Housing Affordability – A Local Perspective

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Abstract: ‘Housing plays a key socio-economic role and represents the main wealth of the poor in most developing countries’ (World Bank 2017). Property provides shelter which ranks, high on the priority list of basic human needs, alongside to food and health. Housing has become increasingly important especially following the 2008 financial crisis which resulted in substantial job losses and in turn affected mortgage repayments and so the property markets. Historically property in Malta is considered as a dual commodity, namely, shelter and investment. Recently, the property market has seen drastic rise in prices, raising with it concerns on affordability. This paper examines the relationship between Housing Affordability [HA], and a number of independent variables including inflation, household size, immigration, renting, employment, income, trading on the Malta Stock Exchange, incentives issued by the Housing Authority, government expenditure on housing, and the number of units built. Literature suggests that these variables directly impact HA. The study is primarily based on secondary data, including a time series covering the period between 2006 and 2016. Pearson Correlation Coefficient was utilized to determine the association between HA and independent variables. The study shows that correlation exist in nine out of the 11 independent variables.

Keywords: Housing affordability, Malta property market, social housing, rent, housing, real estate, loans, affordability index, mortgages.

The Maltese Milieu

Scarcity of land is one characteristic which distinguishes Malta from other European countries and impinges on the day-to-day life of its residents. Statistics show that Malta, with 1,285 persons per square kilometre, is the most densely populated EU member state and one of the most densely populated countries on an international scale (Camilleri 2010). Moreover, the 1995 census shows that the value of the housing stock as at 2004 prices was more than three times the total financial assets held by the Maltese in mid-2004. This proves that the real estate market enjoys the largest portion of investments of the Maltese (Falzon and Lanzon 2013). In addition, Malta’s geographically proximity to Africa and member of the EU, with a purchasing power standard of 77.8% and enjoying a Mediterranean climate which cut on the cost of living, often encourages immigration which in turn increases population.

Several of these attributes are similar to those of Singapore and Hong Kong. Nonetheless, in contrast with these countries, the Maltese housing system in largely privately owned, whilst those of Singapore and Hong Kong rely more on public leasehold systems. In
Singapore, around 85% of the land is owned by the government and 88% of the country’s population lives in public housing flats (Chi-Man Hui et al. 2004). Figure 1 provides a general overview of the local property market. The local market may be broadly classified into two sectors: the open market and social housing. The former includes transactions between private individuals, whilst the latter involves government assistance. Housing has ranked high on the agenda of several Maltese governments, especially after the Second World War. Housing assistance is generally provided through the Housing Authority whose remit includes developing, promoting, and financing the development of housing estates and other residential accommodation. Through its various schemes and initiatives, the authority aims to promote home ownership as well as improve the housing conditions, targeting those who are most in need of its assistance.

**Figure 1:** Local Property Market

**Purpose Statement**

The EU Housing Partnership Action Plan recognizes that European households spend excessive amounts of their income on housing with the result that most cannot meet other basic needs; hence, the escalation in number of refugees, immigrants, street residents, homeless, and youngsters living longer with parents in cities (EU Directorate General for Internal Policies 2018).

The 2008 crisis which evolved in the USA, and which eventually resulted in a global recession, indicates the magnitude of the housing factor on the day-to-day living of residents (Alola 2019). Traditionally, the property market in Malta has favoured home ownership more than renting. Nonetheless, this market has recently experienced several events, which made it more volatile and the first serious shift in trend towards renting was noticed. Such market adjustments positioned the property market in the limelight within the local economy which eventually instigated a number of studies in attempt to identify appropriate measures to stabilize this market.

**Research Objective**

This research will analyse whether correlation exists between a number of independent variables which have been ascertained to be correlated with HA in foreign markets with local HA, the dependent variable, given the Maltese market’s idiosyncrasy.
Literature Review

The neo-classical framework indicates that house prices are determined by the law of demand and supply. Therefore, factors influencing demand and supply impact HA. Some examples on the demand side of the market are mortgage rates/interest rates, household income, and demographic factors, whilst on the supply side one may mention market, cost of land, construction costs, and availability of credit to finance such costs are important determinants (Kristianstad University 2018).

Figure 2: Literature Map
HA – Dependent Variable

The EU Urban Agenda Partnership for Housing has identified variations of this term in different member states. National housing systems vary across Europe and are culturally specific and context dependent (Rosenfeld 2017). Generally, HA is highly debated in countries with high home ownership rates and where policy-makers track home ownership affordability (Sock-Yong Phang 2010), typically the local scenario. In Malta, 80 per cent of the households are homeowners (Central Bank of Malta 2016). Similar scenarios are identified in Hungary, India, Mexico, Spain, Singapore, Greece, and Italy which reach 80 % or more (Proxenos 2002).

HA is monitored by many organizations, often through the application of one of the following calculations:
1. House price to income ratio, applied by the (UN-HABITAT 2001);
2. Mortgage payment to household income ratio; and
3. Median family income to the income needed to qualify for a conventional mortgage for a considered median valued house sold (US Department of Housing and Urban Development 2009).

Glaeser and Gyourko (2003), acknowledge that several different calculations are used in calculating HA. In addition to the above methods, Quigley and Raphael (2004), when calculating the change in affordability over time, apply the house price related to its production costs. This includes the cost spent by the purchaser for capital and includes capital gains. Krainer and Wei (2004) use the price-rent ratio, which is also advocated by Gwin and Ong (2004).

Nonetheless, the most cited indicator and widely used by the World Bank and the United Nations is the median house price to median income ratio. Locally, this method is one of the two mostly used, together with the housing expenditure to income ratio. The former is a good indicator; however, the latter is regarded as being more accurate since it considers the cost of borrowing (Camilleri 2010).

Independent Variables

Inflation

Generally, household expenditure amounting to 25 to 30% of income is considered as the upper limit of affordability (Hulchanski 1995). According to Mostafa (2008), these include basic living requirements, such as food, education, healthcare, and childcare. Therefore, changes in prices of such commodities as a result of a rise in inflation affect HA and which, according to Wong (1997), impacts unfavourably vulnerable households.

Household size

Population is generally perceived to have a direct impact on housing. Nonetheless, Hiller and Lerbs (2016) discovered that household size has a greater impact on HA. This was also one of the main findings by Nistor & Reianu (2018) who argue that where family size changes due to independence, divorce, or other social reasons, housing prices escalate owing to the increase in demand. In addition, longevity also affects demand. According to the US Census Bureau, the number of senior citizens is on the increase. It is estimated
that seniors’ share of population will rise to 16.6% in 2050 to 2.1 billion and 3.1 billion by 2100 (USA Census Bureau 2017a). Such demographic change has various implications, such as property occupancy and increase in demand for smaller dwellings since these are easier to maintain. Moreover, senior citizens utilize property as a means to supplement their pensionable income, by either selling or use as a hypothec (Haurin and Moulton 2017). The Census of Population and Housing 2005 carried out by the National Statistics Office [NSO] show that the average household size in Malta fell from 3.1 in 1995 to 2.7 in 2011 (NSO 2007). Locally, senior citizens, often ‘empty nesters’, seek smaller homes and therefore either sell their property and move to a smaller dwelling or else pull it down to rebuild into a number of dwellings to accommodate other family members or to rent out to add some extra earnings to their income. Whichever route is taken, demand for property is affected.

![Figure 3: Homeownership rates of seniors aged 65 or greater, Europe, and the USA](source: US Census Bureau (2017b) and Eurostat (2017a))

**Immigration**

Nistor & Reianu (2018) conclude that, over time, immigration affects house prices. Similarly, Tabone et al (2019) identified that a strong positive relationship exists between the affordability in the local market and foreign workers. The Maltese population stands at 440,433 residing in just over 316 km². Malta, the smallest member state of the euro area, ranks as the most densely populated (NSO 2017). Between 2006 and 2014, foreign workers, increased by more than fourfold raising from around 5,000 to nearly 22,000 (Grech 2016). In addition, Drôes and van de Minne (2016) conclude that, at the start of the twentieth century, population growth determined house prices.

**Renting**

Notwithstanding that locally HA is closely identified with home ownership, in several countries, affordability is closely associated with renting. Wong et al. (1997) identify rent and income as the two main factors effecting HA. The average rent accommodation within the EU as at 2017 stood at 29.6% of income (EUROSTAT 2017), with Switzerland, Germany, and Austria ranking as the highest with 56, 57, and 40 % respectively. In several countries, the 2007 financial and real estate crisis exacerbated the situation with home ownership becoming out of reach for most households.
Kenna et al. (2016) recommend a balanced housing system which includes the availability and sufficient owner-occupied, private-rented, intermediate tenures, such as shared ownership-like tenures, cooperatives and community land trusts, and social housing schemes. It is suggested that EU and its member states should promote a continuum of tenures to prevent household over-indebtedness, enhancing flexibility, and housing system stability.

The rental market often works as a residual type of housing tenure, useful to those who cannot afford home ownership and do not qualify for social housing. Therefore, it is a means of assisting households from falling below the poverty line. It helps when the household’s income falls below a certain proportion of the annual median wage (Camilleri 2010). Similar to the what has been experienced in the Spanish market, (Nasarre 2017), lack of an updated legislative framework coupled with the heavy regulation of the market for a long period of time has made the rental market less appealing to landlords and therefore was a non-option for households for a number of years. The ‘Renting as a Housing Alternative’ White Paper issued in November 2018 was a practical attempt in the right direction by the government to regularize the rental market.

Employment

Nistor and Reianu (2018) reveal that unemployment rate and income affect house prices. Studies following the 2008 financial crisis suggest a correlation between this independent variable and HA (Gibb 2014). The relationship of these variables was one of the main concerns raised by the EU Urban Agenda Partnership for Housing (Rosenfeld 2017) since it was noted that the unemployment rate in certain member states within the EU was on the increase.

Income

Income and employment are closely related. Wong et al. (1997) identify income amongst other variables as one of the main variables which affect HA. The 2008 crisis was effectively the result of loss of employment; the loss of household’s income in turn ensued a lack of repayment of mortgages, hence the crisis with households falling below the poverty line. Moreover, the residual income of the household after paying for necessities, also determines the distress of the household (Rosenfeld 2017). Residual income has become one of the major concerns of governments, since it determines the assistance required by households.

Figure 4: Relationship between employment, income, and mortgage
Dröes and van de Minne (2016) conclude that, as from the 1970s onwards, income started to have a large impact on house prices, mostly due to increase in liberalization and innovation in mortgage lending.

**Social housing**

Malta’s social housing is provided for by the government and the Housing Authority, as indicated by the Eurostat (2017) in the table hereunder:

<table>
<thead>
<tr>
<th>Table 1: Distribution of population by tenure status, type of household and income group</th>
</tr>
</thead>
</table>

Affordable homeownership is a policy widely used by governments (Sock-Yong Phang 2010). Atterhog (2005) indicates that the advantages of homeownership are related to the dwelling itself, since these tend to be larger and of higher quality. Government policies favouring home ownership are widespread and differ among countries. Policies favouring home ownership include subsidies or incentives in relation to: tax relief on mortgage interest payments, mortgage interest subsidies, exemptions of capital gains, property tax subsidies, tenant protection laws, limitations on the supply of rent, mass privatization, subsidies for state agencies and developers, grants for house purchase, and planning laws (Sock-Yong Phang 2010).

The Annual Report of the Central Bank of Malta of 2016 identifies the incentives which governments have introduced over several years as:

1. Tenant protection laws – rent laws and the White Paper;
2. Direct grants for house purchase – homeownership schemes issued by the Housing Department;
3. Property tax subsidies - first-time buyer’s exemption from stamp duty on the first €150,000 of the value of the property;
4. Tax incentives – in 2015 a new tax system was introduced whereby property became subject to one final withholding tax of 8% on the transfer value of the property, replacing the 12% final withholding tax and a 35% tax on any profit;
5. Incentives to lessors – since 2014 lessors may opt to pay 15% flat rate;
6. Planning laws carried out through the Planning Authority.

Singapore and Malta share some common characteristics. Both are densely populated, have a history of extensive government intervention mainly through subsidized home ownership schemes and enjoy high home ownership rate, at 90 and 80% respectively. In both countries governments have utilized several similar instruments, namely planning of land usage, land acquisition by the state, direct provision of housing, and government sale of sites for private housing (Sock-Yong Phang 2010).
Various countries and cities in Europe, namely Slovenia, Slovakia, the Netherlands, Lisbon (Portugal), Riga (Latvia), Poznan (Poland), and Vienna (Austria), use the term ‘affordable housing’ as a synonym to ‘social housing’ (Rosenfeld 2017). Locally, although these terms are not considered to be synonymous, social housing has been thoroughly researched by researchers in their studies within this field. The White Paper issued locally in November 2018, ‘Renting as a Housing Alternative’, acknowledges that society has moved from the trend of ‘home ownership’ to ‘rent’. Several reasons may be attributed to such shift, including changes within the family structure. As a result, the government announced several measures to regularize the rental market (Ministry for the Family, Children’s Rights, and Social Solidarity 2018).

Figure 5 shows Malta’s position when compared to other EU member states and indicates that it is below the EU average.

Figure 5: Distribution of population by tenure status, Type of household and income group
Source: EUROSTAT 2017

Government expenditure on housing

The 2008 economic crisis worsened the financial situation of the majority of the EU population (Grover 2013). The resultant effect was that an increasing share of European households has experienced difficulty in accessing and maintaining suitable accommodation, with rent and mortgage arrears escalating and in turn increasing demand for social housing. Mostly affected were the middle-class households and workers with temporary or atypical contracts. The increasing share of the population at risk of housing exclusion has translated into an increase in demand for social housing. The number of people registered on social housing waiting lists showed an upward trend in almost all EU countries. The number of people in need of local authority housing in Ireland has increased by 75% since 2008 (passing from 56,000 applicants to 98,000). In England, waiting lists increased constantly from 1997 to 2011 (from 1 to 1.8 million households) with a housing association based in the south of England reporting a 200% increase in its waiting lists between 2008 and 2009. In 2012, 1.2 million applicants were registered.
on the waiting list for social housing in France and 630,000 in Italy. In an attempt to counter such challenge, most EU governments increased public expenditure in social housing. Within the EU member states, social housing expenditure as a percentage of GDP experienced a sharp increase between 2007 and 2008. This continued to increase between 2008 and 2009 but at a less fast rate. On average, social housing expenditure represented 0.1% of GDP in the EU-27 area (EU Directorate General for Internal Policies 2013).

Malta is no exception. In addition, to the incentives provided through the Housing Authority, the government provides accommodation to households which do not have the necessary means to benefit from such incentives. Households benefitting from such expenditure include those which are vulnerable and fall below the poverty line and therefore require full free shelter without the need for any capital outlay.

Figure 6: Assistance to vulnerable households

Households living in free accommodation

Data collected by the Eurostat shows that, between 2007 and 2010, the percentage of the population living in an accommodation rented at a reduced rate or provided free decreased in the majority of European countries. (EUROSTAT, 2017).

Figure 7: Percentage of households living in an accommodation rented at a reduced rate or provided for free in Malta. Source Eurostat
Note: The graph line on top line refer to households below 60% of average income, whilst the bottom graph line refers to households above 60% of average income.

Trading on the Malta Stock Exchange [MSE]

Property is considered an investment, particularly in the local scenario since land is a scarce resource. Property is attractive to investors who seek to trade and make significant return on their investment in a relatively short period. The 1995 census sustains the significance of this market by revealing that the housing stock as at 2004 prices was more than three times the total financial assets held by the Maltese public in mid-2004 (Falzon and Lanzon 2013). As an investment, investment in property is considered to be in direct competition with financial services investment products (stocks, shares, bonds, and others which are traded on a stock exchange). Camilleri notes that a slight change in this market could be identified since the creation of the MSE in 1996. Nevertheless, since traded investments are volatile, property remains the most preferred type of investment (Camilleri 2010). A similar scenario may also be identified in other countries, whereby home ownership is also perceived as an investment since the owner-occupier may benefit for a positive return through income and capital growth (Hutchison 1994). This was also sustained by Grover (1994).

Figure 8: Investment forces

Planning permits – number of units built

The property market is known to have a low-price elasticity of supply. This is due to a number of factors including the length of the production cycle, the difficulties the construction industry experiences in increasing output over a short period of time, and problems in attaining development consent, building permit (Grover 2013). Similarly, research carried out by the Central Bank of Malta concluded that generally there is a time lag between an increase in demand in the local property market and the response from the construction industry to counter the same increase (Central Bank of Malta 2019). Locally, the first town-planning schemes were introduced in the 1960s. At the time, such schemes, allowed mostly for two floors above ground level with respect to residential developments. This was revised in 1988, with two floors in most urban areas and four floors in exceptional cases and six and eight storeys acceptable for Sliema and St Julian’s. The building heights policy was further revised in 1993 to allow those areas which already had a height limitation of three floors, for an additional penthouse (Camilleri 2010).
Furthermore, the property development exercise of 2006 by the Malta Environment and Planning Authority (MEPA) eventually fuelled further construction. The after-effect of such revisions was that of almost doubling the development permits for new dwellings between 2003 and 2007, when it reached its peak (Central Bank of Malta 2017).

**Figure 9: Low price elasticity of supply**
The conceptual framework

Figure 10: Conceptual framework
Methodology

The research investigated whether the independent variables identified in foreign countries and which are present within the local scenario impact the dependent variable in a similar manner given the idiosyncrasy of the local property market, including scarcity of land, high-density population, high dependency of the local economy on this sector, Malta’s geographical and strategic location, and the dual usage of this commodity as shelter and investment. Secondary data was used during this study. A ten-year time series was collected ranging between 1996 and 2016. In order to ensure reliability and accurateness of the data, the researcher used data collected by reputable local sources, often governmental institutions and/or authorities working within this field or which carry out research work.

Pearson Correlation was then applied in order to assess and verify the possible correlation between the independent and the dependent variables. Estimating correlation is a non-experimental form of research whereby correlational statistics are used to describe and measure the degree or association (or relationship) between two or more variables or sets of scores (Creswell 2018). The following is the computational formula:

\[
r = \frac{\text{COV}_{xy}}{s_x s_y} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{(N-1)s_x s_y}
\]

The Pearson Product-Moment Correlation is represented by the small letter \( r \) in the above formula. Pearson Correlation Coefficient measures linear correlation in terms of direction and strength between two variables, ranging from -1 to +1. A coefficient of +1 indicates that the two variables are perfectly positively correlated. Therefore, if one variable increases, the other variable increases by a proportionate amount. Conversely, a coefficient of -1 indicates a negative relationship and, therefore, if one variable increases, the other decreases by a proportionate amount. In addition, a coefficient of zero indicates no linear relationship between the two variable and therefore, if one variable changes, the other stays the same. Moreover, since the correlation coefficient is a standardized measure of an observed effect, it is a measure of the size of an effect. By way of example values of ±.1 represent a small effect, ±.3 is a medium effect and ±.5 is a large effect. The significance level (represented by the small letter \( p \)), indicated in Table 3, show the level of confidence in the data collected. By way of example a significance of 0.05 level or \( p < 0.05 \) means that there is 1 chance in 20 or 5 in 100 that any differences found were note due to the hypotheses.

Data collected was analysed through the Statistical Package for Social Science (SPSS) software, commonly used in such researches since it allows the generation of reports, graphs, plots, and trends. In addition, Excel software was used in the calculations of the year-on-year percentage changes, derived by the researcher from the same collected data.
## Research Findings and Analysis

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>y Property Price Index</td>
<td>179.84</td>
<td>16.09</td>
<td>Index</td>
</tr>
</tbody>
</table>

### Independent Variables

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Unit</th>
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<tr>
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<td>Index</td>
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<tr>
<td>V2 Household size - 65yrs+ without dependents</td>
<td>36.71</td>
<td>5.74</td>
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<tr>
<td>V3 Household size - Separated/divorced</td>
<td>15.74</td>
<td>4.13</td>
<td>Thousands</td>
</tr>
<tr>
<td>V4 Household size - Married</td>
<td>197.46</td>
<td>4.21</td>
<td>Thousands</td>
</tr>
<tr>
<td>V5 Immigration</td>
<td>8.97</td>
<td>5.03</td>
<td>Thousands</td>
</tr>
<tr>
<td>V6 Renting</td>
<td>29,003.82</td>
<td>1,250.05</td>
<td>Number</td>
</tr>
<tr>
<td>V7 Employment</td>
<td>169.25</td>
<td>13.06</td>
<td>Thousands</td>
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<tr>
<td>V8 Average Income</td>
<td>14,966.00</td>
<td>1,628.05</td>
<td>Euros</td>
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<tr>
<td>V9 Housing Authority incentives/subsidies</td>
<td>6.03</td>
<td>2.27</td>
<td>Euro Millions</td>
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<tr>
<td>V10 Government Expenditure on housing</td>
<td>3.63</td>
<td>1.36</td>
<td>EuroThousands</td>
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<td>V11 Households living in Free Accommodation</td>
<td>7,321.18</td>
<td>2,053.07</td>
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<td>V12 Trading on the MSE</td>
<td>626.26</td>
<td>188.15</td>
<td>Euro Millions</td>
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<td>V13 Building Permits – Number of Units Built</td>
<td>5,676.91</td>
<td>2,999.69</td>
<td>Number</td>
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</tbody>
</table>

*Table 2: Research findings*
### Pearson Correlation Coefficient—Analysis of Results

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Pearson Correlation Coefficient</th>
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</thead>
<tbody>
<tr>
<td>V1 Harmonised Index of Consumer Prices [HICP]</td>
<td>0.514</td>
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<tr>
<td>V2 Household size - 65yrs+ without dependents</td>
<td>0.835**</td>
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<td>V3 Household size - Separated/divorced</td>
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<td>V4 Household size - Married</td>
<td>0.883**</td>
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<td>V5 Immigration</td>
<td>0.817**</td>
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<td>V6 Renting</td>
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<td>V7 Employment</td>
<td>0.759**</td>
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<tr>
<td>V8 Average Income</td>
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<td>V9 Housing Authority incentives/subsidies</td>
<td>0.609*</td>
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<td>V10 Government Expenditure on housing</td>
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<td>V13 Building Permits - No of Units Built</td>
<td>0.174</td>
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</table>

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

**Table 3: Pearson Correlation Coefficient**
<table>
<thead>
<tr>
<th>Year</th>
<th>Property Price Index</th>
<th>Harmonised Index of Consumer Prices [HICP]</th>
<th>Household size - 65yrs+ without dependents</th>
<th>Household size - Separated/divorced</th>
<th>Household size - Married</th>
<th>Immigration</th>
<th>Renting</th>
<th>Employment</th>
<th>Average Income</th>
<th>Housing Authority incentives/subsidies</th>
<th>Government Expenditure on housing</th>
<th>Households living in Free Accommodation</th>
<th>Trading on the MSE</th>
<th>Building Permits - Total Number of Units Developed</th>
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<tbody>
<tr>
<td>2006</td>
<td>176.96</td>
<td>83.79</td>
<td>29,788.25</td>
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<td>3,889</td>
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<td>12,550</td>
<td>6,489</td>
<td>1,852</td>
<td>4,991</td>
<td>374.56</td>
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<td>2007</td>
<td>178.94</td>
<td>84.38</td>
<td>31,892.88</td>
<td>11,681.58</td>
<td>193,792.38</td>
<td>5,292</td>
<td>29,200</td>
<td>156,360</td>
<td>12,986</td>
<td>7,398</td>
<td>4,135</td>
<td>4,283</td>
<td>457.51</td>
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<td>174.05</td>
<td>88.33</td>
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<td>12,036.88</td>
<td>195,204.66</td>
<td>6,043</td>
<td>29,553</td>
<td>158,581</td>
<td>13,572</td>
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<td>3,810</td>
<td>4,247</td>
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<td>13,209.73</td>
<td>194,126.86</td>
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<td>4,185</td>
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<td>15,050.98</td>
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<td>8,440</td>
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Table 5: Annual Percentage Change

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The lowest price index in the period of the study was reported in 2009, with the index reaching 165.32; the highest was in 2016 standing at 219.65 and the average for the period of the study reached 79.84. In addition, the largest positive year-on-year percentage change was reported in 2016, standing at 11.27%, whilst the largest negative percentage change was in 2009, standing at -5.02%.

**Independent variables**

The independent variables in this study may be categorized as two: those which generate demand and those that generate supply. Independent variables which generate demand push, whilst those variables which generate supply pull HA.

**Figure 11:** Property Price Index

**Figure 12:** Annual percentage change - Property Price Index

**Figure 13:** Forces within the property market
Harmonized Index of Consumer Prices [HICP]

Figure 14 shows that the trend in the Harmonized Index of Consumer Prices between from 2006 to 2016 was positive and rose progressively. The average index stood at 93.39 with a standard deviation of 6.16. Possibly the reason is that although the basket to calculate the HICP includes renting and maintenance and repair, it excludes mortgage repayments. During this period, the largest year-on-year change is noted to have occurred in 2008 at 4.68%, and the smallest change is noted in 2007 standing at 0.70%.

Independent variables which generate ‘demand’
Household size – 65 yrs+ without dependents

Figure 16: Household size – 65 yrs+ without dependents Source: National Statistics Office, Survey on Income & Living Conditions
Figure 17: Annual percentage change – 65 yrs+ without dependents
Table 4 shows that the trend with respect to households ageing 65 years plus, was steady throughout the period of study, with only one year of decrease in 2012 when it reached 34,904, with a year-on-year percentage change of -0.41 per cent. Nonetheless, this was countered in the following year with an increase of 9.87 per cent. The average number of households falling within this category was 36,709.82. The highest number of households was in 2016 with 47,793 and the lowest was in 2006 with 29,788.

Household size – separated/divorced

The average number of divorced and separated households registered between 2006 and 2016 was 15,735.18. The minimum and maximum were reached in 2006 and 2016, standing at 11,174 and 23,261 respectively. A positive increase was generally experienced throughout the period with the exception of a decrease in 2010 whereby a percentage change of -0.14 is identified. The highest increase was that recorded in 2015, when an
increase of 16.86% was experienced (Figure 19). The correlation test result of 0.802 at a significance level of 0.01, shows that the local market behaves similar to other markets as researched by Nistor & Reianu (2018), whereby it was discovered that independence and divorce, affects house prices through the generation of more demand.

Household size – married

Figure 21 shows that a negative change was experienced in 2007, 2009, and 2010 when a negative change of -0.95, -0.55 and -0.66 are noted respectively. However, this trend reversed itself in 2011, through a steady increase. The highest number of married households was reached in 2016 standing at 205,183 with a slight increase of 0.82% over the previous year. Table 3 shows a correlation of 0.883 with a significance level of 0.01 which indicates that the local property price index and the independent variable behave in a similar manner as that identified by Nistor & Reianu (2018) in foreign markets.
Immigration

Between 2006 and 2016 immigration figures show that the number of immigrants reaching our shores was not steady, possibly owing to irregular illegal immigration and other requests by asylum seekers. Some shocks within the time series may be identified as, for example in 2010, when a change of over a negative 30% was experienced on the previous year. Nonetheless, a positive change of just over 51% was experienced in 2012. Data therefore suggest that, in relation to this variable, it is difficult to identify a trend. The lowest number of immigrants came during 2006, whilst the highest came in 2016. The least percentage change was reported in 2016, standing at 0.68 as also shown in Table 4. These findings coincide with those carried out by Dröes and van de Minne (2016) where it was identified that, over time, immigration affects house prices. Furthermore, data collected demonstrate that a correlation exists between this independent variable and HA, as also indicated by Tabone et al (2019) who discovered that property prices in Malta increase by 1% for every 500 additional foreign workers working on the island. Moreover, this is consistent with the research work of Saiz (2007) who affirmed that immigration coupled with high inelastic supply (as in the local case) affect HA.

Renting

Data collected show a steady positive growth in the number of households renting property with the exception of the years 2009 to 2011 and 2016. Table 5 shows that on a year-on-year percentage change, during these years' figures, dropped by 0.25, 7.68, 0.57, and 2.46% respectively. The minimum number of households renting their property was reported in 2011, whilst the highest was in 2015 with respective figures amounting to 27,061 and 30,995 households. In addition, a correlation of 0.677 at significance level of 0.05 show that a positive correlation exists between renting and property prices. The results agree with the research carried out by Kenna et al. (2016) who suggested that renting may support stabilization of the market through preventing over-indebtedness. The validity of this market to relieve pressures on this sector was also recognized by the Maltese government in the White Paper, ‘Renting as a Housing Alternative’. 
Employment

A positive increase in employment is noted during the period under review. To this effect, the lowest and the highest figures are reported in 2006 and 2016 respectively. Notwithstanding that this period was characterized by a continuous increase in employment, the increase was not homogenous. Table 4 shows that the lowest improvement on the previous year was reported in 2009 with a 0.55 percentage, whilst the highest change was in 2014, with an increase of 3.31. Nonetheless, the time series shows a positive trend. Results show a positive correlation of 0.759 with 0.01 level of significance. Results therefore confirm that the local market follows that of other foreign countries, since the research of both Nistor & Reianu (2018) and Gibb (2014) revealed that employment affects house prices.
Average Income

The lowest average income and the highest average income reported are for the years 2006 and 2016 respectively. Table 5 shows the highest percentage year-on-year change is reported to have taken place in 2016, with an increase of 5.04% while the lowest is reported for 2009. The Pearson Correlation tests shows that a positive correlation exists between average income and property price at significance level of 0.657 which indicates that correlation is significant at 0.05 level. Results also agree with what was identified in other European countries following the 2008 financial crisis in the study carried out by Rosenfeld in 2017.

Trading on the Malta Stock Exchange
The lowest year of trading is reported to have taken place in 2016, with trading amounting to €374.56 million. Meanwhile, 2014 was the year in which the highest amount of trading took place on the MSE, with trading reaching €940.46 million. The period of study shows that trading on the MSE is highly volatile, with some years having a positive increase whilst others experiencing a negative trading. Decrease in trading ranged from a -1.0 in 2011 to -25.13 per cent in 2016 on a year-on-year change. Year-on-year percentage increase in trading, ranged from a 6.67 in 2008 to 31.51 in 2012. Average trading reached €626,2582 million. Data therefore suggest that property from an investor’s perspective is viewed as an additional investment possibility and not as a substitute. Correlation tests indicate that there is no correlation between this variable and the dependent variable, notwithstanding that a slight change in this market was identified by Camilleri (2010) since the creation of the MSE in 1996.

**Independent variables which generate ‘supply’**

**Building permits – Total number of units developed**

Data collected in this study relate to the total number of units developed following approval by the Planning Authority. Therefore, data comprise the actual number of units; by way of example one application for a block of apartments may consist of several units. In line with the economic theory of demand-and-supply, it is expected that an increase in supply, in this case, an increase in the number of units would counter the demand and therefore stabilize prices. In this regard, the researcher considered that such data provide a practical insight as to in what way the number of permits issued fuel HA. Data collected do not show any particular trend; however, an irregular decrease is noted between 2008 and 2013. The least and the maximum amount of units were developed in 2013 and 2017, respectively. A drastic drop was recorded in 2008, with a negative change of 39.73% on previous year. The highest positive yearly increase was recorded in 2016, standing at 90.22% on previous year.

The data included in the research refer to building permits in relation to new units developed and exclude permits related to refurbishments and alterations to existing...
dwellings. Findings demonstrate no correlation with the dependent variable which, at first glance, may be surprising. Nonetheless, this concurs with the conclusions of the study carried out by the Central Bank of Malta (2019) which reveal that, within the local market, the construction industry reacts to an increase in demand with a time lag.

**Housing Authority Incentives/Subsidies**

The average incentives and/or subsidies issued by the Housing Authority between 2006 and 2016 amounts to €6,030,216. These include incentives and subsidies provided by the authority in relation to sales, interest, and various number of schemes to households in relation to the provision of their family homes. The lowest amount granted by the authority was in 2012, when funds allocated amounted to €2,295,097, whilst the highest amount provided was reached in 2015, with a total value of €9,484,179. It is to be noted that in 2015 the government launched the exemption of stamp duty for first-time buyers on the first €150,000 of their new property. In addition, the reform of the capital gains tax (CGT), with the introduction of a final withholding tax system based on the value of the property was also introduced (Central Bank of Malta 2017). Results show a positive correlation of 0.609 between this variable and the incentives and/or subsidies, making such variable an important tool for policy-makers.

![Figure 38: Households living in free accommodation](source: National Statistics Office)

![Figure 39: Annual percentage change - Number of Distribution of household by type and tenure status. EU-SILC Households living in free accommodation](source: National Statistics Office)

**Government Expenditure on Housing**

The lowest expenditure by the government with respect to housing, throughout the period under review was in 2013 amounting to €1,595,000, whilst the highest was that for the year 2016 whereby expenditure reached €6,600,000. Between 2006 and 2016, the major reduction in such expenditure could be reported for the years, 2008, 2011, and 2013, whereby a year-on-year change show negative amount of -11.68, -30.85 and -44.69 respectively. In addition, an insignificant negative percentage change of -0.35% is identified for 2012. Moreover, the highest positive percentage change was reported in 2007, which reached 132.94%. A positive correlation with the property price index is identified at 0.651, at significance level 0.05. The above therefore indicate that expenditure by the government on housing is a suitable tool to stabilize property prices.
Households Living in Free Accommodation

Free accommodation is provided by the government to households which fall below the poverty line, as part of the social housing policy. Data suggest a steady positive increase; however, a few decreases are noted in 2007, 2008, 2011, and 2012, of -14.18, -0.83, -5.40, and -21.44 respectively on a year-on-year basis. A substantial increase in demand was reported in 2009, when residence in such accommodations increased by 65.94% on previous year. In 2010 the increase slowed down its momentum to 26.59%. Data for 2016 show that the demand on previous year increased by only 0.13% which may suggest that other government policies were effective enough to counter some of the demand. The minimum number of households living in free accommodation was reported as standing at 4,247 in 2008, whilst the highest was recorded in 2016 at 9,580. Nonetheless, correlation results do not indicate that correlation exists between households living in free accommodation and the property price index.

Conclusion

Data collected demonstrate a positive correlation with 9 independent variables out of the 13 identified for this study. Correlation is positive for each of these 9 independent variables, which means that the dependent and independent variables move in the same direction. Results show that there is no correlation between the property price index and inflation – Harmonised Index of Consumer Prices, households living in free accommodation, trading on the MSE, and the number of units built. Meanwhile, data show that the strongest positive relationship exists with household composition, that is elderly [households composed of 65 years +]; number of households including separated/divorced and married households, immigration, and employment. A less strong relationship is identified with respect to renting, average income, incentives, and subsidies by the Housing Authority and government investment in housing. A possible reason why correlation with renting is less significant may be that the culture of renting as an alternative to home ownership is a recent development in the local economic scenario and therefore it was still at its infancy stage during the period under review. Meanwhile, it is also noted that the average income, although correlated, is less significant than other social variables. The possible reason here could be that property is mostly financed through bank loans. The highest correlation is that pertaining to the independent variables of married households, followed by the households including citizens aged 65 years+, immigration, and households including either separated or divorced citizens. The least correlation can be identified for the variable related to incentives and/or subsidies issued by the Housing Authority. The analysis shows that a possible way of addressing the affordability challenge in Malta may be that which seeks to tailor-make support according to the different categories of households.

Recommendation for Future Research

Social demographic changes as suggested by the data collected are greatly correlated with HA. Economic changes and government policies may positively influence this sector and alleviate the affordability challenges faced by most local households. At times, perception may be different from actual circumstances. An area of possible research which may be of particular interest is that which evaluates the perception of the local residents and stakeholders within the market as to which variables they consider are fuelling the local property prices, therefore affordability. In addition, the research may
also include possible measures which may be undertaken to facilitate controlling such challenge within the local market. The study may be undertaken by studying different categories of households which may either have already purchased or rented a property or are considering buying or renting a property and/or institution which may be interested in the local property market.

References:


