999) attempts to reconcile these apparent contradictions by arguing that "rail transit imparts value to residential property in districts where the population values the access provided by that transit service the most, regardless of the income of the district" (3). The suggestion is that the extent to which a population values a transit system – and thus is willing to pay more for greater access to it – is not related to income but to the accessibility benefits that transit confers on those living nearby. The benefits are greater in higher-income station areas in some cases, and in lower-income areas in others. As discussed in more detail in the policy implications section, when accessibility benefits lead to rising housing costs in lower-income neighborhoods, long-time residents can be displaced unless appropriate policies are implemented to prevent this from occurring.

► **Orientation and zoning of the station area:** Research suggests that housing cost premiums are more likely to be observed around transit stations that are walkable, mixed-use, and pedestrian-oriented than around those that are auto-oriented (Kahn

2007; Cervero et al. 2004). An auto-oriented station surrounded by industrial facilities and high-speed/high-volume roads can lower nearby property values, while pedestrian-oriented commercial uses and open space within a station area can raise them (as reviewed in Bartholomew and Ewing 2011).⁴ Writing about Portland's light rail system, Lewis-Workman and Brod (1997) conclude that "building transit lines on freeway or major road rights-of-way sacrifices the neighborhood livability benefits of transit" (153). Doing so will still likely increase home values up to the system's "user benefits" – but no further – because the proximity to transit will not contribute "to the character and form" (Lewis-Workman and Brod 1997:147) of the station area.

According to Duncan (2010), transit stations surrounded by walkable, mixed-use developments offer "a more complete auto alternative" (104) because they provide improved accessibility to both work (via the transit system) and non-work destinations (via the mix of uses in the station area). Duncan's (2010) research shows that proximity to the San Diego Trolley by itself was not associated with higher home prices. However, when combined

with a walkable environment – as measured by the number of street intersections and service jobs, and the slope of the terrain – condominium sales prices near a transit station were 15 percent higher than in similarly walkable areas one mile from the nearest station. Condos near auto-oriented stations actually sold at an 8 percent discount compared to similar units in auto-oriented neighborhoods one mile away.

In a separate study, Duncan (forthcoming) analyzes whether local zoning ordinances have any effect on single-family home prices near transit. His research shows that in station areas zoned for low-density development, a home's distance to the station had very little effect on its price. By contrast, single-family homes in areas zoned for higher densities generally sold for less, but there was evidence of a price premium for homes nearest the stations – likely because of the potential to redevelop the parcels to accommodate additional units and thus generate a higher return for investors.

Given the apparent impact of context in general and orientation and zoning in particular, future studies should attempt to capture station area features such as walkability, the availability of retail services, and the area's



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redevelopment potential; failure to do so may blend potentially very different results from different types of station areas and thus produce less accurate findings.

- ▶ **Regional economy:** If there is weak housing demand throughout a region, a new transit line is less likely to lead to significant levels of residential development. According to Cervero, Ferrell, and Murphy (2002): “It is widely accepted that transit investments do not so much generate new growth but rather redistribute where growth takes place – growth that would have occurred with or without transit. However, there must be growth to redistribute, and not in all cases where U.S. rail systems have been built has there been sufficient market demand for meaningful station-area development to occur” (45).

Expanding on this theme, Giuliano and Agarwal (2010) note that in growing markets, new arrivals “must locate themselves” (215) somewhere, which provides an opportunity for a greater number of households to choose transit-accessible neighborhoods. In slow-growth or stagnant regions, a transit investment would have to be significant enough to change the location decisions of existing residents in order for it to have a measurable effect on development patterns.

The regional context can influence not only neighborhood-level development potential but also local-level price trends. In their analysis of neighborhood change in four cities between 1990 and 2006, Weissbourd, Bodini, and He (2009) conclude that roughly 35 percent of neighborhood-level home price appreciation was attributable to regional housing price trends, suggesting that transit’s impact on housing costs may be muted in weak markets and amplified in strong ones.

Nevertheless, there is evidence that proximity to transit can produce at least modest home value premiums in declining markets. In Buffalo, Hess and Almeida (2007) find that properties located within one-half mile of a light rail station were valued from 2

to 5 percent higher than similar properties farther from transit. Taken together, the research suggests that although public transit can give rise to higher housing prices even in weak markets, a new transit line in such a market may not have the same impact as it would in a region where housing is in high demand.

- ▶ **Public commitment and policy framework:** A common thread running through the literature is the finding that growth and development do not automatically follow a new rail line in a “build it and they will come” scenario. Rather, policymakers interested in maximizing the development potential around station areas should offer financial incentives and implement supportive pro-growth policies such as density bonuses, reduced parking, and assistance with land assembly in order to increase the likelihood of this outcome (Loukaitou-Sideris 2010; Cervero et al. 2004). In fact, Giuliano and Agarwal (2010) argue that the development-friendly policies themselves can significantly affect development patterns and produce the apparent land value premiums observed in some studies, rather than the public transit investment that motivated the policy changes in the first place.

None of these contextual factors influence housing costs in isolation. Rather, they interact to create an environment in which the market price for housing is set. Cervero’s (2004) study of public transit in San Diego illustrates this point well. He finds that multifamily rental properties and condo units located near a light rail station sold for a premium compared to similar properties farther away, but single-family units near a light rail station sold at a discount. Being located near commuter rail stations, on the other hand, was associated with a large premium for condos and a more modest premium for single-family homes. Cervero (2004) attributes these seemingly contradictory findings to the value that different populations place on different types of housing and transit. He posits that more affluent homeowners require faster access to white-collar jobs downtown and value commuter rail access, while moderate-income renters place

more value on the accessibility provided by San Diego's light rail system. Thus, the type of transit, the type of housing, and the neighborhood profile can all interact within the same regional economy to produce very different results.

Summary and Policy Implications

The public cost to build or expand a fixed guideway transit system can be substantial. Federal, state, and local governments invest in these systems for a variety of reasons, namely: to improve regional accessibility for residents, businesses, and visitors alike; to reduce traffic congestion; to curb greenhouse gas emissions; and to revitalize neighborhoods. A new or improved transit system can move a region closer to each of these goals, but, as the research generally shows, it can also increase nearby housing costs.

The research also suggests that the conditions frequently associated with higher housing costs near transit are generally the same ones that policymakers, planners, and transit authorities everywhere seek to achieve: fast, frequent transit service that makes important destinations more accessible; a system that minimizes nuisance effects; a policy environment that successfully jumpstarts private-sector growth; and a strong regional economy where housing is in demand. Price increases will also likely be higher in communities that succeed in creating walkable neighborhoods near transit stations with good access to retail and services.

To the extent that policymakers implement pro-growth strategies to achieve these goals, they should also implement parallel strategies to preserve existing affordable housing near transit and ensure that a share of new development is affordable to low- and moderate-income families. Otherwise, longstanding residents may no longer be able to afford rising rents and property taxes, and new development will almost assuredly be priced above what many working families can afford. The consequences of inaction on this front can be displacement and economic segregation.

Appropriate affordable housing strategies depend on local context, but options include:

▶ **Affordable housing preservation:** Where public transit is extended to areas with an existing housing stock, the most cost-effective strategy for building affordability into a station area is often to preserve the housing that is already there. Public funds can be used to acquire and rehabilitate

both already-subsidized and unsubsidized rental and owner-occupied housing to ensure that it remains affordable to low- and moderate-income households.

▶ **Inclusionary zoning:** Station areas expected to experience significant residential development can be prime candidates for inclusionary zoning. Through a zoning ordinance, a community can ensure that a share of newly built for-sale and rental units is affordable to those with low or moderate incomes. Developers are often compensated with density bonuses, which can simultaneously expand the overall supply of transit-accessible housing and increase transit ridership.

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▶ **Tax-increment financing:** Tax-increment financing (TIF) is a strategy that many communities use to help pay for public infrastructure improvements. Municipalities fund public works and then recover a share of the capital expenses through incremental property taxes from higher nearby property values. In the context of public transit, TIF can be used to provide the local portion of the capital for the project itself or to make station areas more walkable and accessible for the surrounding community. Where this strategy is employed, a portion of the tax increment should be set aside to build and preserve affordable housing for households who could not otherwise afford to live nearby.

▶ **Early-stage land acquisition:** Given the research showing housing prices increasing even before a transit system opens, affordable housing strategies that rely on land acquisition may have a narrow window of opportunity. However, a proactive locality that implements a land acquisition strategy before land values increase will have a much greater dollar-for-dollar impact than one that reacts after prices have begun to climb. One option is to acquire land for mixed-income residential development as part of the process of acquiring land for new stations.

▶ **Long-term affordability:** Many affordable housing strategies are structured to provide affordability for a discrete time period, such as 15 or 20 years. However, the price impact of good transit access is not likely to diminish significantly over time and may in some cases

increase. Strategies such as shared-equity homeownership and long-term affordability covenants for rental developments can help preserve the value of public investments in affordable housing over time.

- ▶ **Conditional transportation funding:** Given the evidence, the Federal Transit Administration (FTA) may wish to consider a locality's commitment to affordable

housing before awarding funds to build or expand fixed rail systems. The highly competitive nature of the New Starts program, which is used to support the largest public transit improvement projects in the United States, creates an opportunity for the FTA to reward applicants who develop a plan to preserve or expand such housing around proposed stations.

Endnotes

¹ The research reviewed here focuses on residential sales prices and rents in the United States. Excluded from this brief are international studies as well as findings pertaining to nonresidential commercial and industrial property.

² In their review of the research, Giuliano and Agarwal (2010) argue that “the literature does not establish unambiguously whether or not rail transit investments get capitalized in property values” (228). They attribute inconsistent findings in part to differences in research methods and in the local conditions in which transit investments are made. They also note that only where the road network is insufficient for handling travel demands (i.e., where congestion is severe) does a transit system have an appreciable impact on accessibility.

³ In addition to factors related to the transit system and its local/regional context, the data and methods used to measure housing cost effects also play a role in each study's conclusions (Cervero, Ferrell, and Murphy 2002; Parsons Brinckerhoff 2001). Researchers have taken different analytical approaches, used different datasets, and built different models to test their

hypotheses. To illustrate the importance of including non-transit factors in any analysis, Debrezion, Pels, and Rietveld (2007) find that research that does not consider a home's proximity to other transportation networks (e.g., highways) or an area's demographic characteristics may overstate the impact of transit on housing costs. When one considers the different types of transit systems, metropolitan areas, and research methodologies used to study them, it is unsurprising there is not a single answer to the question, “How much does access to public transit affect housing costs?”

⁴ Landis et al. (1995) offer a counterpoint to this notion, attributing housing price premiums near two systems in California to the availability of parking, and highlighting the absence of parking to partly explain why other systems did not produce higher nearby home values. It is not intuitive, however, why parking, which would “accommodate a wider commuter shed” and likely increase traffic congestion near the station, would increase nearby property values. If anything, it seems that parking would improve access to the station for areas farther removed, which would reduce the benefit of living nearby and moderate any positive price effects near the stations.

References

Bartholomew, Keith and Reid Ewing. 2011. “Hedonic Price Effects of Pedestrian- and Transit-Oriented Development.” *Journal of Planning Literature* 26(1): 18-34.

Bowes, David R. and Keith R. Ihlanfeldt. 2001. “Identifying the Impacts of Rail Transit Stations on Property Values.” *Journal of Urban Economics* 50: 1-25.

Cervero, Robert. 2004. “Effects of Light and Commuter Rail Transit on Land Prices: Experiences in San Diego County.” *Journal of the Transportation Research Forum* 43(1): 121-138.

Cervero, Robert, et al. 2004. *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. Washington, DC: Transportation Research Board of the National Academies.

Cervero, Robert and Michael Duncan. 2002. “Transit's Added Value: At What Point Does Locating near Transit Raise Real Estate Values?” *Urban Land* 61(2): 77-84.

Cervero, Robert, Christopher Ferrell, and Steven Murphy. 2002, October. *Transit-Oriented Development and Joint Development in the United States: A Literature Review*. Washington, DC: Transportation Research Board of the National Academies.

Chapple, Karen. 2009, August. *Mapping Susceptibility to Gentrification: The Early Warning Toolkit*. Berkeley, CA: University of California, Center for Community Innovation at the Institute of Urban and Regional Development.

Chen, Hong, Anthony Rufolo, and Kenneth J. Dueker. 1998. “Measuring the Impact of Light-Rail Systems on Single-Family Home Values: A Hedonic Approach with Geographic Information System Application.” *Transportation Research Record: Journal of the Transportation Research Board* 1617: 38-43.

Debrezion, Ghebreegziabihier, Eric Pels, and Piet Rietveld. 2007. “The Impact of Railway Stations on Residential and Commercial Property Value: A Meta-analysis.” *The Journal of Real Estate Finance and Economics* 35(2): 161-180.

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Diaz, Roderick B. 1999. *Impacts of Rail Transit on Property Values*. McLean, VA: Booz Allen & Hamilton, Inc.

Duncan, Michael. 2008. "Comparing Rail Transit Capitalization Benefits for Single-Family and Condominium Units in San Diego, California." *Transportation Research Record: Journal of the Transportation Research Board* 2067: 120-130.

----- . 2010. "The Impact of Transit-oriented Development on Housing Prices in San Diego, CA." *Urban Studies* 48(1): 101-127.

----- . Forthcoming. "The Synergistic Influence of Light Rail Stations and Zoning on Home Prices." *Environment and Planning A*.

Gatzlaff, Dean H. and Marc T. Smith. 1993. "The Impact of the Miami Metrorail on the Value of Residences near Station Locations." *Land Economics* 69(1): 54-66.

Giuliano, Genevieve and Ajay Agarwal. 2010. "Public Transit as a Metropolitan Growth Strategy." Pp. 205-252 in *Urban and Regional Policy and Its Effects*, Volume 3, edited by Nancy Pindus, Howard Wial and Harold Wolman. Washington, DC: Brookings Institution Press.

Goetz, Edward G., Kate Ko, Aaron Hagar, Hoang Ton, and Jeff Matson. 2010, February. *The Hiawatha Line: Impacts on Land Use and Residential Housing Value*. Minneapolis, MN: Center for Transportation Studies, University of Minnesota.

Hess, Daniel Baldwin and Tangerine Maria Almeida. 2007. "Impact of Proximity to Light Rail Rapid Transit on Station-area Property Values in Buffalo, New York." *Urban Studies* 44(5-6): 1041-1068.

Immergluck, Dan. 2009. "Large Redevelopment Initiatives, Housing Values and Gentrification: The Case of the Atlanta Beltline." *Urban Studies* 46(8): 1723-1745.

Kahn, Matthew E. 2007. "Gentrification Trends in New Transit-Oriented Communities: Evidence from 14 Cities That Expanded and Built Rail Transit Systems." *Real Estate Economics* 35(2): 155-182.

Kilpatrick, John A., Ronald L. Throupe, John I. Carruthers, and Andrew Krause. 2007. "The Impact of Transit Corridors on Residential Property Values." *Journal of Real Estate Research* 29(3): 303-320.

Knaap, Gerrit J., Chengri Ding, and Lewis D. Hopkins. 2001. "Do Plans Matter? The Effects of Light Rail Plans on Land Values in Station Areas." *Journal of Planning Education and Research* 21: 32-39.

Landis, John, Subhrajit Guhathukurta, William Huang, and Ming Zhang. 1995. *Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Transit Systems* (Monograph 48). Berkeley, CA: Institute of Urban and Regional Development, University of California at Berkeley.

Lewis-Workman, Steven and Daniel Brod. 1997. "Measuring the Neighborhood Benefits of Rail Transit Accessibility." *Transportation Research Record: Journal of the Transportation Research Board* 1576: 147-53.

Loukaitou-Sideris, Anastasia. 2010. "A New-found Popularity for Transit-oriented Developments? Lessons from Southern California." *Journal of Urban Design* 15(1): 49-68.

McMillen, Daniel P. and John McDonald. 2004. "Reaction of House Prices to a New Rapid Transit Line: Chicago's Midway Line, 1983-1999." *Real Estate Economics* 32(3): 463-486.

Parsons Brinckerhoff. 2001, February 27. *The Effect of Rail Transit on Property Values: A Summary of Studies* (draft). New York: Author.

Perk, Victoria A. and Martin Catala. 2009, December. *Land Use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values along the Pittsburgh Martin Luther King, Jr. East Busway*. Washington, DC: U.S. Department of Transportation, Federal Transit Administration.

Pollack, Stephanie, Barry Bluestone, and Chase Billingham. 2010, October. *Maintaining Diversity in America's Transit-Rich Neighborhoods: Tools for Equitable Neighborhood Change*. Boston, MA: Dukakis Center for Urban and Regional Policy at Northeastern University.

Weissbourd, Robert, Riccardo Bodini, and Michael He. 2009, September. *Dynamic Neighborhoods: New Tools for Community and Economic Development*. Chicago, IL: RW Ventures, LLC.