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The price you pay

What determines the willingness to pay for housing?

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Abstract

Housing expenditure is without doubt one of the biggest expenditure posts for all households. By using econometrics to estimate regressions with cross-sectional data including more than 1500 individuals, this thesis examines whether there is any individual characteristics that determines how big a share of the disposable income that is spent on housing each month. The results indicate that different factors affect the share of disposable income spent on housing depending on whether the respondent lives in a Single-family house or a multi-dwelling housing. It's indicated that housing is a normal good with an increased demand as income rises.

Keywords: Housing market, Normal goods, Willingness-to-pay, Allmännyttan, Product differentiation.

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1. Introduction

1.1 Background

The Swedish housing market consists of a plurality of tenure, mainly by real estate, such as villas and cottages, rental apartments and housing apartments. There are also owner-occupied apartments and cooperative apartments, but their market share is fairly small. The market share of owner-occupied housing within the real estate have been constantly just over 80 percent for the whole period from 1990 to 2007, and there is almost no variation between different regions of Sweden. (Boverket 2008). The multi-dwelling buildings of the Swedish housing market consist almost exclusively of rental apartments and housing apartments, with the market share of the rental apartments in 2007 being close to 70 percent, and the market share of the housing apartments being close to 30 percent. The share of housing apartments within Sweden has increased since 1990, while the share of rental apartments have decreased during the same time. The share of owner-occupied apartments and cooperative apartments have been stable around one to two percent of the market over time. There is some variation within the country, but the tendency towards more housing apartments is constant for all metropolitan regions, while there is no change in shares among the smaller cities. (Boverket 2008)

The Swedish housing market is characterised by a system of rental regulations, which is a complex system that disturb the market, by providing a price ceiling for housing. Allmännyttan¹, which is present in almost all of Sweden's 290 municipalities, is working as a price leader, and it's safe to say that the presence of Allmännyttan doesn't motivate price competition, which will offset the market price. There are some markets (municipalities) with an excess supply of rental apartments, but these are very few, and above all, very small in terms of population and apartment supply, so overall it's safe to say that there is no incentive in the Swedish housing market that stimulates price competition. (Boverket 2011a)

¹ Allmännyttan is housing companies within the public sector. In difference to its counterparts in many other countries, allmännyttan is not "social housing", but open for everyone in the housing market. (Boverket 2011c)

The 1st of January 2011, there were new directives implemented towards Allmännyttan, from then on forcing Allmännyttan to be run according to business principles and with normal yield requirements. The rents of the apartments of Allmännyttan no longer have exclusivity on working as a norm, but rents negotiated by tenant associations and organizations of private real estate owners may also be the norm. There were also regulations implemented against sharp increases in rent, to prevent rents to drastically increase. The effects of these changes have not yet, since they only been effective for just over a year, been evaluated. (Boverket 2011b)

One argument towards rent regulations is that it is a tool to decrease the segregation within the society. There are some evidence that this is not the outcome of the rent regulations, at least not in Stockholm, where there is evidence that people of non-Swedish heritage tend to live in less attractive areas than their income would suggest, and younger people tend to live in more attractive areas than their income suggest. It can't be said if this is an outcome of the rent regulations, but it is of clear evidence that there is segregation within the renting sector. (Fridell and Brogren 2007)

Since the 1st of October 2010, there is a mortgage cap of 85 percent of the value of homes, which aims to lower the loan-to-value ratio, in order to make people less exploited towards fluctuations of the economy. This regulation aims to give incentives to the households to limit their liabilities, and stand better protected against future downswings in the economy. (Finansinspektionen 2010) The effect of this regulation could be seen in the late autumn of 2011, with loan-to-value ratios decreasing for the first time since 2002. Since it's a fuzzy, rather than sharp, regulation, there is still some households which were able to take on loans higher than 85 percent of the value of their home, but this number fell from 20 percent in 2009 to 9 percent in 2011. It's seen that 98 percent of households with a loan-to-value ratio above 85 percent choose to amortise their mortgage. (Finansinspektionen 2012) This can be seen in contrast to the market as a whole, where only two out of three amortise on their mortgage, with only about 50 percent of those living in housing apartments amortising while almost 70 percent of those living in owner-occupied housing choose to amortise their loans. (SEB 2012)

1.2 Purpose

The purpose of this thesis is to examine if there are any socio-economic determinants of how much of an individual's disposable income an individual is willing to pay for housing, and if there is any housing characteristics that may be used as a determinant of the willingness to pay. If significant results are found, these can be used in the decision making when planning new buildings and neighbourhoods.

The aim of this thesis is to answer the question:

- What determines the willingness to pay for housing?

This question is the fundament of the thesis and will inspire all steps taken in the research of this thesis.

New residential areas are often built with a specific demographic group in mind, and by knowing how different characteristics of the housing affects their willingness to pay, the ones building and planning new residential areas can focus on characteristics that the targeted demographic group in general value, and thereby provide housing that meet customer preferences, while in the same time increasing producer surplus, by letting the producer know what to build, and where to build it.

1.3 Previous research

The research on the willingness to pay for housing based on individual's socio-economic profile is not very extensive, but there is some research done that try to investigate this matter. Green and Hendershott (1996) found that in 1980, those in their late seventies were only willing to pay half as much for housing as those in their early fifties. They found that this was not due to age, but rather due to different levels of education, with those in their early fifties on average being more educated, and different levels of income. It was also found, that within this sample, although the total effect of age on willingness to pay for housing was negative, the partial effect, if there is an effect, is positive. They also found that, given the same household income of \$25000, single households were willing to pay 80 percent as much as married

households, and that black individuals were willing to pay 70 percent as much as white individuals for housing.

Lee et al., (2001) found in their research about the Austrian housing market that both the income elasticity and the price elasticity of housing are within reasonable range, with income elasticity being close to one, meaning that a one percent increase in income results in a one percent increase in demand for housing, while the price elasticity of housing is in the region of 0,4, indicating that housing is a necessary good, and relatively insensitive to changes in housing prices. These findings may hold in Sweden as well, since the Austrian housing market bear some resemblance to the Swedish housing market, with strong public intervention in order to keep the scarce good housing available for lower income groups.

1.4 Disposition

The first chapter gives a background to the Swedish housing market, declares the purpose of the thesis, and gives a brief recollection of previous research on the subject. The theoretical framework is established in the second chapter, and the third chapter declares the method used. The fourth chapter explains the data used, and the expectations of it. An empirical analysis, and a discussion of the results are found in chapter five, and chapter six provides the conclusion of the thesis. The bibliography and the appendix are found at the end of the thesis.

2. Theoretical framework

This chapter will establish a theoretical framework for the discussion and the conclusion of this thesis. Focus will be given to individual choice theory.

2.1 Normal goods

As established by Lee et al., (2001), housing in Austria is a normal good, which most likely holds in Sweden as well. The characteristic of a normal good is such that an increase in income increases the amount demanded of the good. If the income elasticity is one, a one percent increase in income will increase the amount of housing demanded by one percent. For example, if the initial income is 10000SEK, and the initial demand for housing is 4000SEK, a 10 percent increase in income, with the new income being 11000SEK, would result in the demand for housing increasing to 4400SEK. A normal good is the opposite of an inferior good, which experience decreased demand as income increases. (Varian 1992)

2.2 Necessary goods

The finding of Lee et al., (2001), that the price elasticity of housing is somewhere in the region of 0,4, and therefore a necessary good stands without dispute, and is also well established within the psychological research, with Maslow's hierarchy of needs as a good illustration of the need for shelter. (Maslow 1943)

If an individual's purchasing power goes down, the consumption of both luxury goods and necessary goods will go down, but the consumption of necessary goods will proportionally decrease less than the decrease in purchasing power. To distinguish between necessary and luxury goods, one might say that goods with a price elasticity of demand higher than 1 is considered luxury goods, and goods with a price elasticity of demand lower than 1 is considered necessary goods. (Varian 2006)

2.3 Product differentiation

In general, no accommodation is exactly the same, although different accommodations, for example within an apartment complex, may be close to equal. Because there are no accommodations that are the exact equal of another, accommodations may be, according to economic theory, treated as differentiated products, which decrease the presence of price competition. The more the accommodation is able to differentiate itself from other accommodations, the more monopoly power it has, the less elastic is the demand curve for this precise accommodation. (Varian 2006) According to this theory, it is likely that accommodation prices would be lower the more homogenous the environment is, with a presence of price competition pushing the prices downwards.

There is both horizontal and vertical product differentiation, where horizontal differentiation focuses on what the consumers want and their preferences, while vertical differentiation keep focus on the consumers' willingness to pay for the given quality. Much of the literature about horizontal product differentiation are based on location model's, such as Hotelling's location model, where the location of the supplier is the most important differentiation, since the quality and the price of the good is the same all over the market. In vertical differentiation models, products do differ in quality, and if products of different quality are offered at the same price, inevitably all consumers' will choose to consume the one of highest quality, and thus it's important for the supplier of the good to know how high its potential customers value different characteristics and qualities, and how much they would be willing to pay for a combination of a given set of characteristics and qualities. (Sutton, 1986).

Since products', or in the case of this thesis housing, may differ in quality in many different ways, vertical differentiation is the most interesting when it comes to the housing market, since it focuses on the willingness to pay for a certain quality, rather than just the need of having a place to live.

2.4 Transaction costs

In the famous paper by Coase (1937) it is discussed why firms don't buy what they need from the market instead of creating their own planned economy, producing everything that the company need to run their business. He found that the transaction costs which stems from trade of goods and services might be very high. These thoughts can be applied on the housing market as well, with transaction costs definitely being at present. The real costs of changing your accommodation, depending on which type of housing you are in and what type of housing you are moving to, involves transfer fees, moving costs and other necessary costs. Add to this that the mental costs of changing accommodation, the search costs to find a suitable accommodation, and the perceived costs of changing accommodation may harm price competition on the housing market. (Boverket 2011a) If this theory holds, it is likely that individuals are willing to pay more for their current accommodation than the market price, since they value the avoidance of the transaction costs higher than the difference between their monthly expenditure and the market price.

2.5 Economies of scale of housing

The cost of living is not perfectly proportional to the size of the accommodation. As can be seen in in Mäklarstatistik (2012a) the purchase price per square meter of housing apartments goes down when the number of rooms increase, and the monthly fee paid to the housing association do not increase in the same proportion as the number of rooms in the apartment. This implies that you on average receive more living space per SEK spent the bigger your housing apartment is.

This same pattern holds for rental apartments as well, and is shown without doubt when looking at rental fees for rental apartments constructed in 2009, where the average price for a one room apartment with a kitchen is 5704SEK (6428SEK) within Allmännyttan (in the private sector), while a five room with a kitchen only costs, on average, 13213SEK (11826SEK). Although each room is probably not as big in a five-room apartment as in a one-room apartment, there is no doubt that you pay less per square meter the bigger apartment you are renting. (SCB 2010)

It is likely that the same arguing holds for real estate properties as for rental and housing apartments, although no corresponding statistics were found, since economies of scale applies to the production of real estate properties.

2.6 Willingness-to-pay and its problems

When trying to measure the willingness-to-pay for a good, several problems are at hand. Contingent valuation, which is a technique to value non-market goods, such as preservation of the environment or reduction of the impact of contamination, is often referred to as a stated-preference model, where individuals on a theoretical basis states how high they value the utility they get from the good. This can be seen in contrast to a revealed preference model, which are price-based, and derived through market actions.

Diamond and Hausman (1994), end up with the conclusion that contingent valuation is a flawed methodology when trying to estimate the non-use value, and that the absence of direct market actions leads to uncertainty both in the quality of the valuation and the calibration of usable numbers. This critic holds for the part of this thesis that investigates how much the respondents of the survey are willing to pay as a maximum for their housing as well. Even though housing is not a non-use good, in this particular case the absence of market actions creates a bias, and we can't tell if the bias is upwards or downwards.

Arrow et al., (1993), came up with some guidelines for contingent valuation surveys. The most important recommendations are that questions should be designed in a yes or no referendum, giving the respondent a clear action possibility, i.e. if the respondent are willing to pay a specific amount of money in order to preserve a specific natural resource. For the reliability of the survey, it's also desirable that surveys are carried out through personal interviews, with the interviewer being able to inform, and make sure that the respondent understands, about threats to the resource and that the questions are about a specific resource and not about the

environment as a whole. They also recommend subsidiary questions to make sure that the respondent fully understands the questions the interviewer want answers to.

2.7 Expected results

Out of the theoretical framework, we may expect that the price individuals are willing to pay is higher than the market price, or the price that they assume that others in their situation would be willing to pay for their housing. This based on the presence of transaction costs, which may decrease movability for individuals.

We also expect that expenditure as part of disposable income will decrease with age, since it stands without doubt that income is positively correlated with income as long as the individual is within working age, which is considered between the age of 20 and 65. (SCB 2012a). It is also likely that older individuals experience higher costs for their accommodation than younger individuals due to increased demand of quality and space, as well as it is possible that their costs are lower due to lower interest payments, as they have been able to amortise their loans for a longer period, as well as having bought their housing, whether it's a housing apartment or a real estate property for a lower price, since the prices for both housing apartments and real estate properties on average has increased over time. (Mäklarstatistik 2012b) Because of this, it's also plausible to believe that individuals who have lived in the same housing for a long time, if they are living in a housing apartment or in real estate property, will have a lower expenditure compared to their income each month.

Due to economies of scale, it is likely that households with two adult individuals and no children have a lower expenditure compared to their income. When measuring consumption units, the first adult is assigned the weight 1, and the second adult the weight 0,7, which gives a household with two adults two incomes, but only 1,7 consumption units, which increases the income per consumption unit. With the same arguing, households with children is expected to have higher expenditure compared to their income than single households and households with two adults but no children. Children are assigned a weight of 0,5, which would leave households consisting of one adult and one child a single income, but 1,5 consumption units, and

a household with two adults and one child would have two incomes, but 2,2 consumption units. (Statistics Finland)

A more detailed discussion on the expected effect of the different variables on the share of disposable income spent on housing per month is provided in section 4.1.

3. Method

The aim of chapter 3 is to explain the method used to answer the question of the thesis. The method used in this thesis is a multiple regression analysis, which is used to find indicators of the willingness to pay for housing among a set of individual data variables, and is explained in section 3.1.1. The program used to perform the multiple regression analysis is STATA11.

3.1 Regression analysis

To explain trends and dependencies, it is common to use regression analysis. Regression analysis may be used in time-series data, cross-sectional data, or both at the same time. This thesis consists only of cross-sectional data.

3.1.1 Multiple regression models

If estimating an econometric model with many variables, what is estimated is a multiple regression model. A multiple regression model consist of a dependent variable, most often Y , a constant variable, or the intercept, which often is denoted α , a set of independent variables, x , with the coefficient β , and finally a random variable denoted e .

Equation 1. The multiple regression model:

$$y_i = \alpha + \beta_2 x_{2i} + \beta_3 x_{3i} + \dots + \beta_k x_{ki} + e_i$$

The purpose of a multiple regression analysis is to find the independent variables, x , that hold predictive power for y . Essential for a correct multiple regression analysis is to use a model that is as correct as possible, which will be explained in section 3.2.

3.1.2 Cross-sectional data

Cross-sectional data is a one-dimensional data set, consisting of many observations at the same point of time. The sample within the cross-sectional data can be used to create a mirror of the entire population, and by running a regression on the cross-

sectional data, we might be able to do inference on the whole population. When using cross-sectional data, we cannot say anything about the causality, we can only see that there is, or is not, a correlation between the independent and dependent variables. When using cross-sectional data, the coefficients can only be interpreted under a *ceteris paribus* condition, which means that all other circumstances are kept constant.

Cross-sectional data, which variables are associated with one point in time, can be seen in contrast of time-series data, which is a sequence of points in time. Combining these two kinds of data gives a panel data set, which follows several subjects in several points of time. Panel data creates a more complex data set, but the benefit is that panel data usually provides better estimates of the different variables. The ideal for this thesis would be to use a panel data set, to be able to determine the causality within the model, but since there is no such data available, cross-sectional data works as a second best option.

3.2 Regression model

This section will describe the specification of the model, and also show the model applied in this thesis.

3.2.1 The Specification of the model

The specification of the model used is vital in order to get good estimates. The best way to end up with a suitable model is to start with a general model, with many variables and many powers of these variables, and test it down to a specific model. By doing this, you minimize the risk of leaving variables that hold predictive power out of the model, and you will end up with the best possible model given your data set.

The model used in this thesis is a multiple linear regression model, and the method used to estimate the unknown parameters of the model is Ordinary Least Squares, hereafter called OLS. There are some assumptions that need to be fulfilled if we want to use the OLS-model. These are: (Westerlund 2005)

$$A1. Y = \alpha + \beta_2 x_{2i} + e_i$$

$$A2. E[e_i] = 0$$

$$A3. Var[e_i] = \sigma^2$$

$$A4. Cov[e_i, e_j] = 0$$

A5. X is a non-random variable, and no variable can be written as an exact linear combination of the other independent variables.

$$A6. e_i \sim N(0, \sigma^2)$$

3.2.2 Applied model

In order to find out what it is that determines the amount of money individuals are willing to pay for their housing, three models will be estimated. One model is estimated on those living in multi-dwelling buildings, one model on those living in single-family houses and one combined model consisting of the whole survey sample.

3.3 Limitations

The model used is a multiple linear regression model. It holds some limitations, since it is linear in the parameters, it doesn't take into consideration whether the relative differences are small or big. The effect is assumed to be the same regardless of the size of the change. This isn't a big problem for this thesis, since the aim is to discover what factors affect the share of disposable income spent on housing, rather than making predictions about how much an individual spends on housing.

4. Data and expectations

In order to answer the question of the thesis, 'What determines the willingness to pay for housing?' a number of variables are needed. The variables used are derived from an online survey carried out in the beginning of April 2012, where about 1600 individuals answered to questions about their monthly housing expenditure and their individual and household income, as well as questions about their personal characteristics and the characteristics of their housing. The raw data have in some cases been modified. For example, on the question about which floor they are living on, in a multi-dwelling building, those who answered the alternative between the 6th and 9th floor were all presumed to live on floor 7.5, unless by cross-reference it could be determined that they lived on the 6th floor.

Observations with unrealistic answers were eliminated, for example most of the observations with an individual disposable income of more than 100000SEK were eliminated, since a combination of age, education and number of respondents stating an income of more than 100000SEK, indicated that the question was either misunderstood or the answer intentionally or unintentionally wrong.

The dependent variable used in the regression in the next chapter is *monthly housing expenditure as share of disposable income*, and the independent variable is the households' *monthly disposable income*, along with a number of *controlling variables*, such as age, years in current housing, education level, etcetera.

4.1 The variables

This part of the thesis explains the variables used, and also the expected coefficients of the variables for the regression analysis are discussed. Table 1 provides summary statistics for the variables used in the regression analysis.

Table 1.

Variable	Obs.	Mean	Std. Dev.	Min	Max
Age	1542	34.28	9.99	18.83	81.5
Male	1542	0.77	0.42	0	1
Female	1542	0.23	0.42	0	1
Adults	1542	1.71	0.59	1	4
Children	1542	0.63	0.97	0	6
Schooling	1542	5.02	1.92	0	7
Income	1542	22992	12988	1500	115000
Household income	1542	36063	20904	2000	200000
Time at Work (Years)	1465	4.69	4.36	0.25	15
Time in current housing (Years)	1542	4.39	5.18	0.5	23
Living floor (In multi-dwelling building)	1115	2.70	1.65	1	15
Floors in multi-dwelling building	1115	4.37	2.11	1	20
Monthly expenditure	1526	6761	3542	0	32000
Square meters	1541	85.10	46.46	9	350
Rooms	1540	3.21	1.83	1	11
Yard size (If in single family housing)	415	3471	14777	20	180000
Balcony or terrace (In multi-dwelling housing)	1092	0.71	0.45	0	1
Time to city centre (Minutes)	1542	10.48	8.13	2.5	60
Time to work (Minutes)	1493	20.90	16.23	0	60
Importance of city centre (5=high, 1=low)	1542	3.42	1.03	1	5
Importance of time to work (5=high, 1=low)	1542	3.88	0.92	1	5
Share of household income spent on housing	1522	0.2238	0.1223	0	0.9286

The questionnaire answered by this surveys respondents can be found in Appendix 2 together with an explanation of some variables that need to be explained.

4.1.1 Monthly expenditure variable

The monthly expenditure variable is an estimate of how much each respondent's household spend on housing per month. Only the basics are included in this measure, with the exclusion of electricity, which is not included. What is included depends on type of housing the respondent is in. If the respondent is in a rental apartment, the monthly expenditure is the rent. If the respondent is in a housing apartment, the fee to the tenants association, eventual interest rates and eventual expenses for heating, water and sewer constitutes the monthly expenditure. If living in single-family housing, the monthly expenditure is eventual interest rates and the cost for heating, water and sewer.

4.1.2 Monthly disposable household income

The monthly disposable household income constitutes of the households combined salary after taxes, eventual medical coverage, child benefits and eventual other grants. Given the findings by Lee et al., (2001), that housing is a normal good, with an income elasticity of less than 1, we expect that the monthly disposable household income will be negatively correlated with the share of income spent on housing, and that the coefficient will be somewhere between -1 and 0, since the demand for housing, housing being a normal good, will change less than the change in income.

4.1.3 Household expenditure share of disposable income

The household expenditure share of disposable income is the dependent variable in the regressions of this thesis. It is the monthly expenditure divided by the monthly disposable income, and takes on a value between 0 and 1.

4.1.4 Schooling

The variable schooling is a measure of years of extra education. The value of the variable depends on the highest level of schooling completed by the respondent, and

is ranging from 0 to 7, where 0 is equal to completion of elementary school, 3 is equal to completion of gymnasium, 5 means that the respondent has completed at most three years of university studies or a trainee education, and finally 7 means that at least four years of university studies has been completed by the respondent.

The expected value of the schooling coefficient is negative. Higher level of schooling is expected to decrease the share of income spent on housing. This follows from the strong correlation between education and earnings, and the assumption that the demand for housing doesn't change with schooling.

4.1.5 Time at work

This is a measure of how many years the respondent has been employed at the same place. My theory is that the demand for housing increases when a person has experienced a stable life situation for a longer time, maybe resulting in an increased demand for building a home rather than just a place to live, and that this makes an individual willing to spend a higher share of its income on housing.

4.1.6 Time in housing

Due to amortized loans and the historical increase in real estate prices, (SCB 2012b) it's expected that the share of income spent on housing is decreasing with time, and thus the variable coefficient is negative.

4.1.7 Floor

In multi-dwelling buildings, I expect that living on a higher floor is more expensive due to more privacy, less noise and better scenery, thus the share of income spent on housing being higher the higher floor the respondent lives on.

4.1.8 Square meters and rooms

A bigger house or apartment will most likely cost more, and therefore it's expected that the share of income spent on housing is higher the bigger the apartment is. It seems likely that the effect of square meters are higher than the effect of number of rooms, since the size of a room is very variable, and the number of square meters is a better measure of the size of the house or apartment.

Eventual ancillary rooms, such as storing facilities, are not included in the measure, and thus only the effective living space has any impact.

4.1.9 Yard

The size of the yard is likely to affect the expenditure, and thereby the share of disposable income spent on housing, through higher purchasing prices. The yard is measured in square meters, and it's assumed that only respondents living in single-family housings have a yard to their own. In the combined regression the logarithmic value of the yard size is used, and to avoid that all observations with no yard is eliminated, these were assigned a yard size of one square meter, giving the logarithmic value zero. This is a minor manipulation done with the sample in order to increase the degrees of freedom, and this change affects the outcome to an insignificant extent.

4.1.10 Balcony and terrace

Living in a multi-dwelling house, the inclusion of a balcony or a terrace to the apartment is likely to affect the price paid, and therefore the occurrence of a balcony or terrace is likely to have a positive effect on the share of disposable income spent on housing. The balcony and terrace variable is a dummy variable taking the value 1 if there is a balcony or terrace attached to the apartment, and 0 otherwise.

4.1.11 Distance to work and to city centre, and its importance

Shorter distance to work is beneficiary for the time of leisure, and it seems likely that people are willing to pay some extra to earn extra leisure time. The distance to the city centre gives an indication of how central the respondent lives, and since prices tend to be higher the closer to the city centre the housing is located, it seems likely that the share of income spent on housing is decreasing with distance to the city centre.

The distance is measured in travel time with the mean of transport most frequently used by the respondent.

The importance of the travel time to work and the city centre is measured on a scale ranging from 1 to 5, where 5 responds to very high importance. It seems likely that higher importance of travel time increases the willingness to pay for housing, and therefore that these variables have a positive effect on the share of income spent on housing.

4.1.12 Dummy variables and other characteristics

A wide range of dummy variables is used in the regression analysis, such as number of children and if the respondent is living in a single household. There are also dummy variables for different municipalities in Sweden. These dummy variables were chosen on the basis of number of respondents from respective municipality. Individual characteristics, such as number of adults, number of children and total consumption units in the household are also used in the regression analysis.

4.2 The Sample

It's highly possible that the sample used is not representative of the society. First of all, the demographics are not a mirror of the society. As it is, 77 percent of the respondents to this survey are men, which is not the case in the society as a whole.

Secondly, the age distribution shows that there is an excess of young people who have answered the questionnaire.

The biggest problem with this survey is that it's an Internet based questionnaire, which provides no contact between the respondent and the questioner. There might be persons answering the questionnaire who haven't fully understood the question, they might mistype or misclick, or even intentionally give a false answer to the question. There is also the problem that not all people are active on the Internet, and that the ones who are active may be somewhat different to those who aren't.

Even though there is a high risk that the inference is not externally valid, it might still be the case that it's internally valid, in this specific setting.

5. Empirical analysis, results and discussion

Chapter 5 provides the results of the regressions and the interpretation of the variable coefficients. Some descriptive statistics is used in order to try to understand what makes the municipality dummy-variables statistically significant.

5.1 The regressions

In this section, the empirical analysis of the thesis is presented. The individual regressions for those living in multi-dwelling buildings and those in single-family dwellings holds for Ramsey's RESET-test, meaning that it can't be rejected that the regression estimated is the functional form, or, that H_0 : model has no omitted variables can't be rejected.

The combined regression, involving both those living in multi-dwelling building and single-family dwellings, rejects H_0 : model has no omitted variables. Extensive testing has failed to create a model that have good properties, and therefore focus will be put on the two individual regressions that don't reject H_0 of the Ramsey's RESET-test. The combined regression is estimated using White's robust standard errors, in order to allow for the fitting of the model, since it suffers from heteroskedasticity.

The regressions were estimated using a general-to-specific approach, which involves all variables, and many powers of the variables, and testing down decreases the number of variables. In **Table 2**, the coefficients of the variables used in the different models are presented. The sample have decreased from the initial 1542 observations due to missing values on some variables in some observations. Chapter 5.3 will provide interpretations of the variable coefficients found in the regressions. Descriptive statistics of the respondents can be found in the appendix.

Table 2

Share of Disposable income

	Combined ²	Multi-dwelling ³	Single-family ⁴
Constant	4.7905*** (0.3440)	5.0580*** (0.2807)	4.1578*** (0.9606)
Age_log	-0.0737 (0.0678)	-0.0727 (0.0584)	-0.0444 (0.1641)
HHincome_log	-0.7823*** (0.0312)	-0.8322*** (0.0227)	-0.6286*** (0.0776)
Timeatwork	0.0037 (0.0031)	0.0054* (0.0030)	-0.0004 (0.0055)
timeinhousing	-0.0243*** (0.0027)	-0.0192*** (0.0029)	-0.0265*** (0.0053)
Squaremeters_log	0.3763*** (0.0493)	0.4015*** (0.0459)	0.2535** (0.1199)
Rooms_log	0.1160*** (0.0456)	0.1714*** (0.0432)	0.0133 (0.1181)
Consumptionunits_log	-0.6567 (0.4697)	0.4118 (0.2636)	-1.8766** (0.9492)
Adults_log	0.3076 (0.2770)		
Children	0.1085 (0.0936)		
timetowork	0.0013** (0.0006)	0.0004 (0.0006)	0.0032** (0.0015)
citycentre	0.0009 (0.0015)	0.0014 (0.0014)	0.0034 (0.0028)
Importancecitycentre	0.0124 (0.0102)	0.0117 (0.0097)	-0.0043 (0.0250)
importancework	0.1250** (0.0594)	0.0003 (0.0113)	0.2955** (0.1306)
Schooling2	-0.0006 (0.0006)	0.0003 (0.0006)	-0.0029** (0.0015)
Importancework2	-0.0177** (0.0082)		-0.0413** (0.0189)
After16	0.0080* (0.0043)	0.0011 (0.0041)	0.0141 (0.0087)
floorall	0.0146** (0.0066)		
Yardall_log	-0.0229* (0.0132)		
Singlehh	-0.1302 (0.0881)	0.1865* (0.1021)	-0.8499*** (0.3013)
Onechild	0.1268** (0.0521)	-0.0398 (0.0591)	0.2164** (0.0975)
Twochild	0.1843** (0.0793)	0.0076 (0.0866)	0.2561** (0.1165)
Threechild	0.2318* (0.1200)	-0.2686** (0.1228)	0.4545*** (0.1502)
Stockholm	0.2391*** (0.0319)	0.2846*** (0.0264)	-0.0642 (0.1306)
Göteborg	0.1240*** (0.0230)	0.1711*** (0.0283)	-0.0419 (0.1147)
Malmö	0.1356*** (0.0326)	0.1571*** (0.0450)	0.0633 (0.2389)
Lund	0.0907** (0.0376)	0.1333*** (0.0369)	-0.1931 (0.1425)
Umeå	0.0101 (0.0480)	-0.0356 (0.0622)	0.4809 (0.3397)
Uppsala	0.0553 (0.0523)	0.0875* (0.0499)	0.1114 (0.1733)
Strömstad	0.0843 (0.0705)	0.1345* (0.0696)	-0.0607 (0.1289)
Floor		0.0132** (0.0057)	
Adults2		-0.0233 (0.0159)	
Children2		-0.0158 (0.0124)	
Floors2		7.53e-10 (9.74e-10)	
Yard_log			-0.0658*** (0.0193)
Adults			0.3692 (0.2394)
Children			0.3181* (0.1757)
Balconyterrace		0.0045 (0.0221)	
Number of observations	1435	1009	390
Adjusted R-squared	0.5442	0.6787	0.3422

Notes: Ordinary Least Squares. Dependent variable: hhshareincome_log.

Standard deviation within brackets. ***p<0.01 **p<0.05 * p<0.1.

² F-value Ramsey RESET: 2.19. P-value Ramsey RESET: 0.0000

³ F-value Ramsey RESET: 1.24. P-value Ramsey RESET: 0.1354

⁴ F-value Ramsey RESET: 1.38. P-value Ramsey RESET: 0.0618

One may notice that for example the variables for number of rooms and number of adults are logarithmic or squared. This is due to the testing down from a general to a specific model, which gave us these particular models as the best possible models.

5.2 Descriptive statistics

In order to provide an explanation for the coefficients of the regressions, it's suitable to spend some time on the descriptive statistics we are able to draw from the survey sample.

5.2.1 The municipality dummy's

As can be seen, the coefficients for the dummy variables Stockholm, Göteborg, Malmö and Lund are statistically significant in both the combined regression and the multi-dwelling regression, along with Uppsala and Strömstad, which are statistically significant in the multi-dwelling regression. **Table 3 and table 4** provide mean estimates for some variables based on which municipality the respondent live in.

Table 3

	Household income	Household income M-D	Monthly expenditure	Monthly expenditure M-D	Share of income	Share of income M-D
Sample	36063 (532)	31925 (601)	6762 (91)	5530 (104)	0.224 (0.003)	0.234 (0.004)
Stockholm	42406 (1514)	41748 (1623)	7924 (269)	7692 (255)	0.217 (0.008)	0.217 (0.008)
Göteborg	32638 (1312)	30056 (1295)	6519 (208)	6202 (176)	0.247 (0.010)	0.255 (0.011)
Malmö	34974 (2376)	33831 (2530)	7003 (373)	6903 (396)	0.224 (0.013)	0.229 (0.014)
Lund	23451 (1916)	20546 (1710)	5375 (240)	5255 (255)	0.296 (0.016)	0.312 (0.017)
Uppsala	33545 (2653)	29650 (2808)	6259 (388)	5767 (381)	0.227 (0.020)	0.229 (0.021)
Strömstad	37628 (3400)	33500 (5767)	7517 (600)	6677 (602)	0.254 (0.027)	0.293 (0.046)

Notes: Standard errors within brackets. Estimations of means are made using STATA, and the share of income measures don't correspond exactly to the income and expenditure measures in the table. M-D=Multi-dwelling building.

Table 4

	Age	Time at work	Time in housing
Sample	34.28 (0.25)	4.69 (0.11)	4.39 (0.13)
Stockholm	35.07 (0.57)	4.14 (0.25)	4.09 (0.29)
Göteborg	32.69 (0.70)	4.16 (0.30)	3.83 (0.32)
Malmö	31.72 (0.93)	3.66 (0.46)	3.58 (0.66)
Lund	28.92 (0.80)	3.71 (0.34)	3.03 (0.40)
Uppsala	32.62 (1.31)	4.28 (0.58)	4.22 (0.69)
Strömstad	32.55 (1.68)	4.98 (0.67)	3.57 (0.89)

Notes: Standard errors within brackets.
All figures are in years.

As can be seen in the tables, the mean monthly expenditure on housing, for those living in multi-dwelling buildings, tend to be higher than average in five out of six municipalities. The exception is Lund, where monthly expenditure is lower, and monthly household income also is substantially lower than the mean for the whole sample. This is most likely due to the high share of students in Lund, which also corresponds to the lower mean age compared to the sample.

The most extreme case among the municipalities, Lund, with an estimated monthly expenditure as a share of income of about 0.312 for those living in multi-dwelling buildings, give some power to the finding in table 2 that household income is negatively correlated with the share of income spent on housing. Although household income is negatively correlated with the share of income spent on housing, housing is still a normal good, which experience increased demand as income rises. The share of income spent on housing decreases with household income, but the total demand for housing increases with household income.

It is most likely that the difference in demographics between the different municipalities and the whole sample accounts for a big part of the dummy coefficients. Other reasonable determinants of the dummy coefficients are geographical, sociological and psychological factors.

5.3 Interpretation of the variable coefficients

The statistically significant variables in the two models that couldn't be rejected by the Ramsey RESET-test, in the separate models for those living in multi-dwelling buildings and those living in single-family housing, are considered in this section, and the aim is to make an interpretation of the coefficients and see if they affects the share of income spent on housing in the expected way, as stated in section 4.1.

5.3.1 Household income

As expected earlier, the coefficient of the household income is negative, and within the region of -1 and 0. This means that with an increase in income, a lower share of the income is spent on housing, even though the demand for housing goes up, and that a decrease in income will increase the share of income spent on housing.

5.3.2 Schooling

In the single-family housing model, the effect of schooling on the share of income spent on housing is significant with the expected sign, but very small, while in the multi-dwelling model, the coefficient is not significant. One may suggest and suspect that extra schooling affects the share of income spent on housing primarily through the household income variable rather than through the schooling variable itself, since the correlation between income and schooling is high, and income may be seen as an outcome of schooling.

5.3.3 Time at work

Time at work, which I expected to have a positive effect on the share of income spent on housing, due to a stable life situation and a presumed desire to create a home rather than just a place to live, seems to have little or no effect on the dependent variable. In the multi-dwelling model the coefficient is positively significant on the 10 percent level, while in the single-family model it's negative and insignificant.

It might be that the effect is very small, or non-existing, or it might be that the wage developments eliminates any effect that a stable work life situation has on the share of income individuals are willing to spend on housing, if we consider the individual wage development being different, when an individual stays put with the same employer rather than changing employer on a more frequent basis.

5.3.4 Time in housing

Time in housing is negatively correlated with share of income spent on housing in both models, which is the expected effect brought up earlier in this thesis. The coefficient is highly significant in both the multi-dwelling model and the single-family model. It seems reasonable that historical value increases and amortized loans decrease the share of income spent on housing when an individual have stayed in the same housing for a longer time.

This arguing also holds for those who are renting their housing, since rent increases are regulated. Regulations make sure that landlords can't increase the rent beyond reason, forcing tenants to move. These regulations don't apply when a new tenant takes over a rental contract, and landlords are then able to make adjustments to the rent immediately to a level that is reasonable, and on the market price level. (Hyresnämnden 2012)

5.3.5 Floor

The share of income spent on housing by those living in multi-dwelling buildings is positively correlated with living on a higher floor. It seems like the previously brought up expectation, that people are willing to pay more to live on a higher floor, with more privacy, less noise and more spectacular scenery, might be true.

5.3.6 Square meters

The size of the housing in terms of square meters shows a positive correlation with the share of income spent on housing in both the multi-dwelling model and the single-family model, which is what could be expected beforehand. The models show clear support to the fairly uncontroversial thought that people are willing to pay a higher share of their disposable income for housing as the living area increases.

5.3.7 Rooms

The number of rooms shows different effect on the dependent variable depending on whether it's the multi-dwelling model or the single-family model that is taken into consideration.

Those living in multi-dwelling buildings seems to be willing to pay a higher share of their income for having more rooms, while the number of rooms doesn't seem to affect the share of income spent on housing for those living in single-family houses. Why this is can only be brought up for speculation, but a possible explanation is that single-family houses are more diversified, with bigger differences in characteristics, than apartments in multi-dwelling buildings. It might be that the effect of the number of rooms is eliminated by other variables, such as living area, yard area and other, unmeasured characteristics such as for example basements and outhouses.

5.3.8 Yard

The yard size, for those living in single-family housing, is negatively correlated with the share of income spent on housing, which wasn't expected. The most likely reason I can see for this is that single-family housings outside the most central parts of the municipalities, or even in the countryside, have larger yards at the same time as they are somewhat cheaper to purchase than their counterparts in the more central areas of the municipalities.

Another possible explanation, is that individuals with a higher income purchase houses with bigger gardens

5.3.9 Balcony and terrace

For those living in multi-dwelling buildings, I expected that those who have a balcony or a terrace would pay a higher share of their income for their housing. The multi-dwelling model gives no evidence that this should be the case, since the dummy-

variable indicating the occurrence of a balcony or a terrace is not significantly different to zero.

5.3.10 Distance to work and to city centre

I expected the time it takes to travel to work, or to the city centre, measured by the mean of transportation most commonly used, to be negatively correlated to the share of income spent on housing, meaning that longer travel times will decrease the share of household income spent on housing.

The only travel distance that seems to do any difference is the time it takes to go to work for those living in single-family housing, and the relationship is positive, which is different than the expected relationship. One may argue why this is, but one thought is that it might be that individuals are willing to pay higher prices for more peripheral housing, as long as the transportation possibilities meets certain standards, such as a well maintained road networks and a functioning public transport sector.

5.3.11 Household consumption units and number of children

The household consumption units are significantly negatively correlated to the share of household income spent on housing in the single-family model, and insignificant in the multi-dwelling model. It seems like a likely relationship in both cases. Apartment prices increase with the number of rooms, and extra consumption units requires extra rooms, while on average single-family houses are bigger in size, and the need to upgrade housing with increased number of consumption units aren't very present. Thereby, the share of income spent on housing can stay basically the same if the individual are living in a multi-dwelling building, and the number of consumption units, or family members, increases, while the share of income spent on housing possibly decrease if the number of consumption units increase in a single-family house.

In the single-family model, having children significantly increase the share of income spent on housing. It seems likely that this is mainly due to two reasons. Namely, that having children raise the demand for bigger housing, and that those having children living at home are on average younger than other house owners, meaning that they probably earn less, haven't had the time to amortize their loans and haven't benefited, by taking smaller loans, as much on the historical increase in real estate prices.

5.4 Willingness-to-pay compared to the market value

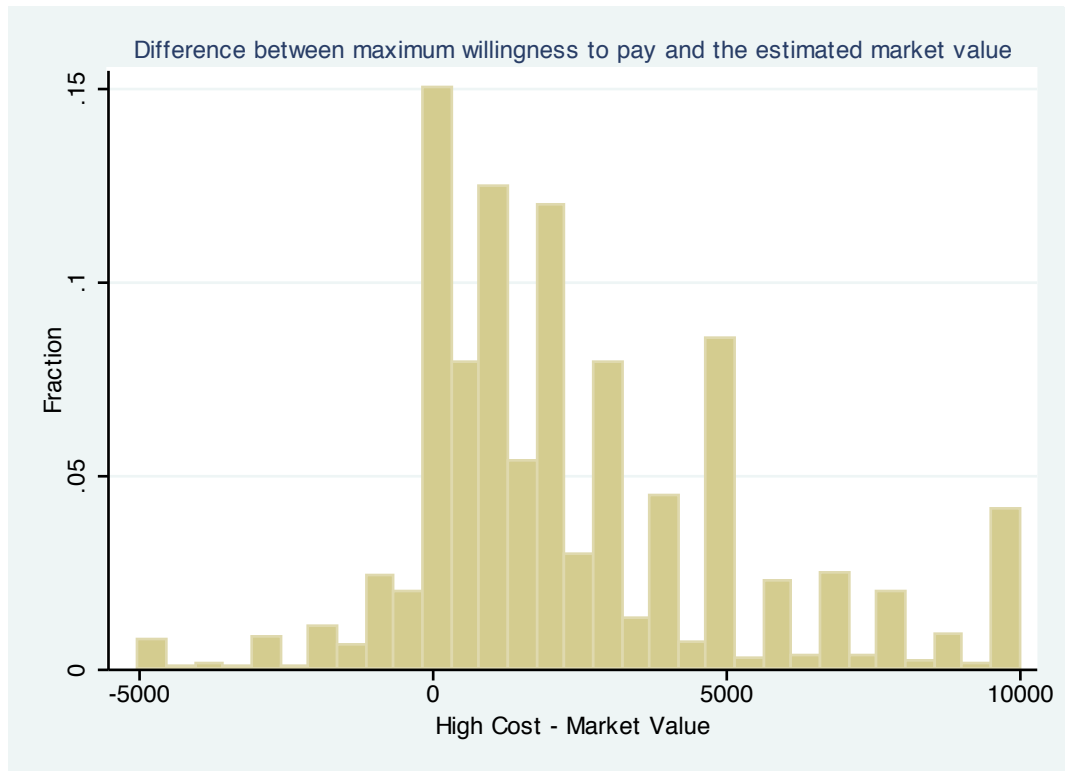
It is apparent that the respondents of the survey are willing to pay a higher price for their current housing than the estimated, by themselves, market value. If this is due to an endowment effect, with the subjective value being higher of a property that the respondent possesses, or if it's due to high transaction costs if they were to move out of their current housing into a new one, it's impossible to tell from the survey. No matter the reason, it seems like respondents of this particular survey are willing to pay more than the market price for their housing.

Table 5 shows the estimated mean of the two variables *High costs*, which is the price at which the respondent would seek other housing given its present income, and *Market value*, which is the amount of money the respondent believe others are willing to pay for the respondents housing. The estimated difference, *High costs* minus *Market value*, is also presented, and can also be seen in **Chart 1**.

Chart 2 shows the distribution of how much people would be willing to see their monthly expenditure as a share of disposable income increase before they would decide to change housing due to high costs.

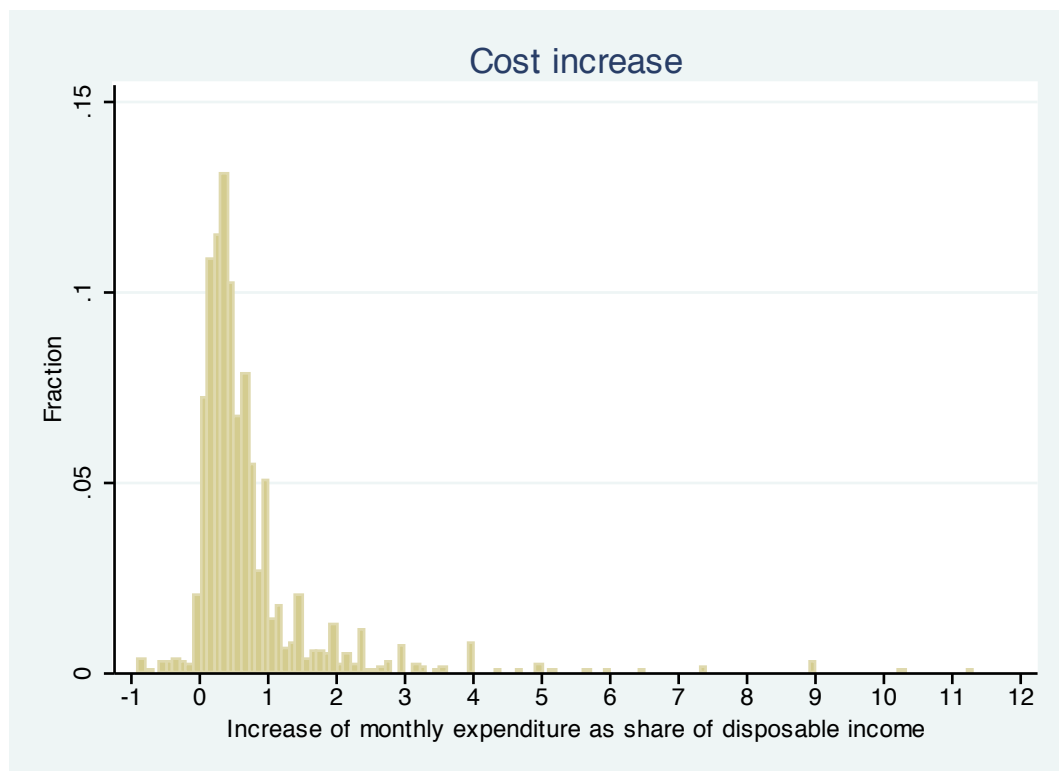
Table 5	Observations	Mean (SEK)
High costs	1536	10926
Market value	1516	8439
Difference High costs And Market value	1513	2481

Chart 1



Note: 26 observations < -5000 and 57 > 10000 are dropped in order to make the histogram easy to survey.

Chart 2



Note: Each tick on the X-axis represents an increase by 100 percent of the share of disposable income spent on housing.

6. Conclusion

The models used in this thesis indicate that there is a relationship between several characteristics and the share of household income respondents' pay for their housing. There is a negative relationship between household income and the share paid for housing, indicating that the finding of Lee et al., (2001), that housing is a normal good, also holds for Sweden. Also the time spent in current housing is negatively correlated, which were expected due to historical value increases and amortized loans for the benefit of those who have stayed in the same housing for a longer period.

The number of square meters were positively correlated with the share of income spent on housing in both models, while the number of rooms had a significant correlation, positive, among those who were living in multi-dwelling buildings.

For those living in single-family housing, the time it takes to travel to their job is positively correlated with the share of income they spend on their housing, while their schooling is negatively correlated with the share of income they spend on their housing. Also, having children have a positive effect on how much of their income they spend on their housing, which is a pattern that is not measurable for those living in multi-dwelling buildings.

One odd finding is that yard size is negatively correlated with the share of income spent on housing. This may be due to houses with bigger yards may be located further out from the city centre, and thereby cheaper. It may also be that individuals with higher incomes purchase houses with bigger gardens, and thereby eliminating the effect that were expected from the size of the yard.

There is no evidence that those living in multi-dwelling buildings, and in possession of a balcony or a terrace, pay higher shares of their income for their housing, but there is some evidence that living on a higher floor in a multi-dwelling building make individuals willing to pay a higher share of their income for their housing.

The statistically significant dummy variables for those living in Stockholm, Göteborg, Malmö, Lund, Uppsala and Strömstad, are most likely an outcome of differences in demographics between these municipalities and the sample as a whole.

It is important to remind the reader about the limited validity of this survey. Although it may be internally valid, there is no proof that these results hold for external validity. There may be some skewness in the demographics of the respondents, answers may be intentionally or unintentionally wrong, and there is the possibility that the respondents have misunderstood the questions asked, since the survey was an online survey, and not personal interviews.

The author would also like to remind the reader that the causality of the different variables isn't clear. Since this thesis consists of cross-sectional data, rather than panel data, which would have been ideal in order to find out if a change in the variables, i.e. a change in income, affects the share of income spent on housing.

The findings in this thesis may be of use when planning for new residential areas, but further research is needed in order to fully understand what it is that determines how big a share of an individual's outcome one is willing to pay for housing.

References

- Arrow, K., Solow, R., Portney, P., Leamer, E., Radner, R., and Schuman, H., (1993-01-11) "Report of the NOAA Panel on Contingent Valuation"
- Coase, R. H. (1937) "The Nature of the Firm" *Economica*, New Series, Vol. 4, No. 16 (1937), pages 386-405
- Diamond, P., and Hausman, J., (1994) "Contingent Valuation: Is Some Number better than No Number?" *The Journal of Economic Perspectives*, Vol. 8, No. 4, (1994), pages 45-64
- Fridell and Brogren (2007) "Lyckas hyresregleringen motverka segregation i Stockholm?" *Ekonomisk debatt*, Vol. 25, No. 6, (2007), pages 80-85.
- Green, R and Hendershott, P.H, (1996) "Age, housing demand, and real house prices", *Regional Science and Urban Economics* Vol. 26, No. 5 (1996) pages 465-480
- Lee, G, Schmidt-Dengler, P, Felderer, B, Helmenstein, C. (2001) "Austrian Demography and Housing Demand: Is There a Connection" *Empirica* Vol. 28, No. 3 (2001) pages 259-276
- Maslow, A. H. (1943) "A theory of human motivation" *Psychological Review*, Vol. 50, No. 4 (1943) pages 370-396.
- Sutton, J., (1986) "Vertical Product Differentiation: Some Basic Themes", *The American Economic Review*, Vol. 76, No. 2, (1986), pages 393-398
- Varian, H (1992), *Microeconomic Analysis: Third Edition*, W. W. Norton & Company, New York.
- Varian, H (2006), *Intermediate Microeconomics: A Modern Approach: Seventh Edition*, W. W. Norton & Company, New York.
- Westerlund, J., (2005), *Introduktion till ekonometri*, Studentlitteratur AB, Lund
- Boverket, (2008) "Förändringar av bostadsbeståndets fördelning på hustyper, ägarkategorier och upplåtelseformer 1990-2007", Bostadsmarknaden 2008-2009 - med slutsatser av bostadsmarknadsenkäten 2008, www.boverket.se/Global/Boende/Dokument/Bostadsbestandet.pdf (2012-05-10)
- Boverket (October 2011) (2011a) "Konkurrens på bostadsmarknaden" Rapport 2011:15, Regeringsuppdrag, www.boverket.se/Global/Webbokhandel/Dokument/2011/Konkurrens-bostadsmarknaden.pdf (2012-05-10)
- Boverket (2011-11-24) (2011b) "Ny lagstiftning förändrar förutsättningarna för

allmännyttan” <http://www.boverket.se/Boende/Kommunernas-bostadsforsorjning/Allmannyttan/allmannyttan2/> (2012-05-10)

Boverket (2011-10-21) (2011c) “En av fem bostäder finns I allmännyttan”, www.boverket.se/Boende/Kommunernas-bostadsforsorjning/Allmannyttan/ (2012-08-17)

Finansinspektionen (2010-07-09) “Bolånetak på 85 procent från 1 oktober”, press releases, www.fi.se/Press/Pressmeddelanden/Listan/Bolanetak-pa-85-procent-fran-1-oktober/ (2012-05-05)

Finansinspektionen (2012-03-13) “The mortgage cap is working”, press releases, www.fi.se/Folder-EN/Startpage/Press/Press-releases/Listan/The-Swedish-Mortgage-Market/ (2012-05-05)

Hyresnämnden (2012-03-29) “Trappningsregeln” www.hyresnamnden.se/Amnesomraden/Skalig-hyra/Trappningsregeln/ (2012-07-04)

Mäklarstatistik (2012-04-17) (2012a) “Mäklarstatistik – t.om. mars 2012”, www.maklarstatistik.se/media/12003/fördjupad_statistik_201204.pdf (2012-05-11)

Mäklarstatistik (2012) (2012b) Statistik, Sverige, maklarstatistik.se/maeklarstatistik/riket.aspx?typ=Boratter&srt=asc&tab=namn (2012-05-21)

SCB, BO30SM1001 (2010-10-01) “BO30 Avgifter/hyror för nybyggda lägenheter” www.scb.se/Statistik/BO/BO0404/2009A01/BO0404_2009A01_SM_BO30SM1001.pdf (2012-05-09)

SCB, (2012-02-17) (2012a) “Disponibel inkomst per konsumtionsenhet för individer efter ålder samt förändringar I procent”, www.scb.se/Pages/TableAndChart___28883.aspx (2012-05-04)

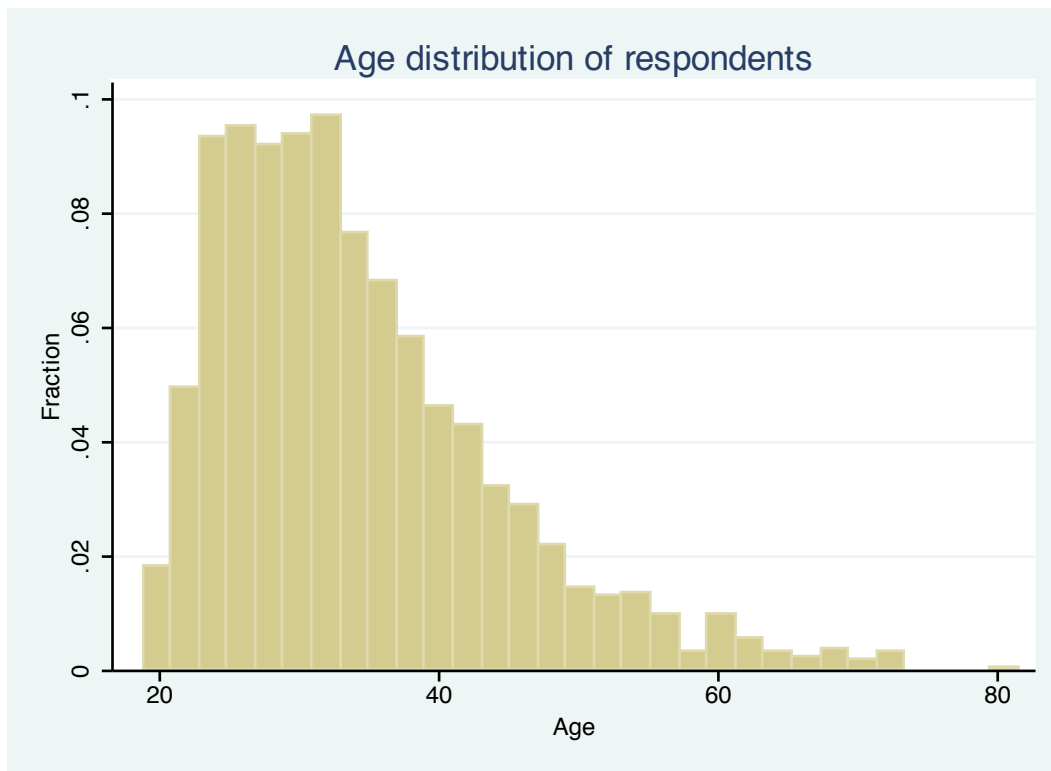
SCB, (2012-05-24) (2012b) “Fastighetspriser och lagfarter”, www.scb.se/Pages/TableAndChart___74160.aspx (2012-06-29)

SEB (2012-04-13) “Två av tre hushåll amorterar på bolånen”, press releases, http://cws.huginonline.com/S/1208/PR/201204/1602090_2720_4.html (2012-05-06)

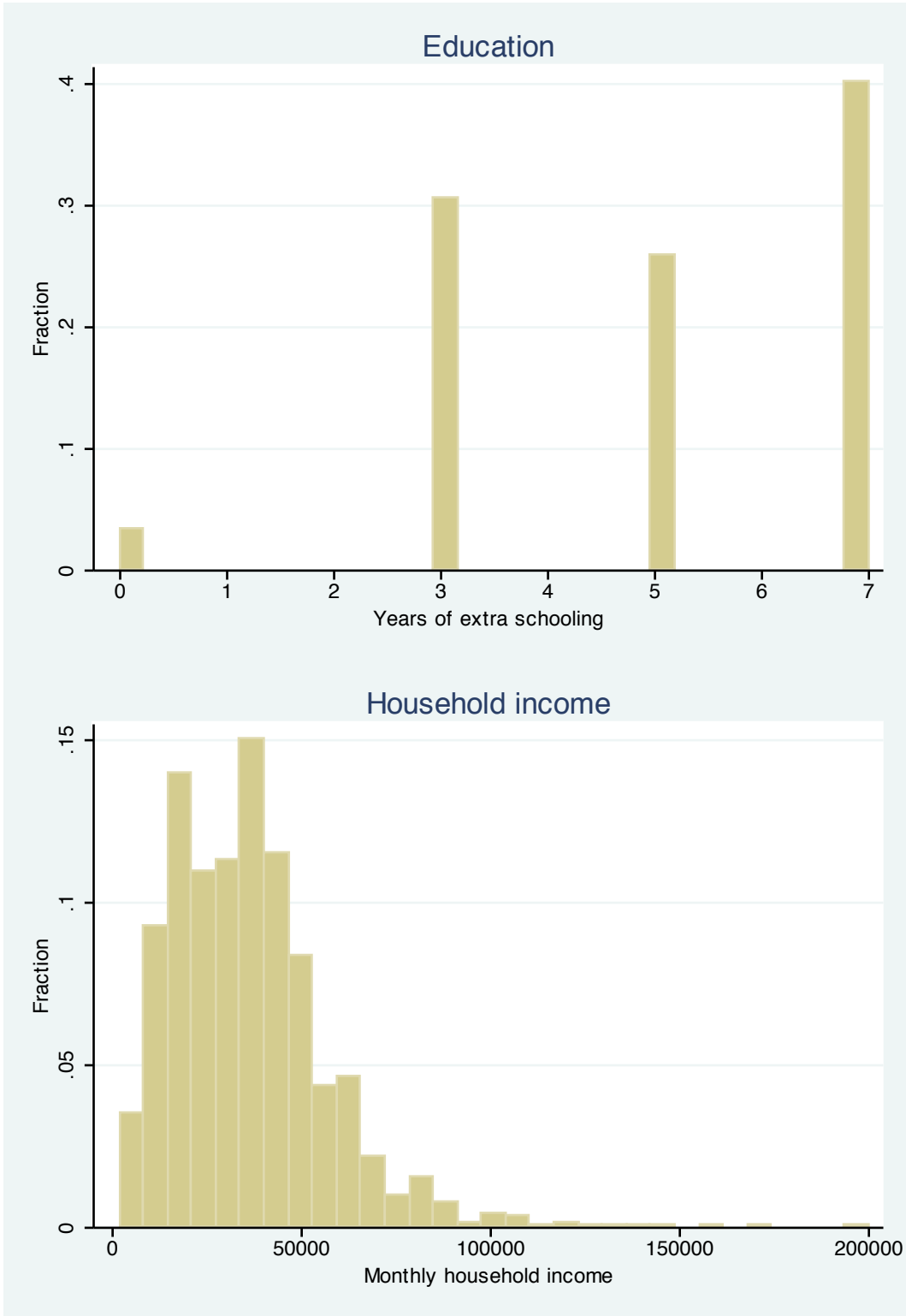
Statistics Finland, “Consumption Units (OECD)”, Metadata, www.stat.fi/meta/kas/kulutussyks_en.html (2012-05-17)

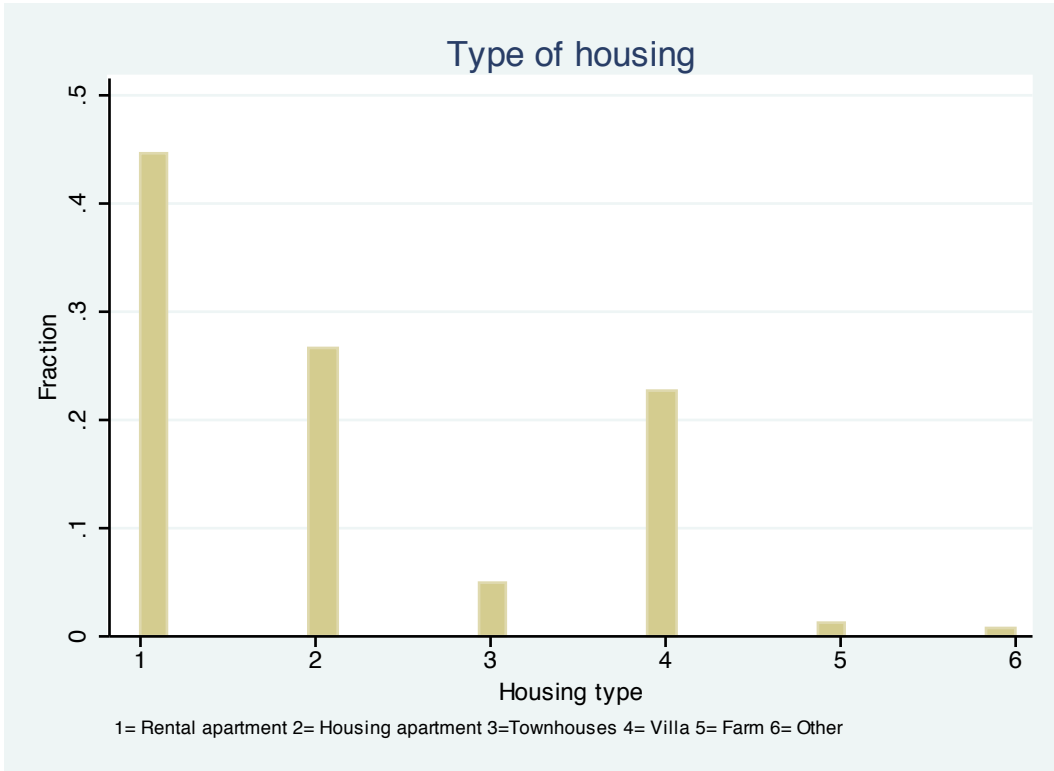
Appendix 1.

The respondents



Sex of the respondent	Frequency	Percent
Male	1190	77.17
Female	352	22.83
Total	1542	100





Appendix 2.

Explanation of variables

Timeinhousing	Number of years spent in the same housing
Timetowork	Time it takes for the respondent to transport him-/herself to work with the mean of transportation most commonly used
Citycentre	Time it takes for the respondent to transport him-/herself to the municipalities city centre with the mean of transportation most commonly used
Importancecitycentre	On a scale from 1 to 5 how important it is for the respondent to live close to the city centre. 1=not important, 5=Highly important.
Importancework	On a scale from 1 to 5 how important it is for the respondent to live close to work. 1=not important, 5=Highly important.
Schooling	Years of extra schooling after completion of elementary school

Appendix 3.

The Questionnaire

“Enkät om ditt boende

Den här enkäten är en del i ett arbete vid Ekonomihögskolan vid Lunds Universitet som är inriktat på boendefrågor.

Enkäten tar ungefär fem minuter att svara på.

Enkäten är helt anonym, och ingen kommer någonsin kunna se vad just Du har svarat. Svaren kommer inte kunna knytas till dig som person.

I slutet av enkäten kan du om du vill fylla i din epostadress, och du deltar i så fall i en utlottning av fyra trisslotter. Det lottas ut fyra trisslotter för var femtionde som svarar på enkäten.

Tack på förhand för att Du vill delta i den här enkäten.

Kön *

Kvinna

Man

Födelseår *

.....

Månad *

.....

Antal vuxna i hushållet *

1

- 2
- 3
- 4 eller fler

Antal barn i hushållet *

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7 eller fler

Vilken är din högsta avklarade utbildningsnivå? *

- Grundskola
- Gymnasium
- KY-utbildning
- Folkhögskola
- Lärlingsutbildning
- Högskola eller universitet, upp till 3 år
- Högskola eller universitet, 4 år eller mer

Vad är din ungefärliga inkomst efter skatt per månad? *

Inkomst inkluderar lön, sjukersättning, A-kassa, studiemedel, samt eventuella bidrag. Svara med enbart siffror.

.....

Vilken är ditt HUSHÅLLS ungefärliga totala inkomst per månad? *

Inkomst inkluderar lön, sjukersättning, A-kassa, studiemedel, samt eventuella bidrag. Notera att svaret blir detsamma som i föregående fråga om du bor ensam. Svara med

enbart siffror

.....

Hur länge har Du arbetat på din nuvarande arbetsplats? *

Är du student, så svara på hur länge du har studerat vid ditt nuvarande lärosäte.

Mindre än sex månader

Sex månader till ett år

1 - 2 år

2 - 3 år

3 - 4 år

4 - 5 år

5 -7 år

7 - 10 år

10 - 15 år

Mer än 15 år

Jag är arbetslös

Hur många år har Du bott i din nuvarande bostad? *

Har du bott i din nuvarande bostad i mindre än ett år svarar du 0.

.....

Din bakgrund

På den här sidan följer några frågor om din och dina föräldrars bakgrund.

Kom ihåg att hela enkäten är anonym. Ingen kan se vad just du har svarat.

Vilken del av världen kommer din pappa ifrån? *

Sverige

Övriga Norden (Norge, Danmark, Finland, Island)

Västeuropa

Östeuropa

Sydeuropa

Afrika

Nordamerika

Centralamerika
Sydamerika
Asien
Ost- och Sydostasien
Australien (Inkluderat Nya Zeeland)

Vilken del av världen kommer din mamma ifrån? *

Sverige
Övriga Norden (Norge, Danmark, Finland, Island)
Västeuropa
Östeuropa
Sydeuropa
Afrika
Nordamerika
Centralamerika
Sydamerika
Asien
Ost- och Sydostasien
Australien (Inkluderat Nya Zeeland)

Hur bodde din familj huvudsakligen under din uppväxt? *

Välj det alternativ som bäst speglar dina minnen.

Villa
Radhus
Lägenhet
Bondgård
Övrigt:

Hur gammal var Du när Du skaffade din första egna bostad? *

Om Du inte minns exakt så svara på ett ungefär.

Yngre än 18 år

- 18 år
- 19 år
- 20 år
- 21 år
- 22 år
- 23 år
- 24 år
- 25 år
- 26 till 30 år
- Äldre än 30 år

Din nuvarande bostad

På den här sidan ställs några frågor om din nuvarande bostad.

Kom ihåg att hela enkäten är anonym. Ingen kan se vad just Du har svarat.

Vilken kommun bor Du i? *

Observera att det är kommunen som efterfrågas, och inte vilken ort inom kommunen.

.....

Vilken typ av bostad bor Du i för närvarande? *

- Villa
- Radhus
- Hyresrättslägenhet
- Bostadsrättslägenhet
- Övrigt:

Vilken våning bor Du på?

Den här frågan skall endast besvaras ifall Du bor i lägenhet.

- Mark- eller källarplan
- Andra våningen
- Tredje våningen
- Fjärde våningen
- Femte våningen

Sjätte till nionde våningen
Tionde våningen eller högre

Hur många våningar är det i byggnaden Du bor i?

Frågan behöver endast besvaras ifall Du bor i lägenhet i flervåningshus.

Två våningar
Tre våningar
Fyra våningar
Fem våningar
Sex våningar
Sju till tio våningar
Mer än tio våningar
Övrigt:

Vad är din ungefärliga månadskostnad för ditt boende? *

Gör en så precis uppskattning av dina kostnader som möjligt. Bor Du i en HYRESRÄTT består din boendekostnad av din hyresavgift. Bor Du i BOSTADSRÄTT består din boendekostnad av avgiften till din bostadsrättsförening samt eventuella räntebetalningar, samt om Du har kostnader för värme, vatten och avlopp som inte täcks av din bostadsrättsförening. Bor Du i annan boendeform, som till exempel i VILLA eller BONDGÅRD, består din boendekostnad av eventuella räntebetalningar samt avgifter för värme, vatten och avlopp. Försök att göra en så precis uppskattning av din boendekostnad som möjligt. Ange svaret med enbart siffror.

Ungefär hur många kvadratmeter är boytan i ditt boende? *

Räkna INTE in förråd utanför bostaden, eller eventuella uthus såsom friggebod och liknande. Vet Du exakt hur stor boytan i ditt boende är kan Du välja nedersta alternativet, och ange ditt svar i enbart siffror.

15 kvadratmeter
20 kvadratmeter
25 kvadratmeter
30 kvadratmeter
35 kvadratmeter

- 40 kvadratmeter
- 50 kvadratmeter
- 60 kvadratmeter
- 70 kvadratmeter
- 80 kvadratmeter
- 90 kvadratmeter
- 100 kvadratmeter
- 110 till 150 kvadratmeter
- 160 till 200 kvadratmeter
- Mer än 200 kvadratmeter
- Övrigt:

Hur många rum finns det i din bostad? *

Räkna inte med vare sig toalett, kök eller eventuell hall.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- Övrigt:

Hur stor tomt har Du?

Frågan skall ENDAST besvaras om Du har egen tomt. Gemensamma innergårdar och liknande skall alltså inte räknas med. Ge ett så precist svar som möjligt. Svara i kvadratmeter och med enbart siffror

Har Du någon balkong eller privat uteplats till din bostad?

Frågan skall ENDAST besvaras om Du bor i LÄGENHET, oavsett upplåtelseform.

- Ja, balkong

Ja, uteplats alternativt altan

Nej, inget av alternativen

Avstånd hemifrån

Frågorna på den här sidan handlar om avstånd från din bostad.

Avståndet mäts i transporttid med färdmedlet du huvudsakligen använder för att ta dig dit, till exempel till fots, på cykel, med bil eller kollektivtrafik.

Kom ihåg att hela enkäten är anonym. Ingen kan se vad just Du har svarat.

Hur lång tid tar det ungefär för dig att ta dig till din orts eller stads centrum?*

Svaren avser minuter färdtid med det färdmedel som Du vanligtvis använder för att ta dig till centrum.

5 minuter eller mindre

10 minuter

15 minuter

20 minuter

30 minuter

45 minuter

60 minuter eller mer

Hur lång tid tar det ungefär för dig att ta dig till din arbetsplats eller skola? *

Svaren avser minuter färdtid med det färdmedel som Du vanligtvis använder för att ta dig till din arbetsplats eller skola.

5 minuter eller mindre

10 minuter

15 minuter

20 minuter

30 minuter

45 minuter

60 minuter eller mer

Jag arbetar hemifrån

Jag varken arbetar eller går i skolan

Viktigt för dig?

Här följer två frågor där Du skall värdera hur viktigt avståndet från din bostad är.

Tänk på avstånd som den tid det tar för dig att ta dig till platsen som efterfrågas, med det färdmedel som du vanligtvis använder för att ta dig dit.

1 = Helt oviktigt

2 = Ganska oviktigt

3 = Varken viktigt eller oviktigt

4 = Ganska viktigt

5 = Mycket viktigt

Kom ihåg att hela enkäten är anonym. Ingen kan se vad just Du har svarat.

Hur viktigt är det för dig att ha kort restid till din orts eller stads centrum? *

1 2 3 4 5

Helt	Mycket
oviktigt	viktigt

Hur viktigt är det för dig att ha kort restid till din arbetsplats? *

Svara på den här frågan även om du för tillfället jobbar hemifrån eller är arbetslös.

1 2 3 4 5

Helt	Mycket
oviktigt	viktigt

Hur skulle Du göra?

Följande frågor baserar sig på att det sker en förändring i antingen din bostadskostnad eller din månadsinkomst.

Försök att tänka dig in i hur Du skulle agerat om något av detta sker.

Exakta förutsättningar för vad som händer står under varje fråga, och det är VIKTIGT att Du läser dessa ordentligt.

Kom ihåg att hela enkäten är anonym. Ingen kan se vad just Du har svarat.

Ungefär vid vilken månadskostnad skulle Du överväga att flytta på grund av att

kostnaderna för ditt boende blev för höga? *

Tänk på din NUVARANDE bostad, och under förutsättning att du har SAMMA månadsinkomst som tidigare. Svara med enbart siffror.

Skulle Du bo kvar i din nuvarande bostad om din månadsinkomst ökade? *

Tänk dig att din månadsinkomst ÖKAR, och att kostnaden för din bostad är SAMMA som tidigare. Svara med den lägsta ökningen av din månadsinkomst som skulle få dig att byta bostad.

1000 kronor

2000 kronor

3000 kronor

4000 kronor

5000 kronor

7000 kronor

10000 kronor

15000 kronor

20000 kronor eller mer

Jag skulle inte flytta oavsett hur mycket min månadsinkomst ökade.

Antag att Du har en månadsinkomst på 15000 kronor efter skatt. Ungefär hur mycket skulle Du vara villig att betala för ditt boende? *

Försök här att INTE tänka på det boende Du har idag, utan försök tänka på hur stor del av din inkomst som Du skulle vara villig att spendera på ditt boende utifrån din inkomst. Svara med enbart siffror.

Antag att Du har en månadsinkomst på 20000 kronor efter skatt. Ungefär hur mycket skulle Du vara villig att betala för ditt boende? *

Försök här att INTE tänka på det boende Du har idag, utan försök tänka på hur stor del av din inkomst som Du skulle vara villig att spendera på ditt boende utifrån din inkomst. Svara med enbart siffror.

Antag att Du har en månadsinkomst på 30000 kronor efter skatt. Ungefär hur mycket skulle Du vara villig att betala för ditt boende? *

Försök här att INTE tänka på det boende Du har idag, utan försök tänka på hur stor del av din inkomst som Du skulle vara villig att spendera på ditt boende utifrån din inkomst. Svara med enbart siffror.

Antag att Du har en månadsinkomst på 40000 kronor efter skatt. Ungefär hur mycket skulle Du vara villig att betala för ditt boende? *

Försök här att INTE tänka på det boende Du har idag, utan försök tänka på hur stor del av din inkomst som Du skulle vara villig att spendera på ditt boende utifrån din inkomst. Svara med enbart siffror.

Ungefär hur mycket tror du att andra personer skulle vara villiga att betala för ditt nuvarande boende? *

Tänk här på ditt nuvarande boende och försök att föreställa dig hur mycket någon annan som söker bostad av den typ som du bor i skulle vara villig att betala. Frågan avser hur mycket du tror att en sådan person i genomsnitt skulle vara villig att betala per månad för att bo i din bostad. Svara med enbart siffror”