



Construction Industry and Property Market Report



October 2017

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October 2017

Dear Mr Chetcuti,

Economic Study on the Maltese Construction Sector and the Property Market.

We are delighted to provide you with our final report detailing the results of our study on the Maltese construction industry, its economic impact, and the local property market.

This document has been prepared on the basis of our work carried out in terms of our letter of our engagement dated 19 December 2016.

We believe that the construction and real estate sectors, in the wider sense, represent an important pillar in the Maltese economy, with various inter-linkages with other economic sectors. Within this context, there is the need for a detailed analysis which sheds some perspective on economic, social and environmental issues relevant to the industry. We hope that we have achieved this objective, and firmly believe that this report can act as the first stepping stone towards evidence-based decision-making in the industry.

Yours faithfully,

Mark Bamber
Partner, Advisory Services

Glossary of terms

Basic prices	A basic price is the amount that is typically received by the producer from the purchaser for a unit
Compensation of employees	The total remuneration (cash or in kind) that is payable by an employer to its employees in return for work carried out during the relevant accounting period.
Constant / real prices	A common set of prices that are used to measure and analyse changes in an economic variable from one year to another without the effect of inflation.
Consumption of fixed capital (CFC)	Consumption of fixed capital represents the decline in the monetary value of fixed assets due to wear and tear, obsolescence and expected damage.
Direct impact	<p>This refers to the first round of spending by a consumer. For example, money spent at a grocery store by a private consumer is considered to be “direct” (first round) demand for food items. This applies to every other expenditure by consumers. Similarly, money that is spent directly by developers for contracting works is considered to be of a direct nature.</p> <p>In multiplier analysis, we typically consider the aggregate demand for the industry, that is, the total of the goods and services in the economy (at a national level).</p>
Disposable income	That part of income that is actually available for spending. This is defined as gross income less direct tax and social security contributions.
Equivalised disposable income	This is defined as the household’s total disposable income divided by its “equivalent size”. In other words, it is a measure based on the number of household members and their respective ages.
Externalities	Costs or benefits arising from an activity and which do not solely accrue to the person/enterprise carrying out the activity, but also to third parties. External costs could be related to damage to the other people or the environment such as pollution. On the other hand, external benefits are profitable or pleasant for other individuals who cannot be charged for them. For example, it is in the interest of the general public for every individual to be immunised against contagious diseases. In such a case, a private individual is benefitting as he/she is less prone to a disease that is contagious from one person to another.
Full-time gainfully occupied	The term “full time gainfully occupied” refers to that portion of the population which is engaged in work on a full time basis (i.e. a 40 hour week). On the other hand, “full time equivalent employment” is simply a conversion method used to measure the number of employees according to the number of hours worked – a part-timer is equivalent to 0.5 FTEs when working 20 hours a week.
Gross Value Added (GVA)	Measures the total value of goods and services produced in an economy (or in a particular sector) during a specific period of time. Similar to the Gross Domestic Product, the GVA can be estimated in three ways; the output approach, the income approach or the expenditure approach.

Gross/Net operating surplus (GOS/NOS)	Gross operating surplus is the excess amount of money that is generated by firms' operating activities after paying labour costs. In other words, it is the gross output less the cost of intermediate goods and services and compensation of employees. The net operating surplus (NOS) is the GOS less the consumption of fixed capital (CFC) component.
Housing affordability index (HAI)	The HAI is the ratio of the median household income to the required income to qualify for a loan on a median-priced property for a single family. The index serves as one measure of the feasibility of middle-income household to afford to purchase a typical property.
Housing bubble	An increase in house prices typically fuelled by an increase in demand coupled with speculative buying which further increases demand. At some point in time, demand stagnates or decreases whilst supply increases, possibly resulting in sudden decrease in prices, causing the so-called "bubble" to burst.
Indirect impact	The demand created by consumers, creates new demand upstream for intermediate suppliers. For example, developers typically engage contractors for their work (direct impact), who in turn need to buy raw materials from other suppliers further up in the supply chain. For example, contractors would need to buy concrete mix or paint in order to provide their services to the developer. This form of spending is included in the "indirect" impacts category and is measured using the "Type 1" multiplier.
Induced impact	This arises as a direct result of additional rounds of spending. For instance, contractors pay wages to their employees (indirect impact), who in turn re-spend their wages on other goods and services in the economy. This form of re-injection in the economy is classified as an "induced" impact and is measured using the "Type 2" multiplier.
Input-output table	An input-output table show the flows of goods and services between the different sectors of the economy. Specifically, it lists the flows of goods and services between sectors of origin and factor services (shown by the rows), and the sectors of destination, including both intermediate and final use (shown by the columns).
Intermediate consumption	Intermediate consumption measures the value of the goods and services that are consumed as inputs by a process of production. These goods and services are supplied to downstream firms and may be either transformed or used up during the production process.
Macro economy	This refers to the national economy as a whole. Macroeconomics is a branch of economics that concerns the determination of the aggregate and average figures in an economy.
Market/current prices	Market or current prices refer to the prices which goods/services are currently being sold at in the market, as determined by the forces of demand and supply in a competitive market. Current prices include the inflationary element.
Median income	Median income is the middle point of the national income.

Multiplier effect	The increase in final income to society arising from any new injection of spending as a result of new demand.
Nomenclature statistique des activités économiques dans la Communauté Européene (NACE)	NACE is a uniform statistical methodology that is applied across the European Community for the classification of economic activities.
Private consumption	Spending by private consumers for their survival or enjoyment. Private consumption is normally divided between spending on non-durables (for immediate use such as spending on food and clothing), and on durables (such as cars), which are expected to be used over a number of years.
Property price index (PPI)	A property price index measures the movement of property prices in a given time period.
Purchaser's prices	The purchaser's price is the amount that is paid by a buyer excluding any ad-valorem tax (such as VAT), but including any transport charges.
Skills gap	The gap between the skills that employers need vs. what job seekers in the market are offering. In this context, this refers to the skills that are typically required by developers/contractors to perform their work vs. the availability of those skills within the labour market. A skills gap causes labour shortage issues in the market and could be problematic for employers within the industry.
Supply table	A Supply table is a large matrix which can provide a detailed picture of goods and services in an economy being supplied either by domestic production or imports. Its main function is to illustrate what type of products are produced by a particular industry, and also to show which industries produce specific types of products.
Technical coefficients	Technical coefficients show, for each industry in the economy, the proportional value of inputs that are purchased from all sectors in the economy for every unit of output.
Use table	A Use table describes the use of goods and services – either by producers (intended for intermediate consumption) or by consumers (intended for final use). A Use table displays which sectors are the main clients for a particular industry's output, while also identifying from which sectors a particular industry sources its inputs.

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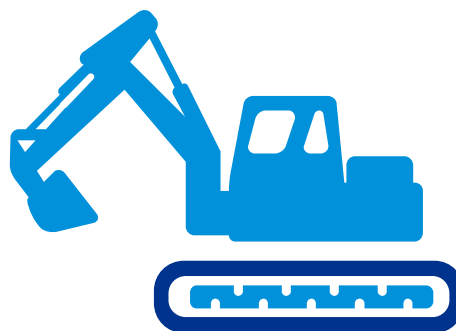
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Executive summary

Background to the study

The construction industry in Malta is considered to be one of the main building blocks of the Maltese economy. It has close connections with both upstream activities (such as quarrying and manufacturing of concrete) and downstream activities (such as manufacturing of fittings and real estate sales). Moreover, the end product (property) is arguably the single most important asset used for collateral financing. Hence, the industry has strong ties with the financial sector.



Scope of the study

The Malta Developers Association (MDA) is keen to gain a realistic snapshot of the industry by quantifying the sector's contribution and gauge the impact of the industry on the rest of the economy. In light of this, we have been contracted by the MDA to quantify the economic relevance of the construction industry and provide insight on the industry's impact on the local economy. Hence, this study seeks to re-define the construction industry and subsequently quantify the size and impact of the industry.

Throughout the course of our engagement, we have carried out a number of stakeholder consultations with key players in the market. These meetings provided us with useful insight on practical aspects of the industry including the practice of bartering, discounts, current stock of property, prices, past trends, legislative requirements and also environmental considerations. Additionally, this report analyses a number of key trends in the market concerning industry players, and price sensitivity of property prices to highlight any differences arising as a result of the type of property being traded.

Methodology and sources of information

This study has been prepared using a mixture of methodological approaches including desk-based research and data collection from reputable sources such as the National Statistics Office, the Central Bank of Malta and Eurostat. We have also made use of KPMG's internal real estate database and consulted a number of stakeholders to gain a more comprehensive view of the industry. A significant number of MDA members were contacted in order to gain insights from players in different lines of work representing different aspects of the industry. The sample of stakeholders involved entities of various sizes, from small family operations to the largest players in the industry.



Headline figures

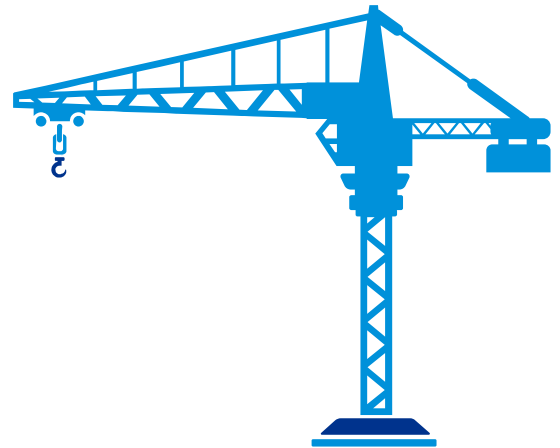
The total direct, indirect and induced output from the construction industry is estimated to be around €2.55 billion.

In terms of Gross Value Added (GVA), which is a subset of output, the total direct and indirect contribution to Gross Value Added (excluding induced effects) from the construction and real estate industries is estimated to be around €1.22 billion, which is almost 15% of total GVA.

The direct contribution to Gross Value Added (excluding indirect and induced effects) from the wider construction industry as defined in this report is estimated to be around €0.91 billion (circa 11% of total GVA).

The wider construction industry as defined in this report generates direct employment of around 16,491 Full Time Equivalents (FTEs) – 9.58% of total. When indirect employment is considered, the figure goes up to 31,451 jobs created (18.27% of total), and to 37,275 jobs created (21.66% of total) when induced employment is added.

An explanation of how these figures were derived is provided in summary form below, and in detail in the main text.



How has the construction industry been defined?

Official statistics are compiled in line with the NACE classification system. Construction activities break down into three divisions, namely the construction of buildings, civil engineering (largely infrastructure projects), and specialised construction activities (demolition, site preparations, test drilling and boring, electrical installation, plumbing, heat and air conditioning installation, building completion and finishing, plastering, joinery installation, floor and wall covering, painting and glazing and roofing activities). We call these 'Core construction activities'.

A number of other activities which are intrinsically linked to the construction industry are also included within the broad definition of the industry. We call these 'Related construction activities'. The following activities have been included:

- Mining and quarrying.
- Sawmilling and planing of wood, manufacture of veneer sheets and wood-based panels, parquet floors, builders' carpentry and joinery and also wooden containers.
- The manufacture of glass, ceramic tiles and flags, bricks, tiles and construction products, ceramic household and ornamental articles, sanitary fixtures, ceramic insulators and insulating fittings, cement, lime, plaster, concrete, ready-mixed concrete, mortars and fibre cement, and also the cutting, shaping and finishing of stone.
- Manufacture of fabricated metal products, except machinery and equipment.
- Manufacture of machinery for mining, quarrying and construction.
- Agents involved in the sale of timber and building materials.
- Wholesale of mining, construction and civil engineering machinery.
- Wholesale of wood, construction materials and sanitary equipment.
- Real estate activities which include the buying and selling of own real estate, renting and operating of own or leased real estate, the operations of real estate agencies and also the management of real estate on a fee or contract basis. It also includes the building of structures, combined with maintaining ownership of leasing of such structures.
- Architectural and engineering activities and any related technical consultancy.
- Specialised design including interior decoration, and industrial design.
- Renting and leasing of construction and civil engineering machinery and equipment.
- Services to buildings and landscape activities.

Size of the wider construction industry

In terms of Gross Value Added and as per NACE 41, the construction of buildings generated almost €197 million in 2015. When estimating the economic contribution of the wider construction industry, we aggregated the activities incorporated in the broader definition of the industry.

The Gross Value Added (GVA) generated in 2015 by each set of activities is as follows:

- Construction of buildings – €196.88 million
- Core construction activities – € 645.60 million
- Related construction activities – € 66.22 million

Hence it is estimated that the construction industry is directly responsible for generating value added valued at around **€908.70** million, equivalent to roughly 11% of the Maltese economy's total GVA (2015 figures).

Estimating the direct and indirect impact of the construction industry on the Maltese economy

In order to arrive at a more comprehensive indicator of the direct and indirect contribution generated by the construction industry, two different methodologies were adopted to estimate the value of all goods and services supplied, directly or indirectly, to the construction industry.

The first methodology involved an analysis and application of the input-output tables published by the Central Bank of Malta. The second methodology involved the application of the Type 1 Value-Added multipliers, also published by the Central Bank of Malta. Our results indicate that the Construction and Real estate sectors contribute to around **14.8% to 15.0% of total GVA in the Maltese economy.**

The construction industry vs. other industries

The construction industry cannot be assessed in isolation. Firms operating within the sector need to obtain inputs (raw materials, professional services and so on) from other industries (such as the production industry, distribution industry and so on), in order to produce any type of output, such as the construction of a residential building.

We looked at the local supply table which shows a detailed picture of the goods and services in an economy being supplied either by domestic production or imports. This illustrates what type of products are produced by a particular industry, and which industries produce specific types of products. The local supply table shows that 95% of domestically produced construction related products are produced by the construction industry itself. On the other hand, 88% of the construction

industry's output constitutes construction-related products. The construction industry also produces other various products such as those related to the professional, real estate and production industry.

Furthermore, the Use table shows that the construction industry itself uses the highest proportion of construction-related products (38%). Additionally, the Use table also shows that the construction industry mostly makes use of production-related commodities, followed by construction-related products.

Incorporating induced effects and multiplier analysis

The output multiplier measures the ripple effects in an economy emanating from some form of economic activity. Two main output multipliers exist, known as Type 1 and Type 2. The Type 1 multiplier measures the direct and indirect effects on the economy. The Type 2 multiplier also measures the induced impacts on the economy. It is worth noting that the Type 1 multiplier for the construction industry is the highest out of all 18 industry categories in Malta.

Given the construction industry's output in 2015 of €1.16 billion, it is estimated that the industry generated an additional €0.80 billion worth of indirect output, and a further €0.58 billion worth of induced output. As such, the construction industry most likely contributes to the generation of around €2.55 billion in direct, indirect and induced output in Malta¹.

Employment generated by the construction industry

Latest figures from NSO indicate that total direct employment generated by the wider construction industry (includes construction of buildings, core construction activities, and related construction activities) amount to 16,491 Full time equivalent gainfully employed.

This does not include indirect or induced employment. Through an analysis of the employment multipliers for the construction sector it is estimated that the industry is responsible for generating around 31,451 direct and indirect jobs in Full Time Equivalents (18.27% of total gainfully occupied). This figure grows to around 37,275 jobs in Full Time Equivalents (21.66% of total gainfully occupied) if induced employment is also considered. By way of definition, induced employment relates to that portion of employment created out of added economic activity through additional rounds of spending.



Emerging challenges - The environmental dimension

Stakeholder consultations indicate that a number of developers have taken the initiative to include more environmentally friendly features, and energy-efficient materials in their construction. At the higher-end of the market, a building's overall quality, including its eco-friendly features, is prioritised as it enhances value and prestige. Despite this, environmental considerations are still not a top priority for many developers since price sensitive markets - such as the First Time Buyers market catering for entry-level properties, and Public Tenders - place more value on other factors, forcing a developer to absorb the additional expenses incurred when using more environmentally friendly materials in order to remain competitive.

With regard to the disposal of construction and demolition waste, the results from our stakeholder analysis show a growing concern over the space available for dumping of this waste. With no new licenses for quarries being issued, the available space to deposit construction and demolition waste is nearing saturation point, at which point only the official marine dumpsite will be available for use. The additional costs and environmental concerns surrounding the use of this site however, make it less than ideal, and thus there is a present and immediate need to develop a national strategy addressing the disposal of construction and demolition waste.

Some MDA members also raised concerns over the limited lifespan of reinforced concrete and the implications this would have on the owners of apartment units which will eventually reach the end of their lifespan. Our research indicates that leasehold or common hold ownership structures for such properties could help address this issue, although a more detailed analysis of the situation is required. Similar to the situation surrounding waste disposal, it is felt that a long-term strategy is required to develop ideas, solutions and mitigation actions.

During our consultations with members of the MDA, we also discussed the issues of noise, visual and air pollution stemming from construction activities. We received a varied response, although larger players in the industry appeared to give the issue more importance than some of the medium-sized and smaller players.

Vacant properties

The 2011 census indicated that just over 71,000 vacant properties existed on the market. Around 33% of that number were dilapidated or in need of moderate to serious repairs, or still in shell form. A further 42% see seasonal or secondary use, largely as holiday homes. During our consultations with key industry players, the general consensus was that during the current period of strong demand, it is unlikely that a large number of good quality,



saleable properties would remain dormant. Industry players believe that most vacant properties are likely either older properties whose layout does not cater well to the tastes of modern consumers, properties tied up in legal issues due to inheritance disputes, properties priced well above market rates, or properties purchased for speculative reasons which are being left vacant rather than placed on the rental market.

We propose that a more detailed study on the profile of vacant properties should be undertaken in order to support the creation of a strategy to facilitate the transition of appropriate properties back into the supply stock. Additionally, a system should be introduced to enable the categorisation of vacant properties based on their state and primary use.

Emerging challenges - the economic dimension

Employees within the construction sector

Stakeholder consultations highlighted that there is a shortage of labour supply in the sector. The issue stems from both the capacity and capability of labour that is available locally, with the shortfall being addressed through foreign labour. This labour scarcity is emanating from a number of factors including a strong demand for property which is leading to an expansion of property supply, and hence a rise in demand for construction workers; the apparent skills gap; and lack of vocational appeal. Additionally, consultations indicated that there is also an element of competition from other similarly paid jobs, in other sectors other than construction. In order to address the issue of skills gap in the market, we suggest that a deeper in-depth study is carried out in order to identify the root-cause of the issue and put forward suitable measures to address those issues. In the short to medium term, we recommend a consideration for an improvement in working conditions and a more competitive compensation package, in order to retain employees in the sector. For a more longer term solution to the skills gap issue,

we believe the MDA should champion the setting up of a Training Academy with a view to sharpen particular skills which are needed in the industry. The Training Academy could offer courses, perhaps in collaboration with MCAST and with the larger players in the industry, with MDA providing accreditation for the different types of skilled positions.

Demand drivers

Our meetings also highlighted that the boom that is currently being experienced by the market is unprecedented. At the core of this boom is surging demand, underpinned by a series of factors, and the accommodating supply, which usually follows with a slight lag. Based on the input received from major players in the industry, the key factors driving demand include: the first time buyers scheme, low interest rates, lifestyle and family dynamics, and the surge in working expatriates (mainly the iGaming and Financial Services). With respect to the latter, most of the MDA members that were consulted attributed the boom in the rental market to the increasing number of foreign workers in Malta.

Risk of a housing bubble

It is difficult to provide a definite ex-ante diagnosis of a sector bubble through the use of statistical and/or econometric techniques. One can only look at the available body of evidence pointing to the potential existence or non-existence of a bubble.

However, given the currently available data, and the qualitative input received from several MDA members following consultation meetings, there does not seem to be any substantive evidence of the presence, or imminent creation of a housing bubble. Nevertheless, there are indications of overheating, and the situation must be monitored closely. The largest potential threat exists in the rental market, where rents are increasing at a faster rate than property prices, with demand originating predominantly from expats. As such, this market is more susceptible to changing economic conditions, which may, in turn, affect property prices.



Emerging challenges - the social dimension

Housing affordability

Housing affordability is an important determinant of demand for properties. Declining affordability may mean that potential property buyers must lower expectations and accept properties which are not located in highly sought after areas for example, or not necessarily accommodating their requirements. At worst, however, it means that certain segments of society are priced out of the market, and may have to resort to renting or social housing.

Part of our analysis entailed the compilation of a Housing Affordability Index (HAI). An HAI is a ratio of the median monthly net household income, and the required level of income needed to qualify for a mortgage to purchase a median-priced property. As such, an HAI score of 1 indicates that a household earning the median income has just enough earnings to qualify for a mortgage on a median-priced property.

The HAI (2016) for different types of properties has been calculated as:

- 1.0235 for apartments
- 0.9223 for maisonettes
- 0.7853 for penthouses
- 0.4532 for terraced houses

Our analysis also concludes that single individuals earning a median wage, or couple where both parties earn the minimum wage, are likely to find

a restricted supply of affordable properties. We propose the setting up of a specialised working group to consider specific strategies applicable to these segments of the population.

For first time buyers, housing affordability is a major concern. Our analysis indicates that as at 2016 prices, a first time buyer household with a total net income of around €25,800 (calculated on the basis of 1.66 persons per household), would be able to qualify for a mortgage on a maisonette that is priced at around 99% of the value of the median of such property. Penthouses or terraced houses would most likely fall outside of the household's price range.

Our findings also suggest that couples earning the median income would be able to afford a median priced apartment of maisonette. Moreover, there may be a supply gap at the lower end of the market. This certainly warrants a deeper analysis by the proposed specialised working group to initiate a socially responsive strategy to address this matter.

Market analysis

Industry practices

Our consultations reveal that bartering of properties (as a means of payment in kind), is still relatively common in the industry, but in recent years fewer transactions are being carried out on this basis. We were also made aware that whilst bartering offers cash advantages, there are a number of downsides,



for instance, when parties exchange property for construction materials, and no discount on such materials are given. There may also be instances where projects get delayed when two cash-strapped parties engage in bartering to proceed with a project, only to encounter liquidity problems to see the project to completion.

With respect to negotiated discounts, consultations indicated that in general, sellers take this into account, and mitigate this through inflated asking prices in order to minimise the impact of negotiations on expected returns. The average discount on the basis of data elicited from MDA members is 4.6% of property value.

Main highlights from property database analysis

KPMG maintains a database of real estate prices which is updated annually. This database contains information that is sourced from the websites of major real estate agents, including, where available, the type of property, location, plot size, number of bedrooms and bathrooms, any views, the condition of property, and the asking price. On the basis of this information, the following are noteworthy:

- Apartments and maisonettes are the most plentiful properties on the market. The average apartment carries an asking price of almost €228,000, which is around 16% more expensive than the average maisonette. However, the median apartment carries an asking price of around €155,000, which is around 11% cheaper than the median maisonette.
- In general, there appears to be an upwards trend in property prices. Listings in our database indicate that between 2013 and 2016 median property prices have risen by around 17% while average property prices have risen by around 24% (average across multiple types of properties).
- Property tends to be the most expensive in the Northern Harbour region and cheapest in the South. Both the median and average asking price of properties in the Northern Harbour region were just over double (2.06 and 2.1 times respectively) that of properties in the South.
- Seafront properties carry a highly significant premium over non-seafront properties. Across the analysed localities, the premium for 2016 was 56% on average.
- A garage space is also a feature which adds a significant premium onto the value of a property. Our analysis indicates this to be in the region of 35%, although this premium is not necessarily solely attributable to the availability of a garage space.
- Figures for the rental market indicate that the average monthly rental rates for apartments and penthouses are highest in the Grand Harbour region where they top €1,100 and €1,600 respectively. This is closely followed by the Northern Harbour region with the average monthly rental for apartments being around €1,070 and the average monthly rental for penthouses being over €1,250.

1

Introduction and contextual background



1.1 Background

The construction industry in Malta can be considered as being a main building block of the Maltese economy. It has close connections with both upstream activities (such as quarrying and manufacturing of concrete) and downstream activities (such as manufacturing of fittings and real estate sales). Additionally, the end product (property) is arguably the single most important asset used as collateral for financing. Thus the industry also has strong ties with the financial sector.

However, published statistical indicators about the Maltese construction industry may give a contrasting impression of a minor sector, largely due to statistical classification. Based on published statistics, the construction industry directly contributes just 4.3% of gross value added (GVA as at 2015) and employs around 6% of the gainfully occupied (average for 2015), even though economic activities within the construction industry have substantial inter-industry linkages, and therefore generate employment and income in other economic sectors.

In this regard, although the National Statistics Office in Malta publishes the contribution of the construction industry to GDP, there is no statistical information with respect to the indirect and induced impacts that this sector generates. For this reason, the Malta Developers Association (MDA) is keen to gain a realistic snapshot of the industry's contribution to the rest of the Maltese economy.

Further to the above, which outlines the need for a more comprehensive quantification of the sector's contribution, there also seems to be a dearth of information, insight and data on local aspects of the construction industry and the property market. This report aims to fill in this knowledge gap in the hope of better understanding the dynamics of this important industry.

1.2 Scope of the engagement

We have been contracted by the Malta Developers Association (MDA) to quantify the economic relevance of the construction industry with the ultimate aim of gauging the impact of the industry on the rest of the Maltese economy. Three major banks active in the local mortgages market – acting as sponsors of this study - have also been a key source of information for this exercise.

The scope of this engagement was to re-define the construction industry and subsequently quantify the size and impact of the industry on the rest of the economy. Moreover, throughout the course of this

engagement, a number of stakeholder consultations were carried out with key players operating within the construction industry. The consultations resulted in interesting insight related to the practice of bartering, discounts, current stock of property, prices, past trends, legislative requirements and environmental considerations during the development of properties. In addition, this report also analyses a number of key trends in the market concerning industry players, and price sensitivity of property prices to highlight any differences arising as a result of the type of property being traded.

1.3 Objectives of this report

The specific objectives of this report are as follows:

- Establish a broader definition for the construction industry by identifying relevant business sectors falling within such a definition.
- Characterise the newly defined construction industry by means of quantitative economic summary statistics.
- Provide qualitative commentary on industry prospects, performance, key trends, the current economic climate within the industry, and the effects of the regulatory environment on industry growth in the medium to long-term.
- Derive the direct economic effect of the construction industry on other industries and the economy as a whole.
- Calculate a simple economy-wide multiplier effect to estimate the indirect and induced effects of the industry.
- Build a profile of developers and gain insight from MDA members with respect to multiple aspects, such as extent of bartering, extent of negotiated discounts in real estate transactions, and the property stock situation.
- Utilise KPMG's real estate expertise and internal database in order to develop summary statistics on the real estate market.

1.4 Structure of this report

This report is structured as follows:

- **Section 1** includes the background to the engagement, the report's primary objectives, an overview of our methodology, identification of main sources of information, main underlying assumptions, and other important information and disclaimers.
- **Section 2** features a characterisation of the construction industry. In this section, relevant economic data relating to a narrow view of the construction industry is analysed, and a broader definition of the industry is developed by including an analysis of other sectors closely linked to the construction industry.
- **Section 3** seeks to estimate the overall contribution of the construction industry towards the Maltese economy.
- **Section 4** looks into the externalities generated by the construction industry, potential risks to the future of the sector, as well as housing affordability in Malta.
- **Section 5** carries an analysis of the property market, including a profile of industry players and an analysis of properties available for sale or rental in Malta.

1.5 Methodology

This report is based on a mixture of methodological approaches as detailed in the ensuing paragraphs.

1.5.1 Data collection and desk-based research and analysis

The first phase of this engagement involved a detailed analysis of the NACE classification system, together with discussions with the MDA and MDA members in order to establish which industries and economic sectors may be closely linked to the construction industry, but are not formally defined as part of the construction industry under the definitions in the NACE system.

This phase formed the basis for much of the work carried out as part of this engagement as it provided a starting point for the economic analysis and impact quantification.

The next phase involved the collection of data from public sources such as the NSO, Eurostat, and the Central Bank of Malta, as well as requests for data from the major banks in Malta. An in-depth analysis of this data, as well as data from KPMG's internal real estate database, was then carried out. The aim of this phase was to extract summary statistics to (a) describe the current economic situation across several aspects of the construction industry and (b) analyse trends in the industry and in the housing market.

More detailed explanations of the specific methodologies used for different parts of our analysis can be found throughout this report where appropriate.

1.5.2 Stakeholder consultations

Even though statistics are a useful tool in industry analysis, they do not always give a comprehensive view. For this reason, it was considered imperative that insight from a sample of industry players be collected. A number of MDA members were contacted in order to gain insights from players in different lines of work representing different aspects of the industry. Additionally, the sample involved entities of a variety of sizes, from small family operations to the largest players in the industry.

The reporting of insights emerging from the stakeholder consultations is an amalgamation of the different opinions and viewpoints which were encountered during the course of the engagement. The report presents the general consensus amongst different individuals being consulted. Certain opinions and views which tackled issues not generally raised by the majority of stakeholders are also mentioned in the report. This was done while also respecting the anonymity of those who agreed to speak with us.

1.6 Sources of information

The following are the main sources of information utilised in the compilation of this report:

- Data provided by major players in the banking sector
- Economic and demographic statistics from the National Statistics Office
- Economic and demographic statistics from Eurostat
- Economic statistics and indicators published by the Central Bank of Malta
- Budget document 2015, prepared by the Ministry of Finance
- NSO, 2016, "Supply, Use and Input-Output Tables," National Accounts Unit 2010
- Micallef, B. 2016. "Property price misalignment with fundamentals in Malta," Central Bank of Malta WP/03/2016
- Gatt, W. and Grech, O. 2016. "An assessment of the Maltese housing market," Central Bank of Malta Policy Note

Additional sources of information are referenced throughout the report as appropriate.

1.7 Underlying assumptions

This report is drawn on the basis of the following generic assumptions. Further case-specific assumptions are listed throughout the report.

- Data received from third parties is presumed to be factual and correct as at the date of this report
- The population frame from which the sample was randomly drawn for the stakeholder consultations is assumed to be representative of the local construction industry
- The insight gathered from the stakeholder consultations were, in the main, of a qualitative nature and as such cannot be interpreted using statistical methods/techniques.

1.8 Important information about this report

This deliverable is addressed to Mr. Sandro Chetcuti, President of the Malta Developers Association (hereafter also referred to as 'MDA' or as 'the Association'), and to the sponsors of this report, namely, Bank of Valletta p.l.c. as lead sponsor, and to HSBC Bank Malta p.l.c. and APS Bank Ltd. as participating sponsors, and has been prepared in accordance with our terms of engagement as per our letter dated 19 December, 2016.

Nothing in this deliverable shall be construed as meaning that we undertake any advocacy services or managerial function for the MDA. Any decisions and/or positions taken are solely those of the Association.

Our duties in relation to this deliverable are owed solely to the Association and accordingly we do not accept any responsibility for loss occasioned to any third party acting or refraining from action as a result of this deliverable. We understand and acknowledge that our final report may be distributed and released into the public domain, in complete or summary form. Our consent for the whole or part of our reports to be copied or disclosed to any third party other than the MDA or report sponsors, or otherwise quoted or referred to, in whole or in part, is on the basis that we do not owe such third parties any duty of care as a result of giving such consent.

We have indicated in our report the sources of the information presented. We have not sought to establish the reliability of these sources by reference to information independent of the Association, but where any relevant information has been obtained, this has been indicated in our report. We have, however, satisfied ourselves, as far as possible, that the information presented is consistent with other information that was made available to us in the course of our work in

accordance with the terms of the engagement letter.

In providing our services, we may have referred to and quoted from laws, regulations, directives or rules issued by regulatory bodies. We may have also commented on their general or specific applicability to the subject of our engagement. We have done so in the context of providing you with business advice and / or assistance and should not be construed in any way as the provision of legal services.

We must emphasise that the scope of the work required in this connection is different from that required for an audit carried out in accordance with International Standards on Auditing and cannot therefore be relied upon to provide the same level of assurance as an audit of financial statements prepared in accordance with those standards.

Our deliverable is based upon publicly sourced information. Our reliance on and the use of this unaudited information should not be construed as an expression of our opinion on it except as, and to the extent that, we may otherwise indicate in our report. We do not accept any responsibility or liability for the impact on our conclusions of any inaccuracies in such information.

There exists a significant degree of judgement involved in selecting methods and basis for arriving at our opinions and recommendations, and a significant number of items may be subjectively considered when arriving at such opinion. It follows therefore that, whilst our opinion will be one which we consider to be both reasonable and defensible, others may arrive at a different conclusion.

2

Characterisation of the Industry



2.1 How big is the construction industry in Malta?

2.1.1 Measuring industry size

One way of measuring industry size is to refer to Gross Value Added (GVA). This measures the total value of goods and services produced in an economy (or in a particular sector) during a specific period of time. The GVA for the whole economy can be measured in three ways: the output approach, the income approach or the expenditure approach.

In our case, we use the output approach, since it clearly shows the value-added or contribution of a specific productive sector to the economy. Using this approach, the total sales of firms which form part of the construction industry are added together, while inter-firm purchases of inputs (intermediate consumption²) are deducted. Therefore, the GVA for an economy (or a specific industry) is calculated as:

$$\text{Gross Value Added} = \text{Total Sales} - \text{Intermediate Consumption}$$

GVA as reported in the national accounts can also be calculated as the increase in the value of goods

and services that arises as a direct result of the production process, and can also be calculated as:

$$\text{“GVA} = \text{CFC} + \text{COE} + \text{T} - \text{S} + \text{NOS”}$$

Where:

- CFC = Consumption of Fixed Capital
- COE = Compensation of Employees
- T = Taxes
- S = Subsidies
- NOS = Net Operating Surplus.

In simpler terms, the equation above takes into consideration all the costs incurred by the producers in the production and provision of a particular product or service. This includes any expenditure on capital, compensation of employees, taxes (income tax payable on profits, but excluding VAT since these are incurred by the consumer), and the net operating surplus. Also it is important to note that subsidies are eliminated from the calculation since these constitute a transfer payment from an economic perspective³.

Figure 1 shows the movement in output and GVA for the construction industry as reported by official statistics in absolute terms. In this context, the term “construction industry” refers to the development of building projects and the construction of residential and non-residential

buildings (as per NACE 41). The graph shows that the industry experienced a slowdown in 2006 and 2007, following the boom in property prices that was experienced in 2004⁴. Growth in property prices slowed down from 2005 to 2007 reflecting the decline in the sector’s GVA of 10.2% between 2006 and 2007. This decline in the growth rate was reflected in the construction industry’s net operating surplus which decreased substantially by 20.4% and another 22.8% in 2006 and 2007 respectively. However, it is interesting to note that in 2006, investment undertaken by the construction industry increased substantially by 17% (as against 2005). The rationalisation exercise undertaken by MEPA in 2006 in relation to height limitations and the inclusion of parcels of land in development zones may have been a factor which contributed to this growth.

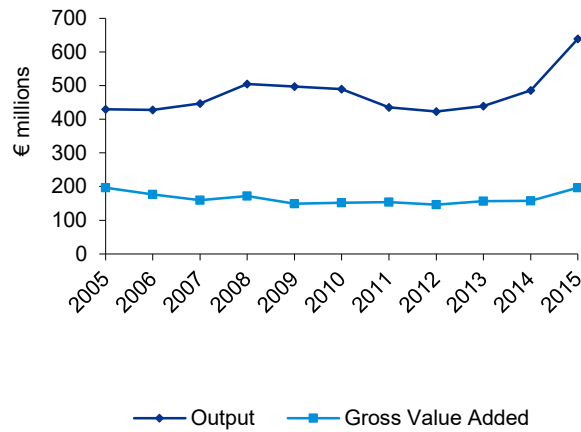
²Intermediate consumption measures the value of the goods and services that are consumed as inputs by a process of production. These goods and services are supplied to the downstream firm, and may be either transformed or used up during the production process.

³Transfer payments are excluded from national output since these are transfer of funds from one economic agent to another. Examples of transfer payments include subsidies to companies, farmers, old-age pensions, children’s allowances and other forms of social assistance payable by Government.

⁴Source: Micallef, B. 2016 p.7.

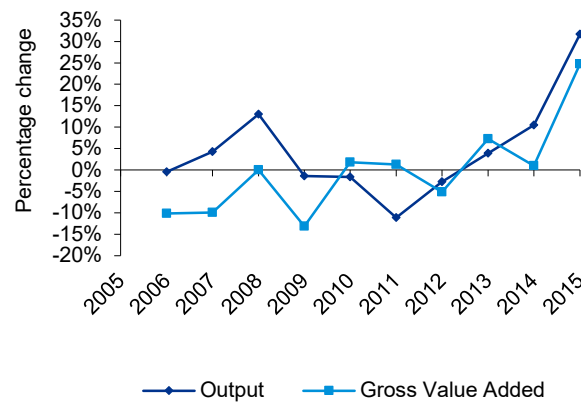


Figure 1: Output and Gross Value Added for Construction of buildings (NACE 41) in absolute terms



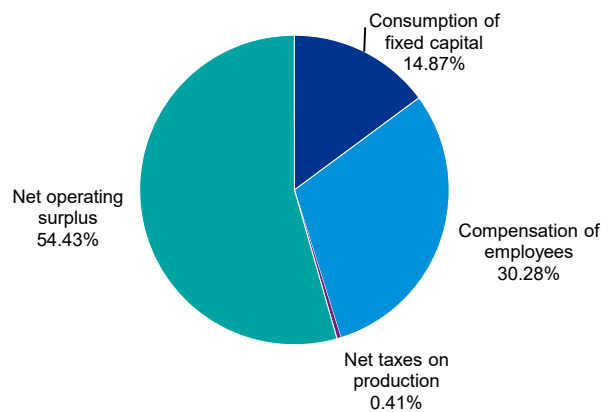
Source: National Statistics Office

Figure 2: Percentage growth in Output and Gross Value Added for Construction of buildings (NACE 41)



Source: National Statistics Office, KPMG Analysis

Figure 3: Gross Value Added Components for the Construction Industry (2015)

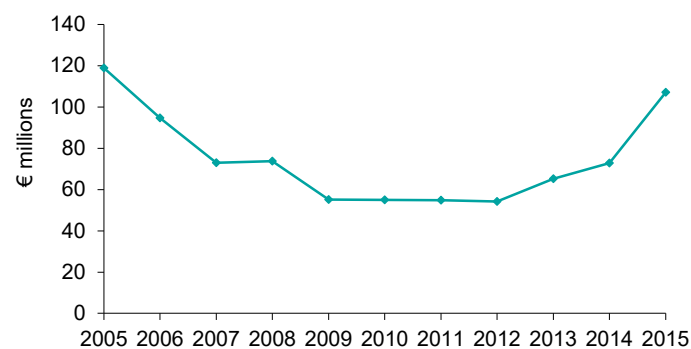


Source: National Statistics Office, KPMG Analysis

Whilst the GVA generated by the industry recovered in 2008 by 7.8%, the industry experienced a slowdown in 2009 and registered a decline in its GVA of around 13.2%. This trough resonates with the global economic downturn experienced at the time. During this same time period, the industry's net operating surplus decreased by 25.4% when compared to 2008. However, the decline in the local real estate prices was relatively marginal when compared to the slowdown experienced in other European markets such as Ireland and

Spain. According to Micallef (2016), the slowdown in the local construction industry at the time was attributable to a number of factors which were mainly supply driven. The presence of a number of vacant properties in the early 2000's allowed a number of house owners to develop their large properties into smaller dwellings of a relatively lower industry standard. This led to a surplus in the number of available properties for sale, leading to a depreciation in real estate prices in Malta⁵.

Figure 4: Trend in Net operating surplus for Construction of buildings (NACE 41) in absolute terms



Source: National Statistics Office

⁵Source: Micallef, B. 2016 p.8.

This decline in the sector's contribution to the economy in 2009, was followed by a mild recovery of 1.8% and 1.3% between 2010 and 2011, and another subsequent decline of 5% in 2012. In 2013 the industry experienced a period of recovery with an increase in GVA of 7.2% when compared to 2012. This increase was largely due to the recovery of property prices in 2013, which remained relatively strong over 2014 and 2015. The surge in property prices is reflected in the industry's growth in its net operating surplus – an increase of 20.43%, 11.44% and 47.26% in 2013, 2014 and 2015 respectively. This increase in property prices was attributable to a number of new government-led economic policies aimed at boosting the property market. For example, the exemption of stamp duty for first time buyers on the first €150,000 of the new property⁶, the tax exemption on capital gains and stamp duty on property (when transferring property

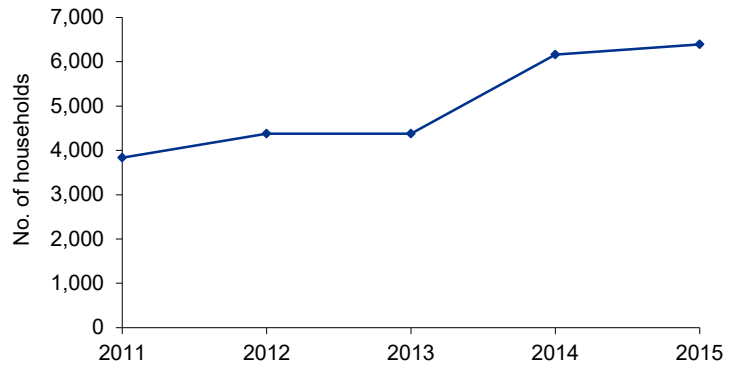
between two individuals)⁷, and the introduction of a final withholding tax system on the basis of the final property value. Upward demand pressures for housing is also brought about by demographic changes, such as the increase in the number of single parents, separations or divorce cases (see figures 5 and 6), and also an increase in the number of foreign workers in Malta. On the other hand, the increase in the ageing population as a result of a longer life-expectancy may increase the number of vacant properties on the island, since individuals of old-age may opt to reside in an assisted living facility, rather than on their own. It is also worth noting that construction output has been on an upward trend since 2012, which contrasts slightly with the sector's GVA, indicating that Intermediate Consumption (payments to upstream suppliers by firms in the construction sector) increased faster than GVA.

⁶As from 2014 and extended to 2017.

⁷Source: Budget Document 2015, Ministry for Finance.

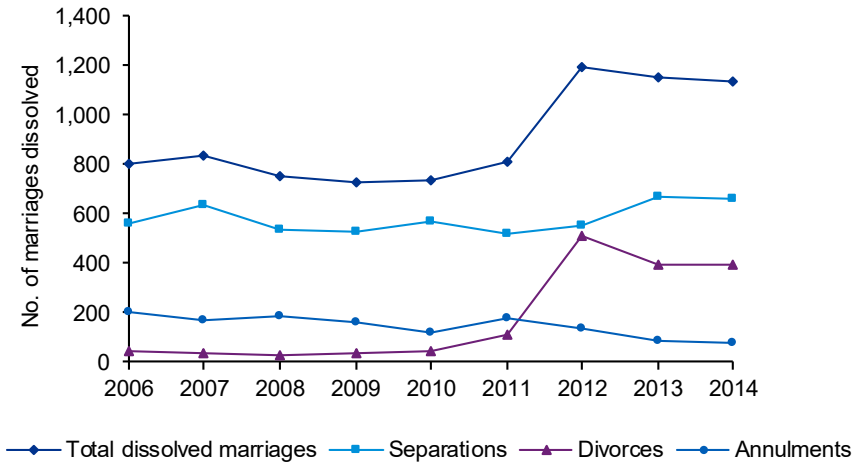


Figure 5: Single parent households



Source: National Statistics Office

Figure 6: Dissolution of marriages



Source: National Statistics Office

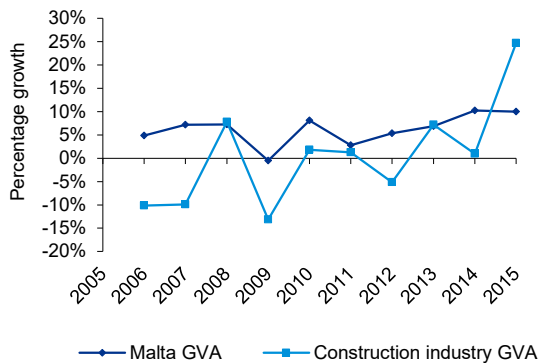
2.1.2 Comparing industry size

The following graphs show the evolution of the Maltese economy's GVA and the construction industry's GVA. This indicates that over time, the total economy's GVA registered a positive growth rate, with the exception of a negative growth rate of 1% in 2009.

When comparing the construction sector's economic growth to that of the national economy, it can be noted that the construction industry did not grow at the same rate as the rest of the economy during the period under consideration.

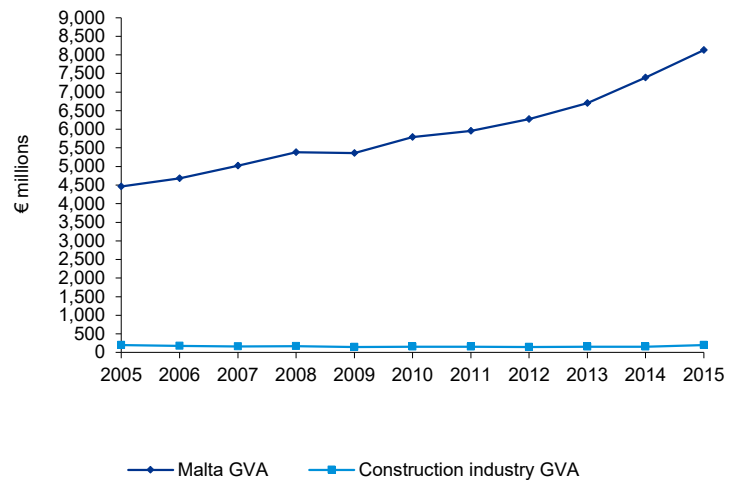
As the graphs show, the GVA for the industry remained relatively constant in absolute terms and registered negative growth rates in the years 2006, 2007, 2009 and 2012. In 2013, the construction industry registered a positive growth rate that is at par with the rest of the economy at around 7%. However, in 2014, total economic GVA grew by 10%, whilst the construction industry GVA only registered a 1% increase. This was compensated for by a high positive growth rate of 25% in 2015, as against a 10% growth rate for the rest of the economy.

Figure 7: Comparison: % Growth in Malta's GVA vs. Construction of buildings GVA



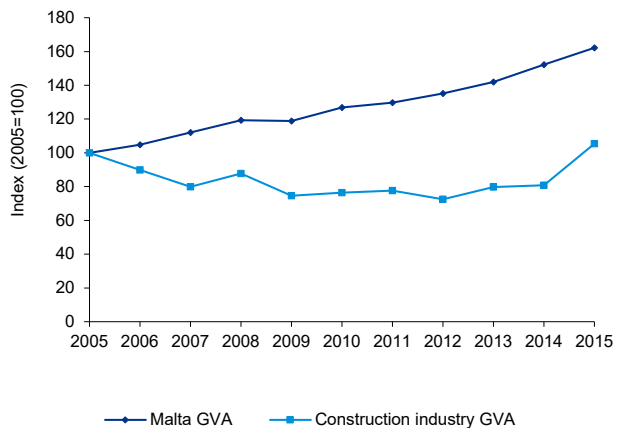
Source: National Statistics Office, KPMG analysis

Figure 8: Comparison: Evolution of Malta's GVA vs. Construction of buildings GVA in absolute terms



Source: National Statistics Office

Figure 9: Comparison - Evolution of Malta's GVA vs. Construction of buildings GVA index (2005=100)



Source: National Statistics Office, KPMG Analysis

An interesting observation can be noted here. Total economy GVA maintained an upward path, with positive growth rates across the years (save for 2009) whilst Construction sector GVA growth fluctuated between positive and negative growth bouts. This is to be expected since a single economic sector's GVA is always going to be less resilient and more susceptible to shocks than an economy-wide measure.

⁸Both national GVA and Construction Industry GVA were re-based such that 2005 is treated as the base year with an index of 100. This should not be interpreted as meaning that both GVAs are equal.

2.1.3 Construction employment and compensation of employees

In this section, we analyse the compensation of employees and also the number of employees as reported by official statistics. Figure 10 shows the movement of the sector's GVA and compensation of employees in absolute terms. This graph suggests that fluctuations in these two variables did not mirror each other due to an increase in the sector's net operating surplus component.

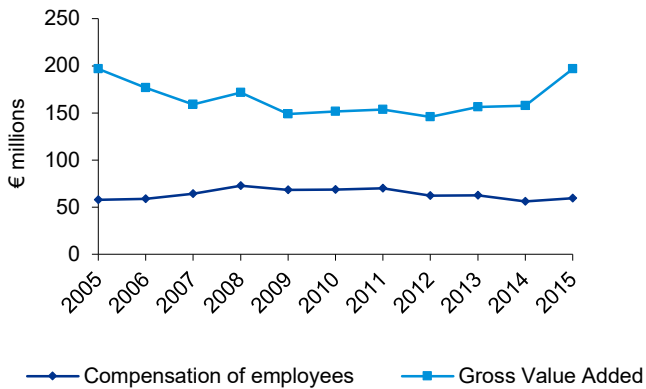
The compensation of employees from the 'Construction of Buildings' as a percentage of the total compensation to employees in the national economy, is shown in the graph below. This indicates that the wage bill for the construction of buildings segment (NACE 41) as a proportion of the total economy's wage bill decreased from 2.7% in 2005 to 1.5% in 2015, implying that the wage bill in aggregate increased faster than that of this particular sector.

However, in order to get a better understanding of

the underlying changes, we look at changes in the growth rate of both variables.

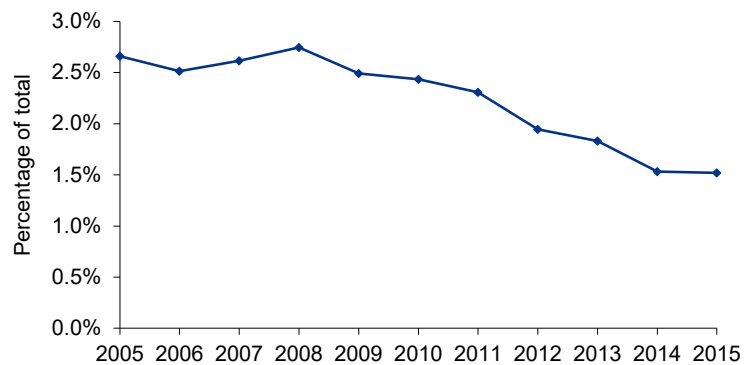
Figure 12 illustrates the growth in the sector's GVA and 'compensation of employees' variables for the period 2005 - 2015. The graph shows that percentage changes in 'compensation of employees' mirrored the sector's GVA with a notable exception in 2006 and 2007. During these two years, the industry registered a negative growth rate of 10% in each year and a positive growth of 2% and 9% in the sector's wage bill during 2006 and 2007 respectively. This dynamic also happened in 2014 where the 'compensation of employees' component decreased by 10% when compared to the previous year whilst the GVA of the sector registered a relatively minor growth of 1%. It can also be noted that growth in the sector's GVA surpassed the growth in the 'compensation of employees' by around 1% in 2010. Nevertheless, despite the disparity between growth rates in the two variables, the rate of change was practically synchronised as expected.

Figure 10: Trends in GVA and compensation of employees



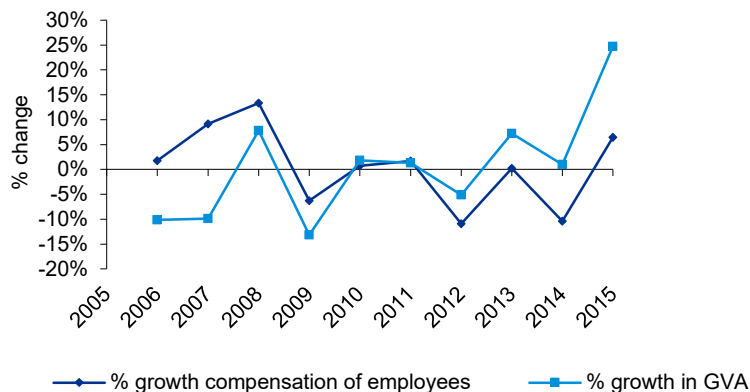
Source: National Statistics Office

Figure 11: Compensation of employees from Construction of Buildings as a % of total



Source: National Statistics Office

Figure 12: Trends in the GVA and compensation of employees components - % growth



Source: National Statistics Office, KPMG Analysis

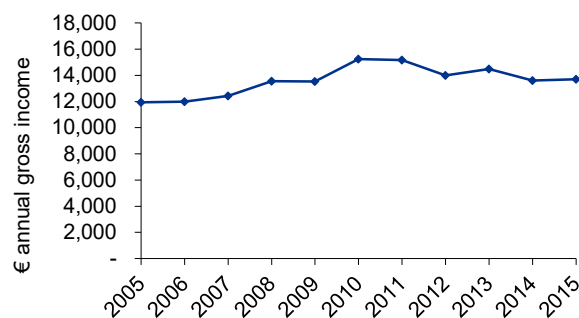
Differences in the sector’s growth rate and the related wages and salaries could be associated with the ratchet-effect of wage behaviour – wages in nominal terms tend to be sticky downwards, particularly due to employers’ reluctance to cut wages, lest it negatively affects employee motivation, productivity, and retention.

Moreover, Figure 13 shows the average annual income per employee for the construction sector (NACE 41). It can be noted that the average annual income per full-time gainfully occupied fluctuated over the 10-year period under consideration. The average annual income per employee stood at around €12,000 (gross) per annum in 2005 and increased up to €15,200 (gross) per annum by 2010.

Subsequently, the annual gross income decreased slightly to an average of €14,000 in 2012 and €13,700 in 2015.

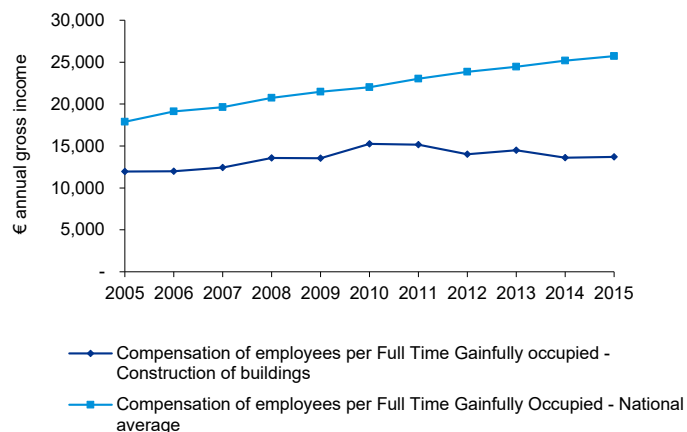
When comparing the annual gross income for the Construction of Buildings sector with the national average, it can be noted that the national average has been historically higher than that registered for the construction sector. The average gross salary (in 2005) for the Construction of Buildings sector stood at €12,000, whilst the national average stood at €15,700. Subsequently, in 2010 the average gross income for the sector under consideration stood at €15,200 whilst the national average increased to €19,200. More recently, in 2015, the average gross salary for the Construction of Buildings stood at €13,700, whilst the national average stood at €22,800. These trends indicate that whilst the national average gross salary steadily increased over the 10 year period, the sector’s average salary fluctuated between €13,000 and €15,000 per annum, without exhibiting any growth despite the boom in the sector. This can be due to a number of factors, including a greater proportion of lower skilled labour, and/or potential instances of under declaration of remuneration.

Figure 13: Average annual gross income per employee in the construction of buildings sector



Source: National Statistics Office, KPMG Analysis

Figure 14: Trends in compensation of employees in the construction of buildings sector compared to the national average



Source: National Statistics Office, KPMG Analysis

In addition, there tends to be a time-lag for the market to clear in the short run. Adjustment in the labour market involves the recruitment of adequate staff by employers and this involves time, especially in a labour market where specialised skill-sets are scarce. Hence, in a situation where an industry is growing, it may be difficult for firms in the same industry to find suitable employees to keep up with their demand. In the face of a labour supply shortage, workers have a higher bargaining power and typically tend to demand higher salaries. On the other hand, employers are reluctant to grant raises during a labour shortage for fear of strong resistance to lowering them again. A combination of these factors make it difficult for the labour market to clear and therefore cause differences between the sector's growth rate in GVA and compensation of employees variables.

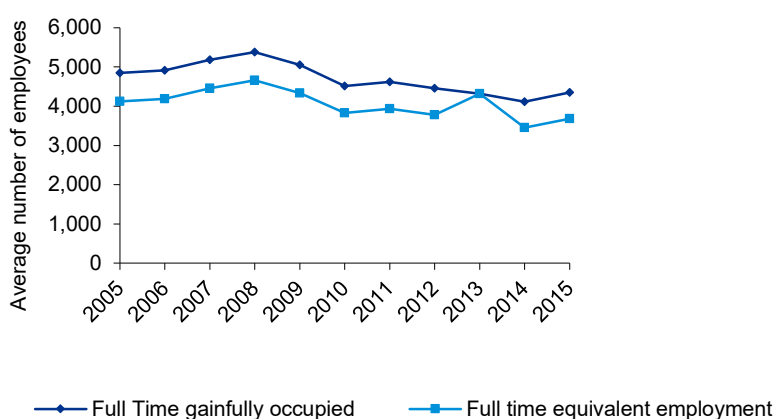
We also consider the average number of employees employed within the construction of buildings sector. This data is based on information obtained by the National Statistics Office from the administrative records of JobsPlus (formerly known as the Employment and Training Corporation)⁹.

The trend in employment for the construction of buildings sector in terms of full time and full time

equivalents is exhibited in Figure 15¹⁰. On average, the industry has employed around 4,700 individuals on a full time basis (gainfully employed), or around 4,070 individuals on a full time equivalent basis (employed but excluding self-employed)¹¹, with the latest figures showing 4,349 FTEs employed within the construction of buildings sector¹². Trend analysis indicates that the number of employees increased slightly over 2006 to 2008, followed by a minor decline in subsequent years until 2015.

This trend in the number of employees employed by the sector does not mirror the sector's GVA. This finding corresponds with various stakeholder's comments on the shortage of labour supply in the sector. This pattern, together with qualitative insight gathered from consultations, suggests that whilst the demand for properties is increasing (due to various exogenous factors, including the first time buyers' scheme and the surge in working expatriates in Malta), there are insufficient workers available to accommodate the growing demand for their services. Additionally, the industry is also suffering from an apparent skills gap, where skilled labourers across all levels in the industry are relatively scarce in their supply. These factors are affecting employment growth that complements the GVA for the sector.

Figure 15: Employment by the Construction industry



Source: National Statistics Office

⁹Note that the National Statistics Office publishes two sets of data on employment using different sources. One set is based on information obtained from JobsPlus (which is what we are quoting in this report), and the other set is based on information gathered from the Labour Force Survey. The latter statistics are different because the survey employed adopts the International Labour Organisation definition for employment. The methodology for these two data sets differs and as such the results are not comparable.

¹⁰The term "full time gainfully occupied" refers to that portion of the population which is engaged in work on a full time basis (i.e. a 40 hour week). On the other hand, "full time equivalent employment" is simply a conversion method used to measure the number of employees according to the number of hours worked – a part-timer is equivalent to 0.5 FTEs when working 20 hours a week.

¹¹Note that these two figures cannot be added together.

¹²Also note that 4,349 FTEs pertain to employees directly employed in 'construction of buildings'. As explained in section 2.2.11, this figure goes up to 16,491 when one considers core and related construction activities.

2.1.4 Legal business units

Business demographic data sourced from the National Statistics Office shows that the number of legal business units operating within the Construction industry decreased in 2012 and then recovered over the period 2013 to 2015. If one were to consider the legal business units classified as “mining and quarrying” and “real-estate”, then the

number of business units operating in construction related activities is estimated to be in the region of 10,400 units. This represented around 12% of business units in the local economy as at 2015, with Construction business units alone accounting for around two-thirds of all the business units that carry out construction related activities.

	2010	2011	2012	2013	2014	2015
Construction	6,901	6,884	6,372	6,445	6,519	6,782
Mining and quarrying	108	103	106	114	126	127
Real estate	3,068	3,103	2,830	2,877	3,049	3,535
Construction-related activities	10,077	10,090	9,308	9,436	9,694	10,444
Whole economy	73,116	76,043	71,864	74,709	79,356	87,971
Legal business units %	14%	13%	13%	13%	12%	12%

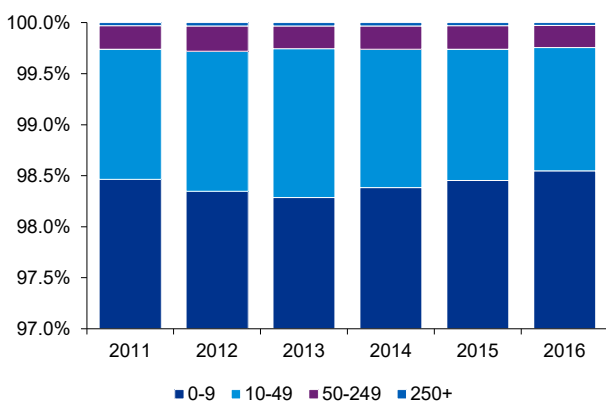
Source: National Statistics Office

Figure 16: Legal business units registered in Malta



Source: National Statistics Office

Figure 17: Construction and Real Estate business units by total employees



Source: National Statistics Office, KPMG Analysis

The number of business units within the construction and real estate industries stood at 10,317 units in 2015 and 11,096 in 2016. This implies that over one year, a further 779 units, equal to an increase of 7.5%, was registered. This increase can be attributed to the increase in demand driven by the first-time-buyers scheme and also the surge in working expatriates (especially in the iGaming and Financial Services). Moreover, stakeholders also welcomed the change in the way development permits have been issued in recent years. An improved and more efficient environmental planning system allowed developments to take place more quickly and hence, this required more contractors within the industry to accommodate this increase in economic activity.

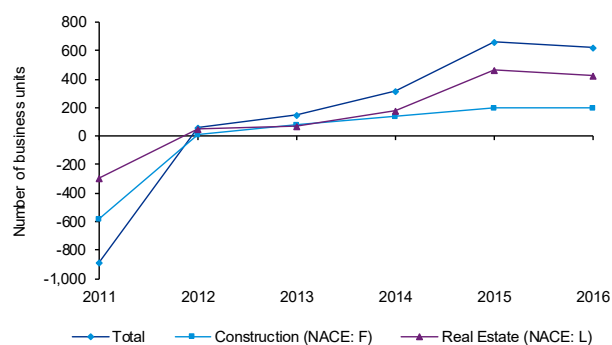
Focusing on the number of employees within business units in the Construction and Real Estate sectors, it can be shown that the absolute majority of business units employ from 0 to 9 employees (98.46%).

Table 2: Number of business units by employees					
Employee range	2016				Total
	0-9	10-49	50-249	250+	
Construction	6,882	113	20	3	7,018
Real Estate	4,053	21	4	-	4,078
Total	10,935	134	24	3	11,096

Source: National Statistics Office

Looking at births and deaths of business units within the Construction and Real Estate sectors, it can be noted that the number of deaths outweighed the number of births, resulting in a net decline of business units in 2011. This trend was reversed in 2012, with a marginal increase of 59 business units, and picked up going forward, stabilising at around 640 new business units being added to the current stock.

Figure 18: Net change in business units

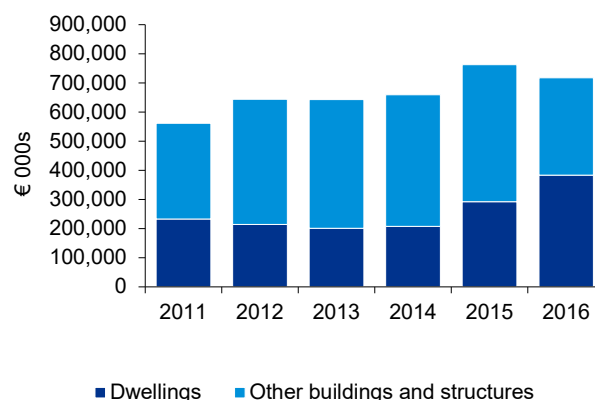


Source: National Statistics Office

2.1.5 Gross Fixed Capital Formation

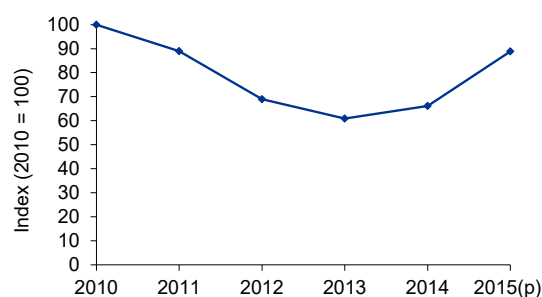
In terms of Gross Fixed Capital Formation¹³ (GFCF) of “dwellings” and “other buildings and structures” for the past six years, it can be noted that the total GFCF by the construction industry increased sharply by 14.8% over 2012. Thereafter, investment increased marginally over 2014 and accelerated in 2015 with a growth of 15.7%, followed by a 6% decline in 2016. Higher stock of properties or work-in-progress during 2015 and 2016, could be attributed to the increased economic activity which generates demand for property. In other words, higher stock of property and work-in-progress implies that a higher supply of properties is available in response to the upsurge in demand that was being registered at the time.

Figure 19: Construction related gross fixed capital formation



Source: National Statistics Office

Figure 20: Index of permits issued for residential buildings



Source: Eurostat, KPMG Analysis

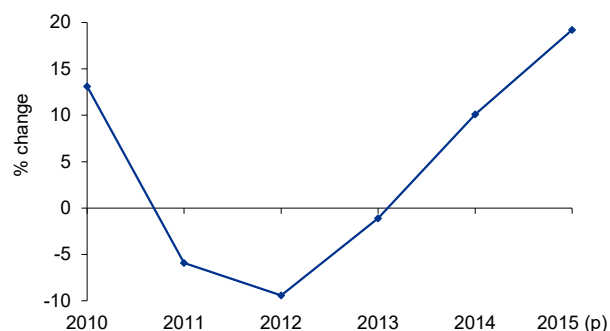
2.1.6 Permits

Looking at the number of permits for buildings (as sourced from Eurostat), the number of permits for residential buildings decreased steadily over the period 2011 to 2013 and increased over 2014 and 2015. These permits are defined by Eurostat as the authorisation to start works on building projects which is typically obtained from public authorities at the last stage prior to the start of the work. In this regard, stakeholder consultations indicated that the reform of the previous environmental body following the change in government administration improved the speed by which development applications and permits are issued. This pattern could also be attributable to increased economic activity in the sector.

¹³Gross fixed capital formation (GFCF) is a measure of total investment and refers to that portion of durable goods that are in the form of stock or work-in-progress. “Gross” indicates that it is measured without deducting any allowance for capital consumption, i.e., without allowing for depreciation (as may be applicable).

In terms of square metres of useful floor area, data shows that permits for residential buildings decreased by 5.9%, 9.4% and 1.1% in 2011, 2012 and 2013 respectively. Subsequently, permits increased again by 10.1% in 2014 and a further 19.2% in 2015. Note that the index shown in the graph below is in relation to permits issued in terms of useful floor area.

Figure 21: Percentage change in residential building permits on the basis of square metres of useful floor area



Source: National Statistics Office, KPMG Analysis

2.2 Defining the construction sector – a wider view

For compiling statistics, national authorities use the NACE classification, a pan-European system of classifying economic activities. The figures reported above pertain to NACE division 41, which includes Construction of buildings, comprising Development of building projects and Construction of residential and non-residential buildings.

Under Section F of the NACE Revision 2 classification, one can also find economic activities directly related to Construction. These are:

- Civil engineering which includes the construction of roads and motorways, bridges and tunnels, utility projects for electricity and telecommunications, and water projects (NACE 42).
- Specialised construction activities including demolition and site preparation, test drilling and boring, electrical installation, plumbing, heat and air conditioning installation, building completion and finishing, plastering, joinery installation, floor and wall covering, painting and glazing and roofing activities (NACE 43)¹⁴.



¹⁴Note that the GVA reported by the NSO in its quarterly news releases is inclusive of codes 41, 42 and 43. However, for the purposes of our analysis we first focus in depth on the construction of buildings sector (NACE 41) followed by an analysis of other “supporting sectors” (including civil engineering (NACE 42) and specialised construction activities (NACE 43)).

2.2.1 Other construction related activities

The NACE code classification also provides for other categories which are not listed under Section F (Construction) but which are intrinsically linked to the construction industry. These are listed below:

- Mining and quarrying, which includes the quarrying of ornamental and building stone, limestone, gypsum, chalk and slate, and extraction of peat and slate (NACE 8).**
- Manufacture of wood and products of wood and cork (except for furniture, straw articles and plaiting materials). This code includes sawmilling and planing of wood, manufacture of veneer sheets and wood-based panels, parquet floors, builders' carpentry and joinery and also wooden containers (NACE 16).*
- Manufacturing of other non-metallic mineral products which includes the manufacture of flat and hollow glass, glass fibres, refractory products, ceramic tiles and flags, bricks, tiles and construction products, ceramic household and ornamental articles, sanitary fixtures, ceramic insulators and insulating fittings, cement, lime, plaster, concrete, ready-mixed concrete, mortars and fibre cement, and also the cutting, shaping and finishing of stone (NACE 23).*
- Manufacture of machinery for mining, quarrying and construction (NACE 28.92)
- Manufacture of fabricated metal products, except machinery and equipment (NACE 25)*
- Real estate activities which include the buying and selling of own real estate, renting and operating of own or leased real estate, the operations of real estate agencies and also the management of real estate on a fee or contract basis. It also includes the building of structures, combined with maintaining ownership of leasing of such structures (NACE 68).*
- Architectural and engineering activities and any related technical consultancy (NACE 71).**

- Wholesale of mining, construction and civil engineering machinery (NACE 46.63); wholesale of wood, construction materials and sanitary equipment (NACE 46.73); agents involved in the sale of timber and building materials (NACE 46.13)
- Renting and leasing of construction and civil engineering machinery and equipment (NACE 77.32)
- Specialised design, which includes interior decoration, and industrial design (NACE 74.10)¹⁵.
- Services to buildings and landscape activities (NACE 81)

Consultations with a number of relevant stakeholders indicated that the above economic activities should, in principle, form part of the wider definition of the construction industry. In addition to the above activities, we also identified supporting economic activities which arise, to some extent, as a result of the construction sector. These may include industrial machinery repair and maintenance, accounting services, project management, market research and technical consultancy, legal services, financial services (provision of loans) and so on.

Since statistics are reported on an economic activity basis, we are not able to disentangle that portion of economic activity which is solely attributable to the construction sector. For instance, one cannot elicit the share of legal and accounting activities (NACE 69) tied to the construction industry. However, to address this issue, we consider industry inter-linkages at a high level in another section of this report.

In Appendix 2, we delve into further detail on the GVA generated by each code as reported by the NSO¹⁶. However it is not possible to analyse each of the above mentioned sectors due to lack of data at a granular level.

¹⁵Note that only "specialised design activities" (NACE 74.1) makes part of the construction industry definition as it is being proposed in this report. Due to the unavailability of segregated information on NACE codes by group and class levels, we refer to statistics that are available at a division level.

¹⁶Data was only available for sectors marked with an asterisk (*). For those marked with a double asterisk (**), data pertaining to some years was confidential.

2.2.2 Putting it all together – Gross Value Added

In terms of GVA, the construction of buildings generated almost €197 million in 2015 – 2.42% of the entire economy. However, if one were to include other economic activities which are directly or indirectly related to construction, the share increases dramatically.

In order to compute a wider definition of the construction industry, we aggregated the statistics reported by the National Statistics Office into three main components:

- Construction of buildings
- Core construction activities
- Related construction activities

The “Construction of buildings” component refers to the same category we described in the first section of this report, that is, the development of building projects and the construction of residential and non-residential buildings.

The “core construction activities” classification considered here includes the following:

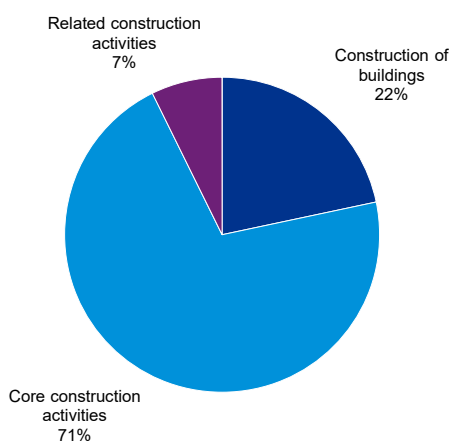
- Civil engineering
- Specialised construction activities
- Real estate activities
- Architectural and engineering activities, technical testing and analysis.
- Mining and quarrying

Finally, the “related construction activities” classification includes:

- Manufacturing of wood and products of wood and cork
- Manufacturing of other non-metallic mineral products
- Manufacturing of fabricated metal products

We exhibit the composition of the industry as per the above categories in the following pie charts.

Figure 22: Composition of the construction industry (as per new definition)



Source: National Statistics Office, KPMG Analysis

Figure 22 indicates that the “core” sectors (71%) make up the larger proportion of the construction industry, followed by “construction of buildings” (22%), with “related construction activities” segment making up just 7% of the total wider industry definition.

Using the wider definition of the construction industry, this industry makes up around 11.18% of

the total economy’s GVA as shown in Figure 23. This is composed of:

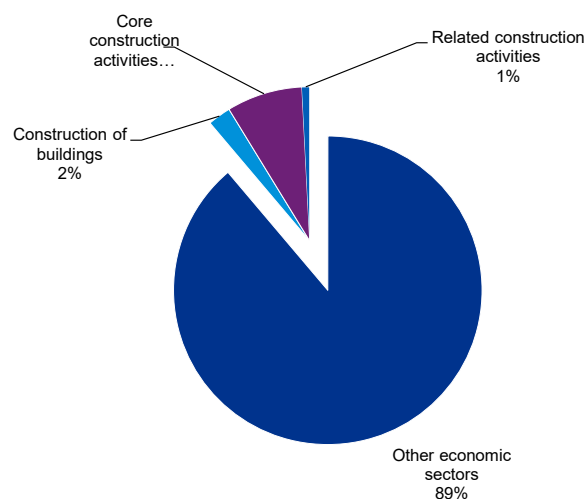
- €645.60 million for the core construction activities.
- €196.88 million for the construction of buildings.
- €66.22 million for the related construction activities.

¹⁷This includes demolition, site preparation, test drilling and boring, electrical installation, plumbing, heat and air conditioning installation, plastering, joinery installation, floor and wall covering, painting and glazing and roofing activities.

This results in a total of €908.70 million GVA, which is approximately 11% of the Maltese economy's GVA. In reality, this is probably higher, as we are not including any other goods and services which are, in some way, related to the construction industry. We could not include such figures due to the following reasons:

- NSO does not disseminate data at the 4-digit NACE code level, which means that certain industry categories are not reported at the required level of granularity
- Data pertaining to certain industry categories is confidential
- For certain industry categories, such as professional services, one cannot elicit that portion of GVA which is solely attributable to the construction sector.

Figure 23: Composition of the construction industry as a proportion of total GVA for the Maltese economy



Source: National Statistics Office, KPMG Analysis

2.2.3 Putting it all together – Employment

In section 2.1.3, reference was made to direct employment being generated by 'Construction of buildings', amounting to an average of 4,700 gainfully employed. As explained in previous sections, the construction industry is wider than just 'construction of buildings'. Latest figures from NSO show that direct employment is closer to 16,500 gainfully employed, which is around 9.6% of the total in Malta). This is broken down as follows:

- Construction of buildings: 4,349 FTEs (2.53% of total gainfully occupied in Malta)
- Core construction activities: 9,171¹⁸ FTEs (5.33%)
- Related construction activities: 2,971 FTEs (1.73%)

2.2.4 Estimating a more comprehensive view of the Construction Industry

In the previous section, it was estimated that the wider definition of the construction industry contributes to about 11% of the total GVA. This includes the GVA of all industries which are either directly or indirectly related to construction. The disadvantage in this method is that a portion of GVA which is not necessarily construction related, but is generated as a result of construction (say, auditing a construction company, provision of legal services, or manufacture and sale of office furniture), cannot be extracted from reported national statistics. This means that the estimated 11% figure is understated.

In order to estimate a more comprehensive view of the Construction industry, which takes into account the supply of all goods and services which are, either directly or indirectly, related to construction, we employ two different methodologies.

- The first methodology entails analysing readily available input-output tables (published by the Central Bank of Malta) in order to extract the Gross Value Added from the various industries, on the basis of the construction and real estate input share of such industries. So for instance,

if the Agricultural sector requires 5% of its input to come from construction and real estate, then 5% of its Gross Value Added is added in our calculation¹⁹. On the basis of this methodology, the following estimates were calculated as shown in Table 3:

Source of GVA contribution	€ millions	% of total GVA
GVA from construction	351.68	4.31 %
GVA from real estate	440.31	5.40%
GVA relating to construction and real estate but emanating from other industries	428.19	5.25%
Total	1,220.18	14.96%

Source: National Statistics Office, KPMG Analysis

- The second methodology entails the application of the Type 1 Value-Added multipliers which are also available from the Central Bank of Malta. The following facts need to be considered:

- Output for the Construction and Real Estate industries totalled €1.17 billion and €0.60 billion respectively (2015 actuals)
- Type 1 Value Added multipliers for both industries were estimated at 0.60 and 0.90
- This gives an estimated Value Added of €1.24 billion in 2015

- To eliminate double-counted figures, an estimated €0.35 billion is deducted from the above total (The deduction was estimated on the basis of inter-industry linkage between Construction and Real Estate)
- The newly calculated total was estimated at €1.21 billion. This represents 14.82% of total GVA in the Maltese economy.

The estimation explained in the previous paragraph is tabulated in Table 4:

Source of GVA contribution	€ millions	% of total GVA
Construction		
Output from construction	1,164.84	
Construction Type 1 Value Added multiplier	0.60	
Value added from construction	698.90	8.60%
Real estate		
Output from real estate	600.64	
Real estate Type 1 Value Added multiplier	0.90	
Value added from real estate	540.58	6.65%
Value added from construction and real estate	1,239.48	
Less inter-industry linkages	(34.86)	-0.43%
Estimated contribution to total GVA by construction and real estate	1,204.62	14.82%

Source: National Statistics Office, KPMG Analysis

¹⁹It must be stressed that the latest input output tables refer to 2010. On the solid assumption that the underlying structure of the economy, and industry inter-linkages, are resilient to changes, we use this framework to update the figures to 2015, based on the growth rate registered in GVA between 2010 and 2015.

²⁰Estimates of Output, Income, Value Added and Employment multipliers for the Maltese Economy, Central Bank of Malta, 2015.

3

The economic impact of the construction industry



As with any other economic sector, the construction sector cannot be assessed in isolation. Firms operating within the sector need to obtain inputs (raw materials, professional services, etc...) from other industries (Production industry, Distribution industry, etc...) in order to produce any type of output, such as the construction of a residential building²¹.

In turn, the construction industry supplies a number of 'products' which are used by many sectors across the economy. These industry inter-linkages are examined using so-called 'supply' and 'use' tables, which are then merged into input-output tables. These are also useful in calculating sector specific 'multipliers' which can gauge the impact of shocks in a particular sector on the entire economy.

3.1 Supply and Use tables analysis

Supply tables are large matrices which can provide a detailed picture of goods and services in an economy being supplied either by domestic production or imports. Their main function is to illustrate what type of products are produced by a particular industry, and also to show which industries produce specific types of products.

Use tables, on the other hand, describe the use of these goods and services – either by producers (intended for intermediate consumption) or by consumers (intended for final use). As such they display which sectors are the main clients for a particular industry's output, while also identifying

from which sectors a particular industry sources its inputs.

This framework provides detailed information on the production processes and identifies any interdependencies in production and use of goods and services in an economy. In other words, supply and Use tables provide a picture of the transactions between sectors/industries in the Supply and use of goods and services.

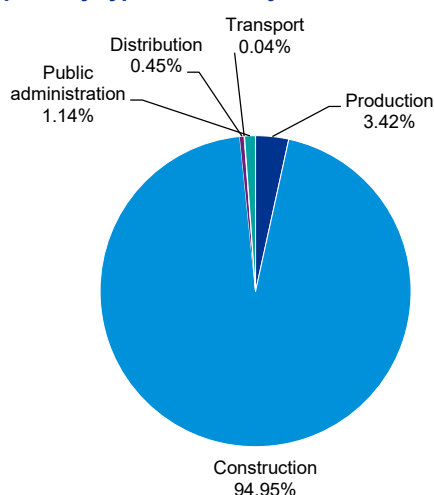
In this section, we provide an interpretation of the latest set of Supply and Use Input-Output tables published by Malta's National Office of Statistics in May 2016. The data quoted in this section refers to the year 2010²². Supply and Use tables in Malta are compiled for 128 products across 88 industries. In this report, we specifically focus on the construction industry.

A more detailed analysis of the Supply and Use tables can be found in Appendix 3.

3.1.1 Supply table

The local Supply table produced by NSO shows that 95% of domestically produced construction related products are produced by the construction industry itself, as expected. Other industries which produce construction-related products include the production, distribution, transport and public administration industries. The percentages related to each industry are shown in Figure 24.

Figure 24: Construction-related products supplied by type of industry



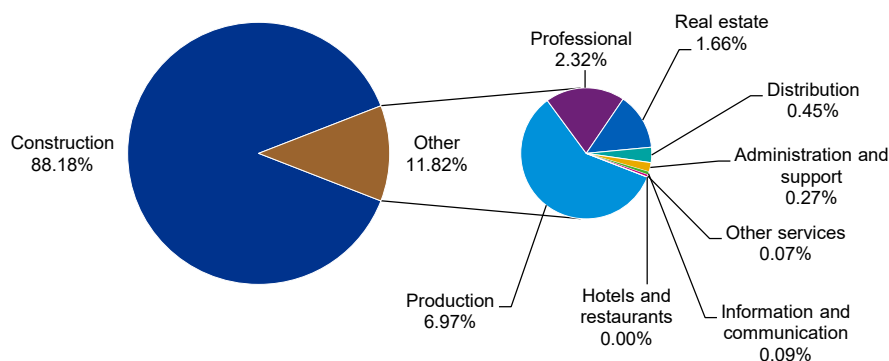
Source: National Statistics Office, KPMG Analysis

²¹Refer to Annex 1 for brief definitions of the NACE code classifications.

²²The latest set of input output tables pertain to 2010. Whilst this may seem dated, it is to be noted that the structural foundations of an economy, in the form of interrelationships between industries, are resilient and do not change much. Therefore, inter-linkages, and particularly percentages, elicited from the 2010 input output tables are still valid and can shed light on the workings and relationships of the Maltese economy.

Similarly, the majority (88%) of the construction industry's output constitutes construction-related products. This is shown in the pie-chart hereunder. The construction industry also produces other various products such as those related to the professional, real estate and production industry.

Figure 25: Types of products supplied by the construction industry



Source: National Statistics Office, KPMG Analysis

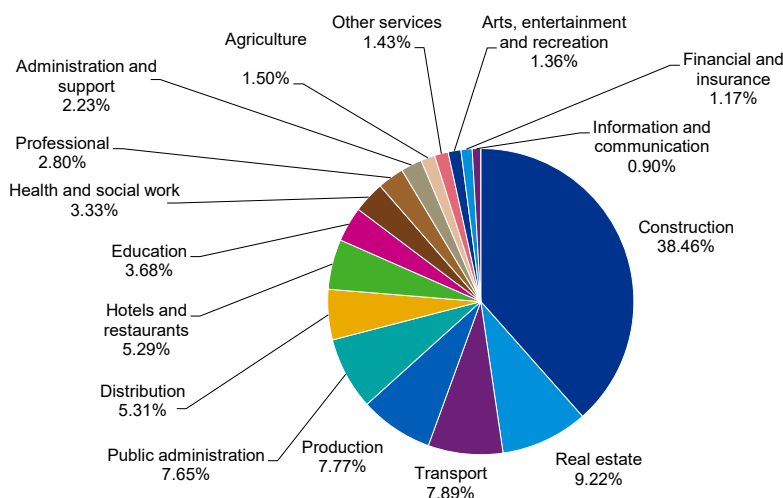
An analysis of the Supply table indicates that the total supply by the construction industry was around €0.79 billion²³ in 2010. GDP statistics indicate that during 2015 this figure increased by 47% to around €1.16 billion.

net taxes paid on these products, one arrives at the total supply at purchasers' prices for construction-related products, which was €0.83 billion during 2010.

The Supply table also indicates that the total domestic production of construction related products (mostly, but not exclusively produced by the construction industry) at basic prices²⁴ was €736 million during 2010. When one also factors in imports, trade and transportation expenses and

Looking at the 'Use table' for Malta, it can be noted that the construction industry itself uses the highest proportion of construction-related products (38%). This is indicated in the pie chart (Figure 26). The total use at purchasers' prices²⁵ was equal to €0.83 billion in 2010. (This is equal to the total supply noted in the Supply table section above).

Figure 26: Construction-related products used by type of industry



Source: National Statistics Office, KPMG analysis

²³At 2010 current prices.

²⁴The basic price is the price that is received by producers, excluding any taxes payable on products but including any subsidies. Taxes or subsidies are payable/receivable as a result of that output production or sale.

²⁵Purchasers' price is the price that the purchasers' pays for the product. This includes any taxes less subsidies on products, but excludes taxes such as VAT. This price also includes any transport charges that are paid by the purchaser. The difference between basic and purchasers price lies in the "trade and transport margins" and "taxes less subsidies" components.

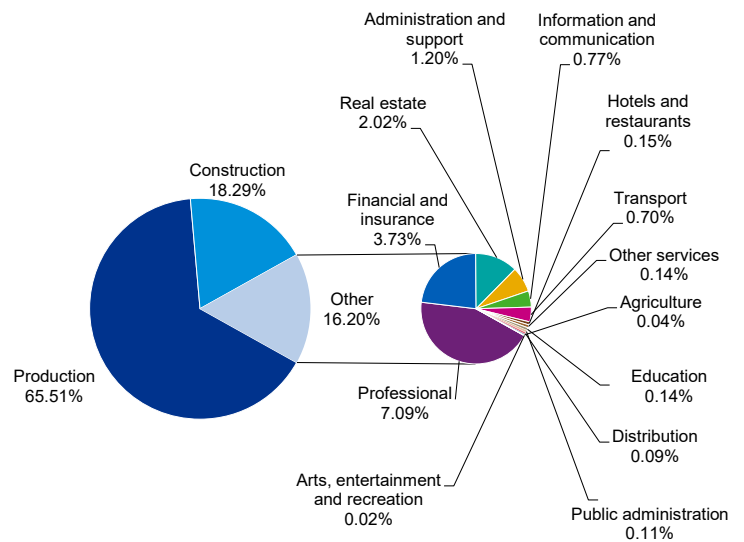
Table 5: Extract from the Use Table for Malta as at 2010: Construction product in € millions					
Final consumption	Gross capital formation	Exports of goods	Exports of services	Total final uses at purchasers' prices	Total use at purchasers' prices
€ millions	€ millions	€ millions	€ millions	€ millions	€ millions
35.6	535.7	0.6	12.7	584.6	833.0

Source: National Statistics Office

The Use table also shows the types of products that are used by the construction industry. This table indicates that the construction industry mostly makes use of production-related commodities, followed by construction-related products.

Furthermore, the Use table shows that the total usage of products by the construction industry amounts to €522.17 million. Additionally, the compensation of employees, taxes (less subsidies), consumption of fixed capital and operating surplus components are added to the total use value to arrive at the total output by the construction industry.

Figure 27: Types of products used by the construction industry



Source: National Statistics Office, KPMG analysis

Table 6: Extract from the Use Table for 2010: Gross Value Added and output at basic prices	
	€ millions
Total Use at purchasers' prices	522.2
Compensation of employees	122.1
Other taxes on production minus other subsidies on production	3.1
Consumption of fixed capital	38.8
Operating surplus and mixed income, net	106.3
Gross value added at basic prices	270.3
Total output at basic prices	792.5

Source: National Statistics Office

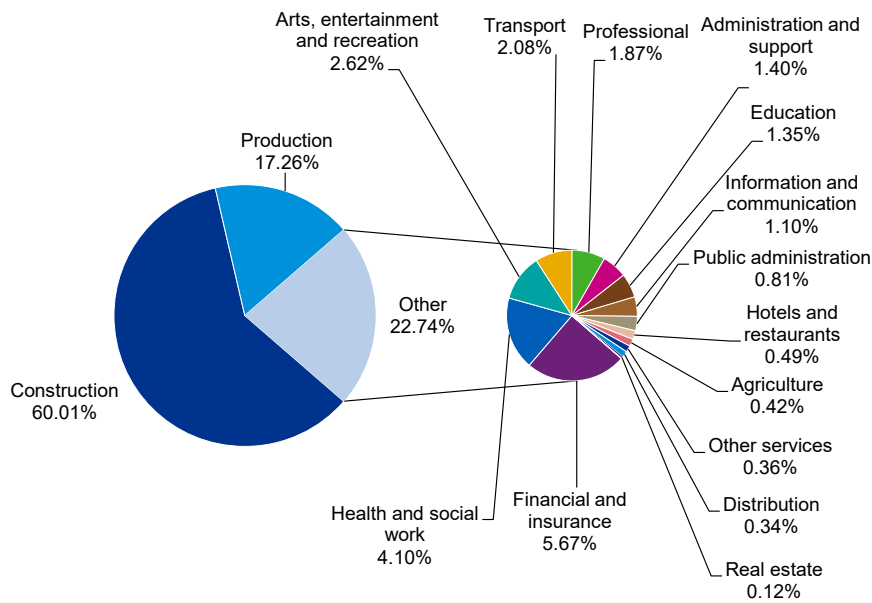
3.1.2 Use Table of imports

This segment of the Use table shows the use of imported goods and services by product and industry in production. It provides a further drill-down of the Use table by showing the proportion of imported products by a specific industry. In analysing this table produced by the NSO for 2010, it can be noted that the largest proportion of imported construction-related products are utilised by the construction industry itself (60%), followed

by the production industry (17%). Imported construction-related industry products are also used by nine other industries. The respective proportions are shown in Figure 28.

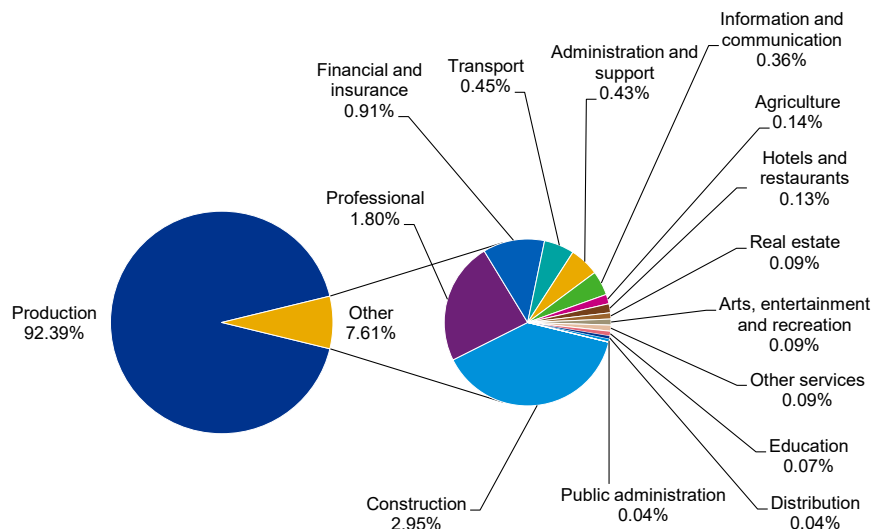
Similarly, the majority of imported products which are used by the construction industry are production-related products, followed by construction-related inputs.

Figure 28: Imported construction-related products used by type of industry



Source: National Statistics Office, KPMG Analysis

Figure 29: Types of imported products used by the construction industry



Source: National Statistics Office, KPMG Analysis

3.2 Industry inter-linkages

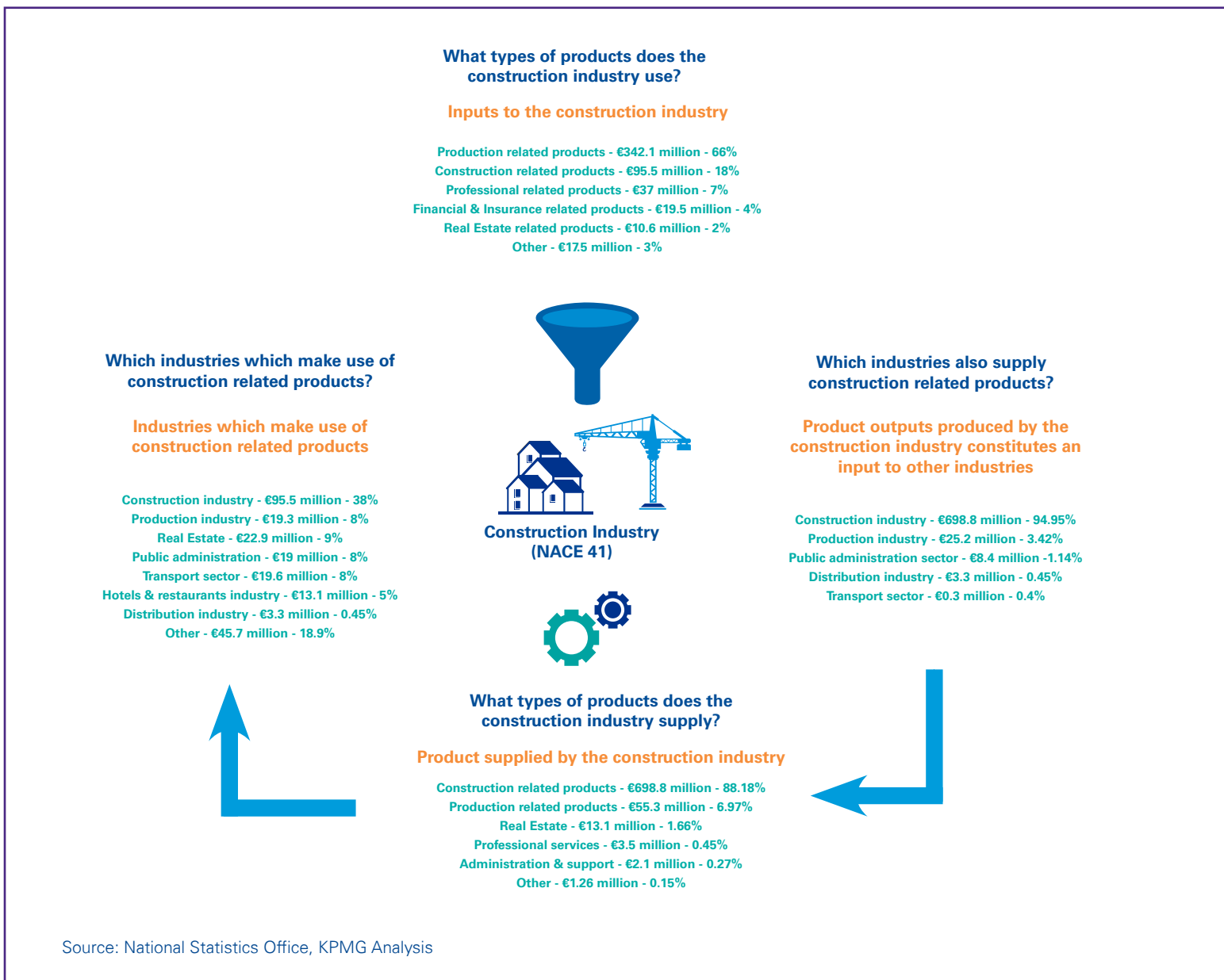
If one were to combine the previous pieces of analysis, a clear picture starts to emerge. With the focus retained on the construction industry and construction related products, the following points are worth noting²⁶:

- The Construction Industry operates by using a number of key inputs or 'products'. In 2010, these inputs (intermediate consumption) totalled €522.17 million, 66% and 18% of which are Production related products and Construction related products, respectively.
- Such inputs are transformed into output products (when combined with labour, capital and enterprise – equivalent in 2010 to €122 million with respect to compensation to employees, € 38 million related to fixed capital consumption, and €106 million retained as operating surplus) to the tune of €792

million. The bulk of this output is classified as 'construction related products', with 88% of the share.

- The Construction industry is not the only industry which produces Construction related products, although the bulk of it is. The production industry also produces construction related products – estimated to be in the region of €25 million, or 3.42% of all construction related products.
- Construction related products are utilised by a number of industries across the economy. The construction industry itself uses 38% of such products, but a few other industries also utilise it as a key input, including the production industry (8%), the real estate industry (9%), and public administration (8%), amongst others.

This analysis is presented as an illustration below:



²⁶In this analysis, we are using the latest Use Tables pertaining to 2010. Whilst the EURO amounts have changed drastically since then (for instance output increased from €0.79 billion in 2010 to €1.17 billion in 2015), economic theory posits that the percentage shares vary only marginally throughout the years since these represent the underlying fundamentals of an economy.

3.2.1 Inter-industry construction proportions

Another way to look at industry inter-linkages is to assess the proportions of GVA of various industries which can be attributable to the construction and real estate sector. In order to do this, we look

at input output tables and compute the share of construction and real estate inputs vis-à-vis Gross Value Added of that same sector. This is shown in the table below:

Table 7: Inputs related to construction and real estate as a proportion of GVA of sectors A-U		
	F: Construction [NACES 41-43]	L: Real estate [NACE 68]
A: Agriculture [1-3]	3.85%	0.29%
B to E: Production [5-39]	3.64%	0.56%
of which: manufacturing [10-33]	2.82%	0.61%
F: Construction [41-43]	41.32%	2.28%
G: Distribution [45-47]	2.52%	4.50%
H: Transport [49-53]	5.62%	1.57%
I: Hotels and restaurants [55-56]	5.32%	6.90%
J: Information and communication [58-63]	0.82%	1.24%
K: Financial and insurance [64-66]	0.59%	0.85%
L: Real estate [68]	6.10%	3.18%
M: Professional [69-75]	3.54%	1.98%
N: Administration and support [77-82]	2.59%	1.12%
O: Public administration [84]	4.59%	0.78%
P: Education [85]	16.59%	3.54%
Q: Health and social work [86-88]	7.37%	1.45%
R: Arts, entertainment and recreation [90-93]	1.91%	0.84%
S: Other services [94-96]	8.52%	1.61%
T: Households as employers [97-98]	0.00%	0.00%
U: Extra-territorial organisations [99]	0.00%	0.00%

Source: National Statistics Office, KPMG Analysis



3.3 Multiplier analysis

3.3.1 Introduction

When a final consumer (an individual or a couple) decides to spend €150,000 on an apartment in a particular locality, the impact on the economy is much larger than the initial capital invested.

In the first instance, the payment of €150,000 from buyer to seller (excluding any agent fees, and assuming the buyer is a developer) will cover the seller's expenses, including:

- Payments to suppliers for raw materials and construction work (which in turn covers compensation to employees, consumption of fixed capital, and profits of contractors).
- Wages and salaries to employees.
- Any other administrative and financial expenses incurred in the course of doing business.
- The residual, which is the return on investment.

This is referred to as the 'Direct impact', or the first round of spending. It is the demand created by the final consumer. In 2015, total output generated by the Construction Sector (comprising construction of buildings, civil engineering, and specialised construction activities) amounted to around €1.17 billion. If one also includes real estate activities

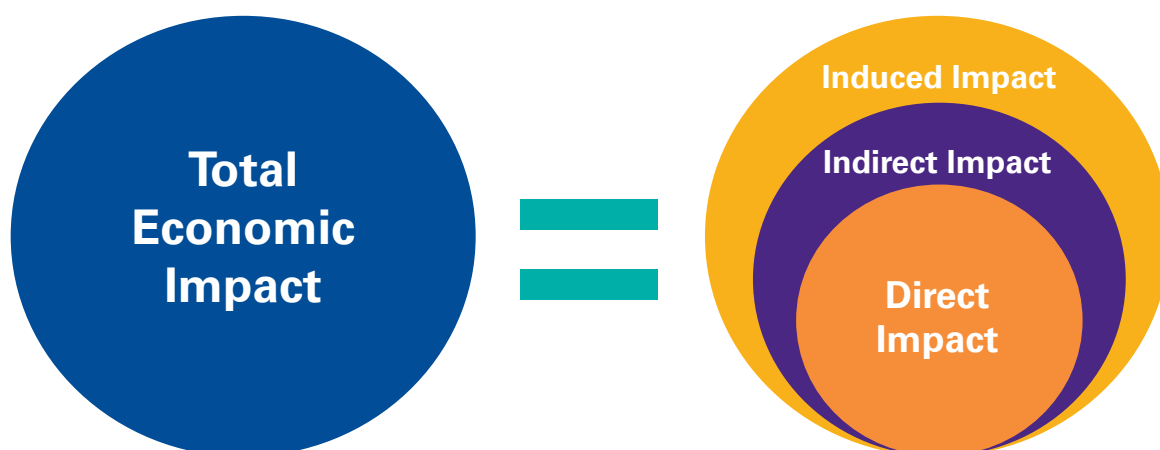
and architectural services, total output increases to €1.89 billion²⁷. This figure is probably understated since it does not include the demand created for furnishings and finishes (tiles, gypsum, furniture, appliances, fittings, lighting, etc...) which form an integral part of expenses related to accommodation.

The demand created by final consumers, creates new demand upstream for intermediate suppliers. By way of example, developers would need to engage with building contractors, who in turn, must buy raw materials from suppliers further up the supply chain. This is called the 'Indirect impact', and is measured using so-called 'Type 1' multipliers.

Finally, one can also include 'Induced impacts', which arise as a direct result of additional rounds of spending by agents involved in a transaction. For instance contractors need to pay wages to their employees. The extent to which such wages are re-injected in the economy depends on the employees' own propensity to consume. The more employees spend, the greater is the ripple effect in the economy. We measure this 'induced impact' using so-called 'Type 2' multipliers.

In sum, the total economic impact is given by the combination of the direct impact, the indirect impact, and the induced impact.

Figure 30: Components of Total Economic Impact



²⁷Here we are not including 'Mining and Quarrying' due to the risk of double-counting, since this activity occurs 'upstream' and is probably included in the total output figures for the 'Construction' Sector.

3.3.2 Technical coefficients

Before we analyse the Type 1 and Type 2 multipliers for the construction industry, it is pertinent to consider the inter-linkages between various sectors of the economy on the one hand, and the construction sector on the other, with the construction industry being viewed as a buyer of goods and services. These relationships can be shown using a 'Technical Coefficients' matrix.

Technical coefficients show, for each industry in the economy, the proportional value of inputs that are purchased from all sectors in the economy per monetary unit of output. This includes any purchases from the industry itself. Technical coefficients are presented in the form of a matrix, where each column represents the production function of each specific industry. Specifically, the table below shows the ratio of the various inputs required to produce a unit of output from the construction industry. This indicates that the

production and construction industries contribute the highest proportion in the form of inputs in the generation of a one unit of output by the construction industry. Moreover, imports and compensation of employees, followed by operating surplus, also constitute an essential input in the generation of a one unit of output generated by the construction industry.

Therefore, for each €100 value of construction output, €48 is paid to local suppliers further up the supply chain; €34 constitutes the Gross Value Added, comprising compensation to employees, fixed capital consumption, and operating surplus; and €18 represent imports.

Technical coefficients for the Real Estate Industry can be interpreted in the same way, with €20 paid to suppliers; €75 representing Gross Value Added; and the rest representing imports.

Table 8: Technical coefficients for the Construction industry and the Real Estate Industry²⁸

Technical coefficients for the Construction industry		Technical coefficients for the Real Estate industry	
Sectors		Sectors	
Agriculture	0.000	Agriculture	0.000
Production	0.180	Production	0.023
<i>of which: manufacturing</i>	<i>0.151</i>	<i>of which: manufacturing</i>	<i>0.016</i>
Construction	0.141	Construction	0.046
Distribution	0.060	Distribution	0.012
Transport	0.006	Transport	0.005
Hotels and restaurants	0.002	Hotels and restaurants	0.003
Information and communication	0.005	Information and communication	0.003
Financial and insurance	0.044	Financial and insurance	0.048
Real estate	0.008	Real estate	0.024
Professional	0.023	Professional	0.025
Administration and support	0.004	Administration and support	0.002
Public administration	0.003	Public administration	0.003
Education	0.001	Education	0.001
Health and social work	0.000	Health and social work	0.000
Arts, entertainment and recreation	0.000	Arts, entertainment and recreation	0.000
Other services	0.001	Other services	0.000
Households as employers	0.000	Households as employers	0.000
Extra-territorial organisations	0.000	Extra-territorial organisations	0.000
Output Technical Coefficients	0.476	Output Technical Coefficients	0.196
Imports	0.180	Imports	0.020
Gross value added	0.340	Gross value added	0.750
Total technical coefficients	1.000	Total technical coefficients	1.000

Source: National Statistics Office

²⁸Note that, in computing the technical coefficients, figures are derived from the national input-output tables (available from the publication entitled "Supply, Use and Input-Output Tables 2010," published by the National Statistics Office). The following formula is used:

$$TC = \frac{F_i}{\sum_{j=1}^N F_j}$$

Where:

F_i is the flow i
 N is the number of rows in a column
 $\sum_{j=1}^N F_j$ is the column sum of the flow.

3.3.3 Economic multipliers

Economic multipliers provide a measure of the magnitude of changes in output, income and value-added levels caused by an initial demand for goods and services. A shift in aggregate expenditure (caused by an increase in demand) will cause an increase in output by a multiple of the initial increase in expenditure.

The multipliers reported by the local National Statistics Office are based on the Leontief demand driven model. The statistics office reports what is known as the “Leontief Inverse” which incorporate the notion that the production process required in order to produce a unit of output (for eventual use by final demand), requires intermediate inputs from other industries. These intermediate inputs constitute the “direct effects”. Moreover, the production of these additional intermediate inputs requires further increased rounds of production. The latter are the “indirect effects”. Type 1 multipliers

encompass the direct and indirect effects whilst Type 2 multipliers include the direct, indirect and induced effects, as explained previously.

The column extracted from the Leontief inverse of domestic production table below shows both direct and indirect input requirements, on all other industries, which are generated by a one unit of output. In other words, adding the Leontief inverse for all the economic sectors under consideration gives the output multiplier for the relative industry. The output multiplier is the ratio of the change in total output (i.e. the impact on GDP) in all sectors of the economy in response to a direct change in the basic output of a particular sector. Taking the construction industry as a case in point, the Type 1 output multiplier is 1.70. This implies that for every €1 increase in final demand in this sector, €1.70 would be expected to be generated in direct and indirect effects.

Table 9: Leontief inverse of domestic product flows

Table 9: Leontief inverse of domestic product flows	
Industry	Inverse
Agriculture	0.003
Production	0.261
<i>of which: manufacturing</i>	<i>0.194</i>
Construction	1.171
Distribution	0.083
Transport	0.027
Hotels and restaurants	0.004
Information and communication	0.012
Financial and insurance	0.074
Real estate	0.013
Professional	0.039
Administration and support	0.009
Public administration	0.004
Education	0.002
Health and social work	0.000
Arts, entertainment and recreation	0.001
Other services	0.001
Households as employers	0.000
Extra-territorial organisations	0.000
Output multiplier	1.704

*in official statistics, “manufacturing” is a subset of the “production sector”
Source: National Statistics Office

3.3.4 Total impact on the economy: Taking 2015 as the base case

In this section, we consider the total output generated by the Construction sector in 2015, and apply three types of Construction specific multipliers to estimate the total impact on the economy brought about by activity in construction.

The four types of multipliers are explained below.

3.3.4.1 Output multipliers

Output multipliers measure the ripple effect in an economy's output. The concept of output is slightly different than GDP, in that the former includes Intermediate consumption, which is excluded from the GDP measure to avoid double counting when adding up all industries. A Type 1 output multiplier is applied to total output to elicit both Direct and Indirect effects, whereas a Type 2 output multiplier also elicits the Induced effect. The Type 1 output multiplier related to the construction industry stands at 1.704, the highest of any industry category, followed closely by the 'Hotels and Restaurants' and 'Professional Services' categories, each with multipliers of 1.651 and 1.626 respectively. In the case of the Type 2 output multiplier, this was estimated to be in the region of 2.19, meaning that a €1 increase in demand for construction increases total economic output by €2.19. Taking 2015 as an example, the total output of €1.164 billion in construction generated an additional €0.80 billion in indirect output and a further €0.58 billion in induced impacts, generating a total of €2.55 billion.

3.3.4.2 Value added multipliers

Value added multipliers measure the extent to which an increase in output generates value added in the economy. By value added we are referring to the creation of wealth in the economy, measured from the income side by compensation to employees, gross operating surplus, and consumption of fixed assets. The Type 1 and Type

2 value added multipliers associated with the construction industry were calculated to be 0.6 and 0.82. This means that the output generated in 2015 had led to around €699 million in direct and indirect value added, with an additional €256 million in induced value added.

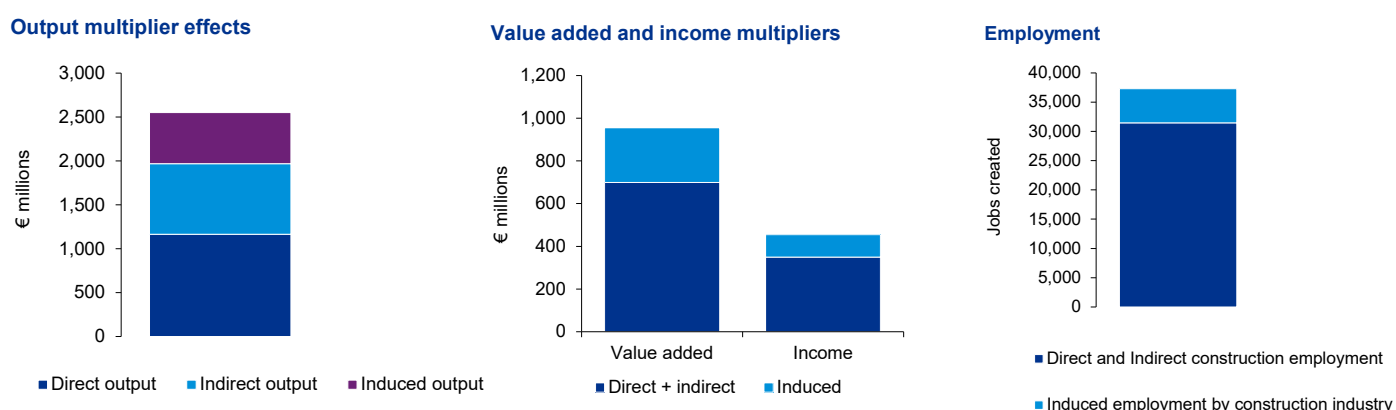
3.3.4.3 Income multipliers

Income multipliers measure the extent to which an increase in output generates income for households. The Type 1 and Type 2 income multipliers were estimated to be 0.3 and 0.39 respectively. This means that the estimated increase in income associated with generation of construction output in 2015 was around €349 million (for direct and indirect effects) and €105 million (for induced effects).

3.3.4.4 Employment multipliers

Employment multipliers estimate the number of jobs created as a result of a €1m increase in demand in a particular sector. For the construction sector, the Type 1 employment multiplier is 27, and the Type 2 employment multiplier is 34. Applying the output figures for 2015, this means that in that year, the construction industry generated an estimated 31,451 direct and indirect jobs (18.27% of total gainfully occupied). Direct jobs refer to employment positions within the construction industry itself (e.g. manual labourer employed with a construction company) whilst indirect jobs refer to employment positions generated as a result of intermediate demand created by the construction industry (e.g. labourer working with a quarry operator supplying raw material to a construction firm). In terms of induced jobs, a further estimated 5,824 jobs (bringing the total up to 37,275 – 21.66% of total gainfully occupied) would be expected to be created. Induced jobs refer to employment created as a result of additional rounds of spending by construction sector employees.

Figure 31: Graphical illustration of output, value-added, income and employment multipliers







4

New challenges
and externalities -
a socio-economic
and environmental
perspective

4.1 Introduction

In the previous sections we have established that the construction industry is an important sector in the economy, employing over 30,000 people directly and indirectly, and generating around one fifth of Gross Value Added if induced effects are considered.

Being such a heavy-weight sector in the local economy, construction inevitably affects a wide range of individuals across multiple spheres. Construction inexorably links to environmental issues, social issues, and also to issues of an economic nature.

In terms of the environment, issues are encountered during construction itself (noise and air pollution), during the lifetime of the building structure (efficiency in energy saving), and also at the end of the building's lifetime when it comes to disposal of inert waste.

The construction industry is also susceptible, perhaps to a greater extent than other industries, to a number of economic externalities, both positive and negative. The fact that real estate influences wealth, which in turn affects consumption, investment, and lending, means that the effects of shocks are systemic and are felt throughout the whole economy.

Lastly, from a social dimension, housing affordability, especially for first time buyers, is at the core of the main issues. At a time when property prices have been increasing, in line with strong and sustained demand, owning a property becomes ever so difficult for individuals and couples at the margin. Driven towards the rental market, their financial situation is exacerbated given the high rental rates prevailing today.

Below, we explore each dimension, drawing mainly from the feedback received from a sample of MDA members which were interviewed during the course of the engagement.

4.2 The environmental dimension

4.2.1 Use of environmentally friendly materials

The general picture which emerged on the use of environmentally friendly construction materials (double-glazing, insulation for roofs and walls, eco-friendly concrete/bricks, use of glass instead of

stone/bricks, use of biscuit joints instead of wood, use of high-quality spalls) was quite consistent across the number of stakeholders consulted. From the supply side, improvements have been noted in that some developers are now incorporating, and considering, construction materials which result in long-term energy saving. For instance double-glazed windows and insulation have become standard in the case of some developers. However, it was noted that the decision to develop projects which are sensitive to the environment is driven more by the desire to differentiate oneself in the market (developers earning a reputation of embarking on higher quality projects) rather than by merits of financial feasibility.

This is because, from the demand side, price sensitive buyers would rather give priority to locality, area, size, and outside space (terraces for entertainment) when buying a property. Furthermore, there does not seem to be enough awareness on the potential cost savings of having an eco-friendly dwelling. On the other hand, there exists a customer segment in the higher-end of the market which give some importance to the overall quality of the building, including its eco-friendly characteristics, because it enhances property value and prestige.

The result is that not enough developers are giving importance to environmental considerations when it comes to initiating a project, for the simple reason that demand for such property characteristics is not so strong. In the end, any costs associated with embellishing a property with insulation, eco-friendly materials and so on, would most probably get absorbed by the seller, especially in the case of First Time Buyers and entry-level property.

Further to this, and in the case of Public Tenders for infrastructural works, the use of environmentally friendly materials and construction methods are not rewarded, particularly since tenders are awarded on the basis of the cheapest technically compliant offer. In such case, the environmentally sensitive bidder may be pricing himself too high in relation to a competitor, so the incentives are not properly aligned to propagate the use of such materials. A system leaning towards a BPQR award (Best Price Quality Ratio) can give greater weight to the environment and reward environmentally sensitive bidders.

Apart from raising awareness on the benefits of eco-friendly living spaces, consultations revealed that regulation can also help in triggering a move towards green buying options. For instance, the Energy Performance Certificate (EPC) is only required to be provided by the seller within the period of the promise of sale or on the date of signing the contract of sale. In this respect, the Energy rating of a property is not usually considered as a criterion when deciding to buy real estate. If on the other hand, sellers are required by law to state the energy rating of a property when advertising such property, potential buyers can compare different ratings, justify any price differences, and take an informed decision when buying a property.

4.2.2 Waste disposal

Most of the stakeholders consulted, especially those operating quarries, expressed concern with respect to the disposal of demolition, excavation and construction waste. Presently, there are 21 quarries accepting construction and demolition waste from third parties, with another 18 quarries which, however, are not permitted to accept construction and demolition waste material. A report issued in 2008, entitled “recycling of construction and demolition waste in Malta – a strategy for short-term implementation”, highlights that most of the construction waste generated arises out of soft stone excavation and soft stone demolishing material²⁹ and also concrete cuttings and blocks. This report further notes that separation of unused and demolished building materials does not take place, especially at construction sites where mixed waste is produced. The report indicates that only metal is recovered and separated by scrap yards and scrap metal dealers, and later exported.

There is a general consensus among those consulted throughout the course of our engagement that a saturation point has been reached, since no new permits are being issued for new quarries (which could then act as depositories for construction waste), presumably due to justifiable environmental and visual impacts. And since space for depositing such waste is running low, costs for dumping would be expected to increase, with such increases in construction expenses reflected in the final consumer price. If no new quarries are permitted to operate and accept such waste, within the next five to ten years Malta could potentially be facing additional challenges with respect to dumping of construction and demolition waste.

Dumping inert construction waste at sea is also a possibility, with Malta’s official marine dumpsite located to the east of the island. However, doing so is expensive and a disposal fee is levied on every tonne of waste deposited at sea³⁰. Furthermore, ERA recognises that dumping-at-sea is a temporary solution, since this can have negative effects on the environment. However, there is also the possibility of positive effects. The creation of artificial reefs, through the dumping of inert waste at sea, can support marine life, and also boost economic activity (diving tourism). Nevertheless, careful planning, evaluation, permitting, and monitoring needs to be carried out in order to minimise any possible damage to natural habitats, including the spawning of invasive species³¹.

Additionally, the strategy issued in 2008 also indicates the need for re-use and recovery of construction and demolition waste, and the subsequent treatment for the recovery of materials. Special attention must be made to protect natural resources (especially groundwater), our natural landscape and environment, and preserve space.

There is thus an immediate need to develop an updated strategy for addressing construction and demolition waste, particularly in the context of a growing industry (and consequently, generating more waste) and the practice of demolishing and redevelopment of buildings. In this regard, we recommend the setting up of a joint task force between the regulatory authorities and industry representatives tasked with identifying and implementing solutions to this pressing issue. In particular, there is a need for the industry to revise the status quo, and seek ways on how to increase the number of facilities available for receiving construction and demolition waste, and its appropriate sorting, recycling, re-use and recovery. If the latter is not an option, appropriate ways of disposal need to be explored in line with the applicable EU regulations. Financial incentives can also be put in place in order to incentivise sorting and recycling at the first point of waste generation (i.e. by contractors). However, this pressing issue warrants a separate study that analyses in depth the current practices of contractors and delves deeper into the issues surrounding waste generated by the construction sector.

²⁹Car, M., Gretzmacher, G., Willing, E., and Zerz, H.J. 2008. “Recycling of construction and demolition waste in Malta”, p. 43

³⁰Deposit of Wastes and Rubble (Fees) Regulation, 1997

³¹Artificial reef deployment is regulated by the Environmental Impact Assessment Regulations (2007), and subject to a full Environment Impact Assessment, including project description, and identification and assessment of direct/indirect effects flora and fauna.





4.2.3 Lifetime of concrete

The use of concrete in the Maltese construction industry has increased in recent years, with most modern structures now being built from concrete bricks (and pre-stressed concrete slabs for roofing) rather than the more traditional Globigerina Limestone.

During our consultations with a sample of members of the MDA, some raised concerns regarding the limited lifespan of reinforced concrete.

Concrete itself is a highly durable and long-lasting material. By way of example, the Pantheon in Rome features the world's largest unreinforced concrete dome, and has survived in excellent condition for almost 2,000 years. The characteristics of reinforced concrete, widely used in modern construction, are markedly different. The inclusion of steel rebar allows for the use of longer and thinner concrete slabs, capable of supporting higher loads. This allows for large-scale construction projects to be completed quicker while also consuming fewer resources, thus also lowering costs. Unfortunately, over time the iron content within the rebar begins to corrode, weakening the concrete and necessitating potentially costly maintenance.

The lifespan of reinforced concrete structures is highly dependent on a number of factors, such as environmental conditions and the quality of concrete and rebar used. Additionally, if regular

maintenance is carried out, a building's lifespan can increase considerably. Research carried out by KPMG indicates that reinforced concrete structures can generally be expected to have a lifespan of anywhere from 50 to 100 years, though factors such as those mentioned previously can contribute to shorter or longer lifespans, with there having been cases of structural failure following just 20 years, as well as cases of buildings over 120 years old still in good condition. It appears as though the use of high-quality materials, and proper maintenance are the key factors to ensuring maximum longevity of the lifespan of concrete.

During our discussions with MDA members who raised concerns on this issue, one issue which stood out was a concern on the implications to individuals who owned apartments in those blocks which will eventually near the end of their lifetimes. One potential solution mentioned to us was the adoption of a leasehold sales model similar to that which is quite popular in the UK. Under this system, consumers purchase a long-term lease on a property and pay an annual ground rent and maintenance charge to the owner of the property's freeholder. The freeholder (generally the developer), is then responsible for maintaining the external walls, roof and common areas. Another concept which we came across in our research is that of common hold property. Under this model consumers would purchase each apartment in a block on a freehold basis. A separate entity, jointly



owned by the owners of each apartment in the block would then be set up with the responsibility of maintaining the outer walls, roof and common areas of the building. Locally, the Condominium Act, which was initially set up in 2001 with the aim of dealing with preventing issues associated with condominium matters, requires the election of an administrator in the presence of four or more condominiums. The Act also gives the option of drawing up custom made rules to regulate the condominium.

Clearly, the implications of the limited life expectancy of concrete have economic and social dimensions, and merit more detailed discussions. Similar to the issue of construction and demolition waste disposal, we propose the carrying out of a study which explores and quantifies the extent of the problem in terms of the remaining expected useful life of the existing stock of buildings. In addition, a long-term strategy is required, possibly through the setting up of technical committees in order to come up with ideas, solutions and mitigating actions.

4.2.4 Pollution: noise, visual, air

Generation of pollution, whether it is noise, visual or air pollution, is a natural by-product of the construction industry. However, there are ways to mitigate such adverse effects, and limit the nuisance to affected parties and the environmental ramifications.

During our consultations with a relatively large sample of MDA members, we explored the issue on whether measures are being taken by contractors and developers, to address such risks.

The general response was varied, but the trend is that, as expected, large and renowned players consider the environmental externalities to be important during the construction phase. In this respect, the necessary measures are put in place to suppress dust (use of construction vacuum equipment when chasing stone, or use of sprayer trucks), limit visual pollution (use of nets, barriers and/or timber/metal hoarding – also used to contain air currents and dust dispersion), and control noise pollution (using techniques and machinery which are quieter, and the use of temporary barriers and enclosures as a sound barrier).

However, it was noted during the consultations that medium-sized and small players in the market do not generally give much importance to limiting the adverse environmental effects of construction, even though environmental management on a construction site is regulated, and enforced, by virtue of Subsidiary Legislation 435.79 of the Laws of Malta³². Such practices might adversely affect other industries, such as tourism, and prove to be a nuisance to residents.

³²Environmental Management Construction Site Regulations, SL 435.79, 1st November 2007.

A possible solution to this problem might be the creation of a Considerate Contractor Scheme, whereby the MDA, as an accreditation agency, issues guidelines on work 'best practice', inspects construction sites regularly, and encourages its members to, for instance, upgrade operations, and provide training to staff and sub-contractors, including enrolment in a Training Academy (see recommendation under section 4.3.1). This way, compliant contractors can become 'accredited' and form part of this scheme, and can benefit from, possibly fiscal incentives. On the other hand, there would be a push for non-accredited contractors to become accredited in order to benefit from, for example, enhanced reputation in the market, preferential treatment in Government procurement, and a competitive advantage in recruitment.

Further to the above, and in line with one of the proposals in the 2017 Electoral Manifesto, Government can provide fiscal incentives, such as tax credits, in order to incentivise the acquisition of modern, environmentally-friendly machinery and vehicles. Such incentives can also be extended to modern equipment which can enhance safety and/or productivity. The creation of a working group,

set up between MDA and Government, can help in the discussion of incentive details, in order to maximise the overall benefit stemming from using more efficient, safe, and environmentally-friendly machinery.

On the issue of visual cohesiveness and aesthetics, stakeholder consultations indicated that a number of buildings in some areas are not aesthetically complementary to the rest of the landscape in the area. Within this context, Government may wish to re-consider the setting up of an aesthetics board in order to assess the context, style and cohesiveness of buildings and streetscapes. Macro urban planning is a pre-requisite if we are to preserve architectural coherence.

4.2.5 Vacant properties

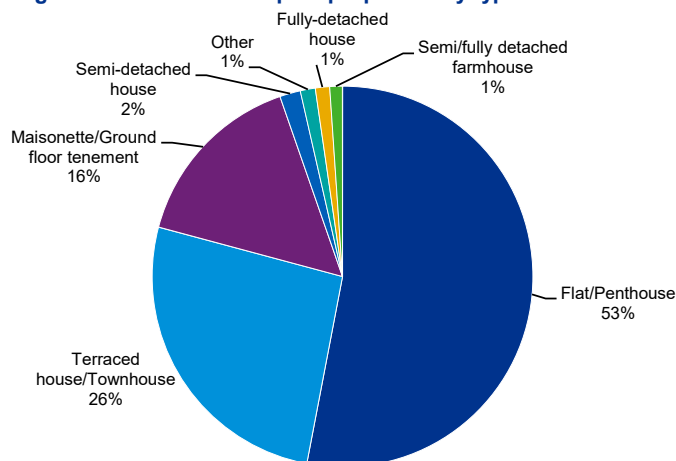
During our consultation meetings with players in the industry, we asked about their perception on the issue of vacant properties around the island. This enquiry was spurred by the figures published in the last Census, carried out in 2011³³. Out of a total of 223,850 dwellings, 71,080 (31.8%) were recorded as 'unoccupied properties'.

Table 10: Mix of unoccupied properties by type								
Region	Flat/ Penthouse	Terraced house/ Townhouse	Maisonette/ Ground floor tenement	Semi- detached house	Other	Fully- detached house	Semi/fully detached farmhouse	Total
Northern	12,213	1,958	2,352	145	158	283	165	17,274
Northern Harbour	10,287	3,656	2,759	209	129	138	28	17,206
Gozo and Comino	7,072	4,625	570	617	159	183	214	13,440
Southern Harbour	2,690	3,781	2,523	29	169	14	55	9,261
South Eastern	3,850	2,649	1,778	92	217	94	166	8,846
Western	1,564	1,932	1,036	162	75	148	136	5,053
Total unoccupied properties as per Census 2011	37,676	18,601	11,018	1,254	907	860	764	71,080

Source: National Statistics Office

Around 53% of unoccupied properties in the country are classified as flats or penthouses, with the second largest category of unoccupied properties being terraced houses or townhouses. Semi or fully-detached farmhouses make up the smallest group of unoccupied properties at around just 1% of the total.

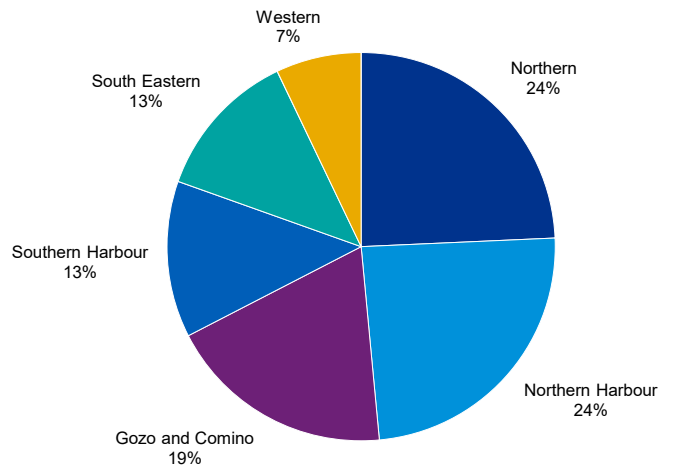
Figure 32: Mix of unoccupied properties by type



Source: National Statistics Office

Figure 33: Mix of unoccupied properties by region

Most unoccupied properties are located either in the Northern or Northern Harbour regions, each representing around 24% of the total number of unoccupied properties. The relatively rural Western region contains the least unoccupied properties, representing just 7% of the total.



Source: National Statistics Office

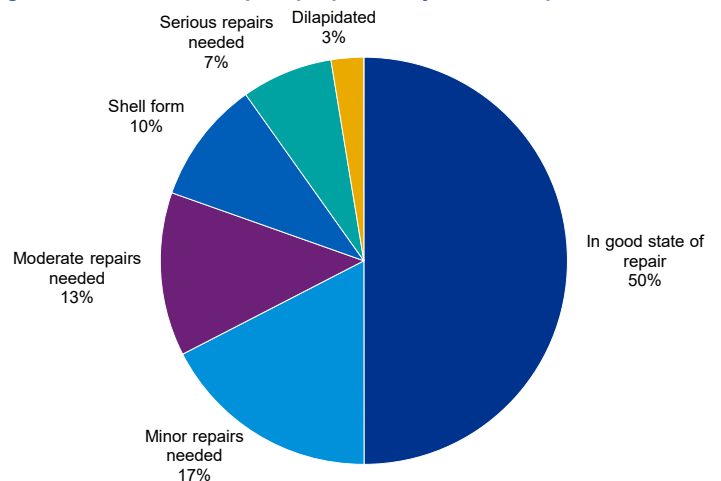
Table 11: Mix of unoccupied properties by state of repair

Region	In good state of repair	Minor repairs needed	Moderate repairs needed	Shell form	Serious repairs needed	Dilapidated	Total
Northern	10,598	3,149	1,588	1,122	574	243	17,274
Northern Harbour	9,080	2,871	2,225	1,242	1,340	448	17,206
Gozo and Comino	7,647	1,922	1,126	1,563	841	341	13,440
Southern Harbour	2,572	1,895	2,185	1,067	1,152	390	9,261
South Eastern	3,539	1,707	1,333	1,332	693	242	8,846
Western	2,097	853	767	611	553	172	5,053
Total unoccupied properties as per Census 2011	35,533	12,397	9,224	6,937	5,153	1,836	71,080

Source: National Statistics Office

Figure 34: Mix of unoccupied properties by state of repair

Around 50% of all unoccupied properties are reported as being in a good state of repair, and only around 3% of properties are reported as being in a dilapidated state. It is interesting to note that around 10% of unoccupied properties are reported as being in shell form, indicating that these properties may have either been temporarily unoccupied until their completion (work in progress) or properties left unfinished due to the then-prevailing market conditions.



Source: National Statistics Office

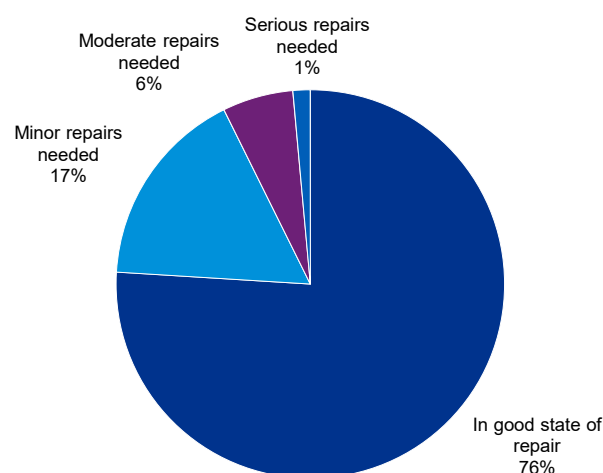
Table 12: Mix of unoccupied properties by region, state of repair and use							
Region & Use of properties	In good state of repair	Minor repairs needed	Moderate repairs needed	Serious repairs needed	Dilapidated	Shell form	Total
Southern Harbour	2,572	1,895	2,185	1,152	390	1,067	9,261
Seasonal or secondary use	712	233	152	38	-	-	1,135
Completely vacant	1,860	1,662	2,033	1,114	390	1,067	8,126
Northern Harbour	9,080	2,871	2,225	1,340	448	1,242	17,206
Seasonal or secondary use	5,273	924	301	152	-	-	6,650
Completely vacant	3,807	1,947	1,924	1,188	448	1,242	10,556
South Eastern	3,539	1,707	1,333	693	242	1,332	8,846
Seasonal or secondary use	1,974	766	510	44	-	-	3,294
Completely vacant	1,565	941	823	649	242	1,332	5,552
Western	2,097	853	767	553	172	611	5,053
Seasonal or secondary use	440	111	60	22	-	-	633
Completely vacant	1,657	742	707	531	172	611	4,420
Northern	10,598	3,149	1,588	574	243	1,122	17,274
Seasonal or secondary use	7,987	2,050	568	87	-	-	10,692
Completely vacant	2,611	1,099	1,020	487	243	1,122	6,582
Gozo and Comino	7,647	1,922	1,126	841	341	1,563	13,440
Seasonal or secondary use	6,293	898	166	87	-	-	7,444
Completely vacant	1,354	1,024	960	754	341	1,563	5,996
Total unoccupied properties as per Census 2011	35,533	12,397	9,224	5,153	1,836	6,937	71,080
Seasonal or secondary use	22,679	4,982	1,757	430	-	-	29,848
Completely vacant	12,854	7,415	7,467	4,723	1,836	6,937	41,232

Source: National Statistics Office

Census data indicates that the majority of unoccupied properties (58%) are completely vacant, while the remaining 42% are used seasonally or as secondary properties. This trend holds true on a regional basis with the exceptions of the Northern region and Gozo and Comino. In these two regions the number of properties which see seasonal or secondary use is greater than the number of properties which are completely vacant, likely due to an above average presence of properties used as 'summer homes' in these regions.

Perhaps unsurprisingly the vast majority (76%) of properties which see seasonal or secondary use are recorded as being in a good state of repair, with only around 1% of such properties requiring serious repairs, and none recorded as being dilapidated or in shell form.

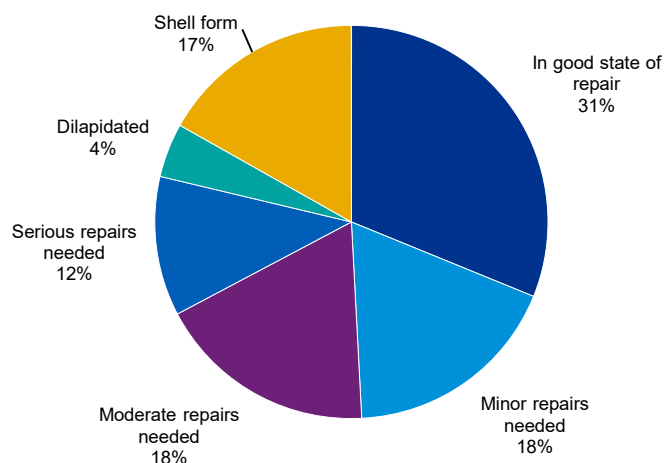
Figure 35: Condition of unoccupied properties with seasonal or secondary use



Source: National Statistics Office

With regard to properties recorded as being completely vacant, around 31% are noted as being in a good state of repair, while only 4% are noted as being in a dilapidated state, and 17% are noted as being in shell form, indicating that these properties are not fit for habitation.

Figure 36: Condition of completely vacant unoccupied properties



Source: National Statistics Office

It is the opinion of most developers and contractors we consulted, that the number of vacant properties which have the potential to become occupied dwellings is very limited. In fact, the Census points out that around 17% of “completely vacant” properties were still in shell form, presumably because they were work-in-progress. Only around half of the completely vacant properties were in a good state of repair (or require minor repairs) – some 20,269 properties. The other half required either moderate or serious repairs, or were in a dilapidated state.

Even though we have no information on how the number of vacant properties have changed over these past six years, over 20,000 properties is still a substantial number of properties on the market. When interviewed, key players in the industry gave us their view on why they think the number of vacant properties *actually on the market* is lower than this:

- Lifestyle: A changing lifestyle brings with it a changing demand pattern for housing. The trend is to opt for a smaller apartment in central areas or in the northern harbour region. Demand is also strong for “entertainment spaces”, such as open-air terraces and open plans incorporating kitchen, dining and living rooms. As such, old properties with layouts which are not conducive to accommodate such lifestyles are not particularly sought-after. Properties, especially in the village core having an elongated layout with one room leading into another, require extensive re-construction and re-design, which may put off potential buyers. Therefore, such properties end up as ‘unwanted’ properties.
- Inheritance disputes: Properties may be tied

up in legal disputes among heirs, and remain in “limbo”, particularly if there is limited potential gain in conflict resolution.

- Pricing: Properties which are priced well above their market going rate are probably going to sit idle and may take longer than most to be sold. The fact that some properties may have multiple owners would likely exacerbate the situation, in that neither party would be willing to negotiate on price.
- Multiple properties bought as an investment: It is a reality that some properties are bought as a form of speculative investment. This practice becomes more lucrative and thus, attractive, in an environment where interest rates are low, and property prices are sustained upwards. The fact that property in Malta remains one of the primary forms of investment opportunities further contributes to increasing the stock of vacant properties which are not currently on sale or for rent.
- Strong demand: Most developers have pointed out that in recent years, the sale of property on plan has increased dramatically. This is evidence in favour of strong demand, and runs counter to the notion that a substantial amount of good quality saleable property is lying dormant. Furthermore, since rents have increased substantially, it does not make financial sense for anyone to leave property dormant if it can be rented out.

In sum, developers disagree with official statistics on how the vacant housing stock is measured, on the basis that some properties included in the estimates are not actually in the property supply stock. Over 40% of properties are listed as ‘secondary and/or seasonal use’, indicating that



these are secondary homes. Another 10% are listed as being in 'shell form' – which could potentially mean that this is work in progress. A further 30% are completely vacant and in need of some form of repair. This leaves around 20% of properties (12,854 properties) which are completely vacant and in a good state of repair. However, some of these could be either stuck in inheritance issues, mispriced not particularly sought after due to property characteristics which are incongruous to current demand patterns, or deliberately kept vacant (a form of investment) by its owner.

Within this context, a study on the profile of vacant properties should be undertaken to enable Government to devise a national policy, and design appropriate measures in order to facilitate the transition (if possible) of such properties back into the supply stock. Vacant properties are not only an eyesore, but they can be detrimental to community welfare (vacant properties are usually prime

locations for illegal activities), can pose serious threats to health and safety, and also depress property values and diminish community wealth.

In this case, Malta's priority should focus on recycling existing dilapidated buildings, refurbishing old buildings (for example buildings in the village core) or replacing with newer structures or communal spaces in tune with modern market demands. Government should also seriously consider ways on how to resolve the issue of fragmented ownership to release such properties back to the supply stock, for instance, through fiscal incentives for ownership consolidation. This will release pressure on undeveloped virgin land, and also contribute towards increasing the supply stock, leading to an improvement in housing affordability.

Also, a system of classification should be introduced whereby vacant properties are categorised according to their state and primary use.

4.3 The economic dimension

4.3.1 Employees in the construction sector

All stakeholders which were consulted, without exception, expressed concern on the shortage of labour supply in the sector. The issue is one of both capacity and capability, with the shortfall being addressed through foreign labour, although even in this case, the supply of labour force in this sector is not keeping up with the strong demand. This labour scarcity is emanating from the following factors:

- Strong demand for property, which leads to an expansion of property supply, and hence a rise in demand for construction workers. Most of the contractors are working at full capacity, and can only accept more work if the developer is willing to wait (usually 1 or 2 years) for the project to start. Furthermore, some contractors have also informed us that, from this year, they have been refusing work due to capacity constraints.
- Lack of vocational appeal. Courses at the Institute of Engineering & Transport – Building & Construction Engineering cater for students who wish to obtain technical training leading to various occupations in the Construction Industry. However, even though in the 2014/2015 scholastic year around 1,100 students were enrolled in this particular institute, the trend is for students to opt for tertiary education. This has a negative effect on the supply of local construction workers (labour for building, finishing, and operating machinery in a construction environment).
- Apparent skills gap. Stakeholders commented that there is an obvious scarcity of skilled labourers at all levels within the construction industry. Contractors are resorting to employing EU nationals and third country nationals, the latter bringing increased cost burdens in connection with work permits. In particular, the market appears to leave a skills gap for tile layers and plasterers, for instance. Also, the industry is in need of suitably trained crane drivers, and scaffolding assemblers. This is especially important within the context of health and safety implications. In terms of middle management, there is gap for qualified site

surveyors, project managers, quantity surveyors, and individuals qualified in quality assurance. This apparent skills gap can be attributed to various factors.

Skills gaps in the labour market are typically attributed to the talent creation system, and there could be a possibility that not enough people with the required skills are being produced by educational institutions in the country. Nevertheless, the latest MCAST prospectus shows that this institution does offer various courses relevant to the construction industry that may help in addressing this issue. In particular, MCAST is offering courses in scaffolding and access, plastering and tile laying, preparation and laying of marbled stairs, steel fixing and concrete technology (amongst others).

Another reason for this issue could be related to the “time lag” from when the graduates join the labour market to when the skills are needed by employers particularly at a time of surging demand.

Within this context, we believe the MDA should champion the setting up of a Training Academy with a view to sharpen particular skills which are needed in the industry. The Training Academy could offer courses, perhaps in collaboration with MCAST and with the larger players in the industry, with MDA providing accreditation for the different types of skilled positions.

- Competition from other similarly paid jobs: We were made aware that contractors are finding it hard to retain unskilled labour due to competition from other similarly paid jobs in sectors other than construction. In particular, clerical and semi-skilled posts with Government entities can offer a competitive compensation package, with much better working conditions, and this is putting upward pressure on wages in the construction industry. Within this context, an increase in salaries to skilled construction workers can prove beneficial to the industry – it will help retain workers, reduce the incentive to under-declare income, and increase Government revenues in the form of income taxes.

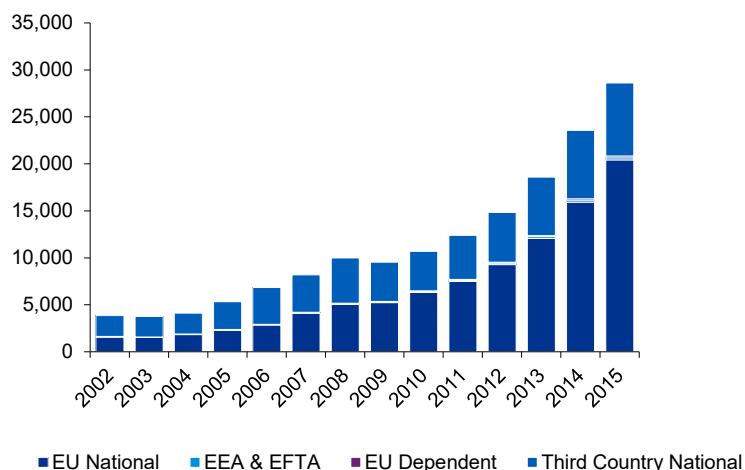
4.3.2 Drivers of demand

Just like in the majority of markets in an economy, the construction industry and property market experience fluctuations in the form of booms and troughs. Almost all major stakeholders contacted from within the industry expressed the same opinion – that the boom which is currently being experienced is unprecedented. At the core of this boom is surging demand, underpinned by a series of factors, and the accommodating supply, which usually follows with a slight lag. Based on input from major players in the industry, the key factors driving demand are the following:

- **First-Time Buyers' Scheme:** First Time Buyers (FTBs) are regarded by many players in the market as the industry backbone. This is because there is always a steady demand from such buyers throughout the years, with an average of around 2,000 marriages per annum (excluding foreigners getting married in Malta). In addition, FTBs are also considered as a secure form of investment by financial institutions since the default rate is relatively low. Over the past years, demand has been boosted by the FTBs scheme, first introduced in its current form in the Budget for 2014, and subsequently re-launched and extended in the Budgets which followed. This scheme exempts first time buyers of immovable property from the stamp duty payable on the first €150,000, with savings up to a maximum of €5,000. This had two upward effects on demand from FTBs. Firstly, the expenses associated with property acquisition were reduced, effectively lowering the cost of property for FTBs. Secondly, and perhaps more importantly, the time-bound nature of the scheme created a sense of urgency from buyers in order to take advantage of the cost savings. Under-declare income, and increase Government revenues in the form of income taxes.

- **Surge in working expatriates (iGaming and Financial Services).** The absolute majority of MDA members we consulted attributed the boom in the rental market to the increasing number of foreign workers in Malta. In fact, data shows that foreign workers have exponentially increased, starting out at around 3,800 in 2002, to circa 34,000 in 2016 – an almost nine-fold increase. As a sub-set of this total, EU nationals also increased considerably, from around 1,500 to over 20,000 by 2015. The direct links with economic growth in general, and with the property market in particular, are obvious. The increasing number of expats require accommodation, and the apparent trend is for these employees to search for properties for rent around the Sliema and St. Julian's area, being highly sought areas for convenience (walking distance to place of work) and leisure (Malta's entertainment hub). Given a fixed supply of property in the immediate short-term, this invariably increases both property purchase prices and rental rates. To compound matters, such individuals employed in managerial positions (and in sectors such as financial services, information and communication, real estate, and professional and administrative support services) often earn wages which can support rental rates exceeding the €1,000 per month, and this has in turn fuelled market rates of properties principally geared towards this customer segment. The influx of expats is also associated with economic growth in a diverse range of industries, and this is why we believe that the setting up of 'Property Malta' is a commendable initiative which is congruent with the aim of enhancing Malta's ability to attract expats and, in turn, broaden demand in the real estate market. Within this context, marketing funds would need to be committed in order to maximise the long-term benefit stemming from this initiative.

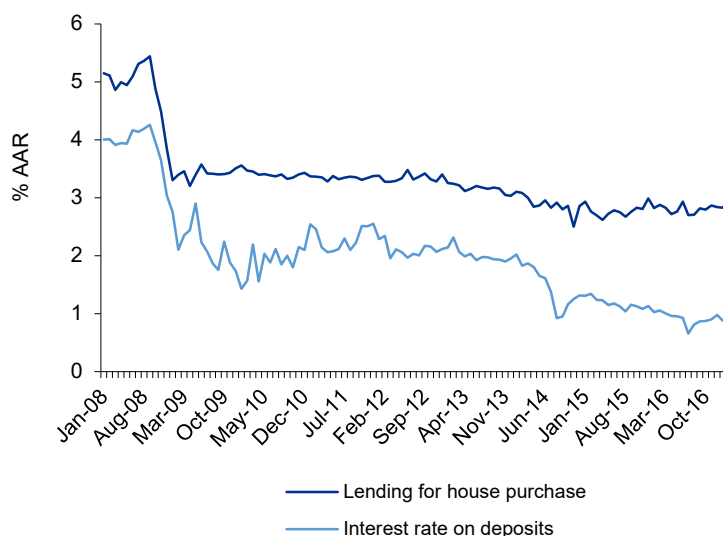
Figure 37: Foreign workers in Malta



Source: National Statistics Office

- Low interest rates – In line with the European Central Bank’s accommodative monetary policy, which is reflected in, amongst other things, low interest rates, local banks’ deposit rates and lending rates have gone down considerably. For the property market, this has had two effects. Firstly, from the buyer’s side, it increases affordability of financing, and this creates more demand for property purchase. Secondly, from an investor’s perspective, it makes more financial sense to invest accumulated savings in property and earn a ROI which is substantially higher than alternative investment opportunities. The higher return on investment is attributable to the record-high rental rates (being spurred by increased demand from expats). Furthermore, the investment is considered to be relatively low risk given the favourable performance of the property market in Malta.
- Citizenship by Investment Programme: As part of the set of mandatory requirements for the Individual Investor Programme, the applicant is required to either acquire a property (of a value exceeding €350,000), or lease a residential immovable property for a period of 5 years at an annual rent of at least €16,000. According to the latest Annual Report issued by the Office of the Regulator (ORIIP), a total of 34 properties were purchased by investors being granted citizenship, while 143 properties were leased. This would have likely increased demand marginally for higher-end properties in the Sliema and St. Julian’s area with an average property price of just over a million Euros.
- Growth in disposable income and general economic growth. The rise in per capita income can have two effects on the property market. Firstly, it generates demand for higher quality accommodation, which is usually matched by property price increases. Secondly, and perhaps more importantly, it creates fresh demand for property. This can either come from individuals looking to buy a second home (summer residence), investors with excess liquidity (who may view investment in property for letting as the only financially feasible investment with relatively low risk), or driven by businesses opting to expand by buying property for commercial purposes.
- Lifestyle and family dynamics: A few of the stakeholders consulted mentioned that changes in family dynamics, particularly the rise in divorces and separations, are also having the effect of boosting demand. In theory, this makes sense, since separated couples are unlikely to share a dwelling. However, looking at data on registered separations, these appear to have been stable, averaging around 580 per year³⁴. Within this context, it is improbable that this factor had any material impact on demand for property, and consequently, on property prices. Nevertheless, the increased popularity of an independent type of living (where a couple own two separate dwellings) may be having an upward effect on demand for entry level property.

Figure 38: Interest rates for Malta from 2008 onwards



Source: Central Bank of Malta

4.3.3 Risk of housing bubble

4.3.3.1 Comments from MDA members

The general consensus among several MDA members is that the industry can sustainably continue in this strong path for another 2 or 3 years, before starting to slow down as supply catches up with demand. In terms of property prices, very few members were optimistic with respect to the current rate of growth in prices in the foreseeable future. Major concerns focused on the sustainability of record-high rental rates being offered for properties principally in the Northern Harbour region (Sliema, St. Julian's³⁵); the dependency on expats to fuel demand and the negative implications which would follow should foreign direct investment cease to flow (or worse still, start retracting); and the general affordability of low-income couples/individuals who could be priced out of the FTBs market. Further to this, some members commented that, due to the current market buoyancy, a few small developers and investors who have financed their investments through debt now find themselves in a highly geared position, making them vulnerable to market slowdown.

4.3.3.2 What constitutes a housing bubble?

A housing bubble occurs when property prices do not reflect the underlying economic fundamentals, and thus result in a misalignment between market prices and underlying value (or equilibrium value) of an asset. The bubble can arise due to excessive credit lending for instance, mispriced risk, excessive 'feel-good' factor, and/or unsustainable / wavering demand. A brewing bubble can expose vulnerabilities, especially coming from high-leveraged undertakings, and a slight downward market correction (arising potentially from over-supply or contraction of demand), can have negative ripple effects which reinforce market decline. And because real estate is an integral part of the economy, its effects are systemic – affecting household wealth, and in turn consumption and bank balance sheets, affecting credit extension for investment and household consumption.

4.3.3.3 Evidence from third party reports

A 2016 Central Bank Working Paper³⁶ explored the issue of house price under/over-valuation, by using a multiple indicator approach. In order to gauge whether prices are misaligned with underlying fundamentals, five indicators are used, namely the house price-to-RPI ratio, the price-to-income per capita ratio, price-to-construction ratio, dwelling investment to GDP ratio, and finally the loan-to-income ratio. These are then weighted and condensed in an index in gap form (deviations from long-term averages).

Broad findings indicate that house prices were slightly over-valued in the period 2006-2007, but this disequilibrium was corrected by the end of 2015. However, the paper notes that if the trend were to persist (beyond Q4 of 2015, which is the last data point in this study), then house prices could go above equilibrium.

In another policy paper³⁷, a mix of statistical and econometric techniques is used to assess whether there is misalignment in house prices. The conclusion is very similar to the other study, even though a different methodology was used. House prices were close to equilibrium levels by the end of 2015.

Further to the above, Central Bank of Malta data sheds light on the declining indebtedness of construction firms, from around €1.50 billion in 2010 to circa €1.15 billion by the end of 2015³⁸. This trend, however, was coupled with a static share of lending to construction and real estate sectors, which means that overall lending by banks declined over the period under consideration (2010 – 2015). Typically, housing bubbles which are fuelled by speculation grow in tandem with debt. In Malta's case, the reverse can be observed - another piece of evidence against the creation of a bubble. In addition, in the light of tighter credit conditions, and relatively weak credit quality in the construction and real estate sectors (35.6% of Non-performing loans pertain to these two sectors according to Central Bank of Malta data), banks are playing an important role in containing any potential creation of a future bubble.

³⁵See Section 5.3 – Apartments in the North Harbour region increased by 49% between 2013 and 2016. In contrast, property prices for apartments in the same region increased by 36% during the same reference years.

³⁶Micallef, 2016, 'Property price misalignment with fundamentals in Malta', Central Bank of Malta

³⁷Gatt & Grech, 2016, 'An Assessment of the Maltese Housing Market', Central Bank of Malta

³⁸This trend was supported by anecdotal evidence during consultations that reliance on bank lending is diminishing.

4.3.3.4 What about the macroeconomic impact?

Real estate is one of the main building blocks of the economy, and changes to asset prices inevitably affect different sectors and different economic agents. A Central Bank of Malta study³⁹ shows that a permanent 10% increase in property prices has an overall positive GDP effect, which is achieved by a combination of positive wealth effects and higher household consumption, higher dwelling investment, and an expansion of credit. The reverse argument also holds – a fall in property prices would be expected to lead to negative GDP effects. From a household’s perspective, this reduces household wealth, which in turn reduces private consumption and dwelling investment. From the financial front, the extent of non-performing loans and probability of default would be expected to increase if property prices and rents go down. If banks respond with higher interest rates and credit contraction, this would continue putting downward pressure on real estate prices. From the fiscal front, lower all-round consumption and investment, which can also lead to lower employment, translates to a shrinking tax base and hence, lower Government revenues.

In reality, property prices have been increasing, which point towards an overall positive macroeconomic impact. In fact, between 2013 and 2016, the following price increases have been registered:

- Apartments: 17% growth in property prices
- Maisonettes: 14% growth in property prices
- Penthouses: 31% growth in property prices
- Terraced Houses: 16% growth in property prices

4.3.3.5 Conclusion: is a bubble brewing?

We have spoken to a large sample of MDA members, which include real estate agencies, developers, contractors and investors, and have

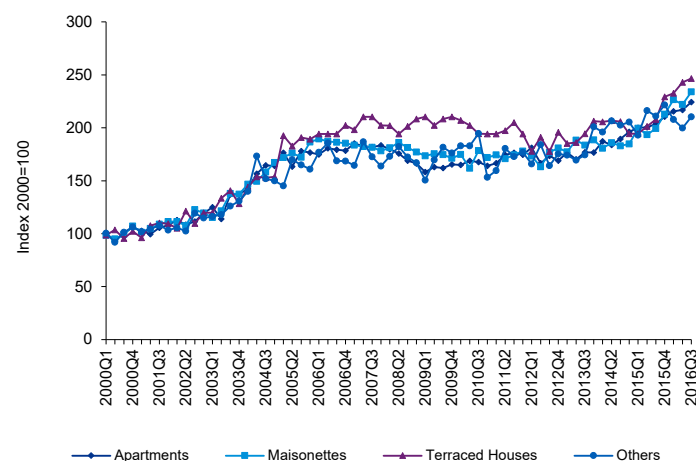
also looked at primary and secondary data, including third-party reports on the sector, in order to formulate a view on the potential existence and associated risks of a housing bubble.

As a preamble to this section, it is important to stress that no statistical and/or econometric technique can provide definite ex-ante diagnosis of a sector bubble. However, one can look at the available body of evidence which can point towards the potential existence or non-existence of a bubble.

The following need to be taken into consideration in forming an objective viewpoint on the current situation:

- Both the Property Price Index published by the Central Bank of Malta (based on advertised prices) and the Index published by the NSO (based on contracted prices) show an upward movement in property prices, whether such properties are apartments, maisonettes, terraced houses, or others. This trend is also corroborated by the KPMG real estate database, which shows a sustained upward movement in price per square metre. Viewing this data, two observations can be made:
 - Any upward movement in property prices, however strong it may be, is not necessarily indicative of a housing bubble provided that it is supported by an organically generated demand (as opposed to speculative demand, or demand which is unpredictable and unstable).
 - Growth in property prices appear to be contained, with the highest increase (since 2009) being registered in 2014, with a growth of 7%⁴⁰. Quarterly data also points towards contained growth with an average of 2% for 2016, and 2.4% for the previous year.

Figure 39: Property Price Index (CBM based on advertised prices)



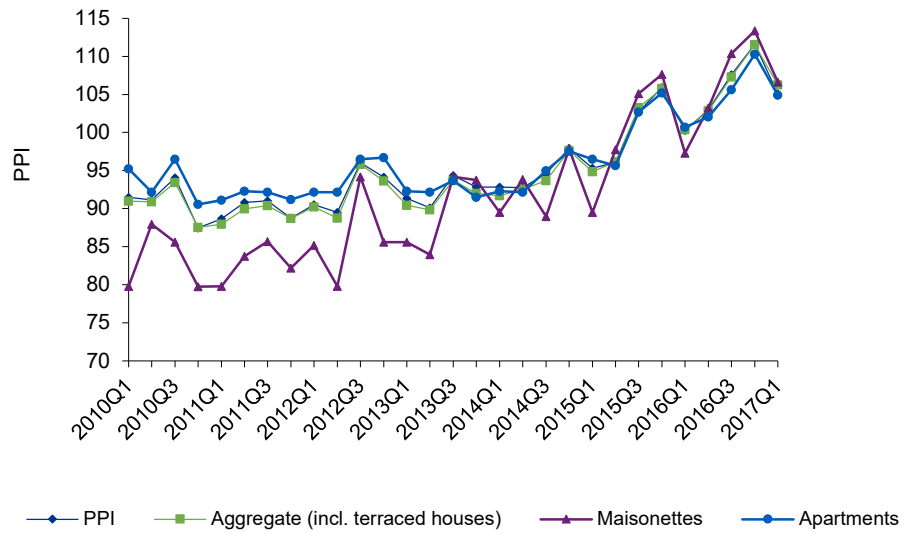
Source: Central Bank of Malta

³⁹Gatt & Grech, 2016, 'An Assessment of the Maltese Housing Market', Central Bank of Malta

⁴⁰Central Bank of Malta data

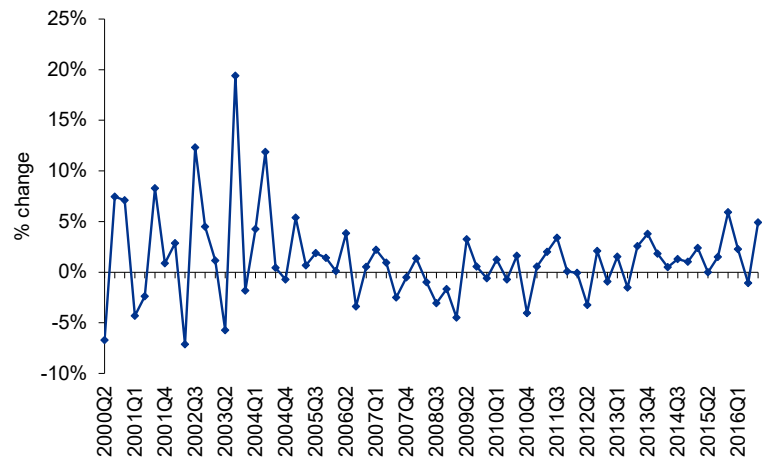


Figure 40: Property Price Index (based on NSO contracted prices)



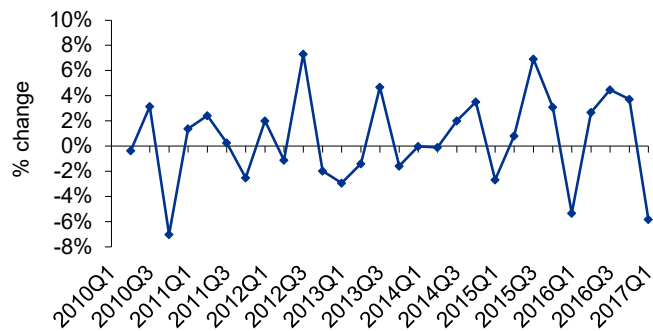
Source: National Statistics Office

Figure 41: Growth in PPI (CBM based on advertised prices)



Source: Central Bank of Malta, KPMG Analysis

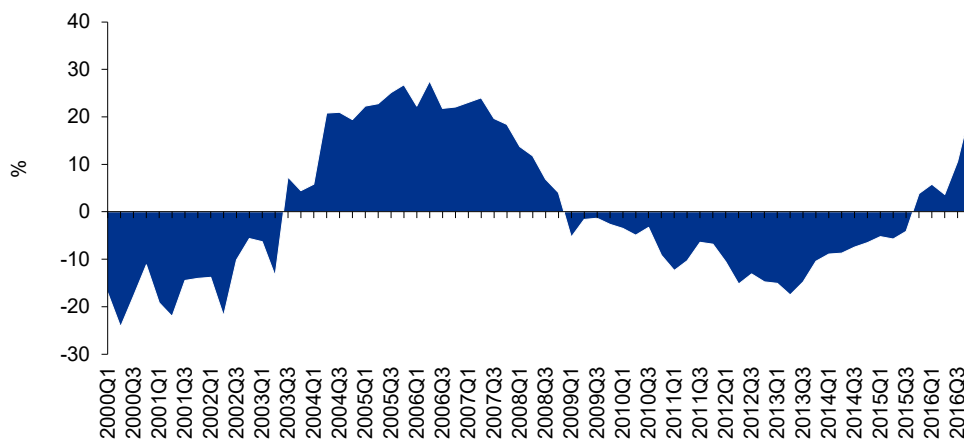
Figure 42: Growth in PPI (based on NSO contracted prices)



Source: National Statistics Office, KPMG Analysis

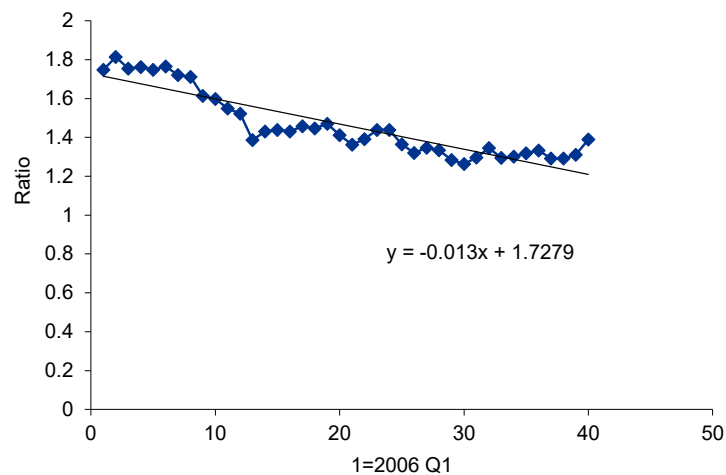
- The price to RPI ratio, which is a measure of the real rate of increase in property prices, is still close to the long-term equilibrium value. The real index is linearly de-trended to elicit deviations from long-term trend, and it appears that, as corroborated by the CBM study, the index was above equilibrium between 2003 and 2008, with a downward correction being experienced between 2009 and 2015. However, even though the price to RPI ratio was once again close to equilibrium during the later stages of 2015, upward corrections seem to indicate that the trend is for a move towards slight over-valuation, so caution must be exercised in this regard.
- We also computed a Property price to income gap, which expresses changes in household's average income to changes in property prices as an index. The trend is downward, meaning that the mean equivalised income is rising faster than the property price index. However, when expressed as deviations from the index's long-run value, a slight over-correction is noticeable. This shows that there are signs that property prices are increasing at a faster rate than income, and that the index is above what the long-term trend would normally predict.

Figure 43: Real House price gap



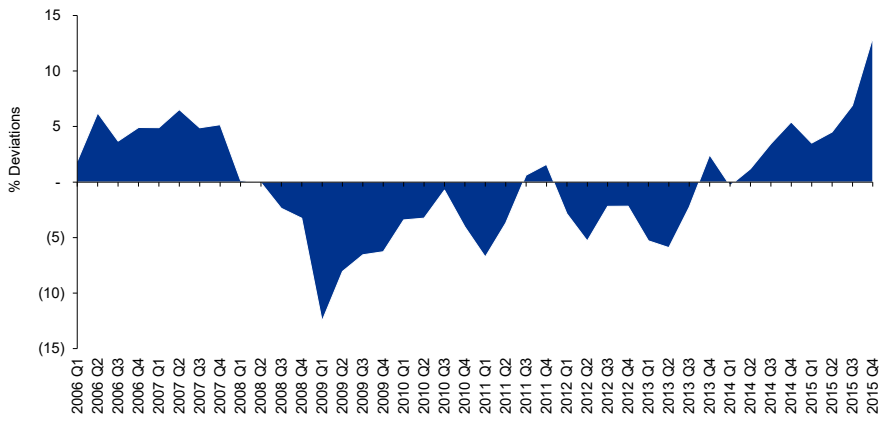
Source: Central Bank of Malta, KPMG Analysis

Figure 44: Property price to income ratio



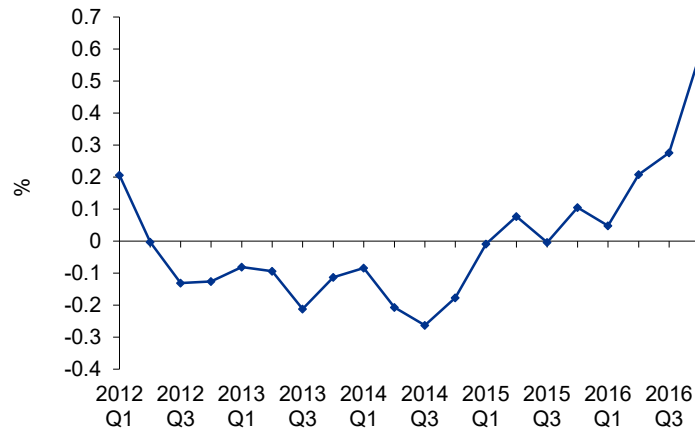
Source: KPMG Analysis

Figure 45: Price to income gap



Source: KPMG Analysis

Figure 46: Dwelling investment-to-GDP gap

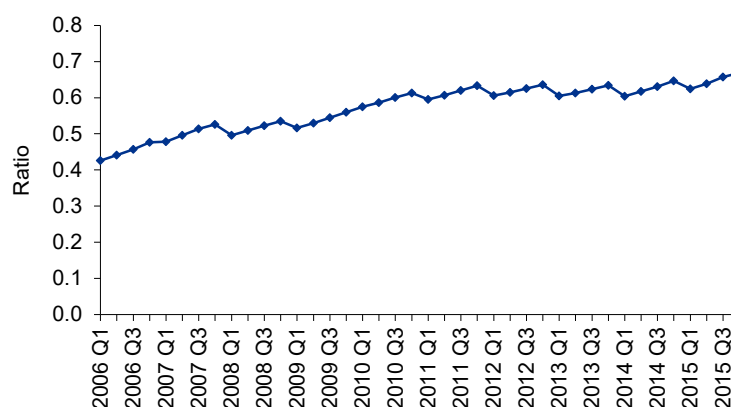


Source: NSO figures, KPMG calculation

- A dwelling investment to GDP ratio was also computed, representing the supply side. A high share of dwelling investment might be indicative of overheating in the property market. The ratio exhibits an upward trend, climbing from 2.2% in Q3 of 2014, to 4.7% in Q4 of 2016. With respect to the dwelling investment to GDP gap (deviations from long-run mean), a positive gap was registered after Q2 of 2016, pointing towards possible (and slight) overheating.
- When looking at the Loan-to-income ratio, another indicator which assesses debt serviceability, it appears that loans to households for mortgages are increasing at a faster rate than the mean equivalised income (MEI) (loan to income ratio increasing). Between Q1 of 2006 and Q4 of 2015, mortgages increased by 149%, whereas MEI increased

by 49%. Even when mortgages are adjusted for population increases, the increase over the period under consideration is still 134%. This ratio shows that, as a population, we are becoming more burdened with household debt, particularly as a result of property price increases and increases in property volume sold⁴¹. This increase in debt has not been matched, to the same magnitude, by an increase in the mean equivalised income, meaning that the mortgage repayment may constitute a larger proportion of monthly income reducing the amount of otherwise disposal income. This does not necessarily signal that households might encounter difficulties to meet monthly mortgage payments, but it is a metric worth observing carefully going forward.

Figure 47: Loan to income ratio



Source: Central Bank of Malta, KPMG Analysis

4.3.3.6 In sum

In order to arrive at an evidence-based conclusion on the existence of a housing bubble, we adopted a multi-faceted approach: we have looked at professional third party reports, carried out interviews with several MDA members, and performed statistical tests which take advantage of the latest data available. In brief, the following are the salient points emerging from this analysis:

- Both Property Price Indices (as published by NSO and CBM) show an upward movement in property prices which is contained. As long as the price increases are generated by stable and growing demand, then this should not present a problem.
- A general consensus among MDA members that property prices may continue in their path for the next 2 or 3 years, before slowing down. Concerns about high rental rates in certain localities, affordability for low income earners, and dependency of some markets (especially rental market) on expats, were voiced by most MDA members.
- Two studies published by the CBM point towards a property market which was in equilibrium at the end of 2015. The studies use different methodologies and arrive at largely the same conclusion.
- We performed similar tests as carried out in the CBM studies, and used the latest data available. The tests carried out (Real House Price gap, Property Price to Income gap, Dwelling Investment to GDP gap, and Loan to Income ratio) all point towards a market which was indeed close to equilibrium at the end of 2015, with signs of slight over-heating going forward.

Given the above, there does not seem to be any substantive evidence of the presence, or the imminent creation of, a housing bubble. However, there are indications of overheating, and the situation must be monitored closely. In particular, the largest potential threat lies in the rental market – rents are increasing at a faster rate than property prices, and the demand for rental properties originates predominantly from expats. This makes the rental market more susceptible to changing economic conditions, which can, in turn, affect property prices.

4.3.4 The need for data

A recurring theme during our consultations, and also one of the primary motivating factors for the undertaking of this study, is the lack of data specific to the construction and real estate sectors. We believe that such an important sector which is in turn, linked with other economic sectors, should benefit from timely, detailed, and reliable data, so that operators and policy makers can take informed decisions.

Even though indices on sales and price evolution of properties exist (both Central Bank of Malta and National Statistics Office use a sample based approach to computing the indices), data on rents is not available. This lacuna is especially worrying, since the currently buoyant rental market is one of the key drivers of property price movements.

We would recommend that Government entities tasked with collecting such data consult with MDA in order to agree on both the nature of data to be collected (including frequency and granularity) and the appropriate mechanisms to be employed for compiling such data.

4.3.5 Interlinkage between the construction sector and the financial sector

The construction sector is intrinsically linked to the financial sector, both from a supply side (financing developments) and from the demand side (financing the buying of property). During the course of our fieldwork, we spoke to a number of local banks to get their views on a number of aspects. The following are the salient points emanating from such discussions, interspersed with additional insight gained from contractors and developers:

- Extension of credit towards developers and contractors has been on a decline during the past years. This was corroborated both qualitatively (in discussions held with MDA members, citing tighter credit conditions, and more extensive requirements to apply for financing), and quantitatively (according to Central Bank of Malta data, there has been a decline in absolute bank lending to construction and the real estate sector, from €1.5 billion in 2010 to circa €1.15 billion in 2015). This is probably the result of stricter regulation⁴² under the Basel III Framework, which is leading banks to be more selective in accepting clients, especially in the light of the relatively weakened credit quality.
- Despite the reduction in bank lending, developments were not stymied, with developers resorting to other means of financing large projects, such as bond issues, pre-financing, or equity. Surprisingly, none of the developers mentioned the Malta Development Bank as a possible means of future financing. This is perhaps indicative of a lack of awareness in this regard. Nevertheless, a number of operators in the sector expressed a hope that infrastructure investment would increase and more importantly, be sustained over the medium term. The development bank could be instrumental in this regard.
- An interesting point which emerged during discussions with banks is the fact that most, though not all, of construction sector players fall short of the requirements which are expected of them when applying for financing – such as detailed business plans, and updated management accounts. Since banks are partaking in the risk inherent in the project being financed, borrowers need to be able and willing to share reliable and robust information relating to the project (technical and financial feasibility studies, project timing, permitting issues, project risks) with a view to maintain information symmetry between parties as much as possible.

- Banks are aware that much of the growth in home lending is being fuelled by the Buy-to-Let market, as individuals prefer to pour their liquidity into tangible assets which earn a higher return, and ensure an adequate pension in the future. Banks are also aware that the Buy-to-Let market carries a higher risk than the “First Time Buyers” market or the “Second Home Loan” market, and thus continue to exercise prudence in lending practices (for instance by ensuring that mortgage payments can be sustained through income).

4.3.6. Concession on public lands

MDA members pointed out that the practice of Government granting concessions on public land at favourable terms, albeit potentially justifiable in terms of positive economic spill-over effects, may present risks of market distortion. MDA members stressed that a certain degree of caution needs to be exercised to ensure such concessions are granted on the basis of, or in congruence with, the going market prices of land.

4.4 The social dimension

4.4.1 Housing affordability

Introduction

The question of housing affordability is an important one from a social perspective. At best, declining affordability can mean that potential property buyers must lower expectations and accept properties which are not located in highly sought after areas, or settle for properties with a limited set of features. At worst, however, it means that certain segments of society are priced out of the market, and have to resort to renting or to social housing.

There are many methods to measure affordability. One of the more popular and accurate measures is to assess affordability in terms of the ability of a median income household to acquire a median priced property.

In particular, the computed Housing Affordability Index (HAI) is defined as the ratio of median household income to the required income to qualify for a loan on a median-priced property for a single family. As such it serves as one measure of the feasibility of middle-income household to afford to purchase a typical property. The parameters used to compute the HAI can be adjusted in the event that one wishes to see an indication of housing affordability to different demographic cohorts.

Definition of terminology

Below is a brief definition of some of the terminology used in this section:

- Down payment – this refers to the proportion of the value of the property which a prospective buyer would need to finance out of pocket and not through a mortgage.
- Coverage ratio – this serves as an affordability check for banks regarding mortgage repayments. In effect, the mortgage repayment cannot exceed this proportion of the borrower's income.
- National Equivalised Income (NEI) – also known as Equivalised Disposable Income, this represents a household's total disposable income divided by its 'equivalent size' (a measure based on the number of household members and their respective ages). As such the median NEI is a suitable proxy for the median wage earned in the country.

Data sources

The HAI computed as part of this study makes use of inputs generated internally by KPMG, inputs obtained through our discussions with major players

in the local banking industry, and inputs obtained from publically available data.

The median price of property was calculated based on data extracted from KPMG's Real Estate Database. The use of our internal database allowed us to compute a median price for different types of properties including apartments, maisonettes, bungalows, penthouses, villas, farmhouses, houses of character and terraced houses.

Data obtained from three major banks in Malta allowed us to establish the average conditions applied to mortgages for different categories of property buyers. Specifically, we obtained data relating to the typical down payment, the average mortgage term, the average interest rate, the average coverage ratio, and the average number of persons taking out a mortgage. This data was segregated to differentiate between first-time buyers, second-time buyers, buy-to-let investors, and buyers of commercial property.

Data available from public sources allowed us to confirm the Central Bank's base interest rate, and the median National Equivalised Income (NEI).

Methodology

The HAI is calculated according to the following formula:

$$HAI = \frac{(Median\ monthly\ net\ household\ income)}{(Qualifying\ income)}$$

Where:

$$Median\ monthly\ net\ household\ income = \frac{(NEI \times Average\ number\ of\ persons\ taking\ out\ mortgage)}{12}$$

and

$$Qualifying\ income = \frac{(Monthly\ repayment)}{(Coverage\ ratio)}$$

Therefore, the HAI calculates the ratio between the median monthly net household's income, and the required net monthly income to qualify for a mortgage for a median-priced property.

Assumptions

In order to calculate the HAI values, the following assumptions were taken:

- Median property prices were sourced from the KPMG property database.
- It was assumed that each household member earned the median disposable income.
- Median property prices for 2006 were estimated by scaling down 2016 prices in line with the Property Price Index published by the Central Bank of Malta.
- Information for the median income in 2016 was not available. This was estimated by increasing the median income for 2015 by the average of the growth rates for the past three years for which data is available.
- Assumptions relating to mortgage conditions and terms are based on averages calculated based on information provided by three major banks in the Maltese market. As such these parameters refer to commonly seen conditions for new mortgage approvals and may not reflect the most affordable or advantageous offers available to any particular prospective buyer. These include:
 - The average down payment required was calculated to be around 18% (minor variations from year-to-year).
 - The average mortgage term calculated to be in the region of 30 years (minor variations from year-to-year).
 - The average interest rate calculated at around 2.4%-2.5%.
 - The average coverage ratio calculated to be in the region of 26% (slight variations from year-to-year).
 - The average number of persons taking out a mortgage was assumed to be around 1.6 (Averages given by local banks).
- In computing the index for 2006, it was assumed that mortgage conditions were similar to those for 2011 due to limited data available.

	2006	2011	2012	2013	2014	2015	2016
Apartments	0.7596	0.8190	0.9987	0.9717	0.9607	1.0773	1.0235
Maisonettes	0.6677	0.7961	0.7742	0.8900	0.8891	0.9140	0.9223
Penthouse	0.5828	0.6677	0.6489	0.7864	0.9227	0.8379	0.7853
Terraced House	0.3425	N/A	N/A	0.4455	0.4422	0.4641	0.4532

Source: KPMG Analysis

Results

Based on the above methodology, our findings as regards a Housing Affordability Index for the Maltese property market are as follows:

When interpreting the results of this analysis, it is important to keep the following in mind:

- An HAI value of exactly 1 indicates that a household earning the median income has just enough earnings to qualify for a mortgage on a median-priced property.
- An HAI value less than 1 indicates that a household earning the median income would not qualify for a mortgage on a median-priced property. This household would need to search for a cheaper property given their current income.
- An HAI value greater than 1 indicates that a household earning the median income earns more than is necessary to qualify for a mortgage

on a median-priced property. In this case it would be possible for that household to consider purchasing a more expensive property.

The above results indicate that a median household would qualify for a mortgage on a median priced apartment, but would not qualify for a mortgage on a median priced property in the other categories tested given the specified assumptions.

The 2016 HAI scores of 1.0235 and 0.9223 for apartments and maisonettes respectively, indicate that prospective buyers would qualify for financing for properties priced at around 102% and 92% of the median asking prices of apartments and maisonettes, respectively. Changes in the HAI results over time indicate that since 2006, property has become more affordable for the median household, despite a slight decrease in affordability during 2016 for all property types examined except maisonettes, which saw a continuous improvement in affordability.

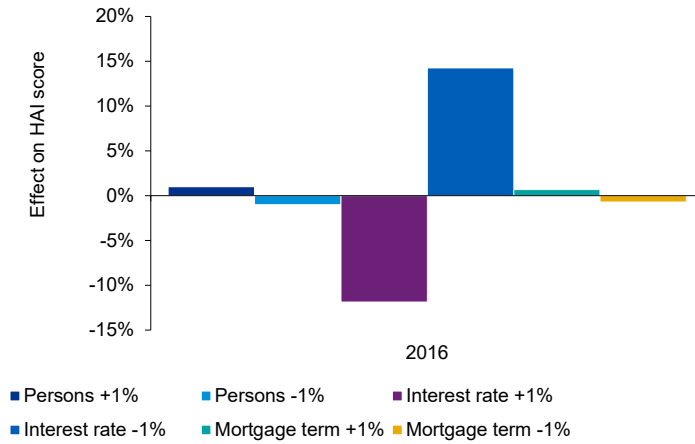
Sensitivity analysis

A sensitivity analysis was carried out in order to assess which factors are the most significant influencers for the affordability of property. The goal of a sensitivity analysis is to gauge the response of the HAI score to a variation of 1% in either direction of a number of key variables. Should a 1% change in a variable result in a change to the HAI score of 1% or greater, this variable can be considered to be a critical variable. This analysis was carried out based on the HAI scores for apartments.

The variables analysed were the number of persons in the household taking out the mortgage, the interest rate charged by the bank, and the length of the mortgage term. From these variables, the interest rate and the number of persons taking out

the mortgage emerged as the critical variables. A 1 percentage point increase in interest rates had the effect of reducing affordability by nearly 12%, and a 1 percentage point decrease in interest rates improving affordability by over 14%. With regards to the number of persons within the household, a 1% change in this figure resulted in a corresponding increase or decrease of exactly 1% to the HAI score. This is due to the implications on household income such that any change in the number of persons can be seen to imply an equivalent change in total household income. The least significant variable was the length of the mortgage term. A 1% difference in the length of the mortgage term resulted in a corresponding increase or decrease of 0.69% to the HAI score.

Figure 48: Apartments HAI - Sensitivity analysis



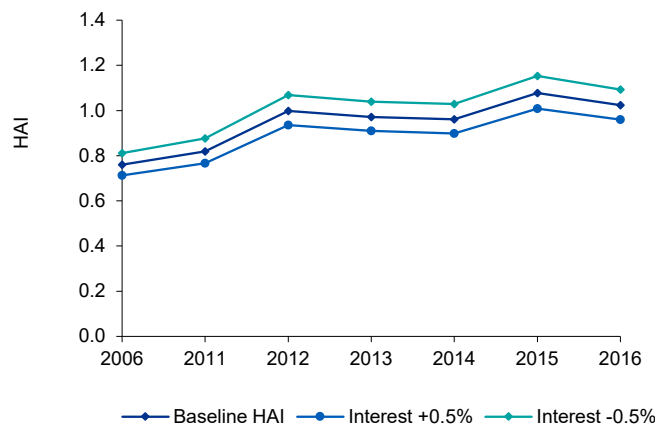
Source: KPMG Analysis

Following this analysis, we examined the impact which certain changes in parameters would have on the HAI results.

An increase in interest rates of 50 basis points could potentially result in a 6.2% decrease to the affordability of a median property to the median

household. In contrast, a decrease in interest rates of 50 basis points could potentially result in a 6.8% increase to affordability. For the median apartment in 2016, an increase in interest rate could reduce the HAI score from 1.0235 to 0.9600, while a reduction in interest rates could increase the score to 1.0930.

Figure 49: Apartments HAI - Interest rate

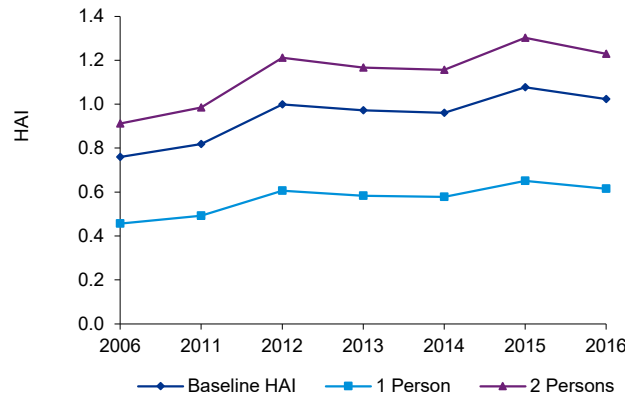


Source: KPMG Analysis

With regard to the number of persons within a household, we analysed the impacts on HAI scores in the case of a two-person household and a single-person household. Increasing the number of persons from 1.66 to 2, resulted in a 20% increase in affordability, from 1.0235 to 1.2295. On the other extreme, reducing the number of persons to just 1, resulted in a 40% reduction in affordability,

from 1.0235 to 0.6147. These figures reveal that a household with two persons earning the median wage would likely be able to afford a property carrying a price premium over the median, while a single person earning the median wage would only be able to qualify for a mortgage on a property worth around 61% as much.

Figure 50: Apartments HAI - Number of persons



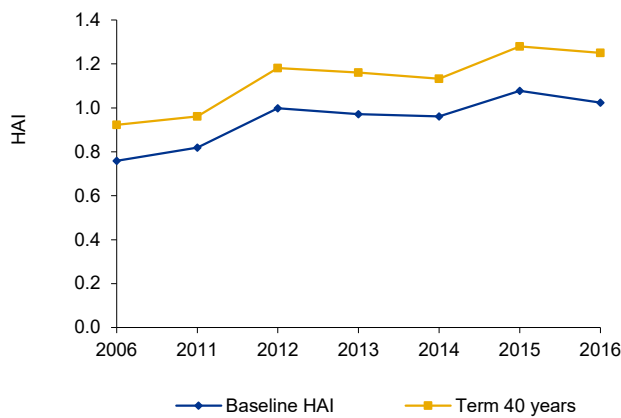
Source: KPMG Analysis

Finally, we examined the impact of an increase in the length of the mortgage term. It was indicated to us that the average length of a mortgage is around 29.32 years. However, local banks also advertise the possibility of mortgages with terms of up to around 40 years. Opting for such a term would increase affordability by around 22%, from 1.0235 up to

1.2502. Hence this indicates that opting for a longer mortgage period would allow a household, earning 1.66 times the median income, to afford a property carrying a price premium over the median.

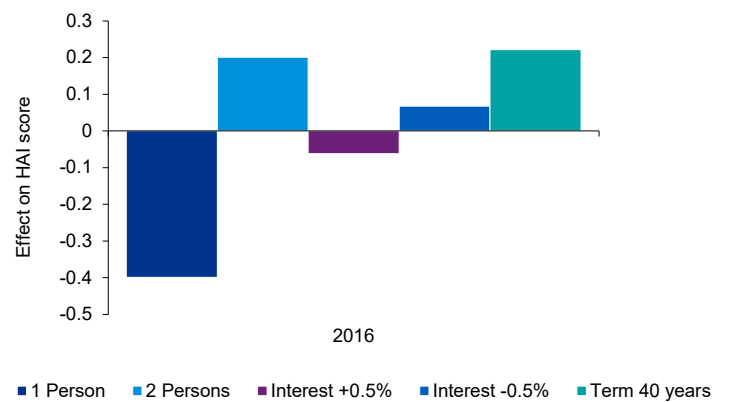
Figure 52 below indicates the relative effects of each of the scenarios described above.

Figure 51: Apartments HAI - Mortgage term



Source: KPMG Analysis

Figure 52: Apartments HAI - Main variables



Source: KPMG Analysis

Regional analysis

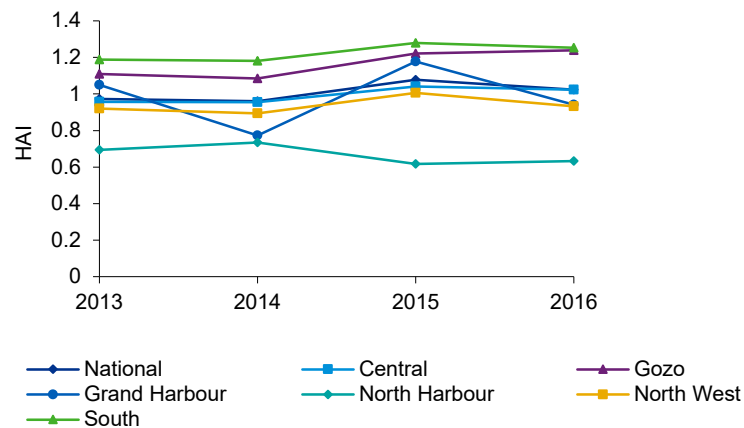
A more in-depth analysis was carried out in order to determine the affordability of different types of property across various regions in Malta and Gozo. This analysis also enables a look at the trends in affordability of property in various regions. It should

be noted that due to a relatively limited sample size, results for the Grand Harbour region and Gozo may be less reliable than for other regions. Nevertheless, the relatively small sample size is likely to be an accurate reflection of an overall lower level of supply in these regions.

	2013	2014	2015	2016
National	0.9717	0.9607	1.0773	1.0235
Central	0.9560	0.9552	1.0401	1.0225
Gozo	1.1090	1.0844	1.2212	1.2393
Grand Harbour	1.0488	0.7724	1.1783	0.9406
North Harbour	0.6935	0.7340	0.6168	0.6325
North West	0.9204	0.8946	1.0054	0.9331
South	1.1879	1.1817	1.2781	1.2519

Source: KPMG Analysis

Figure 53: Housing affordability index - Apartments



Source: KPMG Analysis

In the case of apartments, the national trend is one of increasing affordability. Between 2013 and 2016, the HAI score improved by around 5%. On a regional level, the Central region appears to display very similar results to the national trend. At the extreme ends, the South region and Gozo appear

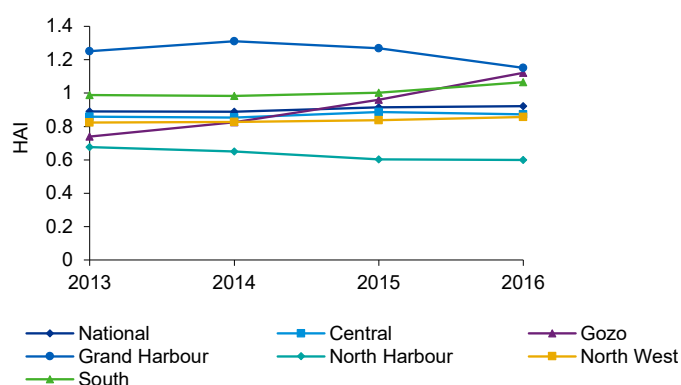
to offer the most affordable apartments, while affordability of apartments being lower in the North Harbour region. The change in HAI scores from 2013 to 2016 indicates that apartments are becoming more affordable in all regions except for the North Harbour and Grand Harbour regions.

Maisonettes

	2013	2014	2015	2016
National	0.8900	0.8891	0.9140	0.9223
Central	0.8591	0.8535	0.8870	0.8731
Gozo	0.7403	0.8261	0.9606	1.1211
Grand Harbour	1.2504	1.3102	1.2695	1.1520
North Harbour	0.6774	0.6503	0.6033	0.5986
North West	0.8232	0.8274	0.8374	0.8575
South	0.9876	0.9832	1.0030	1.0647

Source: KPMG Analysis

Figure 54: Housing affordability index - Maisonettes



Source: KPMG Analysis

Similarly to apartments, affordability for maisonettes between 2013 and 2016 improved on a national level by around 4%. Once again, affordability trends in the Central region were similar to the national trend, albeit improving at a slower rate, and the North Harbour region also appears to have been the region with the least affordable maisonettes during the period. The Grand Harbour region appears to have been the area with the highest affordability

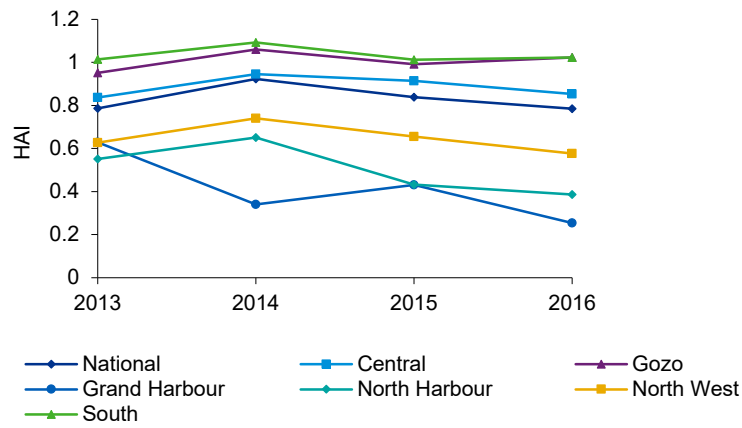
for maisonettes, though results based on listings recorded in 2016 indicate that the Grand Harbour, Gozo and the South regions all have relatively similar HAI scores with respect to maisonettes. The market for maisonettes also appear to be similar to that of apartments in that HAI scores appear to have improved between 2013 and 2016 across all regions, except for the North Harbour and Grand Harbour regions.

Penthouses

	2013	2014	2015	2016
National	0.7864	0.9227	0.8379	0.7853
Central	0.8368	0.9451	0.9140	0.8529
Gozo	0.9522	1.0603	0.9922	1.0234
Grand Harbour	0.6282	0.3408	0.4315	0.2548
North Harbour	0.5523	0.6506	0.4331	0.3869
North West	0.6276	0.7404	0.6557	0.5768
South	1.0138	1.0927	1.0122	1.0230

Source: KPMG Analysis

Figure 55: Housing affordability index - Penthouses



Source: KPMG Analysis

On a national level there has been some variation in the affordability of penthouses. However, listings recorded during 2016 indicate that overall affordability is only marginally lower than it was during 2013. While the trend in the Central region has once again appeared to follow the national trend, the HAI score in 2016 showed circa 2% improvement over 2013. The affordability index also

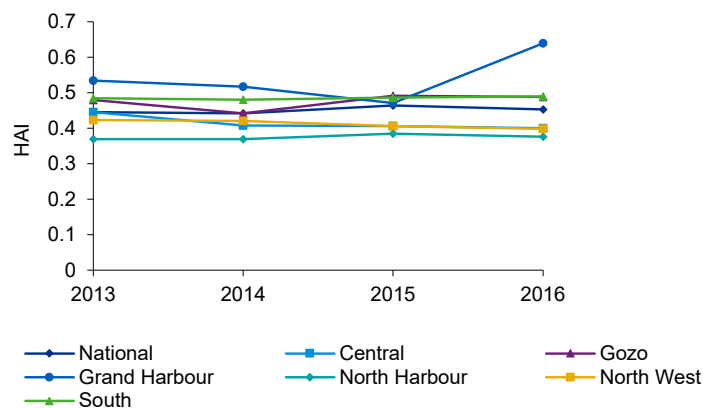
indicates that Gozo and the South region offer the most affordable penthouses, while affordability was weakest in the Grand Harbour and North Harbour regions. Trends in HAI scores indicate that between 2013 and 2016 affordability of penthouses improved in Gozo, the Central region and the South, while affordability weakened in the Grand Harbour, the North Harbour and the North West regions.

Terraced Houses

	2013	2014	2015	2016
National	0.4455	0.4422	0.4641	0.4532
Central	0.4454	0.4078	0.4065	0.4003
Gozo	0.4794	0.4421	0.4913	0.4881
Grand Harbour	0.5340	0.5172	0.4713	0.6396
North Harbour	0.3697	0.3691	0.3847	0.3759
North West	0.4234	0.4210	0.4065	0.3986
South	0.4845	0.4803	0.4868	0.4899

Source: KPMG Analysis

Figure 56: Housing affordability index - Terraced Houses



Source: KPMG Analysis

The affordability of terraced houses appears relatively consistent across most regions. The national trend indicates that between 2013 and 2016, the HAI score for terraced houses has improved by around 2%. Unlike the other property types examined, the Central region diverges from the national trend, with data indicating that the HAI score has fallen by around 10% over the same timeframe. It also appears that affordability has improved significantly in the Grand Harbour region. However, it should be noted that this change is most likely due to a combination of a small sample size and an increase in the number of properties offered for sale in localities which attract a lower average price. Other trends in this market include a reduction in affordability of terraced houses in the North West region, and slight improvements to affordability for terraced houses in Gozo, North Harbour and the South regions, which generally followed the national trend.

Housing affordability for First Time Buyers

The affordability of housing is a major concern for individuals looking to get onto the property ladder. In order to assess the affordability of properties for first time buyers, we made a few modifications to the inputs of our HAI model in order to better reflect this group of buyers. In general, most inputs were left unchanged as we did not believe that first time buyers differed significantly from the general case. The major change which was made was with regard to income.

It was assumed that the majority of first time buyers purchase their home around the same time that they get married. Official statistics indicate that most marriages involve spouses both aged between 25 and 29 years. An estimate of the median income of individuals in this age bracket was derived by assuming a linear relationship between age and income. Using available data for the median income of individuals aged 18 to 24 and individuals aged 25 to 49, the median disposable income for an individual aged around 27 was estimated to be in the region of €15,500.

Based on these inputs the results from our HAI model are as follows.

This indicates that at 2016 prices, a first time buyer household with a total net income of around €25,800 (calculated on the basis of 1.66 persons per household) would be able to qualify for a mortgage on a median-priced apartment. They would also be able to qualify for a mortgage on a maisonette priced at around 99% of the value of the median of such property. Penthouses or terraced houses would most likely fall outside of the household's price range.

The median apartment

As this section places significant reliance on the concept of the "median property", it is important to gain an understanding of what constitutes such a property. Given that the bulk of property listings in our database relate to apartments, this analysis will present a profile of the average apartment.

The following criteria were applied to our database:

- Properties in Gozo were excluded.
- Properties in need of refurbishment, unconverted properties, properties in shell form or pre-construction properties were excluded.
- Only listings recorded in 2016 were considered.
- Only properties with an asking price of between €150,000 and €160,000 were considered, given that the median price of apartments recorded in our database for 2016 was around €155,000.

A total of 530 properties matched our price criteria. This represents 7.7% of the total number of apartment listings which match the rest of our criteria. 58% of these properties are concentrated in 11 localities in Malta, these being Mosta, Birkirkara, Marsascala, Gzira, St. Paul's Bay, Msida, Santa Venera, Zebbug, Qawra, Zurrieq, and Naxxar.

Table 18: Housing Affordability Index - First Time Buyers

	2006	2011	2012	2013	2014	2015	2016
Apartments	0.8694	0.8805	1.0528	1.0432	1.0230	1.1648	1.1067
Maisonettes	0.7642	0.8559	0.8161	0.9555	0.9468	0.9884	0.9973
Penthouse	0.6671	0.7179	0.6840	0.8443	0.9826	0.9060	0.8492
Terraced House	0.3920	N/A	N/A	0.4783	0.4710	0.5018	0.4901

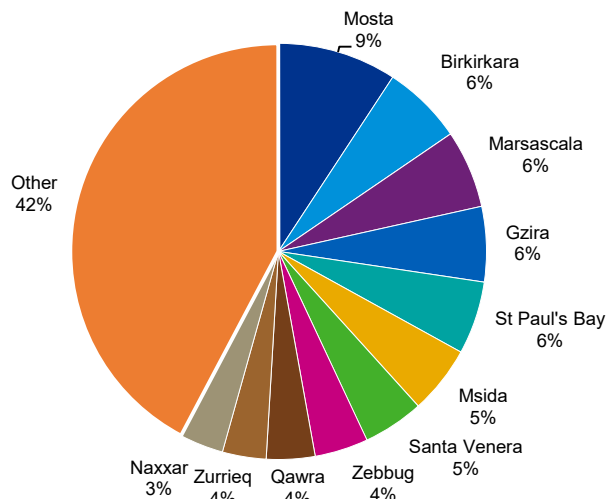
Source: KPMG Analysis

Around 59% of the apartments which met our criteria were available in a finished state, while 17% were available furnished.

The vast majority (71%) of apartments which met our criteria were three-bedroom properties, while 17% were two-bedroom properties and just 4% were single bedroom apartments.

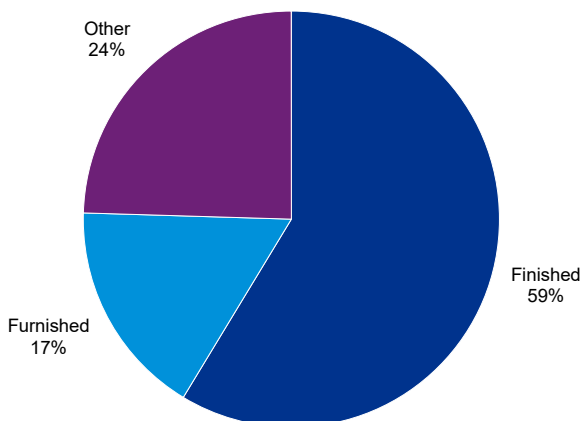
The average floor area of an apartment which met these criteria was around 122 sqm, while the average price per sqm was around €1,363 per sqm. This is around 80% of the average price per sqm of apartments in our database, indicating that the average price per sqm of apartments is likely skewed upwards by properties which carry a price premium for some reason, most likely location or quality of finishes.

Figure 57: Apartments priced between €150,000 and €160,000 by locality



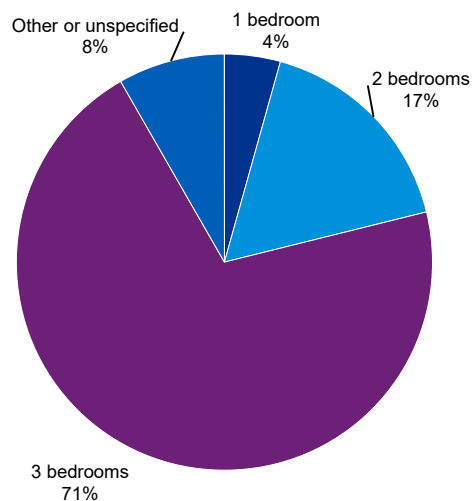
Source: KPMG Analysis

Figure 58: Apartments priced between €150,000 and €160,000 by condition



Source: KPMG Analysis

Figure 59: Apartments priced between €150,000 and €160,000 by number of bedrooms



Source: KPMG Analysis

Affordability for “low-income” households

Given the current scenario of property prices in the market, and the evolution of household disposable incomes, especially for households on low incomes, we explored whether there is a real affordability problem for disadvantaged individuals and couples.

Using our HAI model, we determined what types of property two groups of consumers on low incomes would be able to obtain mortgages for.

A single individual earning the median income (around €14,400 after tax) would qualify for a mortgage on a property with a maximum value of just under €95,300.

A couple, both earning the minimum wage (household income of just over €17,600) would be able to qualify for a mortgage on a property with a maximum value of just under €117,000. As such, we carried out an analysis of our database in order to determine the type and volume of available property listings at these price levels.

We applied the following criteria to our database:

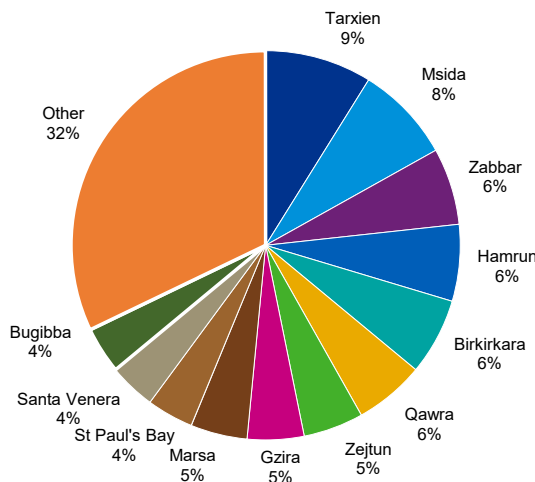
- Properties in Gozo were excluded.
- Properties in need of refurbishment, unconverted properties, properties in shell form or pre-construction properties were excluded.
- Only listings recorded in 2016 were considered.

Single median income earner

A total of 13,473 listings met our criteria. Of these, only 361 listings were priced under €95,300, around 2.7%. A few key highlights from our analysis of properties under €95,300 are listed below:

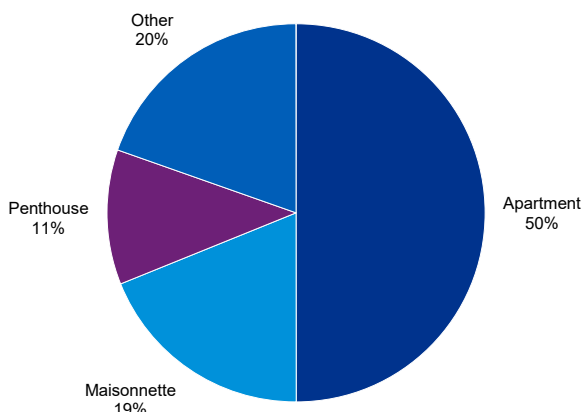
- 68% of all listings were concentrated in 12 localities, these being Tarxien, Msida, Zabbar, Hamrun, Birkirkara, Qawra, Zejtun, Gzira, Marsa, St. Paul’s Bay, Santa Venera, and Bugibba.
- 50% of all these listings were apartments, 19% were maisonnettes, and 11% were penthouses.
- 69% of all listings were for properties in a finished condition, while 14% were for furnished properties.

Figure 60: Properties under €95,300 by locality



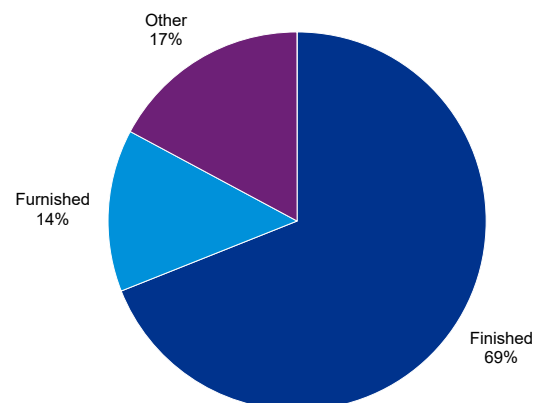
Source: KPMG Analysis

Figure 61: Properties under €95,300 by type



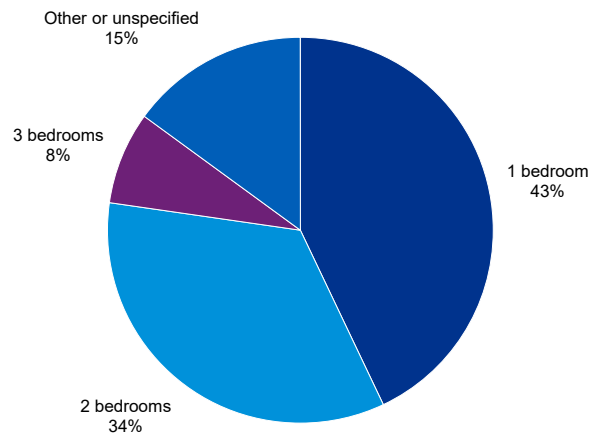
Source: KPMG Analysis

Figure 62: Properties under €95,300 by condition



Source: KPMG Analysis

Figure 63: Properties under €95,300 by number of bedrooms



Source: KPMG Analysis

this analysis, these findings may not provide an accurate portrayal of the market. However, the limited number of listings recorded at this price point is indicative of a shortage of supply within this segment of the market.

Couple both earning minimum wage

From the 13,473 listings which met our criteria, around 1,480 listings were priced under €117,000, approximately 11%. A few key highlights from our analysis of properties under €117,000 are listed below:

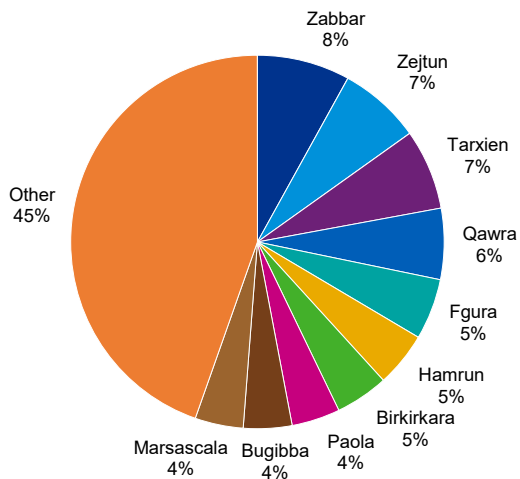
- 55% of all listings were concentrated in 10 localities, these being Zabbar, Zejtun, Tarxien, Qawra, Fgura, Hamrun, Birkirkara, Paola, Bugibba, and Marsascala.
- 68% of all listing were apartments, 15% were maisonnettes and 10% were penthouses.

- 43% of all listings were single bedroom properties, while 34% were for two-bedroom properties.

- The average asking price of all listings was €84,145.
- The average floor area of all listings was 75.93 sqm.
- The average price per sqm for apartments was around €1,302 per sqm and the average price per sqm for maisonnettes was around €1,196 per sqm. For comparison, the average price per square meter across our entire database (limited to listings recorded in 2016) was €1,707 for apartments and €1,489 for maisonnettes. This reflects that the cheaper apartments examined commanded around 76% of the value per square meter as the average property, while maisonnettes commanded around 80% of the value per square meter as the average property. This indicating that factors other than size, such as location or quality of finishes, may also contribute towards the lower price.

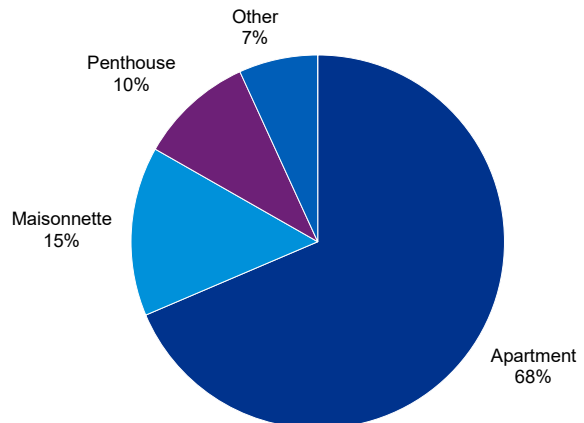
It is pertinent to note that due to the very small sample of properties which met the criteria for

Figure 64: Properties under €117,000 by locality



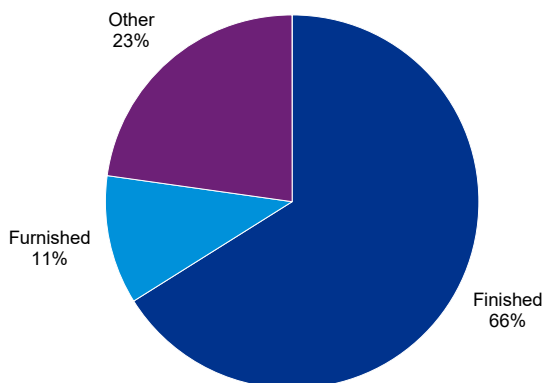
Source: KPMG Analysis

Figure 65: Properties under €117,000 by type



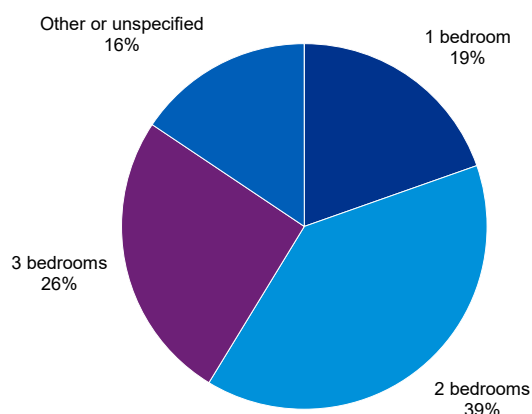
Source: KPMG Analysis

Figure 66: Properties under €117,000 by condition



Source: KPMG Analysis

Figure 67: Properties under €117,000 by number of bedrooms



Source: KPMG Analysis

- 66% of all listings were for properties in a finished condition, while 11% were for furnished properties. Other properties were mostly classified as either semi-finished or semi-furnished.
- 39% of all listings were two-bedroom properties, while 26% were for three-bedroom properties and 19% were for single bedroom properties.
- The average asking price of all listings was €102,128.
- The average floor area of all listings was 93.45 sqm.
- The average price per sqm for apartments was around €1,217 per sqm and the average price per sqm for maisonettes was around €1,244 per sqm. For comparison, the average price per square meter across our entire database (limited to listings recorded in 2016) was €1,707 for apartment and €1,489 for maisonettes. This reflects that the cheaper apartments examined commanded around 71% of the value per square meter as the average property, while the cheaper maisonettes examined commanded around 83% of the value per square meter as the average property. This indicates that factors other than size, such as location or quality of finishes, may also contribute towards their lower price.

Household expectations on accommodation

Housing affordability can also be an issue of expectations. In a time where the ever-changing lifestyle is putting new demands on what constitutes a necessary or essential good/service, turning wants into needs, the disposable income retained for housing and accommodation is being squeezed, despite across the board increases in incomes.

If a household decides to stick with a certain set of criteria when choosing a place of residence, then an affordability problem may exist. However, if such expectations are lowered (for instance widening the net of house search to include two-bedroom apartments instead of three-bedroom, or settling for a less sought-after locality) then affordable housing should not present a problem.

Some commentators also stated that they feel the IIP has caused a distortion in the market. The requirement for those seeking to apply for the IIP is to lease a residential immovable property at an annual rent of at least €1,333 per month. In effect, this has caused properties which were available for rent at around €900 per month, to be offered to such expats at a premium. In consequence, this inflated rental rates not just for €900 p.m. properties, but also for other entry level properties. This artificial increase in price has thus resulted in a rental mid-market crowding out.

Conclusions on housing affordability

In this section, we have computed a Housing Affordability Index (HAI) using primary data (sourced from the major banks in Malta) on, *inter alia*, coverage ratios, downpayment percentages, interest rates, and mortgage terms.

On the basis of these calculations, there is evidence to suggest that a couple earning the median income should not face a shortage of supply of properties within their budget – they would be able to afford a median priced apartment or maisonette. As long as the median price for property and median income continue to grow in line with one another, this dynamic should continue.

The same can be said for first time buyers. In fact, since median disposable income for a FTB is marginally better than that for the general population (the latter of which also includes young individuals and pensioners which depress the general median), housing affordability, specifically for apartments and maisonettes, is guaranteed.

In terms of the sensitivity of housing affordability to changes in pertinent variables, the following are worthy of note:

- Affordability is highly sensitive to interest rate changes. An increase of 50 basis points reduces the HAI by 6.2%, from 1.0235 to 0.9600 (HAI for apartments – 2016).
- Affordability is also sensitive to the number of persons taking out a loan. If 'number of persons' goes down to 1 (from the estimated 1.66), affordability goes down by 40%.
- The HAI was calculated on the basis of a

mortgage term of around 29 years. If the term goes up to 40 years (the maximum term as advertised by many of the major banks), the affordability goes up by around 22%.

We also considered affordability for specific groups of people, in particular single individuals on median income, and couples on minimum wage. In the light of the findings with respect to the affordability issue for low income earners and single persons, we argue that there may be evidence of a supply gap at the lower end of the market. This is because, from all property listings in our database, only 2.7% of property listings were affordable to a single median income earner (properties priced under €95,300). For a couple on minimum wage, this percentage goes up to 11% (properties priced under €117,000). This could constitute a basis for more detailed analysis of this segment, followed by the need of a socially-responsive strategy to address this matter, such as the recently introduced social home loans having favourable interest rates, a waiver of bank transaction fees, and full financing. This would allow low income earners to circumvent potential financial barriers, like the 10% downpayment requirement.

Apart from minimising barriers for low-income earners in accessing finance – through Government backed social loans offered by a selection of participating banks for instance – affordability can also improve by increasing supply of housing and relieving some pressure on the sustained price increments. This can be done in a number of ways, for example, through the Malta Development Bank to finance affordable housing, or through schemes to shift 'vacant' properties back to the supply stock (see section on vacant properties).





5

Property market analysis

5.1 Industry players

5.1.1 Profile of industry players

In order to build a high-level profile of the industry and its players, we identified 12 main activities which are closely related to the industry. These are:

- Quarrying
- Development
- Construction
- Real estate
- Turnkey
- Investors
- Finishes
- Manufacturing of construction materials
- Landscaping
- Joinery
- Renting
- Infrastructure

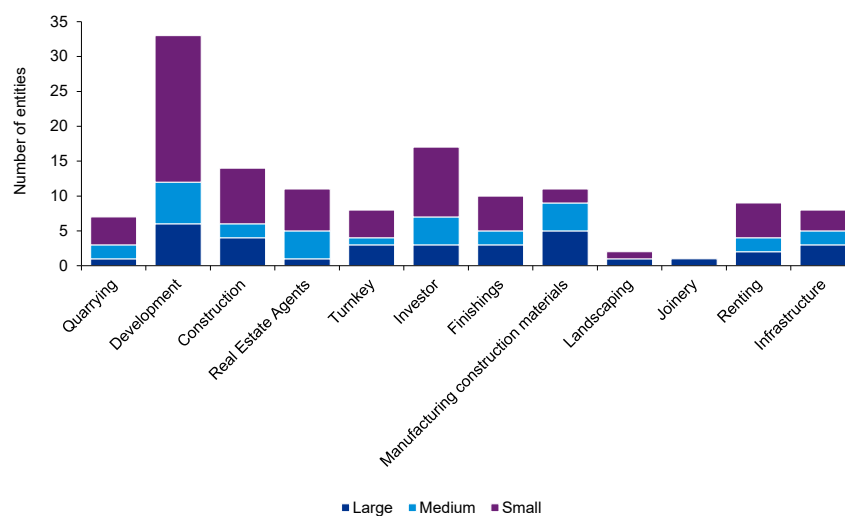
A sample of 50 members of the Malta Developers Association was selected and categorised by the main focus of their business activity. Several cases in our sample carried out a breadth of activities and were found to fall under a number of the identified categories. For this reason several entities in our sample appear in multiple categorisations.

We also sought to differentiate between the members sampled by relative size of each operation on the basis of the value of the respective asset base. Each entity was categorised as either Small, Medium or Large in line with EU recommendation 2003/361⁴³.

Data was sourced from the latest available audited financial statements filed with the Registry of Companies. In most cases, financial statements for the financial year ended 2015 were available with few exceptions, where availability of audited financial statements was limited to the financial year ended 2014.

As a result of this categorisation, our sample contained 33 small firms, 11 medium firms and 6 large firms.

Figure 68: Key market players within the industry by type of activity



Source: Malta Developers Association, KPMG Analysis

A few interesting statistics regarding our sample:

- The total combined asset value for all 50 firms is €804,561,861
- The 6 Large firms represent 12% of the sample, but own 63% of the total assets.

⁴³Small – Balance sheet total less than or equal to €10 million; Medium – Balance sheet total less than or equal to €43 million; Large – Balance sheet total greater than €43 million.

5.1.2 Developer intention and property stock situation

Most of the key stakeholders consulted are of the opinion that the market can sustain a healthy growth over the next 2 to 3 years. However, none of them expect the market to deteriorate, particularly since the local property market has, over the years, demonstrated resilience to shocks.

Given these future expectations of the market, the majority of contractors and developers, especially those considered as established players, informed us that their intention was to monitor the situation closely and exert a greater level of caution, planning and thoughtfulness in upcoming dealings.

With respect to the property stock situation, it is evident that few developers keep a high level of property stock. Demand is so strong, both for residential and commercial space, that it is not uncommon for properties to be sold on plan.

5.1.3 Extent of bartering

Our consultations also reveal that bartering of properties (as a means of payment in kind) is still common in the industry, but in recent years fewer transactions are being carried out on this basis. Bartering usually takes place when contracting parties are facing cash-flow problems, and as such, it is not a common practice in times of an industry boom like the one being experienced, especially when property is being sold on plan and customers are part-financing construction through down payments. Bartering provides the obvious cash flow advantage, but there are downsides as well. For instance, we were made aware that when parties exchange property for construction materials, no discount on such materials are given. Furthermore, those parties bartering property for materials would be forgoing the opportunity to sell that property at a higher price in the future (particularly since property prices would have gone up in the period between project inception and construction until project completion).

There might also be a risk of project delay and disruption when two cash-strapped parties engage in bartering to proceed with a project, only to encounter liquidity problems to see the project to completion. This would typically result in properties being placed on the market at reduced prices in the hope of faster closure to alleviate cash flow, with the consequence of further downward price pressures on other over/underlying properties, perhaps even adjacent ones.

In terms of the effects of bartering on property prices, there is a dual effect which works in opposite directions. When property is being

exchanged for construction materials, the tendency is for construction materials to go up in price (since no discounts are being offered), and this pushes up property price. On the other hand, when bartering takes place due to liquidity problems, property owners would try to liquidise quickly, thus pushing the price downwards.

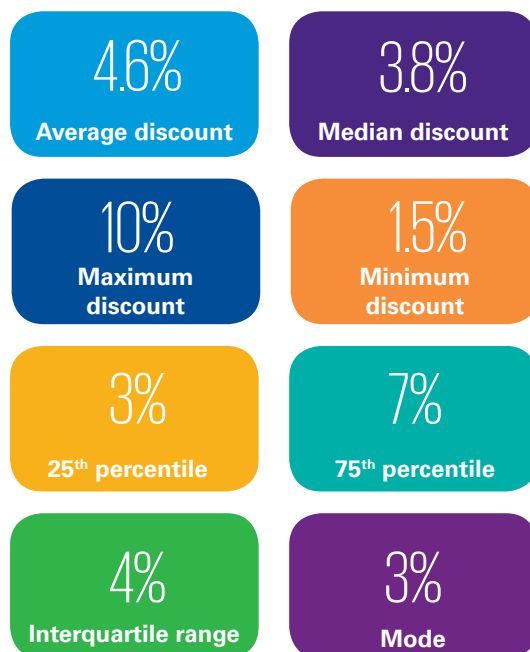
5.1.4 Negotiated discounts

It is common knowledge that purchasers of real estate are expected to negotiate (downwards) on the asking price, giving rise to a gap between advertised and contracted prices. In general, there is usually an inverse relationship between the extent of negotiated discount and the strength of demand for property. In times of subdued demand, buyers have a stronger bargaining position. However, on the other hand, if demand is strong, the bargaining power rests with the seller. Discussions with developers and contractors have shed light on the fact that sellers are now more steadfast in their approach to pricing, and employ a 'take it or leave it' tactic. In extreme cases, buyers bid up the price in order to secure the property.

This does not mean that discounts aren't still being given on the sale of property. However, sellers take this into account, and mitigate this through inflated asking prices in order to minimise the impact of negotiations on expected returns.

Discounts are also affected by other factors, especially in the rental market. Factors like the contract term and payment schedule can affect the extent of discount being given.

The following metrics have been computed on the basis of data elicited from MDA members consulted:



5.2 Property prices – Property for Sale

5.2.1 Price sensitivity and trends in listed prices

5.2.1.1 The data

KPMG maintains a database of real estate prices which is updated on an annual basis. This database contains information sourced from the websites of major estate agents, including, where available, the type of property, location, floor area (internal and external), number of bedrooms and bathrooms, any views, the condition of the property, and the asking price. Entries in the database are marked with the year during which they were recorded.

For the purposes of this analysis, data points collected between 2011 and 2016 were first collated and judgement was used in order to remove some clear outliers. The resulting dataset contained a total of almost 80,000 data points. From these, 19,421 data points were recorded during 2016⁴⁴.

5.2.1.2 Main highlights

Properties by type

For 2016, 11 types of properties were analysed.

These are:



Farmhouses



Plot/Site/Land



Terraced houses



Palazzos



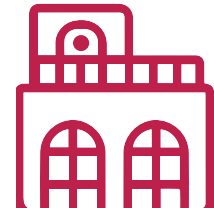
Apartments



Villas



Town houses



Penthouses



Bungalows

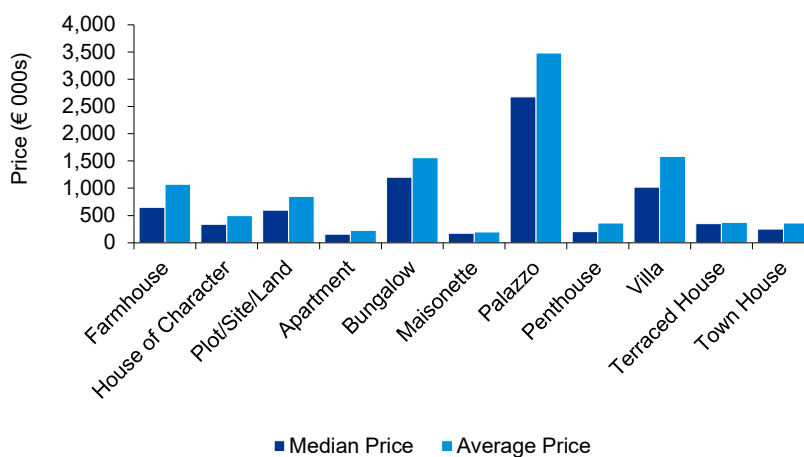


Maisonettes



House of character

Figure 69: Market prices by type of property



Source: KPMG Analysis

⁴⁴Note that there could be instances where the same property is listed more than once under different agents.

The following high level observations could be made:

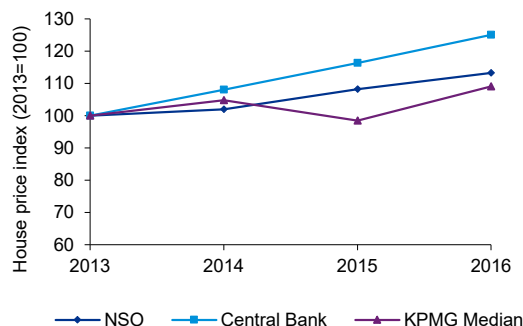
- Palazzos are by far the most expensive type of property on the local market. There is a highly limited supply and it may sometimes take years for such a property to be either purchased or be taken off the market. Due to the exceptional nature of this type of property, the average and median price (€3.48 million and €2.68 million respectively) is very much subject to the specific examples on sale at any given point in time.
- Maisonettes and apartments are the most frequent types of property available. Our dataset for 2016 contained 9,357 apartments, and 2,865 maisonettes. Maisonettes appear to be cheaper on average, however the median price for an apartment is slightly lower. It is likely that this is due to the presence of high-end apartments which inflate the average price for that type of property. The maximum asking price recorded for an apartment was in the region of €5.80 million, while the maximum asking price recorded for a maisonette was around €1.90 million. In 2016, the average price of an apartment was €227,925 with a median of €154,997. For maisonettes, the average price

was €197,308 with a median of €172,000.

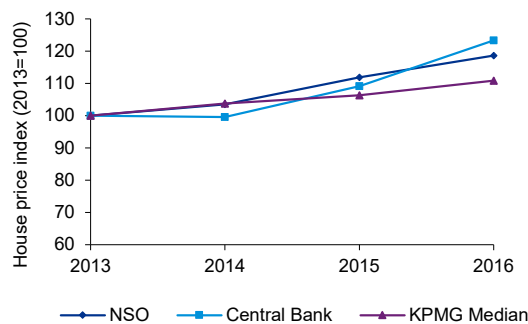
- For most types of property, the distribution of prices observed, indicates that the majority of listings tend to be concentrated towards the lower end of the market, with small volumes of listings at the higher end. Exceptions to this rule are maisonettes and to a lesser degree terraced houses, which feature a more normal distribution of list prices.
- In general, property prices show a tendency to increase year-on-year, though the extent to which this happens varies by type of property.
- When comparing the trend in prices from the KPMG database to other property price indices prepared by the Central Bank of Malta and the NSO, one can note that in recent years the three measures tend to diverge away from each other, with KPMG's index showing property prices as being lower than the indices prepared by CBM and NSO. Reasons for this variance may be attributed to, amongst other factors, differences in sample size and differences in collection methodologies. There is also a 'delay effect' which comes into play – the KPMG data and Central Bank data both use advertised prices, whilst NSO uses contracted prices sourced from the Inland Revenue Department.

Figure 70: Comparison of house price indices

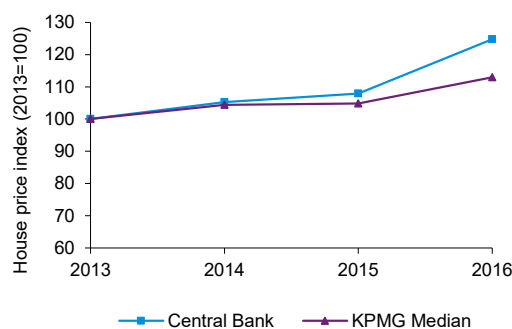
Comparison of house price indices - Apartments



Comparison of house price indices - Maisonettes



Comparison of house price indices - Terraced Houses



Source: NSO, Central Bank of Malta, KPMG Analysis

Regional variations

Location is a critical variable for property value. Our database shows that the most expensive region is the Northern Harbour region, while the South of Malta is the cheapest (refer to regional definitions in Appendix 3 of this report). The database also reveals differences in the availability of property in different regions. During 2016, over 5,500 listings in the South were recorded, while less than 500 listings were recorded in the Grand Harbour region. The database also shows that in general property prices tend to follow an upward trend in most regions with the exception of Gozo.

Distribution of property types by region

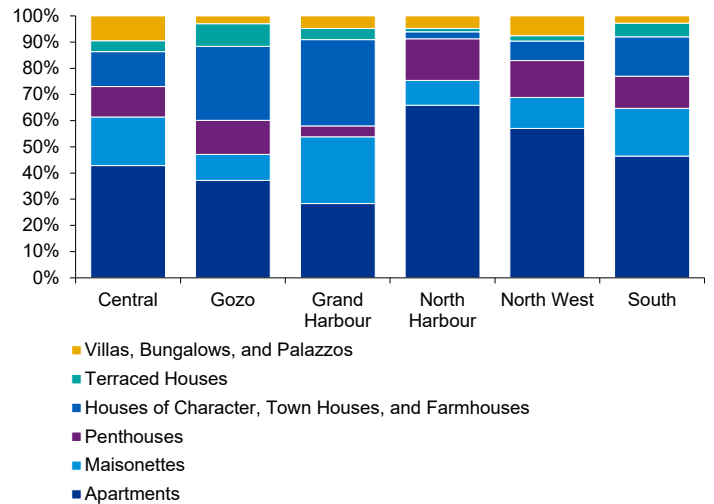
An analysis of the distribution of property types across different regions of the country provides some insight into the different characteristics of each region.

The analysis, carried out for listings recorded in our database during 2016, reveals that apartments are likely to be the largest category of properties for sale in most areas. This is definitely the case in the North Harbour region where apartments and penthouses represent around 80% of the properties for sale. The Central and South regions tend to be more in line with the average split of properties across the country, with apartments and penthouses making up slightly around 53% and 57% of all properties respectively.

By contrast, the Grand Harbour region and Gozo have a more traditional offering, with houses of character, town houses and farmhouses comprising 33% and 27% of properties for sale.

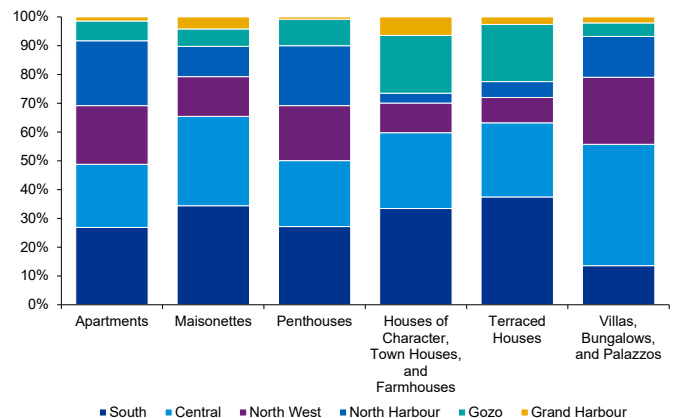
Another aspect of this analysis considers the proportion of each type of property found in each region.

Figure 71: Regional mix of properties for 2016



Source: KPMG Analysis

Figure 72: Proportion of property types by region for 2016



Source: KPMG Analysis

From this perspective, one can note how apartments and penthouses can be found in similar volumes across most regions with the exception of Gozo and the Grand Harbour. This analysis also reveals a relatively low volume of villas, bungalows and palazzos in the South, and relatively high volumes in the Central and North West regions.

The previous analysis identifying Gozo and the Grand Harbour as the main regions for the availability of houses of character, town houses and farm houses holds true. The very small volume of these properties in the North Harbour region further reinforces this region's image as Malta's metropolitan hub.

Real estate developments

The Maltese Islands feature a number of premium real estate developments. Results from our database show that property prices in these developments are on average significantly higher than those properties located outside of developments. The two developments which, during 2016, commanded the highest prices for property, were Tigne and Portomaso.

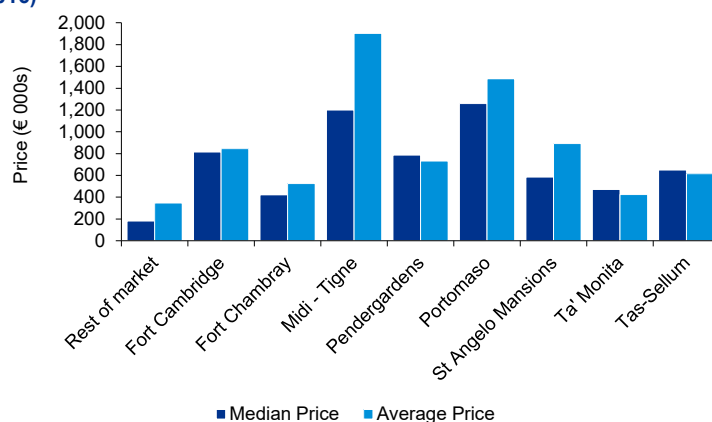
5.2.1.3 Apartments

Listings for apartments represent nearly half of the total number of data points collected during 2016. Over the past few years, the average price of apartments in Malta has risen from around

€195,000 to around €228,000, an increase of about 17%. The median price has risen from just over 142,000 to around 155,000 in the same time period, an increase of around 9%.

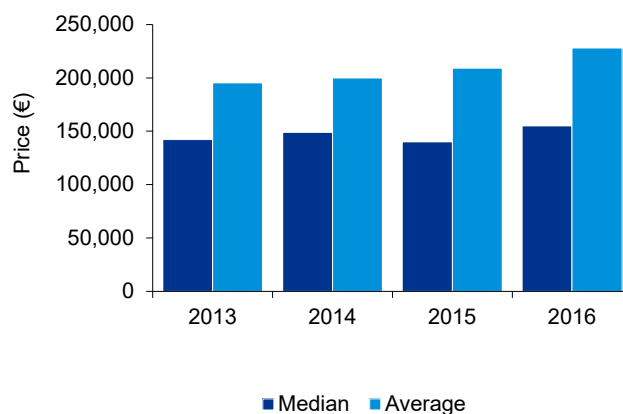
Looking at the distribution of apartment prices, one can note that between 2013 and 2016, no significant change has occurred. The vast majority of apartments in Malta and Gozo are priced at between €100,001 and €200,000. Availability declines rapidly at lower or higher price ranges, although a small niche market has emerged for apartments which are worth over €900,000.

Figure 73: Market prices for properties forming part of a project (2016)



Source: KPMG Analysis

Figure 74: Market prices for apartments



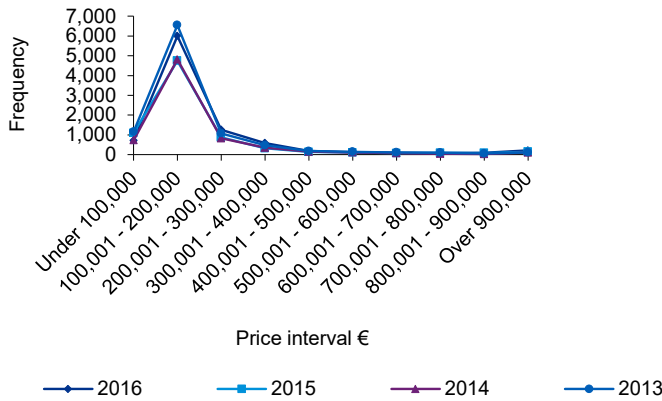
Source: KPMG Analysis

5.2.1.4 Maisonnettes

The market for maisonnettes has been relatively stable over the past few years, displaying only a slight upwards trend in prices. Between 2013 and 2016 the average price for a maisonnette appears to

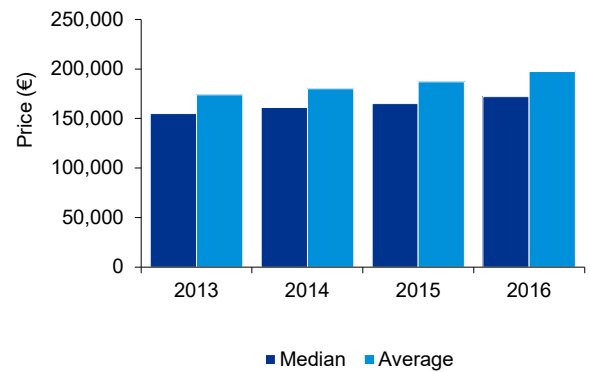
have increased by approximately 14% from around €174,000 to around €197,000. The median price of maisonnettes has risen by approximately 11% during the same period, from around €155,000 to around €172,000.

Figure 75: Distribution of apartment prices



Source: KPMG Analysis

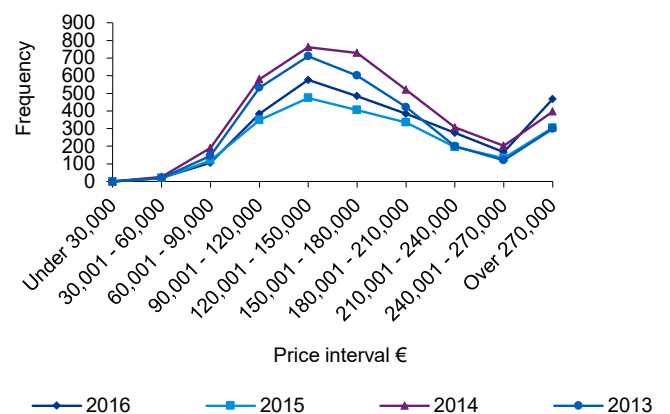
Figure 76: Market prices for maisonnettes



Source: KPMG Analysis

One also notices that the market for maisonnettes shows close proximity between the prices for the median and average property. This indicates that the availability of properties in this category tends to follow a normal distribution, with most units carrying an asking price close to the average. This being said, our database indicates that there appears to be a growing supply of maisonnettes priced above €270,000. These properties appear to primarily be both larger than average and also located in localities which tend to command a higher price, the quality of finishes and furnishing may also be a factor.

Figure 77: Distribution of maisonnette prices



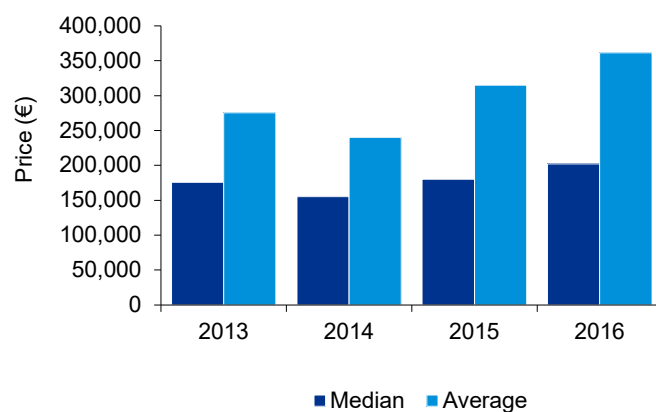
Source: KPMG Analysis

5.2.1.5 Penthouses

The market for penthouses appears to be more volatile than that for apartments and maisonettes, especially in terms of average price. Between 2013 and 2016 the average price for a penthouse increased by 31% from around €275,000 to around €361,000. In terms of median price, this has increased by 15% during the same period from around €175,000 to around €202,000. This disparity between trends for average and median price indicates activity at the upper end of the market is likely having a significant effect of the average price.

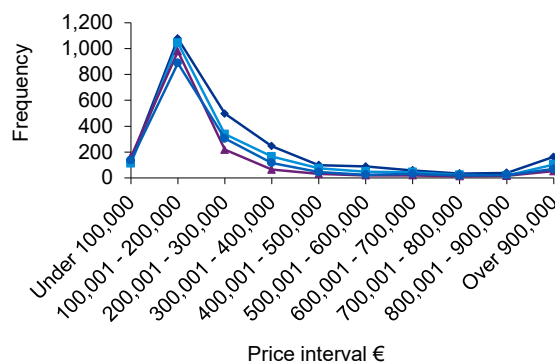
The price distribution for penthouses is rather similar to that for apartments, in that the distribution is skewed significantly to the left. The vast majority of penthouses recorded during 2016 appear to have been available for between €100,001 and €200,000. There is however a growing supply of penthouses priced at over €900,001. It is most likely that these premium offerings are the cause of the significant gap between the average and median prices of penthouses.

Figure 78: Market prices for penthouses



Source: KPMG Analysis

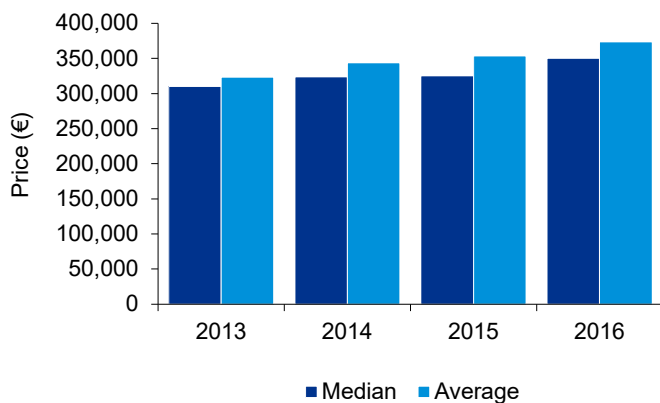
Figure 79: Distribution of prices for penthouses



Legend: 2016 (dark blue), 2015 (light blue), 2014 (purple), 2013 (blue)

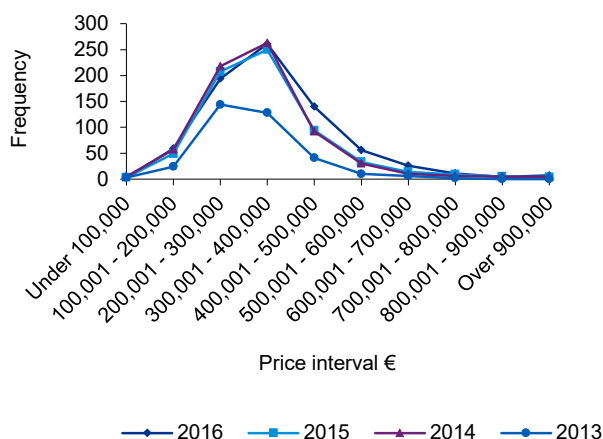
Source: KPMG Analysis

Figure 80: Market prices for terraced houses



Source: KPMG Analysis

Figure 81: Distribution of prices for terraced houses



Legend: 2016 (dark blue), 2015 (light blue), 2014 (purple), 2013 (blue)

Source: KPMG Analysis

5.2.1.6 Terraced Houses

Terraced houses have displayed a steady growth in prices over the past few years, with the gap between median and average prices remaining relatively small. Between 2013 and 2016 the average price of a terraced house increased by 16% from around €323,000 to around €374,000, while the median price increased by 13% from around €310,000 to around €350,000.

The price distribution for terraced houses appears to be skewed slightly to the left, indicating the presence of a few more high-value properties on the market.

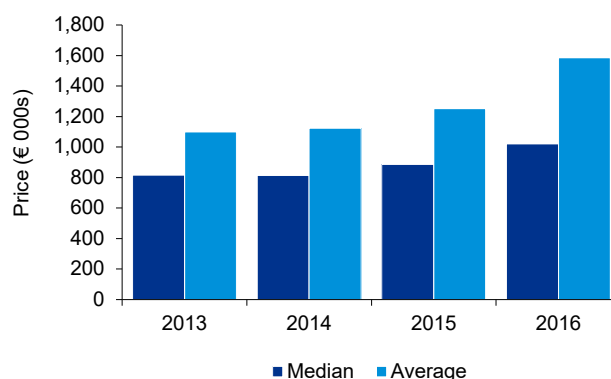
Nevertheless the largest price bracket recorded during 2016 appears to be for properties priced between €300,001 and €400,000. While the supply of properties above this price range still appears to decline rapidly as price increases, the trend shows a growth in the number of terraced houses available at higher prices over the years.

5.2.1.7 Villas

The price of villas appears to have begun to rise appreciably only very recently, following a period of relatively stable prices. The average price of a villa has increased by 44% between 2013 and 2016, with most of that increase occurring in 2015 and 2016. During this period, average price increased from around €1.10 million to around €1.59 million. During the same period, the median price of a villa has increased by 25% from around €0.81 million to around €1.02 million. Most of this increase appears to have taken place during 2016.

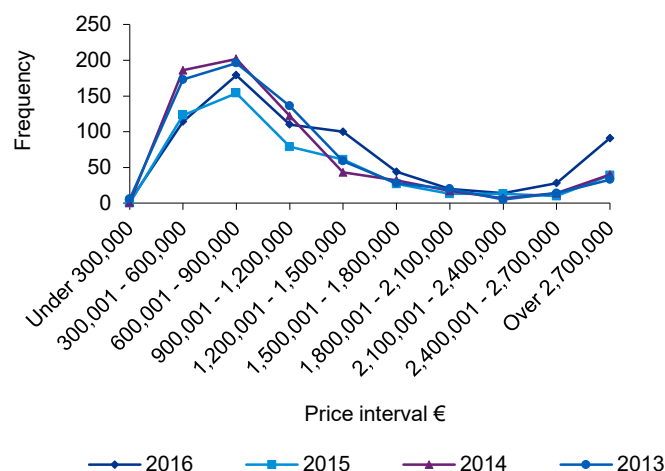
The price distribution for villas tends to be skewed towards the left, with the widest bracket recorded during 2016 for properties priced between €600,001 and €900,000. Given the intrinsically premium nature of villas, it is not surprising that there exists a supply of properties at the upper end of the market. The trend over time shows a steady increase in the number of properties available priced over €2,700,001. As some properties in this category often reach exceptionally high prices, it is likely that this end of the market is the primary factor influencing the gap between the average and median prices for villas.

Figure 82: Market prices for villas



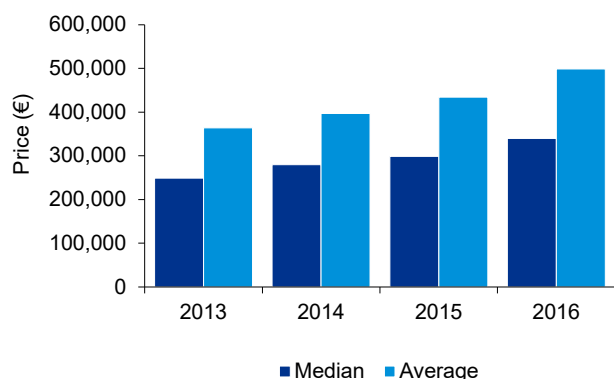
Source: KPMG Analysis

Figure 83: Distribution of prices for villas



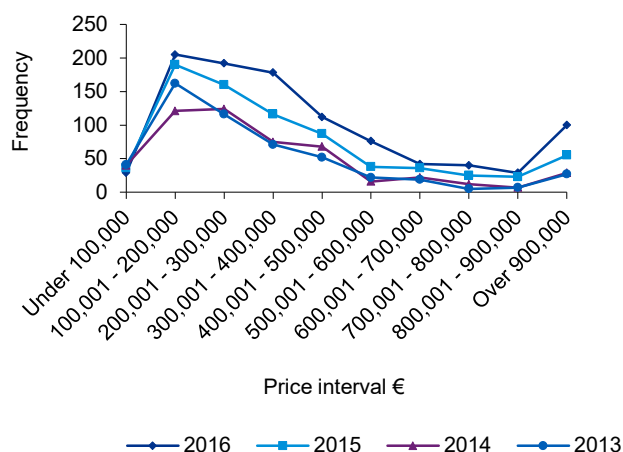
Source: KPMG Analysis

Figure 84: Market prices for houses of character



Source: KPMG Analysis

Figure 85: Distribution of prices for houses of character



Source: KPMG Analysis

5.2.1.8 House of character

Trends in the market for houses of character show steady growth in prices over the past few years. Between 2013 and 2016 both the average and median prices of a house of character increased by 37%, with average prices rising from around €364,000 to around €498,000, while the median price rose from around €249,000 to around €340,000.

The distribution for houses of character is skewed towards the left. Data shows that during 2016 a significant number of properties were available across three brackets ranging from €100,001 to €400,000. A market for premium properties also appears to exist in light of the increase in supply of properties priced above €900,000. The nature of houses of character is such that the condition of these properties can vary greatly hence accounting for part of the wide dispersion of prices.

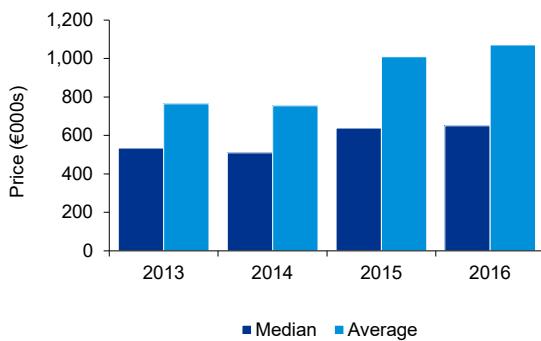
5.2.1.9 Farmhouses

The market for farmhouses appears to have taken a step up recently, with little change between 2013 and 2014, and little change between 2015 and 2016. Between 2013 and 2016 the average price of farmhouses increased by 40%, from around €765,000 to around €1,071,000. The median price for a farmhouse rose by 21% from around €535,000 to around €650,000.

The distribution of farmhouses is noticeably skewed to the left, with data recorded during 2016 showing the most common price range to

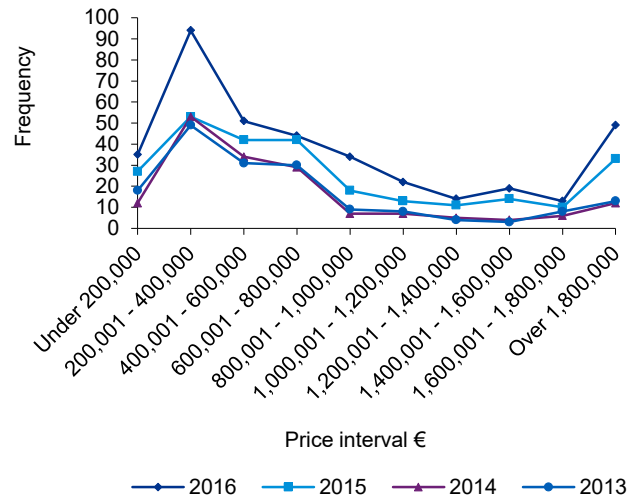
be between €200,001 and 400,000. A significant market also exists at the upper end of the market for properties priced above €1,800,000. Similarly to houses of character, the quality and condition of a farmhouse can have a significant effect on its market value. Additionally, the value of a farmhouse can easily be influenced by the size of land surrounding it, with rural properties which incorporate larger grounds commanding a premium.

Figure 86: Market prices for farmhouses



Source: KPMG Analysis

Figure 87: Distribution of prices for farmhouses



Source: KPMG Analysis

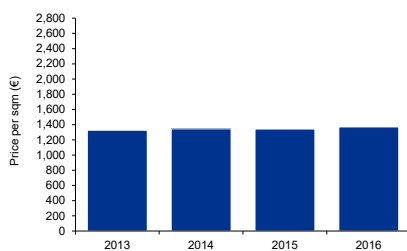
5.2.1.10 Regional differences

It will come as no surprise that the real value of property in Malta lies not in the structure itself, but in the land it is built upon. There exist significant

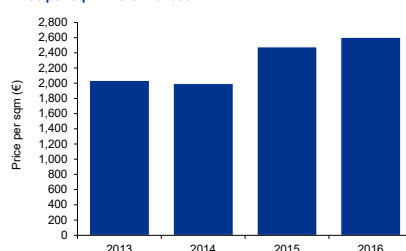
regional differences in the value of property across Malta and Gozo. The graphs below show the average price per square metre for a finished apartment in each region.

Figure 88: Average price per sqm by region

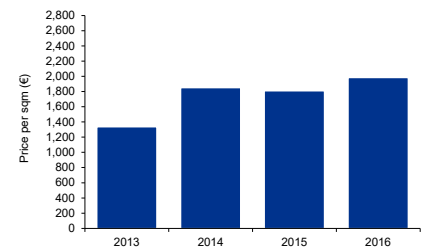
Price per sqm - Central



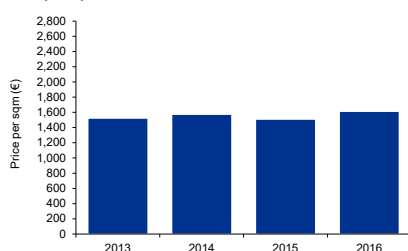
Price per sqm - North Harbour



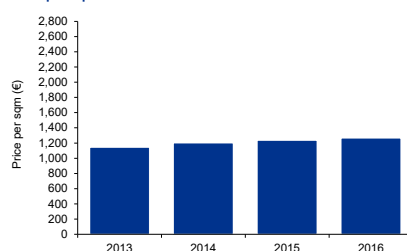
Price per sqm - Grand Harbour



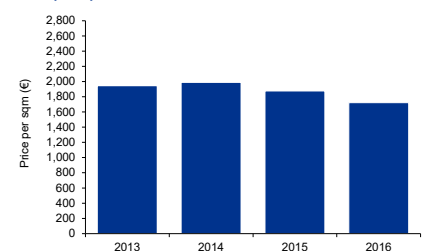
Price per sqm - North West



Price per sqm - South



Price per sqm - Gozo



Source: KPMG Analysis

One can note how the Central region has experienced steady growth over the past few years.

The North Harbour area, already a premium location, has continued to experience a rapid increase in prices, with the price per square meter exceeding €2,600 during 2016.

The South of the island has also seen a substantial growth in prices, moving from just over €1,100 per square meter in 2013 to over €1,260 in 2016.

Property prices in the North West region have remained relatively stable in recent years, fluctuating between €1,500 and €1,600 per square meter.

The Grand Harbour region has also seen significant growth, becoming a sought after niche area in recent years, with pricing indicating a premium status in the market. As of 2016, the average price for a finished apartment was approaching €2,000 per square meter.

Property in Gozo appears to go against the trend generally seen in other regions. Information from our database suggests that property prices in Gozo have fallen in recent years, with the price of a finished apartment in 2016 being, on average, around €1,720 per square meter. For comparison, during 2014, this price approached €2,000 per square meter. It is likely that the relative insularity of Gozo might serve to keep demand for new property at a lower level than in Malta.

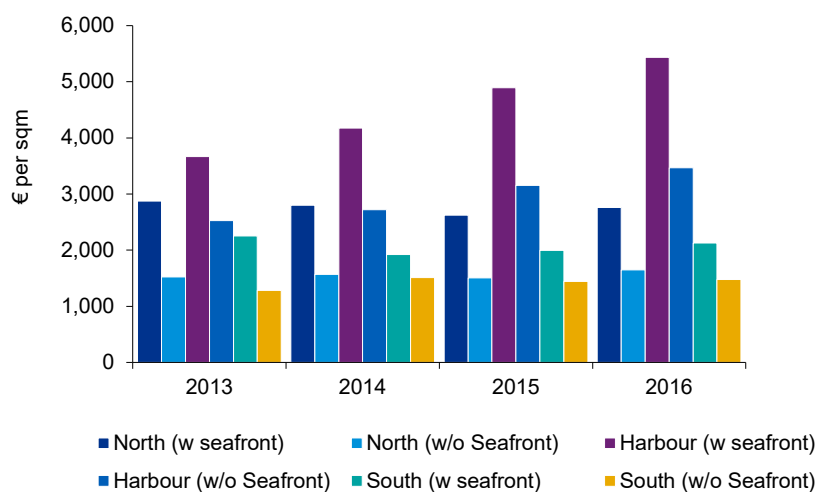
It should be noted that results for property in the Grand Harbour and Gozo regions should be viewed in the context of a relatively low sample size for these regions.

It seems reasonable to infer that both the influx of expatriates over recent years, and the major development projects undertaken around the Sliema / St Julian's locality, are related to the rapid increase in price of property per square meter in the North Harbour region. The market's dependence on a trend that is susceptible to changing economic conditions should prompt caution in this regard.

5.2.1.11 Seafront properties

Results from the analysis of our database suggest that seafront property is significantly more valuable than non-seafront property, as expected. In order to demonstrate this, we have considered property listed for sale in three areas. These are referred to below as 'North', which includes the localities of Bugibba, Qawra, and St. Paul's Bay; 'Harbour', which includes Sliema and St. Julian's; and 'South', which includes Marsascala, Marsaxlokk and Birzebbugia. The graph below presents the results for the three areas. During 2016, the average premium applied to asking prices for seafront properties over non-seafront properties was 68% in the 'North' area, 57% in the 'Harbour' area, and 44% in the 'South' area. The average premium across all three areas varied between around 53% and 70% between 2013 and 2016.

Figure 89: Value of properties with and without seafront



Source: KPMG Analysis

Table 19: Price per sqm for properties with and without seafront					
Locality	Seafront	2013	2014	2015	2016
		€	€	€	€
North	Yes	2,875	2,798	2,622	2,762
	No	1,522	1,566	1,506	1,648
	Premium	89%	79%	74%	68%
Harbour	Yes	3,665	4,174	4,894	5,432
	No	2,525	2,721	3,153	3,469
	Premium	45%	53%	55%	57%
South	Yes	2,251	1,920	1,996	2,126
	No	1,286	1,509	1,443	1,478
	Premium	75%	27%	38%	44%

Source: KPMG Analysis

It is pertinent to note that part of the reason why seafront property usually commands a premium may be due to the fact that these properties are being finished to a higher standard, or possess some other high quality features which may justify a significantly higher price than the average non-seafront property.

In fact, when a Hedonic regression was run on penthouse data to find exactly the extent to which seafront affects price, keeping all other factors (such as finishing, size, garage space etc.) constant, the premium was calculated to be 54%, which is slightly lower than the one previously reported⁴⁵.

Garage space

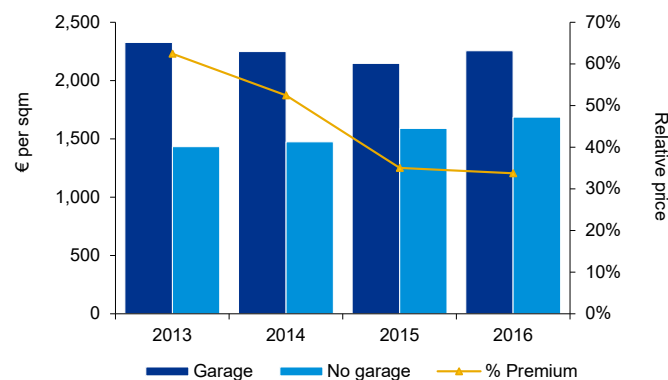
Garage space is typically sought by property buyers as a reserved parking space in the vicinity of their home. As at the end of 2015, NSO statistics show that there were almost 350,000 motor vehicles registered in Malta and Gozo. Naturally, the presence of so many vehicles in a country as small and densely populated as Malta contributes to both traffic congestion, and limited availability of parking spaces. Hence a garage is often seen as a

valuable addition to any property, as it guarantees the owner a parking spot, protects the vehicle from vandalism and inclement weather, and prevents an uncomfortably hot interior during the summer months.

Based on observations from our database, it is apparent that properties which include a garage of some size, carry a premium in terms of price per square meter over properties without a garage. In recent years, it can be seen that properties which include a garage command, on average, around 35% the price of properties without a garage.

Observations recorded during 2016 show that properties possessing between two and four garage spaces generally command the most significant premium in terms of price per square meter. It is worthwhile noting, that while a garage undoubtedly adds value to a property, other factors may also influence these results. Properties which include garage space may be superior to properties which do not in other ways, which may account for some element of the price premium.

Figure 90: Price per sqm for properties with and without a garage



Source: KPMG Analysis

⁴⁵Hedonic equation with log of asking price regressed on a number of quantitative and qualitative regressors. R-squared of 0.75, with n=690.

5.3 Property prices – Property for Rent

5.3.1 The data

The database for the rental market is much thinner than the one for properties for sale. This is to be expected, given a) the speed with which properties for rent are being rented out (usually within minutes of being put on the market, as remarked by a real estate agency during consultations) and b) the relative supply scarcity of such properties vis-à-vis the surging demand.

Despite this, the database is still healthy, with a total of 20,257 observations across 4 years and across various localities. This enables us to elicit some key summary statistics for the rental market.

5.3.2 Average asking rates - apartments

Mostly driven by expats, rental rates have seen rapid growth in recent years. The trend is for properties around the Sliema and St. Julian's area

to be rented out to working expats, and priced according to their ability to pay. During consultations with real estate agencies, we were made aware that in some instances, rental rates are increased in a bidding war between potential tenants.

The following table and graph show the increase in rental rates between 2013 and 2016. Gozo has been excluded from this analysis due to a limited sample size.

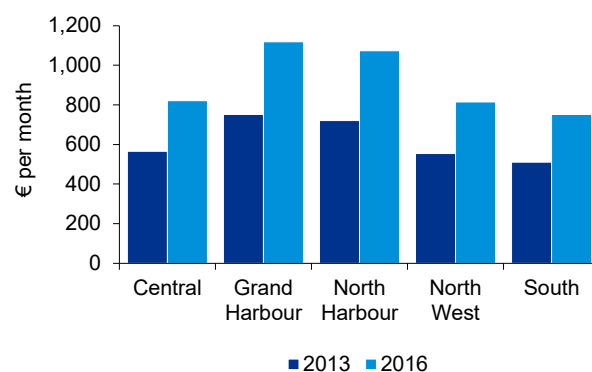
Growth in rental rates appears to have been relatively consistent between different regions, varying between 45% in the Central region and 49% in the Grand Harbour and North Harbour regions. These two regions also command the highest average rental prices in Malta, with the average monthly rent being around €1,074 per month in the North Harbour and around €1,118 per month in the Grand Harbour. The cheapest region for apartment rentals remains the South, with average rates of around €750 per month.

Table 20: Apartment rentals, price per month

Table 20: Apartment rentals, price per month			
	2013	2016	Change
	€	€	
Central	565	822	45%
Grand Harbour	751	1,118	49%
North Harbour	721	1,074	49%
North West	554	814	47%
South	511	751	47%

Source: KPMG Analysis

Figure 91: Apartment rentals by region, price per month



Source: KPMG Analysis

5.3.3 Average asking rates - penthouses

In the case of penthouses, data is much more limited, with a total of just over 3,700 observations. However, some high-level trends can still be elicited. As expected, penthouses command a premium over apartments, with such a premium looking more pronounced in the Grand Harbour and North Harbour regions. With respect to growth in rental rates between 2013 and 2016, this was less than that registered for apartments, varying between 14% in the North Harbour region, and 59% in the Grand Harbour region.

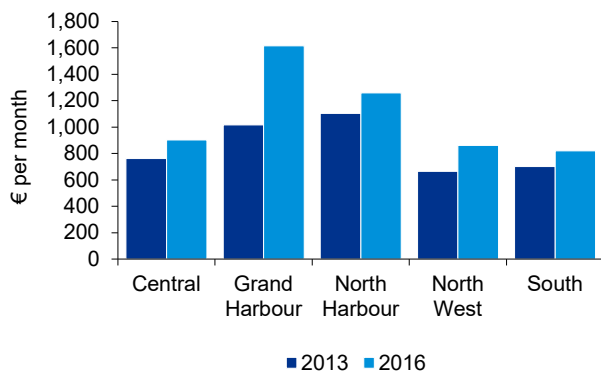
5.3.4 Inflation in the rental market

A closer analysis of rental properties listed in the KPMG database indicates the relative frequency of properties at different price points across the country. Between 2013 and 2016 the largest bracket of rental properties remain those priced at between €401 to €800 per month, although the relative size of this bracket has fallen from around 68% of the sample in 2013 to around 53% of the sample in 2016.

Table 21: Penthouse rentals, price per month			
	2013	2016	Change
	€	€	
Central	762	904	19%
Grand Harbour	1,015	1,616	59%
North Harbour	1,103	1,258	14%
North West	666	862	30%
South	700	819	17%

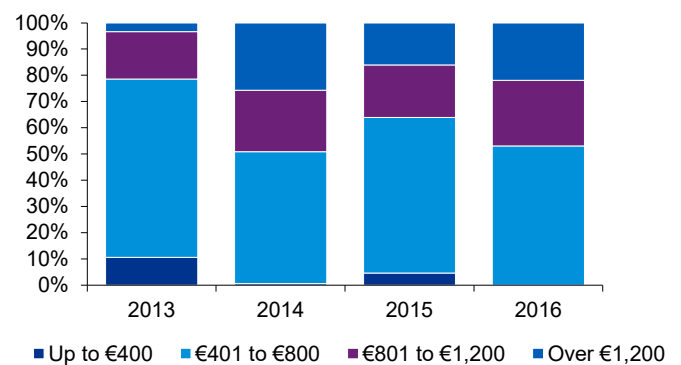
Source: KPMG Analysis

Figure 92: Rental prices for penthouses by region



Source: KPMG Analysis

Figure 93: Composition of rental market by rate per month



Source: KPMG Analysis

Listings for properties priced under €400 per month were proportionately highest in 2013 at 11% of the sample, while no such listings were included in the 2016 sample, suggesting that such properties would be difficult to find on the market today. There has been significant growth in the two upper brackets. Properties priced at between €801 to €1,200 per month constituted 18% of the sample during 2013, with this growing to 25% of the sample in 2016. Properties priced over €1,200 per month constituted 3% of the sample in 2013 and 22% of the sample in 2016.

As such it appears that the present trend within the rental market is such that higher-priced properties are becoming more prominent and now represent a larger proportion of the market than they did a few years ago. Inflation in the rental market should be carefully monitored, as a shortage of affordable properties would negatively impact low-income households who are unable to put together the necessary savings to afford the downpayment required by a bank for a mortgage. Additionally, rising rental prices will also be problematic for expatriate workers in low-paid occupations who must find permanent accommodation from day one of their arrival in Malta.

5.4 Supply gaps

Stakeholder consultations carried out throughout the course of our project indicated that there is a supply shortage for specific properties in certain localities across Malta. In particular, a number of real estate agents highlighted that there is a growing demand for two and three bedroom apartments in central areas such as Sliema, Ibragg, Swieqi, St. Julians, Mosta, Attard, and Balzan. This increase in demand is causing a supply shortage in the market, and in response prices are pushed up to adjust for the disequilibrium in the market.

Stakeholders also highlighted that properties within the €100,000 - €150,000 price range are in high demand, and due to their limited supply, market forces are continuously pushing prices for properties upwards, making it even less affordable for certain segments of the population. Consultations indicated that supply is also

increasing in other central localities such as San Gwann. However, demand for two/three bedroom apartments in the €100,000 - €150,000 price range is not being fully satiated.

Using the sample of property listings for 2016 gathered by KPMG, it can be noted that 32% of the properties available in the market are three-bedroom apartments, followed by maisonettes, penthouses and two-bedroom apartments. This data set suggests that the highest number of available properties in the Central region are three bedroom apartments, with the exception of a number of localities which typically have their own property characteristics (such as Birguma, San Pawl tat-Targa).

Similarly, most of the properties available for sale in the northern harbour region are two and three bedroom apartments followed by maisonettes. A notable case in point is San Gwann, Sliema, Pieta', St. Julians, Ta' L-Ibragg and Ta' Xbiex where a three bedroom apartment is the most common type of property available on the market as at 2016. This high supply availability could be indicative that properties in these areas are on the high side in terms of price, and they are considered to be less affordable for the median income household.

Furthermore, there also seems to be similar market disequilibrium in the rental market. Stakeholders highlighted that supply shortages exist in all areas for rental properties in the €400 - €700 per month range. Similarly, there is a lack of properties available to satisfy the demand for "high-end" rental properties that typically charge around €3,500 per month. On the other end of the spectrum, consultations indicated that properties which are rented out at around €1,500 - €3,000 a month are in high supply and demand for such rentals is low, particularly since Maltese families would not typically afford such rates. This pattern may be attributed to the fact that supply may have outstripped demand, with the latter coming mostly from a certain segment of expats (which excludes that segment demanding premium property rented at over €3,500 per month). For more detailed statistics, see Appendix 4.

5.5 Commercial property

5.5.1 The data

In this section, the aim is to present an analysis of the major trends in property prices for commercial property. The analysis will focus specifically on offices and retail properties available for rental as well as for sale.

A total of just under 11,000 relevant listings for rental properties were found within the database, and just over 4,200 listings were found for commercial properties available for sale.

5.5.2 Commercial property available for rent

The majority of commercial property on the market is available on a rental basis rather than being offered for sale. Recent years have seen an increase in demand for commercial space, especially offices. This is likely due to the recent influx of foreign investment and the growth of industries such as gaming and financial services.

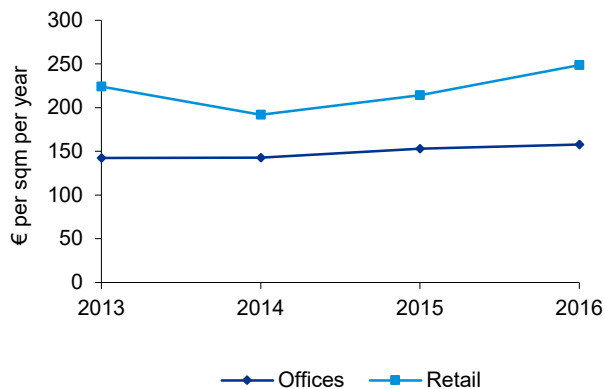
Over the past few years, the average cost for office space rent and retail property has increased by

around 11% for both categories. The average rate for the rental of office space has increased from €142 per sqm per year in 2013, to around €158 per sqm per year in 2016. With regard to retail property, the increase has been from around €224 per sqm per year to around €249 per sqm per year.

Taking a closer look at the rates for office space, one can note that there appears to be a trend for increasing prices in all regions. The South experienced some growth up until 2015. However, rates appear to have declined slightly during 2016. Data for Gozo was not considered reliable due to an exceptionally small sample size.

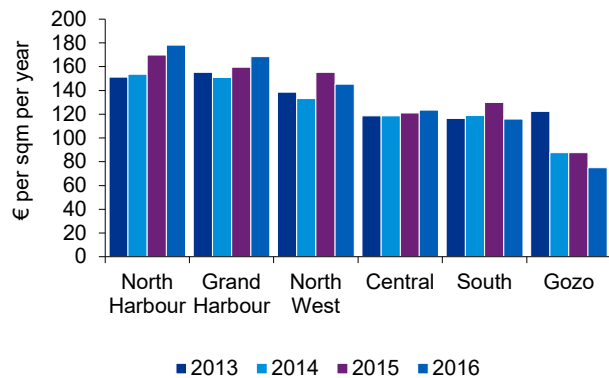
Rental rates for office space in the Northern Harbour region have been the highest in the country for the past few years. On average these have increased from around €151 per sqm per year in 2013 to around €178 per sqm per year in 2016 - an increase of 18%. Property in the Grand Harbour region has also performed well, with rates increasing from around €155 per sqm per year in 2013 to around €168 per sqm per year in 2016 - an increase of 8%.

Figure 94: Average rental rates for commercial property



Source: KPMG Analysis

Figure 95: Rental rates for offices by region



Source: KPMG Analysis

The situation is different when one looks at retail property. Rental rates in 2016 were lower than in 2013 in the North West, and the South, while rates increased in the Grand Harbour region, the Central region and the Northern Harbour region. Data for Gozo was not considered reliable due to an exceptionally small sample size.

The most expensive region for retail property, by far, appears to be the Grand Harbour region, with rates moving from around €382 per sqm per year in 2013 to around €459 per sqm per year in 2016. This is followed by the Northern Harbour region where rental rates have risen from around €276 per sqm per year to around €296 per sqm per year.

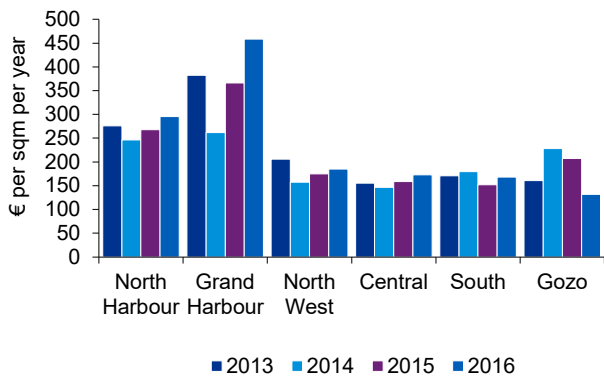
An analysis of the location of the properties in the database recorded during 2016 shows that the

highest proportion of both office and retail property can be found in the Northern Harbour region, followed by the Central region. The Grand Harbour region represents a greater proportion of office space than the South. However, the South region represents a greater proportion of retail listings. Negligible listings for office space were found in the North West.

5.5.3 Commercial property available for sale

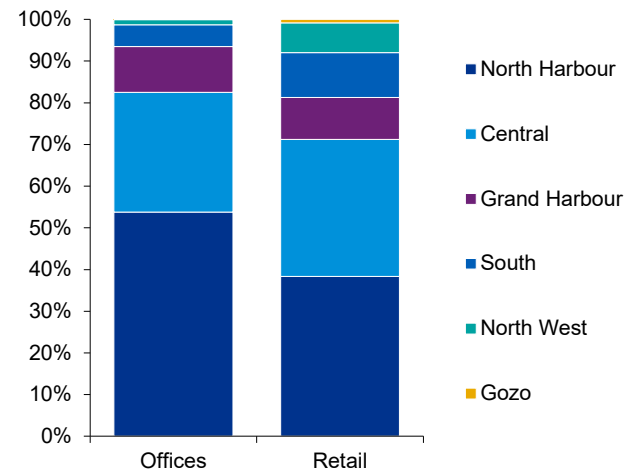
It was noted that a smaller sample of commercial properties were available for sale rather than rental. As a result of a very small sample of properties found for sale in Gozo, it has been excluded from certain aspects of this analysis.

Figure 96: Rental rates for retail property by region



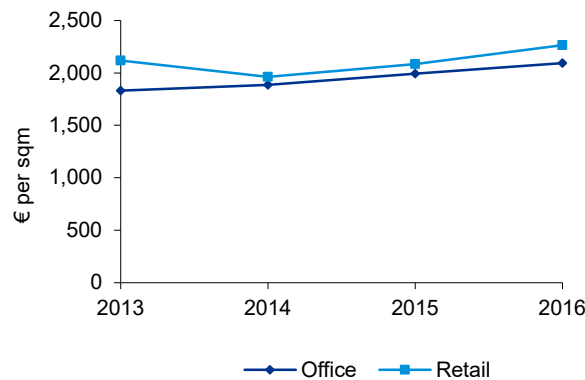
Source: KPMG Analysis

Figure 97: Availability of commercial property for rental



Source: KPMG Analysis

Figure 98: Average asking prices for commercial property



Source: KPMG Analysis

As has been seen with the market for residential property, over the past few years the asking prices for commercial properties available for sale have increased. Pricing for office space has increased from around €1,832 per sqm to around €2,093 per sqm, an increase of around 14%. Pricing for retail space has increased from around €2,119 per sqm to around €2,264 per sqm, an increase of around 7%.

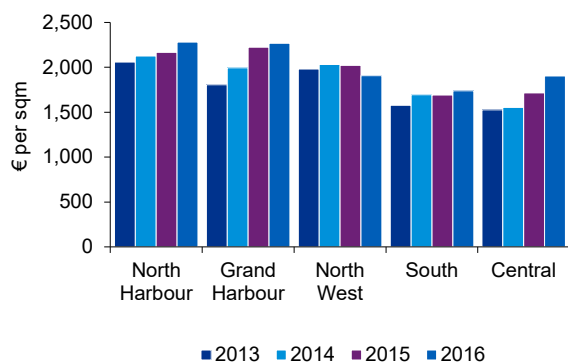
Over the past few years, the asking prices for office space have seen growth in all regions except for the North West, which has seen a small decline of around 4%. Prices for office space have remained highest in the North Harbour region, increasing from around €2,059 per sqm in 2013 to around €2,281 per sqm in 2016, an increase of 11%. The Grand Harbour region has seen stronger growth but still remains cheaper than the North Harbour. Office space here has increased in price from around €1,807 per sqm to around 2,267 per sqm in 2016, an increase of 25%. The Central region saw similar growth, with the asking prices for office space rising from around €1,526 in 2013 to around €1,904 in 2016.

As with the rental market, retail property for sale in the Grand Harbour region commands a higher

average price per sqm than property in the North Harbour region. The Grand Harbour region has also seen higher growth in asking price for retail property in the past few years than the North Harbour region. Prices have risen from around €2,377 per sqm in 2013 to around €2,868 per sqm in 2016, an increase of around 21%. In the North Harbour, the increase has been from around €2,386 per sqm in 2013 to around €2,542 per sqm in 2016, an increase of 7%. It is also interesting to note the growth in asking prices for retail property in the South. Prices have increased from around €1,767 per sqm to around €2,030 per sqm in 2016. This indicates a growth of 15% over the period.

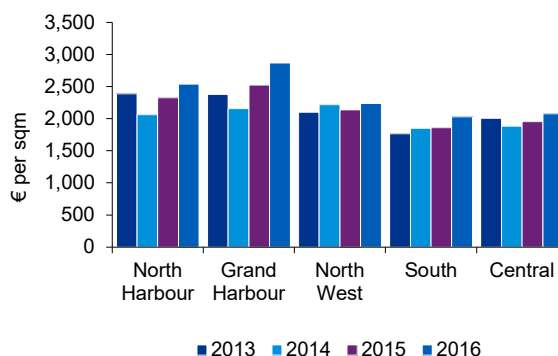
An analysis of the properties available for sale recorded in the database during 2016 gives a similar picture to that of the rental market. The majority of properties listed are located either in the Central or North Harbour regions, with more retail property available in the Central region, and more offices available in the North Harbour region. Also similar to the rental market is the relatively small number of listings for properties located in the North West.

Figure 99: Asking prices for offices by region



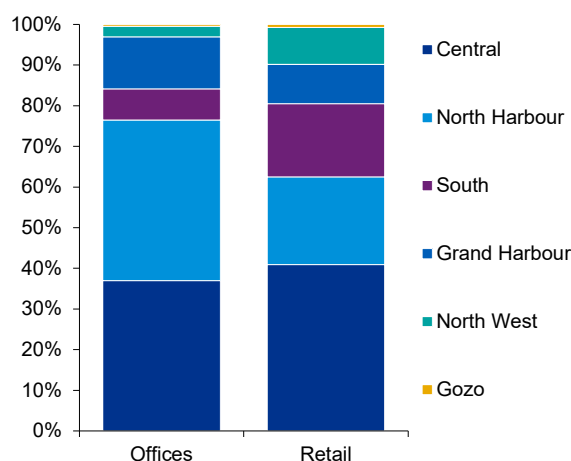
Source: KPMG Analysis

Figure 100: Asking prices for retail property by region



Source: KPMG Analysis

Figure 101: Availability of commercial property for sale



Source: KPMG Analysis



Appendices



Appendix 1

Annex of definitions

This section provides a concise definition of the products and industries presented in the input-output tables. These definitions are adapted from the Eurostat (2008) "NACE Rev.2 Structure and explanatory notes"; *Eurostat Methodologies and Working Papers*.

Agriculture (NACE 1-3)

This division covers the production of crop and animal products, including organic agriculture, genetically modified crops and the raising of genetically modified animals as well as the growing of crops in open fields and greenhouses. Under this heading, forestry and logging as well as fishing and aquaculture activities are included. The latter industry covers the use of fishery resources from marine, brackish or freshwater environments, with the goal of capturing or gathering fish, crustaceans, molluscs and other marine organisms and products. However this category excludes recreational fishing.

Production (NACE 5-39)

This category includes mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, water supply, sewerage, waste management and remediation activities.

Of which manufacturing (NACE 10-33)

This segment includes the manufacturing of food products and beverages, tobacco products, textiles, clothing, leather products, wood and paper products, coke and refined petroleum, chemicals, pharmaceuticals, rubber and plastic, glass products, metals, computer, electronics, optical products, machinery and equipment, motor vehicles, trailers and semi-trailers, furniture, and also repair and installation of machinery and equipment.

Construction (NACE 41-43)

This includes the construction of buildings, civil engineering (including the construction of roads), demolition and site preparation, electrical plumbing and other construction installation activities. It also includes building completion and finishing activities.

Distribution (NACE 45-47)

Distribution covers the wholesale, retail trade and repair of motor vehicles and motorcycles.

Transport (49-53)

This covers land, water and air transport. Specific activities applicable to Malta include taxi operations, freight transport, sea and coastal water transport services. It also includes warehousing and storage activities as well as postal and courier services.

Hotels and restaurants (NACE 55-56)

The hotels and restaurants cover hotel accommodation, holiday, short-stay, camping grounds and recreational vehicle parks. It also covers restaurants, mobile food services, beverage serving and catering activities.

Information and communication (NACE 58-63)

This section covers publishing activities, motion picture, video and television programme production, sound recording and also music publishing activities. It is also inclusive of programming and broadcasting activities, telecommunications, computer programming and consultancy services and also information service activities (such as data processing and web hosting).

Financial and insurance (NACE 64-66)

The financial and insurance segment includes monetary intermediation, central banking, and activities of holding companies, trusts, funds, financial leasing, credit granting, insurance activities, pension funding and also the administration of financial markets.

Real estate (NACE 68)

Real estate activities include the buying and selling of own real estate, renting and operating of own or leased real estate and also activities carried out by real estate agencies.

Professional (NACE 69-75)

This category includes legal, accounting, bookkeeping, auditing, tax and management consultancy services, architectural and engineering activities, scientific research and development, advertising and market research, photographic activities, translation and interpretation activities and also veterinary activities.

Administration and support (NACE 77-82)

The administration and support service activity segment includes rental and leasing activities (of motor vehicles, trucks, personal and household goods, machinery and equipment.) It also includes the activities of employment agencies, travel agencies and tour operators and security services. Furthermore, it also includes cleaning and landscaping activities, and other office administration and business support activities.

Public administration (NACE 84)

This NACE code includes all services related to public administration, defence and social security.



Education (NACE 85)

Education covers the provision of pre-primary, primary, secondary, post-secondary and tertiary education. It also includes sports and recreation education, cultural education and the activities of driving school instructors.

Health and social work (NACE 86-88)

This section covers human health related activities such as hospital activities, medical and dental activities; residential care and social work activities.

Arts, entertainment and recreation (NACE 90-93)

This covers creative, arts and entertainment services, libraries, archives, museums and other cultural activities, gambling and betting activities and also sports activities.

Other services (NACE 94-96)

This includes the activities of membership organisations (business, professional, religious or political), repair of computers, personal and household goods and other personal service activities. The latter include hairdressing and beauty treatments, washing and dry cleaning services, funeral services and physical well-being services.

Households as employers (NACE 97-98)

This includes the activities of households as employers and also undifferentiated goods and services producing activities of households for own use.

Extra-territorial organisations (NACE 99)

NACE 99 covers the activities of extra-territorial organisations and bodies.

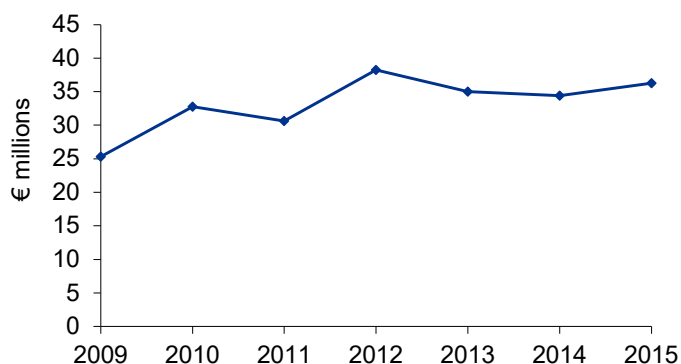
Appendix 2

Detail on NACE categories

NACE 42: Civil Engineering

Data sourced from the NSO shows that the civil engineering segment has improved over the years 2009 and 2010, with a minor decrease in 2011. Growth in this sector picked up again in 2012 followed by a period of stability in GVA during the period 2013 to 2015. This trend is shown in Figure 101 (please refer to page 104). The Civil Engineering segment is undoubtedly driven by infrastructural projects undertaken by the public sector (even through the use of European Union funds). The trend below was driven by various infrastructural projects such as the refurbishment of Valletta and Marsaxlokk breakwater (2009 – 2015), the construction of the Cirkewwa ferry terminal (2010 – 2015), the resurfacing of the 7.3km coast road in Salina (2014 – 2015), the construction of the Valletta lift (2009 – 2013), and also the upgrading and embellishment of industrial estates (2008 – 2015), amongst others.

Figure 102: GVA of NACE 42 - Civil engineering



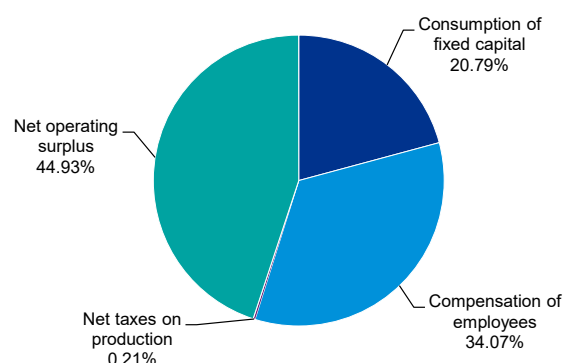
Source: National Statistics Office

Figure 102 shows the composition of GVA for 2010 and 2015⁴⁶ for the Civil Engineering segment. This indicates that the profits generated by private companies operating within the segment increased from 45% in 2010 up to 51% in 2015. The GVA for this segment is mostly made up of the net operating surpluses generated by companies, followed by the compensation of employees and consumption of fixed capital⁴⁷ components. The increase registered for this NACE code could be attributed to the number of infrastructural projects carried out on behalf of the public sector.

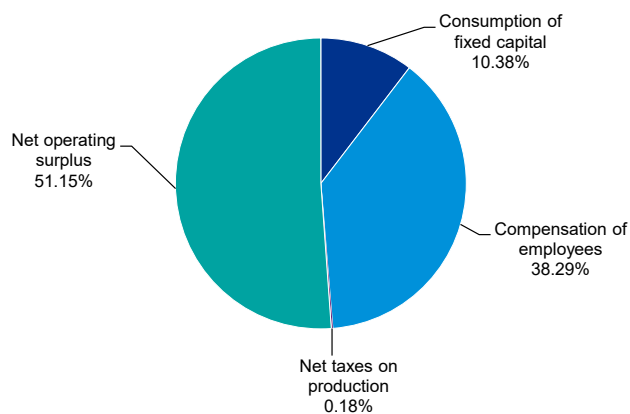
In terms of employment, the civil engineering sector employs around 750 (Average for 2015 – gainfully employed).

Figure 103: Composition of GVA for 2010 vs. 2015 - Civil Engineering

Composition of GVA for 2010 - Civil Engineering



Composition of GVA for 2015 - Civil Engineering



Source: National Statistics Office, KPMG Analysis

⁴⁶This is the last year for which statistics were available as at the reporting date.

⁴⁷Consumption of fixed capital (CFC) represents the decline in the monetary value of fixed assets due to wear and tear, obsolescence and expected damage. CFC does not include accidental damage and the depletion of natural resources. Note that CFC used in national accounts is unlike depreciation, and does not allocate the costs of past expenditures on fixed assets over subsequent accounting periods. CFC represents the decline in future benefits of the assets due to their use in production. (Source: Eurostat, Statistics Explained)

NACE 43: Specialised construction activities

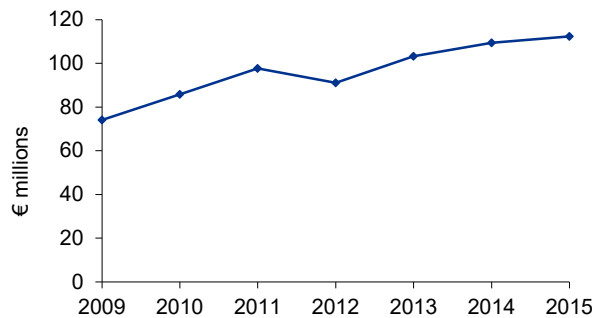
NACE 43 includes activities related to demolition and site preparation, electrical and plumbing installations and building completion and finishes. Data for this code is available from 2009 onwards and the registered increase in the sector's GVA is shown in the graph below. This shows that the sector has grown over the period under consideration save for 2012, when the sector's growth rate decreased by 7%. Note that this class of services listed under this code are typically required immediately following (or preceding) the construction of new properties. Hence, the upward

trend in the GVA for this sector could be reflective of the boom in the property market experienced in recent years.

The composition of the sector's GVA for 2010 and 2015 is illustrated in Figure 104 and shows that the net operating surplus and the compensation of employees contribute substantially to the generation of the sector's GVA.

With respect to employment, this component contributes to about 5,939 gainfully employed (Average for 2015).

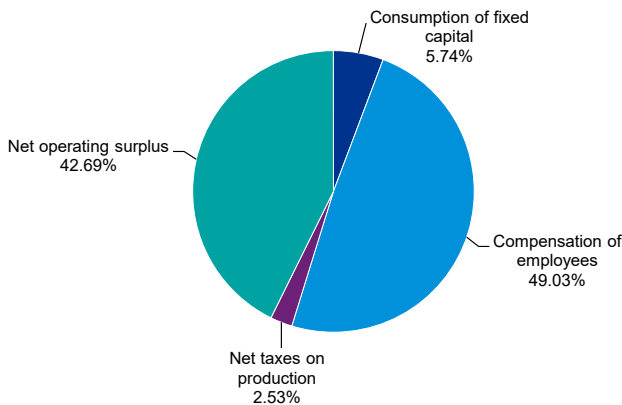
Figure 104: GVA of Nace 43 - Specialised construction activities



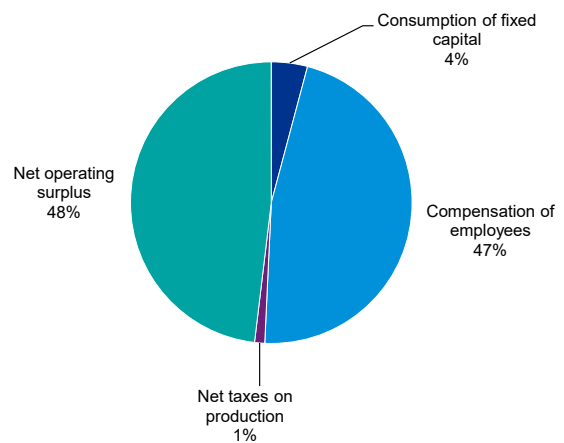
Source: National Statistics Office

Figure 105: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Specialised Construction Activities



Composition of GVA for 2015 - Specialised Construction Activities

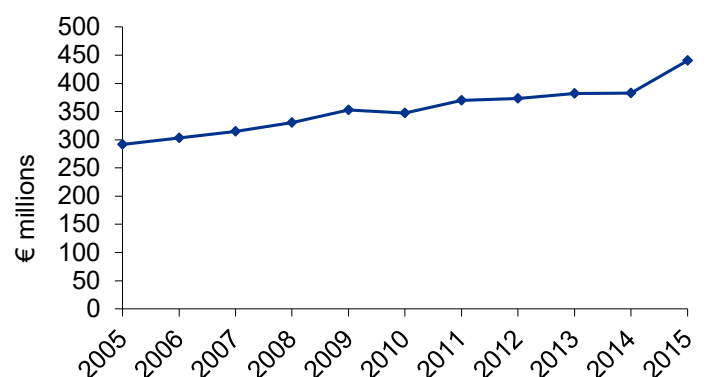


Source: National Statistics Office, KPMG Analysis

NACE 68: Real estate

Official statistics for this sector show that this sector has experienced strong growth from 2005 onwards, with only a minor dip in 2010. Real estate activities typically complement the construction of buildings and hence any changes in the construction sector will naturally reflect the performance of the real estate sector. The decrease in 2010 is most likely attributed to the global economic downturn that was experienced at the time.

Figure 106: GVA of NACE 68 - Real estate activities



Source: National Statistics Office

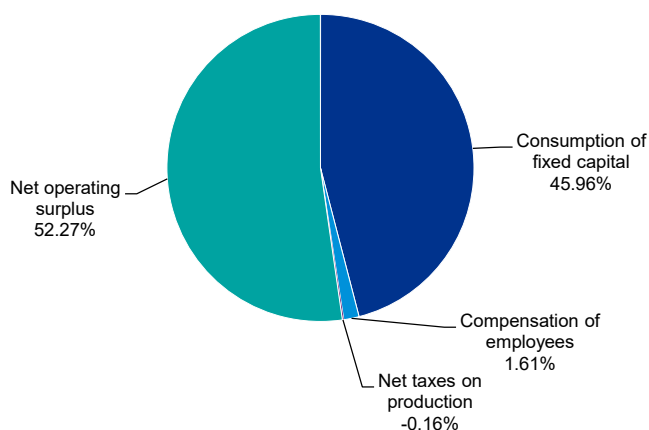
The composition of the sector's GVA for 2015 shows that, as expected, the sector's contribution to the economy was mainly driven by the operating profits of firms falling part of the definition of this sector. This includes companies involved in the buying, selling and renting of own or leased real estate, real estate agencies and also firms involved in the management of real estate on a fee or contract basis. In this regard, Figure 106 indicates that the contribution of the sector's net operating

surplus to the total GVA for the sector increased by around 2% between 2010 and 2015.

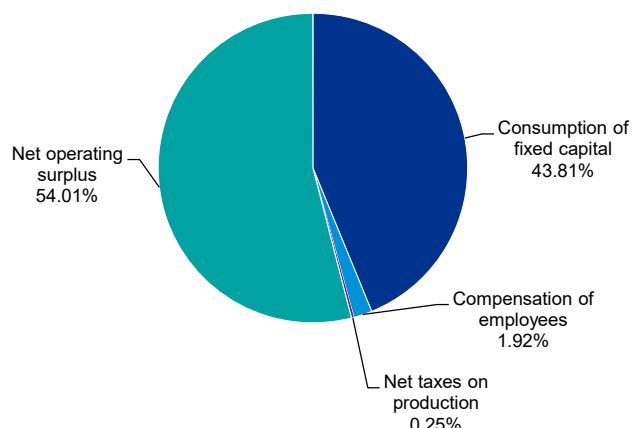
Furthermore, consumption of fixed capital represents around 44% of the GVA generated by the real estate activities sector (as at 2015). Figure 106 indicates that when compared to 2010, this component registered a minor decrease in its contribution to the real estate segment's GVA.

Figure 107: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Real Estate Activities



Composition of GVA for 2015 - Real Estate Activities

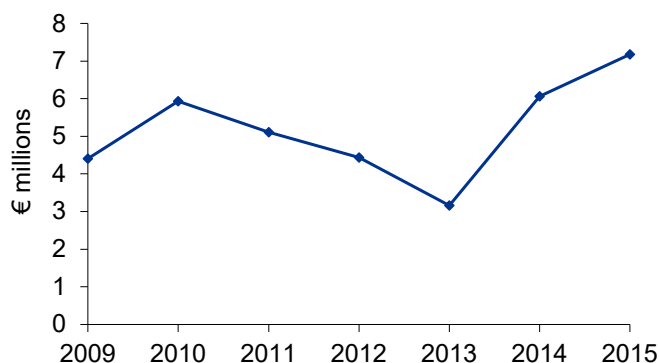


Source: National Statistics Office, KPMG Analysis

NACE 16: Manufacturing of wood and products of wood (except for furniture, straw and plaiting materials)

NACE 16 includes the manufacture of wood products such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, and prefabricated wood buildings. Figure 107 shows that growth in the sector slowed down from 2010 onwards until 2013, followed by a period of recovery in the subsequent two years.

Figure 108: GVA of NACE 16 - Manufacturing of wood and products of wood and cork



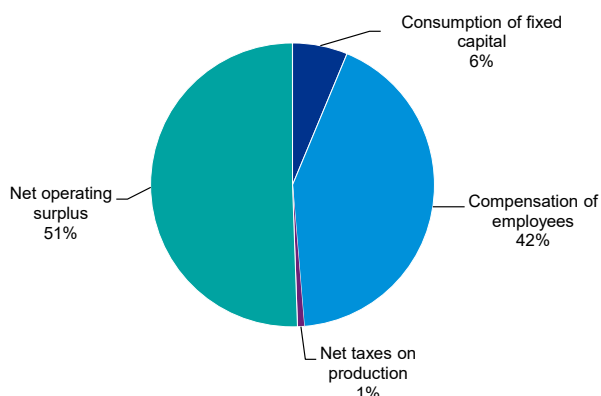
Source: National Statistics Office

The composition of the sector's GVA is mostly driven by the net operating surpluses generated by companies operating within the sector, and by compensation of employees' components, as illustrated below. When comparing the composition

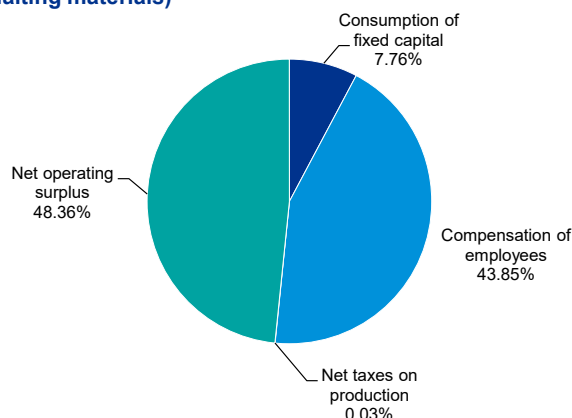
of the sector's GVA of 2010 with 2015, it can be noted that net operating surpluses for NACE 16 decreased by 2% between the two years under consideration, whilst the compensation of employees component increased by around 1.4%.

Figure 109: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Manufacturing of wood and products of wood and cork (except for furniture, straw and plaiting materials)



Composition of GVA for 2015 - Manufacturing of wood and products of wood and cork (except for furniture, straw and plaiting materials)



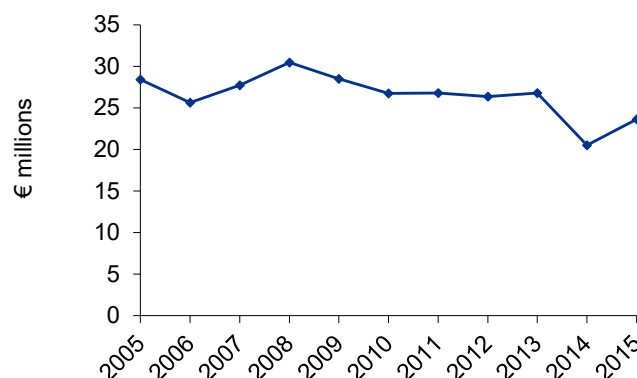
Source: National Statistics Office, KPMG Analysis

NACE 23: Manufacturing of other non-metallic mineral products

NACE 23 includes the manufacturing of products related to a single substance of mineral origin⁴⁸ such as glass and glass products, ceramic products, tiles and baked clay products and cement and plaster. This code incorporates the

whole manufacturing cycle – from raw materials to finished products. The sector under consideration has experienced a strong growth over 2006 up until 2008. This was followed by a moderate decline over subsequent years, a significant negative growth in 2014, with a recovery in the growth rate of 15% in 2015 over 2014.

Figure 110: GVA of NACE 23 - Manufacturing of other non-metallic mineral products

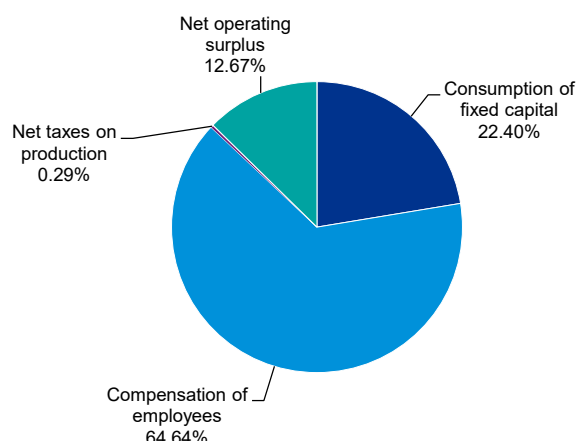


Source: National Statistics Office

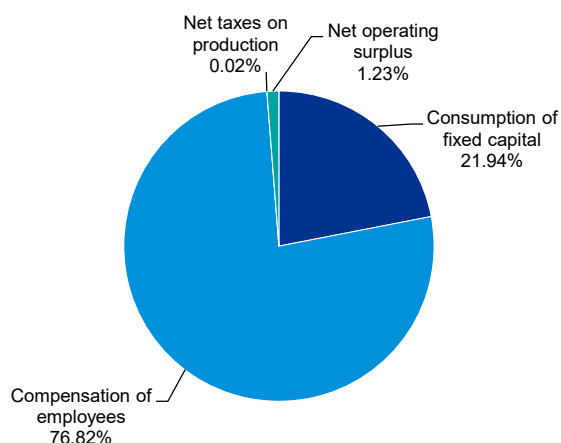
⁴⁸Source: Eurostat, 'NACE Rev. 2 – Structure and explanatory notes', p.149.

Figure 111: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Manufacturing of other non-metallic products



Composition of GVA for 2015 - Manufacturing of other non-metallic products



Source: National Statistics Office, KPMG Analysis

The composition of the sector's GVA shown in Figure 110 indicates that value added is mostly driven by compensation of employees. Over the period 2010 – 2015, the compensation of employees segment increased by 12.43%.

NACE 25: Manufacture of fabricated metal products, except machinery and equipment

This NACE category includes the manufacture of metal products (such as parts, containers and structures) usually with a static and immovable function. This section comprises manufacture of metal structures and parts thereof (such as metal frameworks for construction, towers, masts, trusses and bridges); manufacture of doors and windows of metal; manufacture of central heating radiators and boilers, tanks, reservoirs and containers of metal; manufacture of steam generators; forging, pressing, stamping and roll-foaming of metal and powder metallurgy; treatment and coating of metals; machining (boring, milling, eroding, planing, levelling, sawing, etc...); manufacture of cutlery, tools and general hardware (locks and hinges, tools used primarily in construction); manufacture of other fabricated metal products (such as steel drums,

fasteners and screw machine products etc...).

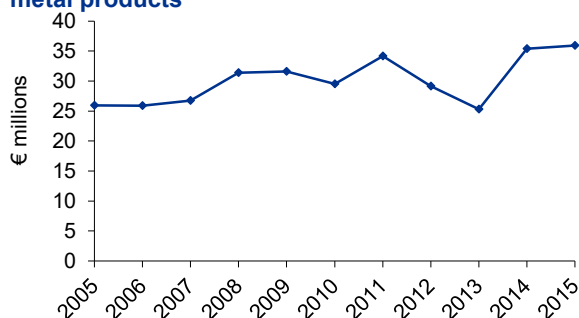
However, it is important to note that some of the sub-categories forming part of this NACE code are not necessarily associated with Construction, so the figures in this section might be slightly overstated. These are:

- Manufacture of weapons and ammunition (code 25.4)
- Manufacture of light metal packaging (code 25.92)
- Manufacture of wire products, chain and springs (code 25.93)
- Manufacture of other fabricated metal products not elsewhere classified (code 25.99)

Looking at the economic performance of this particular sector, it can be shown that positive growth was registered up to 2009, with dips in 2010, 2012 and 2013. The sector picked up again in 2014 going forward.

In terms of employees, the sector employs around 1,486 gainfully employed (average for 2015).

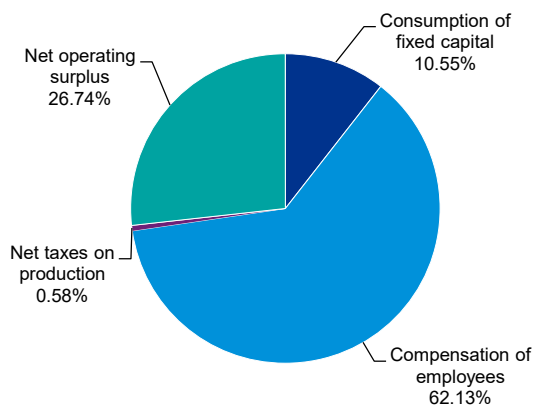
Figure 112: GVA of NACE 25 - Manufacture of fabricated metal products



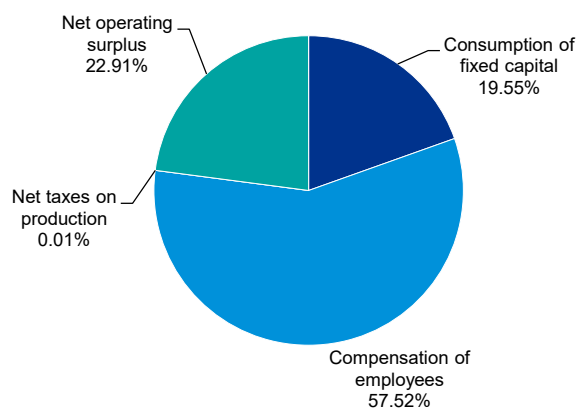
Source: National Statistics Office

Figure 113: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Manufacturing of fabricated metal products



Composition of GVA for 2015 - Manufacturing of fabricated metal products



Source: National Statistics Office, KPMG Analysis

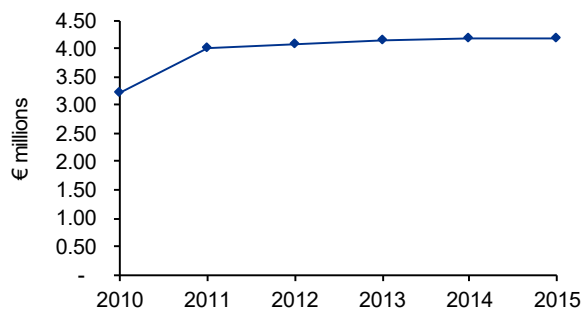
NACE 08: Other mining and quarrying

This category includes the quarrying of stone, sand and clay. The category also includes the mining, quarrying, and extraction of other elements such as chemical and fertiliser minerals, peat, and salt.

Economic performance for this sector shows some growth between 2010 and 2011, after which GVA appears to stabilise.

It is important to note that data relating to the years 2012 and 2013 was considered to be classified by the NSO, and as such was not available to us. Linear interpolation was used to estimate the figures for these years in line with long-term trends.

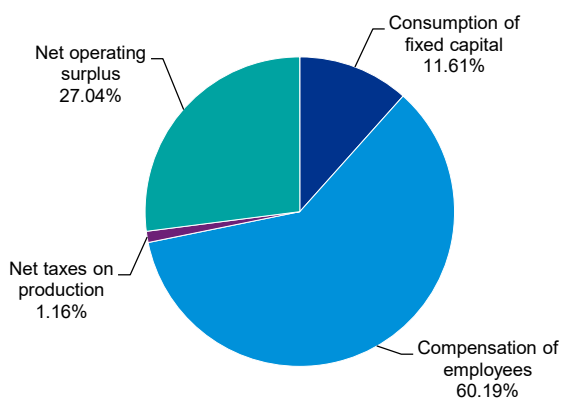
Figure 114: GVA of NACE 08: Other mining and quarrying



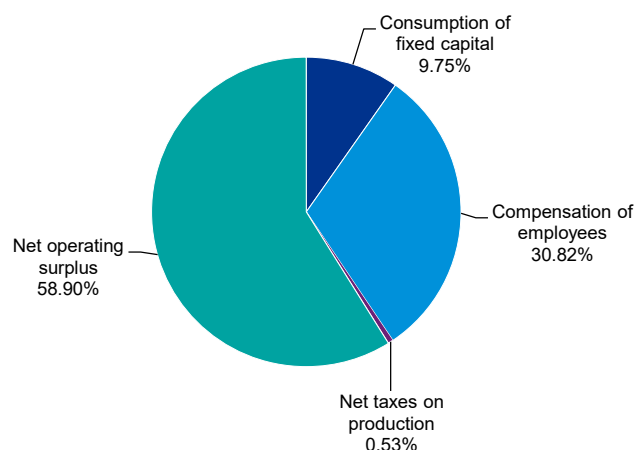
Source: National Statistics Office

Figure 115: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Other mining and quarrying



Composition of GVA for 2015 - Other mining and quarrying



Source: KPMG Analysis

NACE 71: Architectural and engineering activities; technical testing and analysis

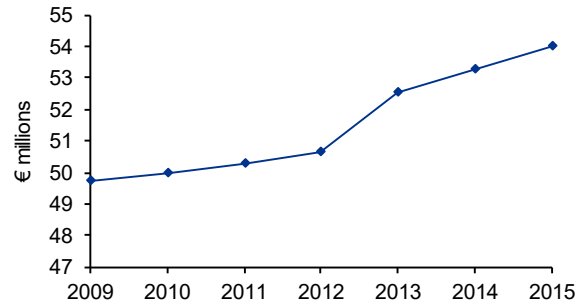
This category includes architectural and engineering activities as well as related technical consultancy services. Technical testing and analysis also falls under this category.

The analysis indicates slow growth between 2009 and 2012, followed by a sharp increase in the growth rate, reflected in the increase in the GVA contribution from this sector.

It is important to note that data relating to the years 2010, 2014 and 2015 was considered to be classified by the NSO, and as such was not available to us. Linear interpolation was again used to estimate the figures for 2010, and linear extrapolation was used to estimate the figures for 2014 and 2015.

Figure 116 also shows that the “compensation of employees” component constitutes a significant proportion of the GVA for the sector.

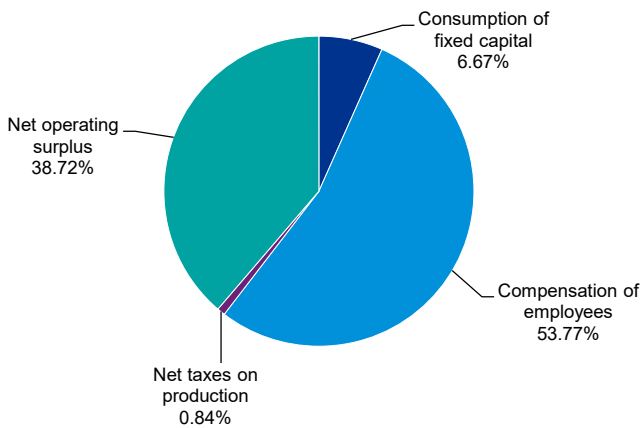
Figure 116: GVA of NACE 71: Architectural and engineering activities; technical testing and analysis



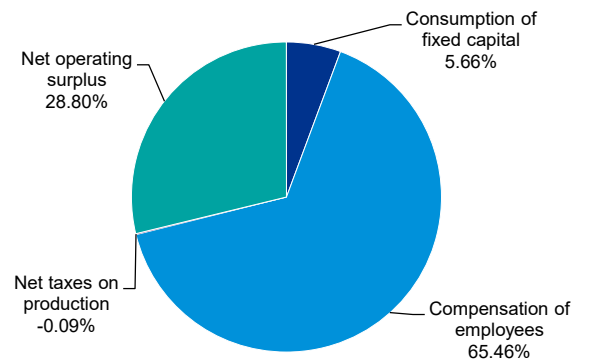
Source: National Statistics Office

Figure 117: Composition of GVA 2010 vs. 2015

Composition of GVA for 2010 - Architectural and engineering activities; technical testing and analysis



Composition of GVA for 2015 - Architectural and engineering activities; technical testing and analysis



Source: KPMG Analysis

Appendix 3

Supply table

Supply tables identify the source of goods and services by product and industry. Reading the Supply table vertically, it shows the types of products being produced by a given industry. If read horizontally, it identifies which product or service is being supplied by domestic industries and what industry produces a given product, and in what quantities. proportion of it is being imported.

Table 22: 2010 Supply table at basic prices, including transformation into purchasers' prices (current prices) for Malta, € millions

Products	Industries												
	Agriculture	Production	of which: manufacturing	Construction	Distribution	Transport	Hotels and restaurants	Information and communication	Financial and insurance	Real estate	Professional	Administration and support	Public administration
Agriculture	181.0	0.0	0.0	-	0.4	4.0	-	-	-	-	-	-	-
Production	36.8	3,203.3	2,420.4	55.3	29.9	8.3	0.6	2.6	4.0	0.2	1.2	4.6	1.2
of which: manufacturing	36.8	2,421.5	2,417.6	12.6	29.9	7.7	0.6	2.6	4.0	0.2	1.2	4.6	0.5
Construction	-	25.2	13.7	698.8	3.3	0.3	-	-	-	-	-	-	8.4
Distribution	-	10.0	10.3	3.5	957.7	2.7	6.1	8.4	-	0.2	0.7	2.7	0.0
Transport	-	1.6	1.6	-	1.8	931.1	0.9	-	-	-	2.1	5.4	0.0
Hotels and restaurants	-	0.2	0.2	0.0	1.2	1.0	663.8	-	-	-	-	0.5	0.0
Information and communication	0.1	5.9	5.3	0.7	8.8	1.3	0.8	702.9	4.9	0.0	5.6	2.0	1.1
Financial and insurance	-	-	-	-	0.0	-	-	-	3,141.5	-	1.4	0.2	-
Real estate	0.1	2.0	1.7	13.1	12.3	22.9	12.1	2.3	6.2	460.5	18.3	0.6	10.4
Professional	1.0	30.6	24.3	18.4	2.4	3.3	0.5	15.1	977.9	0.0	605.5	0.3	0.3
Administration and support	0.0	3.1	2.1	2.1	22.3	4.8	7.7	0.4	906.1	0.0	10.4	424.1	3.9
Public administration	-	-	-	-	-	-	-	-	-	-	0.9	-	534.2
Education	-	0.2	-	-	-	-	0.2	0.1	-	-	-	0.3	-
Health and social work	-	-	-	-	-	-	-	-	-	-	-	0.0	-
Arts, entertainment and recreation	-	0.0	0.0	-	1.5	0.0	13.3	-	-	-	-	0.0	0.1
Other services	-	1.3	1.3	0.5	5.0	1.1	2.0	4.9	-	-	-	2.2	-
Households as employers	-	-	-	-	-	-	-	-	-	-	-	-	-
Extra-territorial organisations	-	-	-	-	-	-	-	-	-	-	-	-	-
Direct purchases abroad by residents	218.9	3,283.4	2,480.9	792.5	1,046.5	980.7	708.0	736.8	5,040.6	461.0	646.1	443.0	559.6
Total supply	218.9	3,283.4	2,480.9	792.5	1,046.5	980.7	708.0	736.8	5,040.6	461.0	646.1	443.0	559.6

Table 22: 2010 Supply table at basic prices, including transformation into purchasers' prices (current prices) for Malta, € millions

Products	Education	Health and social work	Arts, entertainment and recreation	Other services	Households as employers	Extra-territorial organisations	Total Domestic Production	Imports	Total Supply at Basic Prices	Trade and Transport Margins	Net Taxes on Products	Total Supply at Purchasers' Prices
Agriculture	-	-	-	0.0	-	-	185.4	91.9	277.3	37.5	-6.0	308.7
Production of which: manufacturing	0.0	0.4	0.1	0.1	-	-	3,348.5	3,979.2	7,327.7	883.4	467.8	8,678.9
Construction	0.0	0.4	0.1	0.1	-	-	2,522.8	3,962.3	6,485.1	882.7	456.1	7,823.9
	-	-	-	-	-	-	736.0	11.2	747.2	0.2	85.6	833.0
Distribution	0.2	-	-	5.5	-	-	997.8	23.1	1,021.0	-935.2	6.4	92.2
Transport	0.1	-	-	-	-	-	943.0	105.6	1,048.6	-	0.6	1,049.1
Hotels and restaurants	3.4	-	0.0	-	-	-	670.1	3.9	674.0	-	77.2	751.1
Information and communication	2.6	0.7	9.8	0.6	-	-	747.8	339.0	1,086.8	14.2	42.0	1,143.0
Financial and insurance	-	-	1.9	-	-	-	3,145.0	2,291.9	5,436.9	-	14.7	5,451.6
Real estate	1.3	1.0	0.2	0.0	-	-	563.5	4.1	567.6	-	10.1	577.7
Professional	10.6	-	8.0	-	-	-	1,673.9	1,758.3	3,432.2	0.0	18.2	3,450.4
Administration and support	0.1	-	16.2	-	-	-	1,401.1	1,346.0	2,747.2	-	24.3	2,771.5
Public administration	0.0	-	0.0	-	-	-	535.1	15.4	550.5	-	-0.4	550.1
Education	380.7	-	0.0	-	-	-	381.5	6.4	387.9	-	-	387.9
Health and social work	-	517.1	-	-	-	-	517.1	1.1	518.3	-	-	518.3
Arts, entertainment and recreation	-	-	1,591.5	0.0	-	-	1,606.5	4.2	1,610.7	-	56.0	1,666.7
Other services	-	-	-	111.6	-	-	128.6	2.9	131.5	0.0	11.5	143.0
Households as employers	-	-	-	-	18.0	-	18.0	0.0	18.0	-	0.8	18.8
Extra-territorial organisations	-	-	-	-	-	-	-	-	-	-	-	-
Total output by industry	399.1	519.1	1,627.7	117.8	18.0	-	17,598.9	9,984.1	27,583.0	0.0	808.7	28,391.7
Direct purchases abroad by residents								190.0	190.0			190.0
Total supply	399.1	519.1	1,627.7	117.8	18.0	-	17,598.9	10,174.2	27,773.1	0.0	808.7	28,581.8

How to read vertically...

Reading the Supply table vertically, we can note the types of products that the industry supplies. Taking the first number vertically as an example, the Supply table indicates that €55.25 million worth of production related products are supplied by the construction industry. €12.58 million of those production products constitute manufactured items.

How to read horizontally...

Conversely, reading the table horizontally we can deduce which industry produces that type of product. For instance, construction related products are mostly produced by the construction industry itself (€698.80 million).

The Supply table shows that the total supply by the construction industry was around €0.79 billion⁴⁹ in 2010. This has since increased to €1.16 billion (based on 2015 GDP figures), a 47% increase. On the other hand, the table below shows that the total domestic production of construction related products (by various industries but primarily by the construction industry itself) at basic prices⁵⁰ was €0.74 billion for the same period. If imports are added to this figure, the total supply of construction related products

increases to €0.75 billion. When trade and transport expenses, and net taxes paid on the products, are added, the total supply at purchasers'⁵¹ prices for construction-related products increases to €0.83 billion. If one were to consider the total supply in the Maltese economy (at purchasers' prices), which was valued at €28.58 billion⁵², then it is implied that 'construction-related products' output is around 2.9% of the total supply.

Table 23: Extract from the Supply Table for Malta as at 2010: Construction product (€ millions)

Total Domestic Production	Imports at Basic Prices	Total Supply at Basic Prices	Trade and Transport Margins	Net Taxes on Products	Total supply at purchasers prices
736.0	11.2	747.2	0.2	85.6	833.0

Source: National Statistics Office

Use table

'Use tables' show which goods and services are utilised by each and every industry. More specifically, they provide an indication of the upstream demand in an economy and show the input structure of each industry. The 'Use table' also shows the components of value added in line with the income approach of measuring output.

These components include the compensation of employees, other taxes (less subsidies) on production, and also gross operating surplus. Such information allows users to determine the extent to which each industry makes use of inputs in the form of intermediate goods and services, labour and capital consumption.

How to read vertically...

Interpreting the Use table vertically, one can infer which products the industry makes use of. For instance, the construction industry makes use of €342.08 million worth of "production related" products.

How to read horizontally...

The Use table can also be interpreted horizontally to obtain an indication of which industry uses that specific product. For example, the Use table shows that construction related products are typically used by the construction industry itself (€95.5 million), followed by the real estate industry (€22.90 million).

⁴⁹At 2010 current prices.

⁵⁰The basic price is the price that is received by producers, excluding any taxes payable on products but including any subsidies. Taxes or subsidies are payable/receivable as a result of that output production or sale.

⁵¹Purchasers' price is the price that the purchaser pays for the product. This includes any taxes less subsidies on products, but excludes taxes such as VAT. This price also includes any transport charges that are paid by the purchaser. The difference between basic and purchasers price lies in the "trade and transport margins" and "taxes less subsidies" components.

⁵²This is different from Gross Domestic Product – which excludes imports and intermediate consumption.

Table 24: 2010 Use table at purchasers' prices (current prices) for Malta, € millions

Products	Industries												
	<i>of which:</i>												
	Agriculture	Production	manufacturing	Construction	Distribution	Transport	Hotels and restaurants	Information and communication	Financial and insurance	Real estate	Professional	Administration and support	Public administration
Agriculture	21.8	62.1	62.1	0.2	0.0	2.0	33.7	0.0	0.0	0.0	0.1	5.9	0.0
Production	79.5	2,023.7	1,445.0	342.1	116.9	193.9	260.9	71.2	22.9	26.6	46.1	34.1	44.1
<i>of which: manufacturing</i>	75.0	1,601.1	1,352.3	301.1	84.2	175.7	220.9	64.6	18.6	23.4	36.8	27.2	21.4
Construction	3.7	19.3	75	95.5	13.2	19.6	13.1	2.2	2.9	22.9	7.0	5.5	19.0
Distribution	0.3	4.9	3.2	0.5	6.0	0.9	2.5	2.7	0.6	0.3	2.1	3.3	1.2
Transport	5.8	59.2	51.3	3.6	93.2	241.9	3.6	12.0	40.3	0.7	8.0	19.3	6.4
Hotels and restaurants	0.1	4.7	2.4	0.8	3.8	12.5	2.4	1.9	3.1	0.3	3.1	8.3	4.7
Information and communication	0.9	28.3	18.9	4.0	12.7	16.2	6.2	177.3	71.4	1.7	22.2	7.3	33.9
Financial and insurance	4.2	62.6	48.7	19.5	55.8	37.2	23.7	30.8	2,212.7	19.5	33.6	15.2	7.0
Real estate	0.5	8.8	8.0	10.6	47.4	9.4	32.1	6.8	7.0	21.7	11.0	4.2	4.9
Professional	3.9	81.2	59.8	37.0	50.8	33.9	37.4	74.3	1,067.8	18.0	158.3	14.3	30.4
Administration and support	1.6	23.6	14.9	6.3	23.3	58.9	10.6	32.3	1,153.1	1.4	27.8	105.4	35.9
Public administration	0.1	0.7	0.6	0.6	1.3	1.5	0.5	1.1	1.2	0.4	0.8	0.4	12.2
Education	0.3	6.9	5.6	0.7	1.3	3.0	0.8	2.2	2.5	0.2	3.8	2.9	2.6
Health and social work	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.7
Arts, entertainment and recreation	0.0	0.5	0.5	0.1	0.0	0.1	0.1	1.1	0.8	0.1	0.1	0.1	0.4
Other services	0.1	3.0	2.8	0.7	2.4	3.5	8.1	1.0	2.0	0.2	1.0	1.3	0.6
Households as employers													
Extra-territorial organisations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	122.8	2,389.8	1,731.2	522.2	428.2	634.5	435.6	417.0	4,588.6	113.9	324.9	227.7	205.2
Direct purchases abroad by residents													
Purchases on the domestic territory by non-residents													
Total use at purchasers' prices	122.8	2,389.8	1,731.2	522.2	428.2	634.5	435.6	417.0	4,588.6	113.9	324.9	227.7	205.2
Compensation of employees	28.4	426.2	361.0	122.1	294.5	181.4	160.4	123.1	225.9	5.6	135.2	139.1	299.5
Other taxes on production minus other subsidies on production	-25.7	2.7	1.2	3.1	6.7	-16.3	2.6	-0.4	0.5	-0.5	3.5	1.9	0.0
Consumption of fixed capital	13.5	191.3	134.9	38.8	59.2	58.6	49.0	68.5	25.2	160.0	19.5	34.8	55.0
Operating surplus and mixed income, net	79.9	273.4	252.6	106.3	257.9	122.5	60.4	128.6	200.3	182.0	163.1	39.5	0.0
Gross value added at basic prices	96.1	893.6	749.7	270.3	618.3	346.2	272.4	319.7	452.0	347.1	321.2	215.3	354.5
Total output at basic prices	218.9	3,283.4	2,480.9	792.5	1,046.5	980.7	708.0	736.8	5,040.6	461.0	646.1	443.0	559.6

Table 24: 2010 Use table at purchasers' prices (current prices) for Malta, € millions

Products	Industries											Total use at purchasers' prices (= total supply in table 1)	
	Education	Health and social work	Arts, entertainment and recreation	Other services	Households as employers	Extra-territorial organisations	Total	Final consumption	Gross capital formation	Exports of goods	Exports of services		Total final users at purchasers' prices
Agriculture	0.0	0.1	0.1	0.0	0.0	0.0	126.2	154.5	-5.8	33.7	0.2	182.5	308.7
Production of which: manufacturing	13.8	88.3	24.0	33.8	0.0	0.0	3,422.1	2,054.9	684.0	2,510.1	7.8	5,256.8	8,678.9
	7.2	65.7	17.6	30.2	0.0	0.0	2,770.7	1,889.7	690.1	2,472.6	0.9	5,053.2	7,823.9
Construction	9.1	8.3	3.4	3.6	0.0	0.0	248.4	35.6	535.7	0.6	12.7	584.6	833.0
Distribution	0.9	0.5	0.1	0.0	0.0	0.0	26.8	42.8	-0.1	0.8	21.9	65.4	92.2
Transport	2.5	2.2	9.7	0.4	0.0	0.0	508.8	130.2	0.0	15.8	394.3	540.3	1,049.1
Hotels and restaurants	0.8	3.3	2.7	0.1	0.0	0.0	52.6	695.4	0.1	1.1	2.0	698.5	751.1
Information and communication	5.4	7.0	195.4	0.8	0.0	0.0	590.6	235.2	152.2	5.2	159.8	552.3	1,143.0
Financial and insurance	5.3	7.6	116.0	3.4	0.3	0.0	2,654.6	193.4	0.0	1.4	2,602.2	2,797.0	5,451.6
Real estate	3.2	2.8	3.8	1.1	0.0	0.0	175.1	373.2	22.8	1.1	5.6	402.5	577.7
Professional	8.5	3.9	614.3	3.0	0.0	0.0	2,237.1	12.3	156.9	2.0	1,042.1	1,213.3	3,450.4
Administration and support	5.1	11.0	115.1	6.8	0.0	0.0	1,618.2	137.8	0.2	29.0	986.3	1,153.3	2,771.5
Public administration	1.8	4.3	1.0	0.1	0.0	0.0	27.8	504.1	5.4	1.3	11.5	522.3	550.1
Education	4.4	2.1	1.8	0.5	0.0	0.0	35.9	350.8	0.0	1.1	0.1	352.0	387.9
Health and social work	0.5	4.8	0.2	0.0	0.0	0.0	7.7	509.4	0.0	1.1	0.1	510.5	518.3
Arts, entertainment and recreation	1.3	0.3	42.4	0.0	0.0	0.0	47.6	164.2	6.2	1.8	1,446.8	1,619.1	1,666.7
Other services	0.2	1.6	1.3	1.6	0.0	0.0	28.6	112.6	0.6	1.1	0.1	114.3	143.0
Households as employers							0.0	18.8	0.0	0.0	0.0	18.8	18.8
Extra-territorial organisations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	63.0	148.0	1,131.2	55.2	0.3	0.0	11,808.1	5,725.2	1,558.2	2,607.0	6,693.2	16,583.6	28,391.7
Direct purchases abroad by residents								190.0				190.0	190.0
Purchases on the domestic territory by non-residents								-813.9			813.9	0.0	0.0
Total use at purchasers' prices	63.0	148.0	1,131.2	55.2	0.3	0.0	11,808.1	5,101.3	1,558.2	2,607.0	7,507.1	16,773.7	28,581.8
Compensation of employees	300.2	273.8	98.7	31.2	0.0	0.0	2,845.3						
Other taxes on production minus other subsidies on production	1.8	0.9	1.4	1.8	0.0	0.0	-16.0						
Consumption of fixed capital	17.4	63.2	46.4	9.9	0.0	0.0	910.3						
Operating surplus and mixed income, net	16.8	33.2	350.0	19.7	17.7	0.0	2,051.2						
Gross value added at basic prices	336.1	371.2	496.5	62.6	17.7	0.0	5,790.8						
Total output at basic prices	399.1	519.1	1,627.7	117.8	18.0	0.0	17,598.9						

Appendix 4

Definition of regions as per KPMG Real Estate Database

Table 25: KPMG Real Estate Database - Localities in the central region

Attard
Bahar ic-Caghaq
Balzan
Birguma
Birkirkara
Fleur de Lys
Gharghur
Gwardamangia
Hamrun
Lija
L-Iklin
Madliena
Mosta
Mriehel
Mriehel-Industrial
Naxxar
Qormi
San Pawl Tat-Targa
Santa Venera
Swatar
Tal-Handaq
Xwieki

Table 26: KPMG Real Estate Database - Localities in Gozo

Fontana
Ghajnsielem
Il-Munxar
Il-Qala
In-Nadur
If-Rabat
Ix-Xewkija
Iz-Zebbug
Kercem
L-Gharb
L-Ghasri
Marsalforn
Mgarr
San Lawrence
Sannat
Santa Lucia
Xaghra
Xlendi

Table 27: KPMG Real Estate Database - Localities in the Grand Harbour Region

Cospicua (Bormia)
Floriana
Kalkara
Marsa
Senglea (Isia)
Valletta
Vittoriosa (Birgu)

Table 28: KPMG Real Estate Database - Localities in the Northern Harbour Region

Biata il-Bajda
Gzira
High Ridge
Kappara
Msida
Paceville
Pembroke
Pieta
San Gwann
Sliema
St Andrews
St Julians
Swieqi
Ta' Gorni
Ta' Librag
Ta' Xbiex
The Gardens
The Village

Table 29: KPMG Real Estate Database - Localities in the North West Region

Bahrja
Bidnija
Bugibba
Burmarrad
Buskett
Dingli
Ghajn Tuffieha
Landriet
Maghtab
Manikata
Mdina
Mellieha
Mensija
Mgarr
Mtahleb
Mtarfa
Qawra
Rabat
Salina
St Paul's Bay
Xemxija
Zebbiegh

Table 30: KPMG Real Estate Database - Localities in the South Region

Birzebugia
Fgura
Ghaxaq
Gudja
Hal-Far
Kirkop
Luqa
Marsascala
Marsaxlokk
Mqabba
Paola
Orendi
Safi
Santa Lucia
Siggiewi
Tarxien
Wardija
Xghajra
Zabbar
Zebbug
Zejtun
Zurrieq

Table 32: Property listings for 2016 - Types of properties as a proportion of total recorded per locality in the northern harbour region

Locality	Farmhouse	House of Character	"Apartment (bedrooms)"								Villa	Terraced House	Town House	Total
			"Apartment (1 bedroom)"	"Apartment (2 bedrooms)"	"Apartment (3 bedrooms)"	"Apartment (4+ bedrooms)"	Bungalow	Maisonette	Palazzo	Penthouse				
Blata il-Bejda	0%	0%	3%	37%	13%	0%	0%	23%	0%	7%	10%	0%	7%	100%
Gzira	0%	0%	14%	27%	32%	1%	0%	7%	0%	17%	1%	1%	1%	100%
High Ridge	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
Kappara	0%	0%	0%	6%	26%	0%	3%	12%	0%	6%	42%	5%	0%	100%
Misda	0%	0%	11%	22%	32%	1%	0%	11%	0%	18%	1%	2%	1%	100%
Paceville	0%	0%	25%	33%	25%	0%	0%	0%	0%	17%	0%	0%	0%	100%
Pembroke	0%	0%	0%	0%	33%	0%	0%	7%	0%	0%	60%	0%	0%	100%
Pieta	0%	3%	1%	21%	38%	1%	0%	10%	0%	19%	0%	5%	1%	100%
San Gwann	2%	0%	5%	20%	43%	1%	0%	8%	0%	10%	6%	3%	0%	100%
Siema	0%	0%	4%	15%	42%	5%	0%	5%	0%	21%	2%	0%	6%	100%
St Andrews	0%	0%	0%	20%	20%	0%	0%	20%	0%	0%	40%	0%	0%	100%
St Julians	0%	1%	7%	23%	34%	2%	0%	6%	0%	20%	1%	1%	3%	100%
Swieqi	0%	0%	1%	6%	33%	2%	4%	33%	0%	16%	5%	1%	0%	100%
Ta' Giorni	0%	0%	0%	9%	18%	0%	0%	36%	0%	36%	0%	0%	0%	100%
Ta' Librag	0%	0%	3%	6%	38%	1%	3%	19%	0%	13%	12%	3%	0%	100%
Ta' Xbiex	0%	0%	0%	6%	51%	6%	0%	3%	2%	12%	20%	0%	0%	100%
The Village	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	50%	0%	0%	100%

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