Sector Monitor Series

Dubai Real Estate Sector and its Relationship to Financial Sector

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ملخص تنفيذي

الهدف الرئيسي من هذه الدراسة هو التحقق من وجود علاقة بين قطاع العقارات والقطاع المالي على مستوى الاقتصاد الكلي لدي ومعلى مستوى الاقتصاد الجنوبي لسوق دبي المالي. وقد أضحى إحصائياً أن مثل هذه العلاقة موجودة في دبي، على مستوى الاقتصاد الكلي والجنوبي.

إن قطاع العقارات هو المحرك الرئيسي للقطاع المالي. مع أهمية الكبيرة للقطاع المالي بالنسبة لقطاع الخدمات ككل في دبي، فقد أظهر قطاع العقارات بأنه أكثر زيادة في اقتصاد دبي. بما أن هذين القطاعين الحيويين يحركان اقتصاد دبي بكامله، من المهم أن نتابع عن كثب مسار التطورات في هذين القطاعين.

إن الخصائص المميزة لسوق العقارات تتسبب في اختلاف أسعار العقارات عن أسعار الأنواع الأخرى من الأصول، مثل الأسهم. قد يحدث التنبؤ في أسعار العقارات لكن ليس بسبب التغيرات الاقتصادية، لكن نتيجة لخصائص سوق العقارات. لذلك، يعتبر أمارا عادياً أن تتبع أعداد أسعار العقارات على المدى القصير عن توجهاتها في المدى الطويل.

قد يحدث أن يزداد عرض العقارات نتيجة لسياسات حكومية غير مناسبة تشوه من الحوافز الخاصة. على سبيل المثال، قد يؤدي التحرير المالي غير المحكوم بضوابط إلى ظهور مؤسسات مالية جديدة تنافس مؤسسات الإقراض الموجودة وذلك من خلال توفير قروض بشروط سخية. ومع اشتداد المنافسة وتوفير المزيد من الموارد المالية لتمويل المشاريع العقارية، يرتفع الاستثمار في العقارات وفي المحصلة سوف تتباطأ أسعار العقارات بعد ارتفاعها الأولى فوق قيمتها التي تحددها العوامل الاقتصادية.

إن مراقبة أسعار العقارات أمراً هاماً لأجل استقرار النظام المصرفي. ويعد سبب ذلك إلى التأثير المباشر وغير المباشر لклон أسعار العقارات على المصارف. يجب استخدام أسعار العقارات لتقديم البنوك للعوامل السكنية والتجارية كمؤشرات لصحة النظام المصرفي. إن مؤشرات أسواق العقارات التي يجب على صناعي السياسات البحث فيها هي (أ) أسعار العقارات (ب) نسبة القروض التي تقدمها المصارف إلى العقارات السكنية من إجمالي القروض التي تقدمها هذه المصارف (ت) نسبة قروض المصارف المقدمة للعوامل التجارية من إجمالي قروضها.
Executive Summary

- The primary objective of this study is to investigate whether there is a relationship between real estate sector and financial sector at the macroeconomic level of Dubai economy and at the microeconomic level of Dubai Financial Market. Empirical evidence has shown that such a relationship does exist in Dubai, at both the macro and microeconomic levels.

- The real estate sector has been the prime driver of the financial sector. As the financial sector is crucial for the whole services sector of Dubai, the real estate sector shows to be even more leading sector. And since the whole economy of Dubai is being driven by those two vital sectors it is imperative to keep watching closely the course of developments in both sectors.

- The distinctive characteristics of real estate market cause real estate prices to behave differently from the prices of other types of assets, such as shares. The fluctuations in real estate prices may happen not because of cyclical movements in economic fundamentals, but also as a result of the distinctive features of the real estate market. Therefore, it is common that the short run real estate prices diverge from their long-term trends.

- Real estate over supply may happen as a result of inappropriate government policies that distort private incentives. For example, uncontrolled financial liberalization may lead to the emergence of new financial institutions that compete with existing lending institutions by offering loans on generous terms. As competition intensifies, and more financial resources become available for real estate, investment in real estate rises and eventually real estate prices will fall, after initial increase above their fundamental values.

- Monitoring real estate prices is important for the stability of the banking system. This is because of the direct and the indirect exposure of the banks to real estate price volatility. The real estate prices and the banks' lending for residential and commercial real estate should be used as indicators for the soundness of the banking system. The real estate markets indicators that policymakers should look for are (i) real estate prices (ii) banks' residential real estate loans to their total loans (iii) banks' commercial real estate loans to their total loans.
1. Introduction

1.1 Background

The relationship between real estate market and financial market has long been recognized and documented in both the developed and the emerging economies. During economic downturn, the real estate sector has been a major source of economic growth for major world economies. For example, in the US economy the residential real estate prices have been quite strong during the last few years. The rising house prices, together with low interest rates, have boosted mortgage refinancing activities, encouraging consumer spending and hence supporting strong macroeconomic performance. Moreover, the real estate prices are used as indicators of financial stability. The relationship between real estate indicators and the soundness of banks and the financial sector show their significant role in making monetary policy decisions. All this shows the significant impact of the real estate market on the soundness of the financial system and on the macroeconomic activity.

1.2 Objective

The primary objective of this study is to investigate whether there is a relationship between the real estate sector and the financial sector at the macroeconomic level of Dubai economy and at the microeconomic level of Dubai Financial Market. In addition, the study discusses the implications of that relationship for the stability of the financial system.

1.3 Research questions

1. What are the dynamics of the real estate market?
2. What impact the real estate sector is likely to have on the financial sector?
3. How share prices of real estate companies and banks developed in DFM?
4. Are the share prices of real estate companies and banks related?
5. What are the implications of this relationship for the financial stability?
1.4 Methodology and data

Econometric techniques will be used to investigate the relationship between the real estate and financial sectors, both at the macro and microeconomic levels. Secondary data from Dubai Financial Market, UAE Central Bank, and Federal Ministry of Economy and Planning, and other government agencies will be used.

1.5 Outline of the study

The study is further divided into 5 sections. Section 2 discusses the dynamics of the real estate market. Section 3 shows the impact of the real estate sector on the financial sector. Section 4 gives an overview of the economic performance of the real estate and financial sectors in Dubai economy. Section 5 traces the stock market performance of the real estate companies and banks in Dubai Financial Market. Finally, section 6 draws conclusions based on the findings.
2. Dynamic of Real Estate Market

Determinants of real estate prices are similar to those of other assets. These are, among others, the expected service stream (i.e. consumption service) or expected future cash flow (i.e. rents) and the required rate of return as a discount factor. In the long run, real estate prices depend on demand factors, like national income and average discount rates, and on supply factors, like cost of construction, availability of land and the quality of the existing stock of real estate. On the other hand, the real estate markets have different characteristics when compared to markets of other types of assets. The supply of real estate is local in nature; it takes a while to deliver a new stock of real estate because planning and construction takes long time; rents of real estate can be inflexible due to long-term rent contracts; real estate market prices are not transparent because of bilateral negotiations of transactions; the real estate markets are illiquid due to high transaction costs; real estate market actors largely depend on external finance through borrowing; real estate is used as collateral to secure loans.

These distinctive characteristics of real estate cause real estate prices to behave differently from the prices of other types of assets, such as shares. Therefore, it is common that the short run real estate prices diverge from their long-term trends. Furthermore, the fluctuations in real estate prices may happen not because of cyclical movements in economic fundamentals, such as interest rates and the risk premium, but also as a result of the distinctive features of the real estate market.

The economic or business cycle underlies the fluctuations of real estate prices. On the one hand, good economic conditions improve households' average income which in turn increases the demand for new houses, and this ultimately exerts upward pressure on the residential property prices. On the other hand, improved economic conditions provide companies with profitable opportunities which encourage them to expand the scale of their investments. This expansion leads to a higher demand for office space and storage, and this ultimately pushes up the commercial property prices. Also, the perception of risk in the real estate market varies according to the phase of the business cycle. In the upswing phase, the risk involved in real estate projects is
generally considered to be low than in the downswing phase of the business cycle. The changing risk premium (due to changing risk perception) and the variable interest rate (set by monetary authority), which together determine the discount rate, can have a significant impact on real estate prices.

Real estate price fluctuations are also caused by factors that are endogenous to the real estate market, such as supply lags and the historical dependence of investment decisions. In the real estate market, the response of supply is sluggish when compared to other markets. This is because of the limited supply of land and the lengthy of planning and construction. Usually, information flow in the real estate market is not efficient. This is mainly because of the very low turnover rate of the real estate. This leads to rather limited and inaccurate price information. Most of the information that is important for understanding the dynamics of real estate prices is related to the knowledge of local market. Usually, it is very costly to obtain such a localized sort of information. All this makes it extremely difficult, if not impossible, to forecast the future trends of real estate prices. In practice, the forecast of the future movements of real estate prices is either based on current market prices or extrapolated from past trends. This can contribute to the short run divergence of the real estate prices from their long-term fundamentals and values.

During the upswing of the business cycle, the prices of real estate tend to rise. Based on the current prices or past trend, real estate investors (i.e. developers and constructors) decide to start new construction projects. It may take many years for the new projects to be finished. By the time the new projects are up and running, the market demand for real estate may fall, and so the buildings vacancy rates rise. Ultimately, the over supply of real estate puts downward pressure on rents and real estate prices. This may cause rents and prices to fall even far below their long term fundamentals values.

This real estate over supply may happen as a result of inappropriate government policies that distort private incentives. For example, uncontrolled financial liberalization may lead to the emergence of new financial institutions that compete with existing lending institutions by offering loans on generous terms. As the competition intensifies and more financial resources become available for financing
real estate projects, the investors in the real estate sector rise and real estate prices will increase above their fundamental values. The distortion becomes pervasive when there is moral hazard problem due to inappropriate policies such as guarantees against losses. Generous guarantees create the incentive that lenders invest in high return and high risk real estate projects, which lead to excessive risk taking and exuberant real estate. It has been argued that wild and uncontrolled financial liberalization has contributed to a series of real estate boom and bust, such as the collapse of the real estate prices in the cases of the U.S. savings and loan crisis in the 1980’s, and the real estate market collapse and the financial crisis in Southeast Asia in the late 1990s.
3. Impact of Real Estate on Financial Institutions

Generally, the boom and bust nature of real estate price fluctuations plays a role in business cycles, fuelling the upswing and magnifying the downswing. Falling real estate prices tend to put downward pressure on the banking sector, not only because of increases in bad debt expenses for real estate loans, but also because of a deterioration in the balance sheets of borrowers who rely on real estate as collateral. Therefore, the movements of real estate prices and the extent to which they interact with the financial sector and the macro economy become important and deserve careful study.

Bank loans are the main source of real estate finance and therefore there is an interrelationship between the real estate prices and the bank lending. A sudden drop in real estate prices can lead to a worsening of the banks' asset quality and the profitability of the banking system, if the banks are heavily involved in real estate lending. Therefore, the banking system's capital and lending capacity can be reduced seriously by a sharp fall in real estate prices. The lending behaviour of the banks has far-reaching implications for the real estate prices. For example, the banks loans to the developers, constructors and buyers of real estate can alter the balance between the supply and the demand in the market and thus leads to real estate price fluctuations. This link between the real estate prices and bank lending has been confirmed by empirical evidence in several real estate markets around the world (Hofmann, 2001; Davis and Zhu, 2004).

Price fluctuations of real estate can have a significant effect on the performance of the banking system. A sharp drop in real estate prices may trigger a financial crisis in the banking system through several channels. Directly through rising bad debt cost in real estate loans, worsening of the financial conditions of debtors and the banks, or indirectly through the fall in financial transactions and the economic activities.

Usually, real estate credit constitutes major part of the loans extended by the banks. In some countries it can be one third while in others it can be more than half of total bank credit. Falling real estate prices means a lower return for real estate and
therefore loans to real estate sector are expected to default. This reduces the banks' profitability and raises the bad debt expenses of the banks.

Usually in real estate market, the real estate is used as collateral for the mortgage loans. The widespread use of collateral lending in real estate loans increases the credit risk. When a high loan-to-value (LTV) ratio, that is based on the market value of real estate at the time of lending, is used and the real estate prices fall sharply it becomes highly risky for banks because default on mortgage loans are very high under such circumstances.

To a large extent, the banks credit risk exposure to real estate lending depends on whether the mortgage loans are used to finance residential or commercial property. Generally, the lending for residential property is considered to be safe relative to the lending for commercial property. This is because the debt service payment of the residential mortgage loans is usually financed from the household income, which is generally considered to be stable. On the other hand, real estate lending for commercial property (i.e. loans to developers and constructors) are generally considered to be risky. This is due to the fact that the debt service payment of these loans is supported by the rent and/or the price of the completed commercial property under consideration. If the prices of commercial real estate are falling sharply, then the financial position of the borrowers will worsen and therefore will not be in a position to borrow again to complete their unfinished property. Since that property is used as collateral, the collateral value falls sharply and the commercial mortgage loan will default. This is exactly what happened in several industrial countries in the early 1990s and in East Asia in 1997, when commercial property non-performing loans was a major contributor to banking crises in these countries.

Since real estate is used as collateral for other types of loans, i.e. non-real estate lending, fluctuations in real estate prices are most likely to have an impact on the banking system through the balance sheet effect. Sharply falling real estate prices constrain the borrowing capacity of non-real estate businesses that borrow against their real estate. As a result their new investments are constrained and hence their profits are reduced. Therefore, the credit risk exposure of banks to no-real estate loans
also rise. Ultimately, the non-performing loans of both the real estate sector and the other sectors will increase the vulnerability of the banking system.

Generally, it is observed that the banks’ lending criteria are pro-cyclical. That is, their lending criteria are loose in a real estate boom and strict during the bust. Therefore, the banks are more likely to underestimate the default risk of real estate loans during a real estate boom. Such a situation leads to real estate price inflation and this increases the banks’ credit risk exposure to the real estate. When there is a sharp drop in real estate prices, the banks that have high proportion of their loans going to the real estate sector or the other financial institutions that are specialized in real estate lending can easily collapse over night due to this high exposure to real estate risk. As a result, the country's financial system becomes at risk and exposed. The experience of the U.S. in the 1980s and that of Japan in the 1990s are cases in point.

Moreover, falling real estate prices are likely to constrain the banks' profits. During a real estate bust, the rising expenses for real estate related bad debts and the declining values of the banks' real estate assets reduce the banks’ lending capacity and as a result the banks' interest income declines. Also during a real estate bust, construction and related real estate borrowing fall and as a result the banks’ income from real estate related transactions decline. In addition, the decline of the real estate market is most likely to have an adverse impact on the overall economy and this feeds back to the banks through the slowdown of the non-real estate economic activities.

In conclusion, the real estate sector boom and bust are expected to have far-reaching implications for the stability of a country's financial system. This is because of the impact of the real estate prices on the profits of the banks. The experience of both the industrial and the emerging economies have shown that the fluctuations in real estate prices can have adversely impact on the financial system. It is being observed that the financial system is more exposed to real estate market fluctuations in the economies where the financial system is newly liberalized, without putting in place an effective prudential regulation system. Under such circumstances, an excessive competition among the banks and other financial institutions can easily lead to financial imbalances. Later on and when these financial imbalances are ultimately unwound, a banking crisis is triggered and the whole financial system is put in jeopardy.
Therefore, monitoring real estate prices is important for financial stability. This is because of the direct and the indirect exposure of the financial system to real estate price volatility. The real estate prices and banks' lending, for both residential and commercial, are included in the list of the financial soundness indicators. The real estate markets indicators that the banks should look for are (i) real estate prices (ii) residential real estate loans to total loans (iii) commercial real estate loans to total loans.

Real estate prices can influence aggregate demand and therefore the economy in several ways. First, increasing real estate prices have positive impact on expectations of the returns on real estate investment. Hence, developers and constructors engage in new construction projects and as a result the market demand increases in the other sectors that are related to real estate sector. Second, increasing prices of residential real estate stimulates households to increase their private expenditure, by changing their financial position, and this boosts private consumption. Third, movements in commercial real estate prices may significantly influence the investment decisions of those businesses that are financially constrained. In the literature, there is a lot of evidence that real estate price changes have significant impact on private consumption and the whole economy. Helbling and Terrones (2003) found that residential real estate price busts are associated with output losses twice as large as stock markets bubbles. Also, Zhu (2005) found that increases in real estate prices tend to have a positive impact on real GDP in many countries, and the magnitude of this impact is different across countries and sectors. And the commercial real estate sector seems to have a larger impact on the real economy, reflecting the fact that it is more important in influencing the investment decisions and financial positions of the businesses.
4. Performance of Real Estate and Financial Sectors

According to the standard classification of economic activities in Dubai\(^1\), there are two activities that qualify as real estate sector in the sense that is used in this study. The first activity is *construction* which generally comprises site preparation, contracting of civil engineering work, building installation and building completion. The second activity is *real estate, renting and business services* which generally comprises management, lease, rent and sale of residential and commercial buildings. Figure 1 below shows the percentage shares of these two economic activities in Dubai’s total gross domestic product (GDP) during the period 1985-2004.

![Figure 1: Shares of real estate and construction in Dubai total GDP (%)](image)

Source: Authors’ calculation based on data from UAE Ministry of Economy and Planning

Although these two activities are classified as two distinct economic sectors, but for the purpose of this study they are treated as one aggregate sector, called combined real estate sector.

Figure 2 below shows the percentage shares of the combined real estate sector and the financial sector. The financial sector includes all financial and monetary institutions,

insurance and pension funds and financial intermediation institutions. Examples for
these institutions are commercial, savings and deposits banks, stock brokers, financial
services companies and insurance companies, etc.

![Figure 2: Shares of combined real estate and financial sectors in Dubai total GDP (%)](image)

Source: Authors' calculation based on data from UAE Ministry of Economy and Planning.

The percentage share of combined real estate sector in Dubai total GDP grew from
about 9% in 1985 to about 23% in 2004. This gives an annual average share growth
rate of about 5 percentage points. Within the combined real estate sector, the
percentage share of construction sub-sector in Dubai total GDP grew from about 5%
in 1985 to about 12% in 2004. This gives an annual average share growth rate of
about 5 percentage points. On the other hand, the percentage share of real estate,
renting and business services sub-sector grew from about 4% to about 11%. This
gives an annual average share growth rate of about 6 percentage points. If we think of
construction (site preparation, building installation and building completion) as
representing the supply side of the property market, while real estate, renting and
business services (lease, rent and sale of residential and commercial buildings) as
representing the demand side of the market, then demand for property has been

2 Please note that the figures reported in this section are rounded up, but the growth rates are calculated
from the original full figures.
outstripping supply by an annual average rate of about 1% during the period 1985-2004. This may explain the rising trend of property prices and rents in Dubai.

As for the financial sector, which is closely linked to the combined real estate sector\(^3\), figure 2 shows that the trends of their shares in Dubai total GDP are almost identical during the period 1985-2000, with some divergence after that period. It is noticeable from the figure that in 1994 the share of both sectors went up sharply. The percentage share of the financial sector in Dubai total GDP grew from about 7% in 1985 to more than 9% in 2004. This gives an annual average share growth rate of about 2 percentage points. As the scatter plot, figure 3 below, shows there is a relationship between the combined real estate sector and the financial sector.

![Figure 3: Scatter plot for shares of financial and combined real estate sectors](image)

Source: Authors' calculation based on data from UAE Ministry of Economy and Planning.

As it is known, the correlation coefficient, denoted by \(r\), is a measure of the extent to which two variables show a relationship, expressed on a scale of -1 to +1. That is, whether large values of one variable are associated with large values of the other (positive correlation), whether small values of one variable are associated with large

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\(3\) The interrelationship between the real estate sector and the financial sector has been empirically documented, as we have seen in section 3 of this study.
values of the other (negative correlation), or whether values of both variables are unrelated (correlation near zero). Our calculations have found a correlation coefficient of 0.81 between the share of the combined real estate sector in Dubai total GDP and that of the financial sector, using their shares' data set for the period 1985-2004. For checking the causality of this interrelationship between the two sectors, we have resorted to regression analysis. The following estimated linear regression equation (supported by figure 3 above) shows the results of regressing financial sector share (FSS) on combined real estate sector share (RES):

$$FSS = 0.03 + 0.33 \times RES$$

$$R^2 = 0.65$$

Confidence level 95%

The results show that 65% of the variation in the share of the financial sector is explained by the variation in the share of combined real estate sector, and the relationship is significant at 95% confidence level.

The above discussion indicates that there is interrelationship, at the sector level, between the combined real estate sector and the financial sector in Dubai. The next section will discuss whether or not this relationship does exist between the share's values of the real estate companies and those of the financial companies at Dubai Financial Market (DFM).
5. Performance of Property Companies and Banks at DFM

This section discusses the performance of property (i.e. real estate) companies and banks that have been listed in Dubai Financial Market (DFM). The property companies that are studied are EMAAR Properties (EMMAR) and Union Properties (UPP). The banks are Dubai Islamic Bank (DIB) and Emirates Bank International (EBI). The reason that these companies and banks are selected is because they have consistent data sets from DFM since the second quarter of 2000. That is, they have been listed in DFM since its start. Also, EMMAR and UPP are the only real estate companies that are listed in DFM.

The share price is chosen as performance indicator of the two property companies and the two banks. The data that is used is a quarterly data from DFM. Therefore, the share prices are quarterly average prices. Figures 4 and 5 below show the quarterly average share prices of the two property companies (Emaar and Union Property) and the two banks (Dubai Islamic Bank and Emirates Bank International) respectively over the time period 2000Q2 and 2004Q1. As the figures shows, the trends of the share prices are, more or less, similar and closely following each other.

Source: Author calculations based on data from Dubai Financial Market
In order to reach one combined share price for the property companies and one combined share price for the banks, we need to calculate two weighted average share prices, one for the property companies and one for the banks. The weights that are used are the total market values of each company or bank (i.e. market capitalization).

Figure 6 below shows the quarterly weighted average share price of the property companies and the banks during the period the 2\textsuperscript{nd} quarter of 2000 to the 2\textsuperscript{nd} quarter of 2004. As the figure shows, their price trends are closely related. During this period, the share price of property companies grew by a quarterly average rate of about 2\% while that of the banks by about 4\%.

Our calculations have found a correlation coefficient of 0.88 between the share price of the property companies and that of the banks. For checking the causality of this relationship between the two share prices, we have run regression analysis. The following estimated linear regression equation shows the results of regressing banks' share price (BSP) on property companies' share price (PSP):

Source: Author calculations based on data from Dubai Financial Market
\[ BSP = 0.94 \quad PSP \quad R^2 = 0.74 \]

Confidence level 95%

The intercept is not significant (which can be seen from the scatter plot, figure 7 below), that is why the regression is run without the intercept. The regression results show that 74% of the variation in the share price of the banks is explained by the variation in the share price of the property companies. The rest is explained by other factors, which are not included in the estimated regression equation. The relationship is significant at 95% confidence level.
Unfortunately, the unavailability of the banks' data on their investment portfolios (real estate investments versus other investments) did not allow us to test many of the arguments that are articulated in sections 3 of this study. If data were available, we could have tested the argument that there is a link between the real estate prices and bank lending.

No doubt, the real estate has been the talk of the city in Dubai. Construction has been mushrooming everywhere and real estate prices and rents are skyrocketing, which has forced the government of Dubai to intervene to cap the rent increase at 15% till the end of 2006. All this looks familiar and expected, if we look at it on the light of sections 2 and 3 of this study. However, what is not clear is how this real estate success story will develop into the future. Will this continue into the medium and long terms? Or will it follow economic fundamentals and gradually subside? The lesson from the experience of other countries, both developed and emerging, is that things will not continue like this into the future. In the long term, economic fundamentals will over rule the short term considerations and the economic agents will come to their economic senses.

Therefore, it is imperative that policy makers watch closely what is happening in both the real estate sector and the financial sector. In the real estate sector, they need to follow up the developments in the real estate prices, both residential and commercial.
In the financial sector, they need to frequently check on the financial stability indicators that are related to the real estate. These are namely, banks' lending to residential real estate sub-sector and banks' lending to commercial real estate sub-sector and how these are related to the banks' total lending. These are lead indicators that can indicate earlier on if things are developing in the right direction or not. In addition, policy makers are advised to avoid inappropriate government policies that distort private incentives, such as generous guarantees against losses. These guarantees create the incentive that lenders invest in high return and high risk real estate projects. This leads to excessive risk taking in real estate, which may have catastrophic consequences for both the real estate and the financial system.
6. Conclusion

The relationship between the real estate sector and the financial sector has long been recognized in the economic literature. That is why real estate prices are used as indicators of the financial system soundness and they play a significant role in making monetary policy decisions.

The distinctive characteristics of real estate market cause real estate prices to behave differently from the prices of other types of assets, such as shares. Therefore, it is common that the short run real estate prices diverge from their long-term trends. Hence, the fluctuations in real estate prices may happen not because of cyclical movements in economic fundamentals, but also as a result of the distinctive features of the real estate market.

At the macroeconomic level of Dubai, it has been found that there is a significant relationship between the performance of the real estate sector and that of the financial sector. At the microeconomic level of Dubai Financial Market, a significant relationship has been found between the share prices of the real estate companies and that of the banks. Give the far-reaching implications of the real estate sector for the financial stability, it is imperative to include the real estate prices and banks' lending for residential and commercial real estate in the list of indicators of the financial system stability.

There are two important issues that need to be tackled in the future research. One is the distinction between residential real estate and commercial real estate because of their different implications for the economy. The other issue is the construction of real estate price indices that are essential, if the real estate prices are to be used as one of the financial system stability indicators.
References


