Lebanese Real Estate Sales, Analysis and Empirical Evidence between years 2002 and 2016

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Abstract: Objective: The purpose of this paper is to examine the effects of several variables on real estate sales in Lebanon in the period extending between years 2002 and 2016, where major political events took place. The independent variables examined in this paper are commercial banks total deposits, government budgetary expenditure, tourists' arrivals, total exports, gross public debt, and money supply M3.

Methodology: A time series sample of 180 observations is selected, under each variable, from Economena Analytics platform, and regression analysis was conducted to detect the relations between the dependent and independent variables.

Results: Commercial banks total deposits highly correlated with all IVs and thus it was removed, money supply M3 is insignificant, and a ratio of gross public debt to government budgetary expenditures is formed. The regression analysis indicated a direct significant relationship between real estate sales and tourists' arrivals, total exports but an inverse relationship between the variable and the created ratio.

Implication: This research provides critical inference to policy makers especially when planning for economic growth in a country like Lebanon. Tourists' arrivals, total exports and public debt to budgetary expenditures are significant factors that should be considered as politically sensitive variables and major contributors to the growth in real estate sector.

Index Terms: Keywords: Lebanon, Real Estate, Political Events, Government Budgetary Expenditure, Tourists' Arrivals, Total Exports, Gross Public Debt, and Money Supply M3.

I. INTRODUCTION

Since its independence, Lebanon was impacted by a political partisan framework which formed its administration over the years. This framework moved toward becoming a hindrance to the tranquil and viable globalization, prompting a reasonable loss of motion in the basic leadership process and accounting for the breakdown of real improvement foundations.

In late decades, two sorts of contentions have influenced Lebanon's capital ratios, those specifically influencing its region and those that, while outside its domain, had critical spillovers. Lebanon's civil wars of 1975– 1990, and of July 2006 brought about the decimation of its physical capital and initiated a general decrease in its capital stock. Prime Minister Rafic Hariri assassination in 2005, and the absence of a president for the country between the years 2014 and 2016 has profoundly affected Lebanon's capital ratios, through a stamped drop in venture and growth opportunities. On the other side, the heavy regional conflicts pulled Lebanon into the worst era in our modern times. Although the country was booming when the world was plunged into chaos during the financial crisis of 2007-2008, the vast numbers of immigrants and migrants fleeing into the country pushed the unemployment rate into higher levels, and strained the growth rate from possible improvements.

Reported as the world's third-most-indebted country; tumbling under vast interest payments and rising gross public debt to above $74 billion [9] the Lebanese debt to GDP ratio reached 149 percent (Tierney, 2016). The slow-moving growth rate is eliminating the chances of improving the economy; as estimated by the International Monetary Fund, Lebanon's real GDP growth rate is predicted to reach 1% in 2016 and 2% in 2017 (Lebanon weekly report, 2016). [5]

Ranked as the 9th country in the world on the scale of migration flows (BloomInvest Bank, 2013), the Lebanese economy finds its way to survive on remittances flowing into the country. In 2015, remittances constituted 7% of the Lebanese GDP, where 25% of them flew from the Gulf countries [16] The falling oil prices worsened the situation and due to project delays and budget cuts, many Lebanese living and working in the Gulf region found them -selves unemployed and had to return to Lebanon.

The effect of the Syrian War spread to distress different sectors. The tourism sector witnessed declines in the numbers of tourists visiting the country, dropping by 30% since 2010 The Lebanese external sector experienced a contraction in exports by 11.1% and an increase in imports by 6.9%, contributing to a 10.7% rise in the foreign trade deficit [3]

Given the above facts, Lebanon's real estate industry has established to be one of the pillar sectors of the Lebanese economy. Amid the period the Lebanese construction sector provided examples of overcoming adversity in the nation's economy. The nation's good venture atmosphere combined with budgetary market crashes around the globe resulted in an upsurge in foreign direct investment (FDI) inflows that expanded the sector considerably. Since the start of 2011, the real estate sector suffered due to political flimsiness in the

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country and in the region. This was shown by a 10.2% decrease in the volume of real estate sales [4]

As the security conditions intensified, and the overflow impact of neighboring unsettling influences preceded, the real estate sector kept suffering and the sales dropped by 7.2% in 2013. The volume of sales kept falling until the beginning of 2016, where real estate transactions started showing an evolution in the first nine months of the year, increasing by a yearly 4.6% compared to the same period of the previous year [6]

Real estate and construction sectors constitute 20% shares of Lebanese GDP, and real estate registration fees represent the bulk of related public revenues. The growth in real estate sector extensively affects economic growth in the country and results in creating job opportunities for many. This paper examines the connection between real estate sales and a few considered factors over the time of 2002 and 2016. Commercial banks total deposits, government budgetary expenditure, tourists' arrivals, total exports, gross public debt, and money supply M3 were considered as autonomous variables, trying to investigate new noteworthy factors determining the vacillations in sales amid political insecurity.

II. LITERATURE REVIEW

The real estate sector is a key determinant of the Socio-economic improvements of countries. It generates employment in many related industries especially construction and infrastructure. It is likewise a key element of the GDP) indicates that real estate generally contributes to a country's economic growth due to a corresponding growth in the demand for materials, labor inputs and backward and forward linkage effects in the economy. There is a circular relation between economic growth and the real estate market. According to Guo, J., Yuan, J., & Chen, H., (2011) the real estate market has enormous effect on economic development. Furthermore,)[10], stated that monetary ploicies, inflation and economic growth have extensive effects on the real estate returns.

According to Hilbers ([13]"the equilibrium price is the price at which the stock of existing real estate equals the replacement cost." Along these lines in principle, growth in prices indicates growth in demand and results in a growth in the market. Hence real estate sales increase in line with the increase in demand. The trend of real estate cycle overlaps with that of economic progress. Real estate prices can be a prominent indicator of general business cycle DeLisle,).[11]

[17] explored influential favourable factors for the real estate industry, he found out that household revenues, demographic and social indicators, offer and funding costs, impact of the state, are all variables affecting the growth or decline of the real estate market. He also stated that great damage to the real estate industry and construction market may be caused by high rates of inflation, which cause a lower demand for real estate properties and add pressure on prices, thus affect real estate sales negatively.

Wit and Dijk (2003) explained that GDP, unemployment, inflation, vacancy rate, and the available stock affect real estate returns [12] indicated that the real estate market has tremendous influence on the economic growth. He found out that developing real estate industry has economic implications as it boosts the industries of decoration, furniture, electric equipments and so on. Capital markets are influenced by the economic situation; mainly the existence of a major economic crisis adds additional risk to investors in the real estate market [15] According to the latter, investing in real estate requires access to information and necessary data, mainly, to time trends and market prices. For a fruitful real estate market, transparency, efficient cadastral, ownership security is to be ensured.

[14] confirmed that higher degrees of political precariousness prompt lower economic growth. [7]found out that political insecurity, represented by assassinations and the occurrence of violent revolutions essentially irritates the average growth level in cross section regressions on a large sample of countries development level. [1][2] utilized information on 113 nations over the time span of 1950 to 1982 to demonstrate that GDP growth is less in countries with high inclination of government collapse.

Alesina and Perotti (1996) demonstrate that socio-political insecurity creates a questionable politico-economic condition, raising risks and diminishing investment. Delicate and struggle ridden nations typically lose the capacity to create helpful connections inside their social orders and often suffer from a frail capacity to attempt administration capacities. These nations are more defenseless against interior and outer stuns, and thus confront unsteadiness. [18]

Given the restricted accessible literature on the components influencing real estate sales, and contemplating the way that growth rate supports real estate sector and vice versa, this paper adds to past examinations in the field and looks at other central factors influencing the sector's sales. The considered variables are tested in the below sections and the results are presented and discussed.

III. RESEARCH METHODOLOGY

In this paper, monthly time series data were collected over the period between years 2002 and 2016. The data was collected from Economena Analytics[1] platform. A regression analysis was applied to derive the relationship between real estate sales and the considered independent variables. Real estate sales variable is the dependent variable and tourist arrivals, total exports, money supply M3 and the ratio gross public debt to government budgetary expenditure, are the predictive variables. The assumptions of the regression model are tested, and the results are shown below.

Normality of the dependent variable: real estate sales variable was not normally distributed. Natural logs were introduced to the observations and the variable became normally distributed. (Table I)

Table I. Tests of Normality for the dependent variable.

	Shapiro-Wilk		
	Statistic	**df**	**Sig.**
Number of Real Estate Sales	.981	180	.013
Ln (Number of Real Estate Sales)	.985	180	.053

Sample size: at least 20 records for each independent variable are to be ensured, if the dependent variable is normally distributed. The sample constitutes 180 observations for each variable.

[1] Visit www.economena.com

Absence of outliers in all variables: six outliers were detected and removed (the sample size fell to 174 observations). (Table II)

Table II. Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Std. Residual	-2.278	2.802	.000	.988	174
Cook's Distance	.000	.034	.006	.008	174

a. Dependent Variable: Ln Number of Real Estate Sales

Absence of Multicollinearity: Initially, commercial banks total deposits, government budgetary expenditure, tourists' arrivals, total exports, gross public debt, and money supply M3, were the predictive variables. This combination of independent variables showed high correlation between IVs. To remove multicollinearity, the variable, commercial banks total deposits. was removed, and a ratio between gross public debt and government budgetary expenditure was created. (Table III)

Table III. Correlations between all the variables

	Ln Number of Real Estate Sales	Ln Tourists	Ln Exports	Ln Public Debt To Ln Budget Expenditures	Ln Money Supply
Ln Number of Real Estate Sales	1.000	.624	.738	-.047	.566
Ln Tourists	.624	1.000	.447	.099	.460
Ln Exports	.738	.447	1.000	.324	.769
Ln Public Debt To Ln Budget Expenditures	-.047	.099	.324	1.000	.510
Ln Money Supply	.566	.460	.769	.510	1.000

Homoscedasticity and Linearity: Both respected. (Fig. 1)

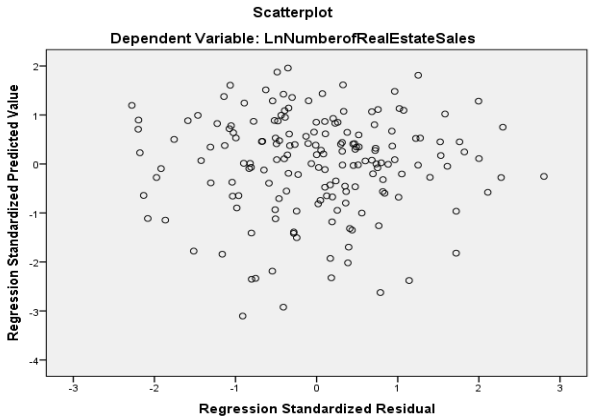

Fig. 1. Homoscedasticity and linearity test

IV. RESULTS

In (Table IV) a positive correlation is detected between Tourists' arrivals, exports, and the real estate sales. While a negative relation is detected between the ratio of public debt to public expenditures and the real estate sales.

The estimated equation is given by: Real estate sales = 6.444 + 0.223 Tourist Arrivals + 0.396 Total Exports + 0.080 MS – 4.657 Public Debt/ Budget Expenditures + ε

All P-values are lower than 0.05 except for the Money Supply. All variables except money supply significantly affect real estate sales.

Table IV Coefficients for the regression model

Model	Uns. Coefficients		St. Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.444	0.483		12.084	0.000
Ln Tourists	0.223	0.031	0.331	7.274	0.000
Ln Exports	0.396	0.041	0.611	9.751	0.000
Ln Money Supply	0.080	0.049	0.115	1.634	0.104
Ln Public Debt/ Ln Budget Expenditures	-4.657	0.645	-0.337	-7.221	0.000

Based on the results in (Table V), 73% of the variation in the real estate sales is determined by the variation of the considered significant independent variables.

Table V. Model Summary for the regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.859	.738	.733	.15069	.031

a. Predictors: (Constant), LnPublicDebtToLnBudgetExpenditures, LnTourists, LnExports,LnMoneySupply

b. Dependent Variable: LnNumberofRealEstateSales

A. Tourists' Arrivals Impact on Real Estate

An important feature of tourism is its ability to establish strong and diverse relationships with other industries, thus its contribution to the GDP is very important. The direct contribution of tourism to GDP includes the initial expenditure made by visitors within the country, including hotels, restaurants, travel agencies, transport companies, as well as public expenditure.

On the other hand, the total contribution of tourism to GDP contains wider impacts on the economy. Indirect impacts are generated by investment expenditures on purchases of new aircraft, construction of new hotels, marketing and promotion expenses, security expenses, etc. To this must be added local expenditures on goods and services related to tourism activity. Induced impacts result from previous direct and indirect impacts. The increase in local consumption resulting from new revenues distributed in tourism is one example.

For Lebanon a country that is well-endowed with tourism assets, tourism remains one of the important resources that generate income, accumulate wealth, and produce influx of foreign currencies. The capital inflows are mainly used to finance the development of infrastructure, support local businesses, especially small and medium-sized enterprises (SMEs), and advance the skills and institutions needed to create a vibrant local economy. This results in a multiplier effect and stimulates private investment. The positive relationship generated in this paper provides evidence on the importance of tourism expenditures on the real estate market returns.

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B. Exports Impact on Real Estate

Among the variables considered as an essential determinant of real estate sales are total exports. An expansion in the export sector leads to an increase in the demand for the products of the country, which result in an increase in the real GDP. Verdoon's Law states that the change in productivity resulting from a specialization in the production of goods destined to be exported, through the improvement of skills and competences in the sector and a reallocation of resources from the less efficient sectors to more efficient sectors, leads to an increase in the real GDP. Growth in total exports is accompanied by an "export multiplier" effect, by which an increase in exports is considered to cause an amplified variation in the total national income.

It is widely accepted that trade is an important determinant of long-term economic growth. Economic policies favoring the growth of export and the liberalization of trade have been at the core of the strategies recommended to developing countries. The theoretical origins of the positive link between trade openness and growth are twofold. First, the conventional approach explains the gains from trade liberalization through comparative advantages; whether in the form of natural resource endowments (Hecksher-Ohlin Model) or technological differences (Ricardian Model). Second, the literature on endogenous growth assumes that trade openness positively affects the GDP per capita and economic growth through economies of scale and technological diffusion between countries. Economic growth creates a favorable framework for the expansion of private investment in a country, among which real estate sector develops).[19] The direct relationship between exports and real estate sales provides another evidence on the importance of exports in developing the sector via the channel described.

C. Public Debt to Budget Expenditures Impact on Real Estate

External debt is considered as a return of capital with positive effects on domestic savings, investment and growth. Proponents of this argument assume that foreign savings are complementary to savings, but if the future debt of a country tends to be higher than its repayment capacity, the debt service will be a growing function of its production, thus discouraging domestic and foreign investors. Fearing that production will be taxed by the state as debt servicing progresses, potential investors will be reluctant to bear immediate costs to increase future production, so investment will be discouraged in some way (Ugo & Presbitero, 2014).

Over-indebtedness is defined as a situation in which external debt is so high that it leads to low investment, via two effects, namely the effect of illiquidity and the effect of incentives. The first effect refers to the idea that the high burden of external debt leads to a scarcity of liquidity, capital formation being at its minimum after years of austerity and low growth. The second effect refers to the idea of the depreciation of public investment and private investment, since a large part of future income will be transferred abroad. These two effects combined may push the debtor country into a spiral of low investment and low growth.

In fact, private agents of the debtor country as well as foreign investors consider the very high burden of external debt as a tax on their future income. This means that the state will raise taxes in the future to cope with the service of its debt. And that an increase in taxes would lead to low after-tax income on capital and therefore reduce the incentive to invest. In this case the debt is considered as a marginal tax on the investment.

If the private sector expects to be taxed in the future, private domestic investment will also be depressed in the sense that investors will invest their capital abroad. This leak may lead to a panic; the contraction of the taxable base may be offset by a possible increase in tax rates, further decreasing the incentive to invest abroad. Such unstable equilibria can lead to capital flight and a decapitalization of the economy. The fact that the capital accumulated abroad by the private sector cannot be exploited by the public sector, liquidity constraints can arise especially when the private has major assets abroad.

The liquidity and incentive constraints can push the heavily indebted economy into a downward spiral of growth, which could also reduce the debtor's repayment capacity, and investment opportunities may be depressed as proven significant in the regression results with an inverse relationship between real estate sales and public debt to budget expenditures.

V. CONCLUSION

This paper provides empirical evidence on the relationship between real estate sales, tourists' arrivals, total exports, and the ratio of gross public debt to government budgetary expenditure. Tourists' arrivals have a positive impact on real estate sales through direct, indirect, and implicit contribution to the GDP. Exports are directly related with to real estate sales via GDP growth channel. On the other hand, indebtedness of the country has weighted negatively on the real estate sales.

Low tourists' arrivals, low exports and over-indebtedness are all major source of uncertainty. The decision to invest is intrinsically linked to the degree of uncertainty of future economic developments. A high degree of uncertainty would reduce the propensity to invest even for risk-neutral entrepreneurs, as it increases the likelihood that currently installed productive capacities cannot be used tomorrow if economic conditions deteriorate significantly. In these circumstances, entrepreneurs will prefer to wait so that uncertainty dissipates before making any decision to invest. Political pressures and instability are major factors of uncertainty contributing to lower investment opportunities and lower sales in the real estate sector, and in return lower economic growth and higher unemployment.

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