

Are Banks Really Lazy? Evidence from Middle East and North Africa



WP/14/86

IMF Working Paper

Are Banks Really Lazy?

Evidence from Middle East and North Africa

Simon Gray, Philippe Karam, and Rima Turk

IMF Working Paper

Institute for Capacity Development and Monetary and Capital Markets Departments

Are Banks Really Lazy? Evidence from Middle East and North Africa

Prepared by Simon Gray, Philippe Karam, and Rima Turk

Authorized for distribution by Ghiath Shabsigh

May 2014

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

Abstract

We investigate whether low loan-to-deposit (LTD) ratios and high levels of reserve balances at the central bank (or holdings of government securities) are a reflection of policy-driven factors compared to commonly cited reasons of reluctance to lend or sometimes weak investment demand in uncertain environments. We examine changes to central bank (CB) balance sheet structures as well as commercial banks' flow of funds over the period 2007–2012. First, Middle East and North Africa (MENA) CBs play an active role in view of their size that is very large with respect to their economies compared to CBs in advanced economies. Second, under exchange rate targeting, most MENA CB balance sheets are asset-driven, holding foreign exchange (FX) reserves to support the exchange rate policy and resulting in lower loan-to-deposit (LTD) ratios in the case of unsterilized increases in FX. Third, CB policy decisions seem to be accompanied by an increase in commercial bank reserve money balances, with ensuing reduction in the LTD. Finally, if governments meet their financing needs from the banking system—whether from commercial banks or by monetary financing—commercial bank balance sheets will tend to expand, resulting in lower LTD ratios. Our analysis suggests that government and CB actions may also drive the demand for and supply of credit, which are traditionally attributed to the behavior of banks and non-financial corporates and households only. The findings offer a different interpretation of changes in CB and banks' balance sheets, with direct implications for LTD, calling to exercise caution in recommending policy action which aim at propping up LTD to 'appropriate' levels in an effort to reinvigorate credit following a downturn.

JEL Classification Numbers: E58; F3; G21; and G28.

Keywords: MENA, central banks, banks, and credit.

Authors' E-Mail Addresses: sgray@imf.org; pkaram@imf.org; rturk@imf.org.

Contents	Page
Abstract	2
Glossary	4
I. Introduction	5
II. MENA Overview	8
A. Macro, Monetary, and Financial Sector Developments	8
B. Credit and Banking Conditions	10
III. MENA Central Banks—Salient Features	12
A. Asset-and Liability-driven Central Bank Balance Sheets	12
B. Central Bank Balance Sheet Structures	13
IV. Policy Decisions and Loan-to-Deposit Ratios	17
A. Government Actions and Loan-to-Deposit Ratios	17
B. Central Bank Actions and Loan-to-Deposit Ratios	20
V. Balance Sheet Structures of MENA Commercial Banks	24
VI. Conclusions	32
Tables	
1. MENA Real Growth Rates	8
2. Stylized Facts on Credit and Banking Conditions, MENA vs. Other Regions, 2007–2011	11
3 (A–E) Structure of Central Bank Balance Sheets—2007 and 2012	14
4. Evolution of the Share of Claims on Government to Domestic Claims, 2007Q1–2012Q4	19
5. Evolution of Central Bank Net Foreign Assets to Total Assets in MENA, 2007Q1–2012Q4	23
6. Evolution of Loan-to-Deposit Ratios in MENA, 2007Q1–2012Q4	25
7. Evolution of Real Deposits and Credit Growth MENA, 2008–2012	26
8. Flow of Funds of Banks’ Balance Sheets	28
Figures	
1. Private Sector Credit Growth	9
2. Financing of Government Deficit—2010–2011, Selected Countries	19
3. Changes in Credit to the Private Sector, Government Claims, and Balances at the Central Bank, 2007–2012	31

Appendixes

I. Definition of Variables.....	35
II. Illustrative Balance Sheets for Government and CB Actions and Policies.....	36

Appendix Tables

1. Government Borrowing—Funding by Non-banks	36
2. Government Borrowing—Funding by Banks.....	37
3. Central Bank Purchases of Foreign Exchange.....	37
4. Quantitative Easing.....	38
5. Monetary Financing.....	38

References.....	33
-----------------	--------------------

GLOSSARY

ACT	Arab Countries in Transition
AE	Advanced Economies
BoE	Bank of England
BoJ	Bank of Japan
CB	Central Bank
ECB	European Central Bank
EME	Emerging Market Economies
FX	Foreign Exchange
GCC	Gulf Cooperation Council countries
GFC	Global Financial Crisis
HQLA	High Quality Liquid Assets
LOLR	Lender of Last Resort
LTD	Loan to Deposit
MENA	Middle East and North Africa
NFA	Net Foreign Assets
NPL	Non-Performing Loans
OM	Oil Importing
OMO	Open Market Operations
OX	Oil Exporting
QE	Quantitative Easing
SNB	Swiss National Bank
ZLB	Zero Lower Bound

I. INTRODUCTION¹

Bank credit is crucial for financing investments and achieving higher levels of economic growth and employment (Levine, 1997; Levine and others, 2000). In predominantly bank-based financial systems, external sources of financing are limited to securing funding from deposit-taking financial intermediaries, as capital markets lack depth and breadth. Generally, lower financing is attributed to banks' reluctance to lend, and in standard credit models, the ability to invest is determined by binding credit constraints (Bernanke and Gertler, 1989; Kiyotaki and Moore, 1997). Furthermore, rising risk may reduce firms' willingness to borrow and engage in new investments (Aghion and others, 2010). In brief, financing conditions may reflect the particular lending behavior of banks on the supply side (risk averse, conservative, or even 'lazy') or mirror weak investment demand by borrowers.

In this paper, we postulate that overall credit conditions in the economy may be a reflection of policy-driven factors compared to commonly cited reasons of reluctance to lend or weak investment demand in uncertain environments. In their conduct of fiscal and monetary policy, governments and CBs may add to the perception (or reality) that banks are lazy because policy actions result in changes to the portfolio composition of commercial banks. An expansion in banks' holdings of government securities and greater reserve balances at the CB mechanically translate into a lower LTD ratio, a metric that is often used to assess the lending practices of commercial banks. *Does this mean that banks are being lazy, investing deposits in risk-free assets rather than engaging in credit extension in support of economic growth resumption in a downward cycle? Or are there other interpretations to observed low LTD ratios?*

In the wake of the global financial crisis (GFC), weak growth in credit remains a significant concern. Credit revival has varied widely across different regions of the world (IMF World Economic Outlook, October 2013). Slow economic recovery was particularly pronounced in the Euro area, notwithstanding different policies that have targeted credit creation through either enhancing credit supply or supporting credit demand (IMF Global Financial Stability Report, 2013); such sluggish recovery in the Euro area has impacted Middle East and North Africa (MENA) countries (Maghreb countries, in particular) in light of strong tourism, goods trade, and remittance linkages.

In the MENA region, a number of countries undergoing major transformations prompted by the 'Arab Spring' events continue to face major socio-economic challenges. The latter differ in nature, when the larger MENA group of countries is examined. As such, and in enabling a more adept analysis, countries are grouped accordingly in two main groups, namely (i) oil-importing (OM) (Egypt, Jordan, Lebanon, Morocco, Syria, and Tunisia); and (ii) oil-exporting (OX) economies. The latter group is further distinguished as OX-Gulf Cooperation

¹ The authors thank Yasser Abdih, Mariana Colacelli, Fuad Hasanov, Seok Hyun, Karsten Junius, May Khamis, Padamja Khandelwal, Amina Lareche, Alina Luca, Pilar Garcia Martinez, Sergio Rodrigues, André Oliveira Santos, and Aminata Toure for useful comments, and Fatima Keaik and Florence Dotsey for assistance in formatting the paper.

Council countries (OX-GCC) (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates) and OX-Non-GCC countries (Algeria, Iraq, Libya, and Yemen). Despite closer growth rates between OX and OM countries expected in 2013–2014, the underlying economic performance of the two groups varies greatly, reflecting different economic, monetary, and financial developments, and risks (IMF Regional Economic Outlook—Middle East and Central Asia (IMF REO- MCD), May 2013). In OM countries, mounting pressures from sluggish economic activity in trading partners, declining exports, capital outflows, anemic FDI, and tempered tourist arrivals have exerted a drag on foreign reserves. Furthermore, fiscal policy space has been significantly reduced, with rises in deficits and debt, resulting from weakened revenues (a consequence of weak economic activity) and high subsidies and wage bills (which were raised in efforts to address social demands and lessen the impact of high international prices for food and energy). In OX countries, increasing vulnerability to prolonged oil revenue shocks may weaken fiscal and external positions: this reflects current increases in hard-to-reverse expenditures (such as wages and subsidies), and declining current account surpluses, notwithstanding a near-term positive outlook owing to continued robust non-oil GDP growth.

In regaining macro stability and achieving sustainable and inclusive growth over the medium-term, fostering private sector-led growth is key.² Building private sector confidence is however challenging as it requires, among other things, access to vital credit in support of economic activity, in a region where funding sources are predominantly channeled through the banking system and equity and bond markets remain underdeveloped.³ So how can enabling credit be secured to meet this objective, unclogging channels of credit for cyclical (downturn) or other structural and institutional reasons impeding the flow of credit? To answer this question, past analyses of weak credit growth in MENA have been attributed to both demand (weak economic activity and uncertainty about investment prospects) and supply (cutback in domestic and external funding and increased strains on banks' balance sheets) factors (IMF REO-MCD, 2010).⁴ A fitting study by Barajas and others (2010) decomposes credit growth rates across MENA into changes to balance sheet accounts relative to the initial level of credit to the private sector and identifies cautious bank funding as the reason behind credit stagnation, suggesting that credit recovery hinges on improved banks' balance sheet conditions and a stabilizing macroeconomic environment. The study further attributes low LTD ratios across a number of MENA countries between 2008 and 2010 to bank funding difficulties, unwillingness to extend credit following macroeconomic and regulatory uncertainty, and lackluster loan demand under weak macroeconomic conditions.

² Policies in achieving better economic outcomes are outside the scope of this paper. This would require a comprehensive national reform agenda based on promoting access to finance, improving business regulation and governance as well as financial sector soundness and social safety nets, implementing labor market reforms, and investing in human capital, among other important medium-term factors (IMF-REO-MCD, May 2013).

³ Private credit has been accelerating albeit from a low base in some MENA-OX countries, while credit growth remains low in MENA-OM because of weak demand and only gradually declining nonperforming loans (IMF-MCD-REO, November 2013).

⁴ Others (Herrala and Turk, 2013) ascribe tight credit constraints across a number of MENA countries to political instability, thereby hampering capital accumulation.

While there are reasons to believe that both demand and supply factors play in role in restraining credit, absence of lending surveys and borrower-bank matched data make it difficult to disentangle demand and supply factors to help guide policymaking.⁵

In this paper, we explore credit developments in MENA, focusing on level rather than percent changes in loans, and provide a thorough analysis of the LTD ratio as a metric to gauge credit conditions. A key stylized fact (see section 3) indicates that ratios are relatively low in comparison with other regions of the world. While LTD ratios can mirror changing funding sources or different loan risk exposure by banks (Demirgüç-Kunt and Huizinga, 2010), the prototype analysis is further extended to incorporate the likely effect of banks' holdings of government securities or FX reserve management policy, where ratios tend to be lower under larger holdings of government securities or higher level of excess reserves. In the MENA case and to varying degrees, we will show that low LTD ratios can be justifiably attributed to official policies which notably result in high borrowing by some governments and CB build-up of FX reserves.

To investigate whether low LTD ratios are indeed a manifestation of say government and monetary financing in a group of MENA countries, we examine the balance sheet structures of MENA CBs and commercial banks and hypothesize that policy actions may either allow for more credit to the private sector or alternatively displace it. The relevant question is *whether increased commercial banks' balances with the CB complement or substitute for private sector lending?* Changes in reserve balances must reflect policy decisions by the authorities, and to this extent, complementarity rather than substitution appears more likely, a priori. As for policy recommendations, we advise to exercise caution in adopting policies that are motivated by observed low LTD ratios in the banking sector without undergoing a nuanced analysis of the sources of trends in LTD attributed to a myriad of behavior and policies in various government and non-government sectors.

The paper is structured as follows. Section 2 presents an overview of MENA's main macroeconomic, monetary, and financial sector developments including credit and banking conditions. Section 3 discusses CB asset-and liability-driven balance sheet structures and changes therein between 2007 and 2012. Section 4 discusses the effect of policy decisions on LTD ratios, focusing on both government and CB actions, while Section 5 investigates changes to the balance sheet structures of commercial banks in MENA which can shed light on LTD behavior. Section 6 concludes.

⁵ The 2010 IMF Jordan country report (IMF, 2010) examines whether the decline in credit in Jordan is due to falling supply of or demand for credit, or both, solving the identification problem by using exclusion restrictions on the supply and demand functions. The results indicate that both supply and demand for credit are affected by expected economic prospects.

II. MENA OVERVIEW

A. Macro, Monetary, and Financial Sector Developments⁶

Table 1 shows real growth rates for MENA, OM, and OX countries. Between 2007 and 2012, MENA's economic performance was increasingly characterized by a two-speed growth, with OX growing at twice the pace of OM in 2012: OX countries grew at healthy rates while OM faced subdued economic prospects. In GCC countries, growth was robust, supported by expansionary fiscal policies and accommodative monetary conditions (reflecting the peg to the US dollar, and thus to an accommodative monetary policy). In the context of booming oil prices and growing social demands, stepped-up government spending (including hard-to-reverse wages and salaries) has meant that fiscal breakeven oil prices have risen faster than the actual oil prices and are expected to continue to rise, increasing vulnerability to negative and protracted oil-price shocks.⁷ Gradually saving more and reducing spending rigidities will strengthen fiscal resilience to oil-revenue shocks. In OM, the slowdown witnessed in 2011 has persisted in 2012 with a moderate recovery expected in 2013, subject to heightened downside risks. For Arab Countries in Transition (ACTs), ongoing political transitions have weighed on growth.⁸ With policy buffers (fiscal and external) largely eroded, the need for action on both macroeconomic stabilization and growth-oriented reforms is becoming increasingly urgent.

Table 1. MENA Real Growth Rates

	2007	2008	2009	2010	2011	2012	2013	2014
MENA	6.4	6.9	3.3	5.2	5.7	4.6	2.1	3.8
MENA-OM	5.4	5.9	4.1	3.9	3.7	2.0	2.8	3.0
MENA-OX	7.1	7.6	2.8	6.3	6.7	5.4	1.9	4.0

Source: Figures for 2007–2011 are authors' calculations using data from the International Financial Statistics and figures for 2012–2014 are from IMF REO-MCD (November 2013).

Overall, Table 1 points to declining real growth rates in GDP between 2007 and 2012, and slow economic growth may explain, at least partially, weak credit conditions. Previous analyses of credit boom-bust cycles in MENA indicate that, on average, it takes three years for private sector credit growth to recover to normal rates following a credit bust (IMF, REO-MCD, 2010).

⁶ This section draws on various IMF-MCD-REO issues, with an emphasis on the May and November 2013 releases.

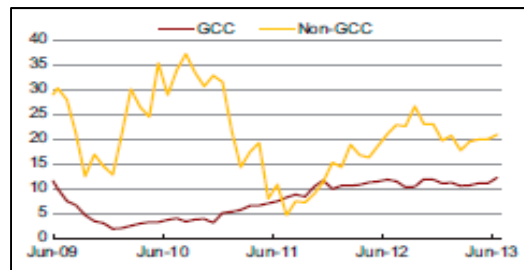
⁷ Fiscal breakeven oil prices guarantee a balanced budget, given non-oil revenues and expenditures.

⁸ ACT countries include Egypt, Jordan, Libya, Morocco, Tunisia, and Yemen.

In 2013, differences in a two-speed region are expected to narrow and modest growth is expected across the region—albeit, underlying performance varies greatly.⁹ OX healthy growth rates are projected to moderate and OM (many of whom are ACTs) subdued growth is expected to improve only somewhat in 2013, while still well below potential. Resolute policy action, across the region, will be needed going forward. In many OM, greater fiscal consolidation and exchange rate flexibility will be necessary to preserve macroeconomic stability, instill confidence, improve competitiveness, and mobilize external financing. For OX, further strengthening of fiscal and external positions will be important to reduce their vulnerability to a potential material oil price decline.

One other important macro variable reviewed is inflation given its association with policies weighing in on LTD determination. In OX-Non GCC countries, inflation drivers have been diverse, including conflict (Libya) and expansionary policies (Algeria). In Yemen, CB financing of fiscal imbalances has often contributed to monetary growth and inflation. Iraq experienced rapid government-driven monetary growth in 2011, but the level of credit extension to the economy is still low and measured inflation there remains the lowest among the OX-Non GCC. Moderating food and import prices and a benign global inflationary environment are expected to help ease inflation in these countries. In OX-GCC countries, inflation is starting to rise but remains moderate (from 2.4 percent in 2012 to 3.2 percent in 2013). Monetary aggregates have generally expanded at a slower pace than reserve accumulation (large balance of payments surpluses generated by commodity-price booms). Figure 1 depicts the growth rate in private sector nominal credit across OX-GCC and OX-Non GCC countries. Broad money growth and private sector credit growth have increased and are even accelerating, probably a result of the accommodative monetary conditions that are largely the result of low interest rates in the U.S., pegged exchange rates, and the absence of alternative monetary instruments.

Figure 1. Private Sector Credit Growth



Source: IMF REO-MCD, November 2013

As for OM, inflation is expected to rise in Egypt, Jordan, Morocco, and Tunisia, reflecting recent and planned subsidy cuts and, in some cases, pressure from monetization of fiscal

⁹ Overall growth for GCC countries is projected at 4 percent, ranging from 3–5 percent in all but Kuwait. Within GCC countries, strong non-oil GDP growth is anticipated (averaging almost 6 percent) but growth in oil GDP will vary substantially across the GCC.

deficits and supply shortages. In other countries, tempered domestic demand and declines in certain food prices are likely to subdue inflation in the near-term future.

B. Credit and Banking Conditions

A brief analysis of the select variables above aims at providing a needed understanding of the surrounding macroeconomic conditions during the focus period of the paper and a segue to the discussion that follows. As such, this section presents stylized facts about credit and banking conditions in MENA relative to other regions of the world. Table 2 provides insights about these conditions to help us identify ingredients for analysis of the LTD behavior, with definition of variables relegated to Appendix I. What clearly stand out are the following observations: First, the role of governments in credit markets is largely visible in MENA countries. On average the ratio of bank-intermediated credit to government and state-owned enterprises to GDP is close to 18 percent compared to averages ranging between 4 and 14 percent in other regions. Second, comparing ratios of deposits and credit to GDP, most OX-GCC countries provide credit at a faster pace than their ability to raise deposits. This pattern is akin to high-and upper middle-income countries, suggesting greater reliance on non-deposit or wholesale (including cross-border) sources of funds. As for other non-GCC countries, most exhibit bank credit to deposits ratios below 100 percent (with the exception of Mauritania and Tunisia), with the MENA region overall ranking second from the bottom of the list (average credit to deposits ratio of close to 77 percent).¹⁰

¹⁰ In the case of Mauritania, LTD above 100 percent is due to the presence of high non-performing loans, which stood at about 39 percent of total loans in 2011.

Table 2. Stylized Facts on Credit and Banking Conditions, MENA vs. Other Regions, 2007–2011*

Country	Credit to Gvt. Firms to GDP	Bank Deposits to GDP	Bank private Credit to GDP	Bank Credit to Bank Deposits	Liquid assets to Dep. and Short-term Funding	NPLs to Gross Loans	Provisions to NPLs	Lending-Deposit Spread	Net Interest Margin
Egypt	33.1	69.7	37.0	51.9	43.6	14.4	90.7	5.3	2.2
Jordan	29.9	95.8	75.3	77.6	36.3	6.3	58.4	4.4	3.3
Lebanon	69.3	206.2	67.9	32.7	34.8	6.3	60.8	2.1	2.3
Mauritania	5.9	20.2	24.3	118.6	48.5	...	...	11.5	3.7
Morocco	17.2	82.7	69.0	84.1	28.5	5.7	72.7	...	3.0
Sudan	3.6	12.5	10.1	77.6	55.4	...	...	...	3.9
Syrian Arab Republic	24.0	45.7	16.6	37.1	60.7	...	...	2.8	2.9
Tunisia	5.0	48.3	57.9	120.8	24.0	...	...	...	3.2
<i>OM Average</i>	<i>23.5</i>	<i>72.6</i>	<i>44.8</i>	<i>75.1</i>	<i>41.5</i>	<i>8.2</i>	<i>70.6</i>	<i>5.2</i>	<i>3.0</i>
<i>OM Median</i>	<i>20.6</i>	<i>59.0</i>	<i>47.5</i>	<i>77.6</i>	<i>39.9</i>	<i>6.3</i>	<i>66.8</i>	<i>4.4</i>	<i>3.1</i>
Algeria	21.4	43.3	13.4	31.1	60.4	...	...	6.3	2.8
Iraq	...	19.3	4.2	22.7	...	...	...	...	9.3
Libya	4.9	26.7	6.8	23.8	90.6	...	...	3.5	2.1
Yemen, Republic of	6.9	18.8	6.1	31.8	72.9	...	...	5.5	4.5
<i>OX-Non-GCC Average</i>	<i>11.1</i>	<i>27.0</i>	<i>7.6</i>	<i>27.3</i>	<i>74.7</i>	<i>...</i>	<i>...</i>	<i>5.1</i>	<i>4.7</i>
<i>OX-Non-GCC Median</i>	<i>6.9</i>	<i>23.0</i>	<i>6.4</i>	<i>27.4</i>	<i>72.9</i>	<i>...</i>	<i>...</i>	<i>5.5</i>	<i>3.6</i>
Bahrain, Kingdom of	14.8	68.0	61.7	91.6	30.4	...	...	5.7	2.1
Kuwait	5.3	59.2	61.4	103.6	25.2	7.8	37.1	3.0	3.0
Oman	4.5	31.6	36.6	116.5	27.8	2.7	113.4	3.2	3.6
Qatar	25.8	46.5	39.2	84.7	29.1	...	...	3.6	2.9
Saudi Arabia	12.3	51.6	41.5	80.4	16.4	2.5	125.4	...	3.1
United Arab Emirates	16.2	61.1	67.5	108.5	23.4	4.2	...	...	2.8
<i>OX-GCC Average</i>	<i>13.2</i>	<i>48.4</i>	<i>51.3</i>	<i>112.4</i>	<i>25.4</i>	<i>4.3</i>	<i>92.0</i>	<i>3.9</i>	<i>2.9</i>
<i>OX-GCC Median</i>	<i>13.6</i>	<i>52.9</i>	<i>51.5</i>	<i>106.1</i>	<i>26.5</i>	<i>3.5</i>	<i>113.4</i>	<i>3.4</i>	<i>3.0</i>
<i>MENA Average</i>	<i>17.6</i>	<i>54.4</i>	<i>38.7</i>	<i>76.9</i>	<i>41.7</i>	<i>6.2</i>	<i>79.8</i>	<i>4.7</i>	<i>3.4</i>
<i>MENA Median</i>	<i>14.8</i>	<i>46.1</i>	<i>38.1</i>	<i>80.9</i>	<i>34.8</i>	<i>6.0</i>	<i>72.7</i>	<i>4.0</i>	<i>3.0</i>
Low income	3.8	20.1	13.7	67.3	41.3	8.2	54.1	10.7	6.7
Lower middle income	4.6	33.6	26.9	78.3	33.2	4.5	72.5	8.0	5.2
Upper middle income	6.7	40.4	40.8	92.9	30.1	3.4	101.5	5.9	4.4
High income	13.8	81.8	94.9	106.6	29.9	3.0	55.0	3.9	2.2
World	6.8	41.5	36.0	85.3	32.1	3.6	65.6	6.3	4.2

Source: Global Financial Development Database, World Bank, April 2013, except for *Bank credit to bank deposits* for Saudi Arabia (from the IFS).

* The last available year in the WB Global Financial Database is 2011.

Third, on average the share of liquid assets to deposits and short term funding is highest in the MENA region (close to 42 percent) exceeding a world ratio of 32 percent. However, this average masks the lowest average registered in the OX-GCC group (at only 25 percent). This may reflect reserve balances (high quality liquid assets) at the CB, which for the banking system as a whole are a product of CB policy actions. While pointing to a better liquidity position for MENA, these figures may also suggest missed investment opportunities for banks in the region.

Fourth, loan portfolio quality in OM economies is on average worse than the world average (8.2 vs. 3.6 percent for the ratio of nonperforming loans (NPLs) to gross loans); provisioning is generally in line with world figures; but the lending-deposit spread is lower than the world average (5.2 vs. 6.3 percent). High NPLs and low spreads in OM may be indicative of ‘underpricing’ of loans, suggesting that credit risk management practices could be lagging in OM economies compared to others. In OX-GCC economies, the lending-deposit spread is narrower (3.9 percent) compared to OM (5.2 percent) and OX-Non GCC (5.1 percent) countries, and it corresponds to the average figure for high-income countries. If lending in OX-GCC economies is supported by direct debiting of government salaries, the relatively low risk involved may justify a lower interest spread compared to other regions. Low credit spreads over deposits for OX-GCC countries also result in narrower interest rate margins on average (2.9 percent) compared to OX-Non GCC economies, albeit higher than the average for high-income countries (2.2 percent).

III. MENA CENTRAL BANKS—SALIENT FEATURES

A. Asset-and Liability-driven Central Bank Balance Sheets

We first draw an analogous distinction between asset- and liability-driven balance sheets in the case of financial intermediaries, exemplified by banks. Where the latter have a strong (retail) deposit base and determine their loan portfolio (and particularly interbank lending) in accordance with their deposit funding capacity, then own balance sheets are known to be liability-driven. They are asset-driven when banks market loans and fund the loans by borrowing in wholesale markets. Similar balance sheet distinction applies in the CB case, with implication on liquidity provision in the banking sector.

In what follows, the main assets and liabilities of CBs are highlighted: on the asset side, foreign assets, credit to government (in the form of overdraft, or holding of government securities), and credit to banks via open market operations (OMO) or in some cases Lender of Last Resort (LOLR) funding; on the liability side, currency in circulation, government deposits, commercial bank deposits (reserve money balances), and in some cases term deposits or CB bills.

Under a CB liability-driven balance sheet, currency in circulation and reserve money balances are large, determining the overall balance sheet size and the CB has more freedom to select its assets. As such, when demand for currency is strong (over 50 percent of liabilities) buttressed by CB credibility, a liability-driven balance sheet allows the CB to choose how to provide liquidity to the banking system; banks need to buy the banknotes from the CB via OMO credit, outright purchase of government bonds, or building up FX reserves.

On the other hand, an asset-driven CB balance sheet prevails under the following circumstances: the CB is subject to fiscal dominance (its credit to government is dictated by government borrowing needs, not by its choice); the CB in supporting a particular exchange rate policy

maintains a sizeable amount of FX in its official reserves; the CB engages in targeted/subsidized lending to sectors of the economy, or in Lender of Last Resort (LOLR). In these cases, CB assets may exceed the economy's demand for reserve money (currency in circulation and banks' reserve balances), resulting in ex-ante surplus of reserve money.

Two examples of an asset-driven balance sheet structure follow. First, the advent of Quantitative Easing (QE) by Advanced Economies (AE) CBs, targeting long-term interest rates, has led to balance sheets becoming asset-driven. When zero lower bound (ZLB) nominal short-term interest rates constrain CB conventional monetary policy, the purchase of long-term assets is then geared to affect longer-term yields and interest-sensitive investment. Second, from an exchange rate policy perspective, a CB balance sheet is asset-driven in the case of CB FX purchase to lean against exchange rate appreciation; such CB asset purchases then drive the balance sheet total.

Recent country examples of CB asset-driven balance sheets include: GCC CBs purchasing FX to maintain an adopted exchange rate peg; the U.S. Federal Reserve (US-Fed) using QE; the Swiss National Bank (SNB) buying FX to lean against exchange rate appreciation; and other CBs conducting LOLR operations (e.g., Central Bank of Chile)—see IMF Policy Paper, October 2013.

To recap, the interest in identifying whether CB balance sheets are asset- or liability-driven stems from its implication on banking sector liquidity provision. Under a liability-driven case, reserve money is supplied strictly to meet demand and the CB tends to be in a strong position to determine the terms (i.e., the price) on which it meets demand. By contrast, if its balance sheet is asset-driven, there will typically be an excess supply of liquidity in the market and the CB role as a monopoly supplier of liquidity weakens.

B. Central Bank Balance Sheet Structures

Table 3 depicts CB balance sheet structures at two points in time (before the GFC in 2007, and five years later in 2012) in AE countries (Panel A); and in MENA countries (Panel B), divided in OM (Panel C), OX-GCC (Panel D), and OX-Non GCC (Panel E) countries. It also reports the size of CB balance sheet assets relative to GDP. With the advent of the GFC, a number of AE CBs engaged in asset purchases, considerably expanding their balance sheets between 2007 and 2012. The US-Fed, the SNB, and the Bank of England (BoE) doubled or even tripled in size relative to GDP, and assets of the Bank of Japan (BoJ) and the European Central Bank (ECB) rose by 40 and over 80 percent as a proportion to GDP, respectively. As for MENA CBs, not all of them experienced an increase in the share of assets to GDP between 2007 and 2012; on average, their size with respect to the economy are generally in line with (or larger than) most AE CBs (with the exception of SNB as of late). However, zooming in on individual CBs, Algeria, Lebanon, Libya, and Saudi Arabia (where FX assets drive the balance sheet) are much larger relative to GDP in comparison with AE CBs.

At the beginning of the GFC, demand for reserve money rose sharply and CBs responded by lending to commercial banks, as part of normal liquidity management in response to a change in demand. In a number of AE countries (Panel A), while demand subsided with improving macro conditions, some CBs continued balance sheet expansion under an unsteady economic recovery. In AE, QE resulted in larger balances of government (or government-guaranteed) securities,

where in the case of the US-Fed, adding “other securities” (which includes mostly government-guaranteed agency securities) to “government securities” points to very large government balances on the CB asset side. In the euro zone, the ECB expanded credit provision to banks as market fragmentation meant they could no longer fund themselves from the market. In Switzerland, the CB has leaned against currency appreciation and increased its FX reserve balances. Across all AE CBs, commercial bank balances held with the central bank increased substantially between 2007 and 2012, suggesting that commercial banks are currently holding significantly more excess reserves than they used to.

Table 3 (A–E) Structure of Central Bank Balance Sheets—2007 and 2012
(in percent of total and of GDP)

Panel A: AE	US-Fed		BoJ		SNB		ECB		BoE	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012
Assets										
FX reserves	4	1	5	4	68	97	22	24	20	85
Government securities	0	62	59	76	3	1	9	20	0	0
Other securities	82	35	27	20	0	0	0	0	37	1
Lending to banks	10	0	0	0	0	0	47	46	43	13
Other	4	2	9	1	29	2	21	9	0	0
Liabilities										
Currency in circulation	87	39	67	51	35	12	45	30	44	15
Government deposit	2	3	3	1	1	4	3	5		
Comm. bank deposits	2	51	13	35	7	56	18	24	28	67
OMO drain	0	0	0	0	4	0	7	7	0	0
Other	5	5	14	11	1	15	23	32	5	1
Capital	4	2	3	2	52	12	5	3	23	18
Total	100	100	100	100	100	100	100	100	100	100
In percent of GDP	6	18	23	32	25	86	18	33	7	26

Note: SNB stands for Swiss National Bank.

Panel B: MENA	OM		OX-Non GCC		OX-GCC	
	2007	2012	2007	2012	2007	2012
Assets						
FX reserves	50	47	98	87	92	84
Credit to government	29	31	8	13		6
Credit to banks	9	13		...	7	8
Other	11	8	(6)	...	1	2
Liabilities						
Currency in circulation	42	47	22	27	13	14
Government deposit	13	12	35	24	15	16
Commercial bank	31	30	18	22	41	39
OMO	1	3	12	7	8	3
Other	16	7	1	10	9	8
Capital	(2)	1	12	9	15	20
Total	100	100	100	100	100	100
In percent of GDP	45	44	64	96	30	32

Panel C: OM	Egypt		Jordan		Lebanon		Mauritania		Morocco		Sudan		Syria		Tunisia	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012	2007	2010	2007	2012
Assets																
FX reserves	23	11	83	80	63	74	27	59	89	61	(10)	(14)	27	27	99	80
Credit to government	40	68	8	23	31	21	68	32	7	2	33	58	46	38	1	3
Credit to banks	18	8	7	6	4	2	2	0	3	31	18	11	23	32	0	16
Other	19	12	2	(9)	2	3	3	9	2	5	58	45	3	2	0	0
Liabilities																
Currency in circulation	22	51	28	37	5	3	36	23	59	77	78	73	64	70	42	39
Government deposits	11	15	6	9	8	9	23	22	4	2	1	4	43	34	3	1
Comm. bank deposits	47	12	25	33	66	79	14	20	26	9	28	40	29	40	11	9
OMO	4	6	3	20	3	1	0	0	0	0	0	0	0	0	0	0
Other	14	11	33	(4)	5	(13)	26	31	3	4	38	19	(38)	(45)	42	51
Capital	1	4	3	5	14	20	2	4	7	8	(45)	(36)	1	2	1	1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
As % of GDP	63	27	63	40	113	149	22	41	34	27	7	12	34	31	20	23

Panel D: OX-GCC	Bahrain		Kuwait		Oman		Qatar		Saudi Arabia		UAE	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012
Assets												
FX reserves	79	77	97	93	99	96	79	74	100	100	100	66
Credit to government	0	0	0	0	0	2	0	0	0	0	0	34
Credit to banks	21	23	0	0	0	0	19	25	0	0	0	0
Other	0	0	3	7	0	2	2	1	0	0	0	0
Liabilities												
Currency in circulation	13	17	17	16	18	21	13	7	6	7	9	17
Government deposits	5	2	22	9	11	14	1	11	44	61	6	1
Comm. bank deposits	56	57	29	55	15	23	57	21	4	4	84	73
OMO	4	2	13	0	29	16	0	0	0	0	0	0
Other	0	3	7	13	1	1	2	2	45	28	1	2
Capital	22	20	13	7	26	24	28	60	0	0	1	7
Total	100	100	100	100	100	100	100	100	100	100	100	100
As % of GDP	25	22	14	16	23	19	15	23	73	93	30	19

Panel E: OX Non-GCC	Algeria		Iraq		Libya		Yemen	
	2007	2012	2007	2012	2007	2012	2007	2012
Assets								
FX reserves	99	99	82	92	97	96	114	64
Credit to government			12	4	3	1		34
Credit to banks								
Other	0.7	1	5.7	5		3	(14.4)	2
Liabilities								
Currency in circulation	17	20	34	42	5	8	31	39
Government deposits	44	38	15	8	63	44	16	7
Comm. bank deposits	6	5	29	34	20	34	20	17
OMO	25	17	18	8		1	4	1
Other	5	15	(15)	4	8	9	5	13
Capital	2	6	19	4	5	4	23	23
Total	100	100	100	100	100	100	100	100
As % of GDP	79	114	41	34	109	210	26	27

Source: Authors' calculations using data from the International Financial Statistics.

Similar to AE-CB more recent balance sheet structure, most MENA CB balance sheets are also asset-driven, mainly the result of largely accumulated FX reserves rather than long-term assets (a more rampant case in AEs). This is evident in Panel B, with large FX reserves dominating CB assets, albeit registering marginally a small decline between 2007 and 2012 in OX economies (Yemen and UAE are an exception having exhibited substantive declines). On the liability side, deposits from governments and capital balances are markedly higher in MENA than in AE. In OX countries, oil revenues can afford governments to hold higher cash balances with some balances being FX-denominated. In OM economies, FX assets prevail but to a lesser extent when compared to OX.¹¹ Across MENA countries (and at the SNB), the counterpart of dominant FX-denominated assets in MENA takes the form of liquidity-draining operations (such as term deposits from commercial banks, or issuance of CB bills) or, in some cases, simply excess free reserve balances (Gray, 2011).¹² Similar to AE CBs, commercial bank deposits have increased across most economies, except for some countries in transition (Egypt, Tunisia, and Yemen) and other countries for reasons related to spillovers from the GFC (Morocco, Qatar, and UAE).

Furthermore, in a select group of OM countries, CBs have demonstrated striking changes between 2007 and 2012, moving from a situation of structural excess liquidity towards balance or even a structural shortage (at a time where many AE countries have moved in the opposite direction). In Egypt, Morocco and Tunisia, notable modifications to CB balance sheets since early 2011 (earlier in the case of Morocco) included a reduction in the proportion of FX assets (as some reserves have been used to stabilize the exchange rate in difficult circumstances) that is offset by a change in net lending to banks.¹³ This has typically involved a drawdown of excess

¹¹ An exception is Sudan where FX reserves are negative and so is CB capital. In this case, the CB cannot rely on the Ministry of Finance to refinance it, as the Ministry is itself borrowing from the CB (58 percent of CB assets in 2012). This puts a pressure on the exchange rate to depreciate and inflation to rise.

¹² Excess reserves are reserve balances held by commercial banks at the CB in excess of the demanded level, composed of legally required reserves plus a small buffer.

¹³ In the case of Egypt, surplus reserve balances held by banks kept overnight interbank rates at the floor of the policy rate corridor until February 2011. In the wake of the revolution in January 2011, the CB sold FX to stabilize the exchange rate as non-residents exited the market, which resulted in draining all surplus liquidity from the

(continued...)

reserves initially, but with excess reserves dwindling, the CB increased its lending to banks. Indeed, the sale of official FX reserves (for e.g., in the face of capital outflows) drained surplus reserve money balances from the commercial banks (because commercial banks have to pay for the FX), in some cases leaving the banking system with an ex-ante shortage of reserve money and thus a need to borrow from the CB. In such conditions, the CB became a regular supplier of liquidity to the market, operating a liability-driven balance sheet. As long as this lending is conducted as an OMO (rather than as LOLR finance), the CB's monetary policy interest rates tend to become more effective; at least in this context, such rebalancing of the CB's balance sheet could be seen as a positive development.¹⁴

More recently, it has become clear that the benefits of a move to a liability-driven balance sheet may be fragile, generally speaking. To the extent that MENA CBs (and other emerging market economies (EMEs) CBs such as Brazil, India, South Africa and Turkey) experienced FX inflows as a consequence of QE in AE countries, an unwinding of QE would expect to lead to a reversal of flows. To draw on an earlier episode (May and July 2013), even a hint of near-term tapering of QE in the U.S. led to capital outflows from a number of EMEs, as international investors sought to get ahead of the game—buying U.S. dollar in anticipation of a dollar appreciation, and moving into relatively short-term (up to three-year maturity) U.S. government securities (but not into longer-term bonds, as the prices of longer-term securities are expected to fall over time as and when QE unwinding results in higher yields). Such previous hints that the US-Fed was set to reduce, or taper, its purchase program had caused turbulence in EMEs. More recently, the December announcement of the Fed's gradually ending its bond-buying program during 2014 was met with relative calm in EMEs, suggesting that half a year of 'talk' from the Fed had prepared the ground well. This said some analysts are warning that the road ahead may be bumpy in a beginning of the end of easy money period.

IV. POLICY DECISIONS AND LOAN-TO-DEPOSIT RATIOS

In this section, we review how government and CB actions may affect the balance sheet structure of the latter and of the banking sector. In the process, we investigate whether observed low limited LTD ratios can be ascribed to government and monetary financing, separately from credit demand and supply conditions—independently of firms' demand for credit behavior and/or and banks' reluctance to lend under an uncertain environment or for possibly being 'lazy'.

A. Government Actions and Loan-to-Deposit Ratios

When the government runs a budget deficit, and to the extent that the banking sector intermediates between the public sector and the private sector savings that finance it, government borrowing by definition results in an increase in commercial bank holdings of government securities. Banks will generally hold government bonds in their asset portfolios if yields are rising and when state-owned banks control a larger share of the market. If government borrowing intermediated by the banking sector grows faster than bank lending to the economy, then credit

market. In response, a short-term liquidity-providing repo was introduced in February 2011 to meet market needs, and the overnight rate rose towards the repo rate, at the center of the policy rate corridor.

¹⁴ For more on monetary policy operations undertaken to adjust the impact of a change in autonomous factors on commercial bank reserve balances, see Gray and others (2012).

to the economy, as a percentage of total lending, falls and the LTD drops; this does not necessarily imply that the level of credit to the private sector has dropped.¹⁵

To shed further light on this, Table 4 shows the evolution of the share of gross claims on government to domestic claims in MENA countries averaged yearly and covering the period 2007Q1–2012Q4.¹⁶ In countries like Egypt, Jordan, Sudan, and Yemen, a clearly emerging upward trend in this share, can be attributed to deteriorating fiscal balances and a pullback of capital inflows by investors; as a result, the government increased its borrowing from the domestic economy with much of the increased government spending was financed by domestic sources (IMF REO-MCD, 2012). Indeed, Figure 2 shows that government financing in Egypt and Jordan has spiked, with greater reliance on domestic financing as external financing turned negative. In Bahrain and Qatar, the share of government credit has risen significantly over 2007–2012, albeit for different reasons having possibly to do with an increase in government-sponsored projects in the economy.

On the implication of excessive reliance on domestic financing and its likely impact of private sector credit, in addition to its statistical impact on LTD ratios, such reliance in a low-growth environment could crowd out credit to the private sector, put pressure on domestic interest rates (as in Egypt already), worsen fiscal positions, and further slow the recovery ...” (IMF REO-MCD, 2012). While such a ‘crowding out’ is apparent, it is important to understand how it is manifested. To the extent that credit to the sovereign carries zero risk weighting for capital adequacy purposes, lending to the government does not ‘use up’ commercial bank capital resources.¹⁷ Similarly, if government assets are included in the definition of high quality liquid assets (HQLA), there should be no constraints in terms of liquid asset holdings: if government securities are all counted as liquid assets, their purchase will increase a commercial bank’s ratio of liquid assets to total assets. As banks intermediate government borrowing from the economy, higher deposits held by banks will imply a higher reserve requirement; but it is relatively uncommon that reserve requirements are binding in situations where there is excess reserve money in the market. This leaves two ways through which crowding out may impact the economy: First, via an interest rate channel where additional government borrowing is likely to push up term interest rates, making it more expensive for other borrowers to obtain credit, and thereby ‘crowding them out’ of the market; second, if government assets are funded by sight deposits (or short-term wholesale market borrowing), there may be a maturity mismatch which limits the banks’ appetite for additional long-term assets. Banking supervisors normally set maturity mismatch limits, restricting commercial banks’ ability to engage in liquidity transformation; and even if they did not do so, prudent treasury management at commercial banks would still limit this activity. Recent evidence on the crowding out effect indicates that large fiscal deficits in OM (8.4 percent of GDP on average in 2012) “ ... raised public debt, and

¹⁵ If the growth in lending to government were matched by non-deposit funding, then the LTD ratio may not change; but this is an unlikely scenario for the majority of banks in the region.

¹⁶ In some resource-rich countries, the government is a net creditor to the central bank as it holds a large portion of its accumulated assets there.

¹⁷ In some countries where Treasury bills and bonds are issued in foreign currency, credit to the sovereign carries a 100 percent risk weight; e.g., in Lebanon, foreign currency credit to the government makes up about 40 percent of total government borrowing.

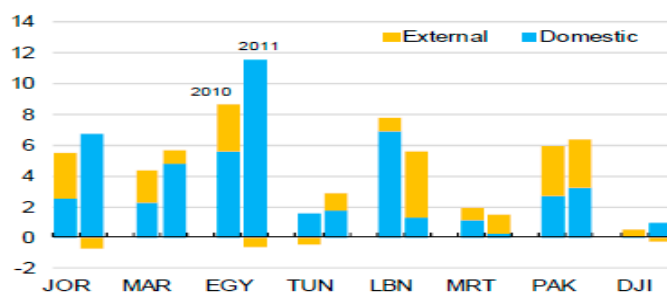
in some cases, were financed by domestic banks, which strained their capacity to lend to the private sector ...” (IMF REO-MCD, May 2013).

Table 4. Evolution of the Share of Gross Claims on Government to Domestic Claims, (2007Q1–2012Q4)

Country	2007	2008	2009	2010	2011	2012	2007–2012
Egypt	48.4	46.8	52.6	53.6	59.3	63.0	54.0
Jordan	15.4	19.6	25.5	26.9	28.6	33.3	24.9
Lebanon	54.4	53.1	52.7	49.8	45.6	43.8	49.9
Mauritania	15.6	17.4	12.4	15.2	15.1	11.5	14.5
Morocco	26.5	22.3	18.8	16.0	15.5	18.4	19.6
Sudan	27.0	30.6	37.3	40.6	45.1	44.7	37.6
Syrian Arab Republic	59.4	52.7	47.9	42.1	39.2	...	48.3
Tunisia	9.6	7.8	7.6	7.0	6.3	6.3	7.5
OM Average	32.0	31.3	31.9	31.4	31.8	31.6	32.0
Algeria	56.4	38.4	32.3	36.0	39.0	42.0	40.7
Iraq	79.9	67.0	59.2	62.8	60.9	53.8	63.9
Libya	6.7	3.6	1.5	0.0	0.0	0.0	2.0
Yemen, Republic of	42.7	41.6	56.6	54.9	60.2	68.6	54.1
OX-Non-GCC Average	46.4	37.7	37.4	38.4	40.0	41.1	40.2
Bahrain, Kingdom of	11.9	10.8	14.0	17.8	21.0	22.0	16.2
Kuwait	10.0	8.3	7.9	7.2	6.9	6.4	7.8
Oman	3.1	2.0	2.2	2.5	3.3	3.9	2.9
Qatar	12.5	11.1	19.9	27.4	37.0	37.0	24.1
Saudi Arabia	23.8	24.8	21.4	21.3	21.7	18.7	21.9
United Arab Emirates	12.0	10.4	11.4	13.0	13.2	14.2	12.4
OX-GCC Average	12.2	11.2	12.8	14.9	17.2	17.1	14.2
MENA Average	28.6	26.0	26.7	27.5	28.8	28.7	27.9

Source: Authors’ calculations using data from the International Financial Statistics.

Figure 2. Financing of Government Deficit—2010–2011, Selected Countries
(percent of GDP)



Source: IMF REO-MCD, April 2012.

On the implication of excessive reliance on domestic financing and its likely impact of private sector credit, in addition to its statistical impact on LTD ratios, such reliance in a low-growth environment could crowd out credit to the private sector, put pressure on domestic interest rates (as in Egypt already), worsen fiscal positions, and further slow the recovery ...” (IMF REO-MCD, 2012). While such a ‘crowding out’ is apparent, it is important to understand how it is manifested. To the extent that credit to the sovereign carries zero risk weighting for capital adequacy purposes, lending to the government does not ‘use up’ commercial bank capital

resources.¹⁸ Similarly, if government assets are included in the definition of high quality liquid assets (HQLA), there should be no constraints in terms of liquid asset holdings: if government securities are all counted as liquid assets, their purchase will increase a commercial bank's ratio of liquid assets to total assets. As banks intermediate government borrowing from the economy, higher deposits held by banks will imply a higher reserve requirement; but it is relatively uncommon that reserve requirements are binding in situations where there is excess reserve money in the market. This leaves two ways through which crowding out may impact the economy: First, via an interest rate channel where additional government borrowing is likely to push up term interest rates, making it more expensive for other borrowers to obtain credit, and thereby 'crowding them out' of the market; second, if government assets are funded by sight deposits (or short-term wholesale market borrowing), there may be a maturity mismatch which limits the banks' appetite for additional long-term assets. Banking supervisors normally set maturity mismatch limits, restricting commercial banks' ability to engage in liquidity transformation; and even if they did not do so, prudent treasury management at commercial banks would still limit this activity. Recent evidence on the crowding out effect indicates that large fiscal deficits in OM (8.4 percent of GDP on average in 2012) "... raised public debt, and in some cases, were financed by domestic banks, which strained their capacity to lend to the private sector ..." (IMF REO-MCD, May 2013).

B. Central Bank Actions and Loan-to-Deposit Ratios

In addition to government financing, CB actions may also drive LTD ratios to lower levels through either a policy of monetary financing, QE, and FX reserves management. Appendix II provides illustrative numerical examples of the effect of government and CB actions on the balance sheets of both CB and commercial banks.

First, when the CB lends to the government (i.e., engages in monetary financing), customer deposits at commercial banks increase as the government spends the money (with LTD ratios falling mechanically), and both CB and commercial bank balance sheets increase correspondingly (see Table 13 in Appendix II). It is assumed that some of the government expenditure stimulates additional demand for currency in circulation and that some demand feeds through to imports, so that the CB sells part of its FX reserves to stabilize the exchange rate (and/or allow banks to maintain their net open FX position as customers buy FX from the banks). In this case, bank deposits fall when customers buy the FX. Some MENA countries have experienced such a combination of monetary financing of government coupled with a drawdown in FX reserves; the overall impact will depend on the relative scale of the monetary financing and drawdown of FX reserves.

Second, QE directly affects commercial bank reserve balances at the CB. If policy rates drop to as low as half a percent or below, most CBs judge that the ZLB has effectively been reached, inciting a motive to start purchasing long-term assets. As bank reserves balances rise, the ratio of credit to the economy to deposits (the LTD ratio) falls, for reasons that are quite distant from other more obvious reasons such as banks' reluctance to lend.

¹⁸ In some countries where Treasury bills and bonds are issued in foreign currency, credit to the sovereign carries a 100 percent risk weight; e.g., in Lebanon, foreign currency credit to the government makes up about 40 percent of total government borrowing.

However, on the issue of ZLB and QE in EMEs, no country has reached the ZLB in its policy rates, though some have come very close.¹⁹ As long as nominal policy rates can be adjusted downwards, there is no clear justification for QE policies.²⁰ This said, regardless of whether CBs in EMEs (including MENA's) has pursued QE policy, the risks of spillovers from QE policies in AEs mount in an integrated world. Investors in AEs, having sold medium- to long-term government securities to the CB, may not maintain all of the funds in sight deposits at a commercial bank earning a very low or even zero return and assuming some credit risk. In their hunt for higher yields, they are likely to move into assets with a positive return, including investing in good quality assets in EMEs. As a result, EME CBs then need to manage the consequent FX inflow, normally purchasing some of it at least. Other things equal, this may depress short-term interest rates and statistically depress LTD ratios of commercial banks if CB's purchase of FX is not fully sterilized.

In the case of MENA, spillover effects from QE undertaken elsewhere around the world have not been felt, as the region experienced, on average, net portfolio outflows contrary to other EME receiving large inflows.²¹ In OM, prevailing low economic confidence led to net portfolio outflows²² and increases in average yields; in OX, however, net portfolio outflows were a result of investment patterns of sovereign wealth funds.²³

Third, and perhaps as important as QE is for some AE, the exchange rate is a significant factor in policy considerations for most MENA countries that have opted for a pegged exchange rate regime in some form or other. Many CBs in the region support the exchange rate policy by holdings of FX reserves and their operations are geared towards managing the impact of a structural excess of reserve balances (notwithstanding a short-lived liquidity shortage in some OM countries). The CB may intervene as a buyer of FX to lean against exchange rate appreciation, mopping up the extra FX, and building its FX reserves, thereby increasing market liquidity. Alternatively, the CB may intervene as a seller of FX to lean against exchange rate depreciation.

¹⁹ With respect to MENA, some countries (Egypt, Jordan, Lebanon, and Tunisia) have hit ZLB for real policy interest rates (Gray and others, 2012).

²⁰ One possible exception is the Reserve Bank of India that took some actions akin to QE in August 2013. The RBI tightened short-term rates in the face of exchange rate pressures that had weakened the rupee exchange rate. But it wanted to limit the impact on longer-term yields to avoid inducing changes in banks' holdings of bonds and raising the borrowing costs of investors. The RBI justified QE based on the need to raise short-term policy rates in response to inflationary pressures while purchasing long-dated government bonds to keep long rates from rising and negatively impacting investment and long-term growth. This is more complex in policy terms than the QE seen in AEs, and complicates the link between policy rates and longer-term yields.

²¹ However, the exchange rates in OX—as well as in a number of OM countries—are linked to the US dollar, meaning that low US interest rates and relative weakness of the dollar may have had some inflationary impact in MENA countries.

²² Prior to the 2011 Arab Spring, some MENA-OM countries experienced large capital inflows.

²³ AE are called to implement a clear and predictable exit out of QE as tapering of long-term asset purchases is likely to increase U.S. rates, further tightening credit conditions in Europe and exposing EME to sudden reversals in capital flows.

Similar to the impact of QE, a decision not to fully sterilize net increases in FX reserves will directly affect commercial bank reserve balances at the CB. When capital inflows increase (or the demand for local currency rises), the supply of foreign currency increases and commercial banks FX reserves also expand. To lean against currency appreciation, the CB buys FX, which increases commercial banks reserves balances. In this case, the LTD ratio falls because of the balance sheet expansion of commercial banks, as there is no change to the absolute level of customer loans.

The fact that asset purchases add to commercial banks' reserve balances, increasing the volume of surplus reserves, suggests that bond purchases would not be appropriate for MENA CBs that operate a managed exchange rate policy. Instead, regular purchases of FX when there are current or capital account inflows have some parallels with QE for exchange rate targeters, in that they result in an expansion of commercial bank reserve balances which, other things equal, depress market interest rates. However, the goal is not to depress the whole of the yield curve as with QE, but rather to support an exchange rate policy.²⁴ Except for Egypt, Mauritania, Somalia, and Yemen, MENA countries use the exchange rate as the nominal anchor for their monetary policy framework (IMF, Annual Report on Exchange Rate Arrangements and Exchange Restrictions, 2011). To better understand the CBs' ability to support the exchange rate policy, Table 5 shows the evolution of net foreign assets (NFAs) in proportion to total CB assets averaged each year over 2007Q1–2012Q4.

Table 5 indicates that CB holdings of NFAs differ significantly among OX and OM countries. OX CBs hold a higher ratio of FX assets to total compared to OM, with regional averages of 89 and 87 percent of CB assets, respectively, for OX-non-GCC and OX-GCC countries compared to 42 percent for OM countries. Higher oil receipts in OX countries have sustained a high level of foreign reserves at CBs. Among these countries, however, the UAE and Yemen have experienced a pronounced drop in NFA (more than 38 and 55 percent decrease, respectively) over 2007-2012.²⁵ The run down on FX reserves is also evident in Egypt, Morocco, and Tunisia (a decrease of 20, 30, and 29 percent, respectively, in their share of assets) between 2007 and 2012. The decline in NFA in OX can be attributed to recent oil price increases, loss of foreign direct investment in Arab Spring countries, and low tourist receipts. Morocco's large decrease in NFA has resulted in part from a bad harvest in 2012 but—more importantly—reflects trend deterioration in the current account over a number of years. In contrast to the run down on foreign reserves in some cases, NFA in Iraq and Lebanon have increased cumulatively by more than 50 percent during that period, and Mauritania registered a surge in NFA that turned positive in 2012 buoyed by a rise in mineral and fishing export proceeds.

²⁴ A small number of AE CBs have also engaged in policies which lead to balance sheet expansion via the purchase of FX—notably Switzerland to lean against exchange rate appreciation.

²⁵ The significant drop in NFA in the U.A.E. in 2009 is related to the Dubai World crisis and the bailout of this corporation by the Abu Dhabi government. Since then, NFA have been steadily growing in the U.A.E.

Table 5. Evolution of Central Bank Net Foreign Assets to Total Assets in MENA, 2007Q1–2012Q4

Country	2007	2008	2009	2010	2011	2012	2007–2012
Egypt	21.1	39.3	47.5	45.0	35.0	17.0	34.2
Jordan	78.1	72.1	76.2	78.3	77.9	72.6	75.9
Lebanon	44.8	54.6	62.2	68.4	68.1	67.7	61.0
Mauritania	-19.6	-25.9	-29.6	-23.6	-10.5	3.2	-17.7
Morocco	89.2	88.1	83.8	83.4	79.4	62.7	81.1
Sudan	-15.2	-1.4	-19.2	-17.8	-12.2	-20.0	-14.3
Syrian Arab Republic	24.8	29.1	27.7	26.8	25.4	.	26.8
Tunisia	95.8	97.6	96.6	93.8	75.9	68.6	88.0
<i>OM Average</i>	<i>39.9</i>	<i>44.2</i>	<i>43.2</i>	<i>44.3</i>	<i>42.4</i>	<i>38.8</i>	<i>41.9</i>
Algeria	92.4	99.3	98.9	98.4	98.52	98.5	97.7
Iraq	57.7	89.2	89.6	88.3	88.07	90.6	83.9
Libya	97.1	97.1	95.8	92.8	91.42	91.3	94.2
Yemen, Republic of	110.4	109.0	89.4	70.0	53.01	48.9	80.1
<i>OX-Non-GCC Average</i>	<i>89.4</i>	<i>98.6</i>	<i>93.4</i>	<i>87.4</i>	<i>82.8</i>	<i>82.3</i>	<i>89.0</i>
Bahrain, Kingdom of	80.3	77.4	68.1	77.9	70.84	75.1	74.9
Kuwait	96.9	93.2	93.2	89.3	91.64	92.7	92.8
Oman	99.4	99.1	95.1	96.6	97.27	97.5	97.5
Qatar	92.3	85.4	89.7	95.3	91.19	88.5	90.4
Saudi Arabia*	100.0	100.0	100.0	100.0	100.0	100.0	100.0
United Arab Emirates	98.8	78.7	45.2	44.3	57.18	60.51	64.1
<i>OX-GCC Average</i>	<i>94.6</i>	<i>88.9</i>	<i>81.9</i>	<i>83.9</i>	<i>84.7</i>	<i>85.7</i>	<i>86.6</i>
<i>MENA Average</i>	<i>69.1</i>	<i>71.2</i>	<i>67.2</i>	<i>67.1</i>	<i>65.5</i>	<i>65.6</i>	<i>67.3</i>

Source: Authors' calculations using data from the International Financial Statistics.

To touch on regulatory policies' likely impact on banks' preferences, a zero capital adequacy weighting typically applied to credit to government in domestic currency, coupled with a relatively high return on credit to government, may give banks added incentive to intermediate between savers and the government. This will expand their balance sheets and by doing so—mechanically—reduce the LTD ratio. However, this does not necessarily reduce the level of lending to the private sector, just its share under such expanded balance sheet.²⁶

In this section, providing a more nuanced look at a falling LTD ratio due perhaps to Government and CB policy actions, would lead a casual reader to withhold judgment in hastily accusing commercial banks of laziness. This section also recognizes that some banks may well be quite cautious in their approach to credit extension under circumstances that banking supervisors may welcome under cases of drifting asset prices away from their underlying fundamentals. Moreover, a high level of government indebtedness and concerns about the future consequences of (overly lax) monetary policy stance may be an important causal factor in the reluctance by banks to lend and by corporates to borrow—that could be justifiable.

²⁶ If leverage ratios are introduced in the future, then at the margin banks will have to choose between lending to government and lending to the private sector (or increasing capital).

V. BALANCE SHEET STRUCTURES OF MENA COMMERCIAL BANKS

IMF quarterly data over 2007–2012 is used to analyze the balance sheet structures of commercial banks in MENA.

Focusing on the levels and patterns of LTD ratios across MENA countries, Table 6 reveals some striking differences.²⁷ Generally, these ratios fall between 60 and 90 percent, compared to a world average of close to 85 percent (as seen in Table 2). We ascribe to a common understanding that values below 60 or above 90 percent are labeled as ‘markedly low’ or ‘excessively high’.²⁸

Looking at individual countries, LTD ratios for Egypt, Lebanon, and Syria fall below 50 percent, similarly to low exhibited ratios in OX-Non GCC economies—this can be explained by a combination of relatively weak loan demand and high government borrowing requirements (financed domestically) coupled in some instances with unsterilized FX reserves growth at the CB (commercial banks may keep large reserves at the CB, especially under existing capital controls). At the other end of the spectrum, Mauritania, Tunisia, and most GCC banks exhibit very high LTD ratios, implying greater reliance on wholesale (and cross-border) funding which is deemed to be a less stable source of financing. Recent analysis indeed suggests greater lending by global banks to GCC countries compared to pre-Lehman peaks (except for Kuwait) as well as increase in funding through bond markets (IMF REO-MCD, 2012). It might also be the case that greater state ownership of (GCC) banks may have engendered a depositor perception that these financial institutions are less likely to fail as they enjoy (or are believed to enjoy) implicit government guarantees. In the case of Mauritania and Tunisia, high LTD may reflect bad loans where the ratio of NPLs to total loans was close to 39 and 15 percent, respectively, in 2011 (IMF REO-MCD, November 2013).

Focusing next on the evolution of LTD ratios averaged each year over 2007Q1–2012Q4 and in search of emerging trends, great variation is noted across MENA countries. While Egypt, Jordan, Libya, Mauritania, Qatar, Saudi Arabia, Sudan, and Yemen exhibited a declining trend in the LTD ratio, Algeria, Bahrain, Morocco, Oman, Tunisia, and the UAE registered an increase.

²⁷ In the IFS database, credit to the private sector is net of provisions, which can reduce the numerator of the LTD ratio. However, the final effect depends on both non-performing loans and provisioning practices that differ across countries.

²⁸ Supervisors may find that, if LTD exceeds 90 percent, banks are at a much higher risk of facing liquidity problems.

Table 6. Evolution of Loan-to-Deposit Ratios in MENA, (2007Q1–2012Q4)

Country	2007	2008	2009	2010	2011	2012	2007-2012
Egypt	56.4	55.5	53.1	50.7	49.5	48.9	52.4
Jordan	84.0	85.1	78.0	74.5	74.7	74.9	78.5
Lebanon	31.6	33.4	32.6	34.6	37.2	38.8	34.7
Mauritania	134.4	136.7	142.6	134.5	121.1	115.2	130.7
Morocco	65.0	70.9	73.8	76.4	79.9	81.1	74.5
Sudan	82.1	79.2	76.4	71.8	67.6	63.6	73.4
Syrian Arab Republic	32.6	33.6	36.0	39.8	44.4	.	37.3
Tunisia	119.4	115.5	115.9	120.2	129.7	131.5	122.0
<i>OM Average</i>	75.7	76.2	76.1	75.3	75.5	79.1	75.5
Algeria	29.0	27.6	32.0	33.6	32.7	33.0	31.3
Iraq	22.8	24.4	23.1	24.2	24.9	31.8	25.2
Libya	30.4	23.6	23.8	25.0	23.6	22.4	24.8
Yemen, Republic of	35.4	38.9	33.1	31.5	29.6	23.2	31.9
<i>OX-Non-GCC</i>	29.4	28.6	28.0	28.6	27.7	27.6	28.3
Bahrain, Kingdom of	81.9	90.1	94.5	89.0	95.2	99.8	91.8
Kuwait	100.7	106.1	98.1	99.1	97.1	97.0	99.7
Oman	102.3	113.7	121.2	121.0	121.8	123.5	117.3
Qatar	83.0	86.1	93.1	80.9	77.3	73.8	82.4
Saudi Arabia	79.6	86.3	79.7	79.3	77.0	79.2	80.2
United Arab Emirates	98.2	110.6	115.8	108.3	102.3	102.4	106.3
<i>OX-GCC Average</i>	93.4	101.2	103.0	98.4	97.0	97.9	96.3
<i>MENA Average</i>	71.3	74.0	74.4	72.6	72.0	73.6	71.6

Source: Authors' calculations using data from the International Financial Statistics.

Table 7 shows the evolution of the real growth rate in credit and deposits at year end between 2008 and 2012. It indicates that real growth rates in credit and deposits have accelerated persistently in the last few years in Kuwait, Oman, and Saudi Arabia, with Iraq and Qatar exhibiting the highest growth rates in the region. On the other hand, most OM countries (Jordan, Lebanon, Morocco, Syria, and Tunisia) exhibited a clear downward trend in real deposit growth rates since 2009. In Lebanon, Morocco, and Tunisia, real credit growth has also generally decelerated since 2010 (earlier for some periods). Moving to OX-Non GCC countries, no clear growth rate pattern is evident; they however exhibit real credit and deposit growth rates that are higher, on average, compared to OM and OX-GCC economies over the past five years. As for negative real growth rates in credit and deposits experienced in Egypt, Sudan, and Yemen in a number of all years during 2007–2012, they are associated with high inflation rates at the time.

Next, we examine level changes in deposit funding and credit as well as changes in other main items in the commercial banks' balance sheets. Table 8 presents a concise summary of the flow of funds for MENA banks' balance sheets over 2007–2012. The cumulative increase in deposits over 2007Q1–2012Q4 is presented in the first row, followed by the change in credit and the difference between them. Showing line items for deposits and credit separately from other balances at commercial banks allows us to shed light on private sector activity independently of other banking decisions such as the intermediation of government financing or the accumulation of reserves at the CB.

Table 7. Evolution of Real Deposits and Credit Growth MENA, (2008–2012)

Country		2008	2009	2010	2011	2012	2008–2012
Jordan	Deposits	-10.3	-4.0	1.8	-4.7	6.3	-2.2
	Credit Growth	-0.3	1.8	1.5	6.3	-0.1	1.8
Lebanon	Deposits	0.0	12.4	5.7	5.4	-4.2	3.9
	Credit Growth		12.9	19.8	10.1	-0.6	10.6
Mauritania	Deposits		17.5	7.5	3.3	-3.9	6.1
	Credit Growth	24.6	0.1	8.7	5.5	9.7	9.7
Morocco	Deposits	14.2	10.5	7.2	18.1	5.2	11.0
	Credit Growth	17.3	9.3	8.6	9.8	3.2	9.6
Sudan	Deposits	10.5	5.1	5.0	5.5	1.8	5.6
	Credit Growth	-8.3	8.4	3.2	-14.5	-8.9	-4.0
Syrian Arab	Deposits	-1.8	12.0	13.0	-8.6	-3.2	2.3
	Credit Growth	24.1	14.3	19.7			19.3
Tunisia	Deposits	15.1	10.0	7.9			11.0
	Credit Growth	10.8	5.9	15.1	8.6	3.2	8.7
OM Average	Deposits	11.2	8.6	8.3	0.6	6.0	6.9
	Credit Growth	8.8	4.7	9.0	3.5	1.2	6.3
Algeria	Deposits	5.6	9.0	7.0	2.8	1.1	5.6
	Credit Growth	9.7	8.8	9.5	4.5	4.6	7.4
Iraq	Deposits	7.8	-7.3	8.4	10.9	-2.9	3.4
	Credit Growth	40.3	12.7	73.9	28.9		38.9
Libya	Deposits	28.6	31.2	44.9	17.9		30.6
	Credit Growth	37.7	8.9	0.7	-31.8	33.7	9.8
Yemen,	Deposits	51.0	8.6	-0.1	-19.0	20.3	12.2
	Credit Growth	2.9	-11.9	-5.3	-34.2	-17.8	-13.3
OX-Non GCC	Deposits	1.6	5.1	2.3	-28.6	16.0	-0.7
	Credit Growth	22.6	4.6	19.7	-8.1	6.8	10.7
Bahrain,	Deposits	22.3	9.4	13.9	-4.7	11.1	11.4
	Credit Growth	38.4	-2.1	4.8	14.1	4.3	11.9
Kuwait	Deposits	15.3	5.3	8.7	1.7	2.6	6.7
	Credit Growth	7.0	4.4	-3.3	0.7	2.8	2.3
Oman	Deposits	6.0	11.7	-2.9	3.8	3.9	4.5
	Credit Growth	30.5	4.8	5.9	9.0	12.1	12.5
Qatar	Deposits	12.0	4.4	5.6	8.6	8.4	7.8
	Credit Growth	28.8	17.5	10.7	17.0	1.4	15.1
Saudi Arabia	Deposits	6.5	27.2	23.6	14.9	20.4	18.5
	Credit Growth	17.3	-3.9	0.0	6.0	13.4	6.5
United Arab	Deposits	8.5	7.3	-0.8	7.4	10.9	6.7
	Credit Growth	36.5	0.9	-1.0	3.4	1.1	8.2
OX-GCC	Deposits	8.2	10.0	4.6	4.8	3.6	6.3
	Credit Growth	26.4	3.6	2.9	8.4	5.8	9.4
MENA Average	Deposits	9.4	11.0	6.5	6.9	8.3	8.4
	Credit Growth	18.3	4.3	9.3	2.5	4.0	8.3
	Deposits	10.8	9.8	8.4	2.5	5.7	7.8

Source: Authors' calculations using data from the International Financial Statistics.

Across 18 examined countries (with the exception of five), average and cumulative increases in deposits over the sample period exceeded the respective growth in credit, resulting in a positive surplus of funds to be invested by banks. The excess of deposit funding over credit extension could have been used to fund the purchase of government securities or increase banks' reserve balances at the CB; in one case, Yemen, credit to the private sector has even regressed over the past few years and the majority of new deposits were invested in new government claims. In

contrast, in the case of Bahrain, Mauritania, Morocco, Oman, Tunisia, and the UAE, increases in deposit funding fell short of new credit extension to the private sector, suggesting that other sources of funds were raised in the banking sector (e.g., wholesale or cross-border funding; borrowing from the CB; government funding as in Oman and the UAE; and new equity), or that NPLs have peaked (i.e., Mauritania and Tunisia (IMF REO-MCD, November 2013)), or that reserves at the CB were being drained (i.e., in Morocco).

With respect to banks' intermediating private and public financing in the economy, in Egypt, Jordan, Sudan, Qatar, and Yemen (and in Lebanon until 2009), the average and cumulative rise in credit fell short of the corresponding changes in government claims, suggesting that banks in these countries are intermediating more public than private financing.²⁹ When deposit sources of funds are not sufficient to cover both private credit and purchase of government securities, draining of reserve balances at the CB is likely to result. This is the case for Egypt and Morocco (and to a lesser extent in Tunisia), which experienced a significant reduction in CB balances over 2007–2012—the counterpart to a reduction in official FX reserves (though this has been to some extent offset by a growth in monetary financing).³⁰

In other countries like Iraq, Lebanon, Libya, and Yemen, the accumulation of reserves over 2007–2012 markedly exceeds the cumulative credit extension to the private sector, suggesting a commercial banks' portfolio structure that is more in favor of holding excess reserves at the CB than providing credit to the private sector. This is also the case for the UAE for most of the period considered, after the country registered in 2008 a peak in the increase in credit at around 250 percent of the rise in deposits.

²⁹ The same conclusion was reached from gleaning at table 3.

³⁰ The negative figures reported for the average and cumulative changes in CB balances for the UAE over the sample period are due to a large one-off reduction in bank reserves between 2007 and 2008 which were probably used to finance the significant increase in credit to the private sector preceding the GFC immediately.

Table 8. Flow of Funds of Banks' Balance Sheets
(in local currency units, except for U.S. Dollar total and percent of GDP)

Country		2008	2009	2010	2011	2012	Average	LC Total	\$ Total	% GDP*
Egypt	Change in Deposits	57,744	62,346	90,642	31,963	99,848	68,508	342,542	57,532	22.8
	Change in Credit to Private Sector	44,254	-7,094	22,892	28,115	31,509	23,935	119,677	20,100	8.0
	<i>Difference</i>	13,489	69,439	67,750	3,848	68,339	44,573	222,865	37,432	14.9
	Change in Government Claims	44,577	101,794	29,066	175,202	165,887	103,305	516,526	86,754	34.4
	Change in Balances at the CB	-51,892	-7,516	17,823	-107,506	-20,559	-33,930	-169,650	-28,494	-11.3
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	20,805	-24,839	20,860	-63,848	-76,990	-24,802	-124,011	-20,828	-8.3
Jordan	Change in Deposits	1,826	1,797	1,973	1,644	468	1,542	7,709	10,857	35.0
	Change in Credit to Private Sector	1,496	161	954	1,329	956	979	4,896	6,895	22.3
	<i>Difference</i>	330	1,636	1,020	315	-488	563	2,813	3,962	12.8
	Change in Government Claims	1,249	1,021	448	1,719	1,651	1,218	6,089	8,575	27.7
	Change in Balances at the CB	472	-23	232	350	-94	187	937	1,320	4.3
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-1,391	638	339	-1,754	-2,045	-843	-4,213	-5,933	-19.1
Lebanon	Change in Deposits	12,927	19,475	14,360	8,642	9,739	13,029	65,143	43,213	100.2
	Change in Credit to Private Sector	5,746	4,964	9,382	6,335	5,526	6,391	31,954	21,197	49.2
	<i>Difference</i>	7,181	14,511	4,978	2,307	4,212	6,638	33,189	22,016	51.1
	Change in Government Claims	5,890	5,498	381	-137	2,875	2,901	14,507	9,623	22.3
	Change in Balances at the CB	8,944	13,872	7,380	11,421	7,299	9,783	48,916	32,448	75.3
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-7,654	-4,859	-2,782	-8,977	-5,962	-6,047	-30,234	-5,078	-46.5
Mauritania	Change in Deposits	28,010	24,247	25,920	52,444	24,890	31,102	155,511	540	13.0
	Change in Credit to Private Sector	55,039	8,893	36,698	31,739	42,986	35,071	175,356	609	14.6
	<i>Difference</i>	-27,029	15,354	-10,778	20,705	-18,096	-3,969	-19,845	-69	-1.7
	Change in Government Claims	11,181	2,112	11,056	-17,199	8,770	3,184	15,920	55	1.3
	Change in Balances at the CB	13,571	4,660	-3,816	36,928	20,320	14,333	71,663	249	6.0
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-51,781	8,582	-18,018	976	-47,186	-21,486	-107,428	-373	-9.0
Morocco	Change in Deposits	75,649	28,132	45,506	40,283	27,171	43,348	216,740	25,817	26.1
	Change in Credit to Private Sector	75,419	38,628	50,844	53,138	29,644	49,535	247,673	29,502	29.8
	<i>Difference</i>	230	-10,496	-5,339	-12,856	-2,473	-6,187	-30,933	-3,685	-3.7
	Change in Government Claims	-1,699	-8,139	-4,171	17,603	24,701	5,659	28,295	3,370	3.4
	Change in Balances at the CB	-575	-16,034	-10,205	-3,574	-4,611	-7,000	-34,999	-4,169	-4.2
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	2,504	13,677	9,037	-26,885	-22,564	-4,846	-24,229	-2,886	-2.9
Sudan	Change in Deposits	2,046	4,125	5,175	3,573	12,903	5,564	27,821	9,007	13.2
	Change in Credit to Private Sector	951	2,803	2,446	1,468	7,539	3,041	15,206	4,923	7.2
	<i>Difference</i>	1,095	1,322	2,730	2,105	5,364	2,523	12,615	4,084	6.0
	Change in Government Claims	3,358	2,259	3,438	3,522	4,560	3,427	17,137	5,548	8.2
	Change in Balances at the CB	676	1,690	-1	936	4,190	1,498	7,491	2,425	3.6
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-2,939	-2,627	-708	-2,353	-3,386	-2,403	-12,013	-3,889	-5.7
Syrian Arab Republic	Change in Deposits	286,678	130,516	183,011			200,068	600,205	53,470	17.7
	Change in Credit to Private Sector	124,502	65,657	126,790			105,650	316,949	28,236	9.3

Country		2008	2009	2010	2011	2012	Average	LC Total	\$ Total	% GDP*
Tunisia	<i>Difference</i>	162,177	64,859	56,221		-	94,419	283,256	25,234	8.3
	Change in Government Claims	6,420	-25,397	13,072		-	-1,968	-5,905	-526	-0.2
	Change in Balances at the CB	56,911	69,018	2,723		-	42,884	128,652	11,461	3.8
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	98,845	21,237	40,426		-	53,503	160,509	14,299	4.7
	Change in Deposits	3,581	3,397	3,711	1,777	4,055	3,304	16,521	11,163	23.3
	Change in Credit to Private Sector	4,145	3,136	6,653	5,499	4,018	4,690	23,451	15,846	33.0
	<i>Difference</i>	-564	261	-2,942	-3,722	36	-1,386	-6,931	-4,683	-9.8
Algeria	Change in Government Claims	-316	440	-120	526	105	127	635	429	0.9
	Change in Balances at the CB	817	586	-1,134	-774	834	66	329	222	0.5
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-1,064	-765	-1,688	-3,474	-903	-1,579	-7,894	-5,334	-11.1
	Change in Deposits	625	-67	557	877	388	476	2,381	31,578	14.9
	Change in Credit to Private Sector	198	208	202	177	273	212	1,059	14,042	6.6
	<i>Difference</i>	427	-275	355	700	116	264	1,322	17,536	8.3
	Change in Government Claims	-250	129	311	270	72	107	533	7,064	3.3
Iraq	Change in Balances at the CB	-73	-20	108	54	201	54	270	3,583	1.7
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	749	-383	-64	375	-158	104	519	6,889	3.2
	Change in Deposits	5,357	6,578	12,035	8,751	747	6,694	33,469	28,641	13.4
	Change in Credit to Private Sector	1,452	725	3,804	3,027	3,317	2,465	12,325	10,547	4.9
	<i>Difference</i>	3,905	5,854	8,232	5,724	-2,571	4,229	21,143	18,094	8.5
	Change in Government Claims	-2,369	561	5,431	2,470	-542	1,110	5,552	4,751	2.2
	Change in Balances at the CB	8,378	-453	5,916	885	1,368	3,219	16,094	13,773	6.4
Libya	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-2,105	5,746	-3,116	2,369	-3,397	-100	-502	-430	-0.2
	Change in Deposits	12,130	3,157	1,052	2,709	6,641	5,138	25,689	20,542	32.9
	Change in Credit to Private Sector	2,458	777	322	-480	2,533	1,122	5,609	4,485	7.2
	<i>Difference</i>	9,672	2,381	730	3,190	4,108	4,016	20,080	16,056	25.7
	Change in Government Claims	-154	-174	0	0	0	-66	-328	-262	-0.4
	Change in Balances at the CB	13,538	6,263	6,023	2,312	7,369	7,101	35,505	28,390	45.4
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-3,712	-3,709	-5,293	878	-3,261	-3,019	-15,097	-12,072	-19.3
Yemen, Republic of	Change in Deposits	158,116	139,996	202,637	-168,460	435,575	153,573	767,866	3,569	10.0
	Change in Credit to Private Sector	61,581	-19,880	32,523	-72,192	-2,228	-39	-197	-1	0.0
	<i>Difference</i>	96,535	159,876	170,115	-96,268	437,804	153,612	768,062	3,569	10.0
	Change in Government Claims	-35,646	273,784	63,763	31,092	234,359	113,470	567,352	2,637	7.4
	Change in Balances at the CB	4,967	21,279	47,631	-110,290	113,718	15,461	77,305	359	1.0
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	127,214	-135,186	58,721	-17,070	89,727	24,681	123,405	574	1.6
	Bahrain, Kingdom of	Change in Deposits	1,049	420	686	192	351	540	2,698	7,175	24.5
Change in Credit to Private Sector		1,868	-46	384	981	469	731	3,654	9,719	33.2
<i>Difference</i>		-819	466	302	-789	-117	-191	-956	-2,543	-8.7
Change in Government Claims		92	518	407	499	247	352	1,762	4,687	16.0
Change in Balances at the CB		-86	85	261	-233	297	65	324	862	2.9
<i>Remaining Sources (+) /Uses (-) of Funds</i>		-825	-136	-366	-1,055	-661	-608	-3,042	-8,092	-27.7
Kuwait		Change in Deposits	2,924	2,878	671	1,936	1,692	2,020	10,102	36,055	22.7
	Change in Credit to Private Sector	3,277	1,426	576	1,160	1,332	1,554	7,770	27,735	17.5

Country		2008	2009	2010	2011	2012	Average	LC Total	\$ Total	% GDP*
Oman	<i>Difference</i>	-353	1,452	95	777	361	466	2,331	8,321	5.2
	Change in Government Claims	85	-75	-11	-23	-203	-45	-227	-812	-0.5
	Change in Balances at the CB	-846	1,575	761	889	762	628	3,141	11,211	7.1
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	408	-48	-654	-89	-199	-116	-582	-2,079	-1.3
	Change in Deposits	1,357	361	700	977	1,013	881	4,407	11,463	14.7
	Change in Credit to Private Sector	2,473	463	861	1,209	1,617	1,324	6,622	17,222	22.1
	<i>Difference</i>	-1,116	-102	-161	-232	-604	-443	-2,215	-5,759	-7.4
Qatar	Change in Government Claims	10	55	118	99	96	76	378	983	1.3
	Change in Balances at the CB	709	-648	691	-535	526	149	743	1,932	2.5
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-1,835	492	-970	204	-1,226	-667	-3,336	-8,675	-11.1
	Change in Deposits	29,389	30,792	49,192	44,332	69,939	44,729	223,644	61,441	31.9
	Change in Credit to Private Sector	50,559	12,975	19,422	39,180	9,728	26,373	131,865	36,227	18.8
	<i>Difference</i>	-21,170	17,817	29,770	5,151	60,211	18,356	91,779	25,214	13.1
	Change in Government Claims	4,347	44,569	12,265	70,772	18,515	30,094	150,469	41,338	21.5
Saudi Arabia	Change in Balances at the CB	-8,304	22,006	45,122	-61,741	12,486	1,914	9,569	2,629	1.4
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-17,213	-48,758	-27,618	-3,880	29,210	-13,652	-68,259	-18,753	-9.8
	Change in Deposits	132	96	47	121	161	111	556	148,221	20.6
	Change in Credit to Private Sector	157	0	42	83	145	85	425	113,345	15.7
	<i>Difference</i>	-25	96	5	38	16	26	131	34,876	4.8
	Change in Government Claims	60	-60	32	-5	7	7	35	9,427	1.3
	Change in Balances at the CB	18	13	8	14	7	12	60	16,000	2.2
United Arab Emirates	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-103	143	-35	29	2	7	35	9,449	1.3
	Change in Deposits	97,583	66,058	44,427	36,339	32,591	55,400	276,998	75,425	19.8
	Change in Credit to Private Sector	246,400	9,361	5,525	27,078	13,423	60,357	301,787	82,175	21.6
	<i>Difference</i>	-148,817	56,697	38,902	9,261	19,168	-4,958	-24,789	-6,750	-1.8
	Change in Government Claims	15,802	27,349	9,338	1,063	20,494	14,809	74,046	20,162	5.3
	Change in Balances at the CB	-107,771	16,087	19,771	2,914	22,336	-9,333	-46,663	-12,706	-3.3
	<i>Remaining Sources (+) /Uses (-) of Funds</i>	-56,848	13,261	9,793	5,284	-23,662	-10,434	-52,172	-14,206	-3.7

Note: The difference between changes in deposits and credit to the private sector shows the amount of private sector funds that can be invested in government claims or that can add to balances at the CB. A *positive* sign on the residual, Remaining Sources/Uses of Funds, implies that new deposit sources of funds exceed increases in private credit, new government claims, and additions to CB balances, implying idle/excess sources of funds. A *negative* sign implies that new deposit sources of funds are not enough to cover increases in private credit, new government claims, and additional CB balances, implying a financing gap/shortage of funds. Local currency (LC) figures for Egypt, Jordan, Mauritania, Morocco, Sudan, Syria, Tunisia, Libya, Yemen, Bahrain, Kuwait, Oman, Qatar, and United Arab Emirates are in million. LC figures for Algeria, Iraq, Lebanon, and Saudi Arabia are in billion.

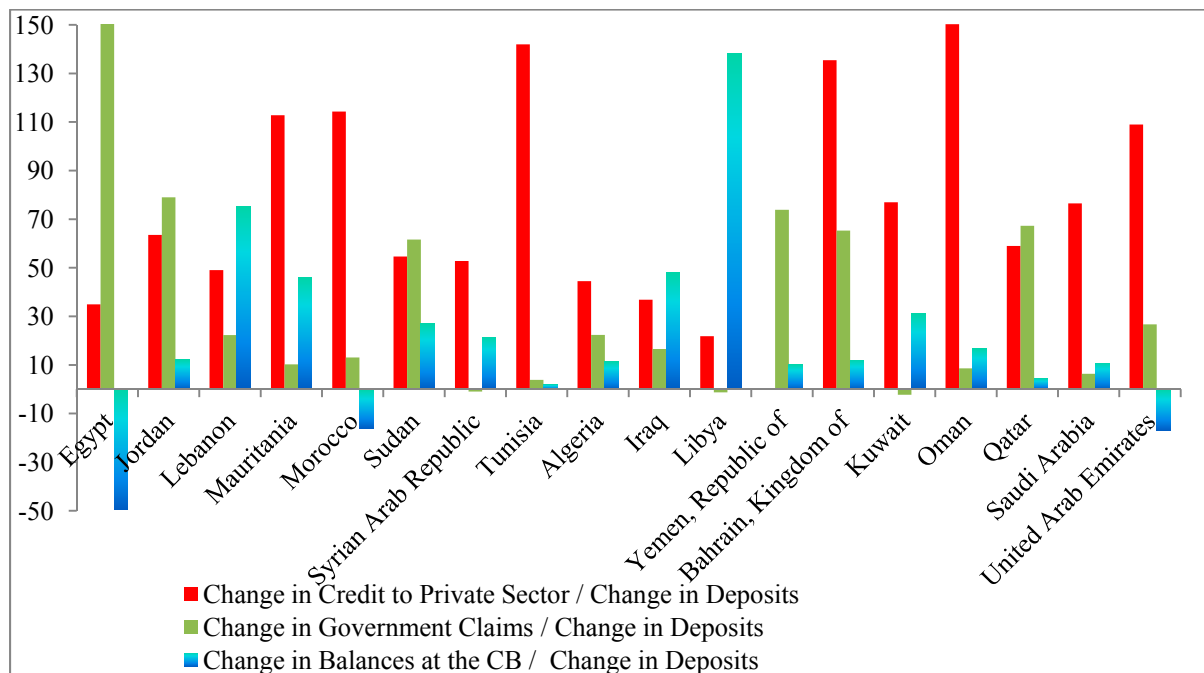
* GDP for Libya is for 2009; GDP for Kuwait is for 2011.

Source: Authors' calculations using data from the International Financial Statistics.

Focusing on the last row, “*Remaining sources (+) / uses of funds (-)*,” a negative sign is interpreted as a drain on bank funding, necessitating the need to raise additional funds to finance banks’ operations. Under normal conditions, banks may raise wholesale and cross-border funding as well as equity sources of funds (including the accumulation of retained earnings) to finance bank investments, whether extending loans or purchasing securities. However, under uncertain economic and political conditions, banks may resort to CB financing through the use of standing credit facilities, or other forms of borrowing from the CB. This is the case for all MENA countries except Algeria, Saudi Arabia, and Yemen which registered a surplus of funds (+) over the sample period which was likely invested in CB bills or in CB standing deposit facilities.

In highlighting banks’ main function intermediating funds in the economy, Figure 3 depicts schematically changes in private sector credit, government claims, and CB balances as a percent of the increase in deposit funding over the period 2007–2012—this underscores important patterns discussed in Table 8. In reiterating those findings, for the majority of MENA countries, credit intermediation to the private sector falls short of new deposit funding raised by commercial banks. In a large number of economies, banks have played a major role in intermediating government financing, and also allocating a significant share of new deposit funding to building up reserve balances at the CB. To sum up, such changes to balance sheet structures suggest that policy decisions might be important factors affecting commercial bank LTD ratio.

Figure 3. Changes in Credit to the Private Sector, Government Claims, and Balances at the Central Banks, (2007–2012)
(in percent of changes in deposits)



Source: Authors’ Calculations using data from the International Financial Statistics.

VI. CONCLUSIONS

In this paper, we investigate whether banks' low LTD ratios are a reflection of policy decisions by the government and the CB. The traditional view explaining the weak conduct of financial intermediation in MENA is that commercial banks are generally reluctant to extend credit to the private sector and that investment demand is also sluggish on the part of investors, due to prevailing political and economic uncertainties. Indeed, low credit growth may impart increased risk aversion on the part of banks, lower level of equity capital resulting from incurred loan losses, or increased credit risk. Banks may also be just passively responding to the non-financial corporate sector's reduced demand for credit: in the face of weak growth and prospects that prolonged global economic weaknesses, potential borrowers may simply take a more cautious approach to incurring new debt; others, quite simply, can no longer afford it.

To assess whether banks are lazy in MENA, we examine changes to CB balance sheet structures as well as commercial banks' flow of funds over the period 2007–2012. We first find that the size of most MENA CBs is very large with respect to their economies compared to CBs in AEs (even after considering the expanded size of the latter in the wake of the GFC); suggesting an active CB role in MENA countries. It was also noted that most MENA CBs are asset-driven, with FX reserves constituting the largest balance sheet component generally held in support of a predominantly pegged exchange rate regime. Policy decisions at the CB level may have also contributed to an increase in commercial bank reserves held at the CB, resulting in a reduction of commercial bank LTD ratio. Further decisions at the government level impacting LTD, are the financing of budget deficits through bank intermediated funds; an ensuing increase of deposits held at banks has result in lower LTD ratios in large host of OM and OX-Non GCC countries. The same effect is at play under monetary financing that prevails in some MENA countries. Thus, the findings suggest that both government and CB actions may explain the low LTD observed on average in the MENA region. Of course, an average cutting across all MENA countries can be misleading, in masking for example a larger OX-GCC (than an overall MENA) LTD average for reasons we discussed in the paper such as greater GCC reliance on non-deposit or wholesale sources of funds and evidently a less recourse to deficit financing under surplus fiscal stance.

In terms of policy implications, the paper advises to exercise caution in implementing demand management or regulatory policies aiming at spurring credit under 'observed' low LTDs. In this vein, we showed that government or CB actions may have statistically altered LTDs ratios for reasons unrelated to supply or demand behavior for credit by banks and non-financial corporates (and households), as embedded in familiar credit models. In light of the differing credit conditions and risks facing OX and OM countries, policies have to be targeted in addressing, for example, risks of government financially crowding private sector demand for credit in a host of OM countries or risks of reliance on less steady sources of wholesale and cross-border (non-deposit) funding in OX countries.

References

- Aghion, P., G.M. Angeletos, A. Banerjee, and K. Manova, 2010, “Volatility and growth: Credit constraints and the composition of investment”, *Journal of Monetary Economics* 57, 246–265.
- Barajas, A., R. Chami, R. Espinoza, and H. Hesse, 2010, “Recent credit stagnation in the MENA Region: What to expect? What can be done?”, *IMF Working Paper No. 10/219*, Washington D.C.
- Bernanke, B., M. Gertler, 1989, “Agency costs, net worth, and business fluctuations”, *American Economic Review* 79, 14–31.
- Demirgüç-Kunt, A., and H. Huizinga, 2010, “Bank activity and funding strategies: The impact on risk and returns”, *Journal of Financial Economics* 98, 626-650.
- Gray, S., 2011, “Central Bank Balances and Reserve Requirements”, *International Monetary Fund, Working Paper No. 11/36*, Washington D.C.
- Gray, S., P. Karam, V. Meeyam, and M. Stubbe, 2012, “Monetary Issues in the Middle East and North Africa Region: A Policy Implementation Handbook for Central Bankers”, *International Monetary Fund, Departmental Paper No. 13/1*, Washington D.C.
- Herrala, R. and R. Turk, 2013, “Credit Constraints, Political Instability, and Capital Accumulation”, *International Monetary Fund, Working Paper No. 13/246*, Washington D.C.
- International Monetary Fund, 2010, *Jordan Country Report No. 10/297*, Washington D.C.
- , 2010, *Regional Economic Outlook, Middle East and Central Asia, Economic and Financial Surveys*, Washington D.C.
- , 2011, *Annual Report on Exchange Rate Arrangements and Exchange Restrictions*, Washington D.C.
- , 2012, *Regional Economic Outlook Update, “Middle East and North Africa: Historic Transitions under Strain”*, Middle East and Central Asia, *Economic and Financial Surveys*, Washington D.C.
- , 2013, *Global Financial Stability Report*, Washington D.C.
- , 2013, *Policy Paper, “Global Impact and Challenges of Unconventional Monetary Policies”*, Washington D.C.
- , 2013, *Regional Economic Outlook Update, “Defining the Road Ahead”*, Middle East and Central Asia, *World Economic and Financial Surveys*, Washington D.C.
- , 2013, *Regional Economic Outlook Update, Middle East and Central Asia, World Economic and Financial Surveys*, Washington D.C.

Kiyotaki, N. and J. Moore, 1997, “Credit cycles”, *Journal of Political Economy* 105, 211–248.

Levine, R., 1997, “Financial development and economic growth: views and agenda”, *Journal of Economic Literature* 35, 688–726.

Levine, R., N. Loyaza, and T. Beck, 2000, “Financial intermediation and growth: causality and causes”, *Journal of Monetary Economics* 46, 31–77.

Appendix I. Definition of Variables.

Variable	Description
Central bank assets to GDP	Ratio of central bank assets to GDP. Central bank assets are claims on domestic real nonfinancial sector by the Central Bank. Source: International Monetary Fund, International Financial Statistics, and World Bank GDP estimates.
Credit to government and state-owned firms to GDP	Ratio of credit by domestic money banks to the government and state-owned enterprises to GDP. Source: International Monetary Fund, International Financial Statistics.
Bank deposits to GDP	The total value of demand, time and saving deposits at domestic deposit money banks as a share of GDP. Deposit money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Source: International Monetary Fund, International Financial Statistics, and World Bank GDP estimates.
Bank private credit to GDP	The financial resources provided to the private sector by domestic money banks as a share of GDP. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Source: International Monetary Fund, International Financial Statistics, and World Bank GDP estimates.
Bank credit to bank deposits	The financial resources provided to the private sector by domestic money banks as a share of total deposits. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Total deposits include demand, time and saving deposits in deposit money banks. Source: International Monetary Fund, International Financial Statistics.
Liquid assets to deposits and short term funding	The ratio of the value of liquid assets (easily converted to cash) to short-term funding plus total deposits. Liquid assets include cash and due from banks, trading securities and at fair value through income, loans and advances to banks, reverse repos and cash collaterals. Deposits and short term funding includes total customer deposits (current, savings and term) and short term borrowing (money market instruments, CDs and other deposits). Source: Bankscope.
Nonperforming loans to gross loan	Ratio of defaulting loans (payments of interest and principal past due by 90 days or more) to total gross loans (total value of loan portfolio). The loan amount recorded as nonperforming includes the gross value of the loan as recorded on the balance sheet, not just the amount that is overdue.
Provisions to nonperforming loans	Provisions to non-performing loans. Non-performing loans are loans for which the contractual payments are delinquent, usually defined as and NPL ratio being overdue for more than a certain number of days (e.g., usually more than 90 days). Source: International Monetary Fund, Global Financial Stability Report.
Lending-deposit spread	Difference between lending rate and deposit rate. Lending rate is the rate charged by banks on loans to the private sector and deposit interest rate is the rate offered by commercial banks on three-month deposits. Source: International Monetary Fund, International Financial Statistics.
Net interest margin	Accounting value of bank's net interest revenue as a share of its average interest-bearing (total earning) assets. Source: Bankscope.

Source: Global Financial Development, World Bank, April 2013.

Appendix II. Illustrative Balance Sheets for Government and CB Actions and Policies³¹

Some indicative balance sheets below show the effect on the central bank and commercial banking system balance sheets of (i) additional government borrowing; (ii) quantitative easing (or monetary financing); and (iii) unsterilized central bank purchases of FX.

An economy holds more government debt because the government is running a budget deficit which it needs to finance, not because the banks are lending less money to the private sector. (Increased government borrowing may push up domestic interest rates, and could also create some uncertainties about future economic growth, both of which could depress loan demand.) The counterpart to government consumption being higher than its income, is that the non-government sector needs to save more than its income. To the extent that the savings are intermediated via the banking system, this will appear as higher deposits with the banks, matched by higher bank holdings of government securities—commercial bank balance sheets expand.

If this government borrowing were not intermediated via the banking system, bank balance sheets would be unchanged. It is not at all clear that credit to the private sector would be higher, in absolute terms, although it would be a higher proportion of a smaller balance sheet. In balance sheet terms, when the government spends money—paying salaries, purchasing goods and services—the commercial bank accounts of its staff and suppliers are credited; and funds are transferred from the government’s account at the central bank to the accounts of commercial banks. In the tables which follow, the first tables consider the impact on the central bank and commercial bank balance sheets of an increase in government borrowing of 50, funded either (a) by the non-bank sector (Table 9) or (b) by the banks (Table 10). It is assumed that government expenditure generates some additional demand for cash in circulation (equivalent to 20 percent of the additional government expenditure) in the economy; and that banks want to maintain their reserve balances at the central bank unchanged (central bank lending to banks increases by 10, to match increased cash demand).

Table 1. Government Borrowing—Funding by Non-banks

Central Bank Balance Sheet					Commercial Banks' Balance Sheets				
	Start	Step 1	Step 2	Post		Start	Step 1	Step 2	Post
Assets					Liabilities				
NFA	150			150	CIC	50		10	60
Government Securities	-			-	Commercial Bank Accounts	50	50	(50)	50
Loan to Banks	-		10	10	Government Account	50	(50)	50	50
Total	150			160		150			160
Assets					Liabilities				
Central Bank Account	50	50	(60)	40	Customer Deposits	200	50	(60)	190
Loans to Customers	100			100	Loan from Central Bank			10	-
Government Securities	50			50					-
Other	20			20	Capital	20			20
Total	220			210		220			210
Loan to Deposit Ratio		50%		53%					

³¹ This appendix draws on Gray and others (2012).

Here the LTD increases marginally, as deposits fall: government spending initially increases deposits in banks, but the additional funds are used to buy government securities, and the spending additionally increases demand for currency in circulation. But the increase in the LTD reflects a smaller balance sheet: loans to customers do not increase.

Table 2. Government Borrowing—Funding by Banks

Central Bank Balance Sheet					Start	Step 1	Step 2	Post	Commercial Banks' Balance Sheets					
Assets									Liabilities					
NFA					150									
government securities					-									
Loan to banks					-		10	10						
Total					150			160						160
Central Bank Balance Sheet					Start	Step 1	Step 2	Post	Commercial Banks' Balance Sheets					
Assets									Liabilities					
Central bank account					50	50	(50)	50						
Loans to customers					100			100						
Government securities					50		50	100						
Other					20			20						
Total					220			270						270
Loan to Deposit Ratio					50%			42%						

Comparing the above two tables, it can be seen that when government borrowing is intermediated by banks—non-bank deposits (liabilities) increase, matched by holdings of government securities—the LTD ratio falls; but this reflects an increase in the balance sheet total, not a change in loans to customers.

Table 3. Central Bank Purchases of Foreign Exchange

Central Bank Balance Sheet					Start	Step 1	Step 2	Post	Commercial Banks' Balance Sheets					
Assets									Liabilities					
NFA					150		50	200						
Government Securities					-			-						
Loan to Banks					-			-						
Total					150			200						200
Central Bank Balance Sheet					Start	Step 1	Step 2	Post	Commercial Banks' Balance Sheets					
Assets									Liabilities					
Central Bank Account					50		50	100						
Loans to customers					100			100						
Government securities					50			50						
Other					20			20						
FX						50	(50)	-						
Total					220			270						270
Loan to Deposit Ratio					50%			40%						

In Table 11, there is no change in government activity, but there is a FX inflow. In Step 1, banks purchase 50 in FX from customers, whose deposit balances then increase. In Step 2, the central bank buys the FX from the banks, whether to stabilize the exchange rate or allow the banks to keep unchanged net open FX positions (or both). But the resultant increase in commercial bank reserve balances at the central bank is not sterilized. In this case, the LTD

falls because commercial bank balance sheets increase. There is no change to the absolute level of customer loans.

Table 4. Quantitative Easing

Central Bank Balance Sheet	Start	Step 1	Midpoint	Step 2	Post		Start	Step 1	Midpoint	Step 2	Post
Assets						Liabilities					
NFA	150		150	-	150	CIC	50		50		50
Government Securities	-	50	50	50	100	Commercial Bank Accounts	50	50	100	50	150
Loan to banks	-		-	-	-	Government Account	50		50		50
Total	150		200		250		150		200		250
Commercial Banks' Balance Sheets											
Assets						Liabilities					
Central Bank Account	50	50	100	50	150	Customer Deposits	200	-	200	50	250
Loans to Customers	100		100		100	Loan from Central Bank			-		-
Government Securities	50	(50)	-	-	-				-		-
Other	20		20		20	Capital	20		20		20
FX			-		-				-		-
Total	220		220		270		220		220		270
Loan to Deposit Ratio	50%		50%		40%						

In Table 12, in Step 1 the central bank buys government securities from the commercial banks (Quantitative easing); and there is no change to the commercial banks' balance sheet totals or to the LTD ratio ('Midpoint' balance sheets). In Step 2, the central bank buys government securities from the non-bank sector (also Quantitative Easing), increasing deposits at banks. Mechanically, this lowers the LTD ratio but, as in the earlier tables, with no change to the actual level of bank lending to customers. There is no change in the economy's demand for currency in circulation, as there has been no additional government expenditure to stimulate demand.

Table 5. Monetary Financing

Central Bank Balance Sheet	Start	Step 1	Step 2	Step 3	Post		Start	Step 1	Step 2	Step 3	Post
Assets						Liabilities					
NFA	150			(20)	130	CIC	50		10		60
Government Securities	-	50			50	Commercial Bank Accounts	50		40	(20)	70
Loan to Banks	-				-	Government Account	50	50	(50)		50
Total	150				180		150				180
Commercial Banks' Balance Sheets											
Assets						Liabilities					
Central Bank Account	50		40	(20)	70	Customer Deposits	200	-	40	(20)	220
Loans to Customers	100				100	Loan from Central Bank					-
Government Securities	50				50						-
Other	20				20	Capital	20				20
FX			-	-	-						-
Total	220				240		220				240
Loan to Deposit Ratio	50%				45%						

In Table 13, instead of quantitative easing, the central bank engages in monetary financing, lending 50 to the government. Customer deposits at commercial banks increase as the government spends the money, and both the central bank and commercial bank balance sheets increase correspondingly. In this example, it is assumed that some of the government expenditure stimulates additional demand for currency in circulation (as in Tables 9 and 10), and that some demand feeds through to imports, so that the central bank sells part of its FX reserves to stabilize the exchange rate (and/or allow banks to maintain their net open FX position as customers buy FX from the banks). In this case, the reduction in the LTD ratio is smaller than in Tables 11 and 12, because banks deposits fall when customers buy the FX. Some MENA countries have seen this combination of monetary financing of government coupled with a drawdown in FX reserves.