

Economic Studies

**Capturing Financial Cycles in Arab Countries
(Credit, Equity, and Property)**

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**صندوق النقد العربي
ARAB MONETARY FUND**



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Abstract

The paper attempts to measure the financial cycles in selected Arab countries by applying the bandpass filter method on three distinct market segments (credit, property, and equity markets), given their effect on the business cycle. More importantly, the paper aims to identify the four-phase of each cycle and provide a description of a cycle's specifications such as amplitude, length, and depth.

The paper comes up with several outcomes. It finds that most Arab countries encountered two equity cycles in general during the period (2015 - 2020). The estimation tells us that the equity cycle lasts for one to two years, including the four known phases, according to the analysis undertaken on the selected Arab stock exchange markets over the period (2015-2020).

On the other hand, the analysis reveals that the hyper supply phase in the housing cycle takes between 5 to 24 months, and also points that the 1980s was the credit booming age in Arab countries due to the credit expansion over that period, which varies across Arab countries. Generally, the paper finds-out that the expansion phase of a cycle could be more prolonged if the trend is flatter and could take a relatively shorter period if it is vertical.

Introduction

In modern times, central banks worldwide pay closer attention to the financial sector, considering that it has an essential role in maintaining macroeconomic stability. Most major central banks state on their mandate the objective of financial stability alongside other objectives that monetary policy is working on, such as price stability, attaining a stable exchange rate, and smoothing the level of output.

Given the importance of the financial sector as an engine for the entire economy, there is a consensus that macroeconomic analysis that does not include financial stability is more likely to be misleading. Thus, understanding the financial sector and its cyclicity is indispensable to further reach out to robust results.

In this context, the monetary policymaking process oriented towards financial stability is most likely focused on smoothing financial cycles and removing related distortions over time. Hence, this paper considers capturing financial cycles based on the monetary policy transmission mechanism channels, mainly asset prices, and domestic credit. Such channels are employed to identify the duration and mismatch of a cycle's dynamic across Arab countries.

To this end, this paper investigates the financial fluctuations for Arab countries following the Global Financial Crisis (GFC), where there has been a pair of



financial developments and shocks such as the post-shock, oil prices shock, etc.

The paper sheds light on the related literature on financial cycles. Then, it provides a detailing description of the methodology used to construct these cycles, considering that this methodology fits the three cycles. The paper then estimates the three cycles separately, beginning with the equity cycle, credit cycle, and then property cycle. For each cycle, the paper ends up with some findings and policy recommendations.

Literature Reviews

Researchers investigate financial cycles from different perspectives. For instance, (Stremmel 2015) studies the financial cycles for 11 European countries, while (Borio 2012) addresses the stylized facts and considers its policy implications. Borio's study also concentrates on the bust phase, which raises much more controversial issues. Also (S. Claessens, A. Kose, et al. 2011) provides a comprehensive analysis for financial cycles using an extensive dataset covering 21 advanced economies over the period (1960 – 2007) to analyze the financial cycles (e.g., credit, house prices, and equity prices).

On the other hand, (Cerutti, et al. 2017) quantifies the importance of the Global Financial Cycle (GFC) for capital flows. The paper uses quarterly data for capital flow disaggregated by direction and type between (1990 – 2015) for 85 countries. Nevertheless, (S. Claessens, A. Kose, et al.

2011) analyze the interactions between business and financial cycles using an extensive monthly database for over 200 business and 700 financial cycles in 44 countries (1960 – 2007).

(Rünstler 2016) argues that credit and property cycles show pronounced medium-term fluctuations, which are longer than a typical business cycle. Earlier, (*Drehmann et al. 2012*) reach out to a similar finding is that property and credit cycles tend to be longer than the business cycles, which are typically between two to eight years, while the financial cycle, according to *Drehmann*, ranges from eight to twenty years.

Another paper (Borio, et al. 2018) Covers a sample of advanced and emerging market economies. And finds that, in general, financial cycle measures provide valuable information. Additionally, their paper argues that financial cycle booms could weaken growth, and they further compare the expected trend of several financial cycle proxies.

(Aghabarari and Rostom 2019) Estimate private sector credit cycles for most oil-importers and oil-exporters in the Middle East and North Africa region. In conformity, (McMahon 2018) points that according to the National Bureau of Economic Research (NBER), there have been nearly 11 credit cycles since World War II, the average length for all of which is 69 months. The current credit cycle runs for 76 months in the expansion phase only.

(Schüler, et al. 2015) Estimate determinants of the financial cycle length using a more flexible approach presents composite financial cycle indicators that include bond and equity prices, covering a broad range of European countries. The paper finds significant cross-country heterogeneity in the length and amplitude of the financial cycle across countries.

(Claessens et al. 2012) find out that turning points occur more often in GDP than in financial cycles. Their analysis reveals that financial disruptions make recessions more prolonged and more profound. They also argue that the co-movements between financial and business cycles have been paid limited attention. (Adrian 2018) points that Central bank can still influence domestic financial conditions, at least to some extent.

Data and Methodology

The paper uses data for Arab counties covering the period from (1960 – 2020), considering that the length of the time series varies across the three cycles forming the financial cycle. To this end, the paper considers variables¹ necessary to measure the financial cycles.

Scholars, in general, employ different methods to potentially determine the trend, such as having the

¹ These variables include, stock prices, housing prices, and credit to GDP ratio which represent the three mentioned cycles equity, property, and credit cycles respectively.

optimal using HP or BK filters ² ; some use in-sample forecasting, while few others estimate the optimal value as a historical mean of the considered variables (Talha 2020). Another methodology considers how a variable fluctuates around its trend and then identifies a "financial cycle" as a deviation from this trend. (*Stijn, Kose and Terrones, 2011*)

The financial cycles, in this context, are measured through several methods, following a classical technique that refers to the turning points identifications according to Burns and Mitchell (1946). The frequency-based filters (bandpass) and unobserved components model-based approach are commonly used to filter the three variables, credit, equity, and asset pricing.

This paper, however, attempts to capture the financial cycles of selected Arab countries using the univariate bandpass filter as a different technique. Such a technique allows us to isolate periodic components of a series that lie within a band frequency and eliminate the slow-moving and high-frequency components. Because of high-frequency data (monthly and quarterly) is subject to cyclical movement over time, the paper is eager to remove the cyclicity from financial cycles and extract the underlying trend component of a series.

² Hodrick-Prescott (HP), or Baxter-King (BK) filter.

The Equity Cycle

The equity cycle refers to the situation undergoing the secondary stock exchange market, such that the outperformance of some asset classes on others. Comparable to different cycles, the equity cycle is possible to vary depending on the concerned stock market, the time horizon, and the trend, which also differs from other financial cycles. For instance, in the real estate market, investors expecting the cycle to last in 10 to 20 years, while in the equity cycle, traders are looking at 10 minutes cycle-end (Igan and Loungani 2012).

To capture the equity cycle in Arab countries, we rely on monthly time series data for stock price spans 60-month for nine stock exchange markets representing nine Arab countries. the data obtained from the stock market database of the Arab Monetary Fund (AMF).

There are several approaches to measure the equity cycle, such as the traditional turning-point analysis introduced by Burns and Mitchell (1946), model-based approaches Galati et al. (2016), and frequency-based filter Aikman et al. (2015). In this paper, we use Bandpass filters to extract the non-cyclical components of the series (*see data & methodology*). On the other hand, (Lawrence and Terry 1999) address the ideal bandpass filter to isolate the non-cyclical components of a time series that lies within a band of frequencies.

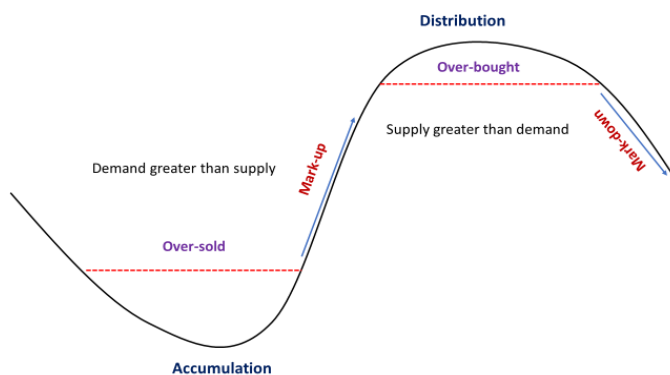
To better understand the nature of the equity market, its dynamic and cyclical nature, we reference our work to a pioneering theory explaining the equity cycle, called Wyckoff³ Market Cycle Theory. This theory allows us to understand the rapid changes in the market, such that when the market is bulling out.

Wyckoff Market Cycle Theory

This theory refers to (Richard Wyckoff, 1873 – 1934), who runs a stock market authority and is the founder of the Wall Street Magazine found in 1907. Wyckoff was a broker, a trader, and a publisher during the classic trading era in the early 20th Century. Mr. Wyckoff was dedicated to instructing the public about "the real rules of the game" as played by the significant interests behind the scenes. In the 1930's he founded a school that later became the Stock Market Institute. His time-tested insights are as valid today as when they were first articulated.



Figure (1) Wyckoff analysis – equity cycle



Source: The Richard D. Wyckoff Course in Stock Market Science and Technique, section 9, p. 1-2

Figure (1) demonstrates the four phases of the equity cycle According to Wyckoff's theory. The accumulation is considered the first phase of the market cycle, where the downwards trend begins to lose its motion. During this phase, the institutional demand is likely to increase, and prices are unexpected to go low any further.

For Example, in Bahrain, there have been two equity cycles spans for two years each. The first one⁴ starts in 2016 and ends in 2018, while the second cycle begins in 2018 and ends in 2020. Similarly, the equity cycle in the UAE starts in 2016 and ends in 2018, which is similar to Bahrain's first cycle, considering the specific factors of each market.

⁴ Noting that the starting phase of the equity cycle is always accommodation, while the ending point is the distribution.

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Figure (2) The Equity cycle in selected Arab countries



Source: data has been obtained from the stock market database of the Arab Monetary Fund

During the period (2015-2020), the Bahrain stock exchange witnessed three downward trends of "accumulation" (2016, 2018, and 2020). During the accumulation phase, investors find it the best time to get a deal of lower prices in anticipation of a trend reversal. For instance, in 2016, investors traded mainly in the Banking sector, which by itself captured 52.4 percent of the total value of shares traded during 2016 comprised approximately 70.46 percent of the complete portion of shares traded in the market. (Bahrian Bourse 2016).

In the Egyptian exchange market, the accumulation phase reached its lowest level in 2017 as prices go remarkably low. In this phase, nearly 22 thousand newcomers joined the market taking advantage of attractive prices, compared to 17 thousand new investors in 2016. In Saudi Arabia, the Capital Market Authority witnessed its accumulation phase in 2019.

In Oman, the accumulation phase was at the beginning of 2016 and recently in 2020. In Tunisia, the stock exchange witnessed a similar cycle to Oman's equity cycle as the two markets' cycle phases are synchronized. For Example, the accumulation phase in the two markets occurred in early 2016 and 2020. However, prices tended to be much lower in Tunisia in 2016.

According to the analysis undertaken on the selected Arab stock exchange markets over the period (2015-2020) using monthly data, the estimation reveals that the

equity cycle lasts for one to two years, including the four known phases. The paper also finds that most Arab countries encountered two cycles in general over the given period.

The Credit Cycle

There is some research undertaken on the issue of the credit cycle in Arab countries, such as (Aghabarari and Rostom 2019) that estimate the credit cycle in the Middle East & North Africa (MENA) over (1964-2017). Other scholars study the credit cycle from the external demand perspective and examine how credit influence the current account dynamic (Jones and Rabanal 2021).

To capture the credit cycle in Arab countries, the paper relies on annual data from the world development indicators disseminated by the world bank covering six Arab countries, *Algeria, Tunisia, Egypt, Sudan, Jordan, and Kuwait*, for the period (1960 to 2020).

The credit cycle reflects the expansion and contraction of the credit provided to the private sector, impacting economic growth, hence the business cycle. According to (Aghabarari and Rostom 2019), it has been noted that the concept of the credit cycle denotes recurring patterns over time in credit growth. The idea is that credit growth expands and decelerates in regular intervals that alternate over time.

Researchers consider several variables to estimate the credit cycle. Some consider domestic credit growth; others find the private credit to GDP is the most convenient and accurate measure. (EBF 2011) The fact that the credit cycles have been more synchronized across countries increases the probability of systemic risk and calls for an internationally coordinated macro-prudential policy approach.

Credit Cycle's phases

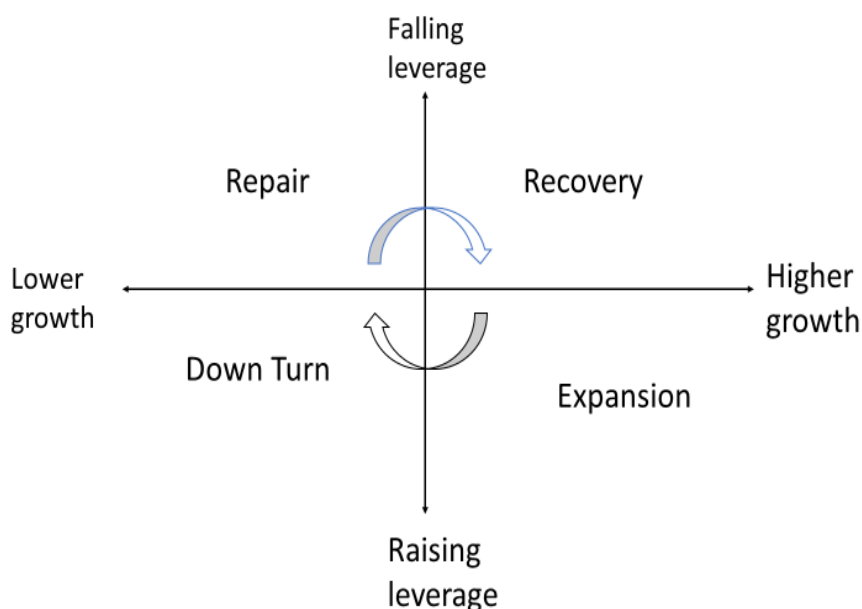
Evidence point that a credit cycle consists of four core phases: expansion, downturn, repair, and recovery (McMahon 2018). The expansion is associated with banks' excitement to provide credit with easy lending procedures, leading to excess credit.

The downturn phase refers to when economic sectors fall indebted, as households and firms cannot pay back their obligations because of negative growth, pushing banks to tighten their lending capacities and reduce the provided credit by raising borrowing costs. Making credit accessible to few customers, as liquidity diminishes, companies start to fail, and default rates rise.

Experts capture the Repair Phase when companies can stem the decline in fundamental credit conditions by adding liquidity and stabilizing their balance sheets. Liquidity is enhanced and leverage reduced by various measures, including cost-cutting, issuing equity, and asset sales. Subsequently, as free cash flow starts to grow and

margins increase, companies enter the Recovery phase with further enthusiasm. Having navigated the cycle, companies remain cautious and focus on conservative balance sheet management until achieving robust and sustainable growth.

Figure (3) Phases of the Credit Cycle



Sources: (Rodriguez, Baker and Palmer 2016)

The paper follows the same approach applied on the equity cycle to construct the credit cycle, which is the univariate bandpass filter. However, other studies go for different methodologies to estimate the credit cycle, such as ARIMA, HP filter, and seasonal adjustment. However, the sample of countries included in the credit cycle is small as it is subject to data availability.

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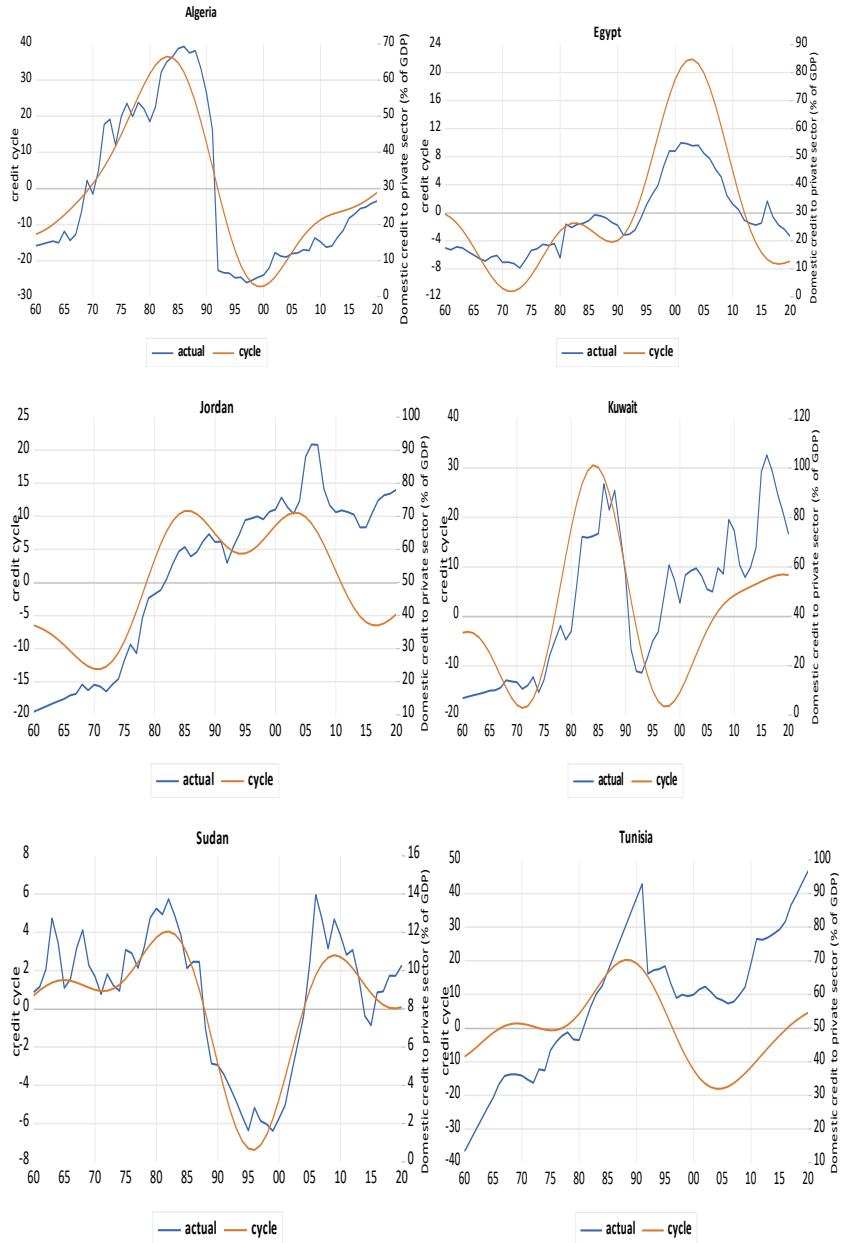
Boom and bust of the credit cycle are considered the center of the financial cycle fluctuations attributable to favorable specific factors, some of which emerged from the demand side such as housing prices and interest rates, while others categorized as supply-side factors, "e.g., extraordinary inflows of fund into the country which increases the supply of credit" (Everaert, et al. 2015)

The analysis points that most Arab countries witnessed a credit boom in the 1980s due to credit expansion over that period, followed by a credit bust, which varies across Arab countries. However, in the majority of these countries, the credit cycle reaches its peak in the 1980s. According to (ODI 1992)⁵, Arab countries reduced their interest rates to make it easy for the private sector to obtain credit.

⁵ Overseas Development Institute

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Figure (4) The Credit Cycle in Selected Arab countries (1960-2020)



Source: the world bank's world development indicators."

The Property Cycle

In the real estate market, the supply and demand (residential and non-residential) are the critical determinants of the property cycle fluctuations; specific factors drive each side of the market forces. Therefore, it is essential to realize how does the property cycle work? its phases, and whether they are influential and synchronize with other cycles (equity and credit) (Esajian 2010). One can observe that these researches end up with various outcomes on boom and bust of the real estate prices.

Investors in the property market care about the developments of housing prices (cycle's phases); this provides better information for investors to set assumptions on the expected length of the phase, which gives a clue for the investor whether to stay in or move into another market where the level of return is satisfied.

According to the survey conducted by the Arab Monetary Fund on measuring real estate asset prices in Arab countries (Mouaacha 2020), the survey finds out the following:

- The real estate price index data is available in six countries: Jordan, Palestine, Tunisia, Oman, Qatar, and Morocco.

- Arab countries apply several methodologies to measure the index in cooperation with central banks and bodies responsible for compiling and statistical data on real estate transactions.
- The index's methodology varies across central banks; some countries construct the index for residential property but not published for the public, such as Oman, Palestine, Lebanon, and Kuwait. While other Arab countries, such as Tunisia and Qatar, measure it and make it available for the public.
- Some central banks such as Jordan and Morocco measure the index for both residential and non-residential.
- Other Arab central banks are looking to provide a comprehensive measurement for the real estate asset prices index, such as UAE, Algeria, and Iraq.

Property Cycle's phases

Although many factors influence the property cycle dynamics, researchers conclude several common factors cause the housing price fluctuations, generating subsequent phases (recovery, expansion, hyper supply, and recession) for the cycle. Such factors include demographics, government policies, general economic factors. Empirical evidence points to the cycle phases: recovery expansion, hyper supply, and recession (Ioannou 2018), which finds a robust correlation

between credit boom and housing price upturn. (Igan and Loungani 2012), reveals that the dynamic of the property cycle is mainly driven by demographics aspects as well as income.

To capture the property cycle in Arab countries, the paper relies on the property prices index constructed by (Mouaacha 2020) the available data spans for five years from 2015 until 2020 and covering five countries (Jordan, Tunisia, Oman, Morocco, and Qatar)

After the global financial crisis, measuring property cycles has brought attention to the characteristics of property cycles in several countries. This is highlighted by (Igan and Loungani 2012), their study finds that income and demographics determinants and credit conditions drive the cycle.

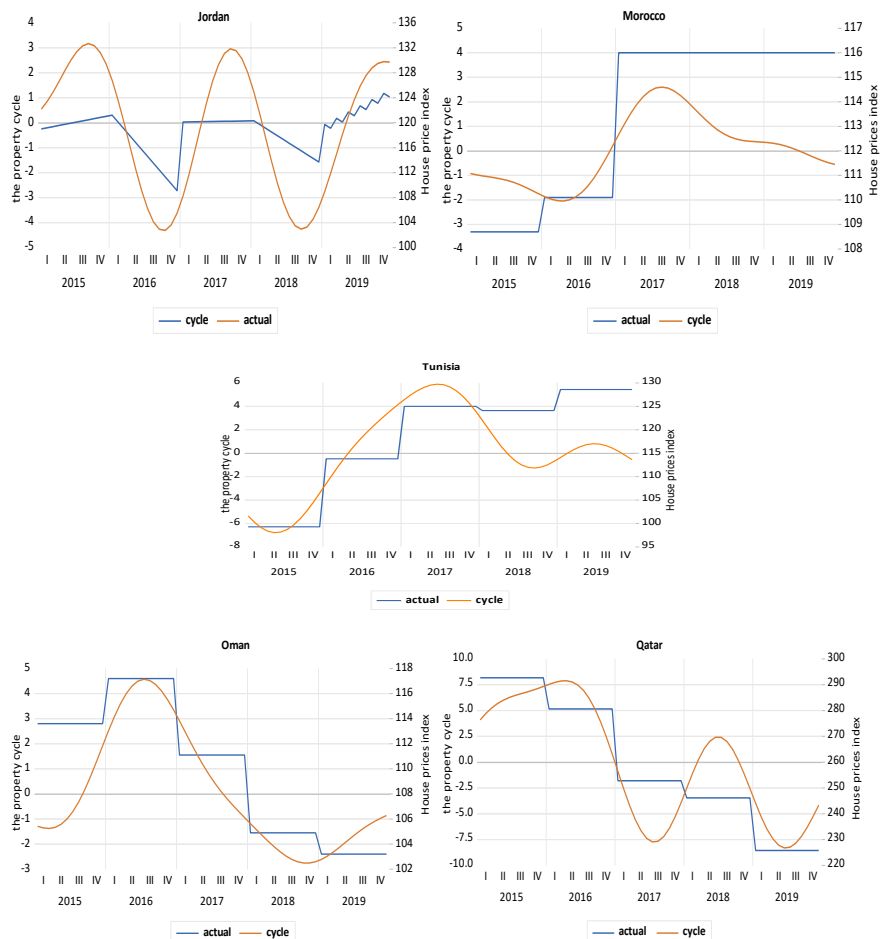
The recovery phase in the property cycle is considered the first segment of the cycle, where investors still in the mode of the recession with an optimistic viewpoint. The analysis points that most Arab countries witness the recovery phase (2015 – 2017), except for Jordan and Qatar, which ended in 2019 and 2018.

In Jordan, the recovery phase started in September 2016 and last in April 2017. While Morocco's recovery continues for nine months in 2016 between April and December. In Oman, there was a recovery phase from March 2015 until September 2015

The analysis indicates that the real estate market witnesses a sort of stagnation over this period, as Investors prefer not to make any transaction over the remaining phase as the economy moves on to the expansion phase. The stagnation of rental growth is the most common feature for this phase, and the investors find it an opportunity to pounce on undervaluing the market properties in various states of financial or physical distress.

Besides, according to the analysis, the expansion phase spans between 6 to 12 months. In Jordan, for instance, expansion was between April and September 2017. Morocco (September 2015 - July 2016), Oman (September 2015 - July 2016), Qatar (July 2017 - March 2018), Tunisia (May 2015 - April 2016).

Figure (5) The Housing Prices cycle



Source: Mouaacha, Mohamed. 2020. the index of real estate prices. Abu Dhabi: Arab Monetary fund.

It is worth mentioning that expansion reflects the ongoing economic situation. In other words, it indicates that how well the economy is progressing, job opportunities are fully utilized, demand is higher for housing, which means

that households and firms are gaining more confidence about the economy than any time ever.

This indicates that the expansion could be more prolonged if the trend is flatter, such as in Tunisia and Qatar, and could take relatively shorter if the trend is steeper, such as Jordan and Morocco.

Hyper supply in the property cycle corresponds to the expansion phase in the credit cycle. In this phase, property suppliers work to meet the demand until reaching out to a point where supply exceeds demand; this is called "*excess supply*" due to too much inventory in the market or a sudden shift in the economy through which demand pulls back. In this phase, house owners will often liquidate their merchandise out of fear that their properties will go unoccupied.

The estimation points that the hyper-supply phase takes between 5 to 24 months. In some Arab countries, the supply of houses exceeds the demand for a more extended period, such as in Morocco (22 months), Jordan, Oman, and Tunisia (11 months). While it lasts shorter in Qatar than other sampled countries (5-month)

During the recession phase, demand slows down against supply as vacancy rates tend to be comparably higher. As a response to this slowdown, property owners (landlords) offer lower prices to attract renters who may encounter budget constraints or fall indebtedness. In the selected Arab countries, the property cycle's recession

lasted between 4 months in Tunisia to 19 months in Jordan, while Qatar and Oman witnessed a recession phase for 10 to 14 months.

Therefore, it is an opportunity for the market traders to purchase properties at lower prices, leading to an excess of the real-estate owned properties, which have been foreclosed upon and repossessed by lenders. Buyers can hold these properties until the market bounces back to recovery.

Conclusion and Policy Recommendations

After filtering the three variables necessary to capture the financial cycle, we reach out to some facts and outcomes extracted from the previous analysis. These facts are, to some extent, reliable with the empirical literature. For instance, the respective market's mechanism derives the boom and bust of the financial cycles, such as the money market, where lenders (primarily banks) provide credit to market participants (firms and households). This is also applied to the real estate market, plus the stock exchange market.

Each of the three markets has features entirely different from one another. For Example, credit, equity, and real estate markets are all considered financial market segments.

The credit market is organized and regulated by the central bank, the equity market is regulated by the

country's stock exchange authority, while the real estate market in some countries, has no regulators.

The paper finds that most Arab countries encountered two credit cycles in general over the given period. In contrast, the lifetimes of the property cycle in Arab countries span between two to four years. In comparison, the equity cycle lasts for one to two years.

Following the previous analysis and outcomes, Central banks are strongly recommended to construct financial cycle measurements consistently. These measurements allow policymakers to monitor the fluctuations in each of the three markets accurately. Before the measurement phase, diagnostic analysis is a must. Additionally, reform of institutional and regulatory frameworks will enhance the three markets' dynamic and lead the market forces to equilibrium.

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