

Supply Without Demand? An Analysis of Building Permits Issued and Housing
Demand in Malta and Other European Small States

Petra Gouder

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Abstract

Amid escalating public concern over Malta's rapid urban expansion, and the resulting social, economic and environmental consequences, this study examines the alignment between housing supply and demand, assessing whether current development levels reflect genuine market needs or are driven by speculative motives.

The analysis situates Malta within a comparative framework of six European small states: Cyprus, Estonia, Latvia, Luxembourg, Slovenia and Malta. Adopting a quantitative approach, random-effects panel data regression is applied to annual data, covering the period 2005 to 2023. Building permits, measured in useful floor area per capita, serve as a proxy for housing supply and are modelled against key economic and demographic demand factors identified through a comprehensive literature review.

Results indicate that, across the sample of European small states, building permit issuance is generally responsive to demand-side variables, with disposable income, net migration, GDP and household formation rates emerging as statistically significant predictors. In Malta, however, the model reveals a clear and persistent gap between predicted and actual building permit volumes, indicating that construction activity is expanding beyond levels justified by underlying market demand. This misalignment poses significant long-term risks, including environmental degradation, erosion of cultural heritage, diminished market efficiency and growing public discontent, amongst others.

The study concludes that, while construction remains a critical economic sector, Malta's current urban trajectory risks undermining sustainable development objectives. It calls for targeted, evidence-based policy interventions to realign development with genuine housing needs, thereby balancing economic growth with environmental stewardship and social well-being.

Keywords: Housing Demand, Building Permits, Urban Planning, European Small States, Malta.

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Chapter 1: Introduction

1.1 Introduction

The skyline of the Maltese Islands is becoming increasingly defined by construction cranes, high-rise apartment blocks, and the constant hum of development activity. Undoubtedly, Malta is experiencing a construction boom that is fundamentally reshaping the nation's urban and architectural identity. Over the years, the total number of dwellings in Malta has surged from 73,934 in 1957 to 297,304 in 2021, a rapid growth trajectory that outpaces the expansion of the population itself (NSO, 2021).

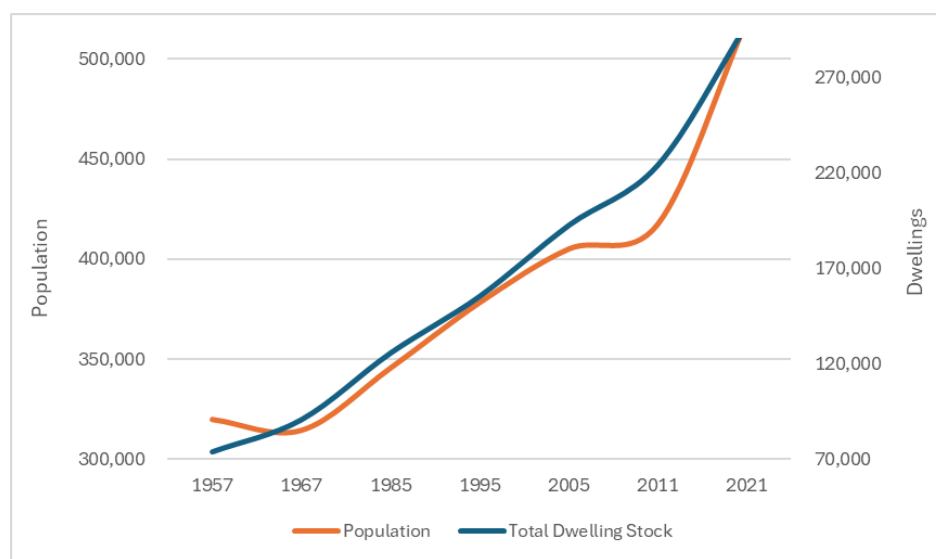


Figure 1.1: Growth of Population and Total Dwelling Stock in Malta

Source: NSO (2021a, 2021b)

Once characterised by its traditional terraced houses, the island is now dominated by high-rise flats and large-scale developments, with apartments and penthouses comprising 70% of all dwellings by 2021 (NSO, 2021a). The most recent census clearly illustrates this dramatic transformation, revealing that for every house built within the last decade, 27 new apartments were constructed, underscoring the scale of the increase in property supply (NSO, 2021a). The construction industry emerges as a major pillar of the Maltese economy, contributing €885.9 million to Gross Value Added in 2024 alone, representing 3.9% of nominal Gross Domestic Product (GDP). When combined with real estate activities, this figure rises to 12% of GDP, emphasising the sector's substantial economic significance and importance (Eurostat, 2024a).

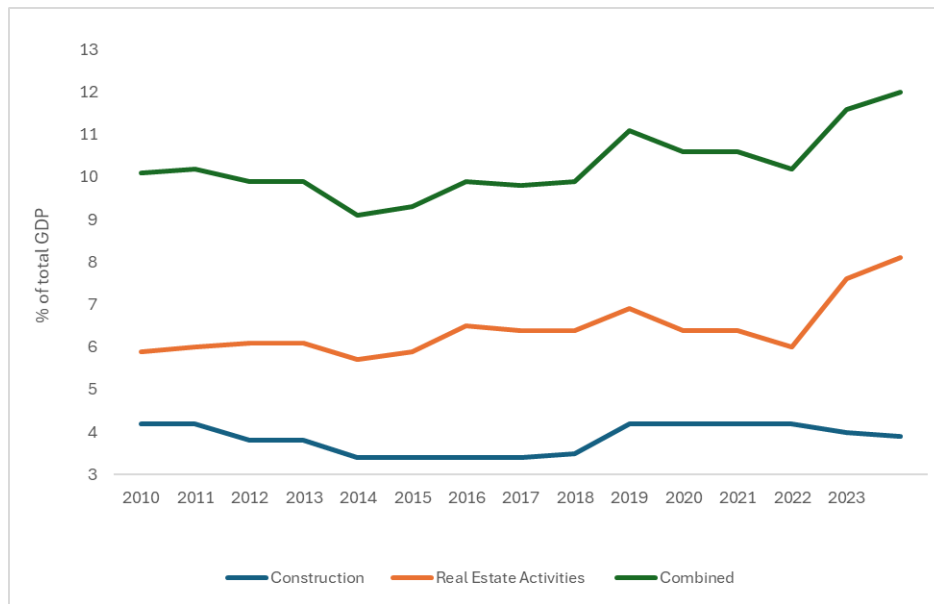


Figure 1.2: Contribution of Construction and Real Estate Activities to Total GDP

Source: Eurostat (2024a)

However, this surge in development has led to what is being termed the "uglification" of Malta, a transformation that many perceive to be eroding the island's natural and cultural beauty (Times of Malta, 2021). While the construction sector is undeniably an important pillar of the Maltese economy, the visible changes in Malta's urban landscape have sparked widespread debate about the true drivers of this rapid development.

While proponents continue to emphasise the economic benefits of Malta's construction boom, critics warn of far-reaching risks and irreversible consequences, including environmental degradation, a declining quality of life and the gradual loss of cultural heritage (Darmanin et al., 2025). Amidst these divergent and often polarised views, one is compelled to reflect with increasing urgency: Who, ultimately, are we building for?

1.2 Aim of Study

This study seeks to investigate the key determinants of housing demand and evaluate whether the pace of construction in Malta aligns with these factors or diverges from the true needs of the market. It further seeks to situate Malta's experience within a European framework, incorporating other small states to provide insight into whether Malta's

development trajectory is an outlier or part of a broader pattern. This comparative perspective enriches the analysis by highlighting both shared and country-specific dynamics that shape construction activity. Building permits, serving as a proxy for property supply, will be analysed alongside the key demand factors identified through the literature review.

This research further seeks to address the potential risks associated with unchecked development levels. As defined in ISO 31000:2018, risk is “the effect of uncertainty on objectives”, where this effect represents a “deviation from the expected” (International Organisation for Standardisation, 2018). In the context of housing, such uncertainty arises when the scale or pace of construction deviates from actual market demand. This misalignment between development output and housing needs can lead to economic inefficiencies, heighten social pressures, and intensify environmental degradation (Vella, 2011; Darmanin et al., 2025). This concern is particularly pronounced in small states like Malta, where finite land and resources amplify the consequences of poorly aligned development. Understanding the relationship between housing supply and demand is therefore critical to managing these risks and ensuring long-term sustainability.

While many Maltese citizens perceive an oversupply of housing, this belief has yet to be substantiated by empirical evidence. Understanding the availability and need for housing is crucial for informed policymaking, sustainable urban planning and addressing the concerns of residents and stakeholders alike.

The author notes a significant gap in the existing literature on housing demand, particularly in the context of European small states, where studies on this topic are largely absent. Specifically, there is no comprehensive source that consolidates the demand factors of property into a single analysis. Furthermore, the question of whether construction rates in Malta are justified by demand remains unexamined, leaving a critical gap in understanding the local housing market.

The findings of this research will contribute to the ongoing discussion on urbanisation in the Maltese Islands. By offering evidence-based insights into the supply-demand dynamic, this dissertation aims to bridge the gap between public perception and measurable economic

factors, informing policies that balance economic growth with social and environmental considerations, while mitigating the risks of housing market imbalances.

1.3 Statement of the Problem

As a small island state, Malta faces unique challenges in balancing land development and preservation due to its limited land area and dense population. As a result, development pressures have increasingly encroached upon areas previously designated as Outside Development Zones (ODZ), leading to the loss of green spaces and worsening issues of overpopulation and overcrowding. This transformation is further tainted by lack of transparency in permit issuance, and an air of 'untouchability' surrounding certain industry players, contributing to an atmosphere of distrust and lack of accountability.

The lack of comprehensive research on this topic has left current policies and strategies without the necessary insights to effectively address the issue's complexities. A mismatch between housing supply and demand has the potential to create multiple challenges. Overdevelopment can lead to environmental degradation, urban sprawl, and inefficient land use. Conversely, an undersupply risks inflating housing prices and limiting accessibility for residents. Additionally, speculative construction, influenced by lobbying or corruption, may skew market dynamics, exacerbating societal and economic risks.

Malta's current urban trajectory raises pressing concerns about sustainability, governance and the long-term well-being of the Maltese population. If these trends continue unchecked, Malta risks losing its identity and becoming a cautionary tale of environmental, social, and cultural degradation. These dynamics underscore the need for data-driven analysis to guide the development of urban development policies.

1.4 Research Questions

To achieve the aims discussed above, the author seeks to answer the following research questions:

1. Do building permit trends in European small states reflect underlying property demand?
2. Do building permit trends in Malta reflect underlying property demand?

1.5 Methodology

To address the research questions, this study adopts a quantitative research approach. It begins with an in-depth review of the existing literature to identify the key economic, demographic and social factors that influence property demand. This theoretical foundation informs the selection of relevant, measurable variables for empirical analysis.

Building on these insights, the study compiles annual data spanning from 2005 to 2023 for six European small states: Malta, Cyprus, Estonia, Latvia, Luxembourg, and Slovenia. The data is obtained from reputable open-access sources, including Eurostat and the World Bank Group. These sources are selected for their methodological consistency and international comparability, allowing for a robust and generalisable analysis. The reliance on secondary data, rather than primary data collection methods, reflects the macro-level focus of the research, which seeks to explore broad trends across countries, rather than individual-level behaviours or perceptions.

The methodological approach is twofold. In the first stage, panel data regression techniques are employed, using Stata statistical software, to estimate how demand-side factors influence property supply across the selected countries. Property supply, proxied by building permits issued, serves as the dependent variable, while the independent variables comprise GDP, disposable income, net migration, and other demand-side factors identified through the literature review.

In the second stage of the analysis, the regression model generated is applied specifically to Malta, enabling a more focused examination of national construction patterns within a consistent analytical framework. This dual approach offers both comparative insights across European small states and a deeper, context-sensitive evaluation of the extent to which Malta's building permit trends correspond to underlying demand conditions.

1.6 Originality

To the author's knowledge, this study is the first to examine the relationship between property supply and demand in Malta, an area that remains largely unexplored in the existing literature. Current research tends to focus on isolated demand factors, primarily property prices, without addressing other key factors affecting property demand in a single paper. Furthermore, this study's consideration of other European small states adds a novel dimension, contextualising Malta's trends within a wider regional context. By addressing these gaps, the research offers new insights into the workings of Malta's property market and contributes to the development of evidence-based policies for urban planning and housing market regulation.

1.7 Dissertation Outline

The dissertation is divided into the following five chapters:

1. Introduction
2. Literature Review
3. Methodology
4. Analysis and Findings
5. Conclusion

Following this chapter, the literature review will present a comprehensive overview of the existing literature on the topic, identifying key themes and highlighting any gaps in the current body of research.

The methodology chapter will outline the research design and provide a comprehensive description of the analytical techniques and procedures used to conduct the analysis.

The analysis and findings will be discussed in chapter 4, where the results from the analysis will be presented and discussed in relation to the research questions, examining the alignment, or lack thereof, between property supply and demand in European small states.

Lastly, the concluding chapter will summarise the key findings, explore their implications for policymaking and urban planning in Malta, and offer recommendations for future research.

Chapter 2: Literature Review

2.1 Introduction

The aim of this chapter is to provide a framework on which to build an understanding of the Maltese housing market dynamics, as well as to consolidate the various factors driving property demand in a holistic manner, providing a valuable resource for further research.

The literature review discusses key trends and challenges, while identifying critical gaps that this research aims to address through the research questions outlined in Chapter 1.

2.2 Malta: Setting the Context

The purpose of this section is to set the context within which the study occurs, to allow a better understanding of the factors shaping urban development in Malta.

The Maltese Archipelago is composed of three main islands: Malta, Gozo and Comino, together with several smaller uninhabited islets. The total land area of the archipelago is 316 km², with Malta being the largest island at 246 km². Gozo, Malta's sister island, covers around 67 km², while Comino spans just 3 km² (Biolchi et al., 2016). As a small island nation, Malta faces significant constraints stemming from its limited land availability, a challenge further intensified by rising housing demand and economic growth. These pressures have accelerated the depletion of land resources, with urban development expanding rapidly to accommodate these needs. As a result, the proportion of the Maltese population residing in urban areas has surged, reaching 95% by 2024 (World Bank Group, 2025c). This high urbanisation rate reflects the growing demand for living space and infrastructure, further driving development intensity and placing increased strain on the island's environment.

As defined by the United Nations (2018, p. 3) in the World Urbanization Prospects: The 2018 Revision Report, urbanisation is “a complex socio-economic process that transforms the built environment, converting formerly rural into urban settlements, while also shifting the spatial distribution of a population from rural to urban areas.” This dynamic is clearly visible in Malta, where the built environment is expanding at an exceptional pace. Notably, in 2018, Malta was reported to have the highest proportion of artificial land cover in Europe, with 27.5% of the

total land area being artificial, amounting to nearly one quarter of the entire island (Eurostat, 2021). Furthermore, as illustrated in the Figure 2.1 below, Malta was found to be the only EU Member State where the proportion of land covered by built-up artificial areas exceeds that of non-built-up artificial areas. This is largely due to the island's high population density, which stands at an average of 1720 people per square kilometre (Borg, 2023). Together, these statistics illustrate the intense pace and scale of urbanisation in Malta, highlighting the critical challenges the country faces in managing sustainable urban growth. As the island continues to densify, there is an increasing need for effective policies that balance development demands with environmental preservation, infrastructure expansion, and social well-being.

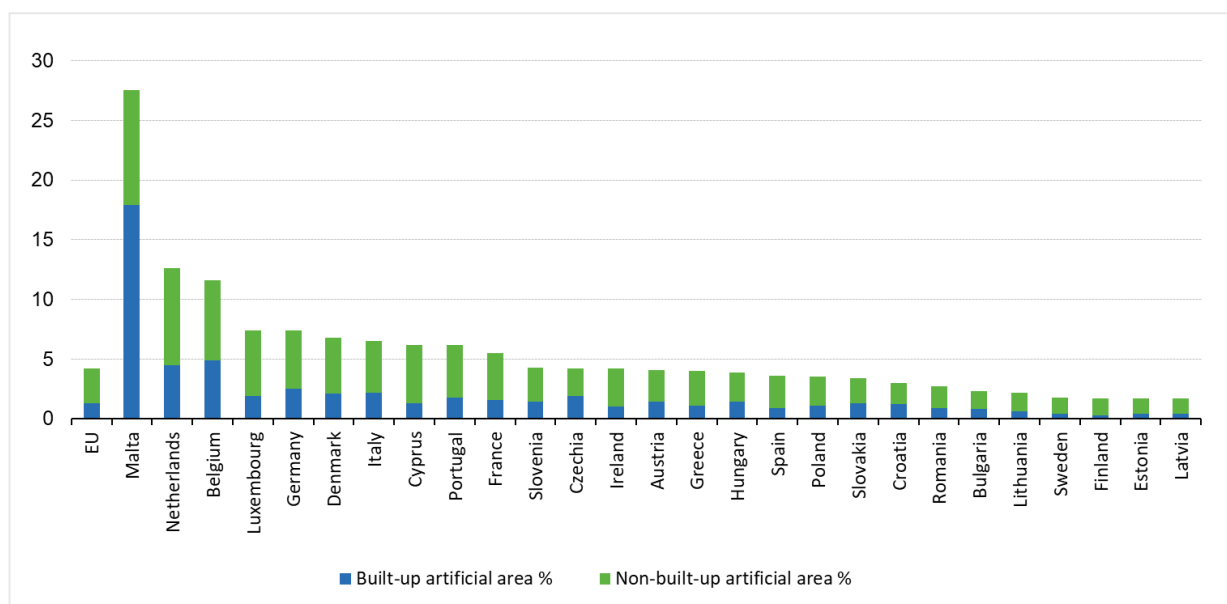


Figure 2.1: Artificial Land Cover in the European Union

Source: Eurostat (2021), compiled by author

2.3 The Importance of Housing

For the purpose of this dissertation, the term 'housing' is considered synonymous with 'dwelling', defined by the National Statistics Office (2021a) as "a building or any other housing unit that has been constructed, built, converted, or arranged for human habitation." Housing is widely recognised as both a fundamental human right and an essential necessity for life. It serves as a cornerstone of Maslow's hierarchy of needs, forming part of the basic physiological requirements for human survival and well-being (Flanagan et al., 2019).

As stated in Article 25 (1) of the Universal Declaration of Human Rights, “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, [and] housing” (United Nations, 1948, p. 76). Furthermore, Article 11 of the International Covenant on Economic Social and Cultural Rights declares, “The right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions” (United Nations, 1976, p.6).

Through its commitment to these international frameworks, Malta’s housing policies seek to uphold the right to adequate housing (Xerri, 2019). Yet, the realisation of this right depends not only on legal commitments but also on the effectiveness of policy implementation and the housing sector’s ability to respond to evolving societal needs. The construction industry plays a dual role in supporting both economic development and the fulfilment of housing needs. It is both a key driver of economic growth and the means by which the physical infrastructure for human habitation is delivered (Ofori, 2015). However, if construction activity is guided predominantly by speculative or profit-driven motives, rather than actual housing needs, there is a risk of oversupply, reduced affordability and urban strain (Fernandez, Hofman and Aalbers, 2016).

This underscores the importance of housing policies that not only enable development but also regulate it effectively to ensure that construction activity aligns with genuine demand, promotes sustainability and supports equitable access to housing. As argued by Adams and Tiesdell (2010), planners are not external to the market but are in fact "market actors" with the power to actively shape outcomes rather than merely respond to them. In this regard, ensuring such alignment is not merely an economic objective but a fundamental social responsibility.

In order to assess whether current construction rates are meeting actual housing needs, it is essential to understand the factors that drive housing demand. These determinants shape the scale and nature of housing requirements within a given population (Megbolugbe, Marks and Schwartz, 1991).

2.4 Determinants of Housing Demand

Housing demand is shaped by various influential factors. According to Mifsud (1997), these determinants can be broadly categorised into three main groups: economic factors, demographic factors, and social factors.



Figure 2.2: Main Determinants of Housing Demand

Compiled by author.

2.4.1 Economic Factors

2.4.1.1 Income

Income is a critical factor influencing housing demand, as it directly determines individuals' purchasing power. Higher income levels provide households with greater disposable income and an increased willingness and ability to purchase or rent property, leading to an increased demand (Senaratne and Zainudeen, 2010; Solak and Kabaday, 2016). Malpezzi (1999) finds that within individual markets in developing economies, the income elasticity of demand typically falls between 0.4 and 0.6, indicating that housing is a necessity rather than a luxury. However, Malpezzi (1999) also observes that over the long run and across countries, demand tends to become income elastic, as increases in income lead to disproportionately higher housing consumption. Consistent with this, Solak and Kabaday

(2016) argue that income elasticity in housing markets is typically positive, and that a 1% increase in income typically results in a greater than 1% increase in demand.

Notably, several scholars have highlighted that the relationship between income and housing demand is not strictly linear. Mulford (1979), Malpezzi (1999), and Zheng et al. (2018) argue that housing choices tend to evolve in stages, with households prioritising different forms of housing as their financial capacity improves. This typically involves a transition from informal housing to rental accommodation and, eventually, to homeownership. These shifts are shaped not only by income growth but also by constraints such as affordability, access to finance, and the availability of suitable housing options at each stage. As a result, income influences not only the quantity of housing consumed but also the type, tenure, and quality of housing that households can access.

2.4.1.2 Property Prices

Property prices exhibit a complex and multifaceted relationship with housing demand, as they influence both affordability and investment behaviour. Generally, rising property prices tend to reduce demand by limiting affordability, as fewer individuals are able to purchase or rent homes (Megbolugbe, Marks and Schwartz, 1991; Bates and Santerre, 2015). This reflects a negative correlation between property prices and housing demand, where increases in prices constrain the ability of prospective buyers to enter the market (Tsai, 2013).

However, since housing is often viewed not only as a consumption good, but also as an investment asset, higher prices can paradoxically lead to increased demand, reflecting a positive relationship between the two. Investors may anticipate future price appreciation and seek to capitalise on potential gains, thereby driving demand up (Portelli, 2022). This dynamic creates what Shiller (2005, cited in Manochehri et al., 2025) describes as a “feedback loop”, where rising property prices attract speculative demand, which in turn pushes prices even higher, often to levels beyond what is justified by fundamental market values.

This speculative behaviour can result in housing bubbles, as demonstrated by the events leading up to the 2008 Global Financial Crisis. Property bubbles continue to pose significant concerns in contemporary markets, where investment-driven activity has pushed property prices to new heights in rapidly urbanising cities such as Dublin (Williams and Nedovic-Budic, 2016), Barcelona (Blanco-Romero, Blázquez-Salom and Cànoves, 2018) and Shenyang (Jiang, 2020).

2.4.1.3 Interest Rates

Interest rates are widely recognised in the literature as a key determinant of housing demand, primarily through their effect on mortgage affordability. When interest rates are low, borrowing becomes cheaper, thereby increasing access to homeownership and stimulating demand (Watson, 2014). Conversely, higher interest rates raise financing costs, often discouraging potential buyers and leading to a slowdown in housing market activity (Calza, Monacelli and Stracca, 2013).

This inverse relationship is supported by empirical findings across various contexts. For example, Battistini, Gareis and Roma (2022) note that a 1% increase in mortgage rates in the euro area leads to an estimated 5% decline in house prices and an 8% drop in housing investment within two years, reflecting reduced demand. Similarly, Lekhuleni and Ndlovu (2023) observe that in South Africa, the mortgage rate is shown to have a strong negative correlation with real house prices. This implies that as interest rates rise, the subsequent decrease in affordability acts as a deterrent, thereby dampening housing demand.

2.4.1.4 Economic Situation

The interplay of economic growth, employment and inflation rates, shape the affordability and desirability of housing, influencing both short-term and long-term trends in the housing market (Leamer, 2015). During periods of economic expansion, increased financial confidence typically stimulates housing demand, supported by job creation, wage growth, and improved economic prospects. Conversely, economic downturns and periods of uncertainty often lead to a decline in demand, as individuals and households adopt a more

cautious approach, deferring major investments such as real estate (Wan, Zhang and Wang, 2009).

Furthermore, employment rates are closely tied to housing demand. A strong job market with low unemployment rates enhances economic stability, fostering confidence among consumers and increasing their propensity to make significant long-term investments, such as purchasing a home. In contrast, high unemployment or widespread job insecurity creates uncertainty, leading to caution and reluctance to enter the housing market (Bates and Santerre, 2015).

Inflation is another critical factor affecting the housing market. As inflation drives up the cost of goods and services, it erodes purchasing power, making both homeownership and rental housing less accessible. This effect is exacerbated when housing prices rise faster than incomes, widening the affordability gap and limiting access to the housing market. Moreover, inflation pushes up nominal interest rates, increasing mortgage costs, and impacting not only new buyers who must borrow at these higher rates, but also existing homeowners with variable-rate mortgages, whose repayments rise as interest rates adjust. This heightened financial burden, particularly for first-time buyers, can significantly reduce demand for homeownership in an inflationary environment (Dougherty and Van Order, 1982).

2.4.2 Demographic Factors

2.4.2.1 Population Growth

As the population increases, so too do the number of individuals and households seeking accommodation, thereby directly increasing demand for housing (Mifsud, 1974; Glaeser and Gyourko, 2018; Myers, Lee and Park, 2025). However, the relationship between population and housing demand is two-sided. Mulder (2006) argues that while population growth naturally leads to greater housing demand, the reverse also holds; the availability, affordability, and quality of housing can shape population dynamics. Mulder (2006) notes that access to adequate housing influences young people's ability to leave the parental

home, form independent households, and start families, while also affecting the attractiveness of a location for potential migrants, thereby contributing to overall population growth.

Migration, in particular, constitutes a significant driver of population growth and, by extension, housing demand (Mulder, 2006; Gopy-Ramdhany and Seetanah, 2020; Portelli, 2022; Deki et al., 2025). Unlike natural population growth, which tends to evolve gradually, inward migration can lead to more immediate and concentrated demand pressures in specific regions or urban centres. As Nygaard (2011) underscores, international migration is closely tied to housing market dynamics, with projections indicating that by 2030, up to one-third of new households in the UK may result from net migration, illustrating the profound effect of demographic shifts on housing demand.

2.4.2.2 Household Formation Rates

Household formation is a key determinant of housing demand and is influenced by a range of demographic factors, including marriage, divorce and the age of young adults leaving the parental home (Mifsud, 1974; Mulder, 2006).

Higher marriage rates generally reduce overall demand for housing, as two individuals consolidate into a single household rather than maintaining separate residences. Importantly, in some cultural contexts, marriage itself is viewed as a key life event that should coincide with establishing a shared home. Qualitative research in the UK found that couples frequently consider marriage as the appropriate moment to begin living together, reflecting a broader cultural norm that links marriage with the creation of a joint household (Forrest, Kennett and Leather, 1999, cited in Mulder, 2006). Thus, societal norms around marriage influence when such household consolidation takes place, thereby shaping the timing and pattern of housing demand.

In contrast, rising divorce and separation rates tend to increase demand for housing, as at least one of the former partners requires new, independent accommodation (Mulder, 2006). Zhang et al. (2020, p.196) determined that when the divorce rate surpasses 2%, it has

a "significant and positive" effect on housing demand. However, the impact of divorce on housing demand is long-term in nature, with Dieleman and Schouw (1989) estimating that the additional demand generated by divorce amounts to approximately one-third of the number of divorces in any given year, with this impact only becoming evident six to seven years later.

Similarly, the timing of young adults leaving the parental home has a direct impact on housing demand, as delayed departures postpone the formation of independent households and reduce demand for additional housing. The age at which young people move out varies depending on their reasons for leaving, and this, in turn, influences when housing demand arises. Those who leave home for employment or education typically do so at a younger age and often accept temporary or substandard accommodation due to necessity. In contrast, young adults who move out for reasons such as independence, cohabitation, or marriage tend to leave at a later age, often postponing household formation until they can establish a stable living arrangement. As a result, the age at which young adults leave the parental home is a key factor shaping the timing and volume of housing demand in the wider market (Mulder, 2006).

2.4.2.3 Tourism Rates

Tourism has been identified as a significant driver of housing demand, particularly in urban and high-traffic tourist areas. Mao, Mend, and Wang (2014) highlight that increased tourism intensity contributes to elevated housing demand in cities, as the influx of visitors generates sustained pressure on local property markets. This is supported by Barbić (2024), who demonstrates a positive correlation between tourism intensity and the volume of apartment purchases, indicating that higher tourist activity can lead to increased property transactions.

Tourism influences housing demand through multiple channels. Firstly, an influx of tourists creates a direct demand for property, as visitors require accommodation (Biagi, Brandano and Lambiri, 2015). Secondly, tourism growth often encourages property investment, as real estate is increasingly viewed as a profitable asset for short-term rental or seasonal use

(Vakili-Zad and Hoekstra, 2011). Additionally, tourism can indirectly affect housing markets through the enhancement of tourism-related amenities in popular tourist areas, such as improved infrastructure, services, and leisure facilities, which may increase the desirability and market value of housing in these areas (Biagi, Brandano and Lambiri, 2015; Barbić, 2024).

2.4.3 Social Factors

2.4.3.1 Consumer Preferences

Shifting consumer preferences play a critical role in shaping housing demand, influencing not only the type and location of housing sought, but also specific dwelling and neighbourhood characteristics. An increasing preference for urban living, for example, has contributed to rising demand for city-centre apartments (Watson, 2014).

Preferences are not uniform across the population but vary significantly across age groups and generations. Research shows that different generations have distinct housing priorities, reflecting diverse needs, values, and lifestyles. Ismail and Shaari (2020) found that older generations, such as the Baby Boomers, tend to prioritise neighbourhood familiarity and community ties, often choosing to remain in the same neighbourhoods they grew up in. In contrast, younger generations, such as Gen X and Gen Z, place greater importance on the physical characteristics of the dwelling itself, such as design and layout, reflecting a stronger focus on the functional and aesthetic qualities of housing.

Key factors influencing housing choice include whether to rent or own, followed by preferences for specific locations, housing types, and neighbourhoods, with these decisions shaped by one's socioeconomic status (Zyed et al., 2016, cited in Ismail and Shaari, 2020). Location consistently emerges as a major determinant of demand, with proximity to workplaces, schools, public transport, and green spaces strongly influencing buyer preferences (Lo and Jim, 2010, cited in Tan, 2012). Moreover, issues such as crime rates and neighbourhood safety significantly influence housing demand. Areas perceived as unsafe may experience reduced demand, even if housing prices are relatively affordable (Senaratne

and Zainudeen, 2010). Furthermore, structural features such as size, architectural style and access to a private outdoor area are also significant determinants of housing demand (Opoku and Abdul-Muhmin, 2010).

2.4.3.2 Cultural Norms

Cultural norms and values exert a profound and lasting influence on housing preferences and demand. Liu et al. (2022, p.3) define culture as “a set of enduring beliefs or values that permanently and profoundly influence and solidify people’s cognitive preferences and decision-making behavio[u]rs”, including those related to housing.

In societies where homeownership holds strong cultural significance, this can drive persistent demand for property regardless of market conditions. For instance, in Malta, homeownership is widely aspired to, sustaining high levels of demand even amidst rising property prices (Vakili-Zad and Hoekstra, 2011). A similar pattern is observed in the United States, where owning a home is closely linked to ideals of personal success and independence, forming a core part of the ‘American Dream’ (Goodman and Mayer, 2018). Cultural expectations can also manifest differently across regions. In East Asian societies shaped by Confucian values, homeownership is associated not only with financial stability but also with family honour, social status, and long-term security, resulting in a widespread preference for owning over renting (Liu et al., 2022).

Moreover, homeownership is widely associated with psychological and social benefits, reinforcing its desirability across cultures. It is often regarded as a social norm that conveys personal achievement, self-esteem, financial success, and social status (Rohe et al., 2013). These beliefs are often reinforced by social groups, such as family, friends and neighbours, who may exert pressure to conform with this norm (Foye et al., 2018).

Furthermore, religious beliefs can also influence housing demand. In Ghana, for instance, cultural and spiritual beliefs, rather than income alone, are seen as key determinants of homeownership (Adu-Gyamfi, 2020, cited in Mulyadi and Ubaidillah, 2024). Religious beliefs and practices, such as the Islamic prohibition of interest (riba), can also restrict access to

conventional housing finance, particularly in countries lacking Islamic banking services, thereby limiting property acquisition and, consequently, reducing demand (Borchgrevink and Birkvad, 2022).

2.4.3.3 Government Policies and Land Availability

Policies aimed at improving housing affordability, such as first-time buyer schemes, tax incentives and subsidised loan programmes, can significantly stimulate housing demand by making property ownership more accessible, particularly for younger or lower-income households (Senaratne and Zainudeen, 2010).

Moreover, planning policies and land-use regulations directly influence the availability of land for residential development. Limited land availability, due to zoning restrictions or land constraints, can restrict housing supply, leading to increased competition and upward pressure on prices, which in turn shapes demand dynamics (Grundl and Kim, 2021).

Table 2.1: Determinants of Housing Demand: Summary of Main Findings

Demand Factor	Relationship with Housing Supply	Author/s
Income	Positive	Malpezzi (1999); Senaratne and Zainudeen (2010); Kabaday (2016); Solak and Kabaday (2016); Zheng (2018).
Property Prices	Complex	Megbolugbe, Marks and Schwartz (1991); Bates and Santerre (2015); Blanco-Romero, Blázquez-Salom and Cànoves (2018); Tsai (2013); Williams and Nedovic (2016); Jiang (2020); Portelli (2022); Manochehri et al. (2025).
Interest Rates	Negative	Monacelli and Stracca (2013); Watson (2014); Calza, Battistini, Gareis and Roma (2022); Lekhuleni and Ndlovu (2023).
Economic Growth	Positive	Dougherty and Van Order (1982); Wan, Zhang and Wang (2009); Bates and Santerre (2015); Leamer (2015).
Population Growth	Positive	Mifsud (1974); Mulder (2006); Glaeser and Gyourko (2018); Myers, Lee and Park (2025).
Net Migration	Positive	Mulder (2006); Gopy-Ramdhany and Seetanah (2020); Portelli (2022); Deki et al. (2025).
Marriages	Negative	Mifsud (1974); Mulder (2006).

Divorces	Positive	Mifsud (1974); Dieleman and Schouw (1989); Mulder (2006); Zhang et al. (2020).
Age of young adults leaving parental home	Negative	Mifsud (1974); Mulder (2006).
Tourism	Positive	Mao, Mend, and Wang (2014); Biagi, Brandano and Lambiri (2015); Barbić (2024).
Consumer Preferences	Complex	Opoku and Abdul-Muhmin (2010); Senaratne and Zainudeen (2010); Tan (2012); Watson (2014); Ismail and Shaari (2020).
Cultural Norms	Complex	Vakili-Zad and Hoekstra, (2011); Rohe et al. (2013); Liu et al. (2016); Foye et al. (2018); Goodman and Mayer (2018); Borchgrevink and Birkvad (2022); Mulyadi and Ubaidillah (2024).
Government Policies and Land Availability	Complex	Senaratne and Zainudeen (2010) ; Grundl and Kim (2021)

2.5 Determinants of Housing Supply

Housing supply is influenced by several key factors that can either encourage or constrain construction.



- Construction Costs
- Land Availability
- Profit
- Government Policies

Figure 2.3: Main Determinants of Housing Supply

Compiled by author.

One of the primary factors is construction costs, which can act as a deterrent to developers if they rise too high, limiting the overall supply of housing. Additionally, land availability plays a crucial role, particularly in urban areas where land is scarce, further limiting the space available for new developments. Furthermore, profit is a powerful motive that drives housing supply. Developers are more likely to increase supply when market prices are high relative to construction costs, as this offers greater financial returns. Lastly, government policies, including land use planning and zoning controls, directly influence the availability of land for development. Restrictive policies can limit supply, contributing to price increases and creating an imbalance between supply and demand (Lerbs, 2014; Gu, Michael and Cheng, 2015; Watson, 2014).

In this study, property supply is proxied by building permits issued in the selected European small states, measured in square metres of useful floor area per 1,000 inhabitants. This area-based approach was chosen over a simple count of permits, as it more accurately reflects the scale of construction activity and the extent of space being added to the housing stock, rather than merely indicating the number of approved developments.

In the Maltese Islands, the Planning Authority (PA) is the entity tasked with granting or refusing development applications. Formed in 2016, following the dissolution of the Malta Environment and Planning Authority (MEPA), the PA is the regulatory body responsible to oversee all development activities on the island and ensure compliance with local planning policies and frameworks (Borg, 2023).

Figure 2.4 below depicts the number of building permits issued in Malta between 2005 and 2023. Moreover, Figure 2.5 presents the total number of approved new dwellings between 2005 and 2023, offering further context on housing supply beyond the total floor area constructed.

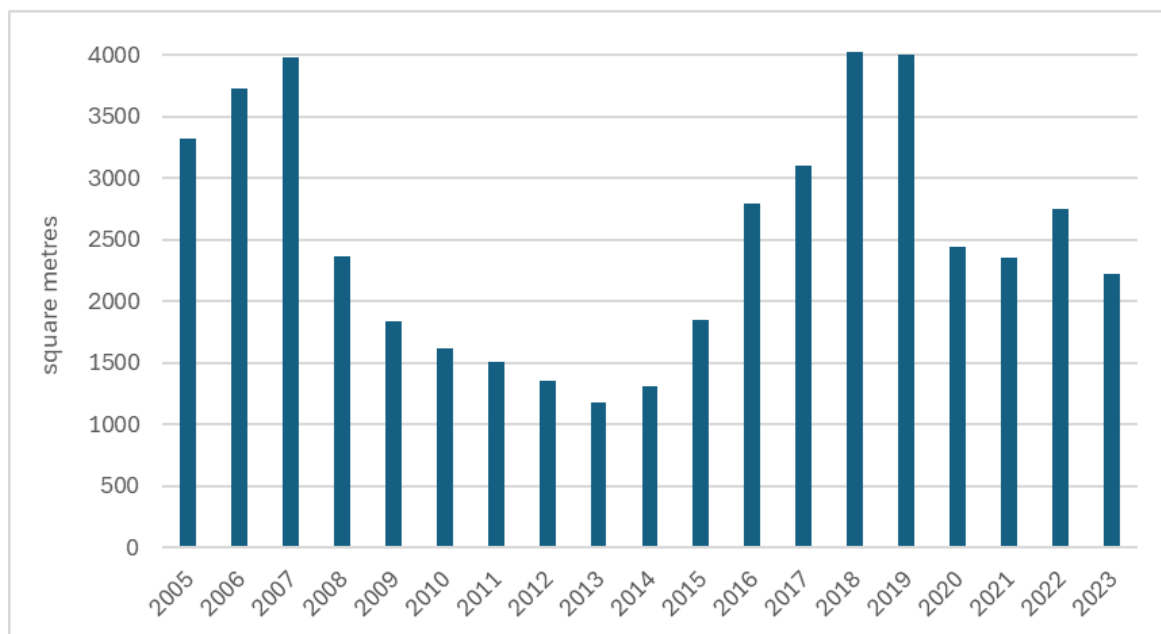


Figure 2.4: Building Permits Issued in Malta between 2005 and 2023

Source: Eurostat (2025g)

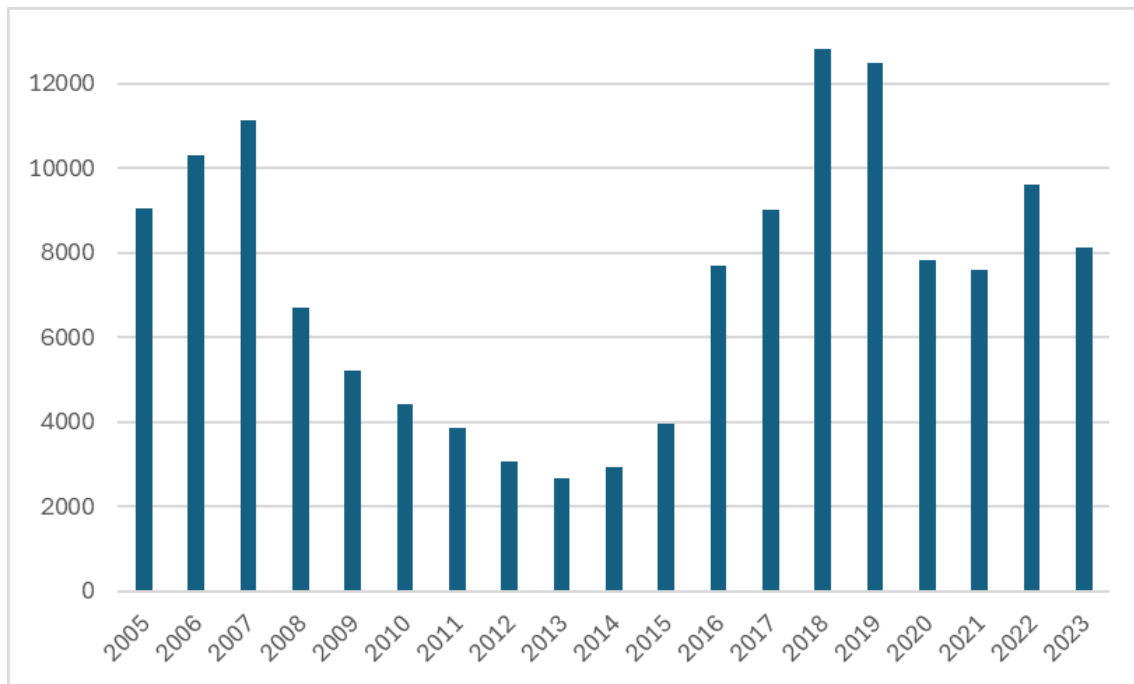


Figure 2.5: Number of Approved New Dwellings in Malta between 2005 and 2023

Source: Planning Authority (n.d. - b)

Several observations can be drawn from the above figures. The slump between 2008 and 2013 can be attributed to the economic recession that occurred as a result of the 2008 Global Financial Crisis. Moreover, a second slump can be observed in 2020 due to the economic slowdown experienced during the COVID-19 pandemic. Aside from these periods, Figure 2.5 shows a consistent increase in new dwellings. This raises important questions about the necessity and utility of such developments. The sheer volume of new housing units prompts an evaluation of whether these properties are meeting actual housing demand or contributing to oversupply.

High vacancy rates in Malta further allude to misalignment, with the most recent census showing that only 72.5% of dwellings were occupied throughout the year (NSO, 2021a). The persistent issuance of building permits amid reports of rising vacancy rates raises questions about urban sustainability. Are these developments contributing to a balanced housing market, or are they exacerbating risks such as environmental degradation and inefficient land use? It is, however, necessary for a proportion of the housing stock to remain vacant at any given time to support the buying and selling processes. These are known as “transactional vacancies” (Vakili-Zad and Hoekstra, 2011, p.444). Unlike most goods,

housing cannot be instantly exchanged due to its immobility, heterogeneity, and the time needed to complete transactions. Additionally, the diverse preferences and needs of buyers and sellers create a natural delay in matching supply with demand. These vacancies therefore provide a necessary buffer, ensuring market fluidity by allowing households to transition between properties without significant delays.

2.6 Neoclassical Theory of Housing Demand

The neoclassical theory of supply and demand, as introduced by Adam Smith in 1776, forms a cornerstone of economic theory, positing that markets achieve equilibrium through the interaction of supply and demand forces. Within the context of housing markets, Ge and Runeson (2006) explore the dynamic mechanisms that underpin these interactions, particularly through the lens of stock-flow models.

Grounded in neoclassical economics, the stock-flow model of housing distinguishes between the fixed housing stock and the flow of changes to that stock. The housing stock refers to the total number of housing units available at any time, including occupied and vacant properties, which remain relatively fixed in the short term due to the time and costs involved in construction or demolition. In contrast, housing flow represents changes to the stock through new construction, renovations or demolitions. Property prices adjust to balance demand with the available stock. In the short term, market adjustments occur primarily through changes in occupancy or vacancy rates, and in the long term, the flow of new construction or reductions in stock respond to price signals, leading to gradual changes in housing availability.

While the stock-flow model retains its neoclassical roots in understanding the basic mechanisms of supply and demand, it moves away from the rigid assumptions of neoclassical economics by incorporating the unique characteristics of the housing market. Unlike neoclassical models, which assume perfect competition, homogenous goods and market equilibrium (Obeng-Odoom, 2022), the stock-flow model acknowledges that housing is a complex good that cannot respond instantaneously to market movements. As a result, perfect equilibrium is rarely, if ever, achieved, with supply adjusting to demand only

gradually rather than instantaneously, a consideration central to the interpretation of the results in this study.

2.7 Housing: A Consumption Good or a Financial Asset?

Housing possesses unique attributes that differentiate it substantially from other goods in the market. As a result, the operation of the housing market deviates from the perfect equilibrium outlined in the neoclassical economic theory. This shift can be attributed to the dual nature of property, which serves both as a financial asset and a consumption good.

As stated by Haila (1988), landowners are exhibiting "an increasing tendency to treat their property as a pure financial asset," moving away from its traditional role as a dwelling. Drawing on Harvey (1982, cited in Haila, 1988), Haila explains that property is often considered "fictitious capital," functioning much like shares, bonds and other financial instruments, where its value is derived from expected returns, typically in the form of rent, rather than its direct utility. Thus, land and buildings are commodified and traded based on their potential to generate future income.

This perspective is supported by Coakley (1994), who describes the dual nature of property as a commodity with both use-value and exchange-value. The use-value of property pertains to its immediate utility, such as providing shelter, while the exchange-value reflects its potential for speculative investment in financial markets. Coakley argues that the distinction between these two aspects is crucial in understanding how property markets are influenced by financial speculation, often to the detriment of addressing housing needs.

These views are further substantiated by Morris (2018) who highlights how this speculative demand inflates housing prices, disconnecting them from local income levels and exacerbating affordability issues. Explaining the situation in Sydney, Morris showcases that despite a record number of new homes being constructed, house prices in Sydney doubled from 2007 to 2017, driven by speculative demand. This shift has prioritised high-end developments for investors, rather than addressing actual housing needs. As a result,

properties are often left vacant, deepening affordability issues and disconnecting housing supply from local demand.

This process has been termed the ‘financialisation’ of the housing market. Financialisation is defined as “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein, 2005, cited in Mader et al., 2020). The effects of this shift are far-reaching. As stated by Whitehead et al. (2023), investor-driven demand exacerbates affordability issues by pushing prices and rents beyond the reach of many residents. Furthermore, the emphasis on financial returns frequently results in a focus on luxury developments, neglecting the urgent need for affordable housing. The rise of Build-to-Rent schemes targeting middle and upper-income households illustrates this misalignment, as these developments often fail to address the needs of lower-income groups.

The work of these authors consistently reveals a persistent trend: construction rates are increasingly catering to speculative investment and the pursuit of profit. As stated by Madden and Marcuse (2016), there exists “a conflict between housing as home and as real estate”, inevitably disrupting the alignment of supply and genuine housing demand and leading to market distortions. This dual role is particularly evident in Malta, where property acts as a key investment vehicle. In fact, Bank of Valletta’s 2022 Investment Sentiment Index found that 38% of over 600 surveyed investors viewed real estate as the best investment option. This preference is further reflected by the strong homeownership culture in Malta, with homeownership rates reaching 74.7% in 2023, significantly higher than the Euro area’s average of 65.3% (Falzon et al., 2023).

While shelter is universally recognised as a human right, the growing financialisation of housing markets has shifted the balance of power from those who need housing to those who profit from it. As a result, the free market alone fails to address the gap between supply and demand (Vakili-Zad and Hoekstra, 2011), underscoring the need for robust policies to ensure equitable access to affordable housing.

2.8 The Role of Urban Planning and the Planning Authority

As defined by Harrison and Williamson (2001), planning refers to the “deliberate and formal processes directed at influencing the development of urban and rural areas, rather than development processes that are shaped by laissez-faire, undirected and unrestricted actions.” Urban planning plays a crucial role in shaping growing cities and addressing the various risks that come along with urbanisation. This involves managing land use, infrastructure and the built environment to create safe, sustainable and liveable urban spaces (Al-Ghiyadh and Al-Khafaji, 2021). Within the Maltese Islands, it is the PA that is responsible for overseeing and implementing this urban planning processes to ensure sustainable development.

The planning system in Malta as it exists today is largely shaped by the Development Planning Act (DPA) of 1992. Prior to this, Malta lacked a comprehensive building policy framework and a dedicated planning authority. Planning was instead governed by the Code of Police Laws, and development applications were considered by a board appointed by the Minister for Public Works. Given the lack of formally approved policy guidance, this system was characterised by inconsistencies and a lack of transparency (Musumeci, 2020). The DPA of 1992 marked a significant shift in Malta's approach to development by establishing the autonomous PA and transferring decision-making power away from the Minister.

The DPA introduced the Structure Plan, approved in 1996, outlining the spatial planning direction for the Maltese Islands, as well as local plans offering guidelines for development within specific localities (Grima, 2024). The boundaries of permissible development were clearly indicated and land outside these boundaries was classified as ODZ (Pace et al., 2023). In 2002, the PA merged with the Environment Protection Department, establishing the Malta Environment and Planning Authority (MEPA). This merger sought to centralise Malta's development management and streamline environmental and planning concerns (Musumeci, 2020).

The DPA of 1992 saw several amendments over the years, and in 2016, two new Acts were enacted: The Environmental Protection Act (Chapter 549 of the Laws of Malta), and The

Development Planning Act (Chapter 552 of the Laws of Malta). These led to the dissolution of the MEPA, which was once again split into the two entities standing today: The Environment and Resources Authority (ERA), responsible for developing and implementing policies to protect the environment, and the PA, responsible for issuing building permits and ensuring alignment with regulatory policies and urban planning goals (Musumeci, 2020).

2.8.1 The Process of Issuing or Denying Building Permits

In Malta, building applications are processed and assessed by the PA through a structured system involving various boards and committees, as outlined on their official website. Applications are submitted to the PA, where case officers review proposals to ensure compliance with planning regulations, policies, and sustainability principles. Recommendations for approval or refusal are then made by the Executive Council, a centralised office overseeing all applications. The Planning Board, which holds the primary decision-making role for issuing development permissions, evaluates applications further (Planning Authority, n.d. - c).

Additionally, specific Planning Commissions handle specialised cases such as those within development schemes, ODZ, or requiring regularisation. Committees such as the Agricultural Advisory Committee and the Design Advisory Committee provide expert advice on sustainable agricultural practices and design considerations for urban conservation areas, respectively. Approved projects must meet established criteria, while denied applications can be appealed. This multi-layered assessment framework reflects the PA's aim to balance development needs with environmental sustainability and cultural preservation (Planning Authority, n.d. - c).

2.8.2 Planning Policies and Urban Planning Risks in Malta

Urban planning policies play a critical role in shaping development trends, influencing both the volume and type of building permits issued by the PA. While these policies aim to regulate land use, building density, and urban sustainability, their practical implementation often raises questions about whether they effectively balance supply with genuine housing

demand. An examination of key policies reveals potential misalignments and risks that could exacerbate overdevelopment and unsustainable growth.

2.8.2.1 The 2006 Rationalisation Exercise

The 2006 Rationalisation Exercise marked a pivotal moment in Malta's urban planning history by expanding development zone boundaries. This policy shifted vast tracts of land from ODZ to developable areas, increasing the land supply for construction. Proponents argued that the expansion was necessary to accommodate Malta's growing population and housing needs. However, others highlighted its speculative nature, driven by lobbying from developers seeking to maximise profits at the expense of long-term sustainability (Galea, 2019). In the context of this dissertation, the Rationalisation Exercise provides a critical lens for analysing whether permits granted on this newly designated land align with actual housing demand or are driving unnecessary urban sprawl.

2.8.2.2 The Floor Area Ratio (FAR) Policy

Introduced in 2014, the FAR Policy incentivises higher building density, permitting medium-rise and tall buildings with over 10 floors in eligible areas, given that the site meets specific conditions such as being surrounded by streets and having at least 50% of the site as open space (MEPA, 2014). While this policy aimed to optimise land use in urban areas, its implementation has been criticised for loopholes that undermine its intent. For example, the controversial ITS site development in St George's Bay misused the FAR policy by including restricted spaces like private pools and car parks in open space calculations, violating the requirement for 50% public space (Ebejer, 2018).

2.8.2.3 Development Control Design Policy, Guidance, and Standards 2015 (DC15)

The DC15 regulates urban planning in Malta by setting guidelines for building heights, urban form, streetscape integration, and architectural quality (MEPA, 2015). However, the DC15 has resulted in the relaxation of building heights by introducing a metre-based height system rather than a floors-based system. While intended to provide clear and measurable parameters, this has been frequently misapplied or exploited, allowing developers to add

additional floors without adequately considering local context or sustainability (Zammit, M.L., 2024). This has led to high-density developments that disrupt the urban landscape and contribute to overcrowding, undermining the policy's original intent to balance growth with harmony.

2.8.2.4 The Strategic Plan for the Environment and Development (SPED)

The SPED is the official document which addresses the spatial issues within the Maltese Islands (PA, 2015). Its objectives include containing urban sprawl and ensuring that development aligns with availability of resources to support sustainable socio-economic growth. However, the implementation of the SPED has been largely criticised for allowing the government to override its provisions for projects deemed to be of national importance. This exemption has enabled the prioritisation of large-scale developments, such as the 2019 Central Link project. This raises concerns about whether the SPED is sufficiently robust to ensure that permit issuance reflects actual housing demand rather than political or economic pressures (Din I-Art Helwa, 2014). As of 2020, the SPED began an ongoing review process by the PA and the ERA, with a revised policy yet to be published.

The analysis of Malta's urban planning policies reveals a recurring tension between the intentions of regulatory frameworks and their practical implementation. While policies such as the FAR policy, DC15, the SPED and ODZ boundaries are designed to promote sustainable development and regulate urban growth, their application has often been undermined by inconsistencies, loopholes and external pressures. These shortcomings not only exacerbate the risks of overdevelopment but also challenge the capacity of Malta's planning system to align property supply with genuine housing demand. This discrepancy underscores the need for a more transparent, accountable and demand-driven approach to urban planning.

2.9 Sustainability in Urban Development

As defined by the United Nations (1987, p. 37) in the World Commission on Environment and Development Brundtland Report, "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet

their own needs.” Sustainable development requires a balanced approach that integrates economic, social, and environmental objectives (Sopiana and Harahap, 2023). In Malta, this concept is particularly critical given the island’s limited land and resources, which are increasingly under pressure from rapid development. While economic growth is essential for improving living standards, its narrow interpretation as mere financial expansion often undermines sustainability. True economic development must encompass social equity and environmental protection to achieve long-term resilience (Hassan and Lee, 2015).

Sustainable development is a core value outlined in the PA’s vision, with their mission statement emphasising their commitment to "acting on behalf of the community to create a balanced and sustainable environment" (Planning Authority, n.d. - b).

Environmental Impact Assessments (EIAs) are crucial in this process. As outlined by Patil (2012), these assessments evaluate the potential environmental consequences of proposed projects, guiding decision-makers to consider sustainability before approving developments. EIAs are undergone by the ERA, which evaluates the environmental impact that may arise from a proposed development, with the aim of curbing harmful construction practices that compromise Malta’s ecological integrity. The outcomes of the EIA are subsequently sent to the PA as part of the development approval process.

However, sustainable development policies are often not straightforward and require careful judgment to balance competing economic, social, and environmental priorities. The recent controversial approval of development at Fort Chambray highlights the complexities of policy implementation. Despite being a Grade 1 scheduled historic site with significant cultural and architectural value, the PA approved plans for the demolition of the historic British Barracks and the construction of commercial hotels and residential facilities. These decisions were made despite widespread public objections and clear violations of the Cultural Heritage Act, and notwithstanding the EIA, which should have underscored the project’s detrimental environmental implications (Galdes, 2024).

Such approvals highlight growing concerns about Malta's capacity to align development with actual demand. This is particularly concerning when viewed alongside the Malta Chamber’s 2021 recommendation for a moratorium on tourist accommodation projects to prevent

oversupply. Information published in the Malta Tourism Strategy 2021-2030 showed that “if all things remain equal and all current and planned tourist accommodation projects are completed, Malta could have a licensed bed stock of 100,000 by 2030, leading to a surplus of 14.1 million” (Zammit, N., 2024). Such projections underscore the need for careful consideration of long-term demand in planning and approval decisions, ensuring that development serves both present and future needs without overburdening the market or eroding cultural assets.

Ultimately, achieving sustainable development in Malta requires a shift away from short-term, profit-driven approaches and towards long-term, sustainable solutions. Effective urban planning must involve detailed analyses of demographic trends, housing needs, and economic activity to ensure alignment between development supply and demand (Hassan and Lee, 2015; Patil, 2012).

By 2030, local policies must be aligned with the United Nations (2016) Sustainable Development Goals (SDGs), including Goal 11: “Sustainable Cities and Communities”. This alignment entails adopting planning practices that prioritise environmental preservation, social equity, and responsible economic growth. It also involves safeguarding natural and cultural heritage, ensuring efficient use of resources, and creating urban spaces that enhance the quality of life for all citizens. Malta’s alignment with the SDGs by 2030 represents an opportunity to redefine development practices, ensuring they benefit both present and future generations while preserving the island’s unique identity and resources.

2.10 Gaps in the Literature

Despite the abundance of existing research on housing market dynamics, a notable gap remains in examining the relationship between housing demand and supply, particularly in terms of real-world data. While prior studies have examined the factors influencing housing demand, they have not explored how these factors align with building permit issuance. This absence of empirical data presents a significant risk of market imbalance, especially in Malta and other European small states where this critical area remains largely unexplored. This

dissertation seeks to address this research gap through the research questions, contributing to a more informed and risk-aware understanding of housing market dynamics.

2.11 Conclusion

Through an extensive examination of various sources, this literature review has provided the reader with a comprehensive understanding of the key factors influencing housing demand, as well as the evolving housing and development landscape within the Maltese Islands.

Laying the foundation for addressing the research questions, this chapter serves as a stepping stone for the empirical analysis to follow, linking theoretical frameworks with practical applications to address critical gaps in the understanding of Malta's housing market.

Chapter 3: Methodology

3.1 Introduction

As outlined in Chapter 2, a wide range of economic, demographic and social factors impact the demand for property. The primary objective of this research is to evaluate the relationship between these determinants and the number of building permits being issued. This chapter outlines the methodological framework employed to achieve this objective and successfully answer the research questions defined in Chapter 1.

In the following sections, a detailed description of the data sources used in the study is provided, alongside an explanation of the econometric model and estimation methods employed. Additionally, the chapter considers the reliability and validity of the data, acknowledging potential limitations and addressing ethical considerations relevant to the research process.

3.2 Research Approach

In scholarly research, deductive and inductive research designs represent two fundamental approaches, each with distinct aims. The choice between these methods depends on whether the research aims to generate new theories from observed patterns, or to test existing theories through empirical analysis (Fife and Gossner, 2024).

An inductive approach begins with specific observations or data sets, from which broader patterns, relationships or theories emerge. This bottom-up method moves from the particular to the general, allowing theory to develop based on real-world findings rather than pre-existing frameworks (Kim, 2021). Conversely, a deductive approach seeks to test whether observed data aligns with pre-established theories or hypotheses held by the researcher. This top-down approach compares theoretical concepts to empirical data, assessing whether the evidence supports or challenges the initial assumptions (Islam, Khan and Baikady, 2022).

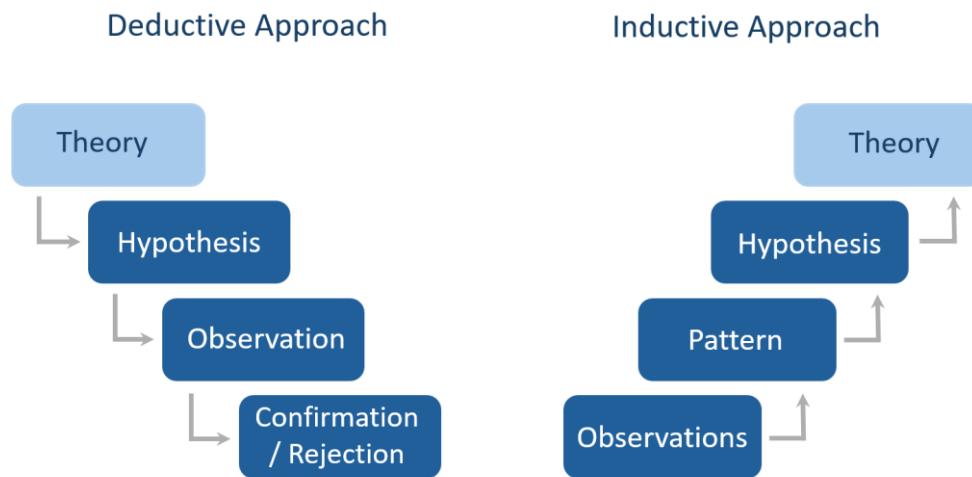


Figure 3.1: Deductive versus Inductive Approach

Source: Islam, Khan and Baikady (2022), created by author.

This study adopts a deductive approach, as it seeks to determine whether the supply of property corresponds with demand or is being artificially driven by external influences. Drawing from the existing literature as well as the research questions, the author has developed the below hypotheses:

H_0 : Building permit trends in European small states do not align with property demand factors

H_1 : Building permit trends in European small states align with property demand factors

And

H_0 : Building permit trends in Malta do not align with property demand factors

H_1 : Building permit trends in Malta align with property demand factors

In testing these hypotheses, this study adopts a positivist research approach. Positivism is grounded in the assumption that reality exists independently of human perception and can be objectively measured. It emphasises deriving knowledge from empirical evidence and observable facts, utilising quantitative data to identify patterns and causal relationships (Karupiah, 2022). A positivist approach is appropriate for this study as it seeks to analyse the

relationship between property supply and demand in Malta through measurable economic indicators, ensuring both objectivity and replicability of its findings.

3.3 Description of Data

In this research, the author utilises secondary data collected primarily from Eurostat, the statistical office of the European Union, alongside other sources such as the World Bank Group and the National Statistical Institutes (NSI) of the European small states under analysis. These sources are well-established and reputable, ensuring a high degree of reliability and consistency in the data provided. Moreover, the European Statistical System, a partnership between Eurostat and the NSIs of EU Member States, applies standardised definitions and data processing methods to uphold statistical accuracy and comparability between countries (Eurostat, n.d.). Similarly, the World Bank Group, a globally recognised institution, follows strict methodological frameworks guided by global standards, ensuring data reliability. By utilising these sources, this research ensures data integrity, minimises biases and discrepancies, and maintains a consistent and credible foundation for analysis.

The study is based on annual data covering the years 2005 to 2023. This extended timeframe allows for a comprehensive analysis of trends, providing valuable insights into the situation while mitigating the impact of short-term fluctuations. This analysis focuses on the six European Small States outlined in Table 3.1 below.

Table 3.1: Population of the European Small States under Analysis

Country	Population (1 January 2025)
Cyprus	979, 865
Estonia	1,369,995
Latvia	1,856,932
Luxembourg	681,973
Malta	574,250
Slovenia	2,130,850

Source: Eurostat (2025i)

Defining small states is a conceptually complex task, as smallness is a relative rather than an absolute concept (Hanf and Soetendorp, 2014). Various institutions offer different classifications, with the Commonwealth (1997) and the World Bank (2024) defining small states as those with populations under 1.5 million, while the Forum of Small States (FOSS) extends this threshold to 10 million (Súilleabháin, 2014). Although Latvia and Slovenia slightly exceed the World Bank's 1.5 million population threshold, they share the fundamental characteristics of small states, including economic vulnerability, exposure to external shocks, limited diplomatic and military capacity, and reliance on international trade (Dimech, 2021; World Bank Group, 2024). Their inclusion allows for a more comprehensive analysis of small state dynamics within the study.

The dependent variable in this study is the total area of building permits, measured in square metres of useful floor area per 1000 inhabitants. This variable, sourced from Eurostat (2025g), serves as a proxy for the intensity of construction activity relative to population size, allowing for comparison across time and countries. An area-based measure was chosen over the simple count of permits, as it more accurately captures the scale and scope of development, rather than merely the number of construction projects approved.

Meanwhile, the independent variables being considered consist of the key demand factors identified through the literature review. These are displayed in Table 3.2, along with a description, their corresponding units of measurement and data source. However, this study recognises that certain demand factors discussed in Chapter 2, namely interest rates, consumer preferences, cultural norms, government policies and land availability, cannot be directly measured and have therefore been excluded from the empirical analysis.

The model includes average disposable income in both linear and squared terms to capture potential nonlinear effects on construction activity. This approach acknowledges that the influence of income may vary at different levels, with its impact potentially increasing initially before tapering off at higher income levels. Additionally, all independent variables, aside from GDP, HPI and average age of leaving parental home, are expressed per capita, which inherently adjusts for population differences. As a result, population is excluded from the model to avoid redundancy and multicollinearity.

Table 3.2: Demand Factors, Unit of Measurement and Data Source

Demand Factor	Description	Unit of Measurement	Data Source
Average Disposable Income	Average household income available for spending and saving after taxes and pension contributions	Euros in purchasing power standards	Eurostat (2025b)
House Price Index (Deflated)	Measures changes in the transaction prices of dwellings, adjusted for consumer price inflation. This will serve as a proxy for property prices	Annual average rate of change	Eurostat (2025f)
Inbound Tourism	The number of tourists travelling to the country for a period not exceeding 12 months, with the main purpose of the visit being non-remunerated activities	Average number of arrivals	World Bank Group (2025a)
Gross Domestic Product	A measure of a country's total economic output	Euros in current prices	Eurostat (2025e)
Net Migration	The difference between the number of immigrants and emigrants	Number	World Bank Group (2025b)
Average Age of Leaving Parental Home	The average age at which individuals no longer live in a household with their guardians	Age in years	Eurostat (2025d)
Divorces	Total number of divorces (legal dissolution of a marriage) per year	Number	Eurostat (2025c) and respective NSI
Marriages	Total number of marriages per year	Number	Eurostat (2025h) and respective NSI

3.4 Ethical Considerations

This study utilises secondary data sourced from reputable open-data sources, and all information is aggregated and devoid of any personally identifiable details. As a result, there are no privacy or confidentiality concerns. The research adheres to the University's Research Code of Practice and has been reviewed and approved by the University Research Ethics Committee (UREC), ensuring compliance with the required ethical standards.

3.5 Data Analysis Tools

Given the numerical nature of the study, a quantitative data analysis approach is adopted, employing the statistical software Stata to conduct a panel data analysis, thereby testing the above hypotheses and providing an objective assessment of the relationship between property demand and supply.

3.5.1 Panel Data Analysis

Panel data analysis consists of two key dimensions: a cross-sectional component, which captures differences across the countries under study, and a time series component, which tracks changes in each individual country's supply and demand factors over time (Pillai, 2016).

The panel consists of the six European small states over the period 2005 to 2023, comprising a sample of 103 observation. This figure reflects 11 missing data points which were unavailable across sources.

The following regression model is developed:

$$Y_{it} = \beta_0 + \beta_1 Income_{it} + \beta_2 Income^2_{it} + \beta_3 HPI_{it} + \beta_4 Tourism_{it} + \beta_5 GDP_{it} + \beta_6 Migration_{it} + \beta_7 AgeLeaveHome_{it} + \beta_8 Divorce_{it} + \beta_9 Marriage_{it} + \alpha_i + \varepsilon_{it}$$

Where:

i = Country (where $i = 1, 2, \dots, 6$);

t = Year (where $t = 2005, 2006, \dots, 2023$);

Y_{it} = *Building Permits* = dependent variable;

$Income_{it}$, $Income^2_{it}$, HPI_{it} , $Tourism_{it}$, GDP_{it} , $Migration_{it}$, $AgeLeaveHome_{it}$, $Divorce_{it}$, $Marriage_{it}$ = independent variables;

β_0 = intercept;

$\beta_1 \dots \beta_9$ = coefficients of the independent variables;

α_i = country specific random effect, representing unobserved, time-invariant factors unique to each country;

ε_{it} = idiosyncratic error term, representing unobserved, time-varying influences on the dependent variable that cannot be attributed to the independent variables.

Panel data analysis is typically conducted using two alternative models: The Fixed Effects Model (FEM) or the Random Effects Model (REM). FEM assumes that unobserved, entity-specific characteristics may be correlated with the explanatory variables. Conversely, REM assumes any variation across entities to be random and uncorrelated with the independent variables.

However, as highlighted by Bell et al. (2019), FEM can oversimplify models by filtering out meaningful between-entity variations, especially for slow-evolving explanatory variables such as the average age of leaving the parental home and the number of divorces and marriages. Consequently, REM is preferred for this study, as it allows for the inclusion of time-invariant variables and yields more efficient and precise estimates when its core assumption holds (Wooldridge, 2010). This assumption is deemed reasonable for this analysis, as variations in building activity is more likely driven by macroeconomic and demographic shifts than by unobserved, locality-specific factors. Additionally, REM enables

broader generalisation of findings by treating entity-specific effects as random rather than fixed (Bell and Jones, 2015).

To ensure the appropriateness of model selection, a Hausman test is performed to determine whether the FEM or REM is more suitable for this study. The null hypothesis posits that the unobserved individual effects are uncorrelated with the explanatory variables. Failing to reject this validates the use of REM as the more efficient estimator. The test results are presented in Table 3.3 below, with a chi-squared value of 2.52 and a p-value of 0.9804, indicating that the null hypothesis cannot be rejected and thereby supporting the use of REM for this analysis.

Table 3.3: Hausman Test Results

Cluster-Robust Hausman Test	
Chi-Squared Statistic	2.52
Degrees of Freedom	9
P-value	0.9804

Given its combination of cross-sectional and time-series elements, panel data is particularly susceptible to two issues: heteroscedasticity and autocorrelation (Baltagi, 2021).

Heteroscedasticity occurs when the variance of error terms is not constant, leading to unreliable standard errors and potentially misleading hypothesis tests. Autocorrelation arises when error terms are correlated over time, inflating statistical significance and resulting in incorrect conclusions about the relationship between variables. To address these issues, the model employs cluster-robust standard errors, which allow for arbitrary correlation of errors within each small state over time (MacKinnon, Nielsen and Webb, 2023).

3.6 Limitations of Study

Despite the robustness of panel data analysis, this study is subject to several limitations.

Firstly, relying on secondary data inevitably introduces potential inconsistencies in collection

methods and reporting standards across sources, which may affect variable comparability. However, this risk has been minimised by selecting reputable data sources and using a single data source where possible. Additionally, missing observations may introduce bias in the results. Nonetheless, their limited occurrence is considered negligible, minimising any significant impact on the study's findings.

Another limitation stems from the challenge of fully identifying and capturing all determinants that influence property demand. While the model incorporates a range of economic and demographic factors, certain qualitative aspects, such as consumer preferences and cultural norms, are inherently difficult to quantify. Moreover, certain influential factors may not be explicitly accounted for due to their unobservable nature or their absence in the available literature. However, the use of REM helps to partially control for these unobservable influences, reducing their potential impact on the findings. Furthermore, variables were carefully selected based on established economic theory and prior academic research.

Ultimately, the model is limited to the selected group of European small states, which may constrain the generalisability of the results and their relevance to other countries or contexts.

Chapter 4: Analysis and Results

4.1 Introduction

This core chapter presents and interprets the results of the regression analysis, examining the relationship between building permit activity and key demand determinants across six European small states, with particular emphasis on the Maltese Islands.

It begins by setting the broader European context through a summary of the sample's descriptive statistics, highlighting key trends and cross-country variations. The analysis then proceeds to apply the panel data regression model introduced in Chapter 3, testing the hypotheses developed and providing an evidence based response to the research questions.

The chapter concludes with a focused discussion of the findings, highlighting the distinctive dynamics observed in Malta and considering their implications for housing policy, urban planning, and the future of sustainable development within small states.

4.2 Descriptive Statistics

Table 4.1 provides the descriptive statistics for the dataset under study, offering valuable insights into the factors influencing building permit trends across European small states. All variables are expressed per capita, with the exception of GDP (presented in billions of euros), HPI (an index), and the average age of leaving the parental home. Particular attention is given to the mean and standard deviation of the data, which provide an initial understanding of the concentration and variability of observations across the sample of countries.

Table 4.1: Summary Statistics for Key Variables in European Small States (2005-2023)

Variable	Mean	Standard Deviation	Minimum	Maximum
Building Permits	0.00199	0.00229	0.00009	0.00982
Average Disposable Income	18,788	7,154	7,798	39,399
HPI	2.91	10.39	-38.9	53.5
Inbound Tourism	2.931	1.496	0.580	7.138
GDP (billions)	28.6	16.4	5.13	79.3
Net Migration	0.00705	0.01014	-0.01704	0.04118
Average Age of Leaving Parental Home	27.1	2.2	21.4	31.0
Divorces	0.00192	0.00089	0	0.00400
Marriages	0.00503	0.00160	0.00225	0.00896

One of the most noteworthy figures is the mean value of the dependent variable: the total area of building permits per metres of useful floor area. This metric offers a spatially standardised measure of construction intensity, indicating the rate at which new developable space is approved relative to existing built area. A value of 0.00199 suggests that, on average, permitted new construction activity accounts for less than 0.2% of each country's total useful floor area annually, indicating a modest pace of spatial expansion across the sample during the study period.

Notably, the standard deviation of 0.00229 significantly exceeds the mean, indicating considerable variation in construction intensity across the six European small states. Such pronounced dispersion suggests that, while average growth remains modest, certain countries, or specific periods within those countries, have experienced significantly higher surges in development activity, while others may demonstrate prolonged periods of minimal new permits. These disparities imply that development activity is unevenly distributed, with

these heterogeneities likely influenced by a complex interplay of country-specific demand pressures, government incentives and varying zoning frameworks.

Among the demographic variables, net migration exhibits particular volatility. The data reveals a relatively low mean of 0.71%, but a high degree of dispersion, with a standard deviation of 1.01%. The range is particularly striking, spanning from net emigration of –1.7% to net immigration of over 4.1% of the population in a given year, underscoring the highly heterogeneous demographic shifts experienced across the countries.

Furthermore, the data reveals a notable divergence in inbound tourism across the sample, with a mean of 2.931 and a standard deviation of 1.496. The broad range, from a minimum of 0.58 to a maximum of 7.138, clearly indicates that some countries experience tourist numbers far exceeding their resident populations, while others have a more moderate tourism footprint.

Similarly, the HPI, with a mean of 2.91 and a remarkably high standard deviation of 10.39, exhibits considerable price volatility across the sample. The observed range from substantial declines of –38.9 to significant increases of 53.5 highlights periods of both considerable distress and robust expansion in housing market conditions.

Collectively, these summary statistics paint a clear picture of significant heterogeneity across both the countries and the time periods under study, reinforcing the empirical justification for adopting a panel data regression approach. This cross-sectional and temporal variation is essential for effectively isolating the impact of specific demand-side determinants on building permit issuance and for understanding how national contexts shape construction trends by accounting for unobserved country-specific influences.

4.2.1 Descriptive Statistics: A Focus on the Maltese Islands

Narrowing the focus to the Maltese Islands, an examination of Malta's descriptive statistics reveals distinct characteristics of its property market and socioeconomic landscape, offering valuable insights when analysed alongside the broader sample of European small states.

Table 4.2 below presents the summary statistics for the variables under analysis. All figures are expressed on a per capita basis, apart from GDP (presented in billions of euros), the HPI (an index), and the average age of leaving the parental home.

Table 4.2: Summary Statistics for Key Variables in Malta (2005-2023)

Variable	Mean	Standard Deviation	Minimum	Maximum
Building Permits	0.005614	0.00221	0.00279	0.0098
Average Disposable Income	17,511	3,560	12,978	25,373
HPI	3.52	6.14	-6.3	19.5
Inbound Tourism	4.719	1.423	1.395	7.138
GDP (billions)	10.5	4.72	5.13	20.5
Net Migration	0.01218	0.01275	0.00179	0.04118
Average Age of Leaving Parental Home	29.9	0.87	28.1	31.0
Divorces	0.00050	0.00040	0	0.00106
Marriages	0.00573	0.00117	0.00225	0.00684

Notwithstanding its comparatively small size and population, Malta's average annual building permits stand at 0.005614, more than 2.8 times the average observed across other European small states (0.00199), positioning Malta as a clear outlier with a significantly more active construction sector in relative terms. However, the relatively high standard deviation of 0.00221 indicates notable year-on-year fluctuations in permit issuance, suggesting a pattern of reactive or speculative development rather than stable, long-term planning.

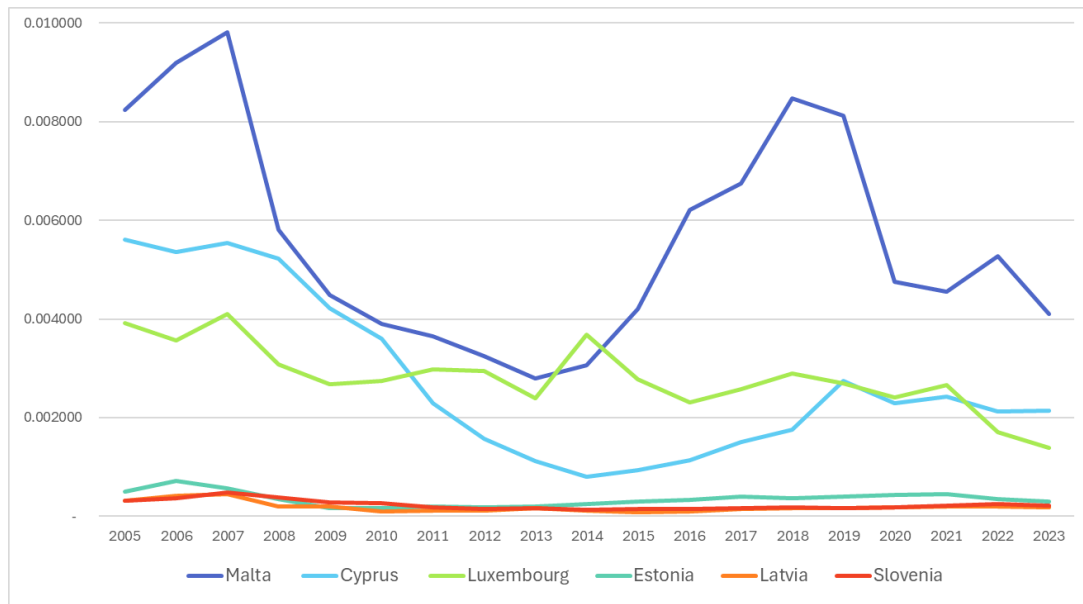


Figure 4.1: Building Permits Issued Per Capita

Source: Eurostat (2025g)

This elevated level of construction intensity appears to contrast sharply with the observed trends in both house prices and average income, which do not indicate market conditions that that would ordinarily warrant such a persistent increase in supply. The HPI in Malta has grown at a modest average annual rate of 3.52%, with significantly lower volatility than that observed across other European small states (standard deviation of 6.14% versus 10.39%). However, the trend includes notable periods of accelerated price growth that, in certain years, outpaced wage increases, raising concerns about housing affordability and potential speculative investment. Nonetheless, property prices overall have not consistently risen in line with the substantial expansion in housing supply, suggesting that development may be outpacing underlying market demand.

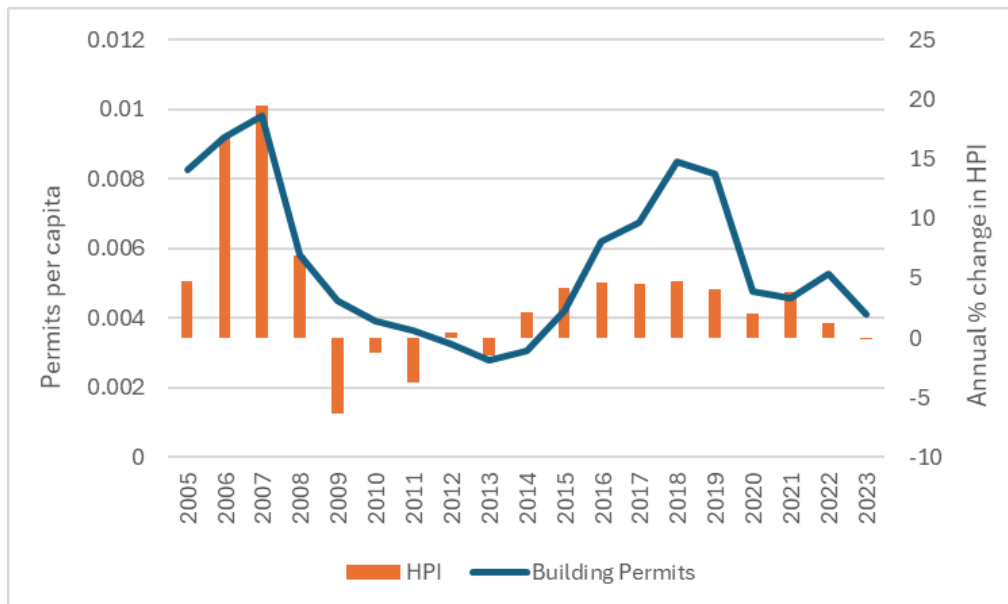


Figure 4.2: Trends in HPI and Building Permits in Malta

Source: Eurostat (2025f, 2025g)

Similarly, Malta's average disposable income of €17,511 shows considerably less volatility (standard deviation of €3,560) compared to its peers (€7,154), indicating no major surges in household purchasing power that would justify a supply-side expansion of this magnitude. The juxtaposition of persistently high levels of building permit issuance with relatively stable housing prices and incomes highlights a disconnect between supply growth and demand-side volatility.

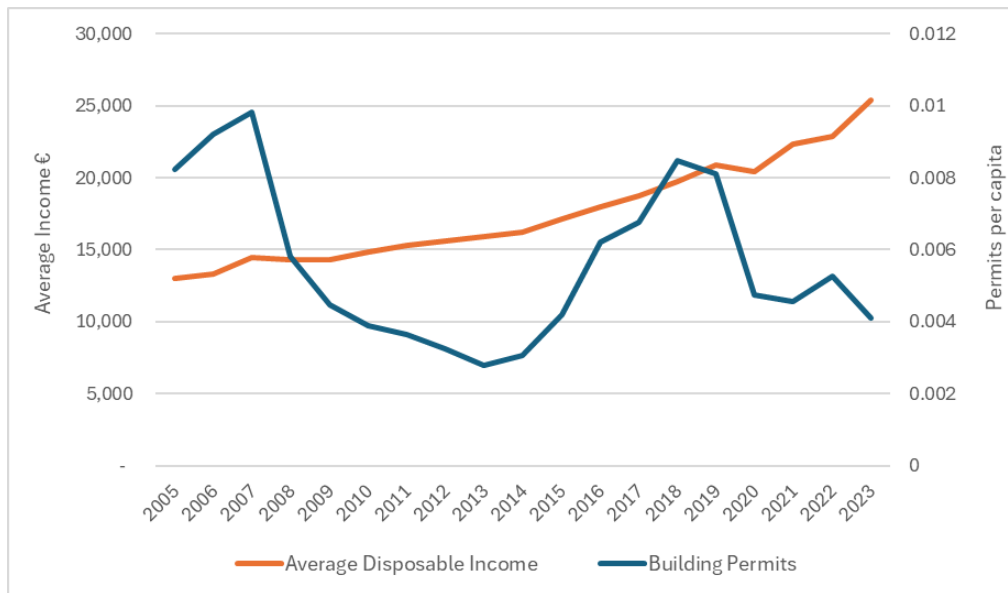


Figure 4.3: Trends in Average Income and Building Permits in Malta

Source: Eurostat (2025b, 2025g)

Beyond these core demand and supply indicators, other variables highlight Malta's unique context. Malta's net migration per capita averages a substantial 0.0122, almost double the 0.00705 mean observed across the comparative sample, underscoring its prominent role as a migration destination within this group. Coupled with a high standard deviation of 0.0127, this indicates that migration in Malta is highly dynamic and often unpredictable, presenting significant challenges for long-term planning and resource allocation.

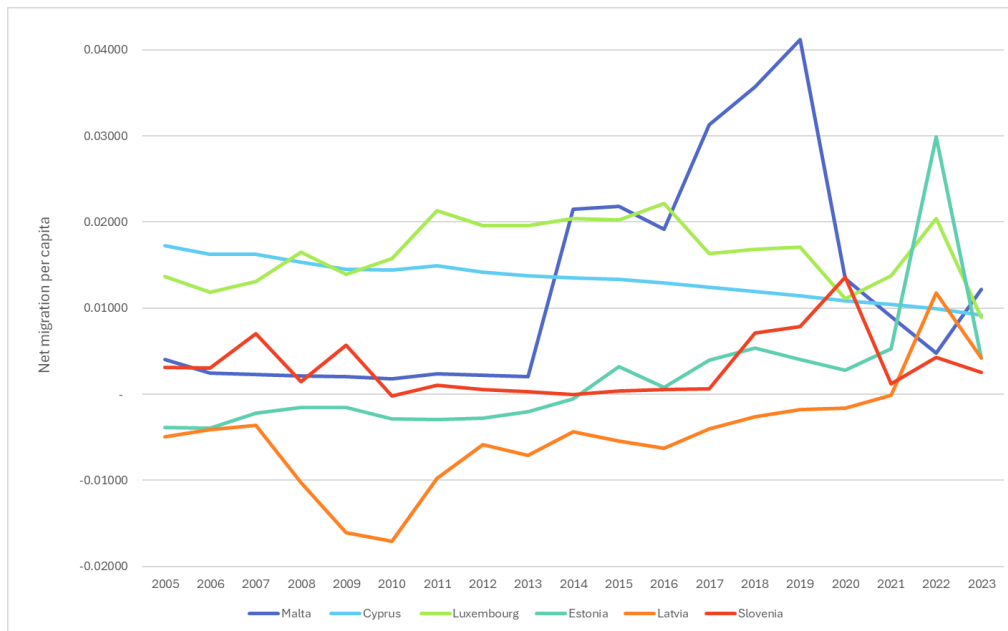


Figure 4.4: Average Net Migration Per Capita

Source: World Bank Group (2025b)

Malta also stands out for its exceptional tourism intensity, averaging approximately 5.79 tourist arrivals per resident, significantly higher than the 3.14 average across other small states. This sustained high tourism volume, coupled with a relatively low standard deviation of 0.71, underscores Malta's consistent status as a leading tourist destination within the dataset. Moreover, the wide range of arrivals, spanning from of 1.39 to 7.14 tourists per resident, further illustrates that Malta regularly experiences tourist volumes surpassing its resident population.

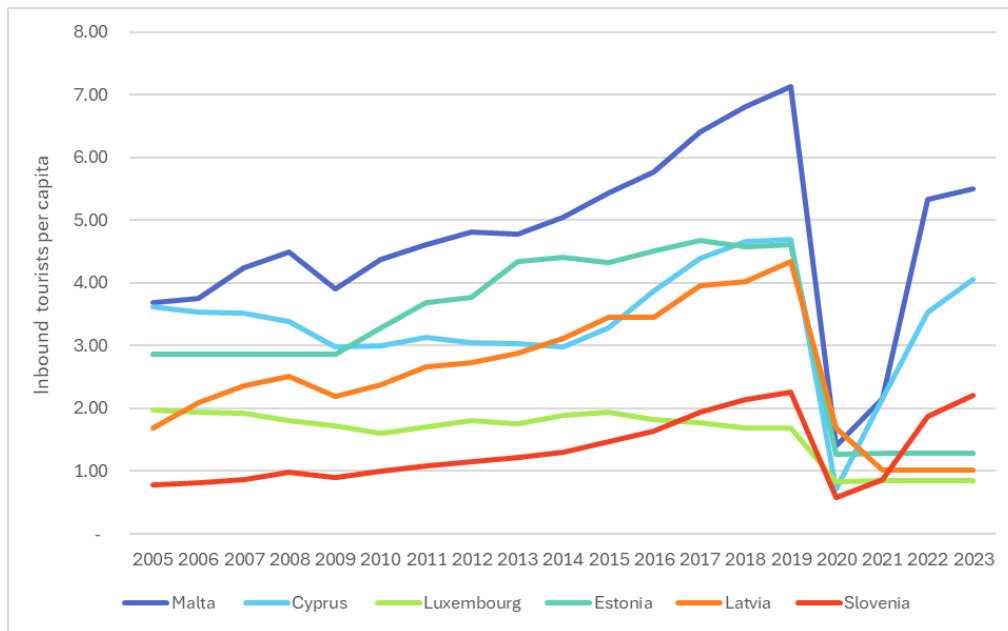


Figure 4.5: Annual Tourist Arrivals Per Capita

Source: World Bank Group (2025a)

In conclusion, the descriptive statistics for Malta paint a picture of an economy experiencing robust construction activity, with high, albeit fluctuating, building permit issuance. This pattern, when contrasted with more stable trends in demand-side indicators, raises concerns that new development may be advancing beyond immediate market needs. The notable internal variability observed across key factors further underscores the need for rigorous regression analysis to clarify the underlying drivers of this imbalance.

4.3 Regression Analysis

To empirically assess the extent to which building permit issuance is driven by housing demand, this section presents the results of the panel regression model detailed in Chapter 3. The analysis was carried out using Stata and the regression results are summarised in Table 4.3 below.

Table 4.3: Regression Results

Number of observations	103
Number of groups	6
R-squared (overall)	0.7909

Building Permits (m ²)	Coefficient	Robust standard error	z	P > z	95% confidence interval	
Income	-3.91e-07	1.63e-07	-2.40	0.016	-7.10e-07	-7.22e-08
Income ²	1.37e-11	2.95e-12	4.64	0.000	7.91e-12	1.95×e-11
HPI	0.0000239	0.0000254	0.94	0.348	-0.0000259	0.0000737
Tourism	0.0000175	0.0001468	0.12	0.905	-0.0002703	0.0003053
GDP	-9.10e-14	1.13e-14	-8.02	0.000	-1.13e-13	-6.87e-14
Migration	0.0638223	0.0236367	2.70	0.007	0.0174953	0.1101494
Age of leaving parental home	0.0000335	0.0001453	0.23	0.818	-0.0002513	0.0003183
Divorces	-1.235311	0.3948666	-3.13	0.002	-2.009235	-0.4613864
Marriages	0.305703	-0.0964818	3.17	0.002	0.1166021	0.4948039
Constant	0.0058336	0.0062552	0.93	0.351	-0.0064264	0.0180936

As shown above, the regression model yielded an R-squared value of 0.7909, indicating that approximately 79.09% of the variation in building permits issued can be explained by the independent variables included in the analysis. This robust R-squared value signifies a strong fit of the model to the data, demonstrating substantial explanatory power and reinforcing the relevance of the demand factors in shaping the issuance of building permits across the European small states under review.

To assess the statistical significance of individual coefficients, a 5% significance level is applied. At this threshold, the critical values for a two-tailed z-test are ± 1.96 . Accordingly, any coefficient with a z-statistic beyond this range, or equivalently, with a p-value less than 0.05, is deemed statistically significant, indicating a measurable effect of that variable on building permit issuance.

The null and alternative hypothesis are as follows:

H_0 : Building permit trends in European small states do not align with property demand factors

H_1 : Building permit trends in European small states align with property demand factors

The analysis of individual coefficients reveals several significant relationships, some aligning with, and others diverging from, established expectations within the literature, as summarised in Table 4.4.

Table 4.4: Comparison of A Priori Expectations and Empirical Findings

Variable	A Priori Expectation	Source	Findings	Statistical Significance	Alignment with Expectations
Income	+	Malpezzi (1999); Senaratne and Zainudeen (2010); Kabaday (2016); Solak and Kabaday (2016); Zheng (2018).	Non-linear	Yes	Yes
HPI	-	Megbolugbe, Marks and Schwartz (1991); Bates and Santerre (2015); Blanco-Romero, Blázquez-Salom and Cànoves (2018); Tsai (2013); Williams and Nedovic (2016); Jiang (2020); Portelli (2022); Manochehri et al. (2025).	-	No	No
GDP	+	Dougherty and Van Order (1982); Wan, Zhang and Wang (2009); Bates and Santerre (2015); Leamer (2015).	-	Yes	No
Tourism	+	Mao, Mend, and Wang (2014); Biagi, Brandano and Lambiri (2015); Barbić (2024).	+	No	No
Migration	+	Mulder (2006); Gopy-Ramdhany and Seetanah (2020); Portelli (2022); Deki et al. (2025).	+	Yes	Yes
Age of leaving parental home	-	Mifsud (1974); Mulder (2006).	+	No	No

Divorces	+	Mifsud (1974)	-	Yes	No
Marriages	-	Mifsud (1974)	+	Yes	No

4.3.1 Economic Factors

4.3.1.1 Income

The regression results reveal a statistically significant, non-linear relationship between income and building permits issued, captured through both the income and income squared terms. Specifically, the coefficient on income is negative and significant ($p = 0.016$), while the coefficient on income squared is positive and highly significant ($p = 0.000$). This combination of signs suggests a U-shaped relationship between income levels and building permit issuance, where increases in income are initially associated with a reduction in construction activity, but beyond a certain threshold, further income growth leads to a positive effect on building permits.

Based on the estimated coefficients shown in Table 4.3, the turning point of this non-linear effect can be estimated using the vertex formula $\frac{-\beta_1}{2\beta_2}$, where β_1 represents the coefficient for income ($-3.91e-07$) and β_2 the coefficient for income squared ($1.37e-11$). The calculation yields $\frac{-(-3.91e-07)}{2(1.37e-11)} = 14,270$. This suggests that in the European small states under analysis, income growth does not begin to stimulate construction activity, in terms of building permits issued, until income reaches €14,270.

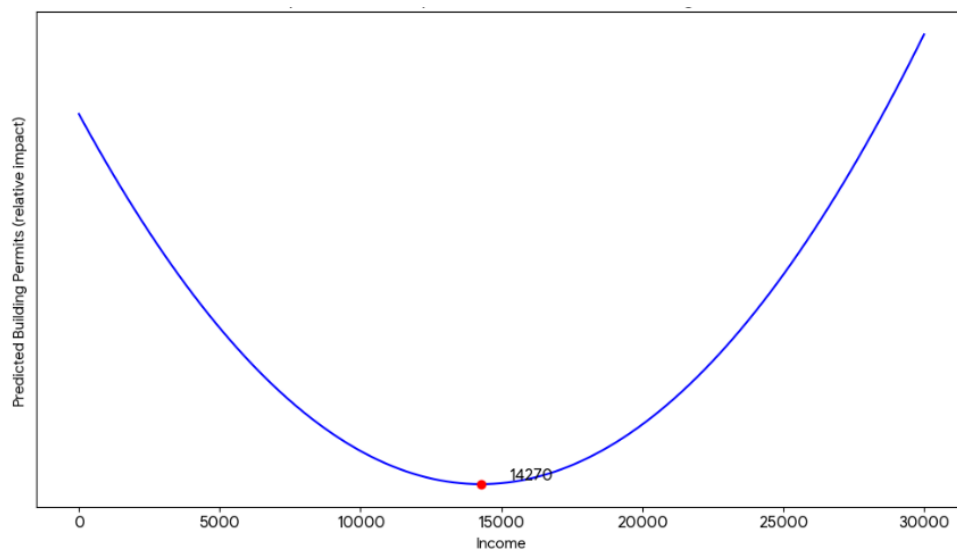


Figure 4.6: U-Shaped Relationship between Disposable Income and Building Permits

Created by author.

This result aligns with the literature reviewed in Chapter 2, where authors including Senaratne and Zainudeen (2010) and Solak and Kabaday (2016) emphasise a positive income elasticity of demand, often greater than one. It also supports the broader consensus by Mulford (1979), Malpezzi (1999) and Zheng (2018) that the relationship between income and housing demand is non-linear, but rather contingent on income thresholds and broader housing market dynamics.

This U-shaped relationship may be driven by several factors. In the early stages of income expansion, additional earnings may not be sufficient to significantly alter housing demand patterns or trigger new construction, particularly if a large proportion of the population remains priced out of ownership (Dong, 2018). As a result, demand may be absorbed by the rental sector, rather than prompting new permit activity. The relationship may also be influenced by income inequality. If rising incomes are not evenly distributed, benefitting primarily high-income earners, the purchasing power required to support new housing developments may not be widespread, thus muting the immediate supply response (Özmen, Kalafatcilar and Yilmaz, 2019).

The positive effect observed at higher income levels, however, is likely driven by the financialisation of housing. As discussed by Haila (1988), Coakley (1994) and Morris (2018), property increasingly functions as a financial asset rather than solely a consumption good. Once basic housing needs are met, higher incomes are redirected towards speculative investment, such as second homes or investment purchases. This dynamic disconnects new permit issuance from organic demand, instead linking it to speculative forms of capital investment.

While the statistically significant finding confirms income as a key driver of housing demand, the quadratic relationship points to a more complex, non-linear dynamic influenced by broader contextual factors. For policymakers, this underscores the need to move beyond reliance on high-level economic indicators and instead consider local demand conditions and supply-side constraints to avoid misaligned development and the risk of overdevelopment.

4.3.1.2 HPI

Contrary to the literature, the regression shows a positive yet statistically insignificant coefficient for HPI ($p = 0.348$), indicating no conclusive evidence of a relationship between property prices and building permits across the six European small states. This finding is consistent with the dual role of property prices in housing markets highlighted in the literature. On one hand, rising prices erode affordability and dampen demand (Megbolugbe, Marks and Schwartz, 1991; Bates and Santerre, 2015), translating into reduced construction activity. On the other hand, rising prices can fuel speculative demand, especially among developers anticipating further appreciation (Portelli, 2022; Jiang, 2020). The absence of statistical significance may therefore reflect these offsetting forces, leading to a net neutral effect.

The result may also reflect the time lag between changes in property prices and developers' subsequent responses, as decisions to initiate new construction involve planning, financing and regulatory approvals that take time to materialise. This delay means that current permit activity may reflect earlier market conditions rather than current price movements. Additionally, as an aggregate index reflecting average price trends over time, the HPI smooths over short-term fluctuations and may consequently obscure the immediate effects of price movements on permit activity, potentially masking short-term drivers of construction.

4.3.1.3 GDP

Regression results indicate a negative and highly statistically significant relationship between GDP and building permits (coefficient = $-9.10e-14$; $p = 0.000$), contradicting prior literature that links economic expansion to stronger housing demand (Wan, Zhang and Wang, 2009; Leamer, 2015; Bates and Santerre, 2015). However, several factors could account for this counterintuitive result. Firstly, this result could reflect the multicollinearity between GDP and other economic variables included in the model, such as income and the HPI. Thus, GDP may act as a proxy for broader economic dynamics already captured by other variables, making it

difficult to isolate the independent effect of GDP and producing an unexpected negative relationship in the regression output (Daoud, 2017).

Moreover, there is substantial variation in GDP across the countries in the sample, which may distort the aggregate relationship between GDP and building permits. For example, the GDP of Luxembourg far exceeds that of Malta, Cyprus and Estonia, whose economies are relatively smaller and less advanced (Eurostat, 2025e). This divergence may weaken the expected positive result. Additionally, GDP may reflect the performance of capital-intensive sectors, such as financial services or the iGaming industry, that contribute substantially to national economic output without necessarily generating increases in local property demand.

4.3.2 Demographic Factors

4.3.2.1 Tourism

In contrast to the findings of the literature, tourism exhibits a positive but statistically insignificant coefficient ($p = 0.905$), offering no evidence of a robust link between inbound tourism and the issuance of new building permits. This stands in contrast to findings by Vakili-Zad and Hoekstra (2011), Mao, Mend, and Wang (2014), Biagi, Brandano and Lambiri (2015) and Barbić (2024), who highlight the role of tourism in fuelling housing demand through both short-term accommodation needs as well as by increasing the attractiveness of property as an investment asset. However, the inclusion of the COVID-19 pandemic period from 2020 to 2021 may have weakened the observed relationship, as international tourism came to an abrupt halt during these years, temporarily suppressing tourism related demand pressures on housing.

The insignificant result observed suggests that tourism-driven demand may not necessarily translate into new residential construction in the short term, especially if accommodation needs are met through non-residential developments such as hotels and resorts, or through the conversion of existing housing stock for peer-to-peer rentals such as Airbnb.

To contextualise this finding, Figure 4.7 plots the average number of nights spent at tourist accommodation establishments across the six European small states, separated into two categories: ‘hotels and similar accommodation’ and ‘holiday and other short-stay accommodation’.

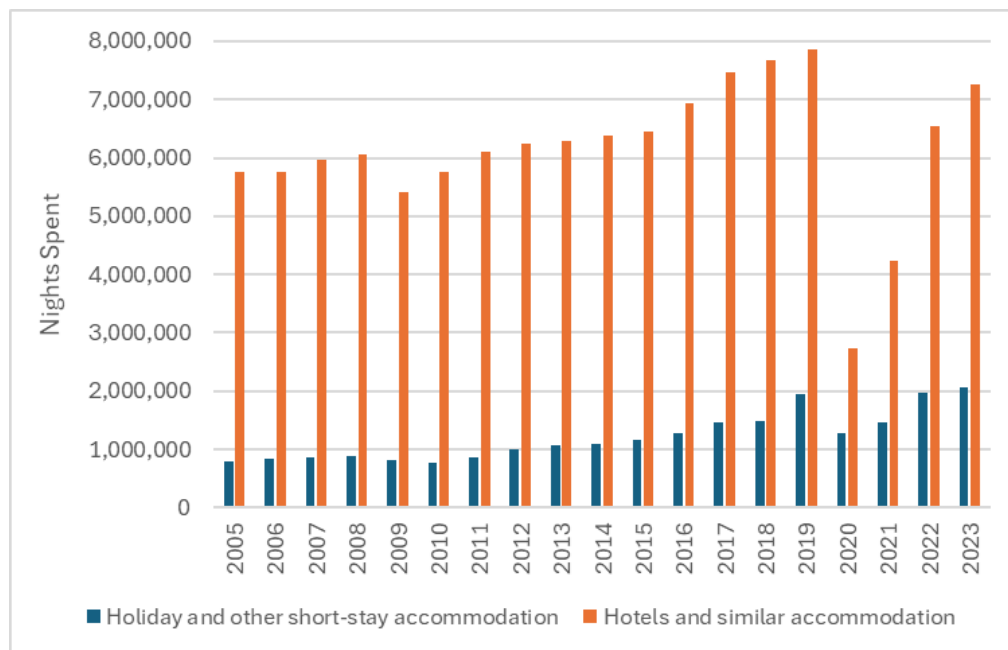


Figure 4.7: Average Nights Spent at Tourist Accommodation by Type

Source: Eurostat (2025a)

Figure 4.7 shows that, at the national level, hotels consistently account for the bulk of tourist stays, underscoring the dominant role of hospitality infrastructure, such as hotels, resorts, and ‘bed and breakfast’ establishments, in meeting tourism needs. This pattern reinforces the argument that rising tourist inflows may not necessarily generate proportional growth in residential building permits, as housing supply pressures may be bypassed entirely when accommodation is handled through such commercial developments. Importantly, the figure also reveals a gradual but clear increase in the use of ‘holiday and other short-stay accommodation’ from 2012 onwards, indicating growing demand for alternative tourist lodgings which may lead to a stronger relationship between tourism and building permits in the future.

However, it is essential to interpret these figures with caution. While they provide a useful aggregate view, they can mask substantial intra-country variation. For instance, in Malta,

short-term rentals are heavily concentrated in tourist hotspots such as Sliema, St Julian's and St Paul's Bay, where the housing stock is increasingly repurposed for holiday short lets. In contrast, more residential and less tourist-driven localities like Marsa and Mtarfa see far less engagement with this type of accommodation (Neville, 2024). Thus, this spatial unevenness may explain why the tourism variable did not emerge as statistically significant in the regression, despite potentially influencing housing dynamics at the local level.

It is important to highlight that the sample includes countries like Malta and Cyprus, where tourism plays a major economic role, alongside others such as Luxembourg and Slovenia, where tourism is comparatively less dominant, potentially diluting the overall effect across the sample. Thus, the impact of tourism may not be consistent enough across countries to register at the aggregate level.

4.3.2.2 Migration

As anticipated, migration displays a positive and statistically significant relationship with building permits ($p=0.007$), reinforcing its status as a key driver of housing demand as identified by Mulder (2006), Gopy-Ramdhany and Seetanah (2020), Portelli (2022) and Deki et al. (2025). Migration contributes directly to population growth, increasing the number of households and intensifying demand for new housing. In the context of small states, the effects of migration may be especially pronounced, given the limited existing stock and more constrained spatial capacity.

The statistical significance of this variable underscores the importance of incorporating migration trends and demographic forecasting into the urban planning process, particularly in cases like that of Malta, where long-term population growth is driven more by mobility than fertility (Lynn, 2025).

4.3.2.3 Average Age of Leaving Parental Home

While positive, the coefficient for age of leaving the parental home was found to be statistically insignificant ($p=0.818$), suggesting no observable relationship with building

permit activity across the sample. While later departure from the family home may dampen housing demand by delaying new household formation (Mifsud, 1974; Mulder, 2006), the data reveals a high degree of cultural homogeneity within the six European small states, where the average age at which individuals left the parental home ranged narrowly from 28 to 31. This low variation across both countries and time may have reduced the explanatory power of the variable. The insignificant result may also reflect the complex, multifaceted nature of household formation, with age being a weak standalone predictor of building permit supply.

4.3.2.4 Divorces

The coefficient for divorces was found to be negative and statistically significant (coefficient = -1.235311; $p = 0.002$), challenging the conventional expectation that higher divorce rates increase housing demand through the separation of households (Mifsud, 1974; Dieleman and Schouw, 1989; Mulder, 2006; Zhang et al., 2020).

One explanation for this negative association is that divorce does not necessarily result in new household formation. As Feijten and van Ham (2010) note, the urgency typically associated with separation often compels at least one partner to relocate at short notice, frequently into shared accommodation or staying with relatives or friends, rather than acquiring a separate residence. In such cases, the existing housing stock absorbs the shift, limiting the impact on housing demand. Moreover, administrative and legal divorce costs and division of marital assets reduce disposable income, delaying or preventing the acquisition of new property by either party (Kapelle and Baxter, 2021; Kapelle, 2022).

In addition, divorce-driven housing demand tends to be reactive and short-term, while residential construction typically responds to sustained, predictable trends (González-Val and Marcén, 2024). Thus, since divorce is unpredictable and highly individualised, it may not generate the typical stable, long-term market signals that incentivise new development.

4.3.2.5 Marriages

In contrast, marriage rates were found to be positively and significantly associated with building permits (coefficient = 0.305703; $p = 0.002$). Although Mifsud (1974) and Mulder (2006) note that marriage can reduce demand by consolidating households, the positive coefficient suggests that, in the small states analysed, marriage continues to represent a key life event that drives property acquisition. This may be due to the greater financial capacity of dual-income households, which are more likely to qualify for a home loan or afford housing costs (Fischer, Khorunzhina and Marx, 2024). The relationship may be particularly strong in cultural settings where homeownership is socially associated with family formation and residential stability (Fisher and Gervais, 2011). This finding reinforces the broader importance of demographic variables in shaping permit trends, beyond purely economic indicators.

4.3.3 Discussion: Answering Research Question 1

The results of the regression analysis highlight the multifaceted nature of housing supply drivers in European small states. While certain variables exert a clear and statistically robust influence on building permit activity, others appear to be more context-specific, exhibiting statistically weaker effects when analysed at the aggregate level.

This underscores the importance of viewing construction trends not through a singular economic lens, but as the outcome of a multidimensional interplay between demographic, economic and social factors. Policymakers and urban planners must therefore go beyond headline indicators, incorporating local contexts and behavioural patterns to avoid mismatches between property provision and actual demand. Such an approach is especially critical in small states, where the margin for overdevelopment is narrow and the risks of misaligned growth are more pronounced.

In light of the regression results and their alignment with key demand-side expectations, the null hypothesis outlined previously, stating that building permit trends in European small states do not align with property demand factors, can be rejected. The strength of the

model's explanatory power, coupled with the statistical significance of core demographic and economic variables, affirms that building permit issuance is meaningfully shaped by underlying demand dynamics.

The regression analysis therefore provides a clear answer to the central research question: Do building permit trends in European small states reflect underlying property demand? These findings offer empirical support for the view that, in the aggregate, building permit issuance across the analysed small states does indeed reflect the underlying demographic and economic demand pressures. Particularly, statistically significant associations were identified with income, GDP, migration, divorces, and marriages. While it is acknowledged that not all variables behave as expected, and some exhibit weak or counterintuitive effects, the overall pattern indicates that property supply is not detached from demand.

Nonetheless, the analysis crucially underscores that the investigated demand factors, though statistically significant, capture only a partial view of the dynamics shaping building permit trends. Their influence, therefore, does not equate to a fully responsive or efficient housing supply system. Rather, the findings confirm that demand signals are at least partially shaping building permit activity, forming part of a more complex equation, thereby offering an important, yet incomplete, insight into the intricate processes through which housing supply decisions are made and implemented in European small states.

The analysis also reveals that some relationships are context-dependent or influenced by lagged or structural effects. For instance, several demand-side variables, such as the HPI and tourism, fail to show significant relationships, while others like GDP and divorce exhibit unexpected results. More importantly, the model does not capture key qualitative and social factors discussed in the literature review, including consumer preferences, cultural norms and government policies, all of which are expected to exert a substantial influence on construction activity. Their omission may mask important drivers of supply that are not easily captured through quantitative approaches. Incorporating these factors could plausibly yield a different conclusion, particularly regarding speculative development, spatial planning inefficiencies, or latent oversupply. Thus, while the current model reveals meaningful associations between demand and permit issuance, it does not fully capture the complex

reality of housing dynamics in small states, necessitating cautious, context-sensitive interpretation rather than a blanket application.

Therefore, while the null hypothesis is statistically rejected, this should not be interpreted as definitive evidence of a well-calibrated housing supply. It can be concluded that while demand-side factors shape construction activity to a considerable degree, they do not fully constrain it. This opens the possibility that overdevelopment may still occur, not because demand is absent, but because supply may be responding to distorted signals, speculative motives, or other drivers beyond the model's scope.

It is important to note that, although no prior studies have been conducted to directly support these findings, this study offers original empirical insight into an under researched area and pioneers the exploration of the determinants of building permits issuance in European small states. In doing so, it lays the groundwork for more nuanced, context-sensitive approaches to housing policy and urban planning frameworks across these jurisdictions.

4.4 Evaluation of the Maltese Housing Market

The following section applies the regression model to the Maltese context, with the objective of addressing the second research question: Do building permit trends in Malta reflect underlying property demand?

The results are summarised in Table 4.5 and visualised in Figure 4.8, comparing predicted building permits, based on the generated regression equation, with actual permit issuance between 2005 and 2023.

Table 4.5: Predicted versus Actual Building Permits Issued (2005-2023)

Year	Predicted Building Permits (m ²)	Actual Building Permits Issued (m ²)	Absolute Percentage Error	Divergence
2005	0.005828	0.008238	41.4	Significant
2006	0.006116	0.009198	50.4	Significant
2007	0.006076	0.009817	61.6	Significant
2008	0.005728	0.005808	1.4	Aligned
2009	0.005280	0.004482	-15.1	Moderate
2010	0.005538	0.003903	-29.5	Moderate
2011	0.005364	0.003646	-32.0	Significant
2012	0.004390	0.003252	-25.9	Moderate
2013	0.004653	0.002790	-40.0	Significant
2014	0.005915	0.003068	-48.1	Significant
2015	0.005901	0.004205	-28.7	Moderate
2016	0.005743	0.006214	8.2	Aligned
2017	0.006499	0.006753	3.9	Aligned
2018	0.006618	0.008478	28.1	Moderate
2019	0.006885	0.008121	18.0	Moderate
2020	0.004261	0.004749	11.5	Aligned
2021	0.004617	0.004562	-1.2	Aligned
2022	0.004097	0.005276	28.8	Moderate
2023	0.004680	0.004099	-12.4	Aligned

To assess the extent to which actual building permits deviate from predicted values, a tiered classification system is adopted, based on the Absolute Percentage Error (APE) between forecasted and observed values. While the Mean Absolute Percentage Error (MAPE) is commonly used as an overall measure of forecast accuracy (Swanson, Tayman and Bryan, 2011; Moreno et al., 2013), employing the APE for each individual year provides a more granular and intuitive measure of the magnitude and direction of annual deviations.

Although the literature does not prescribe a uniform threshold for interpreting forecast accuracy across all domains, the chosen framework draws on established principles from forecasting research. Lewis (1982, cited in Moreno et al., 2013) proposes a widely referenced four-tiered interpretation of MAPE values, classifying forecasts as highly accurate (<10%), good (10-20%), reasonable (20-50%), and inaccurate (>50%). For the purposes of this study, these categories are consolidated into a three-tiered structure to provide a more

streamlined classification of alignment versus divergence, while maintaining consistency with the underlying logic of Lewis’s framework.

The following thresholds are defined:

Aligned: $APE \leq 15\%$

Moderate Divergence: $15\% < APE \leq 30\%$

Significant Divergence: $APE > 30\%$

Errors within 15% are considered aligned, reflecting acceptable variation typical of real-world variability. Deviations between 15% and 30% are classified as moderate divergence, where the prediction shows a noticeable, but not extreme, deviation from reality. Deviations exceeding 30% are classified as significant, indicating a substantial misalignment between predicted and actual permit activity. This classification system offers a structured method for assessing whether observed permit volumes align with demand-driven forecasts, thereby helping to identify potential disconnects between construction activity and underlying market fundamentals.

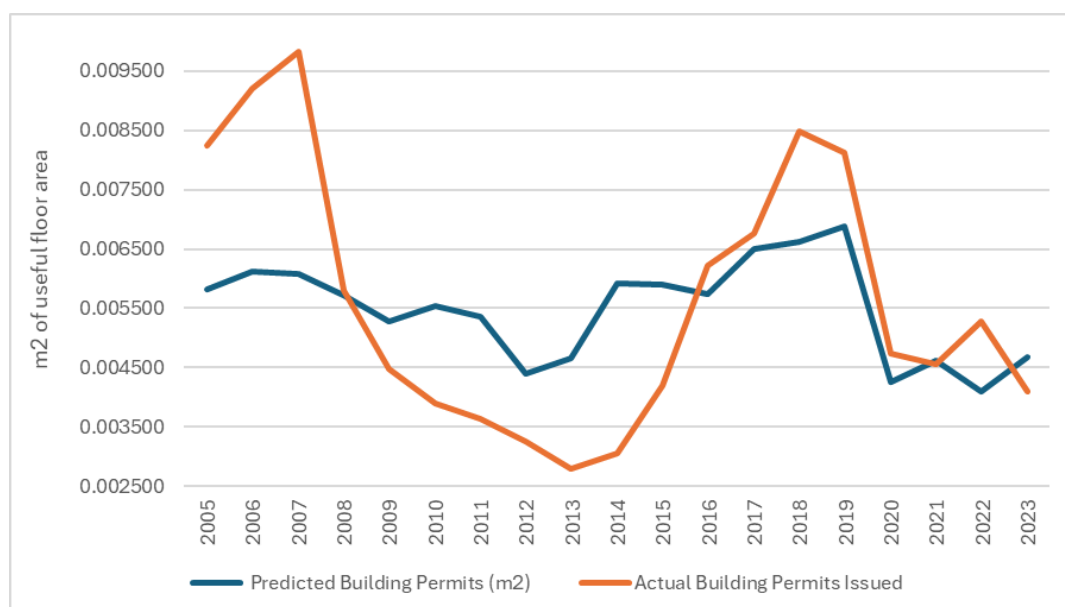


Figure 4.8: Predicted versus Actual Building Permits Issued

Source: Eurostat (2025g)

4.4.1 Overview of Alignment and Deviation Patterns

The results raise important questions about the extent to which construction activity reflects real housing needs. While figure 4.8 shows that demand factors do influence the overall trajectory of building permit issuance, they consistently fall short of fully explaining or constraining supply. A comprehensive review of the period from 2005 to 2023 reveals that, despite limited periods of alignment, actual permit numbers often diverged substantially from modelled demand. Notably, over two thirds of the years under study exhibit mismatches, highlighting the influence of additional forces beyond fundamental housing needs in shaping building permit issuance.

The periods of pronounced divergence between predicted and actual values offer critical insight into the complex dynamics of Malta's property market. A striking oversupply was evident from 2005 to 2007, with actual building permits notably exceeding predicted values, peaking at a 61.6% surplus in 2007. This period directly coincides with the controversial 2006 Rationalisation Project, discussed in Chapter 2. This project marked a pivotal shift in Malta's planning regime by reclassifying previously designated ODZ land as eligible for construction. This decision drastically expanded the supply of developable land, provoking a surge in permit applications and fundamentally reshaping Malta's built environment.

Rather than responding to genuine housing demand, this surge in permit activity was largely driven by the newly realised development potential. Crucially, the policy's motivation appeared to stem less from strategic projections than from political compromise and developer pressure. This framework, which has remained largely unrevised, despite clear evidence of enabling systemic overdevelopment, demands urgent policy attention. A comprehensive reform is essential to establish a system that prioritises sustainable land use and spatial integrity. Aligning property supply more closely with organic, demand-driven growth, rather than speculative or policy-driven expansion, would not only combat unsustainable development pressures but also offer stronger safeguards for Malta's limited land area. The legacy of this project continues to shape the island's urban planning landscape today, serving as a stark example of how short-sighted planning decisions can entrench oversupply and decouple construction activity from genuine housing needs.

The graph then shows a sharp decline in permit issuance around 2008, coinciding with the onset of the Global Financial Crisis, a period that triggered widespread uncertainty across both housing and financial markets worldwide. Developers and prospective buyers alike adopted a more cautious stance, with declining investor confidence and heightened economic uncertainty significantly dampening the appetite for new projects, despite underlying housing demand. This decline was not isolated to Malta but was felt across the EU, as outlined by Mach (2019), who conducted an extensive empirical analysis of the crisis's impact on the real estate sector across the 28 member states. Mach found that building permits were the most responsive indicator to the downturn, with Malta showing one of the highest contractions between 2008 and 2013.

This pattern supports Strauss's (2013) findings that building permits act as a leading indicator of economic activity, driven largely by consumer expectations about future income. In this context, the drop in permits in Malta likely reflects not a collapse in housing demand itself, but a broader climate of economic pessimism and risk aversion, which suppressed forward-looking investment decisions in the construction sector.

Actual permit issuance continued to fall below modelled demand for eight consecutive years (2008–2015), where a trough was reached in 2013. The prolonged mismatch between actual and modelled supply closely parallels broader European dynamics, where permit issuance continued to decline year-on-year until 2013, before beginning a gradual recovery (Mach, 2019). In Malta, however, the downturn proved more persistent, with permits issued in 2014 still 48.1% below predicted levels. This highlights the extent of post-crisis developer caution and suggests a stronger local hesitancy to resume building activity, underscoring how supply in Malta is not only shaped by demand but also by prevailing market sentiment.

Following 2013, actual permit issuance exhibited a steady recovery, once again surpassing projected levels by 2016. This period came to an end in 2019, where the COVID-19 pandemic brought another sharp decline in development activity. Interestingly, the period between 2020 and 2021 displays a particularly close alignment between permits issued and predicted values. This may suggest that the uncertainty and disruption caused by the pandemic

curtailed speculative behaviour, prompting development to respond more directly to genuine underlying demand rather than to opportunistic or investor-driven motives.

In 2022, however, actual permits once again overshoot projected demand by 28.8%, possibly reflecting the realisation of projects initiated prior to the pandemic and the broader return to business-as-usual. By 2023, permit levels realigned closely with projected demand. This may reflect the wider economic fallout of the Russia-Ukraine war, including surging construction costs, supply chain disruptions and heightened geopolitical uncertainty. Much like the pandemic, these conditions appear to have constrained speculative behaviour, fostering a renewed alignment with genuine market demand.

4.4.2 Discussion: Answering Research Questions 2

The observed divergence between predicted and actual building permits in Malta points to a structural misalignment between construction levels and underlying property demand.

While there are moments of alignment, the frequent and wide discrepancies demonstrate that permit issuance is not consistently demand-led. Instead, supply appears to respond irregularly to external shocks, policy shifts and speculative motives, rather than to steady, organic market signals. Although the number of years in which supply exceeded predicted demand (10) come close to those where it fell short (9), the periods of oversupply exhibit substantially wider gaps between actual and predicted permits, indicating persistent overdevelopment.

The consistent pattern provides a clear answer to the research question; building permit trends in Malta do not reliably reflect underlying property demand.

4.4.3 Implications of Findings: The Risks and Consequences of Overdevelopment

An unchecked and disproportionate surge in construction activity gives rise to a broad spectrum of risks that extend far beyond market inefficiency or aesthetic concerns. It signals deeper structural imbalances with far-reaching social, economic and environmental

consequences, threatening the long-term sustainability and well-being of the Maltese Islands.

4.4.3.1 Environmental Degradation and Irreversible Land Loss

Perhaps the most visible and lasting consequence of overdevelopment is the widespread loss of agricultural land and open green spaces. This not only accelerates biodiversity decline but also disrupts natural ecosystems and the vital ecological services they provide (Jia et al., 2024). Rapid urban sprawl transforms these green spaces into impervious surfaces like roads, buildings and houses, causing permanent environmental degradation (Koprowska, Łaskiewicz and Kronenberg, 2020).

Moreover, this also intensifies the urban heat-island effect, where densely built-up areas become significantly warmer due to heat retention by materials like concrete, asphalt and glass, leading to higher average temperatures and increased energy consumption for cooling (Yang et al., 2016). Furthermore, the extensive paving and building coverage reduces the natural capacity for water absorption into the ground, significantly increasing the risk and severity of flash floods during heavy rainfall events, overwhelming drainage systems (Feng, Zhang and Bourke, 2021), a phenomenon already evident in Malta.

Construction activities are also significant contributors to climate change and resource depletion, accounting for 40-50% of global greenhouse gas emissions (A Collective, 2021), an environmental cost likely unjustified by actual housing needs, generating avoidable emissions. As outlined by Ghisellini et al. (2018, cited in Ness, 2019), the environmental risk of excessive construction is not only limited to the direct impacts, such as the physical alteration of landscapes, but also indirect impacts through the generation of vast quantities of waste. Construction waste extends beyond debris to include the premature abandonment of structurally sound, yet old, buildings, left to decay or be demolished in favour of new development (Ness, 2019). In Malta, construction and demolition waste makes up 80% of the total waste generated annually, a figure far exceeding the EU average of 25-30% (ERA, 2021) posing logistical and ecological challenges.

4.4.3.2 Social Risks and Erosion of Cultural Identity

Overdevelopment also impacts social well-being and the quality-of-life of residents. The constant cycle of demolition, excavation and construction generates large volumes of dust, incessant noise pollution, and traffic congestion. Persistent construction activity also contributes to increased stress levels, anxiety and a range of long-term health issues (Falzon et al., 2022). Concurrently, while new buildings proliferate, there is generally a lack of corresponding investment in the underlying infrastructure, including roads, sewage systems, electricity grids and water supply, placing immense strain on such systems as they struggle to cope with the increased demand (LandDesign, 2025). This may lead to increased maintenance costs and frequent systemic breakdowns, possibly explaining the number of power cuts experienced throughout Malta in the summer of 2024 (Times of Malta, 2024).

Rapid urbanisation also contributes to the erosion of community identity, as large-scale developments often disregard existing urban character, leading to the replacement of culturally significant buildings and traditional streetscapes with generic, high-rise structures (Boussaa, 2018). Moreover, the housing stock being added is increasingly detached from the needs of the local population, with much of the new development aimed at foreign or speculative investors. This not only alienates long-standing residents but also deepens socio-economic inequality, with young people in particular being priced out of the market, unable to afford homes in the very communities they grew up in (Briguglio and Spiteri, 2022).

4.4.3.3 Public Safety and Structural Integrity

Intense development volume can exert immense pressure on the construction industry to build quickly and cheaply, potentially leading to shortcuts in building practices. This includes the use of substandard materials, non-compliance with building codes, and insufficient oversight during the construction process, rendering buildings inherently vulnerable to long-term structural degradation and, in extreme cases, catastrophic collapse at the expense of innocent victims (Portelli, 2022). In fact, as reported by the NSO (2024), 55% of all workplace fatalities in Malta between 2022 and 2023 occurred within the construction sector.

Prominent cases such as the deaths of Miriam Pace and Jean Paul Sofia, as well as the 2025

collapse of Tania Flats in Paceville, highlight the human cost of such rapid and unchecked expansion of the built environment.

Furthermore, while Malta is not situated in a highly active seismic zone, it is not entirely immune to tremors and earthquakes. The combination of dense construction, Malta's underlying geological conditions and its traditional loadbearing masonry building typology creates heightened structural vulnerabilities (Torpiano et al., 2016). The proximity of buildings in densely packed urban areas, coupled with height asymmetries, means that one building's collapse can trigger a chain reaction, vastly escalating the disaster and leading to widespread devastation (DHI Periti, 2023). Nevertheless, seismic risk currently remains absent from Malta's building codes, despite its significance to urban planning and construction.

Moreover, Malta's position in the Mediterranean exposes it to underlying tectonic activity, leaving it increasingly exposed to tsunami hazards and other sea-level risks (Sarkar et al., 2024). In fact, UNESCO has mandated preparations for Malta to become "tsunami-ready" by 2026 (UNESCO, 2024). This imperative raises critical questions as to whether Malta's current and planned construction practices adequately account for such growing marine and seismic threats, or if they perpetuate a legacy of under preparedness.

4.4.3.4 Economic Risks

The economic benefits of widespread development are often deceptively short-term, masking deeper long-term vulnerabilities. In a supply-driven market, where construction demonstrably outpaces demand, speculative motives fuel an inherent risk of a property bubble creation (Gatt and Grech, 2016). The resulting artificial inflation of prices is fundamentally unsustainable and vulnerable to external shocks or a sudden shift in investor confidence. The inevitable burst of this bubble would trigger significant economic downturn, profoundly impacting homeowners and financial institutions alike, a lesson starkly demonstrated by the property market collapse of the 2008 Global Financial Crisis (Liang, 2024).

The consequences of overdevelopment also severely undermine the tourism sector, a cornerstone of the Maltese economy. Urban sprawl has encroached on Malta's unique historical sites, obstructing scenic views and diminishing the aesthetic appeal of the island's cultural and natural landscape (Times of Malta, 2019). Furthermore, persistent development has degraded beaches and marine biodiversity through increased pollution and coastal alteration, directly diminishing the island's appeal as a Mediterranean destination and threatening the long-term viability and competitiveness of its tourism industry.

4.4.3.5 Hidden Risks and Critical Knowledge Gaps

While many consequences of overdevelopment are already visible, the full risk landscape surrounding the rapid expansion of Malta's built environment remains significantly underexplored. This creates critical blind spots in risk identification, analysis and mitigation. The accelerating pace and scale of development generate complex interdependencies across environmental, social, and economic systems, interdependencies that are not yet fully mapped or understood. Overdevelopment is not merely a policy shortfall or planning inefficiency; it represents a systemic risk with the potential for cascading and unpredictable consequences. Beyond the known risks and uncertainties, there are likely several unknown hazards that have yet to be recognised. Without urgent efforts to monitor, understand and address the evolving impacts of persistent development, Malta risks walking blindly into threats it cannot yet see.

4.5 Reflection on Findings and the Future of Sustainable Development

This research set out to investigate whether the rate of construction activity across European small states, measured in terms of building permits issued, is justified by housing demand. The results broadly confirmed that, at a regional level, building permits have generally followed underlying demand indicators, with Malta standing out as a clear exception. The results however raise an important question on whether demand-driven supply should remain the dominant framework that guides development, especially in a geographically constrained context like Malta. Is meeting demand sufficient justification for construction?

Central to this issue lies the critically flawed assumption that a demand-supply equilibrium equates to property market health. This reasoning collapses in the face of the physical and ecological constraints inherent to small states like Malta, where even a perfect alignment between property demand and supply becomes unsustainable if it results in the complete concretisation of the island. Development decisions cannot be justified solely by market dynamics when these very forces disregard social, cultural, and environmental thresholds that safeguard the island's unique identity.

As remarked by former President of the Chamber of Architects and Civil Engineers (Kamrat-Periti), Prof. Alex Torpiano, “there is a limit to positive development before it turns negative”, a point Malta appears to be rapidly approaching (Times of Malta, 2023). While development is often justified in the name of progress, the construction industry embodies a ‘not all that glitters is gold’ paradox, bringing with it long-term social and environmental costs, ones that, if quantified, “we may discover that construction actually costs this country a lot more than it contributes” (economist Lino Briguglio, quoted in Times of Malta, 2023).

At the heart of this challenge lies the role of the PA, which is intended to act as a gatekeeper, safeguarding the public's well-being and ensuring that development aligns with long-term planning goals. However, its function appears to have been largely reduced to that of a rubber-stamping mechanism, simply processing applications against policies that may no longer reflect current realities. Tellingly, only 15% of all planning applications were denied over the past three decades (Mangion, 2024), pointing to a system that approves rather than one that proactively plans and guides sustainable development.

There is a prevailing concern that revising building codes, local plans or relevant legislation would infringe upon individuals' right to develop their land. However, the notion that there exists an inherent right to build is fundamentally misguided. If such a right truly existed, the involvement of the PA would be redundant. As Prof. Torpiano argues, the right to determine whether land is developable, or otherwise, belongs solely to the state, and permission is granted on behalf of the community (Schembri Orland, 2020). This is not merely a bureaucratic formality, but a safeguard against individual interests overriding the collective good. Thus, just as the government holds the power to rezone land, removing it from ODZ, it

equally retains the authority to impose restrictions and determine that development is no longer permissible if it does not align with sustainable planning objectives.

The idea that the city, and by extension, land use, is a public good is a central theme in Ness's (2019) critique of market-led urbanisation. Urban development is not just the outcome of economic forces, it is also the physical manifestation of a society's values, culture, and aspirations. When the city is treated as a commodity, sold to the highest bidder, the community loses not only physical space but also its sense of identity and belonging. Thus, planning must not be captured by the interests of landowners or developers but must be guided by objective decisions that prioritise a sustainable future.

Part of the problem may lie in how decision-makers, stakeholders, and even the public are trapped within outdated paradigms. As Harrison (1994, cited in Scott and Selwyn, 2010) explains, a paradigm refers to a set of shared assumptions that shape how we interpret reality and anticipate future outcomes. However, when new evidence challenges these assumptions, it often becomes difficult to recognise or accept; a phenomenon known as the "paradigm effect". When this effect becomes so entrenched that it blinds us to what is plainly evident, it results in what Harrison terms "paradigm paralysis". Within the Maltese context, this paradigm paralysis may partly account for the continued dominance of a growth-at-all-costs mentality, even as its social, environmental, and spatial consequences become increasingly difficult to ignore.

On a small and resource-constrained island like Malta, where land is both finite and rapidly diminishing, every development decision carries profound weight. As land becomes increasingly scarce, our collective responsibility towards it becomes all the more critical. In issuing permits, decisions must now be weighed not only against demand, but also against future needs, intergenerational equity and the preservation of national identity. For the true impact of development lies not in what is built, but in what can never be recovered.

Chapter 5: Conclusion

5.1 Introduction

This concluding chapter consolidates the core findings of the study, revisiting the research questions and highlighting the contribution of this dissertation to the understanding of housing dynamics in European small states.

5.2 Salient Findings

This study set out to examine the extent to which building permit issuance in Malta and other European small states corresponds to underlying housing demand. To this end, a panel data regression model was developed to assess the relationship between building permits and a set of demographic and economic indicators identified in the literature as key demand-side drivers of housing development.

The research aimed to answer two central questions:

1. Do building permit trends in European small states reflect underlying property demand?
2. Do building permit trends in Malta reflect underlying property demand?

In addressing research question one, the findings confirm that, across the sample of European small states, building permit trends are broadly shaped by demand-side variables, with several variables emerging as statistically significant.

Among the most robust predictors was disposable income, which exhibited a statistically significant but non-linear relationship with building permits. At lower income levels, the relationship was negative, while at higher income levels it became positive, suggesting that construction activity intensifies once a certain income threshold is reached, particularly that of €14,270. This finding aligns with economic theory and reflects the financialisation of housing in higher-income contexts, where rising affluence enables greater investment in property.

Net migration also exhibited a significant and positive correlation, reaffirming the role of population growth in driving housing demand. Likewise, marriage rates were positively associated with permit issuance, while divorce rates showed a negative effect, indicating that household formation and social change are important drivers of new housing supply.

A more unexpected result concerned GDP, which, while statistically significant, exhibited an inverse relationship with building permits. This finding contradicts conventional assumptions in the literature which posit that economic growth drives construction activity. The negative relationship observed here suggests that in small states, macroeconomic expansion may not directly translate into increased housing supply.

Other variables, namely the HPI, average age of leaving home, and tourist arrivals, were found to be statistically insignificant, indicating that, contrary to the literature, these factors do not exert a consistent or significant influence on building permit issuance within the sampled states.

Overall, the model confirms a statistically significant link between the selected demand-side variables and building permits issued in European small states. However, the unexpected negative association with GDP and the insignificance of other key variables suggest that supply dynamics in these contexts are more nuanced than previously assumed, and that further investigation is warranted.

Turning to the Maltese Islands, the findings reveal a clear divergence from the broader European trend. When the regression equation was applied to Malta, thirteen out of the nineteen years under study showed deviations between predicted and actual permits values, with actual issuance often exceeding model estimates, particularly between 2005 and 2008, and 2018 to 2019. This pattern suggests that, while the demand variables included in the model retain their explanatory power, they do not fully account for the observed variation in Malta's permit activity, indicating the presence of additional influences not captured by the model.

Thus, in addressing research question two, the results suggest that housing supply in Malta, while influenced by demand factors, is not fully constrained by them. The significant and frequent deviations between predicted and actual permit values indicate that the supply-side response in Malta is not solely a function of demographic and economic drivers. This finding underscores a potential imbalance, where new development may be advancing beyond immediate market needs, raising important considerations for policymakers and urban planners regarding the long-term sustainability and governance of land use on the island.

It is important to note that this analysis draws on a 19-year period, which, while sufficient to identify meaningful patterns, remains relatively short in the context of housing market cycles. In a small market like Malta's, this limited dataset can amplify year-on-year fluctuations, with isolated events, such as large-scale development projects, sudden policy changes or one-off economic shocks, having a proportionally greater impact on observed trends. This can widen the gap between predicted and actual values, even when underlying demand conditions remain broadly stable. Accordingly, while deviations from predicted values are evident, they should be interpreted with awareness of this temporal constraint.

5.3 Significance of Study

This dissertation contributes meaningfully to the understanding of housing dynamics in European small states, a group often underrepresented in mainstream economic and urban policy research. As highlighted in the literature review, this study is the first to empirically model and test the relationship between building permits and a comprehensive set of housing demand indicators in Malta, while also placing Malta's development trajectory within a broader European small state context. In doing so, it addresses a notable gap in existing research while responding to widespread concerns about overdevelopment on the island, offering a data-driven lens through which Malta's urban trajectory can be systematically evaluated.

Beyond its immediate empirical significance, the study also contributes to academic discourse on the limitations of relying solely on macroeconomic indicators to guide planning

and development policies. The findings reveal that, while certain economic and demographic factors influence supply, their explanatory power is not uniform and, in the Maltese context, is often overshadowed by speculative and institutional drivers. This underscores the importance of integrating a broader range of variable into models of housing supply, particularly in small states where land and resources are inherently limited.

Moreover, by empirically demonstrating a structural misalignment between housing supply and underlying demand in Malta, the research provides evidentiary basis for the critical reassessment of planning frameworks, governance mechanisms, and development strategies. In particular, the findings underscore the urgency of addressing the long-term risks posed by unchecked overdevelopment, advocating for a strategic policy shift grounded in sustainability, accountability, and long-term planning.

5.4 Policy Implications

A key policy implication emerging from this study is the urgent need to establish and enforce an official carrying capacity for Malta. Development levels must not be assessed solely in visual or quantitative terms but in relation to the island's capacity to sustainably provide essential services, infrastructure, and a high quality of life. Closely linked to this is the need to adopt lifecycle-oriented development policies. Buildings should be designed not just for immediate use, but with future reuse, durability and low environmental impact in mind. By embedding lifecycle thinking into the planning framework, Malta can reduce construction-related waste, limit raw material consumption, and support a more circular, resilient built environment.

Furthermore, there is a pressing need to reframe housing as a social good rather than merely a financial asset. The findings of this study highlight how overreliance on real estate as an investment vehicle has contributed to the decoupling of supply from genuine housing needs, fuelling excessive construction and inflating property values. To mitigate these risks, broader national economic policy should actively support the diversification of investment channels, thereby reducing the dependence on property markets. This could be achieved through collaboration between the financial regulator, economic policymakers and the

financial industry to promote investor education, offer targeted fiscal incentives, and develop transparent, low-risk financial products. Such measures are crucial to alleviate speculative pressure on housing markets, support more efficient land use, and promote more balanced and sustainable economic growth.

The study also highlights a need for greater regulatory oversight and consistency in policy interpretation, which are crucial for effective risk governance within the planning process. The discretion currently afforded to planning boards and tribunals has led to inconsistent decision-making and undermined confidence in the planning process. To address this, the PA should introduce a formal internal and external audit mechanism to systematically review how policies are interpreted and applied. This would help identify misapplications, ensure alignment with legislative intent, and guide necessary amendments to policies, thereby improving clarity, accountability, and consistency across the system.

Robust enforcement mechanisms are equally essential. The prevalence of unauthorised construction, and the limited enforcement of penalties, has weakened the credibility of the planning system. Stronger enforcement, including increased inspections, timely legal action, and proportionate penalties, is necessary to restore deterrence and uphold the rule of law. Without consistent enforcement, even well-designed policies can be undermined by non-compliance and speculative behaviour.

Lastly, public participation in planning decisions must be strengthened. Inclusive and transparent planning processes can produce more equitable and context-sensitive outcomes. Legal reforms should guarantee early and meaningful public engagement, particularly for large-scale or controversial developments. Mechanisms such as mandatory public hearings, accessible online consultation platforms, and expanded rights of appeal can empower communities, enhance accountability, and ensure that development reflects local needs and values.

A comprehensive reform of Malta's planning policies is therefore long overdue. There is an urgent need to rebuild trust through greater transparency, stronger checks and balances, and the empowerment of communities to have a real voice in shaping the future of Malta's

urban landscape. In this context, two legislative proposals, Bill 143 and Bill 144 of 2025, have been introduced as part of an effort to reform Malta's planning system. However, at the time of writing, in response to backlash from the public, activists, and civil society organisations, a public consultation on these proposed planning reform bills is scheduled to take place. This consultation will run for one month and conclude on September 7, 2025 (Galdes, 2025).

5.5 Limitations

Certain limitations should be noted to contextualise the findings of this study. As a quantitative research approach, the regression model developed is based on measurable economic and demographic indicators and does not account for the qualitative factors identified in the literature as influencing housing demand, such as cultural norms and shifting consumer preferences.

In addition, although the panel data approach enhances the comparative scope of the study, it may not fully capture specific national or cultural characteristics unique to each small state. This is especially relevant when considering the direct applicability of cross-country findings to the Maltese context. Furthermore, the model does not explicitly account for time lags between changes in demand and corresponding supply responses, which are often inherent in the construction cycle.

While these limitations do not detract from the findings, future research could further enrich the analysis by incorporating qualitative dimensions and temporal dynamics factors to better capture the complex and evolving nature of development decisions.

5.6 Recommendations for Future Research

The results obtained highlight promising avenues for further exploration. Future research could complement the quantitative findings through a qualitative analysis, such as interviews with developers, urban planners and policymakers, to uncover additional drivers of development and non-quantifiable influences on supply. Additionally, a deeper investigation into the presence and extent of housing financialisation in Malta could provide

critical insights into supply-side pressures and support the development of more effective policy responses.

Furthermore, future research could examine the influence of regulatory and governance frameworks on the risks associated with persistent imbalances in the housing market. Systematic evaluation of planning policies, financial regulations, and oversight mechanisms may reveal opportunities to enhance these instruments, thereby improving the alignment of housing supply with demand. Such insights would be instrumental in informing policy interventions aimed at fostering a more stable, equitable, and sustainable housing sector.

Lastly, given that the period under study includes significant disruptions from the 2008 Global Financial Crisis and the COVID-19 pandemic, a follow-up study in the future could provide a clearer picture of long-term trends and test the persistence of the observed patterns under more stable market conditions.

5.7 Conclusion

In conclusion, this study reveals that while housing supply in European small states generally responds to underlying demand pressures, Malta represents a distinct case where building permit trends are less tightly coupled to these indicators, pointing to a pattern of unchecked development. The implications of this divergence are profound, extending beyond economic inefficiencies and aesthetic concerns to include irreversible environmental degradation, the erosion of cultural identity, heightened social risks, and concerns for public safety. Consequently, this research serves as a compelling and urgent call to action. By embracing evidence-based policymaking and fostering a renewed commitment to sustainability, Malta can navigate its development challenges and safeguard its unique identity for generations to come.

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