

The Impact of a New Subway Line on Property Values in Helsinki Metropolitan Area

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- The planning process of a new subway line started in 2007 in the Helsinki metropolitan area.
- The construction works were started in 2009.
- The new subway line is planned to be opened by the end of 2015.



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- The prediction of economic theory would be that housing prices near the subway stations would increase as a result of having better access and lower cost of traveling within the city (Alonso 1968, p. 59; Mills 1967, p. 200; Muth 1970, p. 5-6).
 - *The decreased travelling time increases the wellbeing of the community which causes growth in the prices of residential apartments. The prices will keep increasing because of the higher demand until the wellbeing has been restored to its previous level due to the increased living expenses.*
- The empirical evidence on these predictions is however missing, at least in Finland.



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- There is an ongoing debate whether or not transit-oriented development is cost-effective or not
- This study is to help to close this gap by analyzing the contribution of rail-induced price increases.
- The goal of this study is to estimate is there such an impact.
 - 1.) How far (meters) does the effect of a new subway line reach (Q1)?
 - 2.) How big (%) is the average impact (Q2)?
 - 3.) How big (€) is the total impact (Q3)?



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- The first question (Q1: How far (meters) does the effect of a new subway line reach ?) is analyzed and answered based on a literature review.
 - *Material used in this process involve only peer reviewed articles*



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- The second question (Q2: How big (%) is the average impact?) is analyzed and answered based on hedonic approach.

STEP 1

- *Ordinary least squares method (OLS): what is the relative effect of travelling time on housing prices in the case area.*
- *Material: Realized apartment prices from the last 12 months from the cities of Helsinki and Espoo. Total 3.431 observations were found.*

STEP 2

- *Apartments information + travelling times: how much does the travelling time changes due to the new subway line in the case area.*
 - What kind of apartments is there?
 - What is their current travelling time (routeplanner) and what is their future travelling time (routeplanner + timetables)?

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- The third question (Q3: How big (€) is the total impact?) is analyzed and answered based on Q1 and Q2.

Step 1 ▪ *Discover the apartments in the area (Q1 defines the area)*

Step 2 ▪ *Valuate every apartment (Q2 defines the OLS-model that is used to evaluation) and sum it up (total value of the apartments in the area)*

Step 3 ▪ *Define the total impact (Q2 defines the average relative impact)*

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How far (meters) does the effect of a new subway line reach (Q1)?

- The reach of the impact of a subway station has been analyzed in several studies.
 - *According to Dewees (1976) the impact area reaches to 1600 meters.*
 - *McMillen and McDonald (2004) discovered that the impact reaches up to 2400 meters.*
 - *Brandt and Manning (2012) estimated that the impact is the biggest when reaching a distance of 250 to 750 meters from a station.*
- In every study that was reviewed in this study the impact area reached at least to 400 meters.
- In surroundings like Espoo and Helsinki, the radius of the affected area will most likely be somewhere between 400-800 meter

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How big (%) is the average impact (Q2)?

- The impact that the new subway station has on residential apartment prices is on average + 15 % in 0-400 meter radius and + 11 % in 0-800 meter radius.
 - *In previous Finnish studies the average impact has been +11% and +7% respectively.*
 - *The impact in Finland seems to be higher than in other cities and countries. In other countries the average impact was +7,4% and +5,0% respectively.*

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How big (€) is the total impact (Q3)?

- The total impact in the studied residential area Matinkylä was 122 million euros in 0-400 meter radius and 193 million euros in 0-800 meter radius.
 - *As there are eight (8) stations the total impact is most certainly over one billion euros.*

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- The result of this study showed that the apartment prices increase over one billion euros. This means that it is undeniable that the investment is profitable.
- The construction of a new subway has also a lot of other impacts that are not in the scope of this study.
 - *There is a lot of evidence that public-transit induced premium on sales does not concern only apartments houses but also other property types, especially office and retail spaces (Lahti 1989, p. 66, 97; Debrezion et al. 2007, p. 161).*
 - *A new subway also changes the land use near the subway station to a more efficient one which might have major impacts on employment. (Bae et al. 2003, p. 92-93).*
 - *There are also adverse effects that the citizens are afraid of. In some areas of Helsinki the surroundings of subway stations are not especially appealing. Will the surroundings change to an undesirable direction is a question that can only be speculated.*

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- There has been a wide debate on whether the new metro will be a profitable investment. A better question would have been, for who is it profitable.
- Most of the profits are collected by individual property owners and whether this should be included in the profitability analyses at all, is a political choice rather than an empirical question.



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Thank you for your attention!

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