When Policy Innovation Fails: Factor Analyses of the Lisbon Real Estate Market re. Strategic Public Policy, Unintended Consequences, and the Future Macroprudential Agenda.

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Dissertation written under the supervision of Prof. Peter V. Rajsingh

Dissertation submitted in partial fulfilment of the requirements for the degree of MSc in Business Administration at Católica-Lisbon School of Business & Economics

09/06/2020

Acknowledgments

I would like to express my deepest gratitude to Prof. Peter V. Rajsingh for the guidance, expert knowledge, and time invested in this dissertation. His continuous support and dedication were critical for the final outcome.

I am thankful to all the experts who willingly gave up their valuable time to be interviewed. They provided their experience and knowledge, which added decisive insights to this thesis. Thank you, Dr. Paulo Neves, Dr. Luís Marques Mendes, André Monteiro, and those who preferred to remain anonymous.

I extend my gratitude to people who have been influential in my journey, both as a student and a person. There's a piece of all of them in this project.

To João, Ricardo, and Rui, for lifelong friendship and being a second family for the past six years. Thank you.

To Laura, for unconditional friendship, support, motivation, and love. Thank you.

To my parents, Benedita and Rui, for their caring, comprehension, selflessness, and love. I am eternally grateful for the way they are role models of what one should aim for in life. Thank you.

Abstract

Title: When Policy Innovation Fails: Factor Analyses of the Lisbon Real Estate Market re. Strategic Public Policy, Unintended Consequences, and the Future Macroprudential Agenda.

Lisbon residents currently face a habitational crisis inadvertently caused by innovative governmental actions. Policies aimed at attracting foreign investment and spurring urban rehabilitation, coupled with a favourable macroeconomic environment, transformed Lisbon into the most unaffordable city in Europe. This thesis researches the causal factors of the Lisbon housing crisis drawing upon academic literature, review of historical and legal phenomena, and empirical data collection. We inquire into the main variables that contributed to a real estate (RE) bubble in Lisbon and uncover the consequences thereof. We used a hybrid methodological approach, including surveys that enabled correlational analysis, and semi-structured interviews which added granularity to the real-world context. We identified tourism, increased construction costs and Golden Visa demand as the major drivers of a top-to-bottom market dislocation that caused a bubble in the lower residential market segments. Moral hazard also played a role. We found that economic displacement is systematically occurring for young adults who do not own their homes. We also found that education does not bear a significant correlation with higher income levels for the young-adult segment. We frame a potential solution to the crisis in terms of macroprudential policy and governmental intervention. Finally, we highlight the urgency of addressing the Lisbon housing bubble by discussing its impact upon national demographics.

Keywords: Lisbon Real Estate Market; Habitational crisis; Macroprudential Policy; Public Policy Innovation.

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Resumo

Título: Quando a Inovação Política Falha: Análises Fatorais do Mercado Imobiliário de Lisboa relativamente a Política Pública Estratégica, Consequências Involuntárias e Futura Agenda Macro prudencial.

Os Lisboetas enfrentam atualmente uma crise habitacional causada inadvertidamente por ações governamentais inovadoras. Políticas destinadas a atrair investimento estrangeiro e a estimular a reabilitação urbana, aliadas a um ambiente macroeconómico favorável, transformaram Lisboa na cidade mais inacessível da Europa. Esta tese investiga os factores causais da crise habitacional de Lisboa com base em literatura académica, na revisão dos fenómenos históricos e legislativos e na recolha de dados empíricos. Inquirimos sobre as principais variáveis que contribuíram para a bolha imobiliária em Lisboa e descobrimos as suas consequências. Utilizámos uma abordagem metodológica híbrida, incluindo inquéritos que permitiram uma análise correlacional, e entrevistas semiestruturadas que acrescentaram a granularidade necessária ao contexto do mundo real. Identificámos o turismo, o aumento dos custos de construção e a procura derivada de investidores Golden Visa como os principais fatores causais de um deslocamento de mercado de cima para baixo que provocou uma bolha nos segmentos mais baixos do mercado residencial. Os riscos morais também desempenharam um papel importante. Verificámos que a deslocação económica está a ocorrer sistematicamente no segmento dos jovens-adultos que não são proprietários das suas casas. Verificámos também que a educação não tem uma correlação significativa com níveis de rendimento mais elevados no segmento dos jovens-adultos. Definimos uma solução potencial para a crise em termos de

política macro prudencial e de intervenção governamental. Finalmente, salientamos a urgência de abordar a bolha habitacional de Lisboa, discutindo o seu impacto na demografia nacional.

Palavras-Chave: Mercado Imobiliário de Lisboa; Crise Habitacional; Política Macro Prudencial; Inovação de Política Pública.

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List of Abbreviations

ECB – European Central Bank

HH - Household

MP – Macroprudential policy

NPL – Non-Performing Loan

NRAU – Novo Regime do Arrendamento Urbano (New Urban Lease Regime)

PSI20 – Portuguese Stock Index

RE – Real Estate

STR – Short term rentals

US – United States

Glossary

Financialization of housing – the phenomenon occurs when housing is treated as a commodity – a vehicle for wealth and investment rather than a social good.

Economic displacement – a systematic process whereby residents' purchasing power is diminished by soaring rents (Marcuse, 1985).

Executive Summary

Two years ago, my landlord increased my rent. It was a 50% increase. As a student sharing housing, I was able to cope with the rise. But I never stop wondering: what if I hadn't been a student, but were living there with my wife and kids? Could I have sustained that level of price increase if the burden could not be shared with multiple flatmates? Would it be *worth* paying 50% more for the same accommodation? Or would I have moved out with my family to a cheaper house? This line of reasoning mirrors discussions taking place in many Lisbon households over the past several years as an *economic exodus* to Lisbon's periphery became the norm.

Lisbon is experiencing a period of economic boom with hordes of tourists arriving by air and sea (the lull for COVID-19 notwithstanding), who then spend money on glamorous restaurants, cafes and stores. However, we must ask, what is the hidden cost? The corollary in Lisbon has been a rapid housing inflationary trend, whose root causes and consequences this project intends to analyse. Critics widely regard tourism as one of the variables that caused the spike in prices.

The first section is the literature review around RE and housing as a knowledge area. We discuss how RE financialization turned homes into speculative assets. We follow with how rent liberalization in Portugal and the Golden Visa program were significant catalysts for multiple market dislocations. We analyse the new trend of short-term rentals (STRs) and the literature about negative externalities associated with housing. Finally, all these nodes of knowledge are collated under the aegis of public policy, effected under conditions of uncertainty, and presenting a strategic governmental challenge.

To build on the existing research presented in the literature review, we used a hybrid approach of quantitative and qualitative method. We rely on statistical methods to quantify phenomena (Bryman, 1988) while adding further granularity through qualitative data. A hybrid methodology also reinforces the conclusions from each source interviewed for this project. The methods deployed were a survey and semi-structured interviews with RE market stakeholders and participants. We condensed interview data into a comprehensive framework that illustrates the historical context, along with variables that bear upon the residential market and the housing crisis in Lisbon.

Interviewees did not agree about the existence of a housing bubble in Lisbon. However, from the data gathered, it is possible to assert the presence of a bubble at least in the low and mid-

level segments of the residential market. This bubble is driven by a top-to-bottom market dislocation, given that residents found their purchasing power shrinking in the face of foreign demand. Inadvertently, they inflated prices in housing segments below their original price points when relocating. A component of moral hazard is also present, with agents holding onto assets in the lower market segments, hoping for value appreciation or a better deal in the future. This speculative behaviour concurs with Shiller's classic definition of a housing bubble.

The survey focused on identifying whether *economic displacement* was happening in Lisbon, and if so, who were the most vulnerable demographic segments.

The survey established that the most affected segments are *renters* who live with their partners and are between 23 and 28 years old (young-adults), and 30-year-olds. In other words, these are young-adults and adults who live with their partners and do not own their homes. The survey showed that these segments pay higher rents and spend a larger chunk of their household income on habitation. These segments also record dramatically lower levels of ownership, when compared with historical and EU averages. We uncovered that these segments experienced difficulties when applying for a mortgage, particularly as renters whose household income is below 2000€.

The survey also showed that *economic displacement* is present in both segments, with a considerable number of renters claiming to relocate because of unpalatable price increases. These results directly correlate with income levels. Also, surprisingly, in the young-adult age segment, education does not correlate significantly with higher income, which adds further nuance to the problem.

Our research suggests that in order to safeguard virtuous and necessary investment vehicles (such as Golden Visas or touristic demand), governmental entities should incentivize the RE supply-side and support builders and developers willing to construct for lower market segments. Tax breaks and easing bureaucratic permit processes for affordable housing construction would be a path to follow.

The need for intervention is urgent, as economic losses associated with *economic displacement* may be more profound than initially envisaged. The demographic consequences, namely delayed household formation and consequently, the birth of the first child, may also exacerbate the current demographic crisis in Portugal.

Literature Review

Introduction

A house, traditionally, is thought of as an essential human good. A theme throughout this work is the tension between housing being both a *prima facie* good associated with leading the good life, and its status as an asset class – a speculative investment vehicle.

One can divide the extensive research on housing into various subject areas. These include the vast corpus of literature about investing in real estate that discusses financing, cap rates, modelling cash flows, RE asset valuation, etc. (Geltner et al., 2011; Gyourko, Keim, 1993). Then, there are works placing real estate within the framework of structured credit (McDermott, Roy, 2007), along with discussions of the role of subprime mortgages in the Global Financial Crisis (Roubini, Mihm, 2010). The economists Karl Case and Robert Shiller famously created an index tracking the US housing market with pricing that goes back to 1890. In *Irrational Exuberance,* Shiller demonstrates how housing prices in the US, and by extension other parts of the world, bear scant correlation with construction costs, interest rates, median incomes, and demographic factors (Shiller, 2005).

The subject of this thesis – the contemporary housing problem in Lisbon – is analysed through the lens of macroprudential policy (MP). The Banco de Portugal defines MP as designed "to promote the financial system's resilience in absorbing risks, ensuring adequate levels of financial intermediation and thus contributing to sustainable economic growth" (Banco De Portugal). MP is framed in terms of its causal relationship with the emergence of a secular market trend – RE business models shifting towards short term rentals (STRs), which commenters squarely identify with price inflation.

Price inflation creates negative externalities which we will discuss using Marcuse's (1985) notion of *economic displacement*. This phenomenon, a consequence of governmental activity, calls for further mitigating policy efforts, which implicates an extensive body of literature about strategy and policymaking under conditions of risk and uncertainty.

The Financialization of Housing

Randy Martin (2003) proposes that an economic shift towards financialization marked the latter part of the 20th century. Whereas industrial wage employment used to be the dominant mode of economic relations, with financialization the nature of economic agency was transformed. Ordinary people gained increasing access to credit, joining the financial economy and thereby becoming risk-takers and holders of assets such as houses, now conceived of as speculative instruments rather than simply as homes.

Indisputably, for most people in Portugal "owning a house is the largest single investment most households will make" (Ribeiro et al., 2017). Some commenters (Lima, 2019) perceive it positively as "forced savings" that help mitigate the effects of economic downturns, especially for low/mid-level income households. An alternative view is that governments skew prices creating economic inefficiencies and market failures by incentivizing homeownership, which ultimately is harmful to economies and society (The Economist, 2020). These contrary positions converge around the notion that RE financialization pressures housing prices, often destabilizing market supply and demand dynamics, and potentially forcing average homeowners into scenarios of economic distress.

Rising housing ownership is a direct consequence of RE financialization that proliferated across Europe during the '80s, with the housing market absorbing a significant portion of global excess liquidity (Fernandez, Aalbers, 2016; Aalbers, 2017). Neoliberal economic policies rolled back governmental regulations and controls over the housing market and freed up lending with cheap interest rates (*ibid*). With RE considered a highly credit-worthy tangible asset to lend against, mortgage debt exploded, and private players were incentivized to speculate and extract profits from what used to be homes.

The advent of structured credit and securitization of pools of mortgages made financial intermediaries, banks, the shadow banking sector, pension funds, etc., voracious players in the market (Rolnik, 2013). RE became a significant asset class within fixed income to achieve investment yields, diversify portfolios, and generally serve as a less risky asset class, predicated on the perceived regularity of mortgage principal and interest payments and ability to model default risk (Aalbers, 2016). Soros (2009) recounts how the Global Financial Crisis (GFC), whose epicentre was subprime mortgages, turned securitized mortgage instruments into toxic vehicles that took down the entire global financial system, including many Portuguese banks.

Government Policies

Even though Portugal lagged other countries implementing policies associated with financialization, in August 2012, the rental housing market was liberalized through the promulgation of Law nº31/2012. It rectified Law nº6/2006 (NRAU), which was the first step towards RE liberalization. Rent controls were gradually dissolved, and landlords had increased flexibility to renegotiate agreements and block rental contracts from transferring to family relatives. Property owners gained the power to raise rents and evict tenants as part of an IMF-Governmental plan to make the rental housing market more dynamic and to promote urban rehabilitation.

Simultaneously, a major policy initiative was the Golden Visa program (Law nº29/2012) instituted in October 2012 to attract foreign capital to Portugal and also help banks clean up impaired balance sheets (Lopes, 2016; Gaspar, Haro, 2019). Under the program, a €500,000 real estate purchase (or €350,000 for a rehabilitation project) or a €1,000,000 capital deposit, provides parents and dependent children with a residency permit leading to citizenship after five years.

In 2015, several additional options were added to the program, namely investing in equity funds, cultural heritage, or business capitalization (Law nº63/2015). In 2017, capital requirements for these options were lowered further (Law nº102/2017). Yet, the change did not boost investment into alternative vehicles, with investors still privileging RE as the preferred option. In fact, to date, 90% of issued Golden Visas have occurred via RE (Global Citizen Solutions, 2020; Int. Neves, 2020). This scheme requires applicants to spend just two weeks in Portugal every year, which has led to a proliferation of absentee landlords in Lisbon. This latter phenomenon also poses problems when absentee landlords fail to maintain their properties adequately or are in default of their monthly maintenance payments.

Regarding STR's, with the entrance of Airbnb into the Portuguese market in 2012, two years later the government enacted legal instruments that stipulated STR's as "local accommodations". In 2018, four years later, the "room in a private house" category was added to the legislation, effectively signalling support for the growing concept of the "sharing economy." One can graph the time-lapse between events that have contributed to the transformation of RE in Lisbon. We can perceive how legal and regulatory regimes adjusted to market dynamics, with inevitable negative consequences:

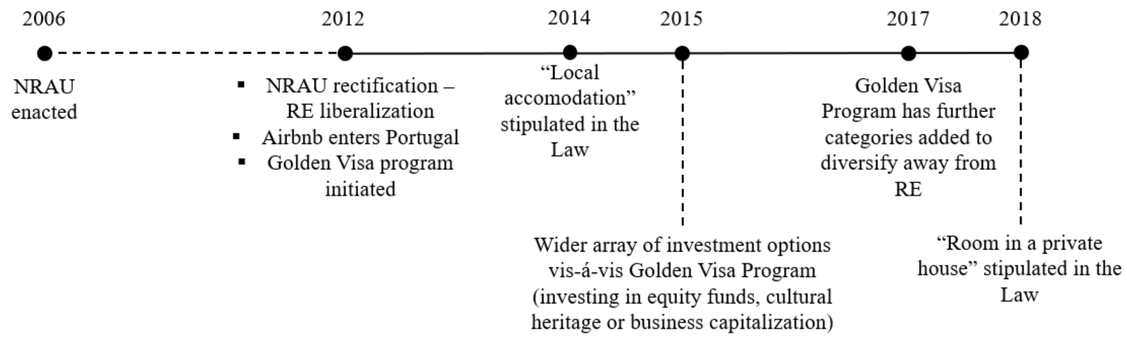

Figure 1: Legal timeline

Speculators, private entities, and foreign investors flooded into Lisbon RE, supported by strategic governmental incentives coupled with a patchwork regime of legislative measures.

Clearly, a confluence of policy factors has given rise to the current Lisbon housing bubble. We later discuss what constitutes a bubble referencing Shiller, a leading exponent on the subject. The rapid inflation of house prices has destabilized the RE market, fostering social instability with multiple stakeholders affected. Philipp Hartmann (2015) states that "boom-bust cycles in real estate markets have been major factors in systemic financial crises and therefore need to be at the forefront of macroprudential policy." He lays out reasons why RE bubbles are events worthy of attention due to their cascade-like economic effects. There are numerous constituencies, stakeholders, and phenomena touched by housing. These include homeowners, the construction industry and its suppliers, individuals' willingness to undertake household formation and its attendant consumption effects, the "animal spirits" in the economy writ large when housing booms or goes bust, etc. Also, both buyers and developers use leverage to acquire and construct properties, which significantly implicates the banking sector. Hartmann further highlights how RE prices are slow to adjust to supply and demand changes due to structural elements associated with this asset class and market (Hartman, 2015).

Additionally, one must recognize the role of multilateral monetary policy, namely the European Central Bank's (ECB's) *lower-for-longer* interest rate regime (Banco de Portugal, 2019). It potentially nudges investors towards RE as a *search-for-yield* strategy (Himmelberg, Mayer, Sinai, 2005; Lourenço, Rodrigues, 2017; Banco de Portugal, 2019).

Macroprudential Strategy

Macroprudential strategy pertains to monetary, fiscal, and other policies aimed at reducing risks in markets (Claessens, 2014). The most widely analysed and deployed methods for cooling RE prices commonly target the demand side. These include caps on loan-to-value ratios, hiking interest rates and increasing banks' reserve ratio requirements. Such restrictions deescalate credit growth by constraining borrowers' access to capital while improving the credit quality of banks' portfolios and ultimately, the risk assets on their balance sheets. It also increases opportunity costs associated with RE investment and makes other investment options more attractive (Galati, Moessner, 2012; Claessens, 2014). The authors argue that borrower-based initiatives are effective. However, these policies target and directly affect country-based/resident investors. They do not curb market swings caused by foreign capital inflows insulated from local lending conditions. This hypothesis is congruent with research that points to positive correlations between a growing proportion of foreign investment into local real estate and market imbalances (Borio, Shim, 2007).

It is clear that Portuguese regulators must go beyond generic macroprudential policies if they are to deal effectively with the array of causal factors responsible for Lisbon's housing bubble – the rapid influx of foreign capital (Lourenço, Rodrigues, 2017) coupled with the effects of a novel real estate paradigm: short-term rentals (STRs) (Cocola-Gant, Gago, 2019).

Short-term rentals (STR)

Housing price inflation due to the STR phenomenon is not exclusive to Lisbon. While it may be favourable for tourism, there is statistically significant research that points to STR-driven real estate bubbles across multiple cities, E.g. in Barcelona (Cocóla-Gant, 2016), Berlin (Bernt, Holm, 2009), Reykjavik (Mermet, 2017) and Sydney (Gurren, Phibbs, 2017). The case of Reykjavik is particularly instructive, having close similarities with Lisbon. Both country's economies became significantly distressed in the late '00s/early '10s and bounced back partly due to RE sector growth. The reason for landlords and investors to adopt this business model is obvious. STRs are more profitable and offer increased asset flexibility as opposed to longer-term rentals (Wachsmuth, Weisler, 2018).

Negative Externalities

All these cities experiencing an explosion of STRs have negative externalities as a common denominator. As supply shifts to a different market demographic – tourists who are short term renters – there is an adverse impact on local people. There is limited literature on RE-based negative externalities, which tend to concentrate in two specific areas: externalities arising from construction, and the different types of economic displacement that occur. The latter is a primary concern for this project.

Luís Lima (2019) points out how younger individuals face increasing challenges qualifying for mortgages due to steep price increases, creating conditions for future social instability related to low rates of RE ownership. In addition, interest rates at all-time lows present an ongoing moral hazard for banks that are incentivized to grant mortgages to less creditworthy borrowers, increasing the probability of NPLs while being a further catalyst for property price inflation (Banco de Portugal, 2019).

Alfama, previously a typical working-class neighbourhood, presents a vivid picture of the unintended social consequences of STRs that are proliferating throughout Lisbon. Cocóla-Grant and Gago (2019) discuss in detail the spatial and social changes that Alfama has undergone over the course of the past five years, raising particular concerns about gentrification. Landlords either evict tenants (sometimes illegally) when a rental contract comes up for renewal or raise prices to prohibitive levels, forcing former tenants to relocate. Their goal is to turn what used to be residential dwellings into STR tourist accommodations.

Marcuse (1985) termed this practice *economic displacement*, a systematic process whereby soaring rents diminish residents' purchasing power. Similar gentrification is present in many other Lisbon neighbourhoods, forcing low/mid-income inhabitants to relocate to more affordable suburbs. At the same time, average salaries fail to grow at levels commensurate with housing estate price appreciation.

Further, the wave of reconstruction and improvement of existing buildings (Lima, 2019) in central Lisbon neighbourhoods exacerbates displacement. The most visible consequence is that this temporarily decreases supply during the renovation period when assets are off the market. Then, prices are hiked up to reflect capital improvements. Authors also discuss an array of negative externalities (Akinbogun, Jones, 2018) which are corollaries of construction activity such as construction debris, large scale crane equipment, noise, traffic congestion, dust, etc., causing residents to relocate to escape these nuisances voluntarily.

Policy & Uncertainty

A macroeconomic paradigm that incentivises RE growth might appear to be promulgating a *prima facie* economic good. But, as the literature shows, there is a range of unintended consequences that arise. As stated earlier, foreign investment and STR platforms significantly disrupted the Lisbon residential housing market, creating troublesome social effects while compounding complex strategic challenges for policymakers. Portuguese governmental authorities have been mainly ineffectual and reactive. As they attempt to correct one particular problem by policy interventions, they potentially create another series of issues in the market (Almeida, 2019). Recently, and unexpectedly, the government enacted a proposal (article 139.º of the State Budget proposal 2020) that opens the possibility towards restricting RE Golden Visa acquisitions in both Lisbon and Porto, after years of promulgating the opposite approach that enabled market liberalization. We can add another data point to the legal timeline:

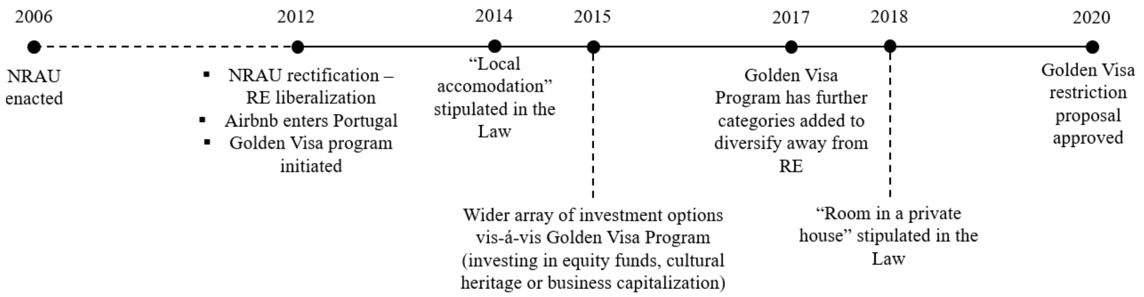

Figure 2: Updated legal timeline

The case of the Lisbon housing market helps us interrogate how different economic and social variables interact and influence the RE market (Sequera, Nofre, 2019; Cocola-Gant, Gago, 2019). One sees how extrapolating into the future via policy choices implicates uncertainty. And awareness of uncertainty potentially leads to inaction or policy paralysis. Both of these hinder effective governmental actions or lead to policy mistakes and unintended consequences. Summers (1980) proposes that anticipating rising inflation, people drive up housing prices and, consequently, construction efforts. But, using a land valuation method, Titman (1985) states that if there is uncertainty about the future, policies intended to stimulate construction actually lead to an activity decrease.

Wilson and Gilbert (2005) describe *impact bias,* whereby people overestimate the intensity and duration of emotional reactions to future events. Behavioural biases in general skew thinking and lead to suboptimal choices as exemplified by *prospect theory* (Kahneman, Tversky, 1977). This posits how individuals are often not good at predicting future utility for best interest maximization. So, public policy needs to step in to promote general welfare and happiness.

It is therefore imperative that the sole entity competent for doing this -- the Portuguese Parliament -- elaborates a RE policy approach for Lisbon that yields sustainable positive results. Such intervention requires grasping the principal rubrics of strategic thinking (Rumelt, 1980; Porter, 1996; Mintzberg, 1979) and adopting appropriate conceptual frameworks to guide action, including learning from past errors. Optimal policy responses need to consider economic interactions as well as social priorities, such as maintaining dignity for citizens in residential housing conditions. It is further paramount that housing policy debates implicate two preponderant concerns: mitigating economic shocks (E.g., macro events such as Brexit, Covid-19, systemic risk from excessive levels of leverage in the financial system, etc.), and tempering the shifting housing market paradigm – from buy-to-use to buy-to-let (Cocóla-Gant, Gago, 2019).

Methodology

Macrosystems, where multiple variables and the behaviour of agents actively influence the system's dynamics, require a holistic and contextual analytical approach. It is clear that there are various players intervening in the Lisbon RE market, with different incentives and normative conceptions of what the market should entail. Interactions between these various actors and phenomena create significant unintended consequences. Under these conditions, different factors have relative weights concerning causality (Stake, 1995; Yin, 2003) and research needs to be cognizant of this.

This project turns upon two research questions, and any chosen methodology must be sensitive to the peculiarities of the questions (Borrego et al., 2009):

1. First, we seek to uncover **the main causal variables** giving rise to **Lisbon's housing bubble and potential economic displacement.**
2. Next, we will theorize about **MP governmental policies that could alleviate negative externalities** resulting from these causal variables.

With regard to the economic displacement part of the first question, we need to ascertain which demographic segments are most affected by displacement. Quantitative tests are suitable for this type of study (Queirós, Faria, Almeida, 2017). In discussing ameliorative governmental policies in light of negative externalities, we will aim to target the population for whom the consequences are most grave. Even though we will use quantitative data, qualitative information is best for gaining the necessary granularity and nuance for understanding the multitude of forces at play (*ibid*).

Quantitative Analysis: Survey

The survey was designed to gain insights into the specific demographics and market challenges of subjects who have recently relocated within Lisbon. In particular, we sought to identify whether there was indeed economic displacement and analyse the nature of the phenomenon in

Lisbon. We were interested in determining the demographic cohorts most correlated with being displaced.

Data was gathered partly online, for younger age segments, and offline through telephone questionnaires, to effectively reach older populations. There were two phases of data collection: the first focused on the entire demographic range, and the second, performed after preliminary data analysis, focused on gathering additional observations from younger individuals.

The survey questions were mainly multiple-choice, with two input questions pertaining to residence location and rent/mortgage value. There were three filter questions intended to improve sample representability: the survey inquired about location, the number of years living in Lisbon, and the frequency of relocations within that period. Respondents not residing in Lisbon, who had not lived in Lisbon for at least five years, or who had not relocated in the past five years, were removed, bringing the total sample size to 172. The reason for this data scrubbing was because respondents not satisfying these criteria either had not lived in Lisbon long enough to have experienced the rapid inflationary trends in housing or they had not changed locations. Hence, their rent/mortgage increases were likely to be less substantial.

The sample was intended to be a slice of the Lisbon population that has changed residence locations within the city over the last several years, but this obviously is not representative of the city's entire population. Nevertheless, extrapolating from samples to a general population is a standard mode of conducting social science research (Forbes et al., 2009).

We performed data analysis using Microsoft Power BI, which integrates R statistical analysis tools and performs calculations through data visualizations.

Qualitative Analysis: Semi-Structured Interviews

There were nine semi-structured interviews with relevant players in the real estate sector: real estate agents, builders, lawyers, politicians and a state adviser. The interviews averaged one hour in duration with extensive notes recorded. When interviewees granted permission, we quote them in the following sections.

The guiding scripts allowed discussions to diverge from the predetermined agenda when useful, and questions were adjusted to fit the scope and expertise of each particular interviewee. Nonetheless, there were common questions asked of all respondents (a summary table can be found in Appendix 1). Many were quantifiable and are presented to support or disprove the working hypotheses of this thesis.

Conclusion

A mixture of quantitative and qualitative research is appropriate for this case study as this approach adopts scientific methods and established measurement procedures to quantify phenomena (Bryman, 1988) while yielding tangible insights typically associated with qualitative research (*ibid*). The use of qualitative and quantitative methods reinforces conclusions from each (Gray, Densten, 1998) and facilitates results that are both statistically significant, and also bear upon the real-world situational context.

Results

This section is divided into three segments. Qualitative data gathered through semi-structured interviews is analysed and metabolized into a comprehensive macro framework for gaining insight into the research questions. That data informs the economic paradigm (current and historical) and explicates incentive structures associated with various agents. We further identify the key causal variables of Lisbon's RE inflationary bubble.

Interpretation of the quantitative data amplifies previously acquired knowledge and serves to substantiate the posited hypotheses about a bubble and economic displacement. We compare demographic data with economic indicators through cross-tabulation, graphical, and correlational analyses. This data enables us to identify the most susceptible and vulnerable demographic segments affected by price increases and is used to corroborate social and geographic change caused by economic displacement.

The last section concludes by weaving results from both sources into a strategic framework that illustrates the key variables and various dimensions of the case study. It lays the groundwork for the concluding section and calls for rethinking governmental strategic MP.

Semi-Structured Interviews Results

Every interview had three elements: the largest segment of the conversation centred upon a description of the current RE market and housing conditions in Lisbon as perceived by the various experts. In this regard, it was interesting to observe how particular contexts contoured perspectives and worldviews. This was followed by discussing negative externalities induced by rising prices. And, finally, the discussion turned to potential mitigation policies that could curb the economic displacement and *exodus* phenomenon which, in some shape or form, was acknowledged by all interviewees.

Two policy variables were identified as causal factors affecting RE. These were the Novo Regime do Arrendamento Urbano (NRAU) rectification through Law nº31/2012, and the Golden Visa program (Law nº29/2012). The majority of the interviewees perceived the two policies as associative and the primary triggers for what was described by Dr. Paulo Neves, a Portuguese parliamentarian, as *"one of the biggest revolutions in Portugal"* (Int. Neves, 2020).

In the 2012 economic recession, Portugal recorded significant declines in foreign investment, rising unemployment (up to 17.3% in December 2012 *(Source: Eurostat)*), and waning positive investor sentiment (Int. Marques Mendes, 2020). PSI20 dropped 42% between June 2011-2012 *(Source: Eurostat)*. The RE market was already struggling from aftershocks of 2008's subprime crisis, recording a 20% drop in real house prices (based both on appraisal valuations and transactions) from 2008 to 2013 (Lourenço, Rodrigues, 2017). This economic stress was exacerbated by the rising national debt (from 75.6% of GDP in 2008 to 129% in 2012 *(Source: Eurostat)*) and the highest balance of payments deficit since 2009 (close to €20 billion in 2010 *(Source: Banco de Portugal)*).

Governmental authorities were urged to find instruments that could alleviate the crisis and promote economic growth. RE acquisition by foreign investors through a residence program (amongst other options) incentivized by fiscal benefits was one such program. Attracting foreign capital via the real estate sector was a swift, stimulative measure, effectively redressing the fact that national enterprises did not have the capital nor confidence to invest.

To further boost the attractiveness of RE, the government reformed the rental market through NRAU rectifications. It was a reasonable move to increase rental yields. In central historical Lisbon most properties were either vacant and in desperate need of renovation or, if occupied, were mainly inhabited by tenants paying as little as 20€ a month in rent. Landlords did not have the legal power to increase their rental yields which discouraged owners from maintaining their properties (Int. Neves, 2020; Int. Anonymous 5, 2020). Thus, with the 2012 NRAU rectifications, it became easier to evict tenants, renovate properties, and put them up for rental at competitive market prices.

The speed and success of this change were tremendous. It gave rise to a wave of investment and entrepreneurial activity that, over the following years, rehabilitated a considerable percentage of downtown Lisbon (Int. Neves, 2020; Int. Marques Mendes, 2020; Int. Anonymous 5, 2020).

Every interviewee was able to describe this exact timeline and its effects. One can summarize the situation as governmental action incentivizing RE acquisition as well as creating foreign demand. Opportunistic global investors recognized Lisbon RE as an attractive asset class in which to deploy capital, focusing on historical neighbourhoods of the city. The first interviewee moment of dissonance revolves around lack of agreement about the exact drivers of urban rehabilitation: was it Golden Visa candidates or other investors and property developers?

Five of the interviewees maintained that Golden Visa investors were the critical component of urban rehabilitation, hoping to buy EU residential rights through the purchase of cheap decrepit buildings, which could be renovated and then rented. Three interviewees suggested the opposite – that even though Golden Visas were certainly a trigger, the major wave of investment and reconstruction was performed by other types of investors, namely developers and property owners who saw the potential upside.

Looking at official governmental data from March 2020 courtesy of Dr. Paulo Neves, the total amount of investment through the Golden Visa Program since its origin has been 5.1 billion euros. This amount concentrates in RE investment (4.6 billion euros, or 90% of the total amount). But Golden Visa purchases for rehabilitation amount to only 9.7% of that amount (or 498 million euros). This indicates that urban rehabilitation was and is actually not a priority for Golden Visa applicants, even though the acquisition price threshold is lower for rehabilitation properties. Such a conclusion is relevant for assessing the efficacy of the program which sought to bring about urban renewal. So, while the Golden Visa program was not seen as the primary reason for the wave of urban rehabilitation, interviewees did view it as a trigger for introducing higher levels of trust in the Lisbon real estate market and its future buoyancy. It stimulated additional opportunistic RE investment, beyond the numbers accounted for by the program's metrics.

It is also possible to extract from this data the broad unpopularity of options added in 2015. Only 5.6% of permits granted resulted from transfers of at least €1 million into Portugal, and a residual 0.2% came through the requisite creation of 10 jobs. To date, cultural heritage investments, business capitalization and fund investments *never* materialized. Most interviewees were of the opinion that while there are entities willing to invest in cultural heritage, equity funds and in job creation, these are not the types of investors seeking to obtain residence and free movement throughout the Schengen zone. Hence, these other unutilized options are clearly misaligned with the demand criteria of the Golden Visa demographic.

Some interviewees proposed that the reason for these options introduction was as a political diversion. Diversification of investment options was merely an attempt to deflect criticism from the RE-centric nature of the program and the market anomalies it was creating.

The abovementioned suggests that the Golden Visa program was not the sole driver of urban rehabilitation and price increases, but was, nevertheless a key catalyst the spurred them. After grasping the historical context that generated initial RE demand, it is now essential to add two further variables, also mentioned by every interviewee, namely short-term rentals and tourism.

Following the turmoil of the 2012 bailout, the profile of Portugal has been rising consistently as a leading tourist destination, particularly as a beneficiary of the expanding trend towards budget European travel and foreign cultural immersion. Since 2017, the country has won consecutive World Travel Awards. Tourism demand has strongly focused on Lisbon, Oporto as well as reinforcing the considerable existing volume of tourists in the Algarve. While demand in the Algarve is dispersed across several hotspots located over the entire southern coast, Lisbon has had to absorb a tremendous growth of new visitors. Within nine years, the number of tourists in Lisbon has doubled from 4 million to 8.1 million in 2019. Disregarding seasonality, simple averaging over this timespan shows there are now roughly 11,000 *additional* tourists per night in Lisbon (an annual percentage growth table can be found in Appendix 2).

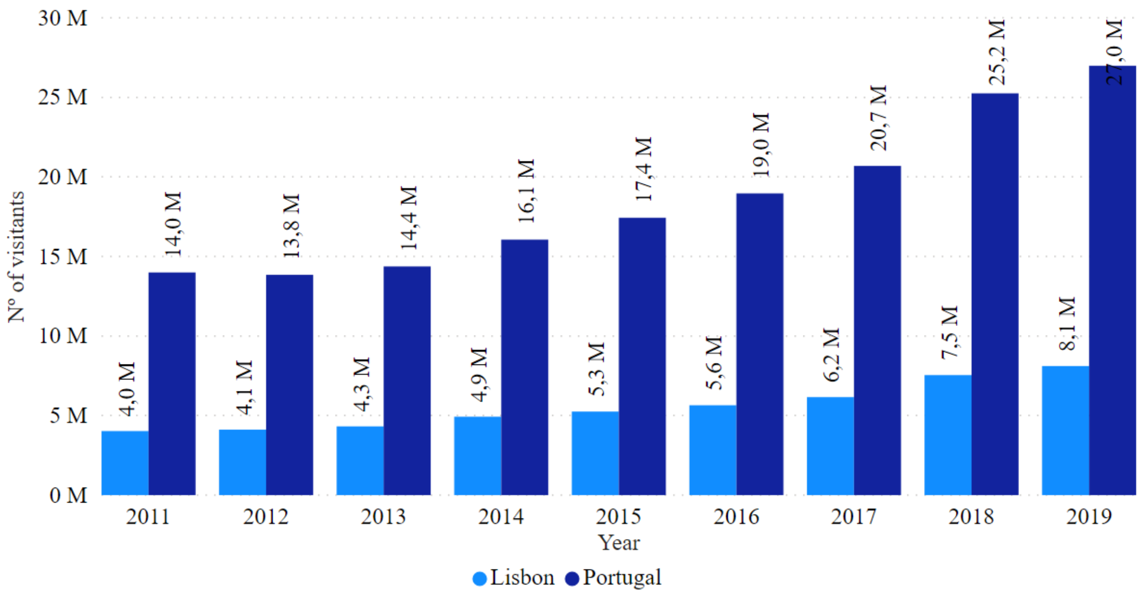

Figure 3: Number of visitants per year (Source: Turismo de Portugal – Travel BI)

To accommodate the additional explosive demand, a multitude of RE related businesses scenarios came to the fore. Real estate agents focused on STR properties. Real estate intermediaries, builders, property management companies, restaurants and commercial businesses benefited from the value networks derived from tourism activity, boosting economic growth through capital inflows and increasing levels of currency in circulation (Int. Anonymous 5, 2020).

Airbnb was introduced in Portugal in 2012 and became a significant presence in Lisbon's touristic lodging sector. Recent data sets the number of Airbnb units at 16,230. These numbers do not account for new hostels, hotels and accommodations rented through other platforms.

One of Airbnb's selling points, and a common claim in support of it, is that it represents the new paradigm of the so-called *sharing economy*, enabling locals to supplement their incomes by renting an extra room in their houses and turning anyone into an entrepreneur. This view proposes a *de minimis* impact from Airbnb upon decreasing the RE housing supply. However, this argument does not hold up against the data, which shows a predominance of available *entire* flats/apartments in European capitals. In Lisbon, 74.8% of the listings pertain to entire units. Analogous scenarios can be seen in Paris (86.8%), Amsterdam (79%), Prague (78.3%), Vienna (73.4%) and Rome (64%), similar tourist hotspots *(Source: Inside Airbnb (insideairbnb.com))*.

This type of STR offering is highly concentrated in central and historical Lisbon, as seen below:

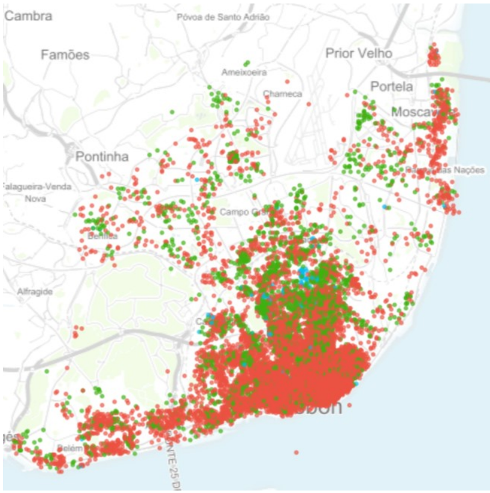

Figure 4: Source: Inside Airbnb (insideairbnb.com)

Due to the rapid growth of tourism, it was necessary to create accommodations for travellers. Therefore, housing rehabilitations targeted the visitor segment (Int. Anonymous 1, 2020; Int. Anonymous 6, 2020). Because STR profits are substantially higher compared to habitational renting, a significant number of landlords also shifted their focus to STR activities. Such dislocation effectively decreased the housing supply in Lisbon, which, coupled with higher demand, caused gradual price hikes.

As of 2019, most Lisbon neighbourhoods have an average rental price above 10€/m2, more than twice the national average, which is 4.8€/m2. Taking only central Lisbon into account, the average rental price per m2 is triple the national average (Carregueiro, 2019) *(Source: INE)*. Using Oporto for comparison, a city that is tracking Lisbon in terms of trends that are sources of concern, average rental prices are 7€/m2 *(ibid) (Source: INE)*, a figure still only half of some areas in Lisbon. This price inflation is astronomical when one considers average salaries in Lisbon, which have been close to stagnant for the past decade. In 2011, average wages were € 1117 a month, rising by 4.8% to € 1170 in 2018, which in absolute terms represents a € 62 increase, an inconsequential amount when compared with the higher levels of market rents *(Source: PORDATA)*.

In fact, Lisbon leads all of Europe (and is 6th in the world) in terms of the percentage of income (50.4%) that goes to rent payments (Idealista, 2019). It outpaces cities like Paris (47.9%), Milan (40.5%) or even New York (31.5%) *(ibid) (Source: Deutsche Bank)*.

Governmental authorities did not initially envisage rent inflation of this magnitude. Assunção Cristas, a prominent political figure during the NRAU rectification period, responded to critics decrying prices in the Lisbon rental market by admitting that rent liberalization strategies simply had not anticipated market dislocations caused by STR's and the tourism boom (SOL, 2018). However, there seems to be a lack of consensus amongst regulators, governmental authorities and market participants regarding the existence of a bubble or a housing crisis.

We can model the main variables responsible for price increases so as to have a visual framework of causal factors:

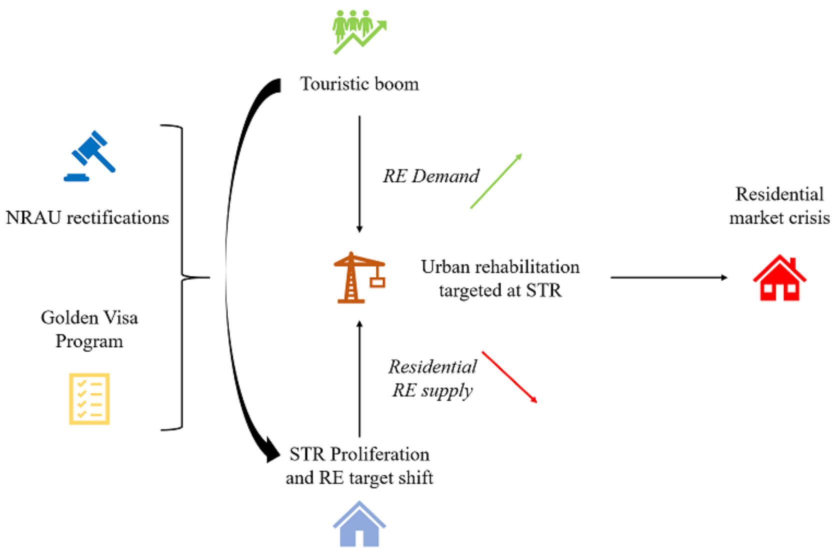

Figure 5: Variables whose interactions originated a residential crisis (Framework)

The most apparent consequence of these variables is rapid price inflation, an unintended consequence which was not initially predicted. As the interviews pointed out, governmental authorities can either be reluctant to intervene or tend towards market activism when faced with scenarios of uncertainty. The propensity towards action or inaction depends on doctrinal, political and economic views. And an anomalous situation can worsen through inaction or inconsistent policy responses.

Interviewees were also divided about the existence of a housing bubble in Lisbon. Uncertainty about this was based on the difficulty of distinguishing between a bubble scenario and natural price increases caused by rising demand with limited supply. The non-bubble view was also linked to market fundamentals improving with interest rates at historically low levels making the cost of capital exceedingly cheap.

Figure 6: Interest Rates (Source: Bank of England, Global Financial Data, Homer and Sylla "A History of Interest Rates" (2005))

At the same time, with local incomes flat, property developers rather than potential local buyers are the beneficiaries of cheap rates for borrowing. Moreover, interest rates and income levels have remained consistently low for years (and expectations are that they will continue to be this way for a while). So, the immediate triggers for the housing bubble are more likely to be found in other factors.

It is useful here to discuss Shiller's definition of a bubble which is predicated on behavioural factors. Shiller writes that *"a bubble is really defined in terms of people's thinking: their expectations about future price increases, their theories about the risk of falling prices (...)"* (Shiller, 2005). Interestingly, interviewees who claimed that Lisbon is "definitely" not going through a bubble-like scenario, were all active participants in the RE market, either through being property intermediaries, legal service providers or investment players. Interviewees who were less active market participants were more accepting of the idea of a bubble, with four interviewees agreeing with this view. It is plausible to suggest that there are elements of moral hazard for participants benefiting from current market conditions. They dismiss criticism of prices rising exponentially and claim that this is a natural market dynamic, a type of behaviour that fits with Shiller's definition.

It is also interesting to note how sophisticated practitioners in the United States and elsewhere also failed to notice the severe housing bubble in the US until it blew up. This was despite spreads between housing and other factors widening significantly and housing prices diverging appreciably from historical trendlines. Two much-cited graphs below from Shiller (2006) illustrate these points. Yet, in the midst of the US housing bubble then Chairman of the Federal Reserve Alan Greenspan told the US Congress that: "*Although a 'bubble' in home prices for the nation as a whole does not appear likely, there do appear to be, at a minimum, signs of froth in some local markets where home prices seem to have risen to unsustainable levels. The housing market in the United States is quite heterogeneous, and it does not have the capacity to move excesses easily from one area to another. Instead, we have a collection of only loosely connected local markets…the behavior of home prices varies widely across the nation…Although we certainly cannot rule out home price declines, especially in some local markets, these declines, were they to occur, likely would not have substantial macroeconomic implications*." *(Source: Testimony before the US Congress Joint Economic Committee (June 9, 2005)).*

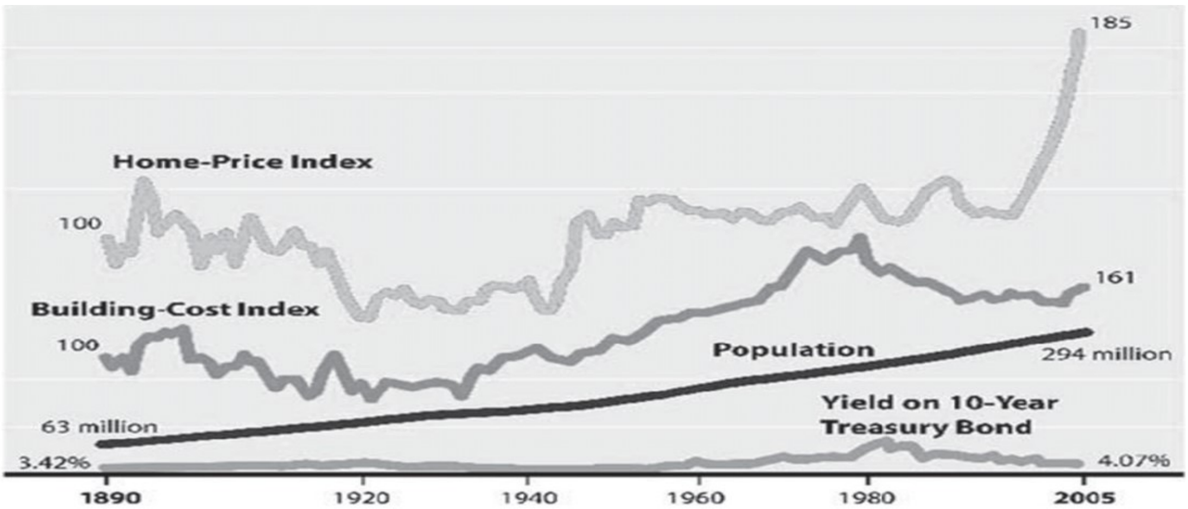

Figure 7: Inflation-adjusted U.S. home prices, Population, Building Costs, and Bond Yields (1890-2005)

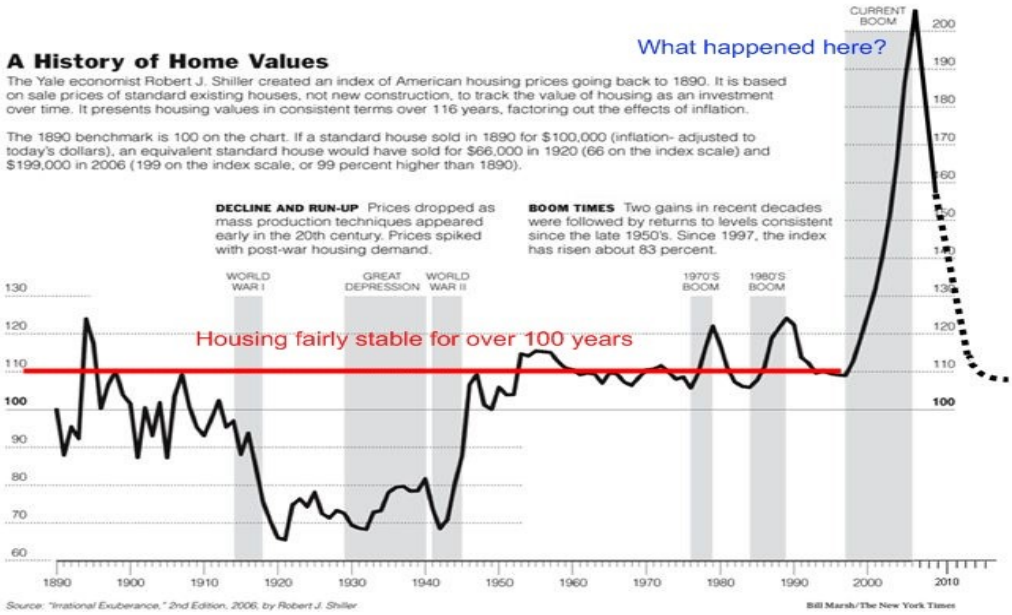

Figure 8: A History of Home Values (Source: "Irrational Exuberance" 2nd Edition, 2006 by Robert Shiller)

Regarding the existence of a bubble in Lisbon, it is essential to understand the segmentation of the residential property market. The market is divided into four main property types: Luxury, High-End, Mid-End and Low-End (Int. Anonymous 2, 2020).

During the pre-Golden Visa period, the market was stratified across national income levels. Logically, households with higher incomes could afford better housing. Additionally, they easily qualified for mortgages and could readily pay the initial lump-sum down payment (Int. Monteiro, 2020). Such factors contributed to higher ownership levels at the top segments of the market as opposed to lower ones (a point confirmed in the sample, which we will discuss later). Foreign demand was residual and inconsequential for market pricing dynamics.

This segmentation scheme is visualized in the diagram below:

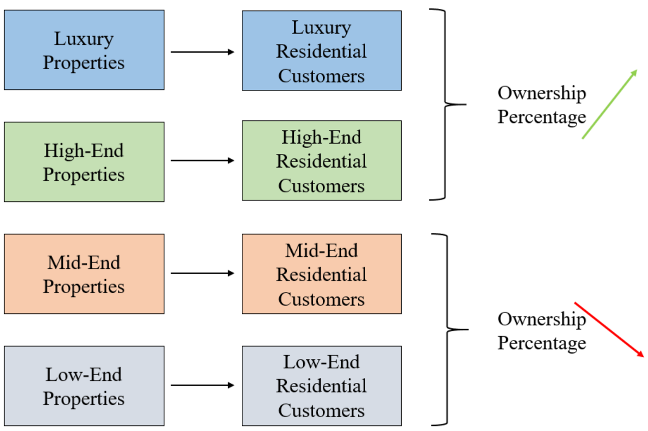

Figure 9: Pre-Golden Visa Market Segmentation Diagram

With the advent of the Golden Visa program, a new type of player entered the residential housing market. Foreign investors with higher disposable incomes and purchasing power who started to invest in Luxury and High-End properties. The average RE purchase value through the program (for properties not to be subject to rehabilitation) is € 620.000 *(Source: Official Government Data)*. Certain interviewees pointed out how brokers started to increase prices in the top market segments to capitalize on this new, highly qualified demand. Now, the original top segment began to have to compete with foreign buyers as demand-driven prices increased. International demand forced many Portuguese nationals into a lower market segment through pricing pressures.

This has happened in both the luxury and high-end markets, targeted by Golden Visa demand. However, residents who were pushed out of their original segment (Luxury or High-End) did not lose their competitive advantage when compared to other residents in segments below their original purchasing cohort. Hence, downgrading from their initial segments, these buyers inadvertently pushed prices up in their new, lower, segment, through their higher purchasing power. This aftershock driven by Golden Visa demand at the top market segments has cascaded down to the Low-End bottom segment as a form of a vicious cycle. The diagram below adds to Figure 4 by presenting market dislocations post-Golden Visa demand, driven initially by the later and subsequently by national residents.

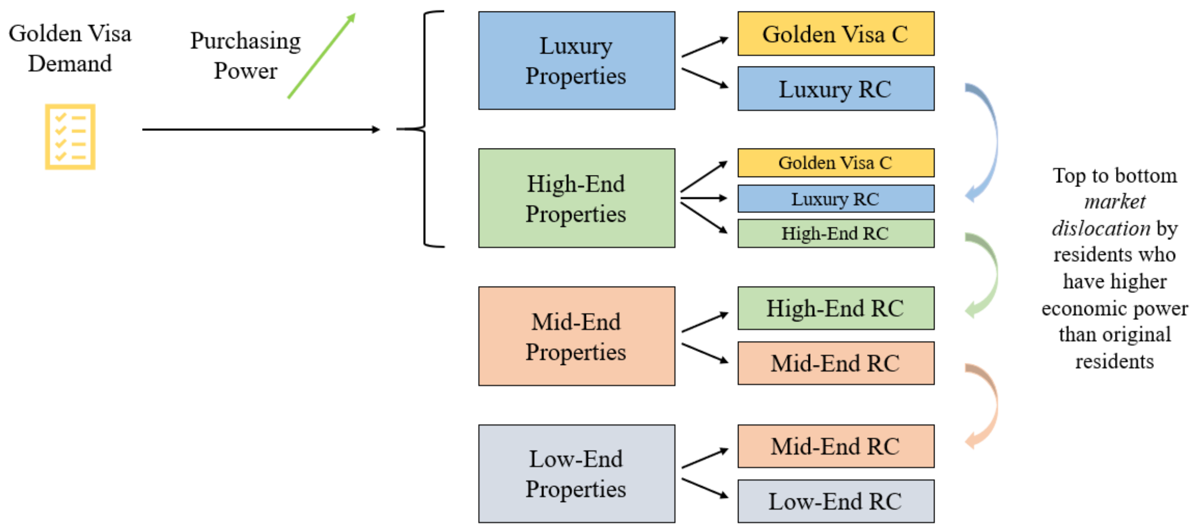

Figure 10: Post-Golden Visa Market Segmentation Diagram

Interviewees pointed out aspects of this market dislocation and how there is a geographic movement towards Lisbon's periphery, where prices are obviously lower than in the city centre. The periphery still has some proximity to central areas, and the type of construction there tends to focus on the Mid- and Low-End segments. However, it was also pointed out by three RE agents that prices in the periphery are also experiencing abnormal increases, not consonant with demand.

Recognizing the demographic shift to the periphery in progress, landlords increased prices there as well, to take advantage of the overall secular inflationary trend. It was also mentioned that owners prefer to keep prices high and hold onto the assets rather than negotiating prices to match actual demand. This situation holds for both sales and rentals based on the perception that because prices are increasing, all purchases and rentals should be making top-dollar in line with the notion of an ever-increasing market. (Int. Anonymous 2, 2020). Such behaviour also reflects Shiller's definition of a bubble, where agents artificially inflate prices by holding onto price expectations, based on the assumption that profits are unidirectional and impervious to cyclical market forces.

Based on the discussions above, it is plausible to assert that the major iatrogenic effect of governmental strategies is an ongoing RE bubble in Lisbon. It is particularly pronounced in the lower housing market segments, which translates into a significant housing crisis that needs to be addressed. And the middle-class economic squeeze that has been engendered has deeper consequences than immediately apparent from considering economic consequences.

As presented above, people are moving towards Lisbon's periphery, which means a longer commute to the city centre where the majority of people work. Research shows that workers with longer commute times have lower levels of both life satisfaction and happiness (Nie, Sousa-Poza, 2015). Additionally, the relationship between longer commute times and happiness is mediated mostly through lack of sleep, which means that people sleep less to compensate for the time lost from commuting *(ibid)*. It also translates into workers with longer commute times being less productive (Ommeren, Gutiérrez, 2009).

Consequently, economic loss occurs as both first and second-order effects arising from the burdens associated with housing. Overall, attendant in the housing bubble are a host of negative externalities which are potentially a net liability for the Portuguese economy, a line of enquiry demanding further study. In fact, Nie and Sousa-Poza found that one additional hour of commute time amounts to an annual loss of 10 billion yuan (or roughly 1.3 billion euros) in China. The same is likely true on a smaller scale in Lisbon.

Housing bubbles are a global phenomenon. In the US, where demand for rental housing has grown over the years, outpacing supply and household income adjustments, rent affordability in many locations is at all-time lows (Hoyt, Schuetz, 2020). The authors describe how housing development costs are affected by economic and regulatory conditions. Restrictive land-use policies, increased labour costs, and higher prices along the building supply chain are also identified as ultimately leading to higher housing prices.

With this perspective in mind, the interviews explored what causal RE development factors could also have contributed to price increases in Lisbon. Interviewees mentioned multiple times how prices also relate to available land, particularly in the city centre, where the area for construction is severely limited (Int. Anonymous 2, 2020; Int. Anonymous 6, 2020). Additionally, manpower is increasingly expensive due to demographic factors such as an aging workforce (older workers tend to have higher salaries) and the decreasing supply of qualified workers (Int. Anonymous 6, 2020).

Seeking to preserve Lisbon's historical integrity and patrimony, the municipality restricts work that can be done on building facades. It was pointed out how these rules increase construction costs substantially (Int. Anonymous 2, 2020). Maintaining facades requires not only additional capital during construction but can also constrain the commercial viability of the future building. Building materials and engineering costs are significantly higher because of the need to engage in historical preservation (Int. Anonymous 6, 2020).

These considerations regarding construction lead to another unintended consequence, which is a shift towards the luxury segment by RE developers (Int. Monteiro, 2020; Int. Anonymous 1, 2020; Int. Anonymous 2, 2020; Int. Anonymous 6, 2020). Because construction costs are increasing and suitable locations are becoming scarcer in the city centre, the focus has been to build for the luxury and high-end segments. These are more profitable and might also potentially attract Golden Visa investors, as well as buyers seeking to take advantage of another governmental scheme – a 10-year tax exemption for non-habitual residents from the Schengen region implemented in 2009.

Strategic business repositioning is rational based on evolving market conditions. Notwithstanding this, it exacerbates the already existing housing crisis, causing sluggish adjustment of supply within the lower segments of the market. It is, therefore, possible to edit the framework presented above to account for the impact of increasing costs in construction for the reasons just mentioned:

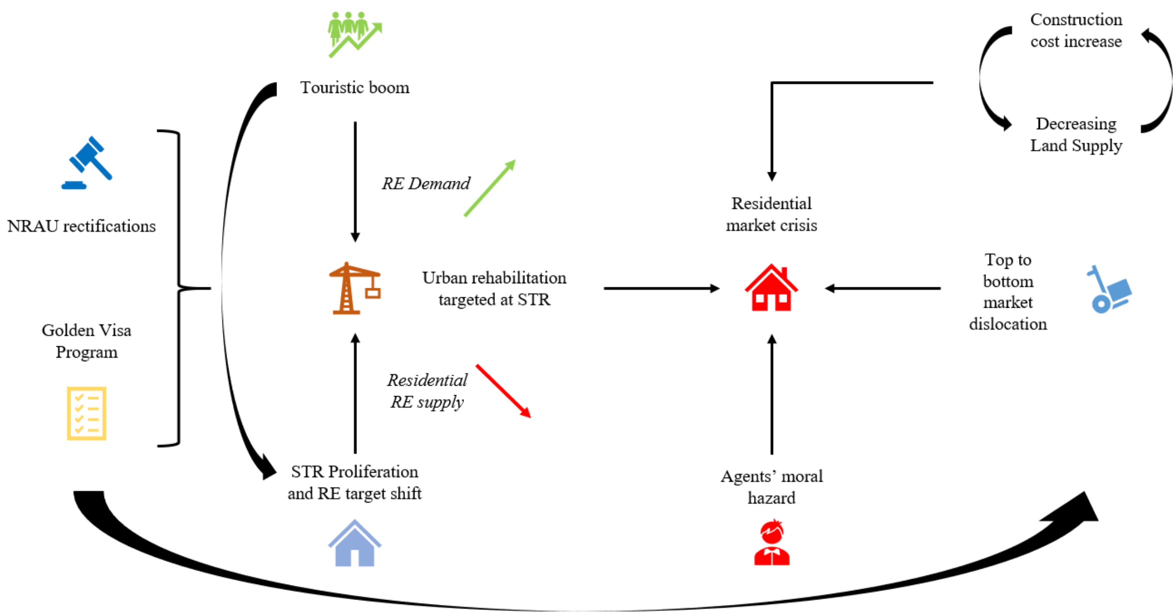

Figure 11: Variables whose interactions originated a residential crisis (Framework 2)

Based on the semi-structured interviews and analytical claims derived from the interviewees, we can plausibly state that there is indeed a pronounced housing crisis in Lisbon. There was broad consensus on this point amongst all the interviewees. However, opinions varied regarding potential solutions to the crisis. There were two central positions: one set of people defended state intervention through stimulating supply and restricting prices. Then some promoted a *laissez-faire* approach – that the market alone should determine prices and that it is still recovering from years of stagnation and losses. This divergence of opinion was congruent with the respective beliefs regarding whether or not there is a bubble.

In order to propose measures that should be taken, it is vital to identify which demographic segments are most affected. This was the point of the survey. We present the results in the subsequent section. Finally, it is also useful to mention several other unintended consequences that cropped up from the interviews. Even though these points are outside the scope of this dissertation, they are relevant and might provide material for future research.

On the subject of RE price increases, the residential housing market is not the only domain where dislocations are evident. It was pointed out small store owners have experienced substantial squeezes through rent increases while being unable to raise prices to offset increased fixed costs. The reason most articulated was tourism, which brings people with higher purchasing power and an appetite for touristic merchandise, unlike goods catering to the local market.

It was also mentioned that any interest rate increase from the ECB might cause an increase in mortgage defaults. Without substantial changes to income levels, higher mortgage costs would further burden total household income. This means that the market is precarious insofar as it is exposed to rising interest rate risk.

Survey Results

Having established that there is a housing crisis in Lisbon and discussed factors which bear upon the housing ecosystem, it is useful to determine the composition of the most vulnerable and affected demographic segments. Understanding this is critical for developing a targeted solution, appropriate to the demographic specificities.

The survey analyses key metrics: levels of rent/mortgage payments, household income, number of relocations, the main reason for relocating, and residential ownership. These variables were selected based on them being significantly mentioned during the interviews and because they are factors generally regarded as meaningful indicators.

During the interviews, six interviewees suggested that the most affected segment potentially is young adults. In this sample, these correspond to the age segment between 23-28 years old. This age group also was bifurcated into two distinct categories of subjects – students, generally enrolled in college-level education, and full-time workers. One consequence is this is there is a large variance in key metrics such as household income and rates of home ownership. Also, students tend to live in shared flats where the number of occupants dilutes the full rent price. Rents for these accommodations are generally higher than for most young-adult households, although monthly per capital outlays are lower (Int. Anonymous 1, 2020).

After preliminary data analysis, another particularity concerning the young adult segment needs to be noted. Young adults who are not in a relationship or do not live with their partner behave similarly to the student sub-segment and tend to live in shared accommodations.

We compared the percentage of full-time workers who do not share housing with their partner *(Figure 12, Graph 1)* with student observations who pay less than 400€/month *(Figure 12, Graph 2)*. There is an increase in observations who pay less than 400€/month in the student sub-segment, which is congruent with students' lower monthly household income on average. However, overall Figure 12 clearly shows similarities between both sub-segments.

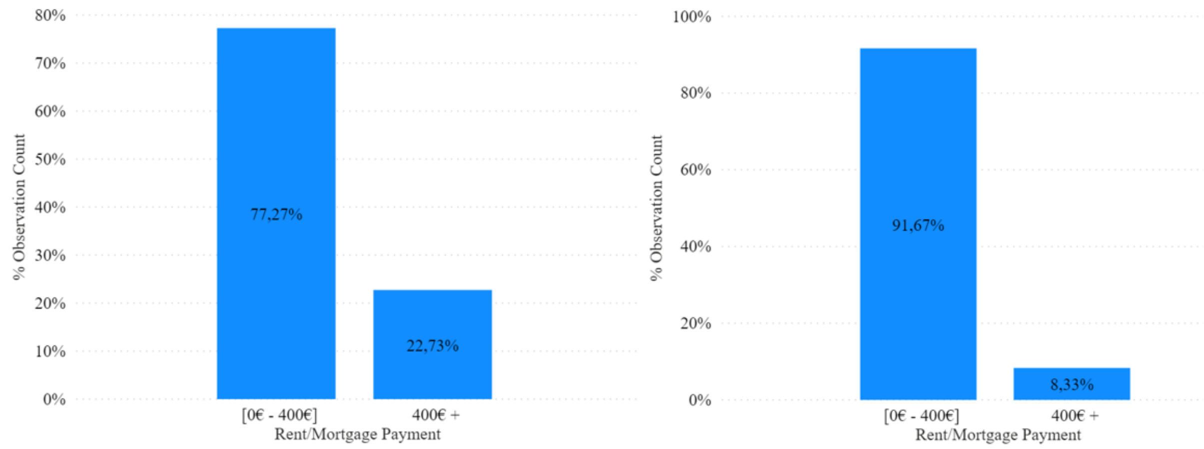

Figure 12: Young Adults Working Full-Time (1) vs Student Young Adults (2)

This distinction is relevant because within-segment disparities such as these skew averages downwards and blur data for future comparisons. Assessing the following age segments ([29-40]; [40-50]; [50-60]), we see that they tend to live with a partner. Therefore, to compare the young-adult segment with older segments, we must point out the observations which are students/live like students, to obtain a representative young-adult segment (for the housing market analysis). This split makes sense because we are focusing on the long-term residential market, while the student sub-segment comprises a short-term segment.

For the subsequent analysis, the young-adult segment encompasses only observations which are living with a partner and working full time, in other words living independently of parental support. The "student" segment was discarded from the analysis and was only added back when appropriate or necessary.

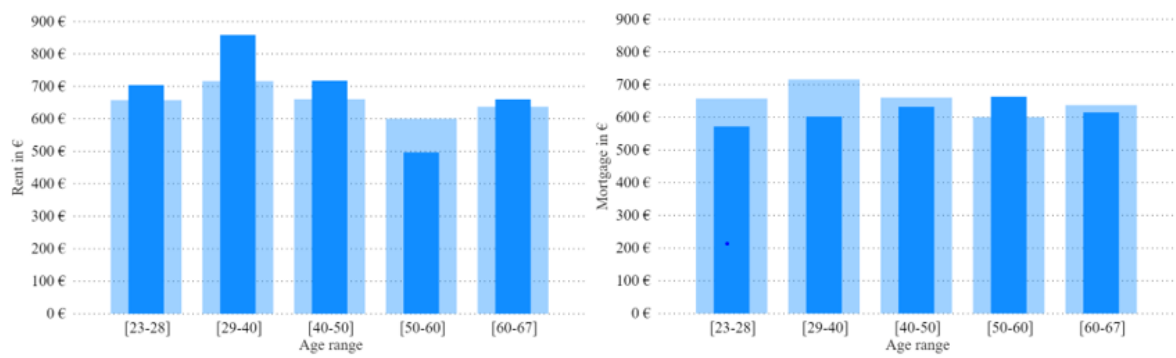

Figure 13: Rent (Graph 1) and Mortgage (Graph 2) Payments vs Age segment average

Figure 13 shows the comparison between rent payments *(Graph 1)* and mortgage payments *(Graph 2)* per age segment. The first point that stands out is the fact that every segment, except 50-year olds', have rents above the average housing price for their age segment (light blue column) in the sample. It preliminarily indicates a rent versus mortgage imbalance, with the market skewed towards higher rents, even though rental outlays of this magnitude grant no ownership, unlike servicing mortgages, nor does paying this amount result in accumulating any equity in the underlying housing asset. It is also apparent that the age segment which faces higher prices is 30-year olds. It's interesting to notice that young adults are required to pay similar levels of rent as 40-year olds, who will tend to have higher salaries and more stable familial and financial situations.

However, these raw values are not necessary nor sufficient conditions to posit a housing crisis *per se* without additional referential data points. Therefore, we compared income distributions and the primary reason for relocation for the young adult and 30-year old segments.

Regarding income distribution, 80% of the sample of young adults have a household income below 3000€, with 50% below 2000€. However, 30-year olds presented significant differences with the latter segment, with only 59% earning below 3000€ and 26% below 2000€. Rephrasing this, 40% of the 30-year olds surveyed had a household income *above* 3000€. Figure 14 illustrates the distributions:

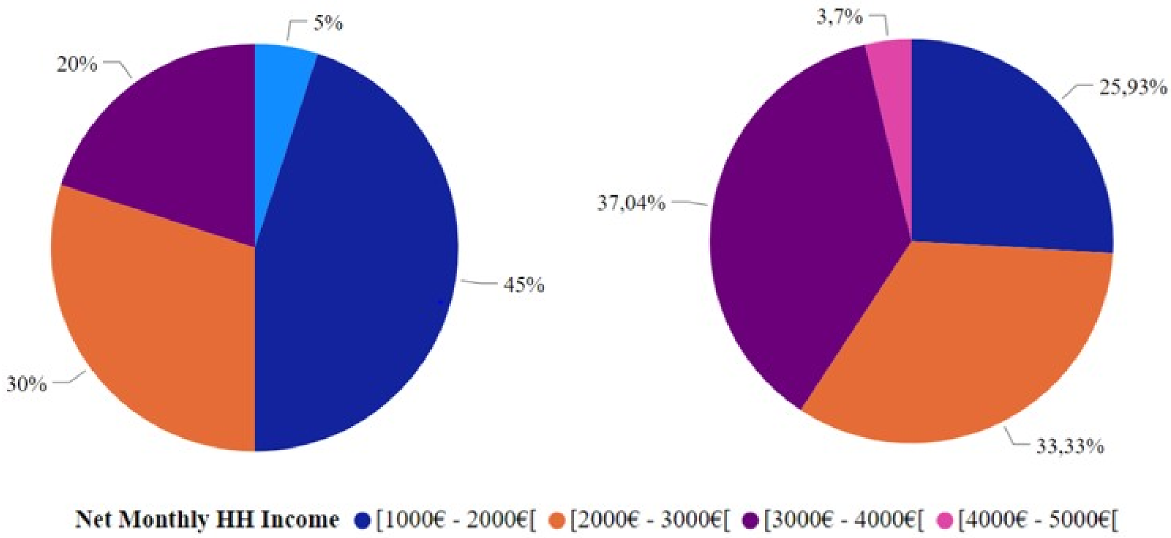

Figure 14: Income distributions of young-adults (Graph 1) vs 30-year olds' (Graph 2)

This income discrepancy is evident when one compares the primary reasons for relocation among both segments. Both segments relocate primarily to move in with their partners (65% for young-adults vs 41% for 30-year olds). However, the second reason is interesting, which was *"rent price increased and decided to move"* for young-adults (15%) and *"housing upgrade"* for 30-year olds' (22%), plainly demonstrating income disparity. While the younger cohort relocated due to price increases, the elder moved to improve housing conditions. This might explain why this segment correlates with higher rent since upgrading generally implicates an increase in rent. Figure 15 illustrates the reasons for relocation for both segments:

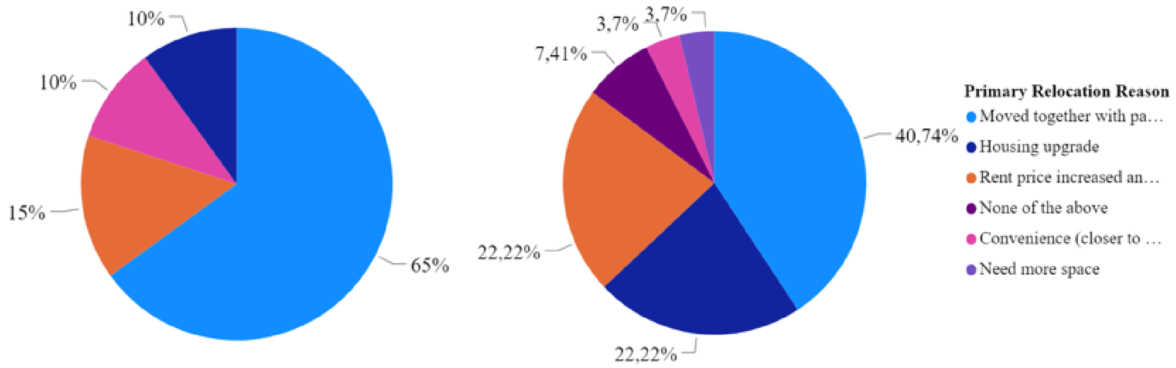

Figure 15: Primary relocation reasons for young-adults (Graph 1) vs 30-year olds' (Graph 2)

Figure 14 and 15 represent the general situation of both segments regarding income and purpose of relocation. However, it does not consider ownership. Therefore, we filtered for the segment that rents.

We can see in Figures 16 (young adults) and 17 (30-year olds), the percentage of renters represented by each category. In this new light, the situation changes significantly, and signs of a habitational crisis begin to be revealed.

In Figure 16, we see that in the young-adults segment, the rental market is highly populated by lower-income individuals. Additionally, renters represent the 15% that relocated due to price increases. The uncoloured areas represent the remaining respondents, who own their homes. These are in the higher income segment and, in this sample, *did not* relocate due to price increases (when transitioning from renting to an ownership situation).

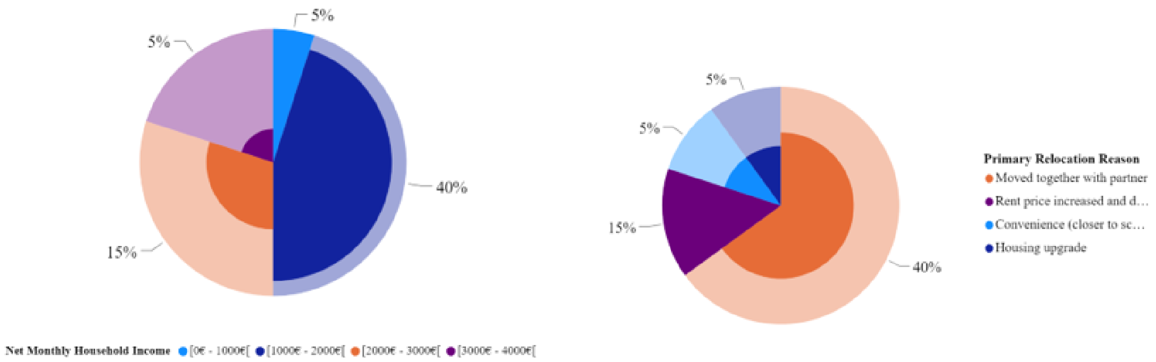

Figure 16: Income distribution and Primary relocation reasons for renters in the young-adult segment

Observing Figure 17 (30-year olds), a similar conclusion can be drawn. *Every* respondent with a household income below 2000€, rents. Also, renters only represent one-quarter of the relocations due to *"moving together with a partner"*, the predominant in-segment reason. However, they represent the *entire* 22% that relocated due to price hikes.

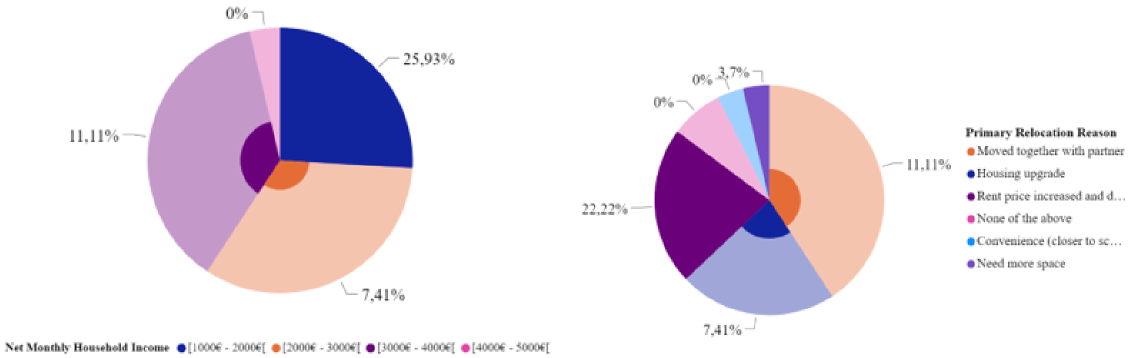

Figure 17: Income distribution and Primary relocation reasons for renters in the 30-year olds' segment

It is now possible to characterize a trend. Renters are generally people with lower incomes and the ones who relocate due to price increases. There seems to be evidence of *economic displacement* in the renting segment, given that in both age ranges, renters comprise *all* observations who moved out due to additional price burden. In the 30-year old segment, this is the relocation reason for more than 50% of the renters, as seen in Figure 17. As could be expected, the data also indicates a strong positive correlation between home ownership and income levels. Also, there was an inverse correlation between "rent price increase" as the primary reason given for relocation and income levels.

This is alarming because the latter age segment is the one with higher rents *(Figure 13)*. Renters are mostly comprised of lower-income respondents, who exhibit low rates of ownership. Considering the incomes of the respondents in the [1000€-2000€] range, the best-case scenario is that these renters spend on average, 42.5% of their monthly household income on housing. This value concurs with studies mentioned above that show how Lisbon residents spend, on average, half of their monthly household income on rent (Idealista, 2019) *(Source: Deutsche Bank)*.

Our next step was then to explore how education levels affect ownership, as education affects income.

Figure 18 shows how the ownership category in the young-adult segment is predominantly composed of respondents who have Master's degrees. Figures 19 and 20 show a higher percentage of ownership *(19)* and broader education heterogeneity *(20)* for the 30-year olds segment.

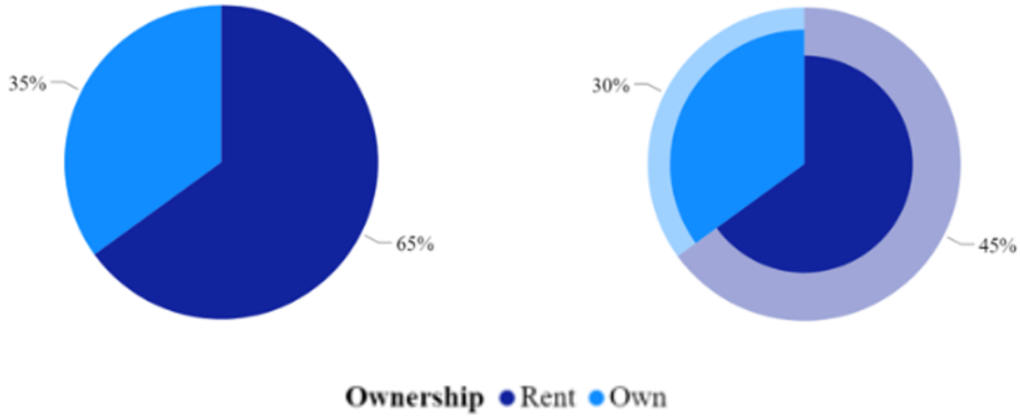

Figure 18: Ownership in the young-adult segment (Graph 1) filtered by master's degree education level (Graph 2)

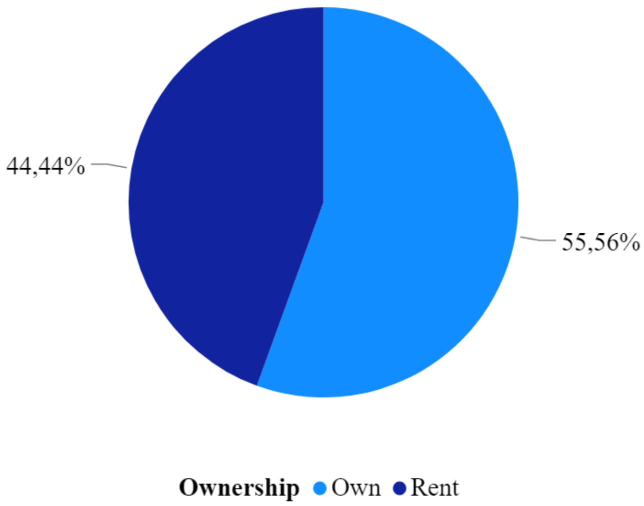

Figure 19: Ownership in the 30-year olds' segment

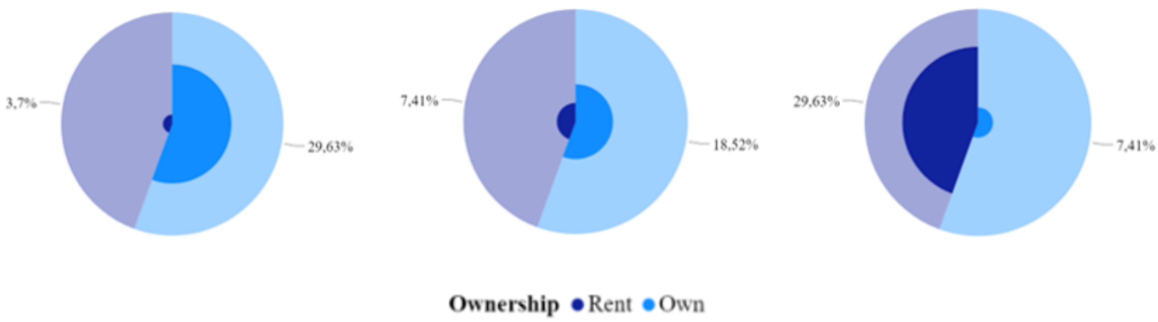

Figure 20: Ownership by educational level. Master's degree (Graph 1), Bachelor's Degree (Graph2) and High School (Graph3)

One would expect that higher education levels correlate with home ownership for both age segments. As mentioned above, education levels have a significant impact on income, and therefore our next step was to study this pattern more deeply in the young-adult segment. In the

30-year old segment income and education emerged as the predominant explanatory factors associated with financial struggles concerning housing. However, in the young-adult segment, the pattern was not so visible.

We state this because the younger generation displayed higher levels of education, but still presented rent increases as the second main reason to relocate. In contrast, the 30-year olds referred to housing upgrades as their second main reason. We analysed the distribution of home ownership and education levels across every income level. The results presented in Figures 21 to 24 show that unlike for the 30-year old segment, education actually has a rather low correlation with income and consequently home ownership.

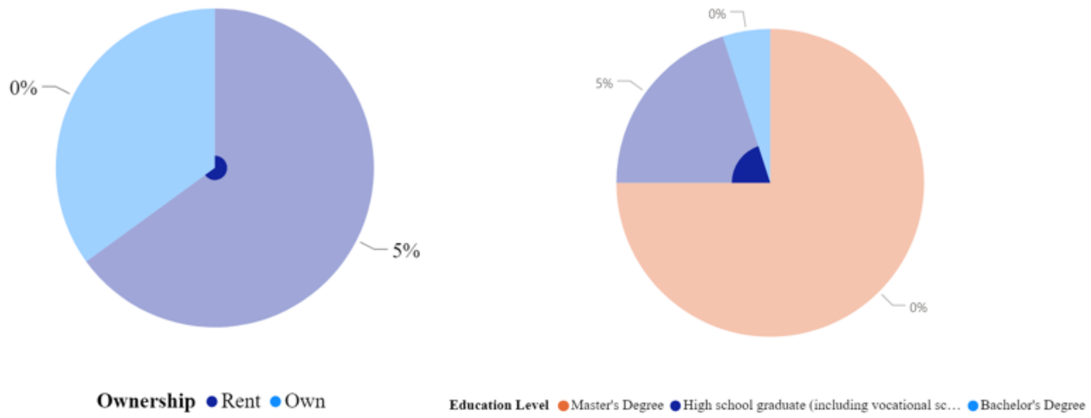

Figure 21: Ownership Percentage and respective education levels in the [0€-1000€] income range

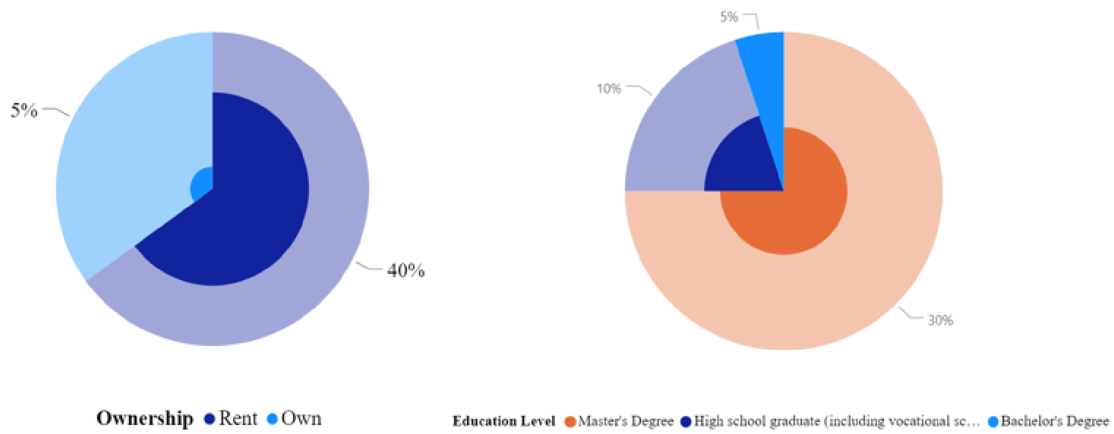

Figure 22: Ownership Percentage and respective education levels in the [1000€-2000€] income range

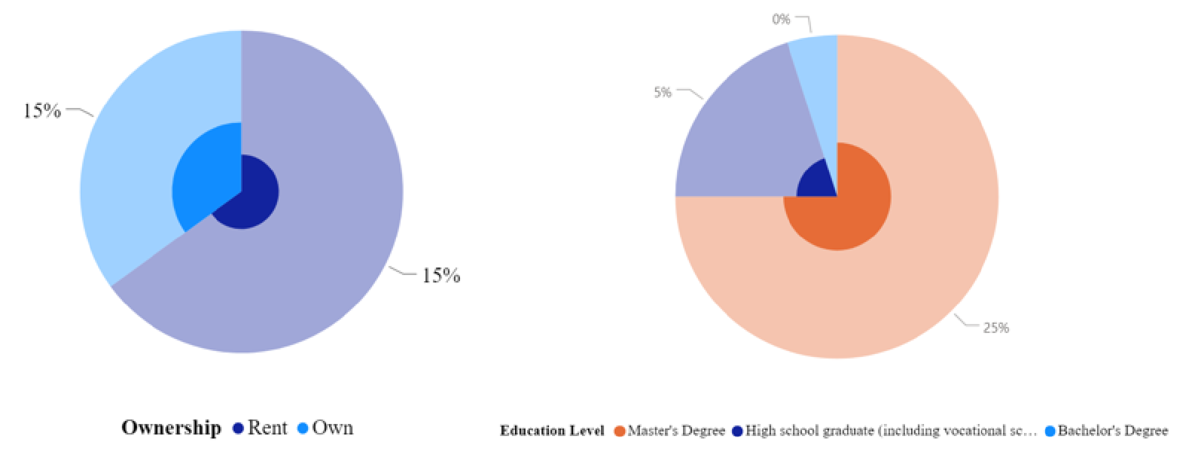

Figure 23: Ownership Percentage and respective education levels in the [2000€-3000€] income range

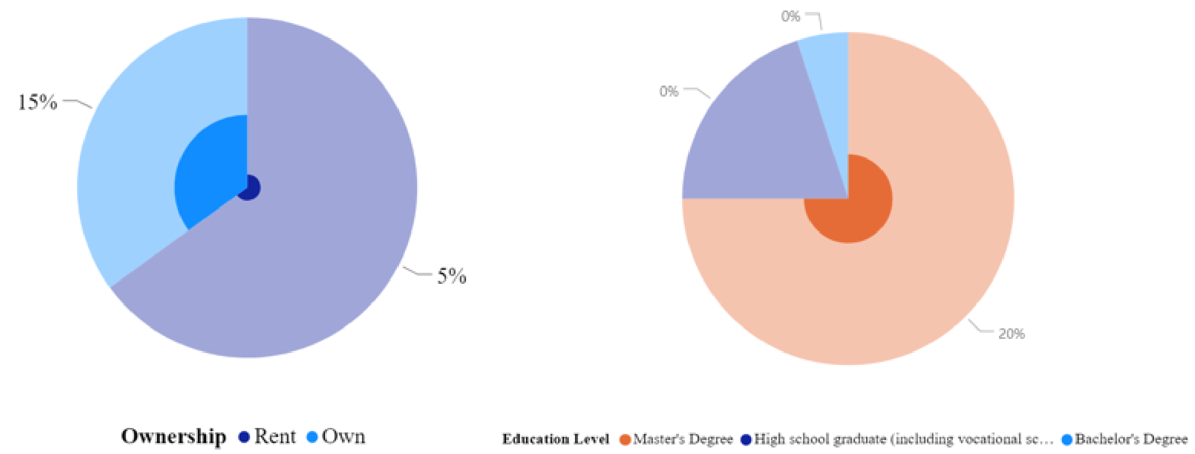

Figure 24: Ownership Percentage and respective education levels in the [4000€-5000€] income range

By comparing Figures 22 and 23, we can assert that education in the young-adult segment bears little correlation with income level. There is a higher percentage of people with Master's degrees in the [1000€-2000€] range than in the [2000€-3000€] range. This further confirmed how income levels deeply affect ownership.

With this in mind, it was essential to understand why lower-income levels positively correlated with renting. The most obvious reason is that this segment lacks funds for housing purchases, which is generally done through mortgages. Therefore, we analysed the behaviour of renters who claimed they tried to apply for a mortgage, based on their level of income. Figure 25 clearly shows that people who had mortgages approved (but chose not to pursue them, as they remained renters) strongly correlated with higher income levels. Mortgage denial was extremely high in the lower-income segments: close to 90% in the [0-1000€] segment and above 50% in the [1000€-2000€] segment.

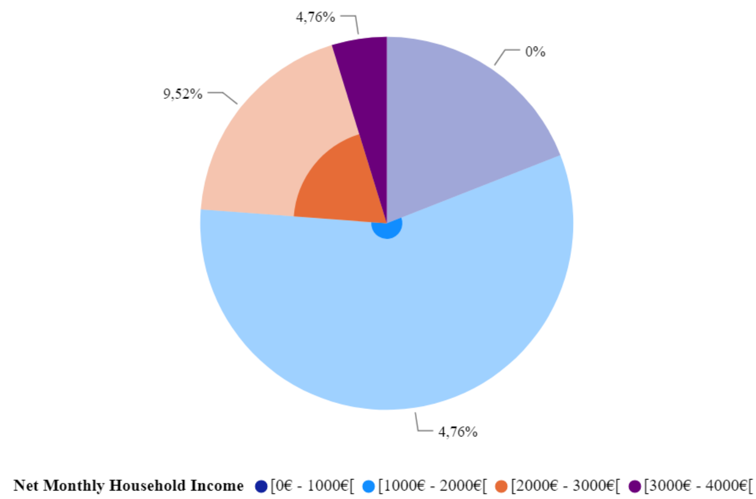

Figure 25: Mortgages granted (but not pursued) by income level

The last section of the analysis concerns the number of relocations. The first step was to find which age range relocated more. Figure 26 shows that young adults and 30-year olds are the ones who moved more often (number of relocations in the past five years).

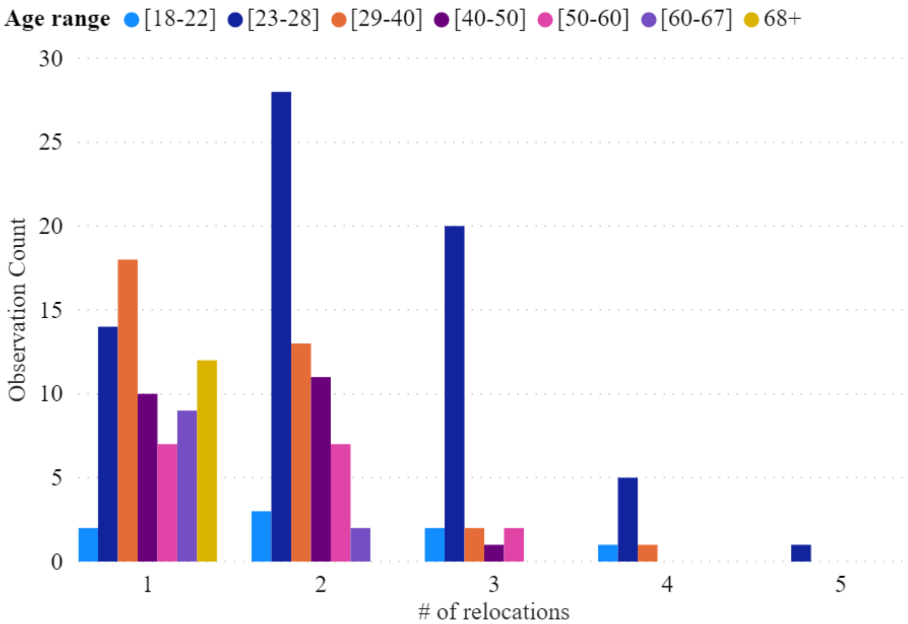

Figure 26: Number of relocations of observations in the past five years per age range

Digging further, we found that people who live in domestic partnerships (Figure 27) relocated less often than people who did not (Figure 28), particularly in younger age segments. This further corroborates the thesis that young people who do not live with their partners reside in shared houses with roommates, which generally makes moving faster and easier to undertake.

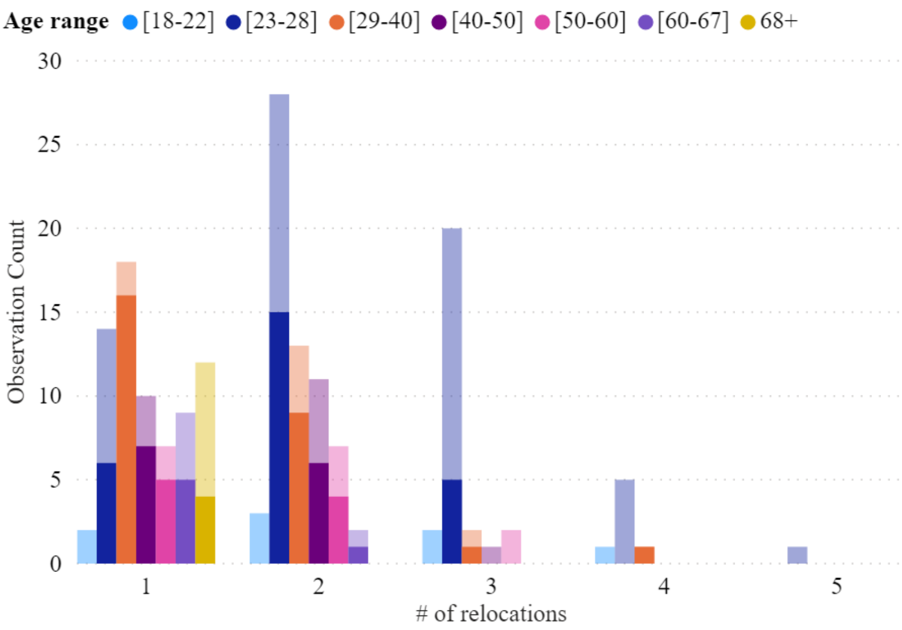

Figure 27: Number of relocations of observations living in domestic partnership per age segment

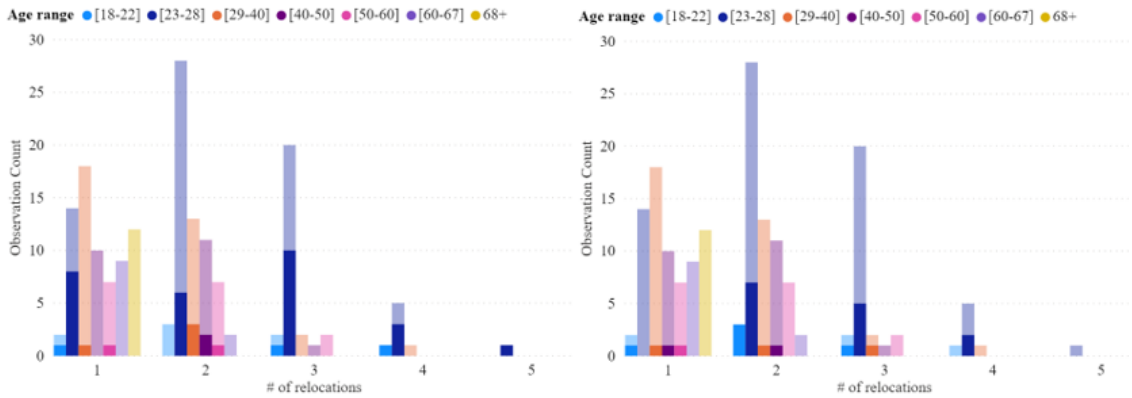

*Figure 28: Number of relocations of observations **not** living in a domestic partnership (In a relationship – Graph 1; Single – Graph 2) per age segment*

Key Findings & Final Discussion

Our survey key insights can be summarized as follows:

- The segments most affected by house price inflation are young-adults and 30-year olds in the rental market;
- Renters tend to be comprised of lower-income individuals in each demographic age segment. Renters also were *every* subject who signalled that price increases were the reason for relocation. In the 30-year old segment, 50% of renters relocated because of rising prices.

- Education has a low correlation with ownership in the young-adult segment. In the 30-year old segment, education and ownership had higher levels of correlation.
- Lower-income observations in both age segments do not qualify for mortgages and are therefore bound to the rental market.

Persuasive indicators suggest that *economic displacement* is indeed happening in Lisbon and that the most affected demographic is the younger workforce. One initial explanation is that this demographic has not yet had the time to ramp up a career into the higher salary bracket that matches with market prices of housing. However, survey data indicates that education does not have a significant correlation with higher income and consequently, housing ownership in the young-adult segment. This situation recalls discussions about the market glut of recent graduates with high levels of education, a generalized phenomenon that makes lucrative employment opportunities more and more competitive. It also problematizes assumptions about consistently producing increasing numbers of college-level graduates.

Having determined key variables that contribute to a housing bubble in Lisbon and establishing the demographic segments most vulnerable to the housing crisis, we now have tools to theorize about mitigating policies and solutions.

The first option would be attempts to curb housing demand. These can range from Golden Visa/STR restrictions and additional tax burdens, to setting maximum €/m2 per neighbourhood both for acquisitions and rentals in Lisbon. Even though there are voices in favour of such ideas, Portugal already tried that route which generates its own set of negative externalities, more notably allowing properties to deteriorate substantially. NRAU's objective was precisely to redress the perverse consequences that came into being when market forces were stymied. In Berlin, rents were recently frozen for more than one million houses for the next five years. Landlords immediately signalled that they would stop renovating and maintaining their properties (Euronews, 2020). Furthermore, calls for rent freezes or price-fixing ignore the potential effects on tourism, which represents 12,5% of the Portuguese GDP *(Source: OCDE).*

These restrictive approaches also fail to address the underlying phenomena. Because market restrictions cannot be sustained in perpetuity, the causal factors creating price increases would likely simply become pent up and then explode once price restrictions are lifted. Supply and demand are *prima facie* forces in markets, after all.

The solution should then focus on developing the supply-side and incentivizing a market shift towards the lower market segments, where the bubble is most pronounced. The majority of interviewees shared this opinion, but then they diverged on whether the government should intervene or remain passive. Given the fact that the market is currently not concentrated in the lower housing segments, it would be naive to consider that market forces can correct the problem. Therefore, the situation should be recognized as a type of market failure that requires governmental intervention. The urgency of the case is compounded by the fact that the socio-economic wellbeing of average families in Lisbon are adversely affected.

This project defends the notion that the government should act as a facilitator and regulator, not as an owner nor manager of housing properties. The prime reason is that the government would hedge its risks regarding a type of asset that is prone to boom-bust cycles. Moreover, it would avoid significant maintenance costs. The risk of mismanagement would also be eliminated, as it would be the sole responsibility of property owners and managers.

We've seen in our sample that ownership rates are substantially lower for the segments most affected by the bubble when compared to historical averages (in 2016, around 75% of Portuguese owned their residences *(Source: Idealista)*). They are also below the EU average, of approximately 70% *(Source: Idealista)*. Any intervention should then also target increasing home ownership.

We've stipulated that, amongst other variables, increased construction costs and a focus on highly profitable, upper market residences have negatively affected the supply of affordable housing to middle-class families. Therefore, the state should sponsor developers who would be willing to build for lower market segments. This should not occur directly through funding, but rather be in the form of project-specific tax breaks and facilitating surmounting bureaucratic hurdles related to new construction. These new homes would then be sold/rented in the open market. Still, restrictions to Portuguese nationals that match the most affected demographic segments, and prices consonant with their purchasing power, would be imposed. These assets should also be blocked from entering the STR market.

This integrated approach would allow each stakeholder to benefit from the trade: the government would hedge its risk at a residual cost while tackling a significant social problem in Lisbon. Builders and developers would collect their margins without losing the opportunity cost of building for upper segments. Owners and renters would have affordable housing available and increased ownership potential: with lower prices, banks would be more likely to grant mortgages as well. Banks, however, would be the main risk-takers, through additional mortgage underwriting due to lower asset prices. It consequently increases banks' exposures to leveraged individuals and potential NPLs.

It is critical to perceive Lisbon's housing crisis as a phenomenon that represents an additional threat to the Portuguese population at a macro level. In 2018, Portugal had the third eldest population in the EU (after Italy and Germany *(Source: PORDATA)*) and exhibited one of the lowest birth rates in the world (*Source: OCDE*).

There is an unrelenting discussion about the consequences of a growing ageing population and the already fragile pension system, coupled with a shrinking active workforce and low replacement ratio. Addressing Lisbon's housing crisis would be an important step in the right direction, particularly when we consider that the second-largest city in Portugal, Oporto, is following a similar inflationary trend.

Significant research indicates that house prices exert negative pressure on birth rates (Dettling, Kearney, 2011). Surprisingly, the effect of house prices is more substantial than unemployment (*ibid*). Moreover, there is strong evidence that house prices delay the birth of a family's first baby by three to four years *after* controlling for relevant variables such as education and labour market participation (Clark, 2012).

This means that the consequences of Lisbon's housing crisis extend beyond the struggle for dignified housing conditions and social equity. They are likely exacerbating a worrisome Portuguese demographic trend. It is also reasonable to posit that the longer a couple takes to have their first child, the less likely they are to have more in the future, further pushing fertility rates lower.

The research results further point to the need for an integrated approach that takes into account every stakeholder in the housing equation. The need to mitigate iatrogenic externalities caused by Lisbon's housing bubble is urgent, considering the constellation of adverse effects upon households and a significant demographic. Bubbles left unchecked always end badly.

Conclusion

The Golden Visa Program and NRAU rectifications that reformed the housing market represent a species of innovation – *public policy innovation*. The general view of innovation is that it is a purely business concept. But, this project analyses a governmental phenomenon that had major market influence, causing a *RE bubble* and *economic displacement*.

We can frame Lisbon's housing situation along the lines of Christensen's concept of disruptive innovation. His notion posits that disruptive innovation usually takes root in niche markets and only later proliferates to the core market. The emergence of the Golden Visa Program, whose investors targeted mainly the Luxury residential market segment, triggered a wave of reconstruction that made the STR market grow astonishingly.

Disruptive innovation is generally regarded as progress and intrinsically good. But there can be significant negative externalities that arise from innovation: Lisbon's residential crisis is undoubtedly a clear example. The stubborn denial from some market participants regarding the existence of a bubble is eye-opening. It shows how we, as business agents, must think more clearly about externalities and their consequences.

We must look at all governmental policies through the lens of strategy and innovation. When formulating policies and guidelines, policymakers need to consider macroprudential implications and how their actions might unintentionally create negative externalities. Lisbon's housing case study shows how good intentions related to economic recovery and urban rehabilitation created a host of iatrogenic collateral effects.

Criticism should not be directed entirely at governmental entities and regulators. Speculators who hold onto assets, keeping them out of the market and artificially inflate prices are also at fault. When market failures or dislocations become extreme, there needs to be political courage to act decisively, even though it might not be the most popular strategy.

This study is significant because it brings the vocabulary and thinking of the business disciplines of management, strategy and innovation to a public policy scenario. It also adds knowledge to the ongoing public debate and discussion regarding Lisbon's housing crisis. Hopefully, this project will aid in steering the debate towards corrective measures that will help alleviate a significant burden faced by young adults.

Limitations

This dissertation does not consider the impact of COVID-19 pandemic in its research questions, analysis and conclusions. This decision factored in two variables. The first is related to the fact that this project was already in progress for a considerable time *before* COVID-19 was present in Portugal. Its effects on the market were also not immediate. However, the major impact was on the STR market, given that foreign tourism collapsed.

Secondly, because the identified incentives and variables that influence the market are likely to endure *after* COVID-19 uncertainty dissipates. In fact, Knight Frank forecasts that Lisbon, Monaco, Shanghai and Vienna are the only world metropolises where RE prices will increase in 2020. For 2021, they forecast strong price growth (>5%) limited to Lisbon and London. Therefore, the substance of this study is not affected by COVID-19, and, if anything, the relevance of the project increases.

Regarding sampling, the elderly segment [60-68] and [68+] might suffer from representativeness bias. Because data was initially collected online, the survey didn't reach these age segments effectively. Therefore, the initial idea was to visit different Lisbon neighbourhoods to collect observations and manually enter them in the dataset. However, due to COVID-19 lockdown and circulation restrictions, it was not possible. The solution was to use landline communications to gather observations. Because it was harder to filter for geographies in Lisbon when calling subjects, this process might have compromised results for the older demographic. However, from the data collected, these segments are not extensively subject to economic displacement. The main reasons for relocation did not present a clear pattern, but there was a slight tendency towards relocation due to either divorce or spouse's death.

Data collected from Inside Airbnb is also skewed towards lower numbers. Because this application extracts information from Airbnb, the available data refers to listings that are available *at the time of website access*. The data used was gathered during COVID-19 shutdown, and a considerable number of properties were removed from the platform and therefore are not present in the numbers (16,230). From several previous accesses, the real number of Airbnb listings in central Lisbon, under normal conditions, is above 20,000 (conservatively).

Future Research

There are two main areas for future research. The first relates to both economic displacement as a phenomenon and the demographic segments that suffer from it. The second is associated with other numerous externalities that were discussed throughout the project.

Having established that housing price increases cause iatrogenic consequences, it would be interesting to quantify the economic loss/gain associated with such externalities. For example, *economic displacement*, which is happening as a generalized occurrence, offers fascinating areas of future research. Comparing the levels of general happiness, welfare and housing satisfaction between observations that were economically pushed out of their homes *versus* observations that did not seems a promising avenue for further study.

We have established that considerable numbers of people are moving to Lisbon's periphery. But it is reasonable to assume that people might also relocate to other Portuguese cities or regions. Therefore, analysing relocation to other areas would be valuable: looking for intra-migration patterns would potentially reveal economic and social impacts in other areas of the country.

The student sub-segment is also worth exploring further. In our analysis, the majority of this segment shares housing, and a considerable percentage relocated due to rent increases. Because of the nature of student life, moving does not raise as much concern as young adults who are starting to build their families. But is still worth considering which negative consequences are present in the student segment, namely the impact it has on parents' household income as they are the ones typically paying for education. Also, it would be interesting to extend the scope of this analysis to Portugal and uncover if there are university students in other cities who avoided Lisbon due to prohibitive living costs associated with housing. Moreover, is educational performance adversely impacted by housing instability?

Regarding other identified externalities, it would be useful to explore the impact RE prices have on small commercial spaces. We know both anecdotally and from interviews that some local business owners were forced to shutter their shops due to rents escalating. But we don't know which types of businesses were most vulnerable and consequently affected nor if the businesses moved to other areas or completely folded.

Understanding the RE-centric nature of the Golden Visa program calls for research into ways of incentivizing investors to choose other options. Or, how can they be made to divert investment from Lisbon and Oporto to other regions in Portugal? The main idea, also defended by Dr. Paulo Neves, is to promote other areas of Portugal as viable investment options for foreign sources of capital.

The project considered housing purchasing costs primarily. Maintenance costs are an area for future research, specifically regarding Municipal Property Tax (IMI). In Lisbon, this tax is considerably higher than in the remaining Portuguese territory. It would be essential to study if ownership rates are *also* dropping because of this additional tax burden that comes with ownership. Additionally, it would be interesting to explore if IMI is a viable vehicle to deter owners from amassing large numbers of properties. If progressive IMI hikes are enforced based on the number of properties, an incentive would exist to release those properties to the market. However, such an idea is exceptionally sensible and has the potential to create multiple market failures, therefore calling for future study.

The last point of future research concerns banks' risk management practices. As mentioned, because we are in the EU, interest rates are controlled by ECB, which also affects mortgage borrowing costs. Due to current macroeconomic conditions, it's unlikely that interest rates will rise anytime soon. But as a precaution, banks should study what interest levels would trigger mortgage defaults, potentially compromising their balance sheets. As assets become more expensive, larger mortgages are necessary. So even with cheap interest rates, a larger principal to be paid off represents a higher percentage of average household income being dedicated to debt service. Any spike in interest rates could trigger a wave of defaults or, at the very least, would severely compromise the disposable income of families who own houses with mortgages.

In the words of the English Victorian author, Charles Dickens, "And though home is a name, a word, it is a strong one; stronger than magician ever spoke, or spirit answered to, in strongest conjuration." Where homes are unaffordable or associated with economic displacement, people are being denied the ability to participate in an essential and crucial human good.

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Appendices

Appendix 1

The main quantifiable questions that were collected during interviews are summarized here, specifying for the role of each respondent. Every conversation covered topics that are beyond these five main variables, but because they were not broadly discussed, they are absent in this visualization. However, those insights are used along with the project, when appropriate.

Both interviews with Dr. Luís Marques Mendes and Dr. Paulo Neves targeted the governmental and legislative scope of the thesis. Therefore, the specifics of the RE market were not discussed in detail. That's the reason for the absence of some answers on their questionnaires.

The chart has some color that allows for an intuitive visual representation of the trend regarding each answer.

Name	Role	Bubble in Lisbon?	Tourism as a variable in price increases	Price control can be achieved through supply adjustment	Most affected demographic segment	Construction focuses on which segment?
André Monteiro	RE Consultant with Major Firm in Lisbon	No, potentially in the lower-end market	Yes	Yes	Young-adults and potentially elders	Residential Luxury and High-end; Company offices.
Anonymous 1	RE Agent with Major Firm in Lisbon	Yes	Yes	Yes	Young adults	Residential High-end
Anonymous 2	Senior RE Consultant with Major Firm in Lisbon	No, potentially in the lower-end market	Yes	Did not answer	Did not answer	Residential Luxury and High-end.
Anonymous 3	RE Agent with Major Firm outside of Lisbon	Yes	Yes	Yes	Young adults	Residential High-end
Anonymous 4	Independent RE Agent outside of Lisbon	Yes	Yes	No	Young adults	Residential Luxury and High-end.

Anonymous 5	RE Managing Partner in top-tier Portuguese Law Firm	No, potentially in the lower-end market	Yes	Yes	Did not answer	Residential Mid-High-end
Dr. Luís Marques Mendes	Former State Secretary, Minister, PSD President, Lawyer. Currently State Councillor	Did not compromise on an answer	Yes	Did not answer	Did not answer	Did not answer
Dr. Paulo Neves	Ex-Journalist. Teacher and parliamentarian for PSD	Did not compromise on an answer	Yes	Did not answer	Young adults	Did not answer
Anonymous 6	Owner of a building company with 30 years of experience	Yes	Yes	Yes	Young adults and small businesses	Residential Luxury and High-End; Commercial areas.

Appendix 2

Percentual Visitant Growth in Lisbon since 2012: