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Property bubble : test for suitability and reliability indicators : a comparative assessment of Western Australia and Provence-Alpes-Cote D'Azur

Romain A. Aureglia
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PROPERTY BUBBLE:
TEST FOR SUITABILITY AND RELIABILITY OF INDICATORS

A COMPARATIVE ASSESSMENT OF WESTERN AUSTRALIA AND PROVENCE-ALPES-COTE D'AZUR

BY
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B.BUS (INTERNATIONAL BUSINESS)

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of Bachelor of Business with Honours at the Faculty of Business, Edith Cowan University.

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USE OF THESIS

ABSTRACT

Purpose: The main purpose of this thesis is to contribute to the speculative bubble literature and to provide a practical test upon Lind's (2008) definition and set of indicators to identify a property bubble.

Methodology: The methodology for this thesis consists of a case study and a comparative analysis. The paper will connect Lind's theoretical framework to a practical test to provide a concrete answer for the validity of his work.

Findings: Media and general perceptions have had a great influence over the housing market actors for both Provence-Alpes-Cote d'Azur and Western Australia regions. House prices increases are often attributed to speculative events without real evidences. Narrowing the definition, and the use of a valid set of conditions, revealed that the regions used in the case study do not provide sufficient evidence to categorise these markets as having a property bubble. The complexity of factors (e.g. macroeconomic, credit and labour market) has had a significant impact over house prices, and the Global Financial Crisis (GFC) has changed the outcomes of the study. In PACA, the GFC has suppressed speculative behaviour and potential new actors are now reluctant to enter the market. In WA, the GFC divided the market into resource industry actors and "others" (buyers with no commercial relation to the resource industry). The paper also confirms Lind's framework is a suitable and reliable set of tools that helps to identify speculative episodes. It is important to add that any further research on this topic needs to implement a set of specific factors in conjunction with the proposed common base.

Research limitations: The timeframe for this thesis is 2000 to 2011. The central limitation of this research has been the availability of recent data. The Australian Bureau of Statistics will release the latest dataset from the 2011 census in June 2012. The French equivalent provides data up to late 2009. The absence of authorative comparative data was the main limitation encountered in this study.

Keywords: property bubble, rationality, case study, comparative analysis, house prices, Western Australia, Provence-Alpes-Cote d'Azur, real estate, housing market.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

i. Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

ii. Contain any material previously published or written by another person except where due reference is made in the text; or

iii. Contain any defamatory material.

iv. Contain any data that has not been collected in a manner consistent with ethics approval.

Signature: 

Date: 17/5/2013

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Regards,
Romain Aureglia
June 2012, Perth

TERMINATION OF PROPERTY MARKET SECTOR

THE ENGLISH UTILISED IN THIS THESIS IS CHARACTERISED AT TIMES BY TERMINOLOGY DERIVED FROM THE PROPERTY MARKET SECTOR AND NOT COMMONLY UTILISED.

Abbreviations

ABARES: Australian Bureau of Agricultural and Resource Economics and Sciences

ABS: Australian Bureau of Statistics

AHURI: Australian Housing and Urban Research Institute

ECB: European Central Bank

EU: European Union

FIRB: Foreign Investment Review Board

FNAIM: Federation Nationale de l'Immobilier

GDP: Gross Domestic Product

GFC: Global Financial Crisis

GSP: Gross State Product

GST: Goods and Services Tax

INSEE: Institut National de la Statistique et des Etudes Economiques

NHSC: National Housing Supply Council

OECD: Organisation for Economic Co-operation and Development

PACA: Provence-Alpes-Cote d'Azur

RBA: Reserve Bank of Australia

REIWA: Real Estate Institute of Western Australia

WA: Western Australia

WAPC: Western Australia Planning Control

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CHAPTER 1
INTRODUCTION

Background

From the year 2000 to the end of 2011, both Provence-Alpes-Cote d'Azur and Western Australia have been experiencing a prosperous period with strong economical growth. In parallel, both housing markets have undergone sharp price increases. However, in both regions, the media and the public have attributed house price increases to a property bubble, without concrete analysis.

The Global Financial Crisis (GFC, 2007 – 2011) has affected both regions to varying degrees, and, therefore, has resulted in different outcomes. Whilst France struggled to adapt to the GFC's pan-European consequences, Australia used its export-oriented resource industry to prevent its economy from going into a decline. The GFC has distorted the principles of "fundamentals" and made the assumptions of a speculative bubble more prevalent among the media and analysts, in an effort to justify the increase in prices.

Purpose

The main research purpose of this thesis is to fulfill two different purposes:

1- It evaluates the assumption that the two regions have experienced speculative property bubbles. The main evaluation consists of a comparative assessment examining the differences and similarities in any dimensions (macroeconomic, structural changes, credit markets, incentives and beliefs/rationality).

2- It tests the validity and reliability of a theoretical set of tools aiming to help identify and determine the extent of a property bubble in a specific market.

The timeframe for this thesis is from 2000 to the end of 2011, and the intention of this thesis is to provide a precise evaluation of the housing market in order to offer insights for future research.

Methodology

The methodology used in this research relied on publicly available statistical data and related information. More specifically, the information collection process consisted of utilising journal articles and previous professional studies to gain a proper

understanding of what is needed to establish a relevant set of indicators suitable for both the French and Australian residential housing markets. Further, the statistical data collection process involved gathering information from each nation's statistical institutions, the Australian Bureau of Statistics (www.abs.com.au), as well as the French equivalent institution, l'Institut de la Statistique et des Etudes Economiques (www.insee.fr). Further data and information was gathered from region/state government sources, real estate institutions and housing related associations.

A reader should note that the analysis for the thesis relied exclusively on the national statistical institutions and focused only on the regional scale, but also on policies at an anterior date to gather all the necessary information. For example, data from Australia in the 1980s remains relevant to the 2000-2011 period due to the financial deregulation that occurred during that time and which continues to impact upon the banking and financial services sector.

Outline

The first section (chapter 2) of the thesis begins with a review of the past and present literature available on the "speculative bubble". It will focus on the Asian and U.S markets, in which most of the studies have been conducted. It will examine the latest definition, and propose a first set of dimensions in order to extract all the relevant information in relation to a potential speculative episode. The second section (chapter 3) will provide to the reader an extensive explanation of the methodology used, and establish the theoretical framework used to explore the housing market and its environment in both PACA and WA. The third section (chapter 4) will then provide a background of the geographical and macro-environmental factors (economic context, credit market, structural changes, belief/rationality and incentives) that influenced their respective housing markets.

A comparative evaluation will demonstrate a first set of differences and similarities between Provence-Alpes-Cote d'Azur and Western Australia for the latter analysis (chapter 6). The fifth chapter will undertake an assessment of both housing markets until the end of 2011. The main characteristics of both PACA and WA residential property markets have been investigated. A final assessment has been made to ascertain the similarities and differences between the two regions. The final chapter of this thesis provides a result section and analysis: whether the case study provides sufficient evidence of a property bubble. It draws conclusions as to the suitability and

reliability of Lind's analytical framework through complementing it with additional components (specific to each individual marketplace).

Limitations

The thesis will be written in the first half of 2012 with all data collected and utilised inclusively and up to the 31st December 2011. New policies and changes that might take place in 2012 have not been considered. The data that will be utilised in this paper comes exclusively from authoritative sources: such as national statistical institutions and national and regional real estate institutions. Nonetheless, it is important to note that the results from the 2011 census in Australia will be released after this thesis has been submitted, and therefore will not be incorporated into the analysis or results.

There are different types of housing in any property market (residential, commercial and industrial properties) and this research will focus only on the residential market in PACA and WA. Future studies could be more precise on the exact type of residential housing, but for the purpose of this thesis, every different type of residential properties (established, new and social housing) will be considered to gain insight into the overall residential housing market.

CHAPTER 2
LITERATURE REVIEW

In the last two decades, the notion of "property bubble" has been extensively analysed and has caused a number of debates between economic and property specialists as well as the general public. One prominent characteristic of the current and past literatures on "property bubble" is the divergence of opinions over aspects of the definition and the validity and reliability of indicators (Case & Shiller, 2003). According to the location of the studies conducted, different outcomes have been identified and the debate elevated to a more complex level. Even though definitions tend to converge, the means to identify a proper bubble diverge and resulted in the formation of several strands of literature.

This literature review proposes to discuss the different definitions across the literature over the past twenty years. Kindleberger (1978) defined a bubble as a *"non sustainable pattern of price changes or cash flows"* and contributed extensively to the literature. This paper starts from Stiglitz's bubble definition (1990), which today remains the prominent starting point in most recent discussions about the phenomenon and follows through the latest definition available at the present time.

This literature review points out the problems related to an inadequate definition of the "bubble" concept and the lack of means to properly identify one. Nevertheless, contemporary studies (Lind, 1998; Xiaoling, 2007; Lind, 2008) have attempted to refine and complete the definition by clarifying missing links between the theoretical framework and real indicators. It is also argued that the large disagreements among specialists mostly derive from the fact that the concept (a market bubble) cannot focus on a single array of factors but has to be adaptive to better define the extent of a bubble. Further, a hypothetical range of conditions and indicators have been defined to better identify the phenomenon. Lastly, it focuses on the psycho-sociological feature of a speculative bubble, which appeared to be the converging point in the overall literature, and its repercussions on both market and society.

2.1 THE CONCEPT OF PROPERTY BUBBLE

2.1.1 Definition and comments

The concept of a property bubble is not new. Case and Shiller (2003) highlighted that major newspapers brought the phenomenon to a large audience in the early twenty-first century. The concept has started debates between specialists for decades (Kindleberger, 1978, 1987, 1993). For the last twenty years, most discussions started in reaction to Stiglitz's (1990) below price bubble definition:

> The basic intuition is straightforward: if the reason that the price is high today is **only** because investors believe that the selling price will be high tomorrow - when "fundamental" factors do not seem to justify such a price - then a bubble exists.

This definition has been frequently investigated and several divergences have emerged from the debates. Garber (1990), in his study of illustrious past events of speculative movements, including the "*Tulip Bulb Mania"* (1634 – 1637), was the first to specify that a speculative bubble should compose *both* a price increase; then a price fall. Siegel (2000) also detailed that a bubble should be characterised by a large drop in prices after the bubble burst. According to Siegel's results it is virtually impossible to identify a bubble immediately. Time is an essential component and is necessary to determine whether the previous prices can be justified by future cash flows.

Likewise, Lind (2008) determined that Stiglitz's definition of an asset price bubble did not refer to a bubble as a cyclical episode. He rejects Stiglitz's reliance on the concept of price increase alone and proposed the following definition:

> "There is a bubble if the price of an asset first increases dramatically and then almost immediately falls dramatically." *(Lind, 2008)*

Historical perspectives reveal that the most important aspect to understand is to consider a bubble as an episode or cycle consisting of a sharp price increase and then a sharp price drop (Garber, 2000; Lind, 2008). Implicitly, Stiglitz's study assumed that if prices do not increase in accordance with "fundamentals" then it does not last: he never mentioned the after-effect of such speculative movements. However, Stiglitz's symposium shows that it has been possible to construct proper economical models where price increases not based on "fundamentals" continue to rise. The definition by Stiglitz in 1990 includes references to what can explain the price increase; and he achieves this through two different means. Initially, Stiglitz asserts that a price is high today *only* because investors do think the price will be high tomorrow. On this basis, Stiglitz is questioning the assumption whether general beliefs and the incentive of the investors have a real effect on the price increase, as well as, if they justify the price increases. Stiglitz's second explanation stated that price increases could not be justified by "fundamentals". Stiglitz's qualitative research has led to the conclusion that it is rather easy to construct models based on this assumption and emphasises the idea that markets could have multiple equilibriums. Throughout the research, Stiglitz failed to implement a clear explanation of the "fundamentals" and it is the vagueness of the term that has led specialists (Himmelberg, Mayer & Sinai, 2005) to criticise his work.

2.2 HOW TO IDENTIFY A PROPERTY BUBBLE

2.2.1 Fundamental definition

Based on Stiglitz's (1990) definition, it is clear that introducing vague explanatory factors was bound to lead to major divergences in almost every known bubble episode. A number of studies (Shiller, 2001, Case & Shiller 2003) have attempted to determine the "fundamentals" introduced by Stiglitz and to refine the definition in a more recent context. Shiller's study (2001) was mainly directed towards the psychological aspect of the fundamental factors. Indeed, through a psychological and behavioural finance analysis, his research led him to conclude that financial experts may behave in a way that helps to perpetuate bubbles in the financial markets. Therefore, such conclusion implements a critical factor in the identification of the bubble concept.

Further, Case and Shiller (2003) studied the housing bubble phenomenon in the United States of America whilst the property market was experiencing an

unprecedented price boom. Their research method was based upon the relation between price increase and a more refined definition of "fundamentals". According to the study, "fundamentals" are defined as being the combination of beliefs and expectations, as well as a set of ratios including; income, mortgage interest rates and unemployment rate. This is an important addition to Stiglitz's work, as he did not integrate such a view in his earlier studies.

Nonetheless, in a paper focusing on changing popular models, Shiller (2007) revealed that no direct relationship seems to exist between low long-term interest rates and high asset prices. Shiller (2007) intrinsically emphasises the point; it is a change in popular models that resulted in high asset prices. He considers "money illusion" as an important factor in such an environment, and the lure of "exuberant" profit engenders irrational thinking. Likewise, Wheaton and Nechayev (2008) also claim that fundamentals such as income and interest rates did not seem to explain the large price fluctuations in the U.S. housing bubble. They linked the large price increases within the U.S. housing market during the 2000's to a combination of factors. Firstly, the active sub-prime lending market, which causes the rate of home ownership to drastically rise. Secondly, the increasing behaviour of purchasing homes as speculative investments. Combined the two factors resulted in the housing stock build exceeding by 60 percent the growth number of household formations.

Further, Glaeser, Gyourko and Saiz (2008) undertook significant research on market elasticity. They analysed 79 metropolitan cities between 1982 and 2007, and concluded that places where residential supply was inelastic, the bubble phenomenon is more common, longer, and prices tend to inflate much more. Elastic property markets tend to avoid property bubbles; however, in the event of such a bubble they experience shorter duration and less intense price differentiation.

2.2.2 Conditions and prerequisites

Several studies have focused their efforts on interpreting the fundamental factors that would help to identify a bubble in a specific market (Cole & Eisenbeis, 1996; Shiller 2001, 2007; Lind 2008). However, it is the most recent research by Lind (2008) that directed attention to the conditions and prerequisites needed to identify a "property bubble".

Lind (2008) stressed that the aspect of bubble theories should rely on their predictive ability. He implicitly stated that the predictive ability should be attained through an efficient indicator system, able to predict the probability of a period of dramatic price increase immediately followed by a dramatic fall in prices. Further, a number of established conditions would allow the identification of the first signs of a bubble. In the literature, he acknowledges a set of five dimensions that need to be analysed to find sufficient conditions for a specific bubble cycle to hypothetically exist:

1. Macroeconomic situation and policies
2. Structural changes
3. Capital and credit market
4. Beliefs, expectations and rationality
5. Incentives of individuals.

In a study by Xiaoling (2007), essential prerequisites are required to determine that a bubble is forming within a property market. Her analysis reinforces the above conditions set by Lind. Other researchers such as Malpezzi and MacLennan (2001), or Goodman and Thibodeau (2008), successfully identified the latest U.S. housing bubble using long-term equilibrium models. The models they utilised define "fundamentals" as being mainly ratios and macroeconomic features such as income, rent levels, demography, interest rate, user cost and supply shifters over a period of time using past data.

Xiaoling (2007) confirmed the use of these indicators, but went further by establishing a set of more specific measurements, notably the investor's psychology.

The most common condition found in the speculative bubble literature is the psychological aspect of a bubble episode. Shiller (2001) highlights the fact that in any

asset allocation decision-making, it is important to depict the nature of the decision made by any long-term investors. He emphasizes the fact that investors have to judge several psychological and societal features to justify their decisions. Notwithstanding the judgment, reaching a decision is not only a matter of analytical models alone but also considers the input of judgment coming from both personal and intellectual perceptions. In his book, *Irrational Exuberance*, Shiller (2000) stated that major speculative bubbles are mostly supported by some "superficially-plausible" popular theories that are self-reinforcing. He also emphasises that judgmental mistakes would come from the fact that people fail to fully perceive that these popular theories are based on limited facts that do not fully reflect existing market conditions. The judgment does not come from naïveté or credulousness, but instead comes from the difficulties in assessing the sources of prominent public theories (Shiller, 2000). Further, he stresses the fact that news and media play an important role in the construction of our conventional knowledge. He draws attention to the impact of a good story, the influence it has on public thinking, and how easily it can reinforce popular theories.

Shiller's analysis is reinforced through Pouré (2005) who has described all the arguments above as the "bubble sociology". For Pouré, the most paradoxical aspect in a property bubble is that everyone knows the existence of such a bubble. He utilises Stiglitz's definition to assert that if economic fundamentals do not justify the maintenance of the property bubble, other hypotheses must be considered to understand the bubble phenomenon. He argues that the mechanism of diffusing a property bubble can be compared to the method used to diffuse rumour and myths.

Case & Shiller (2003) question four general beliefs of actors in the market:

1-If the beliefs about the future development of the asset price.

2-If expectations of large future price increases are sustaining the market.

3-Whether these expectations are prominent enough to engender concerns for the potential homebuyer.

4-Whether there is enough confidence in such expectations to motivate action.

In a more philosophical registry, Nozick (1993) also points to another important aspect on rationality and belief:

> *Two themes permeate the philosophical literature. First that rationality is a matter of reasons. A belief's rationality depends upon the reasons for holding that belief [...] Second, that rationality is a matter of reliability. Does the process or procedure that produces (and maintains) the belief lead to a high percentage of true beliefs?*

Rationality is a recurrent theme in Shiller's work (2000) as he often asserts that it is an important and essential aspect to study when understanding a bubble episode.
The below table is a summary of the leading research scholars within the field of the "speculative bubble", as applied to the housing market, but within this thesis it is Lind (2008) who provides the central theoretical and methodological framework.

AUTHORS	FINDING
STIGLITZ (1990)	Investors psychology (if fundamentals do not justify price increase)
SHILLER (2001, 2007)	Investors psychology, "money illusion"
CASE & SHILLER (2003)	Combination of belief and expectations, price to income ratios
XIAOLING (2007)	Macroeconomic, investor psychology, rent to income, price to income ratios
LIND (2008)	Macroeconomic, structural changes, credit market, incentives, beliefs and expectations
GLAESER, GYOURKO & SAIZ (2008)	Supply elasticity
WHEATON & NECHAYEV (2008)	Subprime mortgage, house investment
GOODMAN & THIBODEAU (2008)	Macro-economic

TABLE 1 – FINDINGS IN CONDITIONS AND PREREQUISITES IN THE LITERATURE

2.2.3 Reliability and validity of a general set of indicators

While the first perceptions of the existence of a bubble can be determined through the different conditions and prerequisites cited above, efficient indicators need to be defined in order to measure the extent of the phenomenon. An important finding by Xiaoling (2007) is that even as she defined a concise set of indicators she expresses reservations as to the relevance of those indicators when applied to a global context. Most countries possess their own government policies and as a result what can be true in one country can be wrong in another. In their research, Himmelberg, Mayer and Sinai, (2005) questioned the validity of indicators within the same country. Using the Unites States of America as the focus of their study they concluded that some ratios are not reliable enough when comparing one metropolitan city to another. Analogous to variances between countries and even cities within the same country, can, and do, vary widely.

2.3 BUBBLE CLASSIFICATION

This thesis investigated how to identify a bubble based on the literature. Some researchers such as Xiaoling (2007) or Lind (2008) have established a small number of recurrent types of bubbles. Indeed, even though the methods and means to identify a bubble have evolved over time, it is important to be able to classify them. According to the arguments in this chapter, each bubble episode possesses unique features, but it is possible to regroup some of them based on specific patterns.

They have been able to distinguish three frequent different types of bubble according to their specific configurations:

•Type 1: The "bigger fool theory" or pure speculative bubble

People consider that the price for an asset is too high today and ultimately will fall; there is another possibility that the price will continue to increase for a short period of time, thereby making it possible to sell and make a profit at the apex price, just prior to a downturn.

•Type 2: The irrational expectations bubble

Actors of the market become over-optimistic and think that the asset price will quickly rise over a long period. It is also thought that the expected growth will be considerably higher than historical averages.

•Type 3: The irrational institutions bubble

This type of bubble proposes a mechanism where the main issues are related to the principal agents. Actors of the markets are incited to pay higher prices compared to historical averages. The main actors are not expecting any possible losses when prices fall. Lenders also expect to be able to shift the losses to a higher authority (typically government/s): this process is commonly referred to as "moral hazard".

Classifying bubble episodes is not a simple task and has to take into consideration the interaction between individuals, their knowledge, their belief and plans *with* the diverse incentive systems and environment surrounding them.

This is the primary objective of the thesis.

2.4 CONCLUDING COMMENTS

This chapter has reviewed several research literatures in an attempt to interpret, discuss and challenge different bubble definitions that have emerged during the last two decades. Taking the definition given by Stiglitz (1990) as the main starting point, several other analysts (Lind, 1998, 2008; Shiller 2000, 2001; Case & Shiller, 2003; Xiaoling, 2007) have been taken into consideration in an effort to reach a more integrative and complete definition, which hopes to fulfil the gaps brought about by previous research.

Even if Stiglitz's definition has been challenged throughout the past two decades, many researchers have sought to make it more applicable to a general context. Not surprisingly, the publication of Stiglitz's definition of a bubble was followed by a wave of disagreement among experts and fuelled further research on the subject. This process has created a more integrative definition: one that could be adapted to a general situation. In fact, the urge to change and implement new theoretical and concrete frameworks resulted in a better ability to understand and thus determine when property bubbles were expected, or indeed, happening. Today, the relevance of a general set of indicators and conditions remains very hypothetical as researchers (Xiaoling, 2007; Lind, 2008) highlight that the actual situation of a market can greatly differ from the hypotheses emitted. Nonetheless, most researchers agreed that the psycho-sociological condition remains the most common factor in the bubble literature. Understanding the mentality behind the individual's decisions-making process is essential to the supporting evidence of a "bubble". Moreover, the consequence of unsuitable indicators has been a misleading feature in research over time and locations. This has pushed researchers to constantly redefine specific sets of fundamentals that would allow us to better determine occurrence of bubbles in the future. Nonetheless, concerns about the validity of such indicators support the point that, not only what can be true in a country can be proven false in another, but also that those concerns extend to a smaller scale, recognizing differences between states, regions, cities and so forth.

CHAPTER 3
METHODOLOGY

3.1 CONTEXT OF RESEARCH

The literature on the "speculative bubble" has created a succession of debates and arguments over the reasons why a speculative bubble occurs, and how to properly and efficiently identify a speculative bubble within a property market.

Contrary to the bulk of the research for this thesis, this study methodology does not rely on Stiglitz's (1990) definition. Stiglitz's definition does not take into consideration the bubble episode as a whole and mainly focuses on the psychological aspect of a speculative bubble. The essence of a speculative bubble is the fact that every bubble episode should be regarded as a unique episode where unique features take place. There is little point constructing an exact definition of a speculative bubble; it is a relationship between factors of a specific market, location and time. However, the literature review demonstrated that apart from the psychological feature, other aspects of a bubble (i.e. macroeconomics, environmental) must be investigated to develop a comprehensive definition and a more appropriate set of tools that help identify such a phenomenon.

3.2 RESEARCH DESIGN

The study is proposing the use of a case-study methodology using two different locations, Western Australia (WA) and Provence-Alpes-Cote d'Azur (PACA), to test the evidence of a speculative bubble in the respective housing markets. The case study will involve a comparative analysis between the two regions which are used because they offer typical characteristics. The case study will be used to assess and provide feedback on the validity of the set of indicators developed by Lind (2008). Extensive secondary data will be used in the research to measure the extent of a speculative bubble: if they provide the necessary conditions for a bubble episode to occur?

Lind himself (2008) acknowledges the need to test the suitability and reliability of his framework in a number of ways, and this is the objective of this research.

A widely-accepted definition and an adequate set of tools, that allow anyone to identify and frame the extent of a speculative bubble has not been reached yet. Lind (2008) has attempted to define a speculative bubble episode as the following:

"There is a bubble if the (real) price of an asset first increases dramatically and then almost immediately falls dramatically."

Through his research Lind (2008) conferred a clearer explanation framing the different components of his definition. He considers a price increase as "dramatic" when real prices double in a five-year period, or increase by 50 percent over three years. In past major bubble episodes, it has been observed that there were no stable periods after a dramatic price increase, and prices fall immediately upon peaking. Lind insists that a bubble episode has not occurred if prices have stabilized at a high level over a three-year period. Otherwise, both price increase and price decrease need to be considered as two separate events. In order to narrow the concept, he asserts a one-or-two year period is the longest acceptable timeframe when bubble prices peak and start to decline. Considering the fact that price does not necessarily need to fall back to its initial level, he assumes that a 50 percent fall can be regarded as a dramatic fall.

Several studies show that bubble episodes have been variable in duration and famous past bubbles – the Dutch Tulipmania (1634 -37), the Mississippi bubble (1719-20) – and more recent bubbles – the Internet bubble (1995 – 2000), and the American Housing bubble (both the 2000 – 2007 price apex stage, 2007 – present rapid depreciation stage) – provide evidence of such irregularity in duration. That's why it is necessary to emphasize the point that this time-lapse remains hypothetical, but plausible, when applied to the housing market.

3.3 LIND'S DIMENSIONS

According to Lind (2008), the conditions for a "property bubble" are determined by several dimensions in our society (refer to Figure 1) that can be applied to any nation: the universality of consumers who base their price mechanism upon varying conditions. However, the probability of establishing a general set of indicators could be regarded as being singular and would slightly differ according to the location under investigation. The "fundamentals" from a housing market change from one

place to another, and these can be applied to a certain market if not in another.

Examining the following dimensions could, under the right conditions, lead to a set of sufficient conditions:

Macroeconomic situation and policies

Speculative bubble episodes tend to occur in a long boom period that lasts for some time. It can be seen that speculative bubbles tend to occur in a period where macroeconomic policies have been lax.

Structural changes

Structural change is a theme that has become recurrent in numerous studies on speculative bubbles (SOURCE). Lind (2008) evaluates structural changes as being a period where it is more difficult than usual to judge what is "normal".

Capital and credit market conditions

When the price for an asset increases drastically, the buyers must be able to pay the price and credit is often necessary.

Beliefs, expectations and rationality

Belief, expectations, plan of the actors, and rationality, could all be considered as the most important conditions within a speculative episode. It is an important aspect to know how the actors who bought the asset at a high price acted, thought, and based their decision on.

Incentives of actors

The incentive of actors is a recurrent theme in bubble studies. It refers to the fact that incentive systems could have made "rational" decision-making for individuals that from the outside looks irrational.

Lind (2008) emphasises the fact that the dimensions shown in the figure below should be analysed in order to find a sufficient set of conditions for a specific bubble episode. Each dimension should host factors that would be necessary for a speculative bubble to occur.

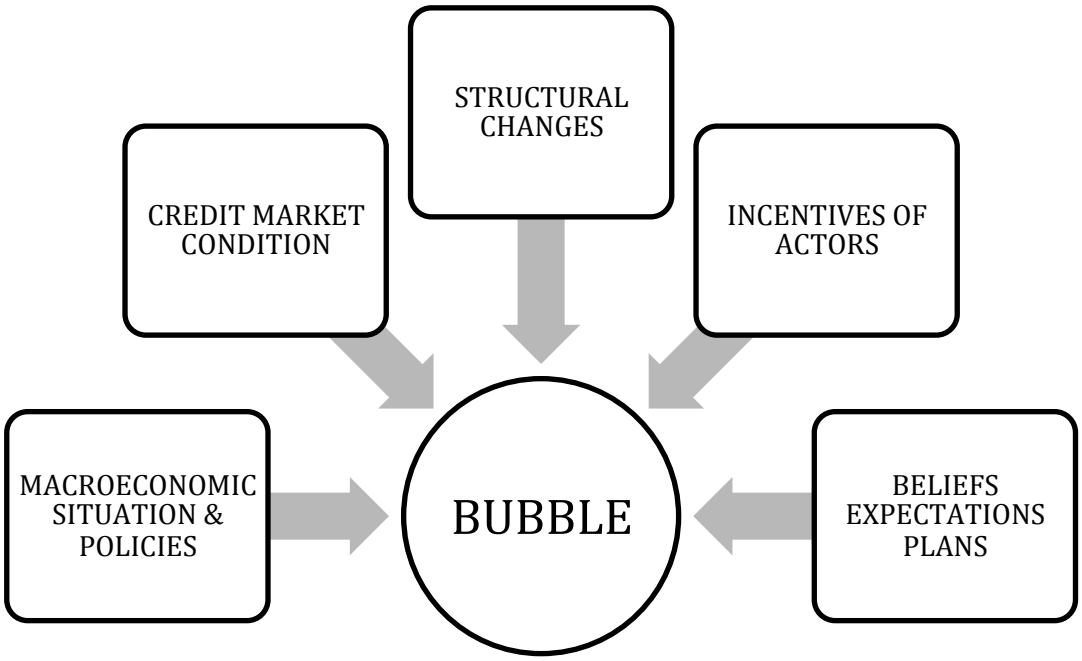

FIGURE 1 - LIND'S THEORETICAL FRAMEWORK

3.4 EXAMPLE OF INDICATORS

Lind proposes to review the following points as being potential determinant factors in either dimension mentioned above.

Price and incomes

Price to income ratio is an indicator that is commonly found throughout the literature. Case & Shiller (2003) revealed that the price to income ratio has been relatively stable over time in many American regions. They concluded that income alone could explain the house price changes in eight different states but the addition of other fundamental variables adds explanatory power.

Lind (2008) refutes this argument and asserts that even in the fastest growing countries or regions, incomes do not exceed a 10 percent annual growth and any period showing a dramatic price increase would be characterised by an increased price to income ratio. Therefore, he concluded that it would be difficult to distinguish periods where prices increase because of a structural change, or by factors that are temporary.

Housing expenditure

While forming an indicator for the housing expenditure it is more credible to focus on the interest payments in relation to a homebuyer's income instead of focusing on the standard user cost concept. An increase in the relationship between interest payment and income would constitute as a bubble indicator.

Housing supply

Housing supply has been introduced in the latter part of the literature about property bubble. Goodman & Thibodeau (2008) argue that a rise in price caused by macroeconomic factors, such as falling interest rates, or an increase in GDP, does not always constitute a bubble per se. This is particularly the case if major difficulties in increasing the housing supply have been observed. Lind (2008) made it clear that the focus should turn on how difficult it is to increase supply in areas where prices rise sharply. Therefore, the easier it is to increase supply, the more probable it is that the price increase is part of property bubble.

The credit market

Lind (2008) indicates that riskier financing choices by households show that bank loan support is easy to get and this is reflected by the loan to value ratio. While investigating a housing market, the focus should be on the loan to value ratio as a high ratio provides the perceptible signs of an easy lending. He also proposes another aspect for investigation: how banking and lending institutions determine their credit standards, and, how do they perceive borrowers' credit solvency.

Buyer expectation about prices

In relation to Stiglitz's definition, people expect further increases in house prices, even though prices are already at an excessive level (significantly above the historical average market range), can be a sign of a bubble episode. Households generally underestimate the risk from housing investment, and even conclude based on popular theories previously examined in this thesis that the mid-term investment outlook for housing is low risk.

Speculative behavior

Lastly, short-term speculative behaviour could be considered as an indicator. If prices dramatically increase and buyer price expectation about the future are high, some investors might see an opportunity for quick profits by buying and selling an asset soon after.

Concluding statement

The dimensions examined above will be utilised as the reference points for the case study examined in the next two chapters. Each dimension will be analysed to provide insights into the relationship it has with house prices in both regions examined.

CHAPTER 4
A THEORITICAL AND CASE STUDY APPROACH:
THE GLOBAL FINANCIAL CRISIS AND DEVELOPMENTAL FACTORS

The following chapter aims to explore Lind's (2008) dimensions in order to show how different conditions have an impact on house pricing. Both Provence-Alpes-Cote d'Azur and Western Australia will be used as case study to provide a point of comparison for the latter assessment of conditions. It starts with the geographical and demographics aspect of each region. It also investigates their macroeconomic framework for the last 10 years to determine the economic factors influencing both housing markets. Moreover, it defines the major structural changes affecting the economy and assesses the credit market. Finally, the last part is committed to appraising the incentives of actors, their beliefs, expectations and rationality on their housing market. After each argument, the use of a comparative assessment will highlight the differences and similarities among the case study and bring light to the relationship with the property markets.

4.1 GEOGRAPHICAL BACKGROUND

4.1.1 Western Australia

Western Australia is the largest state in Australia. It covers one third of the continent while hosting only 10.3 percent of the population, 73 percent of which lives in the capital city, Perth. The city numbers almost 1.7 million inhabitants (ABS, 2011b). In terms of population, it is the fourth most populated state after New South Wales, Victoria and Queensland (ABS, 2011c). Because WA covers more than 2.5 million square kilometres (ABS, 2008), a large diversity of geographical and weather conditions has caused demographic disparities. Perth is considered to be the sunshine capital in Australia with 3000 hours of sunshine a year ("Western Australia weather and climate." n.d.). Perth's high liveability is reflected in its top 10 position within *The Economist* annual city survey (2011).

FIGURE 2 – WESTERN AUSTRALIAN REGIONS

The state is divided into ten different regions. The extreme northern part of the state is considered to be sub-tropical with only 2 seasons being "wet and dry seasons" while the middle and eastern inland parts of the state are considered to be semi-arid or desert and lightly inhabited with the only significant activity being mining and agriculture. In contrast, the southwest coastal area and surroundings have a Mediterranean climate which is home to the majority of the state's population. The weather conditions are more tempered and the geographical relief proposes more abundant fertile soils.

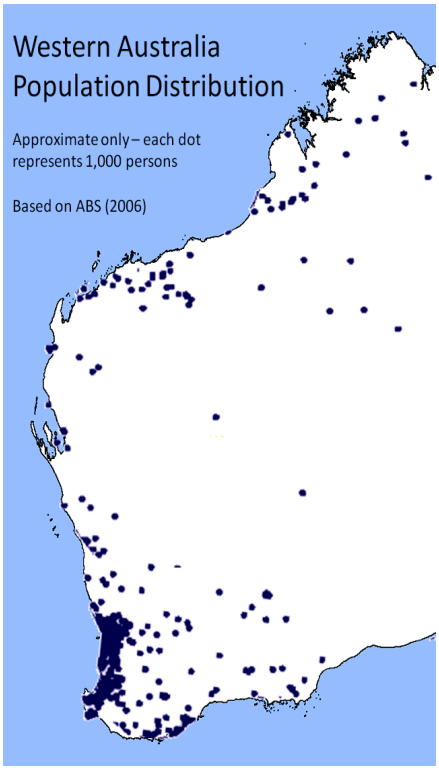

FIGURE 3- WA POPULATION DISTRIBUTION

WA's main residential population centres runs along the coastline, as shown in figure 3. It only has a few inland residential centres of any scope or size, with Kalgoorlie being the largest. From June 2011, there were more than 2.35 million inhabitants, which represent a rise of 448,150 people on a ten-year period or an annual growth of 2.7 percent (ABS, 2012). It is the fastest growing Australian state per capita, but not the largest in net terms (New South Wales). The state population density is 0.9 inhabitants per square kilometre (ABS, 2012), but this does not reflect the proper urbanisation pattern in the most urbanised part of the state (the greater Perth metropolitan region).

In June 2010, the Perth Statistical District counted an average density of 310 inhabitants per square kilometre with several suburbs around the CBD reaching more than 2000 inhabitant per square kilometre (ABS, 2012). In the last decade, the Western Australian demographic pattern has been largely influenced by overseas immigration, which according to figure 4 has surpassed the natural increase and interstate immigration. Consequently, the overall increase in population is impacting the housing demand, which is intrinsically high compared to the available stock (ABS, 2012).

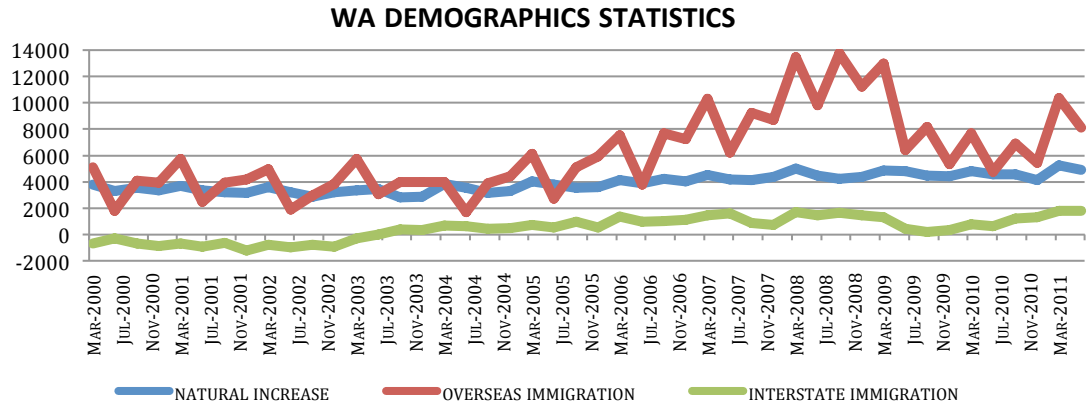

FIGURE 4 - WA POPULATION GROWTH (ABS, 2012)

4.1.2 Provence-Alpes-Cote d'Azur

Provence-Alpes-Cote d'Azur is the third most populated region in France. From the most recent population census in 2008, the number of inhabitants rose to 4,882,900 - an increase of approximately 377,000 inhabitants since 1999. Thanks to a growth rate estimated at 0.9% per year between 1999 and 2008, it stands as the eighth most dynamic regions in France. Within fifty years, the region's population has grown by 73 percent and increased by more than two million individuals. In addition, amongst all the Provence departments, PACA annual growth is higher compared to the national annual growth rate (0.7% per year from 1999 to 2008) (INSEE, 2010).

Despite PACA possessing an area of 31,400 square kilometre or 5.6 percent of the metropolitan area, it is a region possessing large geographical contrasts. It regroups alpine reliefs on the northern and eastern parts, the Rhone valley on the western part and the Mediterranean littoral on the southern part of the region. It is composed of 6 departments, 18 districts, 236 cantons and 936 communes.

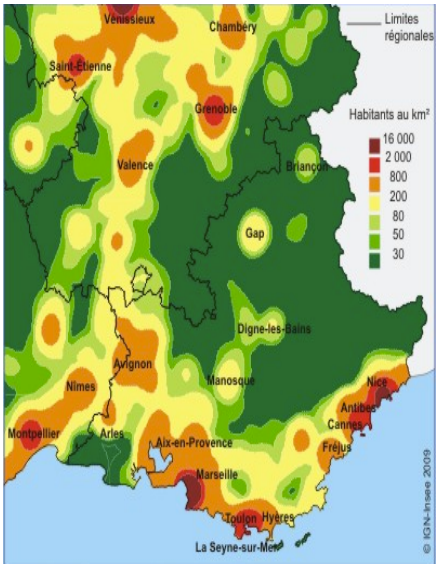

FIGURE 5- PACA POPULATION DENSITY

Twelve cities, of more than 50,000 inhabitants each, constitute a dense urban continuum, ranging from the Mediterranean coastal area to the beginning of the Rhone valley at the north west of the region (INSEE, 2010). The littoral is 83 percent of the region's population on a 25-kilometre coastal fringe wide pole, in contrast to a national average of 60 percent urban residency. It is ranked in second position below Ile-de-France in terms of urbanisation.

The region possesses three of the ten most populated cities in the country: Marseille-Aix-en-Provence (1,4300,00), Nice (950,000) and Toulon (550,000) (INSEE, 2010). In France, populations from rural and urban areas have been progressing at the same pace (+0.7% per year between 1999 and 2008). The Provencal region has been able to distinguish itself from the rest with an average growth rate recorded at 1.5% per year (INSEE, 2010). PACA, like WA for Australia, is the sunniest region in France, offers an attractive lifestyle, and is considered to have the best natural heritage and leisure infrastructure. These assets have placed the region as a leader in domestic and international tourism.

4.1.3 Evaluation

The most prevalent feature between the two regions is their difference in size. While WA enjoys the reputation as one of the largest states in the world, the French region sees its size being a restrictive criterion to further develop. In a matter of scale, the French region can fit more than 84 times into WA. In term of population, the French region has more than twice the population of WA. It gives a clear idea of the French region's density (156 times) as compared to WA. However, WA has taken advantage of its abundant space to expand its cities boundaries, but failed to utilise spatial height. A new dwelling in WA covers on average 222.1 square meters, whilst the typical Provencal house will cover 83 square meters (INSEE, 2009). Both regions' population structures reveal a high degree of urbanisation around the main metropolitan centres. Eighty-three percent of PACA's inhabitants are gathered in the four main living centres and their surroundings, 73 percent of the population in WA is found within the Perth Metropolitan Area. PACA's 25 kilometre coastal fringe hosts the largest part of the region's population with an average density of 3,233 inhabitants per square kilometre, or approximately ten times higher than the Perth Statistical District. Such high urbanisation rates can be explained in both cases by the regional environmental configurations. The large panel of climates and extreme weather conditions in WA can be seen as a disadvantage as climate does not allow a consistent urbanisation to take place in its different regions. Since the founding of WA, high temperatures and hostile landscape have limited the possibilities of developing new cities outside of the greater Perth metropolitan area and this has caused its major cities and towns to be built along the coastline. However, climate and the environment is also a positive argument for the local tourism and strong criteria in the liveability index. Similarly, Provence's weather conditions, climate, culture and historical aspect give the region a great attractiveness that draws over 30 million tourists a year (INSEE, 2010).

4.2 MACROECONOMICAL ENVIRONMENT

4.2.1 Western Australia

From the early-2000, the Western Australian economy has become increasingly reliant on the resources industry. The mining and natural gas expansion over the last decade has enabled the state economy to flourish. Over the past five decades, the gross domestic product has continuously expanded reaching $AUD193 billion in the 2010-2011 period (ABS, 2011c). If WA was a country, it would be ranked 52nd among the top 100 economies around the world and is equivalent to Denmark's economy (Indexmundi, 2011).

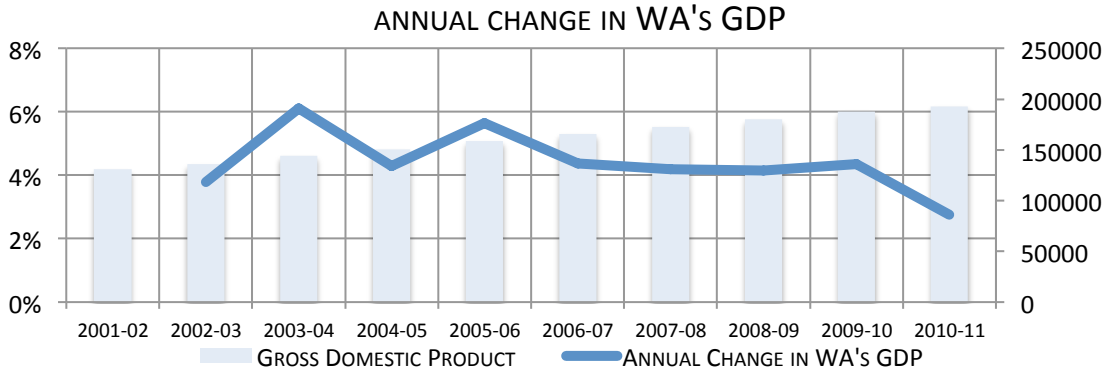

FIGURE 6 - WA GDP & ANNUAL CHANGE (ABS, 2012)

The domination of industries such as mining and natural gas, led WA to greater economic stability, and therefore, the ability to better manage the effects of an economic downturn such as the GFC. The mining industry greatly boosted WA's economy and it represents 46 percent of Australia's total exports (ABS, 2011c). The agriculture sector is decreasing in importance as a result of the resources sector expansion. The state has considerable agricultural industries (from grain and beef, to wines and fresh produce) that export their produce globally (ABARES, 2011). Tourism is gaining in importance within WA's economy but revenues from this sector have mainly been beneficial for small coastal cities outside Perth. The success of resources, agriculture and services has made WA the fastest growing state in Australia, with the highest gross state product per capita in the country (AUD$82,643), the highest wages in the country with an average of AUD$61,000 in 2011 (refer to figure 7, ABS, 2011e).

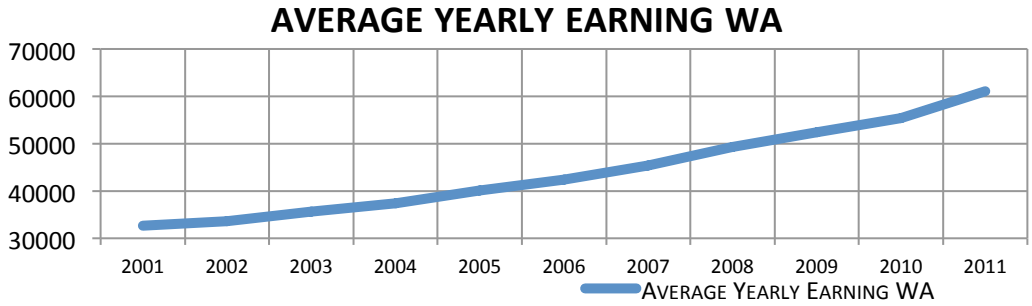

FIGURE 7 - AVERAGE YEARLY EARNINGS (ABS, 2012)

The economic growth in the WA economy masked the fact that mining only ranks seventh in terms of total number of employment by industry and represents only one tenth of the total workforce. Further, the inflation rate has been growing in accordance with the growth rate, and this has lead to a widening income gap between mining and non-mining sectors. High wages in the resource industry have driven staff remuneration to the highest in the country. It is difficult for non-mining businesses to hire and retain staff, as they cannot compete with the high salaries on offer within WA's mineral riches (Barrett & Kerr, 2011). WA is an economy reliant on a single sector (resources) and its exportation is dependent upon its customer's ability to buy. For example, China, the primary importer of WA resources (ABS, 2011b), encountered a serious inflation period in 2009-10, which resulted in reduced exports and higher unemployment (Oliver, 2011). This experience shows that if global growth, and in turn China's growth, were to be interrupted by further economic downturns the WA economy would be at risk. As would Western Australian households. A BankWest survey revealed that 31 percent of Australians are financially unsuitable for a housing loan insofar as they have little or no savings, an over-reliance on debt, few assets, inadequate insurance and high housing costs relative to their income (Mortgage holders showing stress, 2010). Mortgage holders in WA are more exposed to a higher risk of experiencing financial pressures due to the state's reliance on the resource industry, which has resulted in a lack of economic diversification (Quinn, 2011). However as a result of the GFC, the consumer sentiment is at historic lows. Households are more reluctant to commit to big purchases given the global uncertainty. In November 2011, residential land and homeowner occupied personal lending finance have respectively decreased by 22.1 percent and 49.5 percent while debt consolidation has increase by 7 percent. These numbers confirm the presence of low consumer confidence as WA consumers look to pay down debt rather than take on any additional purchases, including a house (Barrett & Kerr, 2012).

4.2.2 Provence Alpes Cote d'Azur

FIGURE 8 - POSITION OF PACA IN EUROPE (CCI, 2002)

Provence-Alpes-Cote d'Azur is the third wealthiest region in France and is located between the major, but complementary, European axes: the Alpine area, hyphen to the continental Europe and the Mediterranean basin (refer to Figure 8). Characterised by a strong exchange and negotiation traditions, it is the third technological and scientific centre behind Paris and Lyon. It is ranked third in its attractiveness for foreign direct investments. Its south European geographical position and its history, have made the region the interface of the entire Mediterranean basin. Provence-Alpes-Cote d'Azur occupies a Euro-Mediterranean geo-strategic role (CCI, 2002). From the early 2000's, the Provence-Alpes-Cote d'Azur region has seen dynamic growth. PACA is one of the most prosperous regions not only within France but the whole of the European Union, and this remains the case despite the current European financial turmoil (INSEE, 2011b). At a national level, the Provence-Alpes-Cote d'Azur region has always been considered as an engine for the national economy. It is the third most productive region in the country, and accounts for 7 percent of the overall GDP in 2010 (INSEE, 2011c). Over the last decade (2000-2010) PACA has enjoyed a constant growth rate above the national economic average (INSEE, 2010) (see below figure 9). The region's economic fabric is principally composed of small enterprises with less than 10 employees. The proportion of SME among the region is above the national level and largely composed of service sector companies (INSEE, 2010). The service sector, which creates more job than any other sector, is over-represented. Further, the industrial sector within PACA has taken advantage of significant nationwide expansion of investment opportunities within areas such as energy, aviation and petrochemicals.

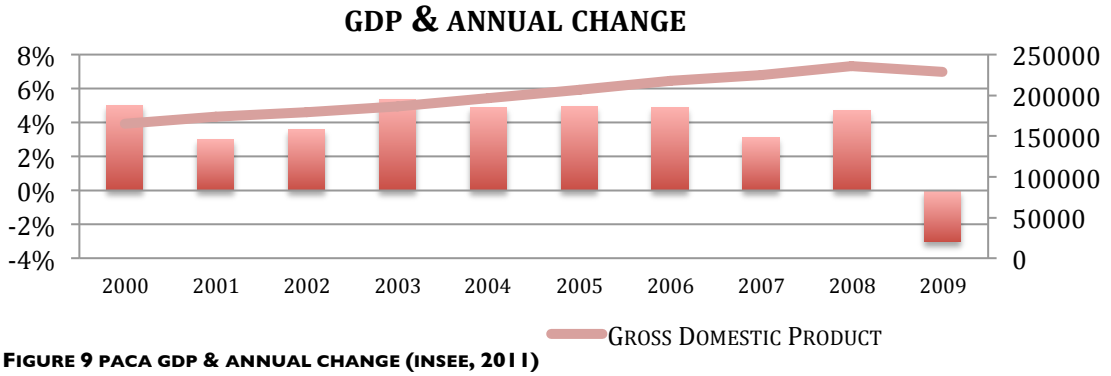

FIGURE 9 PACA GDP & ANNUAL CHANGE (INSEE, 2011)

The main economic drivers of the region are tourism, construction, agriculture, technology, government and banking services (Warde & Gadzinski, 2011). In 2008, the onset of the GFC had a severe impact on both the regional and national economy: activity started to decline from the second quarter and the unemployment rate sharply increased at year-end. The PACA region has experienced a regional deterioration in employment as a result of the GFC, with unemployment exceeding the national average. In 2009, the unemployment rate reached 11 percent, while the national average was 9.3 percent (INSEE, 2011c). The effect of this crisis had more impact on the region than any previous downturns. The first signs of improvements were perceptible at the end of the 2009. Nonetheless, the situation remains uneven regarding the different sectors, with industry remaining moribund but recovery discernable in the service sector. For PACA, the "Euro-Crisis" meant a decline in various sectors activity through degradation in the business climate. It also had repercussions on banks, which have been reluctant to inject money into the system. The unemployment rate, which was starting to recover, returned to the highest level since 2001 and reaches 11.1 percent of the active population in the third quarter of 2011. The industry and construction sectors have also been severely affected. The construction sector, including the property market, started in the second half of 2009 to display positive figures on the back of a broader national recovery. Yet it struggles to reach the same level of activity prior to the GFC, as buyers/builders are finding it hard to obtain loans for projects. French banks, which have been buying public debt from countries such as Greece, Italy and Ireland, found themselves exposed to great risk of default and restrained their services (Edwards, 2012).

4.2.3 Evaluation

The macro-economic perspective has a profound influence on house prices. Both regions displayed strong macro-economic growth from early 2000 to the first repercussions of the GFC (refer to Figure 10). Over the last ten-year period, the Provence region has grown 38 percent while WA grew 34 percent. This has made PACA the fastest growing region in France during this period. It has relied on the stability of its industries and the valuation power in its service sector to sustain its growth. WA has grown extensively through the expansion of its resource and oil industries.

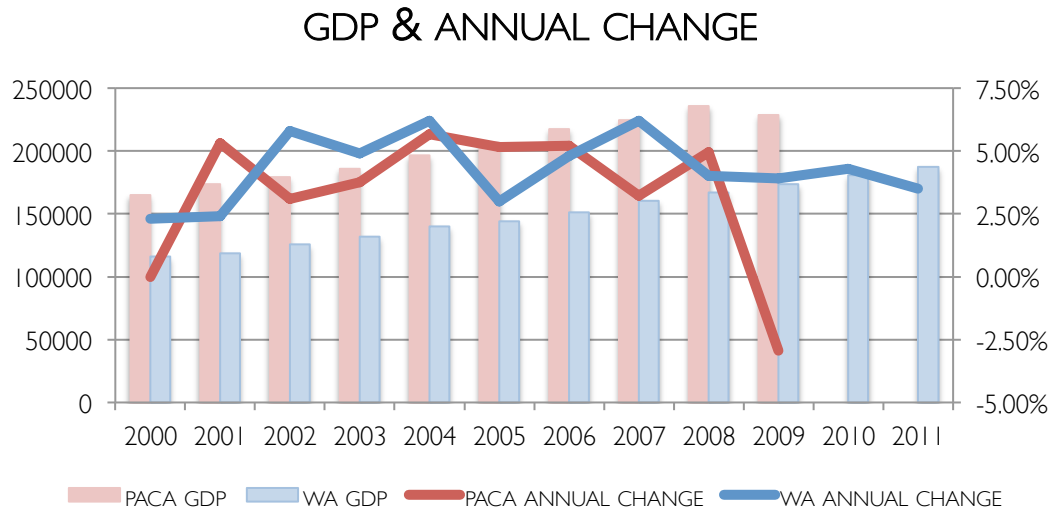

FIGURE 10 - COMPARISON GDP & ANNUAL CHANGE (ABS & INSEE, VARIOUS)

However, from the end of 2008, PACA started to be impacted upon by the GFC while Western Australia was able to take advantage of its resource industries links to Asia to maintain a positive growth projection. The French region suffered from a complete downturn of its economy and many sectors in the region, such as the industry, tourism or construction sector, were severely affected. In the 2007-2010 period, PACA grew by 1.9 percent, and it is one of the few French provinces to have been able to display positive results due to its diverse economic base and ability to attract foreign direct investment.

The mining industry helped WA's economy withstand the global turmoil, but since the GFC its economy has been running on a two-speed pattern (Lannin, 2011). The mining industry has imposed inflationary costs in its efforts to attract highly qualified workers. All firms with few or no relationship with mining have suffered from this inflationary process, and also felt the consequences of the GFC upon their specific markets (i.e. tourism, hospitality, retail). The mining industry represents only one tenth of the total workforce and the GFC impact on all other sectors have created a gap in living standards. The difference between the two regions lies in the composition of their economic fabric, which is influencing the way the economy can react towards unforeseen events. WA depends on a significant resource sector, whilst the PACA economy is diverse; with an established industry sector along with tourism, agriculture, construction, banking services and hi-tech industry. PACA does remain economically fragile in the context of an international economic downturn. WA could encounter the same type of fragility if its international customers reduce their resources demand (Schuman, 2011). Due to its diversity the PACA region has lower risk profile in the event of a global downturn than WA.

Improvements in economic opportunities often create prospects for the enhancement of the population's living conditions and create the possibility for increased buyer's capacity. The reverse also applies.

4.3 STRUCTURAL CHANGES

Structural change in an economy refers to those major inputs (i.e. financial deregulation, changes in fundamentals perceptions) influencing markets, and therefore, the economy in the long term. These changes take place on a nationwide scale and it may, or may not, be reversible.

4.3.1 Western Australia

Housing overvaluation in Australia has been a concern for almost a decade and the Australian housing market usually appear in the top five of the most over valuated housing markets in the world (The Economist, 2010, 2011, 2012). However, ANZ analyst Montalti (2011) recognises that what actually happens to house prices is driven by forces (examined below) other than those used to calculate an estimate of overvaluation. The central problem remains that these "other forces" are often conveniently ignored, or discounted, as either insignificant or irrelevant.

Financial deregulation

Until the early 1980's, the Australian banking system was heavily regulated with common features such as high interest rates and lending restriction on the amount of credit available to households (Montalti, 2011). At that time, many households who were prepared to take on a loan and service their obligations did not receive any housing financial services. In the first half of the 1980's, the removal of the heavy quantitative restrictions, and the lowering of interest rates, coincided with the introduction of risk-based approaches. This made mortgage lending the most appropriate solution to households. The shift from a restrictive credit rationing to a debt-servicing framework for assessing exposure limits has redefined the criteria for household sector credit (Montalti, 2011).

Montalti's study (2011) did not assess to what extent such a fundamental change in the operating environment had on recalibrating house prices but instead identified that the net impact over the longer-term is a permanent shift in the average threshold of debt servicing, supporting higher house prices.

Taxation system

In 1999, the Capital Gain Tax (CGT) was discounted and it gave the opportunity for investors to re-assess the fundamental value of their asset, based on potentially

higher after-tax returns (Montalti, 2011). The capital gain tax has been reduced from 100 percent to 50 percent, while 100 percent of costs are still deductible. In parallel, investors used their superannuation as a tax advantage compared to savings accounts and bond gains which are taxed up to 70 percent (Australian Tax system, 2008). In 2000, the introduction of the Goods and Services Tax (GST) increased the basic cost of a dwelling's construction. The price impact did vary and the government compensated first homebuyers with the First Home Owner Grant Scheme, which provided $AUD7000 for established homes and $AUD14,000 for new dwelling. At the same time, the equivalent in taxation was adding up to $AUD24,000 for the price of a newly established house. The Reserve Bank of Australia observed that the Australian taxation system offers a more favourable treatment for investors than many other countries (Senate Committee, 2008).

Shortage of homes price supports

From the mid-2000's, the housing market has seen the emergence of a chronic shortage of dwellings. The combination of extensive government regulations, limited-land release, excessive infrastructure charges, and higher environmental standards, has raised the basic cost for residential development. It also results from the above average population growth that has caused an excess housing underlying demand compared to the limited supply side. Montalti (2011) indicates that the tension between both forces of the market is likely to persist for the near future.

Foreign direct investment in residential housing

In December 2008, the government introduced new policies opening up the opportunities for temporary visa holders to invest in the housing market. Due to the changes that involved new policies, the Foreign Investment Review Board (FIRB) noted that foreign investments in the Australian housing market have increased by 30 percent (FIRB, 2011). Concerns have been raised that foreign investors do buy land or houses not to take benefit from a rental yield but instead leave it vacant to profit from capital growth (Schwab, 2009). In April 2010, the Federal government announced that foreign investment policies had been modified to ensure that properties are utilised for personal or rental purpose (Colebatch, 2010).

4.3.2 Provence-Alpes-Cote d'Azur

In France, the government adopts necessary measures to enhance the industry performance when required, but as a member of the European Union, it has relinquished areas of economic sovereignty. This means that the PACA region is influenced by EU decisions that do not always favour its economic interest.

Housing policies

In France, the government installed several housing policies considered as social policies to maintain the demand for new dwellings and to stimulate housing supply. This has been achieved through fiscal incentives that favour the rental market, or designed to boost the construction of new dwellings. At the first signs of the GFC, housing policies were adjusted to limit the consequences upon the housing market through methods to maximise budget stimulus (Bouveret, Costes & Simon, 2010).

Credit changes

Credit market changes have driven a noticeable change in how the French have been consuming. The creation of the European Central Bank (ECB) in 1998, which basically is a conglomerate of all the European members' national banks, was the starting point of a new credit market era in Europe. The ECB established three credit indexes, which are taken as references by banks to apply interest rates to the property market.

Currency change

The ECB introduced the Euro as the European currency in 1999 and it became the official currency in 2002. Introducing a currency common to 17 nations had significant consequences. Even if the third article of the European Treaty promotes price stability, the inflation level perceived by the population is more than the official inflation rate (Maastricht Treaty, 1992). Nevertheless, the Banque de France (2007) asserted that the introduction of the Euro took place at the same time large price increases in the housing market as well as in petroleum products were occurring.

4.3.3 Evaluation

In the last three decades, major changes in the economy have influenced both PACA and WA housing markets. All the major changes appear to be similar in nature, but differ slightly, as they are not targeting the same characteristic in the housing market. In the early 1980's, Australia underwent a major change in its financial system and went through a transition from highly regulated financing options and high interest rates to a less regulated credit market. This allowed more households to access house financing with fewer restraints and as a result the consumer acquired an improved buying ability.

Montalti (2011) proved that structural changes had a direct impact on house prices over the long-term, but also that other elements were considered as structural house price drivers. She identified the implementation of tax relief and fund schemes as incentives to both homebuyers and investors to produce more activity in the housing market. Since the 2000, PACA has frequently applied tax incentives and financial advantages to correct market imperfections and preserve the market. In parallel, the 1992 Maastricht treaty led to structural changes within the European Union and this lead to the creation of the ECB and the introduction of Euro as a single currency. The importance of such changes led customers to express concerns over perceived inflation beyond the official rate and the change in credit conditions.

4.4 CREDIT MARKET CONDITION

Pouré (2005) asserted that the housing market fundamentals were directly linked to the credit market. According to this hypothesis, low interest rates tend to increase home prices. In contrast, high interest rates tend to decrease house prices. Low interest rates would allow households to take on a long-term debt. On a large scale, this would result in an increase in the monetary flow but it would also result in house price inflation.

4.4.1 Western Australia

The Western Australia credit system like other Anglo-Saxon countries are characterised by the presence of a subprime mortgage market and brutal competition between the banks and other lending institutions.

Lower interest rates

Lower interest rates do driven up housing demand, and the desire for households to access homeownership. The decline in interest rates from the mid-1990 to the early-2000 increased household borrowing capacity, this in turn gave the buyer more flexibility when bidding for a house (Senate Committee, 2008). The changes in rates in the early-2000 were introduced to place a brake on rising house prices, which initially had been triggered by the 50 percent discount applied to the Capital Gain Tax (CGT).

Lowering of the credit standards

From the mid 1990's the Reserve Bank of Australia determined that banking and lending institutions were starting to lower their borrowing criteria (Montalti, 2011). This allowed more people to access home-loans and reinforced the underlying demand in the property market.

Lowering of credit standards came with precautions regarding household solvency, their ability to avoid any default in repayments, if the Reserve Bank of Australia increases the interest rate.

Lenders allowed customers to borrow amounts exceeding 30 percent of the income criteria determined to be the limit ceiling for responsible lending. The Organisation Economic Cooperation Development (2005a) reported that those loans given to borrowers, which did not match traditional criteria, were considered as a recent

innovation in the mortgage credit.

4.4.2 Provence-Alpes-Cote d'Azur

Accessing a loan in France is associated with careful regulated practices. Credit is not available for people who do not meet the requirements and no exceptions are made across all banking institutions. This has been the main reason why the housing market did not replicate the decline in Spain, United States of America and others (Bouveret, Costes & Simon, 2010). In France the mortgage-credit system firmly resides in the traditional mortgage-bank relationship.

Lower interest rate

Home-loans in France are granted from banks, as other lending institutions are almost non-existent. As a consequence, interest rates are managed between the banks which themselves are regulated with the "Euribor" rates: being the reference interest rates from monetary market in the Euro zone and used as the major reference in the interest rates market. Home-loan interest rates have declined from 7 to 4 percent between 2001 and 2005. This was due to a drop in the key ECB interest rates and the banks diminishing margins from home-loan products. From the second quarter of 2008 home-loan interest rates rose to 6 percent due to stricter changes in ECB monetary policy from 2005 to 2007, driven by the sharp increase in refinancing costs for GFC affected banks (Bouveret, Costes & Simon, 2010).

Duration of mortgage

An increase in the duration of a home-loan granted by the financial institutions has allowed households to maintain their "buying capacity" in a situation where housing prices have been rising. The share of home-loans with a lending period superior of 20 years went from 16.4 percent in 2001 to 63.2 percent in 2007 (Bouveret, Costes & Simon, 2010). It is clear that increasing the duration of a loan tends to increase the borrowing capacity. Nevertheless, the impact of the GFC has resulted in people being unwilling to commit to long period loans. The share of loans with duration below 30 years represents 98 percent in 2010 (INSEE, 2011).

4.4.3 Evaluation

The credit market plays a key and continual role in both regions. Even though the policies engaged are not similar, comparable outcomes are observable. The relationship to credit availability in both countries is different. The more conservative French lending system contains more restrictive criteria than the more liberal Australian lending system. The two regions aim to keep the buying ability of potential homebuyers to a constant demand even though house prices were rising. Provence-Alpes-Cote d'Azur has targeted to keep interest rates at a low rate, as did Australia, but preferred to keep tight credit standards to lower default risk and household debt. In contrast, Australia preferred to lower its credit criteria to increase demand and thereby allow more people access to homeownership, even at the cost of the lender undergoing "stress" as repayments often consumed more than a third of their income. The credit market also helps the housing market to improve its supply. In France, housing finance is generally accompanied by some fiscal incentives aimed at improving the overall housing stock. The zero rate home-loan has been designed to help an investor obtain the benefits of housing finance on the condition that the investor redirects the asset on the rental market. In Australia, credit market demand has been maintained and supply activity sustained, yet considerable regulatory concerns remains over what would be defined as the subprime sector (APRA expressed concerns as early as 2003 in relation to subprime lending). In contrast, France maintains a stricter code of lending over the entire mortgage market. These differences within the housing mortgage market reflect broader philosophical differences over the regulatory role of the state in the marketplace.

4.5 INCENTIVE OF ACTORS

4.5.1 Western Australia

The Australian taxation system plays a significant role in getting households and investors to invest money into the housing market. Tax incentives make the property market more attractive than alternate investments. The capital gain tax reduction and land tax exemptions have been examples of types of incentives for investors. This has driven house prices up (Montalti, 2011). The taxation system has resulted in people seeing property as an asset. In 2008, the government provided new funds for first homebuyers eager to enter the market; and opened the door to foreign investments. Grants given to first homebuyers were to encourage many hesitant buyers to enter the market. Foreign investments in the market rose by 30 percent within the first six months of the policy being adopted. Adjustments were made to focus Foreign Direct Investment (FDI) incentives towards the development of new residential housing stock that is placed on the market for occupation or rental (Schwab, 2009).

4.5.2 Provence-Alpes-Cote d'Azur

The French government has outlayed many housing policies to help both investors and homebuyers invest in the property market. Investors were offered either in the form of tax incentive (rebates), where loans were granted to help social housing financing, or regulatory actions, such as the "*loi relative à la solidarité et au renouvellement urbains" (loi SRU)*, which imposes on every city to consider some percentage of new building to be granted for social housing (Bouveret, Costes & Simon, 2010). These policies were introduced to increase the supply in a time when prices have been increasing. Moreover, the housing policies have implicit social objectives (i.e. help access home ownership for low income households). For homebuyers, the policies were implemented to help access to home-ownership and aimed to correct market imperfections – such as low-income households and banks denied households – so as to maintain demand during a sharp price increase. The zero rate home-loan is an example and consists of a conditional and complementary interest-free loan to a future new homeowner. In parallel, the strong price increase could have been maintained through different environmental policies, which have increased the quality, value and volume of construction (Bouveret, Costes & Simon, 2010).

4.5.3 Evaluation

In each region, governments have been the main creators of incentives towards the housing market. All incentives are aimed at increasing market activity and performance through tax incentives, fiscal advantages or funding schemes. In the past decade, the main policies implemented in the two regions in favour of housing demand have sought to have households achieve homeownership. The First Home Owners Grant and the First Home Owners Grant Boost are great examples (Burns, 2009). The French policies have been introduced to correct market imperfections and provide help to people in need. From 2007, the government focused its action on social housing and the access to homeownership for low-income household. In the mean time, governmental actions are used to contribute to the housing supply and the rental market. Governments targeted investors as the main resources to increase their housing stocks. Australia's taxation scheme is recognised as being advantageous for both foreign and local investors. The appeal Australia had through the different incentives implemented was confirmed when the government allowed foreign investments to flow in without going through a review board assessing the suitability of the project on the housing market. The expected outcomes – investors contributing to the rental market by increasing the housing stock – was different from the actual result where, investors left the asset vacant and waited for capital gains (as CGT has been halved). This was more lucrative than rental yields. The government altered the foreign investment policy in order to force investors to either occupy or rent their housing stock.

4.6 BELIEFS, EXPECTATIONS AND RATIONALITY

4.6.1 Western Australia

According to Hassan (2012), Western Australians see the residential property market as a sound investment with the potential for returns above the investment pool mean. In July 2009, 80 percent of consumers had high expectations for house prices to increase over the next twelve months. In December 2011, 40 percent still had the same expectations. Western Australians are optimistic about future house prices but remain cautious about the immediate house price outlook. Only 9.5 percent expect an increase of more than 10 percent while the majority think there will be either a small increase or no change at all. Potential entrants saw an opportunity to enter the market as the percentage of people considering buying a new dwelling continually increased in the last two years (Hassan, 2012). Favourable foreign investment policies have attracted international capital based on the well-founded belief that it will bring them net capital gain over a medium-term period (Schwab, 2009). These expectations are made possible by the institutional finance available to the potential domestic *and* foreign entrants. Post-GFC (2008-09) interest rates were reduced without corresponding increases in loan requirements. The global environment and the constant change in primary conditions fuel the market with uncertainty and challenge decision-making.

4.6.2 Provence-Alpes-Cote d'Azur

Because of PACA housing market specificities, such as low indebted households, the absence of subprime-mortgage credit, and the instalment of many policies aiming to sustain the market, actors remain within a strong framework that helps to maintain the entire system on a "*reasonable*" level. However, the housing market has been undergoing a period of rapid price progression and substantial number of sales, albeit at a reduce rate as a result of the GFC. In a time where prices have been stagnating, the credit market was reluctant to provide sufficient finance to promote the housing market. As a result, people simply found prices too high compared to their income levels. Moreover, a lack of confidence at this actual economic juncture makes potential investors hesitant to enter the market at such a critical period. The low growth economic perspectives combined with the change in taxation to reduce the public deficit, and the imminent loss of the AAA ratings should trigger interest rate rises. Potential buyers have started looking for alternate solution to invest in

housing, and most of them chose to rely on savings accounts. In France, 16.7 percent of households' incomes are retained in savings accounts. Households have been focusing more on saving money in order to improve their buying ability when overall economic conditions improve (INSEE, 2012).

4.6.3 Evaluation

The French as well as the Australians commonly refer to the housing market as a sound and wise investment. However, the thought process behind the act of buying is motivated by different expectations. In France, the strong framework and assistance provided to the housing market's actors diminish the potential risk of default for banks. The banking tradition in France covers both actors and lenders so as to avoid any structural imbalance in the market. PACA house prices are estimated to be high compared to the historical average and actors (households, professional and investors) do not expect it could rise further. Potential investors have withdrawn from the market and instead favoured the alternate solution of placing savings in surety accounts. In 2011 a higher percentage of Western Australian investors than 2008-09 expected future house price increases to be "moderate" as compared to the previous "high" expectations. The increase in first homebuyers' activity in the marketplace in 2011 signalled the convergence point at which stagnant medium house prices met increasing medium wages levels. Like France, Australia installed housing policies designed to reinforce both demand and supply. However, it has fuelled investors and homebuyers expectations and beliefs about prices.

CHAPTER 5
HOUSING MARKET

In order to understand property market fundamentals, it is necessary to appraise the various mechanism of the business and to understand the buying and selling processes for a property. The housing price is established according to a contract between both the seller and the buyer. While trying to understand the motivations behind the buying act, it is possible to deduce several fundamentals for the property market. It asks simple questions: why would you buy?, and, why would you sell? Buying a property should be an answer to a primary need. Each household in a nation lives in a single primary residence. The demand level is therefore a function of the population demographics and its investment potential. The supply level is determined through the existing housing stock and the ability of a society to construct new dwellings.

5.1 WESTERN AUSTRALIA

Homeownership is considered part of the Australian culture. Winter & Stone (1994) defines the "great Australian dream" as "*owning a detached house on a fenced block of land*". The weight of this homeownership culture is such that the government has implemented several housing incentives to stimulate the national ownership rate.

5.1.1 Situation

The Western Australian residential housing market is driven by the constant increase in population, and driven by the consistent and continual economic growth. An average annual population growth of 2.5 percent over the past 10 years, including large immigration from overseas and high natural population increases in WA (ABS, 2012), has constituted the major demand for new dwelling. This, combined with the economic benefits from the mining industry, has underpinned house prices. However, ABS (2011) has demonstrated that the housing supply did not grow in accordance to the rapid rising demand.

This has already resulted in a chronic housing shortage and had an impact on house prices (Australian Government, 2011). In the 2000-2010 period house prices increased by 150 percent and involved two distinctive phases. As figure 10 shows, the first increase ranged from 2000 to 2006 and corresponds to the period when government (federal and state) implemented funding schemes designed to help household to access homeownership and tax incentives in order to boost demand. During the same period, the number of sales was approximately twice as high as the number of housing starts, and the difference between supply and demand caused the prices to rise quickly until they reached a critical point (refer to figure 11). The second phase (2006-07) starts at a point where supply could not fulfil the increasing demand; hence affordability was therefore at its lowest (Senate Committee, 2008).

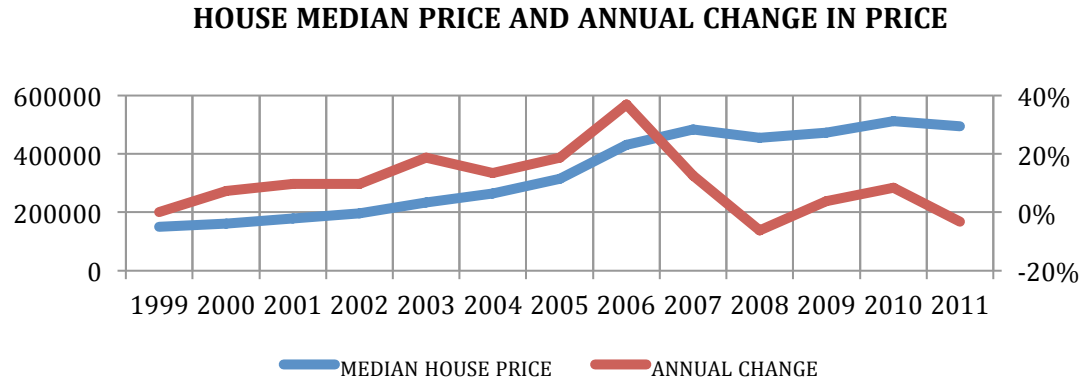

FIGURE 11 - HOUSE MEDIAN PRICE & ANNUAL CHANGE IN PRICE (LANDGATE, 2012)

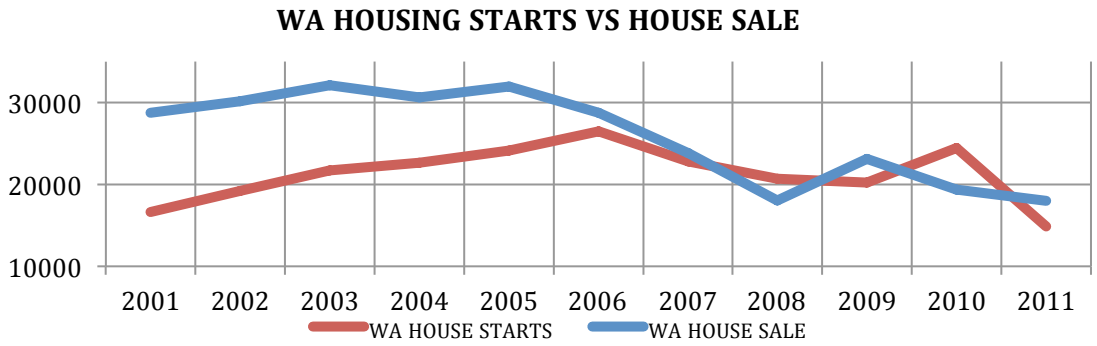

FIGURE 12 - WA HOUSING STARTS VS. HOUSE SALES (ABS & LANDGATE, 2012)

In 2006, 228,547 households in WA reported that they owned their homes while 266,111 stated that they were making repayments on their home-mortgage. Together, this represents 70 percent of the population in WA (refer to Figure 13) (Shelter WA, 2010). In addition, many first homebuyers were unable to enter the housing market due to the increasing home prices.

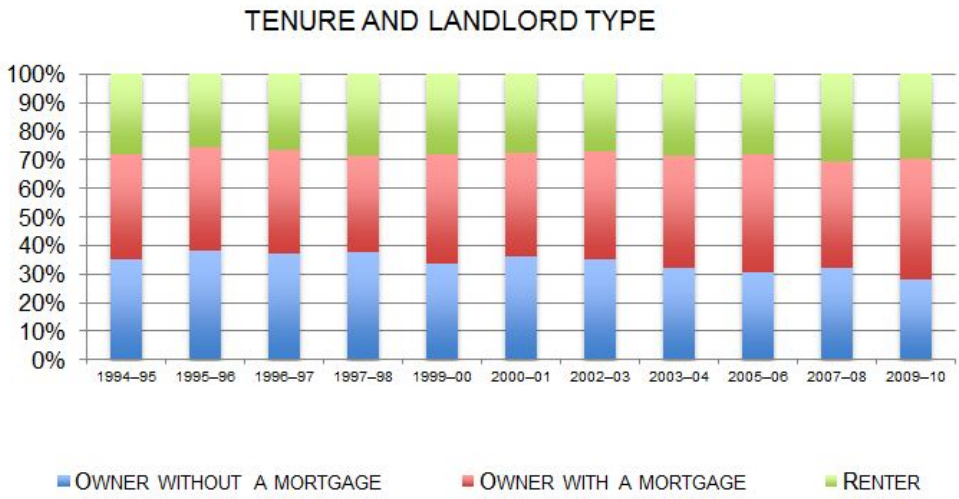

FIGURE 13- WA TENURE TYPE (ABS, 2011)

In time, a gap between the average income and the average loan size increased, and despite falls of interest rates, the repayments constituted a continually larger percentage of the average income (Shelter WA, 2012). Strong overseas immigration, growing inter-state migration, as well as a rapidly growing natural population, helped the market to avoid a drastic decline. Low interest rates and the lowering of the lending standards played an important role. In addition, regressive changes in the housing finance market have confirmed that the housing market is acting as a brake on the broader economy (James, 2011). The issue of affordability has been established as the main cause in the fall of the housing finance. In WA, large numbers of residents cannot afford to take a loan, as repayments would consume a high percentage of their earnings. The term "housing stress" is employed when a household is using more than 30 percent of its income to repay a housing mortgage for a residence. As figure 14 shows, the housing stress on WA households has slightly increasing in the last 10 years, and 85 percent of home-loans are using variable rates which increased between 2002 and 2008. Recent negative economic events have resulted in more people entering housing stress.

A recent study revealed that if interest rates increase by just 0.25 point, 11 percent of borrowers would fail to meet their payments and this would rise to 23 percent if interest rates increase by a full half a point (Shelter WA, 2010).

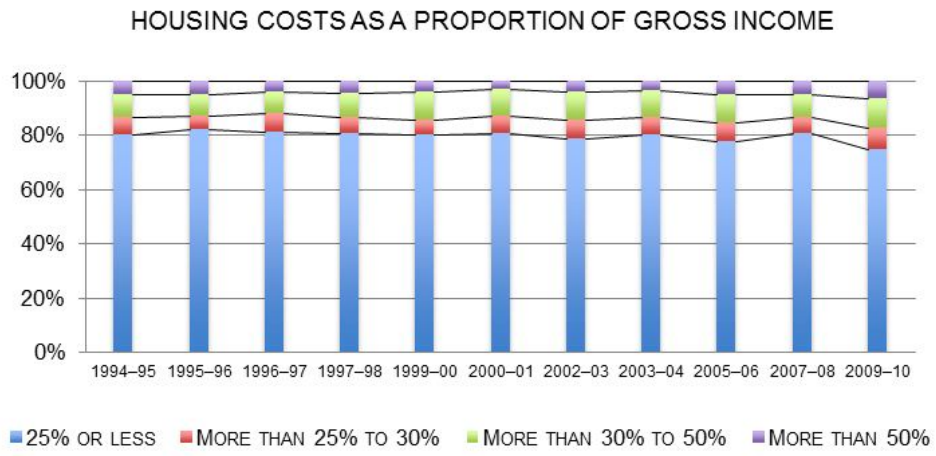

FIGURE 14 – HOUSING COST AS PROPORTION OF GROSS INCOME (ABS, 2011)

5.1.2 Demand drivers

Regional economy

Western Australia's exponential resources exploitation has triggered a housing market expansion based on the large incomes and revenues mining had delivered. From 2000, house prices started to increase at an average of 10 percent per annum, peaking in 2006 at 36 percent. From 2007 and the first signs of the GFC, the market underwent a turnover point where house prices stopped increasing but to decline (-20 percent in 2007 and -18 percent in 2008). Such declines were driven by Australian lending and regulatory institutions progressively tightening the lending criteria, and the Reserve Bank of Australia (RBA) increasing the interest rates throughout 2002-08. From 2007, the accumulated rises in home loan rates and the GFC had a direct impact on the overall consumer confidence and on the Western Australian housing market with a 12 percent year-on-year decline (ABS, 2011).

Demographics

Migration played an important role on Western Australian demographics. Overseas migration has increased significantly over the last ten years and has been a key driver of the underlying demand for new dwellings. Australian Government research (2011) revealed that higher immigration rates have a huge influence on the demand for housing, especially given the high proportion of young adults in the migration intake. Moreover, in developed countries, changes in the average household size is a common feature, and changes occur for a number of reasons such as an increase in divorce, latter marriage, and fewer children (Salt, 2009). As we can see in figure 15, the WA demographic pattern made such a transition. It causes demand for houses

to increase. Further, the trend for lone person households is expected to increase far more quickly than family and group households. Consequently, during the 2000-08 period, the total number of households increased at a greater pace than the total number of housing starts; the net effect being a tightening of the market and corresponding inflated house prices. Further, the underlying demand exceeded the new dwelling supply by 3,100 in 2011; however, in the last 6 months of 2011 supply restraints began to ease as a direct result of a reduction in immigration numbers (Macroplan, 2011).

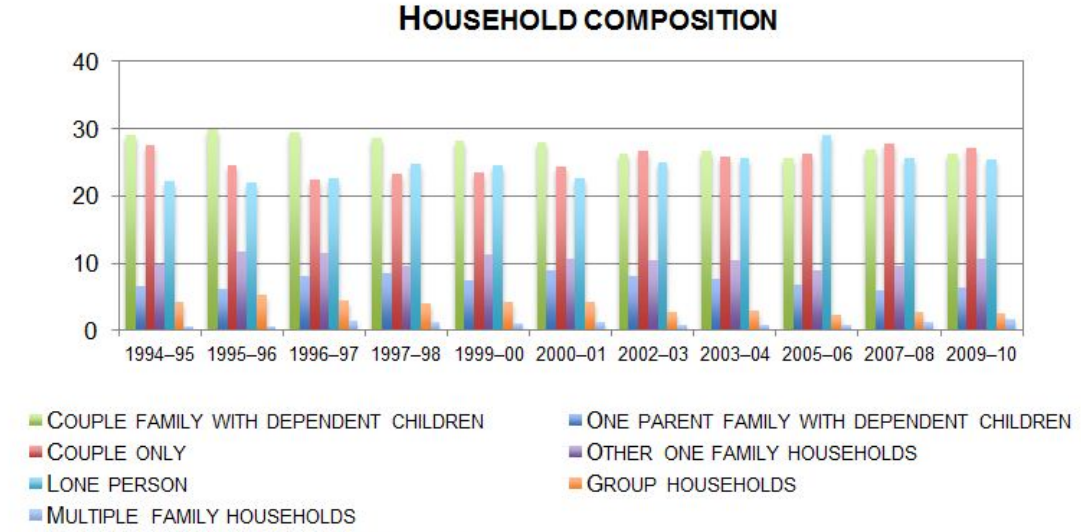

FIGURE 15 - WA HOUSEHOLD COMPOSITION (ABS, 2011)

Credit availability

From the mid-1990s, standard home loan interest rates declined and this allowed households to take advantage of the lower interest rates by increasing their borrowing capacity. The RBA reduced official interest rates because of the low inflation period Australia was encountering. At the same time, an increase in competition between the lending institutions and banks saw interest rates decline below the norm as many lending institutions decreased their margins in an effort to increase the number of potential borrowers (refer to below Figure 16).

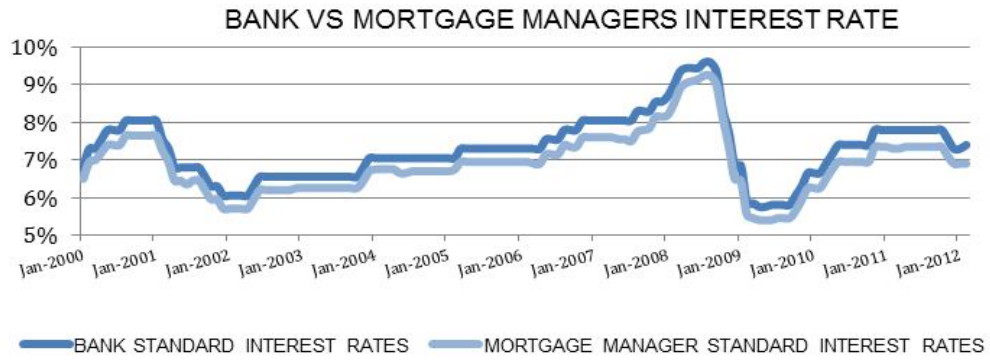

FIGURE 16 - BANK VS MORTGAGE MANAGERS INTEREST RATE (RBA, 2012)

Similarly, while interest rates have decreased, access to credit has been improved. This is regarded as a positive outcome from the early-1980 financial deregulation, with the Australian housing finance market introducing a broad range of products. Sharpless (2008) indicated that the greater credit availability in Australia has fuelled the aspirations of first homebuyers. The transition from credit rationing to credit marketing has had an important impact on lower-income households: they were offered amounts of credit above the 30 percent housing stress criteria. McIvor (2008) revealed that lower-income households not only take up loans they cannot afford, but often enter into agreements without a firm understanding of what they are signing.

Government assistance measures

The housing policies engaged at all government levels targeted key segments of the property market and have had an impact on the effective demand. A number of direct policies employed targeted homeownership assistance, the taxation regime in order to regulate housing expenditure, and, therefore housing demand, prices and affordability (Australian Government, 2011). A lack of policy integration has resulted in the Australian federal, state and local governments constantly altering the original policy settings due to uncoordinated and inefficient processes (Pasqua, 2008).

For example, foreign investment policy settings have been through a series of alterations as successive governments have had to alter and backtrack from original policy settings due to their distortionary effect (FIRB, 2009). Further, on the domestic front the First Home Buyers incentives scheme originally combined with low interest rates to boost the underlying demand for dwellings, only later to be withdrawn in 2009 resulting in a fall in demand of 56 percent in 2010. (Macroplan, 2011).

Type of demand

Demand is mainly triggered by the underlying demand of households eager to buy a house to live in, but it has also stimulated "effective housing demand" (defined here as anything other than the need for shelter). Edgerton (2008) noted that actors in the market have changing aspirations; with a house becoming valued as a speculative "asset", and not as a "home". In addition, this attitude has directed many households to take up investment property loans. The motivation for this change was "irrational exuberance": a desire to obtain return on capital well above the mean.

However, the GFC has slowed down such activity. Property developers, from individuals to large enterprises, suffered from the decrease in housing finance. At the same time, owner-occupiers have been taking advantage of the significant reductions in interest rates, and, the corresponding increase in housing affordability (Australian Government, 2011). Finally, it is essential to note the overall decreasing activity related to speculative demand. Prior to the GFC, the establishment of new houses in suburbs, often occupied by miners or mining companies, have been the main target for speculative demand. The fact that mining industries are investing in accommodation for their staff, regardless of the amount of money put forward, has driven speculative demand. Further, Australia's foreign investment policies had impacted upon the Western Australian housing market by fuelling speculative behaviour through a beneficial taxation system.

5.1.3 Supply drivers

Construction expenditure

In the early 2000s, low construction costs involved with the establishment of a new dwelling had been a comparative advantage for WA housing supply (Macroplan, 2005). However, the Australian government (2011) identified a number of issues having a direct and detrimental impact on construction costs. First, it observed that the skilled labour market in the residential construction industry has tightened up due to the increasing competition from the resources sector and major infrastructure projects. Second, it linked the skills shortage, the delay of construction schedules, and the increasing price of commodities, to increasing costs. The future implementation of an emission pricing scheme and other environmental regulatory

requirements will have further impacts on the construction costs of a house (Australian Government, 2011). The combination of factors (skills shortage, delay to construction schedules, increasing price of steel, concrete and other construction materials, and regulations) has increased the construction costs and impacted on the selling price.

Planning processes and land release

Pasqua (2008) asserts that the provision of land is an essential feature to the effective working of an economy. The government's role is to ensure sufficient land area is released for urban development in accordance to the Western Australia Planning Commission (WAPC) policies. Further, he revealed that inefficient planning approval processes have resulted in inappropriate land releases unable to meet the underlying demand. This has resulted in the need for rationing supply. However, adequate land release policies would consist of a fast and efficient release of land that will accommodate varying market conditions (Pasqua, 2008). Poor government policy management has resulted in inadequate supply, with the direct impact being an inelastic market with subsequent price signals.

Access to transport and proximity to existing infrastructure

Climate change policies and peak oil prices have resulted in higher fuel prices and transportation taxes, which in turn have increased household expenditure (Senate Committee, 2008). People are seeking to live closer to work, and in the long term this will result in more compact cities (AHURI, 2011). The importance of a well-developed public transport system and proximity to the workplace is a key driver of housing supply. Questions arise over the ability of governments to continue to expand roads and the transport capacity, consistent with reasonable access to workplace and services. The convergence point in this idea is that promoting more compact urban places will result in greater integrated investments (AHURI, 2011).

5.2 PROVENCE-ALPES-COTE D'AZUR

The French housing market is generally characterised by the growth of an insufficient number of dwellings compared to the number of households. PACA is considered a perfect example. Its high population density exposes the region to a great shortage in supply compared to the population growth, which has increased by 11 percent in the last decade (INSEE, 2010). Some peculiar characteristics are differentiating the Provencal market from others. The Provence region is considered to be one of the most exclusive and desirable regions in the world to live in, and this is mirrored in its housing market. House prices in some areas can be compared with high-end locations in New York or London. As a whole, it combines the characteristics of a luxury property market with a more standard property market (Warde & Gadzinski, 2011).

5.2.1 Situation

During the 2000-2007 period the evolution of the housing market is due to the rapidly growing demand for new dwelling. Improvements in the financial conditions, lower interest rates, and the application of tax incentives, increased the interest of homebuyers in acquiring an asset. However, it also triggered house prices to greatly appreciate with an average annual growth on nominal price of 10 percent (refer to Figure 17). From 2000 to 2010, the credit market developed products varying in duration, up to 50 years, with the aim of preserving household purchasing power. The number of houses for sale and sold were at equilibrium, and, therefore failed to expand the housing stock (refer to figure 18).

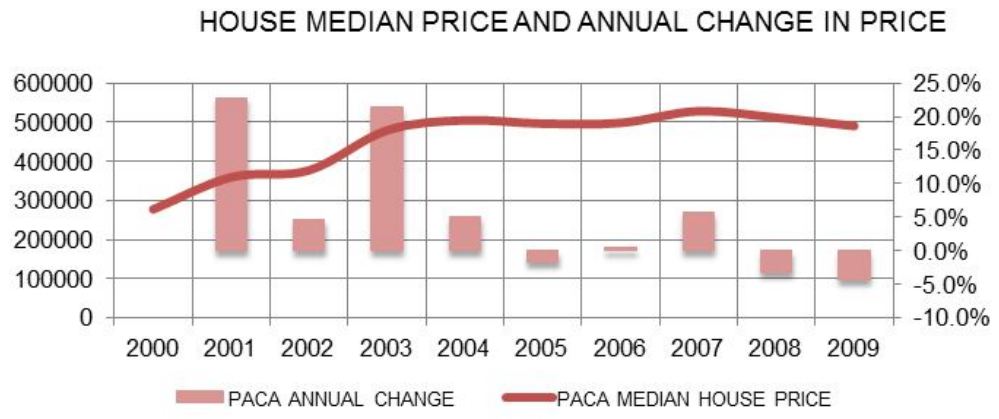

FIGURE 17 - HOUSE MEDIAN PRICE & ANNUAL CHANGE (INSEE, 2011)

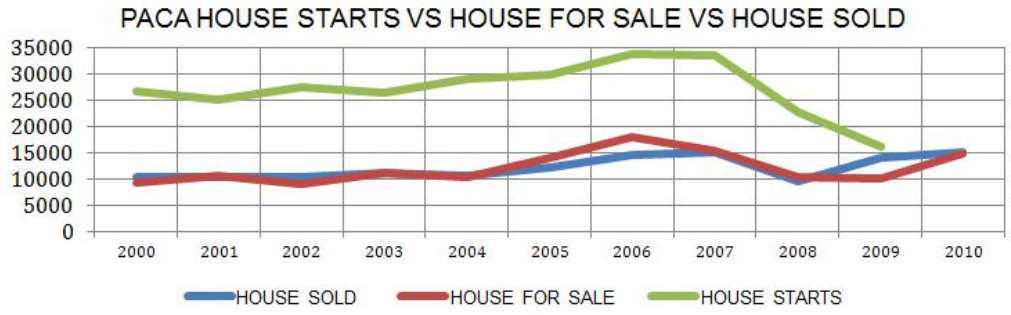

FIGURE 18 - PACA HOUSE STARTS VS HOUSE SOLD VS HOUSE FOR SALE (INSEE, 2011)

As shown in figure 17 the median house prices have been increasing by an annual 13.5 percent growth rate in the early-2000. Prices stabilised in 2005 when the first negative annual growth rate took place. Between 2005 and 2008, stagnation occurred. In 2008, driven by the GFC, prices encountered their first major decline. Household investments decreased from 6.5 percent in mid-2008, as the European Central Bank (ECB) raised interest rates and banks tighten credit standards. The consequences of such a reversal were immediately felt by the property development sector, which drastically reduced new start-ups whilst attempting to retain sales volume (refer to Figure 18). Moreover, the increasing number of new houses available directed property developers to reduce building permit requests (-17 percent in 2008) (Bouveret, Costes & Simon, 2010).

The actual housing market condition is linked with a structural failing where there has been an insufficient supply compared to increasing demand. Dwelling supply is limited by capacity constraints. According to an INSEE conjuncture study, 61 percent of construction firms have had difficulties recruiting since the mid-1990. It also reveals that important construction delays have made it even more difficult to adjust housing supply to the fluctuating demand. Construction firms have to look after supplementary risks impacting the final housing supply. The onset of the GFC saw the market reach sustainability through contraction, with low-growth economic prospects, stricter borrowing conditions, and reduced consumer confidence, restraining activity.

5.2.2 Demand drivers

Population Growth

The increasing household-supply demand in the region arises mainly from population growth. INSEE (2010) reveals that the number of households has been rising faster

than the population growth. This trend can be explained by the fact there has been a change in the demographics pattern that led housing demand to increase from the combined effects of immigration, aging population and single parenting. As reflected in Figure 19 demographic pattern remains on a low-growth trend, with the increasing number of households matching the number of houses for sale.

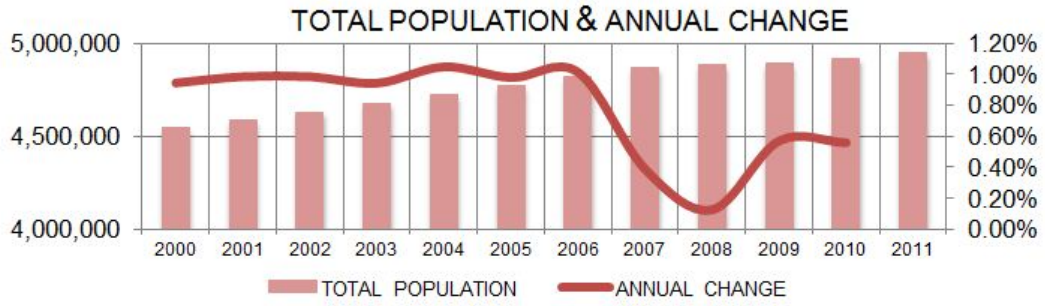

FIGURE 19 - PACA TOTAL POPULATION & ANNUAL CHANGE (INSEE, 2012)

Regional economy

The main components of the PACA economy are tourism, industry, technology, construction, government and banking services. PACA's GDP has been constantly expanding from 2000 to 2008, and the regional economy has been growing at the same rate (5.4 percent) as the U.S. and United Kingdom economies, but with less volatility (Warde & Gadzinski, 2011). From 2009 a GFC-derived slowdown across sectors provoked a decline in the economy. After a slight recovery the economy stood still due to the Europe sovereign debt crisis. The low growth trend combined with high unemployment and low consumer confidence will definitely affect the housing demand, and consequently house prices.

Transactions and Price

A main driver of demand in PACA region has been the strength of the local resale market. This is particularly true for the main coastal cities such as Nice, which is one of the few European cities to be seen as both a holiday resort, due to the favourable climatic conditions, and as a European city of size, scale and cultural attractiveness. The number of residential property transactions in the region is one of the highest in France and constantly represents 10 to 13 percent in relation to the national market size (INSEE, 2010). The "effective demand" has a great role in the housing demand and secondary residences account for 17.2 percent of the total housing stock. Wealthy locals and foreigners have been driving the effective demand. Since 2009,

the number of transactions has returned to pre-GFC levels. A quick comparison of PACA with other Mediterranean regions shows that the former has greatly benefited from a steady price growth trajectory over the more speculative fluctuations of the latter (Warde & Gadzinski, 2011).

Type of demand

For the last 50 years, the PACA housing market has been fuelled by the constant underlying demand in the region. Large numbers of external buyers (foreign and domestic) and generational (retired people) immigration, combined with a high natural population increase, have been the main components for driving housing demand. The effective housing demand in the region has been fuelled by professionals, but also by individuals investing to build secondary residences. Until 2004, one quarter of the foreign housing investment goes to the PACA housing market. PACA local government asserted that large foreign investment is responsible for an increase of 60 percent of house prices between 1999 and 2004 and exerted pressure on the overall housing market (DGUHC, 2007). Since 2007, and the GFC based contraction, the proportion of direct foreign investments has both decreased and localised on the prestigious localities of Cote d'Azur and the Provence littoral.

5.2.3 Supply drivers

Construction and secondary residences

The same demographic factors driving demand apply to supply. In addition, the housing starts figure has been amplified by the number of secondary residences, which is a typical feature of the region housing market. Even though the proportion of secondary residences has been constant for the last decade, it has grown at the same pace as overall housing development and reached 17.2 percent of the regional housing stock. The percentage of secondary residences in different cities across the region differs greatly (Warde & Gadzinski, 2011).

Geography

The geography of the region limits the availability of land. The topography of the region offers a large mountainous relief, and therefore, limits the availability of supply compared to demand (Warde & Gadzinski, 2011). Presently, the saturated coastal

fringe obligates property developers and future homeowners to accept the need to access more remote areas. The environment also plays a great role as numerous national reserves and protected sites prevent further property development projects to occur. The space available for new cities or suburban areas is considered a scarce resource and will become even more so in a near future due to ongoing property development.

Natural risk assessment

As Figure 20 illustrates, local governments' natural risk assessments make clear that natural disasters in the region are a major constraint upon housing construction. More than half the region was assessed to be potentially exposed to high natural risk, such as earthquakes, avalanches, floods, forest fires and landslides. Natural risk protection plans are established locally but affects the entire region (Warde & Gadzinski, 2011).

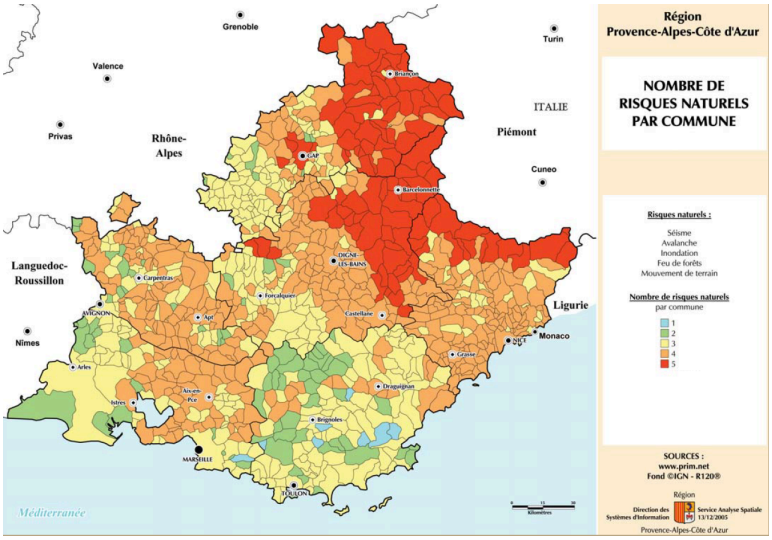

FIGURE 20 - NUMBER OF NATURAL RISK PER COMMUNE

Governmental policies

As the housing market represents a politically contentious sector of the French economy, the government has had to act as a regulatory institution to avoid any severe imbalance within the various components of the market. Thus, the government has adopted a large number of policies aimed at correcting market imperfections. Policies targeting demand aim to correct market imbalance and improve access to home-ownership for the disadvantaged. Despite this, the

government was unable to install policies targeting an improvement in the number of residential properties available. It has, however, implemented incentives to promote the development of social housing in the region, with specific reference to the "loi SRU". Currently PACA is the latest region that has failed to achieve the national social housing criteria, and as a result, the central government is offering future incentives to do so.

5.3 EVALUATION

Having established the past and current housing market situation for both locations, several features emerge and give the opportunity to differentiate and find similarities between both the PACA and the WA residential property markets.

To begin with, a common feature of both housing markets is that they encountered sharp house price increases in the years of the 2000 to 2005 (as shown in figure 21). The price increase has been greater on the WA housing market, while the French region's property market was already seeing its median house price hold steady due to ECB changes in interest rates. In figure 21, we can clearly see the constant increase in both house prices in the first half of the 2000-10 period. Since the onset of the GFC in 2007-08, both housing markets have been stagnating around the same price level. However, the house price index reveals that the WA housing market has been much more inflated than PACA. In the last ten-year period, WA house prices tripled whereas PACA's increased by 2.5 times (refer to Figure 21)

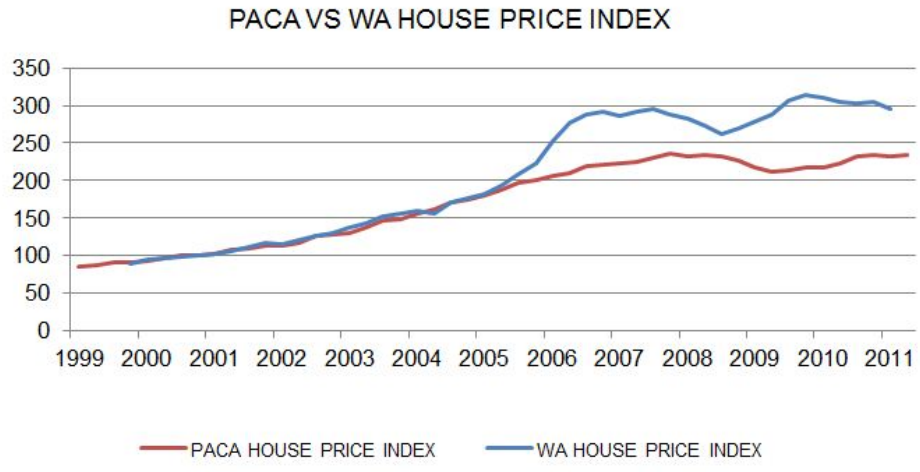

FIGURE 21 PACA VS WA HOUSE INDEX (ABS & INSEE, 2012)

In the early 2000, housing starts within PACA were steadier than in WA due to the

large difference in population size. In the 2006-2007 period, the French housing market encounters a flat period due to the fact ECB restrained its interest rates and financing residential projects became more constraining. From 2008, PACA's housing starts underwent a sharp slowdown due to the first consequences of the GFC on the region such as a fall in activity for the construction industry and the lack of investment finance for both property developers and households. At the same period, the Australian region underwent a slight decrease in activity but still remained in the range of activity level for the last ten years. It is in 2011 that the construction activity in housing have been at its lowest for the past ten years and reach PACA level of activity at its lowest during the GFC (refer to figure 22).

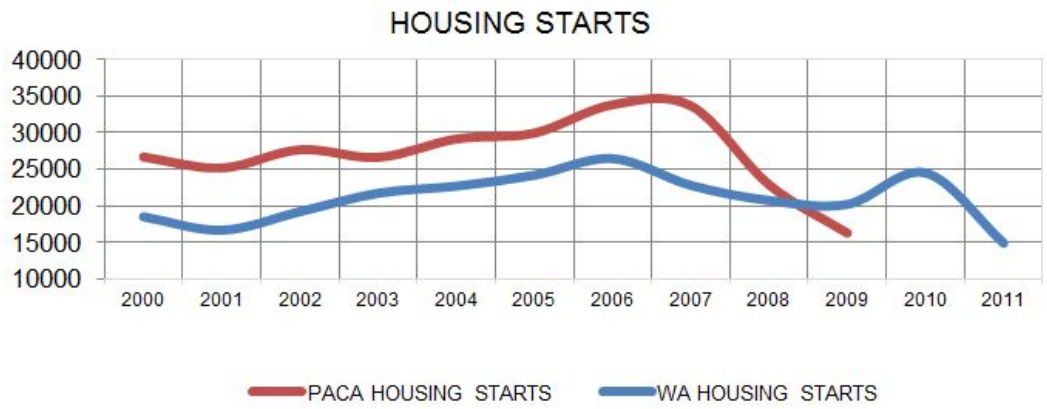

FIGURE 22 - PACA VS WA HOUSING STARTS (ABS & INSEE, 2012)

This thesis had identified both similarities and differences in the demand-supply equation in the PACA and WA housing markets.

The most common factor in the housing demand remains the condition of the regional economy. Both regions were economically thriving in the early-2000, with both housing markets having seen the number of housing start increased every year as well as house prices. The point of distinction occurred when the first signs of the GFC emerged. In PACA, the market underwent a reversal in housing starts due to the falling activity in the construction sector. In contrast, Western Australia has been able to take advantage of its resources industry to counter an eventual economic downturn. Nevertheless, it is argued that an entity like WA that relies on a single industry can be vulnerable to the creation of a two-speed economy that results in wealth disparities within the population.

Another similarity is the demographics aspect. Both regions faced a large increase in population. Due to its economic prosperity, and therefore the constant need of

human labour, WA has seen its population increase at a much higher rate than most regions in the world. At the same time, PACA which had experienced a large population increase over the previous two decades (1987 to 2007), has been in a reduced growth phase for the last five years (2007-11) due to changing demographics and economic uncertainty. Critically, immigration has been more prominent in both regions than any other forms of population increase.

One of the main strengths of the PACA housing market has been its ability to retain and increase housing value over a long period (1950s to the present). In fact, the region has never experienced an extended period of sharp decline in prices but instead tended to fluctuate slightly in relation to the economic environment. The region remains attractive to homebuyers of varying wealth who are seeking either new or existing stock. Seventeen percent of housing stock is held as secondary residences by wealthy French citizens, or by foreigners. Geography, culture, customs and leisure have been essential to establishing the region's "lifestyle" reputation.

In contrast the WA housing market does not possess such a long-term reputation and is still seen as a volatile market. The expansion of the Perth metropolitan region has been facilitated by the desire for Western Australian households to own a "house on a detached, fenced block". However, this massive expansion may have reached its limits as Australian households increasingly express the desire to be able to live close to workplace and community infrastructure (AHURI, 2011). The regional environmental configuration does not allow the demography to evenly take place, but also makes difficult the new instalment of community services and infrastructures far from an established city.

In WA, the government is responsible for the release of land to enable new construction to take place. However, Pasqua (2008) proved the government does not possess any efficient mechanism to adapt to the fluctuating market components. Similarly, the French government through its local communities regulates land distribution due to the PACA region great exposure to natural risks (earthquake, floods, forest fires or avalanches). These natural risks impact on the ability of governments and individuals to build new dwelling as it limits building space, which is already restricted by extensive natural reserves.

CHAPTER 6
RESULTS & CONCLUDING DISCUSSION

This chapter assesses the complex set of factors examined in the previous chapters to determine the different variables affecting the Provence-Alpes-Cote d'Azur and Western Australia housing markets.

6.1 CAN WE TALK ABOUT A BUBBLE?

A Global Financial Crisis (GFC)-derived housing crisis as seen in the American and Spanish markets is highly unlikely to occur within PACA and WA. The combination of factors under investigation during this thesis did not provide sufficient evidence that a property bubble occurred (between 2000 and 2011). The dimensions explored in the previous chapters revealed a set of factors impacting (demographics, credit market, supply elasticity, economic environment, government assistances, taxation system) on the property market. The thesis highlighted the similarities and differences between each region: establishing a common set of factors and more regionally specific features.

The timeframe (2000 – 2011) chosen for this research incorporates a major financial downturn that has affected major developed economies. The repercussions of the GFC have been more severe upon PACA than WA. As a result, the two regions have experienced different macro-environment reactions. The following chapter will individually analyse the complexity of factors used in the previous chapters to explain why both regions do not meet the definition of a property bubble.

At first, the characteristics of the French housing market (i.e. low indebted households, no subprime mortgage) and the pecuniary elements in PACA housing market (i.e. constant underlying housing demand and an inelastic housing supply) excluded the possibility of a sharp speculative event. The housing market experienced significant price growth at the beginning of the 2000's, and this was the result of a combination of factors (improvement in financial conditions, favourable tax incentives and people's optimistic expectations about future price development). The GFC had a profound influence on most dimensions (i.e. macroeconomics,

incentives of actors, beliefs and expectations) investigated. PACA's reaction to the GFC was principally aimed at sustaining the housing market by implementing strategic policies and targeting key factors in an effort to avoid a drastic decline in prices. The presence of such an "unforeseen" global event affected the perception of the housing market and consequently altered the actors' aspirations. In addition, the change in people's expectations about future price developments reduced future economic growth and the pecuniary characteristics of PACA housing market provoked a negative gearing. Further, the set of factors includes conditions that inhibit the emergence of a property bubble. Supply elasticity, the large decrease in FDI, or the recession caused by the GFC, can be considered as such.

The structural inelastic supply characterising the PACA housing market, and not speculation, is one of the defining features promoting large price increases over the last decade. In PACA, the chronic shortage in supply has been a problem for decades and government incentives have proved ineffectual. Even though the PACA housing market could have been targeted by speculative demand during the large price increases, the GFC has dampened demand. A potential future risk exists in actors' expectations about future price development and potential buyers' "irrational exuberance". In 2005, the Organisation for Economic Co-operation and Development (OECD) found the French housing market had behaved cyclically over the past 30 years. That housing market cycles last nine to ten years: with 5 years of increasing prices followed by 4 to 5 years of decreases. If this rule is applied to the PACA housing market, the conclusion drawn from the previous chapters indicates that PACA is at a turning point of a normal cycle and prices will start to decrease within the next twelve months (by end 2012).

Table 2 refers to the developmental factors examined in the thesis and provides a summarize overview of the pre-during-and-post-GFC impact.

PACA COMPLEX OF FACTORS SUMMARY	**PRE-GFC**	**GFC**	**POST-GFC**
MACROECONOMIC ENVIRONMENT	PROSPEROUS PERIOD WITH STRONG ECONOMIC GROWTH (>4%)	RECESSION	STAGNATION (ECONOMIC GROWTH <1%)
STRUCTURAL CHANGES	INTRODUCTION OF EURO (2002) AND CREATION OF ECB (1998)	GOVERNMENT CHANGES	STRUCTURAL AND SOVEREIGN DEBT CRISIS IN EUROPE
CREDIT CONDITION	LOW INTEREST RATES AND AVERAGE CREDIT AVAILABILITY	RISE IN INTEREST RATES AND CONSERVATIVE CREDIT AVAILABILITY	LOWERING OF INTEREST RATES AND RESTRICTIVE CREDIT AVAILABILITY
INCENTIVES	TARGET HOUSE DEMAND AND SUPPLY WITH TAX INCENTIVES	LIMIT THE DECLINE IN BOTH HOUSING DEMAND AND SUPPLY	TARGET TO SPECIFIC MARKET IMBALANCE TO CORRECT FLUCTUATIONS
BELIEF & EXPECTATIONS	OPTIMISTIC EXPECTATIONS OF FUTURE PRICE INCREASE	LOW EXPECTATIONS OF PRICE INCREASE	MIXED EXPECTATIONS ABOUT PRICE INCREASE
GEOGRAPHIC & DEMOGRAPHICS	RESTRICTIVE AVAILABILITY OF LAND AND HIGH POPULATION	RESTRICTIVE AVAILABILITY OF LAND AND HIGH POPULATION	RESTRICTIVE AVAILABILITY OF LAND AND HIGH POPULATION
HOUSING DEMAND	LARGE UNDERLYING DEMAND	RETRACTION OF DEMAND	MEDIUM LOW DEMAND
HOUSING SUPPLY	INELASTIC SUPPLY	INELASTIC SUPPLY	INELASTIC SUPPLY

TABLE 2 – SUMMARY OF PACA COMPLEX OF FACTORS

The overall WA housing market from 2000 to 2011 does not meet the criteria established in this thesis for having undergone a housing bubble. However, selected locations such as Karratha and the Perth suburbs of Peppermint Grove, Mosman Park and proximity do clearly meet the criteria. Karratha is located in the Pilbara region of WA, which is the centre of iron-ore mining, whilst the Perth suburbs identified house the entrepreneurial and professional class who have been the greatest beneficiaries of the state's resource expansion (Winter, 2011).
Like PACA, WA house prices experienced a sharp price increase in the early-2000 until 2005 when it moved beyond the trend line (refer to house price index). Past structural events in the WA economy and regulations in the housing market have encouraged potential homebuyers to access homeownership. Further, policy changes in 2004 and 2008 aimed to support new investment in rental housing stock.

From 2002 to 2008, the credit market experienced increasing interest rates as the RBA imposed restraint upon the household market after a period of increasing prices throughout the same period (REIWA, 2012). This increase in rates, combined with the GFC, did slow down the trajectory of price increases.

During this time, Australia adapted its taxation system to attract investors into the housing market. However, poor policy-making resulted in the FDI attracted increasing house prices without adding to net housing supply. Further, inefficient land release and planning systems failed to address demand and supply requirements. The GFC occurred at a time (2008-09) when WA was encountering successive expansions in its economy through the resources industry. The continuing impact of the GFC on the non-mining sectors has been negative as they faced an inelastic property market combined with mining-related inflationary pressures (labour, land, contents and infrastructure prices above the national average.
Refer to Table 3).

WA COMPLEX OF FACTORS SUMMARY	**PRE-GFC**	**GFC**	**POST-GFC**
MACROECONOMIC ENVIRONMENT	PROSPEROUS PERIOD WITH STRONG ECONOMIC GROWTH AND SUCCESSIVE BOOMS	CREATION OF DISPARITIES BETWEEN RESOURCES INDUSTRY AND OTHER SECTORS	INCREASE IN THE "TWO-SPEED" ECONOMY
STRUCTURAL CHANGES	FINANCIAL DEREGULATION EASE OF THE TAXATION SYSTEM	FOREIGN INVESTMENT POLICES AND FHO INCENTIVES SCHEME	CHANGES IN FDI POLICIES AND FHO GRANT SYSTEM
CREDIT CONDITION	RISING INTEREST RATES GREAT CREDIT AVAILABILITY	DECREASE IN INTEREST RATES AND GREAT CREDIT AVAILABILITY	RISING INTEREST RATES AND GREAT CREDIT AVAILABILITY
INCENTIVES	TARGET FIRST HOMEOWNER	TARGET HOUSING SUPPLY AND RENTAL MARKET	STRICTER CHANGES IN POLICIES AND FUND SCHEME
BELIEF & EXPECTATIONS	VERY OPTIMISTIC EXPECTATIONS OF FUTURE PRICE INCREASE	VERY OPTIMISTIC EXPECTATIONS OF FUTURE PRICE INCREASE	OPTIMISTIC EXPECTATIONS ABOUT PRICE INCREASE
GEOGRAPHIC & DEMOGRAPHICS	LARGE AVAILABILITY OF LAND AND HIGH POPULATION GROWTH	LARGE AVAILABILITY OF LAND AND HIGH POPULATION GROWTH	LARGE AVAILABILITY OF LAND AND HIGH POPULATION GROWTH
HOUSING DEMAND	LARGE DEMAND	LARGE DEMAND	LARGE UNDERLYING DEMAND
HOUSING SUPPLY	RATHER ELASTIC SUPPLY	LOW ELASTIC SUPPLY (LIMITED LAND RELEASE, INEFFECTUAL PLANNING POLICIES)	LOW ELASTIC SUPPLY (LIMITED LAND RELEASE, INEFFECTUAL PLANNING POLICIES)

TABLE 3 – SUMMARY OF WA COMPLEX OF FACTORS

In conclusion, it is not correct to refer to a property bubble when evaluating the PACA and WA house price increases over the last 10 years. Prior to the GFC, house price fluctuations in both regions were interpreted as a deviation away from the "fundamentals" (refer to Table 4). With the GFC this has changed. Buyers are now exclusively basing pricing upon these "fundamentals".

6.2 RELIABILITY AND SUITABILITY OF LINDS' FRAMEWORK

Lind's (2008) theoretical framework has been used extensively throughout the thesis with specific reference to the case study explored in chapters four and five. Such a model put forward and established a number of common factors within PACA and WA that has been indispensable to the research. As Lind recommends in his paper, the framework must be complemented with typical factors of the housing market under investigation. Table 4 below presents the general framework used in the case study (including housing market factors) and related the different dimensions with the extent of the condition (necessary, sufficient or detrimental). Detrimental conditions, such as a recession, restrictive land availability (causing supply inelasticity), and restriction on credit, have enabled the PACA housing market to avoid a housing bubble. The thesis reveals that a selected number of Perth suburbs and mining towns have experienced a property bubble. However, the state as a whole has not. The thesis concludes that the avoidance of a bubble was more the result of external factors (e.g. the onset of the GFC) than good planning on the governments' behalf.

Lind's hypothesis is, therefore, deemed correct.

This research rejects the finding of literature within the review that a *unique* set of factors can be determined, but stresses that it should be a combination of *common* factors with more *specific* indicators (national, region, local and city scale).

COMPLEX OF FACTORS SUMMARY	**NECESSARY CONDITION**	**SUFFICIENT CONDITION**	**DETRIMENTAL CONDITION**
MACROECONOMIC ENVIRONMENT	PROSPEROUS PERIOD WITH SUCCESSIVE BOOMS	ECONOMIC GROWTH (>2%)	RECESSION PERIOD
STRUCTURAL CHANGES	X	FEW CHANGES IN STRUCTURE	X
CREDIT CONDITION	LOW INTEREST RATES AND GREAT CREDIT AVAILABILITY	LOW INTEREST RATES OR GOOD CREDIT AVAILABILITY	HIGH INTEREST RATES (>10%) OR RESTRICTIVE CREDIT AVAILABILITY
INCENTIVES	NO REGULATORY INCENTIVES TOWARDS HOUSING MARKET	POOR INCENTIVES TOWARDS HOUSING MARKET	INCENTIVES RESTRICTING SPECULATIVE DEMAND
BELIEF & EXPECTATIONS	VERY OPTIMISTIC EXPECTATIONS OF FUTURE PRICE INCREASE	OPTIMISTIC EXPECTATIONS OF PRICE INCREASE	HIGH EXPECTATIONS OF PRICE **DECREASE**
GEOGRAPHIC & DEMOGRAPHICS	LARGE AVAILABILITY OF LAND AND HIGH POPULATION GROWTH	NORMAL AVAILABILITY OF LAND OR HIGH POPULATION	RESTRICTIVE OR NO AVAILABILITY OF LAND
HOUSING DEMAND	UNDERLYING DEMAND AND EFFECTIVE DEMAND	LOW EFFECTIVE DEMAND	ONLY UNDERLYING DEMAND
HOUSING SUPPLY	HIGHLY ELASTIC SUPPLY	ELASTIC SUPPLY	INELASTIC SUPPLY

TABLE 4 COMPLEX OF FACTORS USED FOR BUBBLE IDENTIFICATION

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