Appendix A

Table 1. Summary of recent studies for the impacts of heavy rail transit on residential property values

Authors	*Study Area (Rail Type)*	*Method*	*Railway Station Impact on Residential Property Value*	*Major Findings and Conclusions*
(Nelson, 1992)	Atlanta, the United States (Heavy rail transit)	Hedonic price model with Ordinary Least Squares (OLS)	- In lower-income neighborhoods, property values increased close to $1045 for every 100 feet a property was closer to the East Line. - For the high-income neighborhoods, every 100 feet a property was closer to the East Line, property values dropped by $965.	- Heavy-rail transit stations had a positive price effect on low-income neighborhoods where households depend on rail transit because of income.
(Gatzlaff & Smith, 1993)	Miami-Dade County, the United States (Heavy rail transit)	Repeat-sales indices and hedonic price model (OLS)	- At most, a 5% higher rate of appreciation in real estate sales value compared to the rest of the City of Miami. - The impact of rail development announcement on residential property values was weak.	- The impact varied across neighborhood types. The Metrorail weakly increased the value of properties proximate to stations in higher-priced neighborhoods experiencing growth, relative to neighborhoods in decline. - The system had little effect on accessibility.
(Haider & Miller, 2000)	Toronto, Canada (Heavy rail transit)	Spatial autoregressive (SAR) models and Comparable Sales Approach	- In the presence of other explanatory variables, locational and transportation factors were not strong determinants of housing values	- The number of washrooms and the average household income in a neighborhood were found to be significant determinants of housing values.
(Bowes & Ihlanfeldt, 2001)	Atlanta, the United States (Heavy rail transit)	Semi-log form of hedonic price model	- The premium paid for being close (but not very close) to a station was greater in high- than in low-income neighborhoods. - Properties within a quarter of a mile from a rail station are found to sell for 19% less than properties beyond three miles from a station.	- The higher opportunity cost of commuting time of higher-income residents enhanced the value they attach to transit access. - Houses that are very close to stations were affected by negative externalities, but those at an intermediate distance were beyond the externality effects and benefited from the transportation access provided by the stations. - Rail stations contributed to neighborhood crime by enhancing the neighborhood's access to outsiders.
(Cervero & Duncan, 2002)	Los Angeles County, the United States (Commuter rail transit)	Hedonic price model (OLS)	- Single-family properties and condominiums experienced the greatest price premium when located near a commuter rail line, while multi-family (rentals) experienced the opposite effects	- Premiums varied greatly by property type and rail corridor.
(Bae, Jun, & Park, 2003)	Seoul, Republic of Korea (Heavy rail transit)	Hedonic price model with Generalized Least Squares (GLS)	- Anticipatory price effects reflected up to the year of opening and then evaporated.	- The city has a dense subway system (and many other types of transit). As a result, locations do not differ widely in terms of access to transit. - The prices were negatively associated with population density but positively associated with employment density.
(Yankaya, 2004)	Izmir, Turkey (Heavy rail transit)	Hedonic price model (OLS)	- Proximity to the subway stations was a statistically significant determinant of the market price of house units. - The effect was high in the impact zone of the subway stations, but small for greater distance from the buffer zones of the subway stations.	- The influence of transport investment on property values depended on transport costs, total vehicle time, and distance to the nearest station.
(Immergluck, 2009)	Atlanta, the United States (Heavy rail transit)	Semi-log form of hedonic price model	- High-income areas near the Beltline appreciated more slowly than the outer area, while the price in the lower-income, increased by approximately 15–30%.	- Spatially targeted development projects in lower-income areas had positive spillovers on residential property values. - Lower-income owners/renters may not afford higher taxes resulting from higher property values, and thus, they are likely to experience some pressure towards displacement.
(Martínez & Viegas, 2009)	Lisbon, Portugal (Heavy rail transit)	Semi-log form of hedonic price model and spatial hedonic pricing model (spatial lag)	- Rail accessibility illustrated a positive impact for the proximity to the Cascais Line with coefficients ranging between 6.75% and 10.73%, and a negative impact for the proximity to the Sintra Line with coefficients ranging between −9.16% and −3.58%.	- The perception of a lack of security prevented the properties of the nearby areas from taking full advantage of the proximity to this public transport system.

(Debrezion et al., 2011)	The Netherlands (Commuter rail transit)	Semi logarithmic hedonic specification	- Dwellings very close to a station were on average about 25% more expensive than dwellings at a distance of 15 kilometers or more. - Within the zone up to 250 meters around a railway station prices were about 5% lower compared with locations further away than 500 meters.	- The distinction between the nearest railway station and the most frequently chosen railway station was important. - Railway station accessibility is a complex concept, as it involves competition between railway stations.
(Medda, 2012)	Warsaw, Poland (Heavy rail transit)	Hedonic price model (OLS)	- Properties located within 1 km of a metro station showed a higher selling price than those located beyond 1 km.	- Land value finance represented a significant and direct contribution to the success of public infrastructure investments by providing fair, efficient, and stable funding mechanisms.
(Dubé et al., 2013)	Montreal, Canada (Commuter rail transit)	Hedonic price model (GLS) combined with a difference-in-differences (DID) estimator	- Proximity to a commuter train station translated into a market premium that varied from roughly 11% of the mean house price for properties located near a station at sufficient distance from the CBD (>10 km).	- Gains accessibility to train stations derived from a combination of on-foot access, or immediate proximity, to commuter rail stations and car travel time reduction, with most of house price appreciation being experienced in the vicinity of stations.
(Pan, Pan, Zhang, & Zhong, 2014)	Houston, the United States; Shanghai, China, (light rail transit and heavy rail transit)	Hedonic price model (OLS) and multi-level regression (MLR) model	- Rail transit had significant, positive effects on residential property values, whether in the limited transit system in Houston or the more extensive system in Shanghai.	- A newly constructed rail transit system takes time to have noticeably change local housing markets and transit ridership - Traditional city center does not have significant positive effects on property values.
(Zhong & Li, 2016)	Los Angeles, the United States (light rail transit and heavy rail transit)	Spatial Durbin Model (SDM) and Geographically Weighted Regression (GWR)	- Proximity to mature rail transit stations had positive effects on multi-family property values but negative effects on single-family properties.	- The premiums for rail transit accessibility largely depended on different development phases and could be heavily discounted by the existence of Park-and-Ride facilities.
(Diao et al., 2017)	Singapore (Commuter rail transit)	Spatial Difference-in-Differences (SDID) model incorporated spatial lag term (SAC) and spatial error term (SARAR)	- The opening of the new rail line increased housing value in the treated neighborhoods located within the 600-meter network distance from the new stations by approximately 7.8%.	- The significant anticipation effects appeared 1 year before the opening of the rail line, and the effects diminished closer to the actual opening date. - The inter-dependent structure between the treatment zone and the control zone implied that the new rail lines may bring differential economic benefits to different neighborhoods.
(Mohammad et al., 2017)	Dubai, United Arab Emirates (Heavy rail transit)	Hedonic price model (OLS) and Difference-in-Differences (DID) model	- The effect was about 13% within 701 to 900 meters of a metro station, but it was estimated to be -9% and -17.7% within 0.5 kilometers of a station.	- The properties located very close to metro stations were adversely affected by increased negative externalities associated with noise and pollution from the transport system.
(Amir Forouhar & Hasankhani, 2018)	Tehran, Iran (Heavy rail transit)	Trend analysis, difference-in-differences model, and qualitative impact assessment methods	- Properties located within 0.4 km of a new metro station showed a significant positive impact in lower-income neighborhoods, while a considerable negative treatment effect for residential properties in high-income neighborhoods.	- Several contextual factors including the need for public transportation, land-use planning and management, socio-cultural effect, and possible nuisance effects, influenced the magnitude and direction of the impact.
(AlQuhtani & Anjomani, 2019)	Dallas, the United States (Heavy rail transit)	Natural logarithm and semi-log forms of multiple regression model	- The median housing value percent change within a one-mile buffer around rail stations was around 14%. - The homes in proximity to stations experienced a negative change.	- The impact depended on factors such as transportation accessibility, socioeconomic attributes of residents, and the attributes of the locations. - Economic development and locations of commercial activity had the highest effect on housing value.