**Are Banks a Casualty of the Arab Spring?**

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Keywords: Arab Spring, banks, and credit.

*Abstract*

*Despite contrasting levels of stagnation in bank credit, the economic growth in the five countries of the Arab Spring remains decidedly low. We analyze the role of banks in Bahrain, Egypt, Libya, Tunisia, and Yemen, pre-and post-revolution, and find that the volume of credit these banks offered to the private sector was neutral to real economic growth. This result is confirmed by several leading studies on credit-less economic recoveries that follow a financial crisis. Supported by a recent IMF study that ranks banking regulation and supervision “poor” or “below- average” in four out of the five countries under study, we attribute the limited effectiveness of their banks to government intervention in credit allocation and pricing. Our results cast doubt on the banks’ ability to lead an economic recovery and suggest that monetary policy* *alone will not be successful within its first three years. We recommend the introduction of a fiscal stimulus and policies that prevent economic slumps in the countries of the Arab Spring.*

1. **Introduction and Objective**

Undoubtedly, banks were the main financial institutions to feel the immediate impact of the volatile political landscape in the countries of the Arab Spring. Political unrest slowed economic development markedly, with real GDP in Yemen and Libya declining year-on-year by more than 15% and slowing growth throughout the Arab World by 2.2%.

After more than three years of economic and financial instability, any turnaround is expected to require leadership from a strong and healthy banking sector recognized to be the main source of credit to spur economic growth. This concept is documented in several studies about the pivotal role that banks play in an environment marked with uncertainty [King and Levine (1993); Levine (1997); Rajan and Zingales (2003)]. This concept is also the principal rationale concerning why international agencies and development officials strengthen the banking sector in order to bolster the economy. However, recent evidence about the economic relation between credit and growth fails to identify a clear link between these variables in several countries. This relation is now doubted in countries that have experienced a financial crisis, and especially when bank credit is dictated by political considerations and social pressures distorting the local credit markets and disrupting the regular channels of monetary policy. At the moment, bank credit to the private sector is stagnating in Yemen and especially Egypt where credit is down 8% from its levels prior to the revolution, but it is on the rise in Tunisia and Bahrain (11% and 2% respectively). Yet despite the contrast in bank performance across these countries, the GDP growth rate is decidedly low and has been unable to regain its pre-revolution levels.

Against this backdrop, we (researchers) analyze the role of commercial banks before, during, and in the aftermath of the Arab Spring in the countries that experienced an uprising since 2010/2011, namely Bahrain, Tunisia, Egypt, Libya, and Yemen. We ask fundamental questions: Should banks be the primary sector to lead the economic recovery? And if so, how soon can the results materialize?

These basic questions are important to ask because if banks are debilitated by the uprising, suffer from a lack of liquidity, and are unable or unwilling to participate in the recovery effort, then the government needs to step in with classical Keynesian measures to boost economic activity and restore growth to its prior levels. This measure is the traditional economic recipe that International organizations[[1]](#footnote-2) have advocated for countries that have suffered a major crisis. However, if an economic recovery can take place without bank credit, then pinning hopes on that sector leads to misdirection and disappointment.

1. **Literature Review**

In the aftermath of a financial crisis, the collapse of output has been investigated by Calvo et al. (2006) who place the blame for the crisis on the serious malfunctioning in Emerging Market economies that depend on excessive short-term lending. These economies become vulnerable to shocks when foreign inflows disappear. The authors find the recovery was faster than anticipated, and took place without credit in the economies that have suffered a significant decline in output. They argue that a failure of the domestic banking system to spur lending during the recovery phase is not important for output growth to return to its pre-crisis levels. These “Credit-less” recoveries, as they are known in the literature, are possible. Along those lines, Abiad et al. (2011) show that 20% of all recoveries occur in the absence of credit growth but that the average economic growth during these episodes is about a third lower than during “normal” recoveries. More recently, Gambocarta et al. (2014) find that banks’ credit fosters economic growth only up to a certain point, which clearly varies with each country. Beyond that limit, bank lending is no longer effective and becomes neutral to real growth.

In a nuanced variation to the preceding studies, Bijsterbosch and Dahlhaus (2011) investigate the determinants of credit-less economic recoveries. After building a dataset and documenting some stylized facts of credit-less recoveries in emerging market economies, the authors identify the key factors that lead to such phenomenon. The authors predict the probability of credit-less recoveries in central and eastern European EU Member States in the coming years. Their findings confirm earlier results that credit-less recoveries are not at all rare events. In their sample of low- and middle-income economies, one in four recoveries in output occurs without a pick-up in credit. Their results are useful for this analysis to the extent that their data is based on countries with a level of development similar to the ones investigated in this paper.

Following a crisis, the notion that bank credit is indispensable to an economic recovery is rooted in the tenets of monetary policy. Banks represent the arm through which a Central Bank can expand credit using a variety of monetary policy tools ranging from open market operations, setting the discount rate or the reserve requirement ratio. In an economic downturn, banks that are otherwise healthy, are able to extend credit more readily than other financial intermediaries (Bolton et al. (2013)). Because they often have an established, and sometimes long-term, relationship with their clients, banks are able to offer credit even during a downturn when other lenders withdraw.

Closely related to the topic of this paper, a number of academic studies have analyzed the relationship between financial development and growth. The focus of these studies is on the level of financial development (scope, breadth, and reach of financial markets and institutions) as opposed to the volume of bank credit. Mostly, the literature includes divergent views on the issue of causality, in which one side of the debate contends that financial development can be a causal factor for economic growth. Studies in this camp include King and Levine (1993) who investigated the experience of 77 developed and developing countries and found higher levels of financial development are significantly and robustly correlated with faster current and future rates of economic growth, physical capital accumulation, and economic efficiency improvements. Along those lines, Demirguc-Kunt & Levine (2008) found strong evidence that financial development is important for growth. The authors prescribe that policymakers prioritize financial sector policies and devote attention to financial development in order to promote growth. These findings are also confirmed in Bayoumi & Melander (2008), who find that a 2½% reduction in overall credit causes a reduction in the level of GDP by around 1½% in advanced economies. Other supporting studies include Christopoulos & Tsionas (2004), and Habibullah and Eng (2006) who studied 13 Asian developing countries and confirmed that financial development, in general, promotes growth.

On the other side of the debate, other studies have revealed that economic growth can also be a causal factor for the development of the financial sector. Cases of bi-directional causality also exist, for example Demetriades & Hussein (1996) who studied 13 countries, identified single and bi-directional causalities and concluded that the situation varies with each country. A similar conclusion was drawn by Ghirmay (2004).

The literature also includes studies that cast doubt altogether on the relationship between financial intermediation and economic growth. The initial doubt about this relationship is traced to Lucas (1988) who argues that policymakers have exaggerated the role of financial factors in economic growth. More recently, Favara (2003) found that the relationship between financial development and economic growth is at best weak, and in some cases the relationship is puzzlingly negative. Therefore, the author concludes that the impact of financial development on economic growth is ambiguous, and in some cases, the effect is actually negative. A similar perverse result was also identified in the case of Chinese banks by Boyreau-Debray (2003) and Boyreau-Debray and Shang-Jin (2005).

In the context of MENA countries, several studies have investigated the relation between economic growth and credit. For example, Makdisi, Fattah, and Limam (2007) found that over the period of 1960 – 1998, the total factor productivity in the MENA region was not an important source of growth in comparison with other regions. Ben Naceur and Ghazouani (2007) relate banks performance and economic growth with the stock markets of the region. More recent evidence on the role of banks in the MENA region is investigated in Gray, Karam, and Turk-Ariss (2014) who investigate whether low loan-to-deposit ratios and high levels of reserve balances at the central bank are driven by policy decisions that banks are forced to follow or caused by a weak demand for investment.

Given the sizable debates discussed in these studies, the analysis in this paper is focused more specifically on the role of banks after a crisis. We, as researchers, do not take sides in the debate about the direction of causality between financial development and economic growth[[2]](#footnote-3). We stay away from investigating the breadth, scope, reach, or level of competition in financial markets and how these factors relate to economic growth. The objective of this analysis is directed to the volume of bank credit, its effectiveness, and whether it can lead an economic recovery, and not on ways to fix and reform the banking sector. We ask how significant is their credit function to economic growth before and after the uprising? In line with the existing research in the field, we examine the contribution of banks credit to economic growth using various models. The aim is to use past and current trends based on historical data and examine the effectiveness of this sector to an economic recovery.

1. **Methodology**

To evaluate the role of bank credit in economic growth, we researchers proposed a panel analysis of the five countries that experienced an uprising. We investigated this relation over a long period of time (24 years: 1995 – 2013) to capture the central tendencies that exist between the key variables.

We begin with a variation of the standard model originally introduced by Beck and Levine (2004), and later modified in Takáts and Upper (2013) in the study of 33 developed and developing countries. The model in Takats and Upper (2013) is across countries but with a time invariant. In contrast, our basic model is closer to the original formulation of Beck and Levine (2004) and has the structure of a panel data of the form:

$Y\_{it}= α\_{i}+βCR\_{it}+θ'X\_{it}+ϵ\_{it}$ (1)

Where ***Y*** is the real per capita GDP growth and ***ε*** is an error term. The main independent variable is the ratio of bank credit to GDP, *i* and *t* represent country and time period, respectively. To the extent that the effect of bank credit on growth may be non-linear, we use the logarithm of the ratio of the bank credit to GDP (***CR***). The model includes threecontrol variables that have been identified in the literature to affect the relation between bank credit and economic growth. The choice for these variables has been widely motivated originally by Beck and Levine (2004 and more recently in Bijsterbosch and Dahlhaus (2011), Bech et al. (2012), and Takats and Upper (2013). The control variables are represented by the vector ***X***, and **θ** is the corresponding vector of parameters. The role of the control variables is to address the classical problem of variable omission bias. The three control variables are as follows:

* National Debt (as a percentage of GDP)
* Real Investment (Gross Capital Formation) as a percentage of GDP
* Country i’s Real Exchange Rate

Model (1) is estimated using a fixed-effect estimation approach with a robust estimator suggested by Arellano (2003).

Because the effect of the bank credit on growth may not be contemporaneous, we expand model (1) by allowing three annual lags. The lag effect is consistent with the findings of Takáts and Upper (2013) who argue that the change in bank credit consistently fails to correlate with growth during the first two years of the recovery.

$Y\_{it}= α\_{i}+\sum\_{s=0}^{3}β\_{s}CR\_{i,t-s}+θ'X\_{it}+ϵ\_{it}$ (2)

Model (2) allows us to determine the lag effect of the correlation between bank credit and growth. We are careful to describe this relation as ‘just a correlation’ because the direction of causality has not been determined and this subject represents a contentious question widely debated in the literature.

A key limitation of Models (1) and (2) is the fact that the panel analysis is static. We relax this assumption by expanding the structure of the model and allow lags in the dependent variable *Y* in a dynamic panel data framework. We use the system estimator suggested by Blundell and Bond (1998). The dynamic panel model takes the form:

 $Y\_{it}= α\_{i}+δY\_{i,t-1}+βCR\_{it}+θ'X\_{it}+ϵ\_{it}$ (3)

In this structure, the lagged dependent variable *Yt-1* contains the prior effects of bank credit on growth and therefore we eliminate the lagged values of *CRt* from the regression.

1. **Results and Discussion**

The descriptive statistics of the sample are provided in Table 1. Within the five countries under investigation, we observe a wide range of differences in their national statistics. For example, in terms of the national debt, Libya’s government began to record a surplus (represented as a negative number) since 2003, the year when U. S. and International sanctions began to ease on this country. In that year, the growth rate in Libya’s real GDP registered an astounding 13%. In 2011, the World Bank statistics reported that Libya’s debt surplus reached 162% of its GDP. In contrast to Libya, Bahrain has continuously run a debt surplus since 1995. Its surplus ended in 2011 when the uprising began, and Bahrain’s economy began to register a deficit.

Table 2 shows the impact of the uprising on the countries in question and the Arab World in general. Some of the noteworthy observations are as follows:

* In terms of GDP, Yemen[[3]](#footnote-4) experienced the slowest growth (-15% in 2011), and the year-on-year change in its annual growth was 18.4% between 2010 – 2011.
* Among the five countries that experienced uprisings, Bahrain’s economy suffered the least, -2.2% (from Table 2). This figure is identical to the impact on the region as a whole.
* Ignoring any opportunity cost or any growth the Arab World could have achieved in the absence of the uprisings, the 2.2% decline on the region’s GDP translates into a loss of $55 billion (or $155 on a per capita basis) in 2011.

Figures 1 and 2 highlight the change in bank credit to the private sector and the GDP growth rate before and after the uprisings.

Table 3 reports the credit extended by banks as a proportion of each country’s GDP. Prior to 2011, Bahrain and Libya were in the lead with bank credit proportions exceeding 60% of GDP. The average for the Arab World was 43%. Following the uprisings, the proportion of bank credit fell throughout the region to 38% of GDP, a difference of 5% or a decline of $142 billion. By 2011, Tunisia’s banks began to recover, loaning $5.4 billion more after the uprising than they did prior to the revolution. However, for many reasons, including the overthrow of the Mursi’s government, the Egyptian banking sector is still down 8% ($21 billion) from its level during the Mubarak era. These figures, however, are *only* pertaining to total bank credit; they relate nothing about how credit is allocated, nor do they suggest that the banking transparency has improved or cronyism has declined since the uprising. Any change in governance of the banking sector will require more time and data. The only current reference point we found is an IMF study by Creane et al. (2004) that introduces a financial development index for the MENA region and which is summarized in Table 4.

The results of Models (1) through (3) are provided in Table 5. Starting with the regression of Model (1), we notice that the control variables have the proper signs. Specifically, an increase in national debt, as a percent of GDP, reduces growth due to the crowding-out effect on investment demand. Carrying more public debt increases the cost of debt and discourages private investment. In addition, the sign of the Real Investment coefficient is positive because higher investment leads to more economic growth, but this variable is not statistically significant in Model (1). Meanwhile, the negative coefficient of the real exchange rate suggests that a weaker currency hinders economic growth, a result consistent with the growth literature on emerging markets. The key independent variable, the domestic credit offered by banks to the private sector as a percent of GDP (CR) has a negative sign but is not statistically significant.

The results of Model (2) are stronger than those of Model (1). Specifically, the coefficient of the Investment demand is strongly statistically significant and maintains its positive sign correctly. The other control variables also maintain their signs and are statistically significant. More importantly, however, the key variable (CR), and all its three annual lags are statistically insignificant. Interestingly, the sign of the contemporaneous CR and its lags are not all identical. The coefficients of the current variable and its third year lag are negative, while those of the first and second year lags are positive. These results, while statistically insignificant, are consistent with the findings of Favara (2003) who shows that the direct impact of bank credit on economic growth is ambiguous.

The results of Model (3) that are based on a dynamic panel analysis lend further support to Models (1) and (2). The lagged dependent variable is, as it should be, statistically significant. The control variables are properly signed and statistically significant but the CR variable remains insignificant, suggesting that the credit extended by the banking sector is not necessarily the main driver of economic growth. We also performed a test of robustness of the results against any autocorrelation in the errors. The tests for AR(1) and AR(2) are both rejected at 1% and 5% respectively. In addition, we re-ran all three models using the bank credit variable without a logarithmic transformation and the results (available from the authors upon request) were almost identical to those presented in this article.

The finding of no correlation between bank credit and growth is not rare and is actually confirmed by the findings of Bijsterbosch and Dahlhaus (2011), Gambocarta et al. (2014), and earlier by Favara (2003), in a large panel study of several countries including some Middle Eastern countries between 1960 and 1998. In fact, Favara’s results showed that for some countries, the relation is puzzlingly negative. Similarly, Boyreau-Debray (2003) have also identified a negative correlation between growth and bank credit in China as banks were lending funds to unprofitable organizations of the Chinese State Enterprise. Our results here lend further support to the notion that bank credit does not have a first order effect on economic growth. When the dynamic specification and slope heterogeneity across countries are taken into account, the effect is inconclusive and ambiguous. The consensus is that each region or country is a special case and broad generalizations may not be possible. What is clear is that the classic notion that bank lending spurs economic growth is not supported in the countries that have experienced uprisings.

Why bank credit is not necessary for economic growth in the countries of the Arab Spring is not a difficult a question to answer. With the exception of Bahrain, many of the banking institutions in the five countries that experienced uprisings suffer from opaqueness and cronyism and were ranked “below-average” or “poor” using a Financial Development Index (for selected MENA countries) published by the IMF[[4]](#footnote-5). For example, on a scale of

1 – 10, only Bahrain exceeded the average of 5.5. Tunisia, Egypt, Yemen, and Libya banking sectors’ regulation and supervision were ranked 5.3, 5.3, 3.3, and 2.0 respectively (see Table 4). In such institutional landscape, banks likely do not have the freedom to lend using traditional underwriting tools and credit analysis but are directed, often by the power establishment, to loan to specific projects that may not be profitable, nor lead to economic growth. Many of the banks in these countries are government sponsored institutions that implicitly cater to specific interest groups and may not necessarily maximize the public welfare. Their bad loans are also commonly written off and funds are misdirected. As Creane et al. (2004) note, government controls on lending rates and the allocation of bank credit repress financial systems. Forcing banks to subsidize credit to certain sectors, or restricting the quantity of credit, distorts the credit market and lowers efficiency and the effectiveness of the transmission mechanism. Such controls limit banks’ abilities to adequately fund promising and productive business opportunities.

1. **Policy Implications and Conclusion**

The relation between bank credit and economic growth has recently risen to the foreground after new evidence cast doubt about earlier findings. Specifically, studies on the economic recoveries of countries that experienced financial crisis have demonstrated that economic growth without bank credit (credit-less recoveries) are pervasive. Along those findings, another group of studies has shown that the effect of bank credit on economic growth is often ambiguous and large, international, cross-country generalizations are not always correct because country-specific effects tend to be dominant factors in this complex relation.

This study has focused on a compelling question: Are banks able to lead an economic recovery in the five countries of the Arab Spring? Despite contrasting levels of stagnation in bank credit, the economic growth in these countries remains decidedly low. To address this question, we, the researchers, investigated the correlation between the volume of credit their banks offered to the private sector and these countries’ economic growth between 1995 – 2013. Using a variety of models in panel data analysis, our results show that this correlation is poor, even when lags are considered and control variables such as investment, public debt, and exchange rates are accounted for. These results suggest that a recovery in output may not require a pick-up in bank lending, and new bank credit is not a necessary condition for the economy to recover. Our results are confirmed by similar studies applied to other regions where bank credit was neutral to growth and credit-less recoveries after a crisis were common.

Why bank credit may not be too important for economic growth is a fundamental question beyond the scope of this paper. Some plausible answers may lie in the credit restrictions that some governments impose on the banking system (high reserve requirements, interest rate ceilings, and directed lending). These interventions are believed to impair the transmission mechanism, lead to credit market disruptions, economic inefficiencies, and hinder growth. These factors may exist in various fashions in four of the five countries that have experienced the Arab Spring and where banking regulation and supervision was ranked “below-average” or “poor” by the IMF.

The results in this paper should not be misconstrued to suggest that the banking sector is generally ineffective or that credit expansion is useless. This conclusion would be false. Banks must remain healthy to perform their utility function by offering deposits, transferring funds, and providing basic credit functions. However, our results cast doubt on their ability to lead an economic recovery in the countries of the Arab Spring.

Several implications emerge from the results of this study:

* Based on the track record of the five countries of the Arab Spring, monetary policy aimed at spurring growth will not be successful alone within its first three years.
* Economic goals, especially those requiring short term results, should be revisited if they hinge on policies that rely on the banking sector.
* If banks are unable to dislodge the economy from a neutral gear the government *must* takes the initiative with Keynesian economic stimulus[[5]](#footnote-6). Therefore, preference should be focused on policies that influence aggregate demand, prevent economic slumps, and require active economic intervention by the government.

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| **Table 1****Descriptive Statistics****Countries Included:** Libya, Egypt, Bahrain, Tunisia, Yemen, and the Arab World Average1995 - 2013 |
| Variable | MAX | MIN | STDEV | MEAN  | MEDIAN | # of Obs. |
| Claims on central government, etc. (% GDP) | 58.19 | -162.59 | 31.18 | 6.12 | 6.37 | 144 |
| Domestic credit to private sector by banks (% of GDP) | 72.54 | 3.01 | 19.40 | 33.88 | 34.99 | 144 |
| GDP growth (annual %) | 13.00 | -15.09 | 3.14 | 4.35 | 4.34 | 131 |
| Gross fixed capital formation (% of GDP) | 34.52 | 9.77 | 4.72 | 20.00 | 19.94 | 129 |
| Official exchange rate (LCU per US$, period average) | 219.59 | 0.28 | 65.08 | 29.25 | 1.30 | 120 |

*Source: The World Bank*

TABLE 2

|  |  |
| --- | --- |
| **Drop in the GDP Growth Rate in 2011** | **Real GDP Growth Rate** **Before & After Uprisings (3 year average)** |
| **Country** | % | 2008-2010 | 2011-2013 | Difference |
| Bahrain | -2.2 | 4.4 | 3.7 | -0.7 |
| Egypt | -3.4 | 5.7 | 2.0 | -3.6 |
| Libya | -67.1 | 3.6 | 11.0 | 7.4 |
| Tunisia | -3.8 | 4.0 | 2.2 | -1.8 |
| Yemen | -18.4 | 3.8 | -2.8 | -6.6 |
| All Arab Countries | -2.2 | 4.4 | 4.0 | -0.5 |

*Source: The World Bank*

TABLE 3

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| --- |
| **Domestic credit to private sector by banks (% of GDP)** |
| **Country** | 2008-2010 | 2011-2013 | Difference |
| Bahrain | 67.8 | 69.3 | +1.6 |
| Egypt | 37.3 | 29.4 | -8.0 |
| Libya | 9.0 | 14.6 | +5.6 |
| Tunisia | 60.7 | 72.1 | +11.4 |
| Yemen | 6.6 | 5.6 | -1.0 |
| All Arab Countries | 43.2 | 38.2 | -5.0 |

 *Source: The World Bank*



Fig 1



Fig 2

Table 4



*Source: Creane et al. (2004). Republished by permission from the authors.*

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| --- |
| **Table 5** |
| Panel Data AnalysisDependent Variable: **Annual Growth Rate in Real GDP (Yit)**5 countries: Bahrain, Egypt, Libya, Tunisia, and Yemen T = 1995 – 2013 |
|  | **Coeff** | **Robust** **t-ratio** | **Significance** |
|  |  |  |  |
| **Model 1** |  |  |  |
| *Fixed-effects, 95 obs, R-square 17.4%* |  |  |  |
| Const | 5.20 | 1.08 |  |
| CR (Log Domestic Credit by Banks % of GDP) | −0.4256 | −0.3329 |  |
| National Debt (% of GDP) | −0.0597 | −2.878 | \*\*\* |
| Real Investment (% of GDP) | 0.09 | 0.97 |  |
| Real Exchange Rate (local currency per US$) | −0.02715 | −3.362 | \*\*\* |
|  |  |  |  |
| **Model 2** |  |  |  |
| *Fixed Effects, 84 obs, R-square 20.3%* |  |  |  |
| Const | 3.72 | 0.90 |   |
| CR (Log Domestic Credit by Banks % of GDP) | −4.95 | −1.456 |  |
| CRt-1 (Log Domestic Credit by Banks % of GDP) - 1y lag | 2.65 | 1.49 |  |
| CRt-2 (Log Domestic Credit by Banks % of GDP) - 2y lag | 3.85 | 1.06 |  |
| CRt-3 (Log Domestic Credit by Banks % of GDP) - 3y lag | −2.00 | −0.8124 |  |
| National Debt (% of GDP) | −0.0531 | −2.068 | \*\* |
| Real Investment (% of GDP) | 0.15 | 2.04 | \*\* |
| Real Exchange Rate (local currency per US$) | −0.0184 | −1.882 | \* |
|  |  |  |  |
| **Model 3** |  |  |  |
| *Dynamic Panel Model, 85 obs* |  |  |  |
| Const | −0.0191 | −0.4463 |  |
| Dependent Variable - 1y lag (Yt-1) | −0.171 | −1.65 | \* |
| CR (Log Domestic Credit by Banks % of GDP) | −0.350 | −0.3261 |  |
| National Debt (% of GDP) | −0.093 | −3.541 | \*\*\* |
| Real Investment (% of GDP) | 0.107 | 1.716 | \* |
| Real Exchange Rate (local currency per US$) | −0.036 | −3.024 | \*\*\* |
| *Wald Test Chi Square (5) and p-value: 23.51 (< 1%)* |  |  |  |
| *Test for AR(1) errors and p-value: -5.21 (<1%)* |  |  |  |
| *Test for AR(2) errors: 0.964 (< 5%)* |  |  |  |
| *Significant at 10% (\*), 5% ( \*\*), and 1% (\*\*\*)*    |

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1. In explaining the key role of banks following a financial crisis, The Institute for International Finance (2011) argues that the “private sector deleveraging will remain a major headwind to growth in the years ahead”. [↑](#footnote-ref-2)
2. For a review of these issues in the context of countries in the MENA region, see Soltani and Maktouf (2013), Manizheh and Hook (2013). For the case of Egypt, the reference is Kamal (2013). [↑](#footnote-ref-3)
3. The World Bank figures show that Libya’s real GDP shrunk by 62% in 2011 and rebounded by 105% in 2012. We consider these changes as outliers and eliminate these extremes from the analysis. [↑](#footnote-ref-4)
4. This is part of large study by the IMF detailed in Creane et al. (2004). [↑](#footnote-ref-5)
5. Egypt’s recent Suez Canal Expansion Project is one such example. See http://www.worldbank.org/projects/P004982/suez-canal-development-project?lang=en [↑](#footnote-ref-6)