



AMERICAN UNIVERSITY OF BEIRUT

REAL ESTATE MARKET IN LEBANON, REAL  
DEMAND OR A POSSIBLE BUBBLE?

by  
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A project  
submitted in partial fulfillment of the requirements  
for the degree of Master of Business Administration  
to the Suliman S. Olayan School of Business  
at the American University of Beirut

Beirut, Lebanon  
April 2015

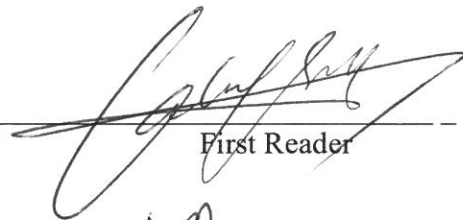
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Date of project presentation: April 28, 2015

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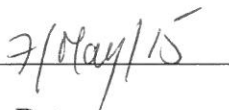
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## ACKNOWLEDGMENTS

I would like to thank each and every person who supported me in this project, as well as the institutions that guided me to the throughput. SAYFCO Holding, represented by its Chairman-CEO, Mr. Chahe Yerevanian, for enlightening me further about the real estate sector in Lebanon.

My recognition and gratitude are addressed to my thesis advisor Dr. Salim Chahine, the second reader Dr. Walid Nasr, for their support and assistance.

## AN ABSTRACT OF THE PROJECT OF

Ralph Shawki Kassab for Master of Business Administration  
Major: Business Administration

Title: Real estate market in Lebanon, real demand or a possible bubble?

This paper evokes the real estate prices in Lebanon, as since 2005, prices have risen significantly and provoked a big lag between the purchasing power of citizens and real estate prices. It addresses the notion of bubbles in general, underlining their characteristics, then presents some of the bubbles that happened to the real estate sector in the region and worldwide. Bubble bursts are then depicted while showing their plausible reason.

A study of the Lebanese case is then conducted, while stressing on various microeconomical and macroeconomical factors that reflect the variation of the real estate prices in Lebanon. Afterwards, a presentation of the real estate prices in Ashrafieh area (Which variation is similar in the whole Lebanese territory), is done from 1998 until 2014, and a bubble check test is conducted (GSDAF test according to PSY(2011)). The test result shows two bubbles in the pricing of real estate in Lebanon, one in 2005 and the other in 2008. While accounting for the inflation and stagnation of prices prior year 2005 hikes, country's risk premium, it can be concluded that other factors need to come along with the real estate prices such as income, rent, ...

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# CHAPTER I

## INTRODUCTION

The real estate sector goes far beyond satisfying a person or a group of persons needs for shelter, housing, doing business, it is also an important component for investment. It is, in fact, a measure of wealth for individuals and companies. Starting from the United States where real estate accounts almost to 30% of the total assets owned by the nonfinancial private sector. In France, 60% of households own homes. To add, real estate assets are considered safe collateral that allows monetary transmission. Whilst underlining the importance of the role of real estate in global economies, the IMF underlines that more than two thirds of the banking crisis were headed by intensive fluctuations in house prices. As for Lebanon, 60% of FDI's inflows are those related to the residential and real estate investments.

The real estate prices in Lebanon have significantly increased starting 2005. In fact, some Lebanese regions have witnessed an increase of the real estate prices of more than 300% in nominal growth, especially highly demanded zones where lands are scarce. The main objective of this paper is to respond to the fears of a bubble burst in the real estate sector, and especially to the youth who are striving to possess a property in Lebanon but are undetermined whether to go for it or wait for the bubble to burst.

While bubbles burst, fragile economies may collapse, the banking sector receives a shock from crisis to recession. Individual's savings as well as corporate monies allocation are put at stake during a bubble burst phenomena.

The literature review will focus on the asset valuation and diverse studies that reflect the importance of the models in addressing ongoing market trends since it is also a topic of interest for empirical and theoretical economists alike.

In fact, bubbles bursts happened in the US, Europe, the Gulf Region, ... and are recent. A close lookup on real estate bubbles will be underlined, starting from foreign cases and focusing finally on the Lebanese case.

An exhaustive study on the Lebanese market will be presented, stressing on the major factors influencing the real estate prices.

What are the real causes that led to the sudden variation of the real estate prices in Lebanon?

Will the real estate market in Lebanon be facing a bubble burst or the increase in prices is due to a normal supply/demand cycle?

How did Lebanon manage to shift to new requirements based on the increased prices of the real estate properties?

Then, Lebanon will be benchmarked to other regional peers in order to check whether the actual increases in prices are due to a bubble effect or they are a price correction of underestimated assets or subject to the rational fundamentals of supply and demand. In a final step, a bubble check analysis will be conducted to clarify the future of the industry.

Confirming or refuting the existence of a bubble, would be of a great importance to everyone as, the decision making related to the biggest lifetime investment done is the acquisition of real estate assets.

## CHAPTER II

### REAL ESTATE BUBBLES: DEFINITION, PATHS AND CHARACTERISTICS

#### **A. Definition of Bubbles**

The term "bubble" is widely used but rarely clearly defined. Case and Shiller “believe that in its widespread use the term refers to a situation in which excessive public expectations of future price increases cause prices to be temporarily elevated.” (Cowles Foundation Paper No. 1089, 2004)

A real estate bubble can be also defined as due to the increase in demand for houses coupled with limited supply (subject to change), and the speculation market. In addition, parties wanting to make considerable profit within a short period of time, enter the real estate sector and misbalance the equilibrium. When demand slows down or stops as the supply of housing increases, it can make a marked drop in the price of housing, which is referred to as a “bubble bursting.”

#### **B. Different Paths of Bubbles**

Real estate bubbles have varying paths according to each and every country. Calverley (2009) found that the US housing bubble has been regionalized while as the prices of real estate properties in the United Kingdom followed a cyclical pattern influenced by its business cycle. In addition, some price declines in 2004 due to rising interest rates, or stagnating at certain levels were encountered in Australia. Some other

nations witnessed late increasing price hikes, such as Bulgaria, Canada, Spain and Dubai where the cyclical housing production was affected from overseas capital from prior bubble markets.

Downs (2008) explains that the ending phase of a bubble witnesses a sharp last run-up “led by speculators in a wave of euphoria”, then a sudden decrease in the financing activity leads to a huge drop that triggers the bubble to burst, consequently, sales slowdown and the prices of real estate entities struggle in a downward trend.

According to the World Bank, “although many bubble collapses are followed by crises, not all crashes lead to crises that destabilize the financial system; financial systems that have strong supervisory and regulatory institutions and macroeconomic stability before the onset of a bubble tend to weather a bubble’s collapse better than systems that do not”. Furthermore, the World Bank emphasizes that the frequency of bubbles and crashes are higher in emerging markets due to opaque financial markets, lack of supervision and regulation and poor accounting standards.

### **C. Characteristics of Bubbles**

Bubbles are characterized by excess variance and fluctuations that are not hooked by fundamentals. Shiller (1981) and Fama (1965) relate the excess volatility of the asset prices to the phenomenon called “bubble”.

In addition, as Kindleberger (1978) described, the courses of bubbles have a defined shape. They begin with an early uptick, perhaps representing real good news or a little bit of early froth. That surge escalates, and during this growth period of the bubble, price growth escalates and the path of prices is convex. Ultimately, the bubble ends either in a violent

crash on in a slow deflation.

Nonetheless, bubbles may be perceived as factors influenced by the supply-demand phenomenon. Particularly, in periods of high demand, supply will follow since the prices seem to increase, and when demand falls and the supply is still at his high levels, this provoke a lag that accounts for bubbles bursting in order to regain equilibrium.

In his study, Calverley (2009) showed that in 2008, the IMF measured “house price gaps” in western nations based on dynamics such as disposable incomes, short and long-term interest rates, credit growth, changes in equity prices, and working population. He concluded that the housing prices are overvalued in a range going from 10% to 32%.

Malpezzi and Wachter (2002) studied the cause of speculative bubbles that were due to combination of investors’ extrapolations of latest trends of long-term price increases, which was considered as “adaptive expectations” to a disruptive phenomenon, and the pricing behavior subject to myopia, in which previous events having down trending effects are neglected, as they are low in frequency.

#### **D. Why Prices Go Up During Bubbles**

According to Shiller (2005), there are several factors that influence (trigger) the increase in the prices of the real estate, including the positive growth of the population, the scarcity of lands in specific valuable areas, increase in the construction costs, decline in interest rates, sensitivity of housing demand to income and price, and the high transaction costs.



### **E. Rational Bubble**

According to Alexander Bitzow Pedersen & Erik Christian Montes Schütte, there are few properties of rational bubbles that can be witnessed. The existence of a bubble will lead to its explosiveness and thus prices will increase. All every pricing is composed from a fundamental and a bubble component, the bubble component will account for an increasing proportion of the actual asset price. In parallel, negative bubbles cannot exist in this case since the explosive behavior of the bubble will force prices to take the value of zero at some point in time. As rational investors are aware of this situation, the bubble will burst immediately because no one will pay for the bubble premium. Second, a bubble is a martingale and thus past events cannot help predicting future cashflows.

### **F. Intrinsic Bubble**

While criticizing the rational bubbles as the investors do not account for the uncertainty related to the return but just on the expected return, Froot and Obstfeld (1991) tried to bypass the exogenously driven collapse by modeling the bubble as a non-linear function of the fundamentals specifically the level of the implicit dividends. For this reason, these are called intrinsic bubbles. Intrinsic bubbles are characterized in a way that for a given level of exogenous fundamentals, the bubble will maintain at the same level over time and increase/decrease with the fundamentals. Subsequently, persistent high level in returns will produce a persistent bubble, and thus persevering deviations from the fundamental asset value. This implies that asset prices will overreact to changes in dividends or rents, which is consistent with empirical results.

They also pointed out that fads and irrationality could also generate persistent

deviations from the fundamental asset value as well as changes in the regimes.

### **G. Irrational Bubble**

In this case, the deviations from the fundamentals present a non-rational or irrational trend, which was not explicitly studied due to its difficulty. As pointed out by Blanchard and Watson (1982): “it is hard to analyze rational bubbles. It would be much harder to deal with irrational bubbles.”

One of the most researchers involved in the irrational bubbles remains Robert Schiller who has developed his book “Irrational Exuberance (2005)” in which he underlines the fact that bubbles are a combination of structural, economic and psychological elements.

Some critiques related to the irrational view is driven by the advocates of the EMH (Efficient Market Hypothesis). EMH considers that asset prices are priced correctly at all times and the deviations are just apparent illusions. As Eugene Fama, father of the EMH, put in an interview: “People are always saying that prices are too high. When they turn out to be right, we anoint them. When they turn out to be wrong, we ignore them. They are typically right and wrong about half the time” (Cassidy, 2010). In Fama's view, rapid changes in prices are determined by changes in the risk appetite of investors. During boom times, risk appetite is high and the future required return on assets is low. Thus the discount rate applied to future dividends will be low and this pushes asset prices up. When a recession arrives, risk aversion increases and the resulting elevated discount rates cause prices to decrease rapidly.

In contrary, Shiller is confident that behavioral factors are the cause of such variations. Latest empirical evidence has been supportive of Shiller's view. Greenwood and Shleifer (2013) use a collection of investor surveys to show that market expectations are strongly positively correlated with each other, as well as with past returns and with the price level, investors expect the highest future returns when prices are near their cyclical peak.

In the real estate pricing, in general, it is referred to the price-to-rent ratio. The reason behind it is that, in equilibrium, the price a household is willing to pay for a house should be equal to the present discounted value of all future services that the property can provide.

$$P_t = \sum_{i=0}^{\infty} \left( \frac{1}{1+r_f} \right)^i \mathbb{E}_t (D_{t+i} + U_{t+i}) + B_t$$

where  $P_t$  is the after-dividend price of the asset,  $D_t$  is the payoff received from the asset (i.e. dividend),  $r_f$  is the risk-free interest rate,  $U_t$  represents the unobservable fundamentals and  $B_t$  is the bubble component. The quantity  $P_t - B_t$  is often called the market fundamental.

According to the Journal of Asian Economics, a divergence between the actual efficient asset price and the fundamental value of the asset is a necessary and sufficient condition for the presence of a bubble. Since the fundamental value of the asset is often ambiguous and sometimes hardly findable, Phillips, Shi, and Yu (PSY, hereafter, 2011) advise to find a sufficient condition for detecting bubbles. A study of the explosiveness in the dynamic behavior of the asset price after the fundamental value is taken into account.

Bubble detection in asset pricing has been comprehensively studied and various

methods were applied for checking. The present value model is not else than the discounted future cashflows that are collected from the asset in the absence of a bubble condition.

Blanchard and Watson (1982), Gurkaynak (2008) study the fundamental part of the price of an asset. In the cases where buyers are willing to pay an excessive amount to the fundamental value in a way to anticipate future major escalation of prices above the fundamental value, rational bubbles arise. When rational bubbles are present, the asset price is composed of the fundamental component and the bubble component.

Shiller (1981) discussed that when a rational bubble exists, the variance of observed asset price will surpass the bound imposed by the variance of the fundamental value. To note that some critics exist in regard to this approach as it is considered as limited in relation to the bubble part. In addition, West (1987) compared, in a non-bubble component, the estimate from a linear model to that of the underlying equilibrium model. If a difference exists between the two approximations it may imply the presence of a bubble component.

Campbell and Shiller (1987) proposed a method for checking the gap between the asset price and the fundamental value which will exhibit explosive behavior during a bubble-formation course. A unit root test checks the explosiveness and the presence of a bubble. If a bubble exists, the asset price and the fundamental value can be characterized in two possible instances. First, the asset price is non-stationary but the fundamental value is stationary. Or, both are non-stationary. However, the second case is not sufficient evidence for the presence of a bubble, and therefore, a co-integration test is called for. In the presence of a bubble, no co-integration of the asset price and its fundamental price can be done. Diba and Grossman (1988) “highlight that the explosiveness in the abovementioned gap is sufficient for bubble detection, and the unit root and co-integration tests are the

instruments for the identification of the explosiveness.

Evans (1991) stressed on some limitations of the unit-root and co-integration test, and has their inability to detect bubbles in some periodically collapsing periods.

Phillips, Wu, and Yu (2011) use a sup Dickey–Fuller (DF) test, which consists in implementing the right-tailed DF test repeatedly on a forward expanding sample sequence and performing inferences based on the sup value of the corresponding DF statistic sequence.

As shown by PWY, the test power is improved by the abovementioned method, also to note that it allows to detect the time-frame of the bubble. However, PWY has a limitation which is its ability to detect just a single bubble or the first bubble in a series of bubbles. For multiple bubbles, a method by PSY(2011) can be applied.

PSY (2011) suggest another approach called the supsup DF test, by repeated implementation of a right-tailed DF test. But, “rather than fixing the starting point of each regression window to be the first observation of the full sample, the PSY procedure extends the sample sequence by varying both the starting point and the ending point of the sample over a feasible range of flexible windows” as highlighted by Matthew S. Yiu, Jun Yu, and Lu Jin.

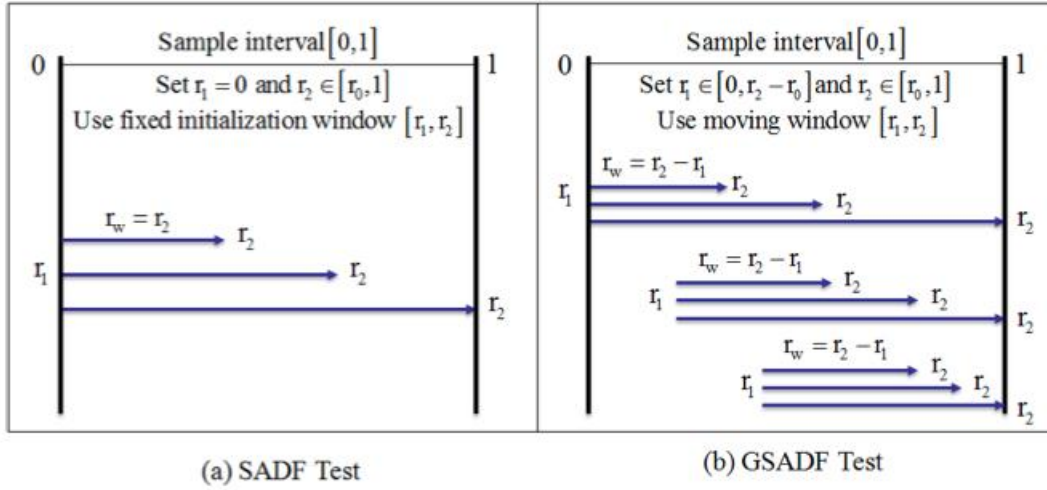


Figure 1 SADF Versus GSADF Stamping Methods

## H. Phillips, Shi, and Yu (PSY) Method

PWY and PSY are based on the Present value model, rational bubble assumption and nonlinear explosive characteristic. A flexibility in the starting observation and window size is also implemented.

$$X_t = \mu + \delta X_{t-1} + \varepsilon_t, \varepsilon_t \sim \text{iid}(0, \sigma^2).$$

The above expression enables to check for an explosive root where  $X_t$  is the time series of the asset price with the fundamental value been taken into account, and  $\varepsilon_t$  is the error term. In the test, the null hypothesis is  $H_0 : \delta = 0$  (unit root behavior) and the alternative hypothesis is  $H_1 : \delta > 0$  (explosive behavior).

The critical values of the standard Dickey Fuller test are obtained for the right-tailed alternative hypothesis  $H_1 : \delta > 1$  rather than the normal left-tailed test  $H_1 : \delta < 1$ . The

regression in the first recursion uses  $\tau_0 = \lfloor nr_0 \rfloor$  observations for some fraction  $r_0$  of the total sample, where  $\lfloor \cdot \rfloor$  indicates the integer part of the argument. Following regression build on this original data using successive observations giving a sample of size  $\tau = \lfloor nr \rfloor$  for  $r_0 \leq r \leq 1$ .

The enhancement in the PWY technique is that the first observation of each regression is fixed to be the initial observation of the full sample but the number of observations used in each regression expands until the full sample is covered. A recursive computation of the DF from every regression, and the finding of the Sup DF allows to detect the existence of a bubble. As for the specification of the timing of the bubble (Start and Finish), the recursive DF statistic is compared to the critical value sequence. Thus, the start time of the bubble coincides with the first recursion for which the value of the DF statistic of estimated  $r$  is larger or equal to the right side critical value, and the collapse date is identified as the first successive recursion for which the DF statistic gets below the critical value.

In order to specify the timing of the successive bubbles, the PSY method test for  $H_0: \delta = 0$  against  $H_1: \delta > 0$ . Thus, a variation in the number of observations is applied as well as a change in the first observation of each regression. To find out if there is a bubble, the supsup DF statistic is used and the Sup DF Statistic is compared to the critical value to time-stamp the bubble.

In order to check for the starting time and ending period of all bubbles, PSY proposed calculating a sup DF statistic-based backward expanding samples.

Finally, bubbles can be negative too where the fundamental value is less than the observed

price and the observed price drifts downwards explosively. The PSY method can be used in the same way to pinpoint negative bubbles.

## **I. Forecasting Bubbles**

The major problem in the bubble detection is that it relies on past events in order to check for a bubble. But, decision makers are interested in forecasting the existence of bubbles. It is to note that major challenges exist in predicting for bubbles as it is highly difficult to differentiate between the increase in fundamental of the asset price and an increase due to speculations.

Bordo and Jeanne (2002) and Borio and Lowe (2004) define a boom or bust in asset price series as a period in which the rate of growth falls outside the three-year moving average confidence interval defined by reference to the historical first and second moments of the time series. Detken and Smeets (2004) use a recursively calculated one-sided Hodrick- Prescott Filter with a high smoothing parameter ( $\lambda$ ) to define an asset boom as any period in which real asset prices are above their estimated trend by more than 10%.

In a study, which is very analogous to Detken and Smeets (2004), Agnello and Schuknecht (2011) conclude that their measure is reasonably objective. Their empirical strategy uses discrete choice models on pooled panel data with the following basic setup,

$$h_{it} = Z'_{it}\beta + u_{it}$$

In the equation  $h_{it}$  is a continuous latent dependent variable that establishes the state at which the housing market in country  $i$  is in at time  $t$ , and  $Z_{it}$  is a set of explanatory variables. This latent variable is assumed to be a function of the explanatory variables. The



main variables included in  $Z_{it}$  are growth in real GDP per-capita, the short term interest rate, growth rate of real credit to the private sector, growth rate of the working-age population, and the growth rate of global liquidity, which is defined as the PPP-GDP weighted average of broad money growth. In their study they estimate if the situation is in a boom or bust period.

Dreger and Kholodilin (2013) use binary choice model in predicting the real estate bubbles using two algorithms. The first algorithm is based on approximating the deviations from the fundamental values. To define fundamental values they run the following regression for each country separately,

$$rhppi_{it} = \alpha_0 + \alpha_1 rhpi_{it-1} + \alpha_2 rgdppc_{it} + \alpha_3 pop_{it} + \alpha_4 urb_{it} + \varepsilon_{it}$$

where  $rhppi_{it}$  denotes the logarithm of real house prices,  $rgdppc_{it}$  is real per-capita GDP,  $pop_{it}$  is the population, and  $urb_{it}$  is the urbanization rate in country  $i$  in period  $t$ . The fundamental prices are then defined as the fitted values of the regressions above. “To account for the volatility in the estimated fitted values, the authors smooth deviations using a spline regression. If the smoothed deviation is positive and higher than 0.5 standard deviation from the fundamentals, the observation is categorized as having a bubble by the first algorithm. The second algorithm is constructed by using a Hodrick-Prescott filter on  $rhppi_{it}$  and other thresholds that determine the magnitude of house price growth

$$cycle_{it} = rhpi_{it} - trend_{it} > \varphi \sigma_c$$

where  $trend_{it}$  is the Hodrick-Prescott trend estimated from real house prices,  $\varphi$  is the boom threshold factor, that designates the growth intensity, and  $\sigma_c$  is the standard deviation of

the cyclical component in country  $i$ . Under the second criterion, a bubble is defined in any period in which the cyclical component exceeds a predefined threshold. Once both algorithms have been estimated, the authors go on to define the bubble chronology according to those periods in which both algorithms test positive for exuberance. To look for predictability the study uses two different strategies, the first one is based on a simple signaling approach and the second is based on binary choice panel data models. Under the first method, the authors choose a set of variables that are considered good indicators for bubbles. For each indicator they determine a threshold or critical value, violation of which may be considered as a signal of an approaching or ongoing bubble. For each threshold, the accuracy is measured by computing the cumulative sum of correctly identified bubble and no-bubble periods as a share of total observations included in the sample. Their second prediction strategy is based on a fixed effects panel probit/logit methodology. The authors accounted for the fixed effects in the model by subtracting the within-group means for all the variables. The best predictor variables are the real effective exchange rate, money supply growth, and house price-to-income growth. They also report that the fixed effects probit/logit approach is much more accurate than the signaling approach. Thus they conclude that the binary models are very useful in forecasting future speculative bubbles.”

As highlighted in “Detecting and Predicting Housing Bubbles: An Application of the Generalized Sup ADF Test and Dynamic Probit Models”;

## CHAPTER III

### EXAMPLES OF REAL ESTATE BUBBLES IN THE WORLD

Real estate bubbles are common in the world and are being discerned by the economists, financial institutions and widely highlighted on the news due to their significant impact on the whole country's economy.

#### **A. Financial Crisis and Bursting Dubai Property Bubble**

The substantial increases in property prices in the Dubai real estate market in the period preceding the 2009 crash were the result of highly speculative activities that caused it to become extremely leveraged. As Bloomberg notes: "Dubai suffered the world's steepest property slump in the global recession, with home prices dropping 50 percent from their 2008 peak", according to Deutsche Bank AG.

Accordingly, the effects of this bubble burst were spread all over the globe, from European banks that are main creditors to Dubai's holdings, to middle eastern financial institutions that were caught by surprised by the burst.

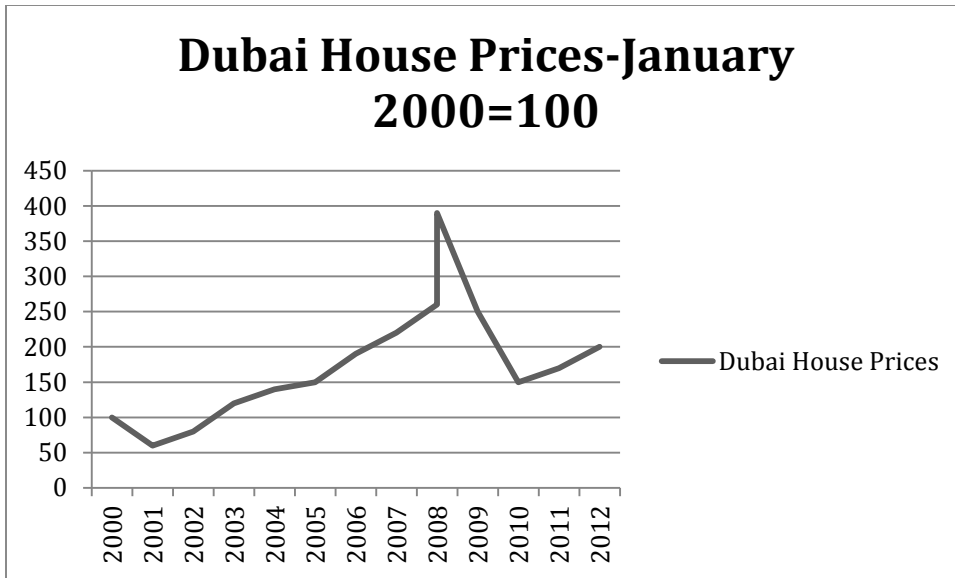


Figure 2 Dubai House Prices – Source: <http://www.marketoracle.co.uk/Article26746.html>

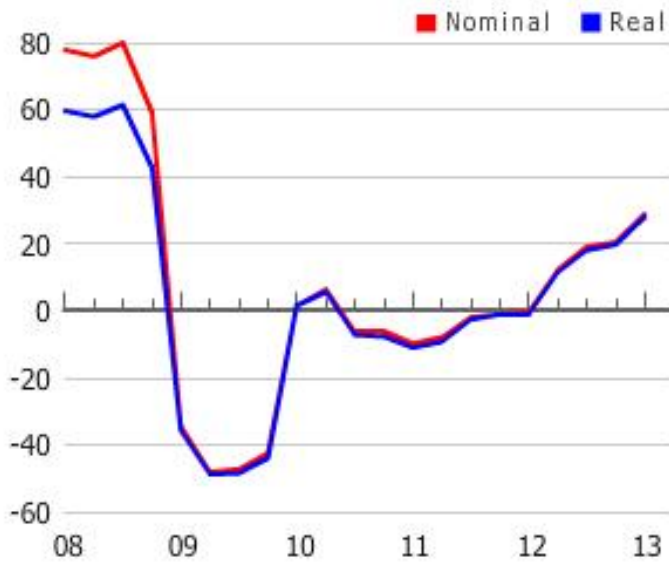


Figure 3 Dubai House Prices Change Over Time (% Change Over A Year Earlier, Function of Time) (Source [www.globalpropertyguide.com](http://www.globalpropertyguide.com))

## **B. Northern Ireland Debt Crisis-Irish Economic Downturn**

Real estate prices in Northern Ireland were for long periods of time independent from those of the surroundings. In addition, it is until the end of the last century, that the housing prices began to rise in real terms. Prices in 2006 had jumped 48%, and housing prices peak was reached in the last half of 2007, and since then prices have been declining significantly. It can be noted that real estate prices have fallen almost 50% in Northern Ireland.

To explain the situation, some argue that “the resulting gradual relaxation of credit standards increased demand for housing (Hott 2011). Evans (2004) and Gibb, Livington, Williams, Berry, Brown, and McGreal (2007) discuss the role played by the planning system in constraining supply and thereby further increasing house prices. At a more local level, Government policy advocating homeownership as a means to address the social and economic disparity that existed within the region has also been suggested as a key contributor to the house price growth in Northern Ireland” (McCord, McGreal, Berry,

Haran, and Davis 2011).



Figure 4 Northern Ireland House Price Change Over Time (% Change Over A Year Earlier, Function of Time) (Source [www.globalpropertyguide.com](http://www.globalpropertyguide.com))

### C. Subprime Crisis, Mortgage and Credit Crunch in the US

Another example of housing bubble that had rotated the economy upside down resides in the United States of America. A nationwide recession happened in 2008, for which, the real estate meltdown was a primary cause. The inflow of foreign saving into the US mortgage market is one cause for the bubble creation according to Bernanke (2009), to add, the government's role in weakening mortgage underwriting standards as per Liebowitz (2008) and the quality of subprime loans for Demyanyk and Van Hemert (2008) are other causes.

According to Krugman (2009), the unregulated "shadow banking system" (investment banks, hedge funds, structured investment vehicles, etc.) became highly leveraged, and the bursting of the housing bubble set off a cycle of deleveraging in the shadow banking system, which contributed to the credit crisis.

In his book “Real Estate and the Financial Crisis” (2009), Downs adds that the increasing speed and ease of financial transactions, influx of low-wage workers into the labor markets, surge in available capital, continuous rise in home prices, radical reorganization of real estate lending, tax advantages that favored costly homes, and a shift of funds into real estate have initially generated a flood of liquidity, reduced short-term interest rates, massive flow of capital into real estate markets, intense competition among investors and lenders, sharper increases in real estate prices whereby real estate indices outperformed the major stock indices, a paradigm shift by institutional investors favoring real estate, a disconnect between property ownership markets and rent markets, and a deterioration of subsidizing standards.

Furthermore, irrational exuberance played a key role in the housing bubble, as with all bubbles, when all parties involved in creating the housing bubble became convinced that home prices would continue to rise, the same was underlined by Robert Shiller (2008). In fact, Case and Shiller reasoned that the effects of “feedback amplification mechanisms” cause bubbles where price increases respond, as in a vicious circle, to additional price increases effecting in magnification of the original impact.

So housing bubbles exist in cases where buyers show that they have been influenced by an investment motive, as well as when emotions, excitements and anxieties are present amongst real estate buyers. Thus price appreciation becomes the principal purpose for buying, and when proprietors start to regard housing as an investment, rather than a home to live in.

Case and Shiller have noticed also that during booming periods, the sellers reap

additional advantage as the buyers tend to pay more than the equilibrium price, which diminishes their surplus and lead prices to limits equaling the buyer's willingness to pay.

In the period of recession, prices remain at high levels and diminish only as a last resort.

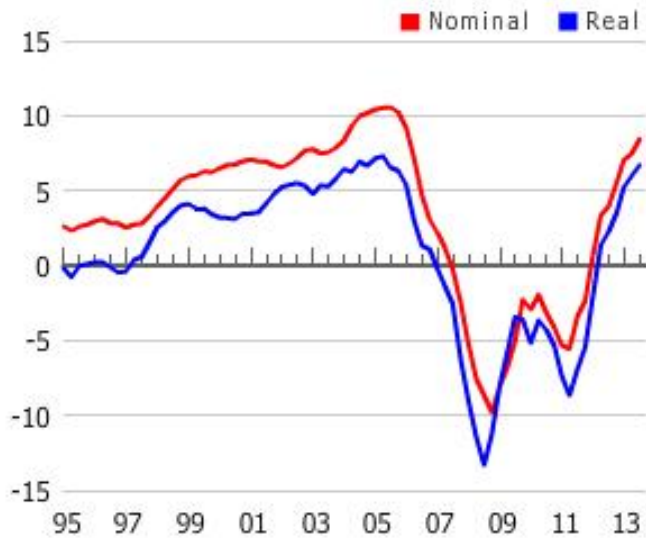


Figure 5 US House Price Change Over Time (% Change Over A Year Earlier, Function of Time) (Source [www.globalpropertyguide.com](http://www.globalpropertyguide.com))





## CHAPTER IV

### THE LEBANESE CASE

#### **A. History of The Pearl of the Middle East**

Lebanon, a middle-eastern country, has suffered from a war that lasted for more than fifteen years, starting 1975. The country was highly devastated, and many sectors have been negatively influenced by its outbreak. By the war ending in 1990, the country suffered in different domains including infrastructure, construction, industry and consequently its whole economy.

In particular, the real estate sector in Lebanon was part of the crash, so the after-war era coincided with various projects that focused on revitalizing Lebanon to regain its all-time particular position within the region, and an unavoidable link between the east and the west.

To stress more on the qualities that this country possesses, it should be highlighted that Lebanon attracts mostly Arabs due to its wonderful nature and exceptional climate in the region. Mountains and sea, nightlife and touristic sites, exquisite restaurants and one of a kind population make Lebanon the hub for the whole middle-eastern region. Consequently, an influx of financial resources from the Arabs and Lebanese expatriates blossomed many sectors throughout history and the real estate sector particularly.

In the first after-war period, the government pushed construction forward, but still, and as described in the UNDP report of December 2009, a decline of the construction is witnessed between 1995 and 2000, “due to the economic recession at the local level as well as the loss in investor confidence following the Israeli aggression in 1996, but also, the

result of an excess supply of buildings being addressed to the upper class and to wealthy gulf investors rather than to middle class citizens, who in reality, were driving demand for small and medium sized apartments.”

The beginning of the century showed flourished real estate and construction activities supported by the end of the Israeli occupation to the South of Lebanon in first place, by the amendment of Law N296 governing foreign acquisition of property, in which registration fees were lowered to attain a rate of 5% (They were at 16% for foreigners) in second place.

As a third after-war era, the period starting in 2006 shows increasing real estate projects and prices as well that go along with the increase in demand due to the relaxed political situation (After the Israeli war of 2006), and soaring oil prices that were reflected directly in the Lebanese economy.

Nevertheless, no one can deny that the construction and real estate sectors in Lebanon are till now a success story, even though influenced by the ongoing troubles happening regionally and internationally.



Figure 6 GDP in Lebanon 1990-2014 (Source: TradingEconomics.com)

The GDP in Lebanon has been showing since 2003 a significant increase, which was driven by various sectors including trade, telecommunications and banking in addition to the construction sector. Furthermore, the private sector contributed efficiently in the increase in the GDP. According to Motta and Nakhle, in their presentation in 2011, “only two sectors saw a significant rise of their share in total GDP, namely trade (retail and wholesale) and construction” for the period starting by the end of the twentieth century till 2009.

## B. Factors Influencing The Real Estate Pricing in Lebanon

### 1. Supply Versus Demand

The period from 2007 till 2010 has witnessed increasing value and volume of real estate transactions from 4.2 Billion US Dollars in 2007 to 9.5 Billion US Dollars in 2010. As of 2011, the transactions started decreasing due to the unstable political situation and due to the conflicts in neighboring countries.

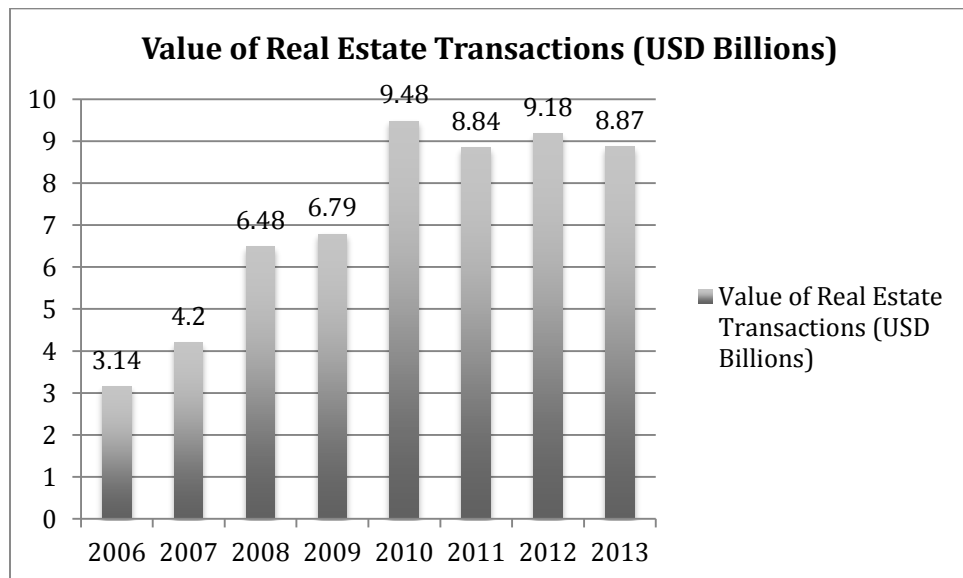


Figure 7 Value of Real Estate Transactions in Lebanon from 2006 to 2013

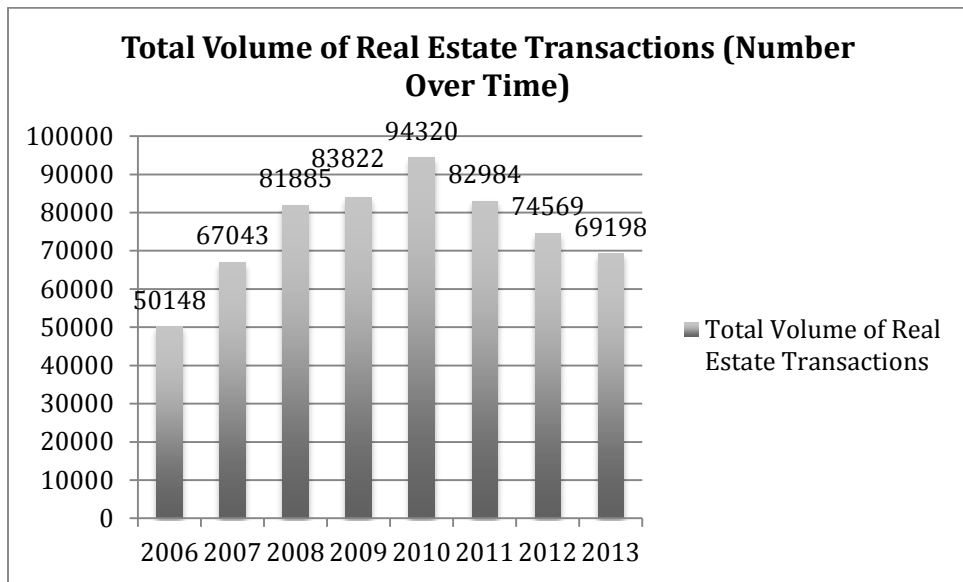


Figure 8 Volume of Real Estate Transactions in Lebanon from 2006 to 2013

A downward trend for the total volume of real estate sales was noticed in 2012, 2013 and 2014. It is crucial to highlight that the drop in real estate transactions happened on the whole Lebanese territory, thus not related to zone discrimination. But, Beirut is showing the highest decline of 10% (year on year basis) compared to other regions.

(Bank Audi, 2<sup>nd</sup> Quarter 2014 Report)

a. Internal Demand

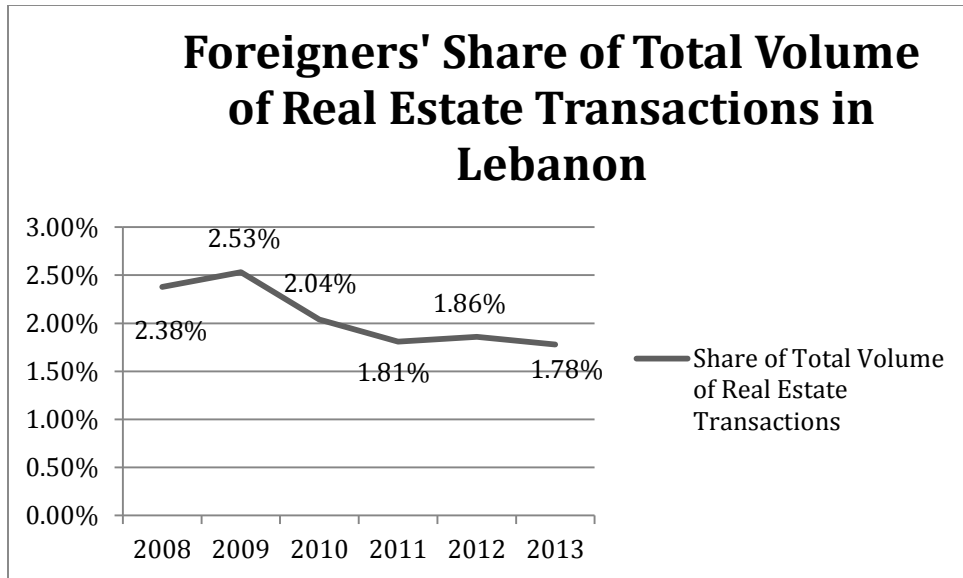
A shift to the small sized apartments is prevalent on the whole Lebanese territory, thus small units are built instead of the previous trend of big apartments. In addition, the property location is being shifted towards the suburbs or other areas that are more

affordable to the buyer (Metn-South) which are far from Beirut, thus far from the highly priced apartments. Admir 2 is one example of a new construction project consisting of studios ranging from 93 to 200 square meters located on the boundary of Adma/Ghazir region.

#### b. Foreign Demand

According to BLOM invest bank, in its 2010 report, around half of total Arab Foreign Direct Investment (FDI) is directed towards big property developments in Lebanon. In fact, the holdings of raw land by Gulf Cooperation Council (GCC) investors in Lebanon totaled 2 Million square meters (sqm) in 2005, four time 2002's figure and on a steady continuous increase. Major investors originate from the Kingdom of Saudi Arabia, the United Arab Emirates and Kuwait.

According to BankMed, in its July 2013 report, foreign demand has declined from its 2.53% share of the total volume of real estate transactions in 2009 to 1.78% in 2013. This is mainly due to the unresolved regional conflicts and turmoil. But an increase was noticed in 2012, when the share reached 1.86% that is originated from the Syrian displacement into Lebanon after a rate 1.81% in 2011.



**Figure 9 Foreigners' Share of Total Volume of Real Estate Transactions in Lebanon from 2008 to 2013**

#### c. Supply Side

Real estate suppliers have responded to the new consumer's habit in their preferences to the small sized units, and started working on projects covering this issue. In fact the new residential units that are above 400 square meters have witnessed a decline of 10.8% in 2010, another chute of 48.6% in 2011, and a negative change of 45.9% in 2012. In addition, the supply of residential units has changed from the development of a single building to the development of residential compounds.

As the demand in the last three years was declining, the construction of units followed the same trend; the construction permits showed a steady retreat of almost 11% from the period starting 2011. 16.456 Million of SQM in 2011, became 14.581 Millions of SQM in 2012, that finally reached 12.925 Million of SQM in 2013.

Furthermore, the supply of residential units shifted from Beirut and Mount Lebanon for new zones. In fact, it could be underlined that large compounds are being established in

Faqra comprising luxurious chalets, as well as flourishing areas in Jiyeh southern Beirut.

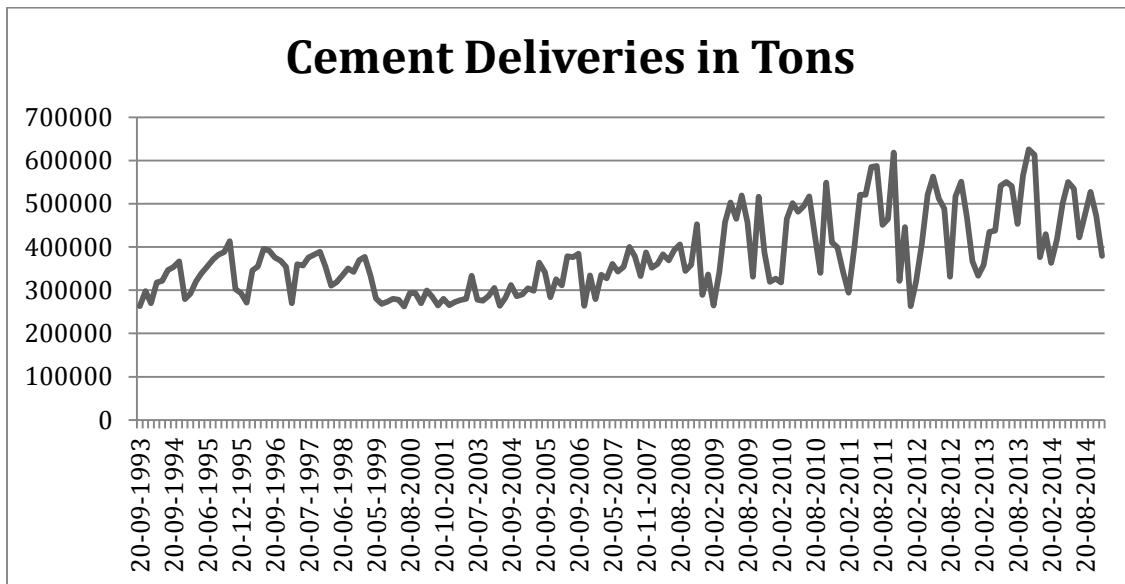


Figure 10 Cement Deliveries in Lebanon in Tons Over Time (Source: Banque Du Liban)

Furthermore, the supply of real estate and construction projects can be discerned by the amount of cement deliveries that are plotted on the previous graph. On average, cement deliveries have a very slight upward trend with high variability. Starting year 2000, cement deliveries are on a rise which reflects constant and continuous development of projects, real estate are big part of them.



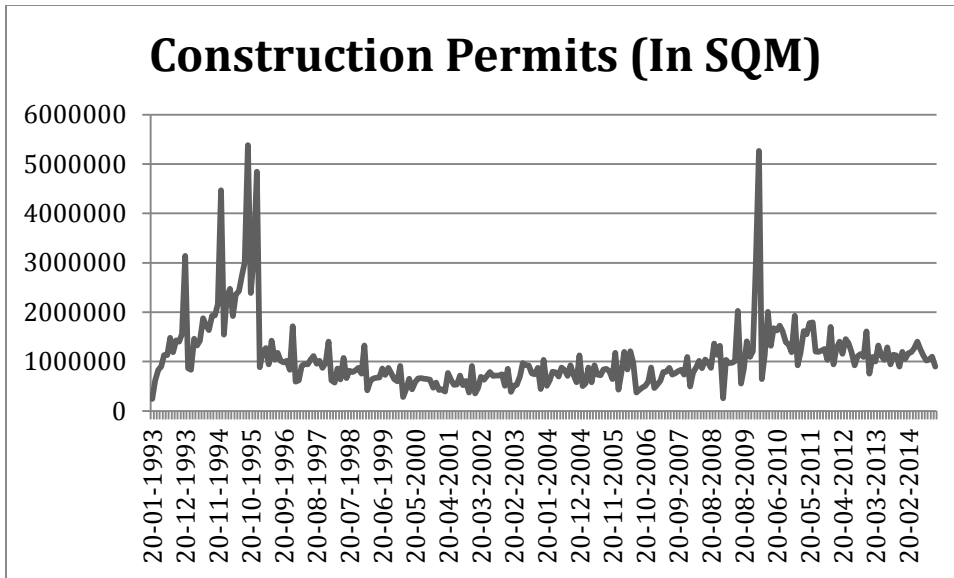
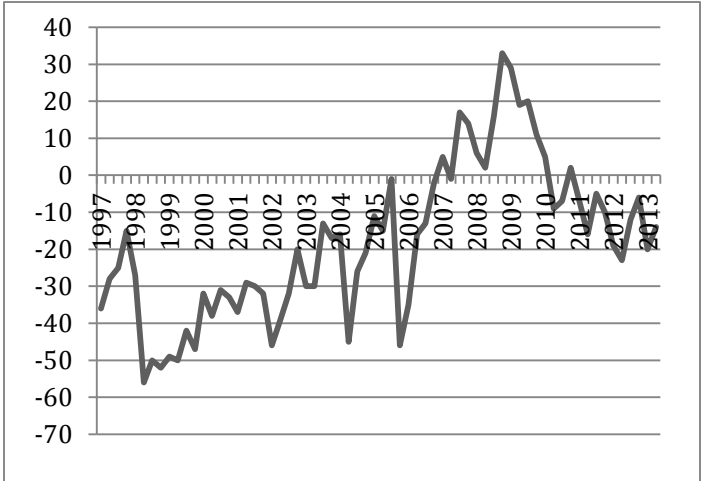


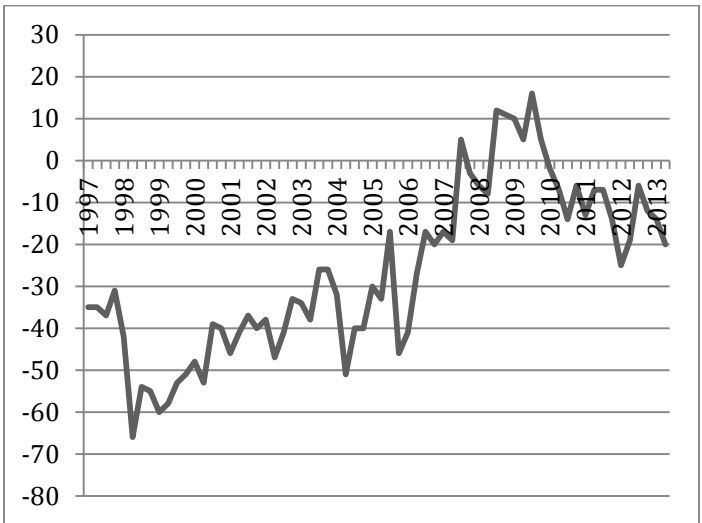
Figure 2 Construction Permits in Lebanon in Square Meters Over Time (Source: Banque Du Liban)

Other practical measure for the supply side resides in the construction permits that will be executed in the coming years. After the civil war has ended, permits increased to historical levels until 1995 to reach the levels of 5200000 SQM, then the permits averaged around 1000000SQM for the period 1996-2008, 2009 showed a huge peak at 5100000, then the permits regained their averages around 1100000SQM.

Accordingly, the suppliers of real estate are investing, and researching to develop projects in Lebanon at constant rate with some period of intensified willingness to offer properties.



**Figure 3 Construction-Evolution of Opinions (Balance Between the Proportion of Managers Estimating Improvement and Others Decline)**



**Figure 13 Portfolio Of Projects-Evolution of Opinions (Balance Between the Proportion of Managers Estimating Improvement and Others Decline)**

Based on the above two graphs, the managers opinions have shown positive percentage for portfolio of projects as well as construction for the period 2007-2010 compared on a quarter to quarter basis of the previous year.

## ***2. Variation in the Lands Prices***

According to ERGA Group, the lands prices have started increasing in 2007 which led to the increase in prices in the real estate sector. As the value of the land is directly reflected in the property price, they have been showing consistent rise which is accentuated by limited areas to construct within Beirut due to its restricted space. As shown by Credit Libanais report (2008), many areas have shown land prices in 2008 that are 4 times higher than in 2000.

## ***3. Variation in the Construction Material Prices***

A significant amount accounted for in any construction entity is related to the materials involved in the construction process.

**Table 1 Construction Material Pricing on a Base 100 in 2000**

(Source: [http://census.gov.ph/sites/default/files/attachments/itsd/specialrelease/CMWPI\\_140901.pdf](http://census.gov.ph/sites/default/files/attachments/itsd/specialrelease/CMWPI_140901.pdf))

Line No.	COMMODITY GROUP	2014										2013				
		SEP	AUG	JUL	JUN	MAY	APR	MAR	FEB	JAN	AVE	DEC	NOV	OCT	SEP	
	ALL ITEMS	226.9	227.0	227.3	226.6	225.7	225.5	225.1	224.8	224.5	221.6	224.0	223.6	222.9	222.9	
1	SAND AND GRAVEL	212.4	211.9	211.8	211.6	210.4	210.1	209.2	207.9	207.4	202.3	203.5	203.5	203.1	203.1	
2	CONCRETE PRODUCTS	210.3	210.2	209.8	209.1	207.8	207.5	207.1	206.9	206.2	204.0	206.3	206.3	205.2	205.0	
3	CEMENT	198.4	198.3	198.0	196.7	195.7	195.6	195.6	195.6	194.4	190.2	193.7	193.1	192.0	192.0	
4	HARDWARE	219.8	219.7	219.8	219.8	218.7	218.6	217.7	217.4	216.6	214.1	216.3	216.2	215.0	214.9	
5	PLYWOOD	187.7	187.2	186.4	185.1	182.9	182.9	182.4	182.0	181.6	180.5	181.4	181.4	181.2	181.2	
6	LUMBER	245.5	244.9	243.5	242.1	238.4	238.1	237.1	237.1	235.2	230.0	232.6	232.6	231.3	231.3	
7	G.I. SHEET	189.9	189.9	189.5	189.4	189.2	189.2	188.9	188.2	187.3	182.3	184.5	184.5	183.9	183.9	
8	REINFORCING STEEL	253.9	253.5	253.5	253.5	253.5	252.3	252.3	251.9	252.9	251.4	252.7	252.7	252.6	252.6	
9	STRUCTURAL STEEL	285.0	284.6	284.2	284.2	283.8	283.6	283.4	283.2	283.8	281.1	282.0	282.0	281.7	281.7	
10	TILEWORKS	187.5	187.5	187.5	187.0	187.0	186.6	186.6	185.8	185.6	179.8	182.6	182.2	182.1	180.3	
11	GLASS AND GLASS PRODUCTS	184.6	184.3	183.7	182.9	182.4	181.9	181.9	181.9	181.9	179.5	179.7	179.7	179.7	179.7	
12	DOORS, JAMBS, AND STEEL CASEMENT	205.1	205.1	204.7	204.1	203.3	203.0	203.0	202.8	203.1	200.7	202.8	202.8	201.9	201.9	
13	ELECTRICAL WORKS	206.3	205.9	205.1	203.5	201.8	201.8	201.2	200.8	200.8	197.8	200.0	200.0	199.1	199.1	
14	PLUMBING FIXTURES & ACCESSORIES / WATERWORKS	172.1	171.3	170.9	169.4	167.8	167.5	166.4	165.3	165.3	160.0	162.1	162.1	161.0	161.0	
15	PAINTING WORKS	207.3	207.3	206.9	206.3	205.8	205.4	205.1	204.8	204.5	203.8	204.4	204.4	204.2	204.2	
16	PVC PIPES	180.6	180.6	180.3	180.3	180.3	179.7	179.7	179.7	179.7	175.0	178.1	178.1	176.7	176.7	
17	FUELS AND LUBRICANTS	330.2	333.4	339.7	338.7	339.1	340.4	339.1	339.6	338.5	333.3	339.3	335.2	335.3	337.2	
18	ASPHALT	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	
19	MACHINERY AND EQUIPMENT RENTAL	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	114.6	

Construction material wholesale price index compared to a base of 100 in 2000; Industry and Trades statistics department in the Philippines considered as a benchmark for worldwide price changes.

As shown the previous table, all items related to the construction industry have been showing consistent increase in prices compared to the 2000 base. Also, the labor force wages show increasing trends which added to the higher prices of raw material provoke aggressive pricing strategies used by the real estate companies. The increase in prices is accompanied by multiple fluctuations especially in the materials that are prices worldwide.

#### 4. US Dollars to Euro Exchange Rate

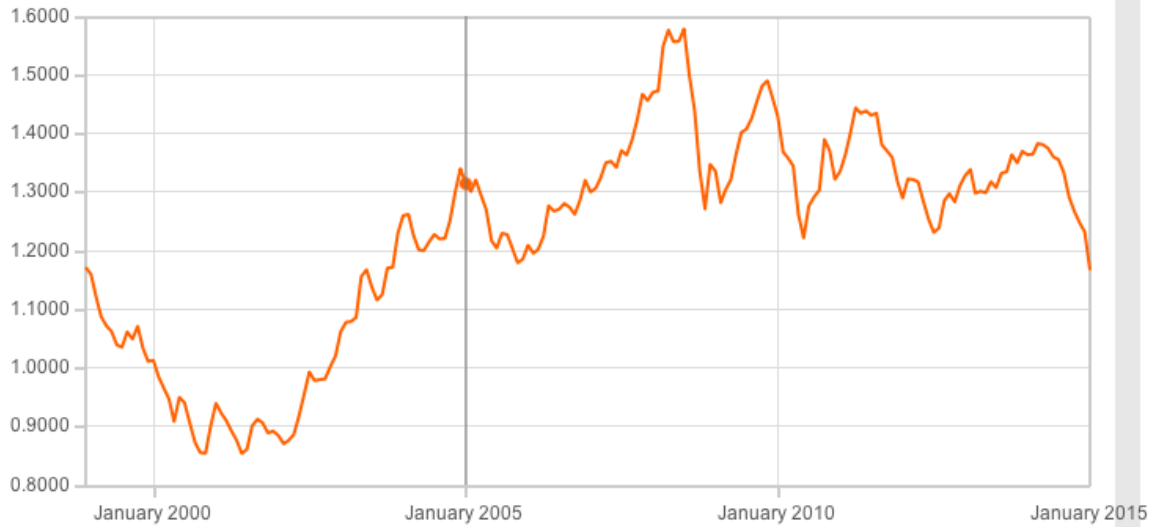


Figure 4 Euro-US Dollars Exchange Rate from 2000 to 2015 (Source.

<http://www.oanda.com/currency/historical-rates/>)

The value of Euro-Dollar exchange rate influences directly the Lebanese economy as this country imports significant items from Europe and trading is done in US Dollars or Lebanese Pound mainly. To mention that Europe is a leading manufacturer of construction items and technologies.

As shown on the previous graph, the exchange rate of the Euro to US dollars was at parity in 2000 and 2002. After hitting lowest values, the Euro-Dollar exchange rate rebounded by 19.7% in 2003 and 10% in 2004. Other weighty hikes occurred in 2007 and

2008, registering rises of 9.1% and 7.5% respectively. The average exchange rates in 2009, 2010 and 2012 saw significant drops. The average Euro exchange rate against the US Dollar from 2009 is around \$1.32. By the end of 2014, and beginning 2015, the exchange rate is witnessing historical values that are below the 1.2 level.

### ***5. Scarcity of Lands***

Due to small geographic area (10452KM<sup>2</sup>) forming the Lebanese territory, lands are scarce, notably that the infrastructure is not adequate or not even reaching rural zones, which restrict the alternatives for new construction projects to districts that are close to the main Lebanese cities. To add, the Lebanese territory contains sharp mountains thus, according to Bloomberg, “more than half of Lebanon’s 10,452 square-kilometer area cannot be developed.” (Bloomberg, 2013)

Consequently, the owners of lands have an upper hand in the transactions, and thus may reap additional benefits with respect to selling their land. As such, the scarcity of lands is another factor influencing the prices in the real estate market in Lebanon. According to FFA private bank, Solidere generated USD 304 million in gross revenues in 2011 (with 80% generated from four land sales), so, on average each land in question is sold for \$60 million in downtown Beirut.

### ***6. Mounting of Luxurious Apartments***

The years starting 2006 showed increased interest for the supply of high-end luxurious residences. In fact the pipeline included several projects such as but not limited

to: Sursock Residences, Hochar Tower, Wadi Grand Residency, Abdel Wahab 618, DAMAC Tower, Les Domes de Sursock, ... But this trend, according to BankMed in its August 2014 report, has been altered.

**Table 2 Luxurious Residential Building Number Evolution from 2009 to 2013**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Luxurious Residential Buildings</b>	1418	1086	932	1100	422
<b>Total Buildings</b>	21774	26504	25168	22108	20717
<b>Proportion (%)</b>	6.51%	4.10%	3.70%	4.98%	2.04%

As it can be seen in the previous table, the supply for luxurious residential buildings has dropped from almost 7% in 2009 to the level of 2% in 2013. In contrast, the supply is being shifted to respond to the clients' requirements for standard non-luxurious apartment due to the income constraints.

### ***7. Soaring Oil and Gas Prices***

Lebanon is very influenced by the neighboring oil producing countries, as the inflows coming from the sale of oil and gas get reverberations in the Lebanese real estate markets. The Lebanese mild weather, attract Arab residents that invest in the Lebanese economy and purchase lands, apartments, villas and palaces shifting the demand curve. As it can be depicted, the inflation adjusted price of oil in 1999 was at the ranges of \$23.42 per barrel, reached \$60.45 in 2005, and \$100.01 in 2008. Then the inflation adjusted prices of oil declined to the ranges of \$58.76 in 2009, increased to \$77.11 in 2010, and then stagnated on the levels of \$90 per barrel later on. The above mentioned numerical examples stress on the fact that intensive inflows of money were due to the increased prices of oil

that were translated in a development of the Lebanese real estate sector to serve the Arab neighbors in finding their need in Lebanon. Thus prices in the real estate sector were correlated to the soaring oil and gas prices and thus pressure was exerted on the suppliers that pushed the prices up in the years starting 2005.

It should be underlined that the oil prices showed a significant decrease in the last semester of 2014, and beginning 2015 when barrel prices reached the historical levels of \$40. This, shall be also studied to reflect the consequences on the Lebanese economy in general and on the real estate sector in particular.

## ***8. Finance***

The Lebanese banks have tailored a variety of loans for the real estate developers and buyers as this industry is significant to the whole Lebanese economy. To add, the advantageous interest rates of such loans encourage the loan takers to proceed with the real estate projects or in the buying process of apartments.

### **a. Lending to Construction**

In order to check the increasing amounts of outstanding loans for the construction industry, it can be beneficial to highlight that the volume of loans reached the level of 4.313 Billion USD in 2008, increased to reach 4.839 Billion USD in 2009, 6.298 Billion USD in 2010, 7.132 Billion USD in 2011, 8.137 Billion USD in 2012 to reach the levels of 9.181 Billion USD end-2013. Thus, an increasing trend over all past years underlines the fact that the banks are still investing in the real estate sector.



## b. Lending for Housing

In a similar study for the loans provided to the housing, it can be detected that the loans growth reflects the buyers improved confidence. In fact, the Central bank of Lebanon introduced several subsidized home loans in a reaction to the increase of the properties in the years starting 2005 as previously underlined.

The years starting 2008 showed increasing trend in the lending for housing that started at a level of 1.768 Billion USD, increased by 59% in 2009 to reach the levels of 2.805 Billion USD, then another jump of 61% in 2010, the loan reached an amount of 4.511 Billion USD. In 2011, housing loans averaged around 5.982 Billion USD in a steady increase in future years to the levels of 8.535 Billion USD in 2013.

A regression analysis by BankMed in its August 2014 report, shows a correlation of 78% between lending for housing and real estate sales.

Thus, the abovementioned analysis stresses on the fact that the loans are vital for increasing demand in the real estate sector.

Even though the amount of loans is considerable for the real estate sector, however, the financial leverage in real estate development in Lebanon remains relatively low, as developers tend to be more dependent on self-financing and presale money. A good example of presale money that allows the developer to finance his construction project resides in SAYFCO Holding's strategy which allows the company and the developer to reap advantages from presale money as SAYFCO sells almost 5000 units per year. Noting that the majority of these sales are for projects that are under construction.

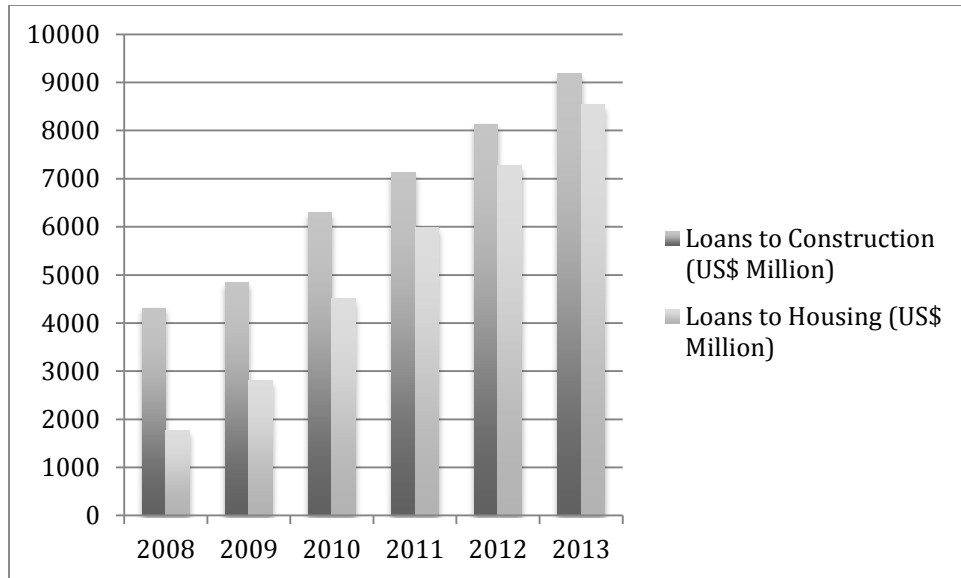


Figure 5 Lebanese Banks Loans to Construction and Housing (Source BDL-Bank Audi Research Department)

### c. Banque Du Liban's Role

“Banque Du Liban” has always been following up with the different sectors in the Lebanese economy and taking measures for sustainability. In fact, in mid-2009, the BDL has declined the interest rates on housing loans to historical levels, the following graph shows clearly the dropdown of interest rates in Lebanon over the past 15 years which has as effect an incentivized increase of all types of investments.

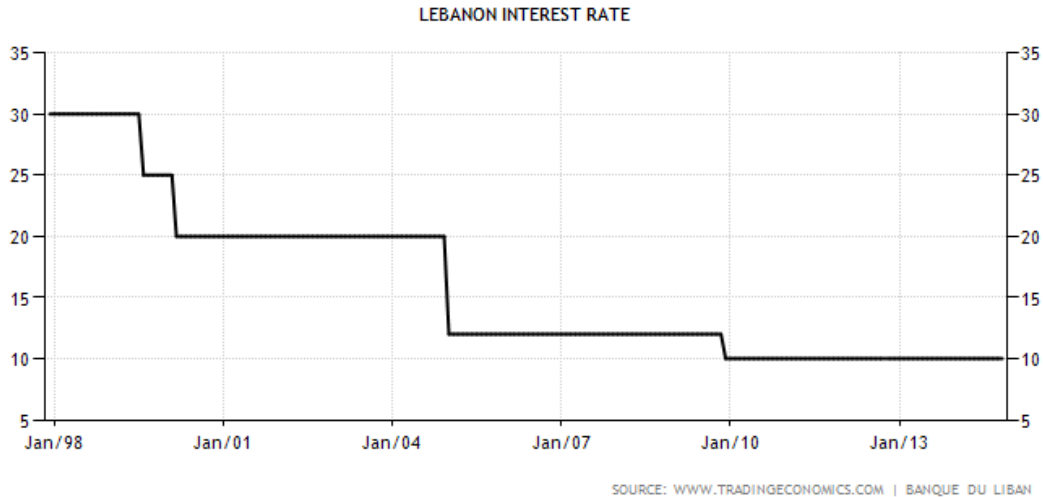


Figure 6 Interest Rate in Lebanon period from 1998 to 2013 (Source: Trading Economics)

In addition, BDL issues regular circulars for binding activities in the real estate sector. Following the subprime crisis in the United States in 2008, amendments were made on the basic circular 7776 issued in 2001 through the intermediary circular 9958 concerning the procedures imposed on the Lebanese banks.

The 9958 circulates that banks should limit real estate loans whose values exceed 60% of the desired property or real estate project under construction, as well as that the value of the loan must not surpass 60% of the warranty presented by the investor.

To add, in 2013 and 2014, BDL provided “stimulus packages” aiming to support the Lebanese economy and particularly the real estate sector as the gap between the buyer’s purchasing power and real estate prices is still large. Thus the intervention of the Central Bank of Lebanon repeatedly allows proper monitoring and provision of healthy lending to close deals.

#### d. Attractive Tax System

The real estate sector in Lebanon did attract Lebanese expatriates and foreigners due to the exceptional tax system that is considered as having the lowest fiscal charges in the whole world.

In fact, the maximal tax rate reaches 15% and 20% for companies and individuals respectively. Also, there are fees that do not exceed the 1% of the real estate transaction that should be accounted for as well as reduced registration fees for nationals and international investors. Furthermore, gains on the real estate transaction are exempted from any taxation.

Notwithstanding the above, the nature of the Lebanese economy, which embraces a free Laissez Faire economy whereby it relies predominantly on market forces to allocate goods and resources and to determine prices; According to BLOM invest in its 2010 report, a liberal financial environment is adopted in Lebanon with a free external exchange market, full currency convertibility policies, banking secrecy law and low restrictions on the movement of capital, which attract businesses.

To sum up, all the above-mentioned factors influence the real estate development in Lebanon from both the supply and demand sides.

#### **C. Measures taken to sustain the increases in prices**

As prices in the real estate sector peaked rapidly starting 2005 in the Lebanese market, several measures were implemented to contain the boom, as the purchasing power of customers has not accompanied the rate of increase in prices. For instance, small sized apartments are being built, in addition to the selection of new zones that are far enough

from the accustomed urban zones, as well as the development of residential compounds rather than single buildings.

### ***1. Flourishing Small Sized Properties***

A cultural change in the Lebanese mentality has started being witnessed as the home-buyers seek spaces in which they can live in comfortably, without being stopped by the old-time clichés requiring having three saloons, four hundred squared meters apartments, ... In fact, small-sized apartments are found to be the most adequate for the ongoing situation, as the total price remains kind of affordable, and the home buyer can procure the required down-payment for such a property. Dwellings, less than 100 square meters, started spreading throughout the whole Lebanese territory, which is no more a taboo, as luxury, if required, is being applied in the small apartments the way it is being done in larger ones. The use of the space has been altered, living rooms and receptions are unified, American style open-kitchens replace the previously adopted kitchen as separate entity...

**Table 3 Number of Construction Permits for Housing Units (Source. Order of Engineers of Beirut, Bank Audi Research Department)**

	<b>2010</b>	<b>Structure</b>	<b>2011</b>	<b>Structure</b>	<b>2012</b>	<b>Structure</b>	<b>2013</b>	<b>Structure</b>
<b>Less Than 100 sqm</b>	1695	6.40%	1853	7.36%	1504	6.80%	2503	12.08%
<b>101-150 sqm</b>	10053	37.93%	11573	45.98%	9938	44.95%	10111	48.81%
<b>151-200 sqm</b>	7201	27.17%	5735	22.79%	5401	24.43%	4117	19.87%
<b>201-300 sqm</b>	4046	15.27%	2771	11.01%	2386	10.79%	1431	6.91%
<b>301-400 sqm</b>	503	1.90%	505	2.01%	345	1.56%	218	1.05%

<b>More than 400 sqm</b>	543	2.05%	279	1.11%	151	0.68%	79	0.38%
<b>Individual houses</b>	1426	5.38%	1583	6.29%	1464	6.62%	1585	7.65%
<b>Villas</b>	1036	3.91%	863	3.43%	914	4.13%	672	3.24%
<b>Palaces</b>	1	0.00%	6	0.02%	5	0.02%	1	0.00%
<b>Total</b>	26504	100.00%	25168	1	22108	1	20717	1

The above-presented table shows clearly that apartments less than 100 square meters present increasing ratio in the real estate structure almost doubling from 6.4% to 12.1% from 2010 to 2013. Also apartments in the range of 100-150sqm consist 48.8% of the total 2013 structure whereas they were just 37.9% in 2010.

## ***2. Property Relocation to Nearby Areas***

Another measure was taken to sustain the increase in prices in the Lebanese real estate sector is the relocation of properties to new zones, that are cheaper in terms of lands prices, nearby the accustomed neighborhoods.

In fact, since the Hazmieh area is considered as luxurious environs near Mar Takla, developers found a nearby zone that was not previously structured to form a new district named New Mar Takla, located downside the valley, where lands are available and at lower prices. Thus the rise of apartments in such areas enables new buyers to relocate to newly developed zones at reasonable prices compared to well-known residencies. Furthermore, many projects started development outside Beirut, Metn, Baabda, which are considered the most expensive sub-districts, to flourish areas in the Chouf, Keserwan, Jbeil, where multiple projects are being held to deliver shelter to home buyers in zones that are relatively affordable. Effectively, Sarba 1053 project, Adma 360, Pine Village, Collina

projects launched in 2014 and many others are located in newly attractive zones for development. Since the Lebanese territory is small in size, such projects remain attractive as new buyers are willing to invest of their time in transportation to reach the Capital rather than not acquiring any property in zones where prices are skyrocketed.

### ***3. Rise Up of Residential Compounds Spread Throughout the Territory***

In order to market effectively and anchor people’s perception for additional advantages, developers have started providing compounds in which several amenities are present from swimming pools, to gyms and sports centers. These additional features allow the compounds to be independent from their neighborhood thus can be set at remote areas without fear of considerable distances to daily consumption requirements. Les Rives, Eden and Red Rock projects comply with the above specifications and are located in exceptional locations providing chalets and residential units for home-buyers. Thus, such projects underline the trend to explore new areas, and provide top luxurious units for persons that use them according to seasonality.

**Table 4 New Residential Units in Lebanon - By Type (Source. Order of Engineers and Architects)**

<b>Units</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Standard Residential Building</b>	17409	20287	17890	15750	14888
<b>% Change</b>		16.53%	-11.82%	-11.96%	-5.47%
<b>Standard Residential Compounds</b>	480	2135	3310	2215	2709
<b>% Change</b>		344.79%	55.04%	-33.08%	22.30%
<b>Luxurious Residential Building</b>	1418	1086	932	1100	422
<b>% Change</b>		-23.41%	-14.18%	18.03%	-61.64%
<b>Individual Houses</b>	999	1426	1583	1464	1585
<b>% Change</b>		42.74%	11.01%	-7.52%	8.27%

<b>Luxurious Residential Compounds</b>	352	533	584	660	440
<b>% Change</b>		51.42%	9.57%	13.01%	-33.33%
<b>Villas</b>	1108	1036	863	914	672
<b>% Change</b>		-6.50%	-16.70%	5.91%	-26.48%
<b>Palaces</b>	8	1	6	5	1
<b>% Change</b>		-87.50%	500.00%	-16.67%	-80.00%
<b>Total</b>	21774	26504	25168	22108	20717

As shown in the previous table, it can be shown that starting 2010 there is a significant increase in the standard residential compounds which have elevated by almost 350% compared to 2009. Also, the luxurious residential compounds have increased by 51.4% from 2009 to 2010.

After 2010, the number of projects including these types of units did not decline to levels below the 2010 minimal flat.

#### **D. SWOT Analysis**

The strengths, weaknesses, opportunities and possible threats of the Lebanese real estate sector will be presented.

##### ***1. Strength Areas***

- Adoption of the free Laisser-faire Economy in Lebanon that allows ease of entry of foreign investment.
- The Lebanese real estate sector is a secure investment for the Lebanese expatriates as well as Arab citizens, and this is amplified by global crisis in which Lebanon remained unaffected;
- Lebanese Central Bank decisions and actions to stimulate the real estate



sector.

- Stability of the peg between the Lebanese pounds and the US dollar, which gives foreign investors confidence as there is limited exchange rate risk.
- Very limited geographical area of the Lebanese territory which enables each dwelling to be at proximity from resorts, mountains, beaches, central districts, ...
- Local cement suppliers have good reputation thus can be relied on them, which allows the developers to reduce cost by not importing cement material.
- The moderate climate of Lebanon that is unique in the region makes Lebanon as an attraction point for the Arabs citizens.

## *2. Weaknesses*

- Real estate projects require considerable capital funding, which induce some developers to get financial loans from banks that collaborate with renowned developers.
- Following the regional and international crisis, many investors turned to Lebanon as a safe heaven, and on a speculative basis, purchased properties which dragged prices up.
- The rush in demand in years from 2006 to 2008, drove prices up immensely, which prohibited the middle-income society to possess apartments in Beirut.

- The increase in prices, regional turmoil, unstable political situation stressed more on the demand; The person searching for home is still undecided whether to go for the deal or to wait for possible decrease in prices.

### ***3. Opportunities***

- Reaping benefits from rapid growth of the real estate sector.
- Lebanese expatriates returning back home as well as Syrian refugees would require to settle, thus the need for provision of apartments.
- The increase in oil prices to historical levels led to high liquidity in the region previously.
- Several alternatives are present to finance the ownership of an apartment through banks, the Housing Bank and the Public Housing Authority.
- Less strict regulations regarding cap on foreign ownership than in neighboring countries.

### ***4. Threats***

- As several zones witnessed purchases by Neighboring citizens, social, religious and parliamentary figures asked for more stringent rules that allow to preserve Lebanon's identity in terms of demography, heritage, ....
- Construction material prices on the rise implementing higher prices on the purchaser.

- Risk of feasibility of some projects due to extreme land prices
- Any transfer of the regional turmoil into the Lebanese boundary will affect negatively the whole economy and the real estate sector specifically.
- The increasing debt in Lebanon would exert more pressure on financial institutions, thus may disturb the real estate sector.
- The rising of extremists' movements in the region and being on the frontiers of the Lebanese territory.

## **E. Porter's Five Forces for Real Estate Market in Lebanon**

### ***1. Barriers To Entry***

- The Lebanese law limits foreign ownership of real estate to 3000 square meters in aggregate.
- Foreign ownership limited to 3% by each caza except for Beirut where it is limited to 10%.
- Huge investment required for luxurious projects.
- Banks strict regulations for lending for construction as well as for housing.
- Land availability which is becoming difficult to find.

## ***2. Rivalry Amongst Competition***

- The main drivers of competition are the location, view, infrastructure, position, orientation, finishing quality and the quality/price ratio.
- Amenities provided in compounds differentiate amongst competitors.

## ***3. Supplier Power***

- The small geographic area of the Lebanese territory as well as the existence of non-adaptable lands for construction provide powerful hand for suppliers as lands are scarce.
- Limited number of suppliers of raw materials.
- The use of conventional technologies in the construction industry provoke low influence of developers in bargaining steel suppliers for example as this material is required and is priced internationally.

## ***4. Customer Power***

- Customer's bargaining power is limited as the majority has limited down payment and thus should manage to reap maximal advantages with restrictions.
- Little margin of price negotiation as developers are not in rush for cash as the real estate development is showing positive economic profit.

## **5. Threat of Substitutes**

- Investors that are interested in the financial assets may invest in fixed income or bonds for search of significant yields.
- Another alternative may be to invest in treasury bills.
- Home seekers may rent properties while wishing that that the prices decrease in the near future.
- Arab investors may decide to invest in other regional countries having even more lenient rules for foreign proprietors.

## CHAPTER V

### BENCHMARKING LEBANON TO OTHER REGIONAL COUNTRIES

According to the global property guide, Lebanon is placed ahead of regional Arab countries in comparison of the price to rent ratio. In fact, it is assessed that Lebanon has a 22 years price to rent ratio while other countries like the United Arab Emirates, Morocco, Jordan and Egypt have 17 years, 17years, 12 years, and 11 respectively. This stimulates the reason that properties in Lebanon may be overvalued, or there are underestimation of the rental yields. (Global Property Guide)

#### **A. United Arab Emirates**

Comparing Lebanon to Dubai, Numbeo highlighted that Lebanon has on average a 16.21 price to income ratio whereas Dubai is at 6.30. In differentiating between the city center and outside of it, it was found that the price to rent ratio is at 25.00 in BCD compared to 12.10 in Dubai. As for outside of the city center, Lebanon has a 17.46 price to rent ratio compared to 10.23 in Dubai.

#### **B. Kingdom of Saudi Arabia**

Comparing Lebanon to Saudi Arabia, Numbeo highlighted that Lebanon has on average a 16.21 price to income ratio whereas Saudi Arabia is at 3.12. In differentiating between the city center and outside of it, it was found that the price to rent ratio is at 25.00 in BCD compared to 13.89 in Saudi Arabia. As for outside of the city center, Lebanon has

a 17.46 price to rent ratio compared to 14.59 in Saudi Arabia.

Based on the previous comparison with regional peers, it should be underlined that salaries did not follow the prices of real estate in Lebanon, that is why the gap is high compared to peers.

### C. Comparison of GDP/Capita for Lebanon and Neighboring Countries

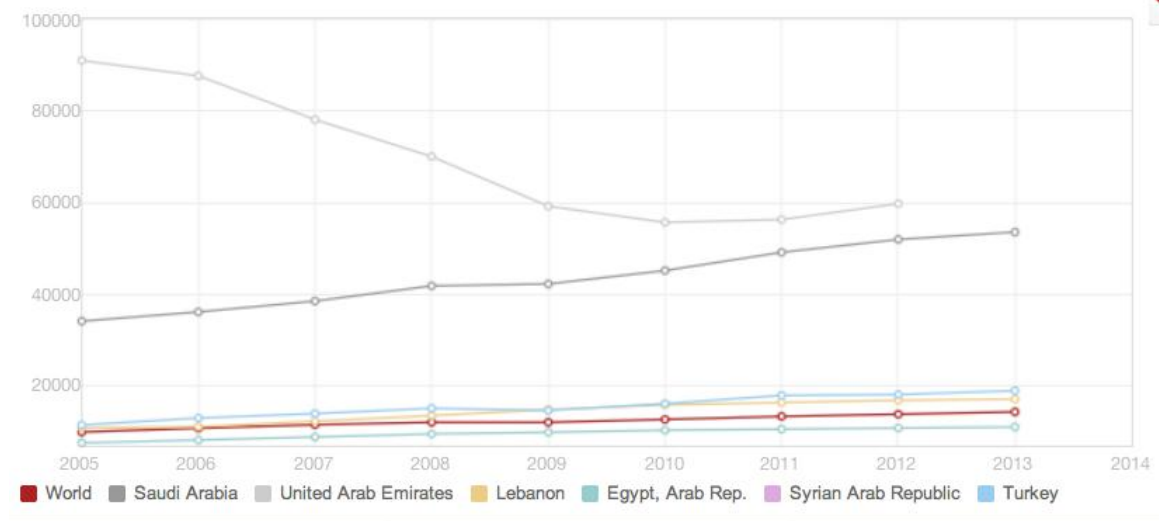


Figure 7 Comparison GDP/Capita of Lebanon and Neighboring Countries  
(Source: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD/countries/1W-SA-AE-LB-EG-SY-TR?display=graph>)

The above graph shows that Lebanon is above the world average for GDP per capita, less than the Arab oil producing countries, Saudi Arabia and UAE. The GDP per capita in Lebanon is similar to that of Turkey. Even with similar GDP per Capita, Lebanon shows higher price to income ratio equal to 17.87 in Beirut as compared to 10.01 in Istanbul. Price to rent ratio are almost 25% higher in Beirut as compared to Istanbul.

Nevertheless, an important limitation exists which is related to the “black market” that is in all the sectors in the Lebanese economy which is not accounted for in the official calculations of the GDP. Taking that into consideration, Lebanon’s position on the above

graph will be shifted to higher levels.

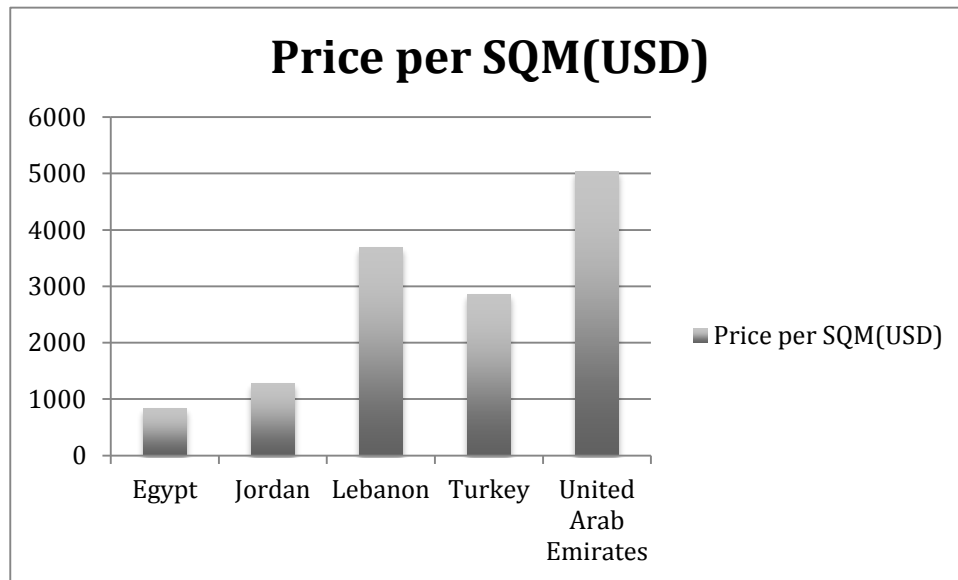


Figure 8 Comparison of Prices per SQM in Lebanon and Neighboring Countries

According to global property guide, Lebanon shows an average price per square meter of 3693 USD which is higher than the prices in neighboring countries such as Jordan of 1282 USD per square meter, and Turkey of 2855USD per square meter. Lebanon remains under the pricing of real estate in the United Arab Emirates where the average price per square meter is at 5037USD.



## CHAPTER VI

### BUBBLE CHECK FOR REAL ESTATE PRICES IN LEBANON

In order to check for the existence of a bubble or multiple bubbles in the real estate sector in Lebanon, extensive data is required for the real estate prices. Unfortunately, there is no data available for the same neither at the government, nor banks and not even within the private sector. As such, collection of data has been done at AUB libraries, microfilms department, where “L’Orient Le Jour” newspaper has been checked throughout the years 1998 until 2014. The real estate prices in a specific region (Ashrafieh) were recorded taking into consideration all the existing offerings semiannually, noting that the real estate prices have varied nationwide in a very similar manner. The data starting 2005 was checked at higher frequency in order to detect the timing of the bubble if exists.

In order to attenuate the effect of the error induced by some outlier data, the average of 4 consequent data inputs are calculated as plotted in the next graph:

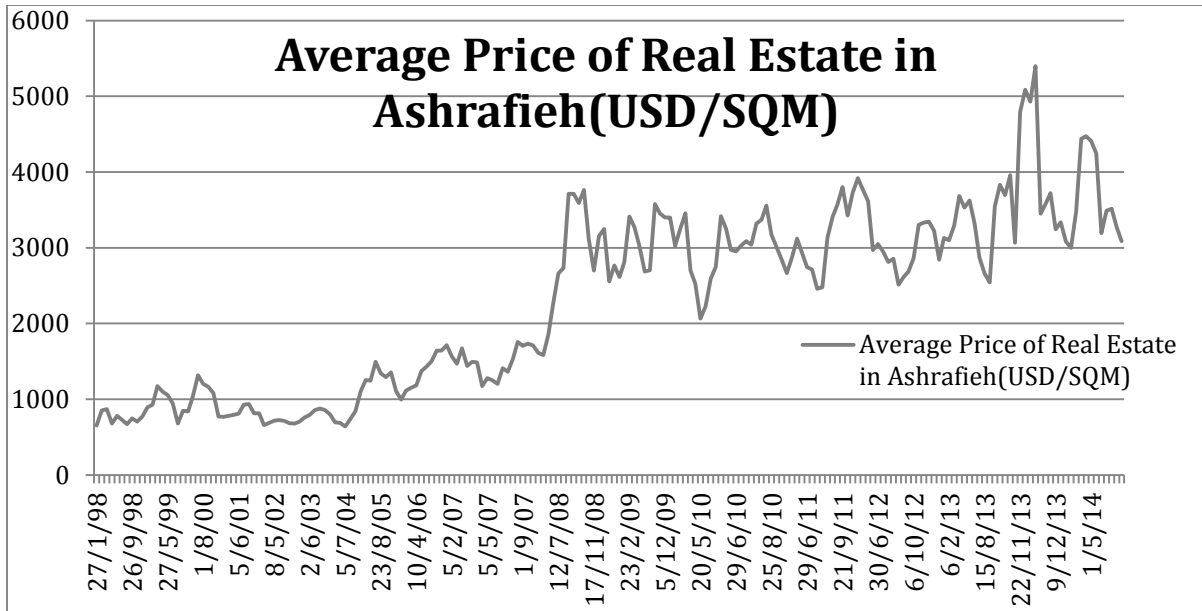


Figure 9 Variation of Real Estate Prices in Ashrafieh 1998-2014 - Data Extracted From L'Orient Le Jour Microfilms Department at AUB Libraries.

The previous graph shows price ranges at just below 1000 USD/square meter from 1998 until end of 2003, then some variability is present, an increase from 800USD/square meter to 1400USD/square meter in the 2004 period, In 2005 and 2006, prices showed fluctuations in an increasing trend peak. In 2007, average prices reached the levels of 1700USD/SQM and by mid-2008 a price hike is observed leading to prices to the ranges of 3700USD/SQM. Starting 2008, prices remained at 3000USD/SQM with major variability but at a steady average price.

Applying the GSADF Test:

By using Eviews and applying the GSADF Test:

Right Tailed ADF Tests  
 Sample: 1 203  
 Included observations: 203  
 Null hypothesis:  
 AVERAGE\_PRICE has a  
 unit root  
 Lag Length: Fixed, lag=0  
 Window size: 20  
 Date: 03/24/15 Time: 20:58

		t-Statistic	Prob.*
GSADF		3.141695	0.0040
Test critical values:	99% level	2.926622	
	95% level	2.267206	
	90% level	2.041470	

\*Right-tailed test

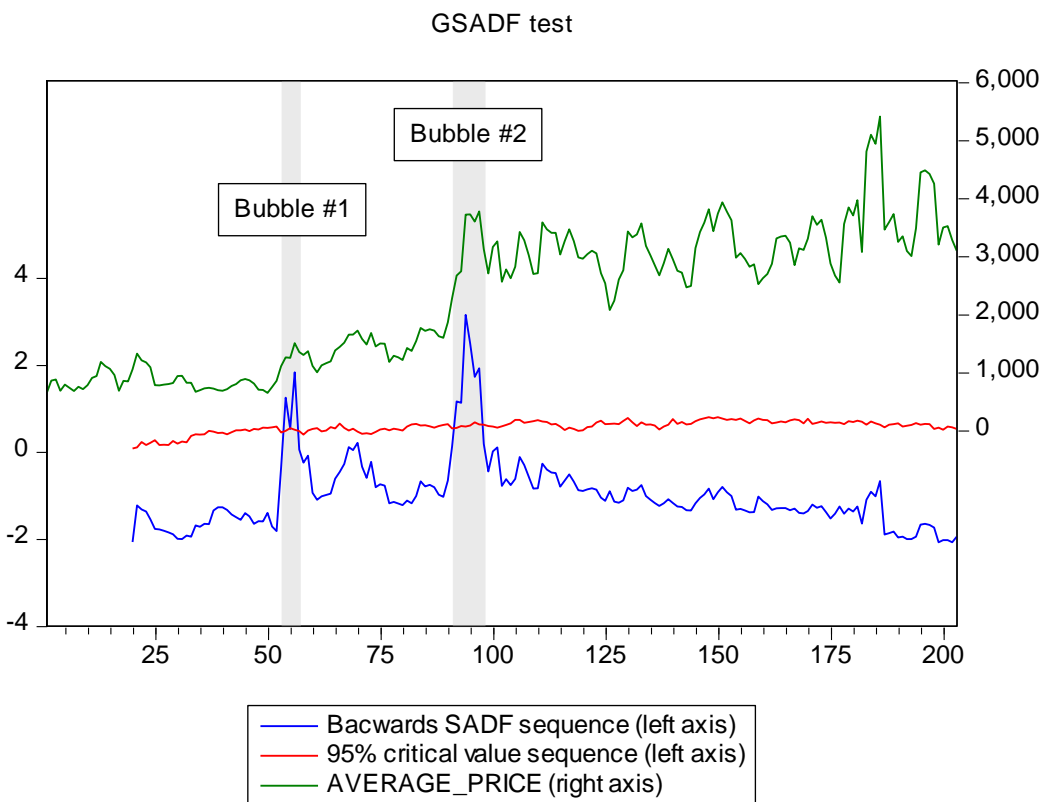


Figure 10 GSADF Testing for Bubbles in Pricing of Real Estate in Lebanon

As depicted by the GSADF test, the Lebanese real estate prices have presented two

bubbles, the first one between the observations 53 and 57, the second between 91 and 98 which can be translated to the period February-August 2005 from one side and July 2008 from the other side. In these two periods, the backwards SADF sequence exceeded the 95% critical value sequence, which implies the existence of a bubble according to PSY.

The aforementioned bubbles in the real estate pricing in Lebanon can be shown by the extensive increase in the related prices for the same period as a very steep curve is well defined in 2005 and 2008.

Many underlying factors may be part of the booming prices, from influx of petrodollars from the GCC companies and individuals, to transmittals of Lebanese expatriates for owning a secure real estate property and/or land in their nation. Rising oil prices, “relatively” relaxed political situation, and elevated raw material prices as well as labor cost melted with an excess of demand that led to overpriced properties. Furthermore, the speculations were an added factor that underlined the overpricing.

But, the above test does not take into account the political risk premium in the region, and particularly in Lebanon. Thus for calculating the discount rate, and by accounting for the risk premium, bubbles may have vanished. To add, prices after the end of the war in 1990 have not increased, and remained stable until 2004. Thus, the bubble in 2005, and that of 2008 may be considered as an adjustment to the stable prices. Thus the 300% increase divided by the 25 years period from 1990 until 2015 show an increase of 12% yearly which is still higher than the yearly inflation rate but the gap is highly minimized.

To note that same results of GSADF test appear while testing the housing prices in Lebanon for the rolling ADF sequence, thus the two bubbles in 2005 and 2008 are proven

to have occurred in the Lebanese real estate pricing.

Right Tailed ADF Tests  
 Sample : 1 203  
 Included observations: 203  
 Null hypothesis:  
 AVERAGE\_PRICE has a  
 unit root  
 Lag Length: Fixed, lag=0  
 Window size: 20  
 Date: 03/23/15 Time: 11:26

	t-Statistic	Prob.*
GSADF	3.141695	0.0040
Test critical values:	99% level	2.925100
	95% level	2.305725
	90% level	2.047991

\*Right-tailed test

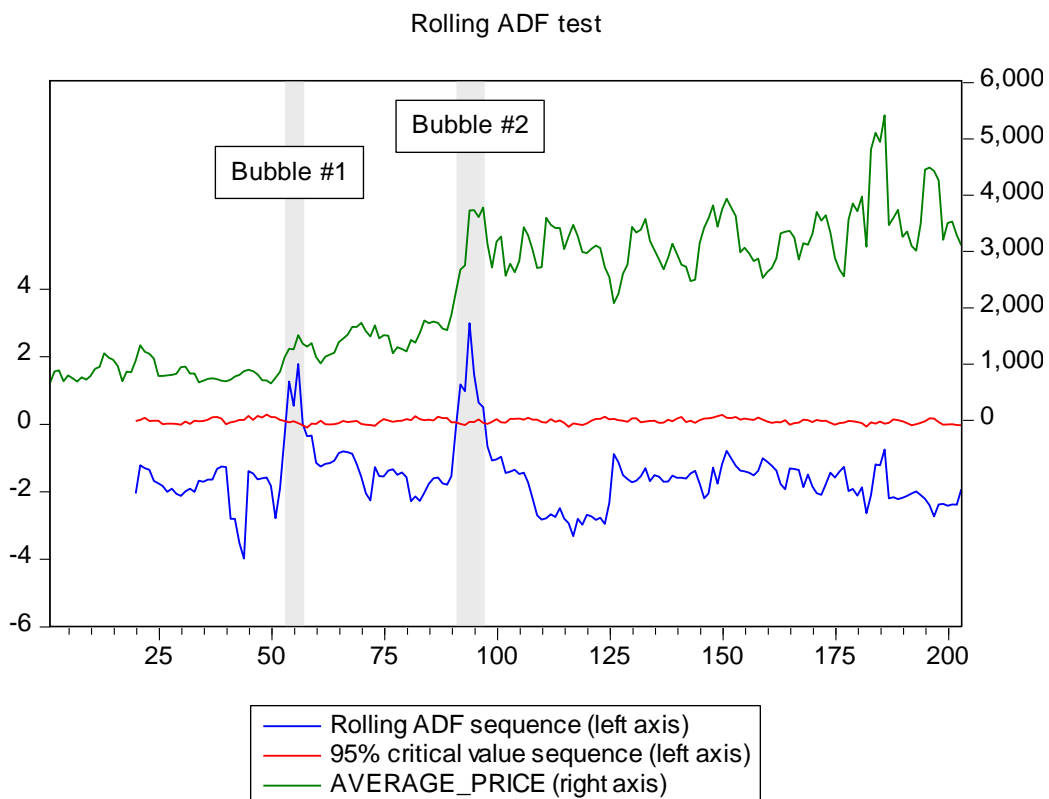


Figure 11 RADF Testing for Real Estate Bubble in Pricing in the Real Estate Sector in Lebanon

## CHAPTER VII

### CONCLUSION

No one can deny the excessive increase in prices of the real estate in Lebanon in the last decade. Similar figures are present in Dubai, Northern Ireland and USA where bubbles have collapsed. In Lebanon, prices are not only function of supply and demand, but also related to the speculation of increasing prices of the real estate on the long run. Even when prices peaked, the supply kept his full power until the year 2011, by then supply and demand almost stagnated and showed a slight slowdown.

The aforesaid increase in the prices in the real estate sector in Lebanon led the suppliers as well as customers to adapt by implementing measures such as relocations, small sized apartments, ... It goes without saying that the strategy adopted by Banque Du Liban in managing the flow of monies has helped in supporting the suppliers from one side and the home seekers from the other. By comparing Lebanon to its regional peers, it can be found that prices of real estate are close to that of oil producing countries, rather than non-ones.

Additionally, the regional turmoil has supported the increases in prices as foreigners, mainly Syrians, were obliged to move to Lebanon as a safer place thus allowed the sustainability in the increase of prices in rent as well as in the selling.

By implementing the GSADF test for bubble checking, it was found that the Lebanese real estate sector has witnessed two bubbles in its prices, one in 2005 and the other in 2008.

Even though, real estate prices have not gone down, as the suppliers are willing to negotiate

for some discounts, and as long as they sell an apartment they can sustain some time prior doing another deal. It should be well underlined that the model did not take into account the risk premium of Lebanon, also to note that after war prices showed a stagnation for almost 15 years, thus the sudden increase is to recap on the missed price growth. For the question, are we in a bubble right now? The answer is no, but other factors such as the income should get along with the inflation rate, as well as the rent prices.

In fact, companies such as SAYFCO Holding, have implemented the correct strategy of providing small apartments, in regions that are not in the highest priced lands, and accompanying them with a massive and aggressive advertising and marketing campaign on social networks.

To conclude, real estate prices and others will, in the near future, face another expectation, that of natural gas in the Lebanese territory...

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