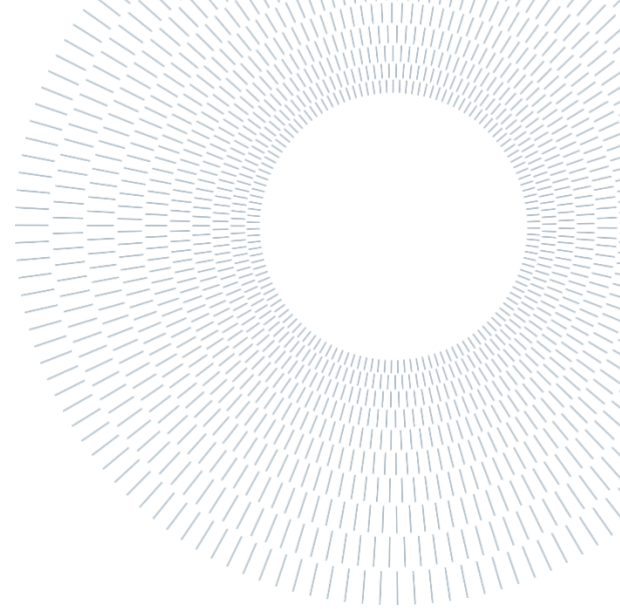




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EXECUTIVE SUMMARY OF THE THESIS

Immigration and Housing Prices: The Case of Belgium

TESI MAGISTRALE IN MANAGEMENT ENGINEERING – INGEGNERIA GESTIONALE

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1. Introduction

Immigration has become a significant global issue in recent years, with the number of migrants worldwide tripling in the past 50 years [1]. This phenomenon is driven by factors such as political unrest, conflicts, and climate crises. Previous studies have shown immigration to have positive, negative or null impacts on housing prices [2, 3], with an increase of immigrants leading to an increase in the demand, but also having potential additional effects such as white flight and negative wage impacts [2].

This research examines this issue in the context of Belgium, using district-based panel data ranging from 2001 to 2017. Data primarily comes from the Belgian Statistical Office (Statbel) website and its Walloon counterpart, the IWEPS.

I used both OLS regressions and instrumental variable regressions to analyze immigration's impact on three types of housing prices at a

district level: general house prices, individual house prices and apartment prices.

The results of these regressions are discussed, followed by a robustness test on two data subsets. I then suggest some paths for further research as well as highlight the limitations of the study and provide recommendations for stakeholders such as governmental institutions and real estate developers.

2. Background

The International Organization for Migration defines migrants as individuals moving temporarily or permanently across borders for various reasons [4]. More precisely, an international immigrant is a migrant who relocates to another country for at least 12 months and intends to remain there permanently [5], while a short-term migrant is

an individual only moving away for a limited duration. Refugees, on the other hand, are individuals fleeing persecution or conflicts in their home countries [6]. Overall, the number of international migrants has been steadily increasing, and Europe remains their main destination, accommodating about 30.9% of global immigrants [1].

For centuries, Belgium has been a destination for individuals seeking better opportunities, education, but also refuge. Its central position and early industrialization during the 19th century attracted skilled workers from neighboring countries. Following WWI and WWII, many Italian, Turkish and Moroccan immigrants, among others, came to Belgium to rebuild the country and to fill labor gaps in industries with reduced workforce such as mining and metallurgy [7].

Following the 1970's old crisis and recession, Belgium shifted from temporary guest worker programs to permanent residency and family reunification [8]. Indeed, instead of leaving the country due to the worsening economic conditions, many migrant workers chose to stay and become permanent immigrants. This led to new integration efforts from the government and changes in immigration patterns. Nowadays, immigrants are mostly highly skilled workers, European nationals and international students.

While many previous studies have explored the social and political consequences of immigration on host countries, studies about their impact on the housing market conducted on different countries are fairly recent and show varying relationships between immigration and house prices. Some studies suggest a positive relationship, with immigration leading to higher prices like in the case of Canada, the USA, Spain or Switzerland, while some show no relationship between the two or a negative impact on housing prices.

3. Methodology

This study builds upon the widely used model developed by Saiz in his research on American housing prices and immigration [2]. The equation used in this paper is as follows:

$$\Delta \ln(p_{it}) = \beta \left(\frac{\Delta I_{it-1}}{POP_{it-2}} \right) + \pi \cdot U_{it-1} + \mu \cdot \Delta \ln(I_{it-1}) + \Lambda_t + \alpha_i + \Delta \varepsilon_{it} \quad (1)$$

Like Saiz, I used a first-difference estimation approach to mitigate potential biases arising from unobserved factors. Specifically, this study focuses on the short-term effects of immigration on the Belgian housing market, using year-on-year differences in the regressions.

The dependent variable of the equation is the variation in the natural logarithm of housing prices, while the independent variable of interest is the lagged change in the number of immigrants in a district relative to the twice lagged total population of that district. The capita income and unemployment rate are used as control variables, while time and district fixed effects are taken into account using dummy variables.

Additionally to the base model, I conducted regressions adopting an instrumental variable (IV) approach to address potential endogeneity issues. The instrument used is called the past-settlement instrument and relies on historical immigration patterns within specific nationalities across administrative divisions [9]. It presents as follows:

$$ss_MIG_{i,t} = \sum_n^N (ss_MIG_{i,t}^n) = \sum_n^N \left(\frac{MIG_{i,1996}^n}{MIG_{1996}^n} * \frac{\Delta MIG_{i,t}^n}{POP_{i,t-1}} \right) \quad (2)$$

This instrument accounts for the fact that immigrants tend to settle in areas where others from the same nationality have previously established themselves.

The past-settlement instrument is made of two components: the "share" and the "shift." The share reflects the proportion of immigrants from a specific origin country in a given district in reference year 1996, relative to the total immigrants from that country in Belgium in 1996. The shift measures the net inflow of immigrants from the same origin country in a district in a particular year relative to the district's total population in the previous year.

For the IV approach to be valid, it assumes that immigrants in the base year (1996) are not better at predicting housing price developments than locals and that annual changes in national immigration flows are not influenced by the economic conditions of the areas where immigrants settle.

This study uses both OLS regressions and IV regressions and, in all specifications, considers year fixed effects and robust clustered standard errors.

4. Empirical Results

For all types of dwellings, the specifications including all control variables and both time and district-fixed effects are preferred and

presented in Table 1. For both general and individual housing prices, the independent variable of interest representing variations in immigration holds statistical significance, at a level of 1% for the former and 5% in the case of the latter.

I found that immigration has a significant negative impact on both types of dwellings, with a 1% increase in immigrant population over total population leading to a -0.43% decrease in general housing prices and -0.92% decrease in individual house prices. Additionally, no significant effect was found regarding apartment prices.

Additionally to the regressions presented in Table 1, IV regressions were conducted for all three types of dwellings using the past-settlement instrument. However, first-stage regression tests as well as post-estimation endogeneity tests showed that the independent variable of interest was not endogenous. Therefore, the use of an instrument is not justified, and results of the OLS regressions are less biased than those obtained through the IV regressions.

Table 1: Results of OLS regressions on three types of dwellings

	$\Delta\text{Log house price}$ (general)	$\Delta\text{Log house price}$ (individual)	$\Delta\text{Log apartment}$ price
Number of observations	714	714	701
Constant	0.07 (0.013)***	0.063 (0.027)**	0.027 (0.032)
(New immigrants at t-1)/(Population at t-2)	-0.429 (0.157)***	-0.922 (0.383)**	-0.343 (0.243)
$\Delta\text{Log income at t-1}$	-0.047 (0.395)	0.193 (0.386)	0.599 (0.426)
Unemployment at t-1	-0.39 (0.215)*	-0.953 (0.453)**	0.149 (0.528)
Time Fixed Effects	Yes	Yes	Yes
District Fixed-Effects	Yes	Yes	Yes
R-Squared	0.598	0.361	0.193

Notes: (1) Standard errors in parentheses.

(2) * significant at 10%; ** significant at 5%; *** significant at 1%.

4.1. Conclusion of Empirical Results

This negative impact of immigration on housing prices is significantly different than most cases in the literature. Nevertheless, it is similar to results estimated by Sá in her study in the context of Britain [3]. While an increase in immigrant population has a direct positive effect on demand and prices, it can be counterbalanced by several phenomena.

One of these phenomena which could explain this decrease in housing prices is called the white flight phenomenon. It is very prevalent in Belgium and implies that natives will leave an area if more immigrants come in said area. If natives with higher incomes move out and immigrants with lower incomes settle, local wealth decreases, housing demand too and prices follow.

A second possible explanation is a decrease in local average wages as immigrants can be substitutes to local workers as they are more likely to accept lower wages, therefore driving local wealth down, leading to a decreased demand and lower prices.

4.2. Additional Results

After analyzing the overall impact of immigration on housing prices in Belgium, it appeared interesting to conduct further analyses to show the impact on the housing market of the arrival of immigrants from different continents of origins. For these analyses, only general house prices were considered.

Overall, immigrants from all origins but Africa were shown to have a negative impact on housing prices. Specifically, a 1% increase in the inflow of European immigrants leads to a 1% decrease in general house prices. Asian immigrants have an even larger negative effect, causing a 1.74% decrease in house prices with a 1% increase in their inflow. American immigrants have a similar effect to that of Asians.

African immigrants, on the other hand, have a positive impact, with a 1% increase resulting in an 0.83% increase in general house prices. Oceanians have no significant impact due to their small numbers in Belgium.

Overall, the presence of African immigrants mitigates the overall decrease in house prices caused by immigration from Europe, Asia, and America.

5. Conclusion

This thesis addresses the often-overlooked area of research which is the impact of immigration on countries' housing markets.

The study analyzes data from 2001 to 2017 across Belgian districts, and reveals that immigration has a negative impact on both general and individual housing prices, and no impact on apartment prices. This is contrary to most prior research on immigration and housing prices, and may be due to phenomena such as the white flight phenomenon and the substitution of local low-skilled workers with cheaper immigrant labor.

This research also showed that not all immigrants have the same impact on the Belgian housing market, with most of them leading to a decrease in prices while African immigrants have the opposite effect.

Lastly, while most researchers rely on instrumental variable regression to study the impact of immigrants on housing prices, it was shown that this methodology is not applicable in the case of Belgium, at least at a district level. It also raises questions regarding the assumption made by many researchers that this method is applicable to their case without necessarily questioning the possible exogeneity of the main independent variable measuring immigration.

6. Limitations and Recommendations

Certain limitations faced during the elaboration of this paper as well as future research paths should be considered.

The study's primary limitation is the lack of recent housing sales data beyond 2017. Future studies should integrate more up-to-date information to capture more recent events, but also explore earlier years to provide insights into long-term impacts of immigration on housing prices. Including additional factors such as governmental policies and more economic variables, and analyzing immigration's impact at a more granular level could also provide a more complete overview of the issue as well as yield insights allowing to tailor more specific, locally-targeted policies. Additionally, it could be interesting to examine the specific influence of refugees themselves and not immigrants as a whole.

Lastly, this study emphasizes the need for policies and programs promoting mixed neighborhoods and a better integration of immigrants. This would help prevent phenomena such as white flight, therefore preventing a devaluation of the housing stock as seen in the case of Belgium. On a last note, governments should elaborate incentives aimed at real estate developers for them to develop quality but affordable housing, with the aim of creating inclusive and diverse communities.

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