LIBYA

SELECTED ISSUES

July 2024

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INTERNATIONAL MONETARY FUND

LIBYA

SELECTED ISSUES

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CONTENTS

QUANTIFYING LIBYA'S EXCHANGE MARKET PRESSURE[1]

Libya's exchange rate has experienced both appreciation and depreciation pressures over the past few years. This paper identifies the sources and quantifies the exchange market pressures on the Libyan dinar and finds that (i) the cumulative pressure on the exchange rate has been negative and (ii) despite the alternating appreciation and depreciation pressures, foreign exchange reserves have remained relatively stable. The findings suggest that additional monetary tools and the use of fiscal policy can help contain the parallel market premium and avoid the use of capital flow measures.

A.   Introduction

1.   As an economy dependent on oil exports, Libya uses a fixed exchange rate linked to IMF Special Drawing Rights as the key nominal anchor. Libya's economy is largely dependent on oil and gas production, and fluctuations in international energy prices—denominated in US dollars—have a significant impact on the economy and put pressure on the exchange rate in both the official and parallel markets. The official exchange rate is fixed and functions as the nominal anchor while the parallel market rate fluctuates in response to these pressures. The nominal anchor is supported by the substantial foreign exchange reserves as long as the fiscal policy remains broadly consistent with the authorities' macroeconomic stance.[2]

Libya's reserves and US interest rates
(USD millions; percent)
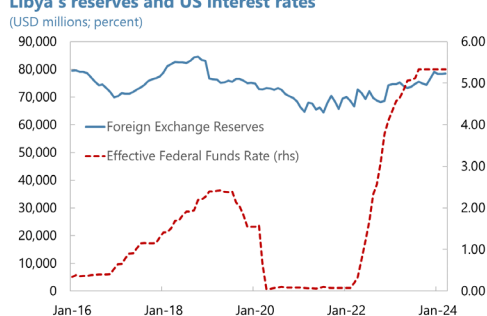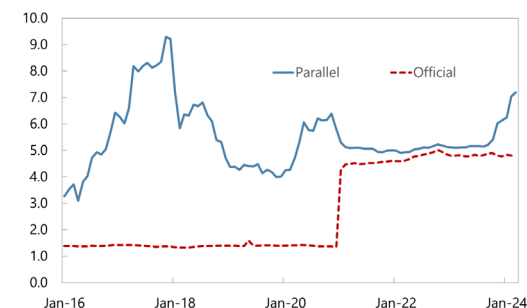

Sources: Haver, Central Bank of Libya and Fed FRED

2.   After several years of depreciation pressures following the 2015 oil price collapse, evidenced in a notable and persistent parallel market premium, the official exchange rate of the Libyan Dinar (LYD) was devalued in early 2021. Following the 2015 oil price collapse, the CBL initially imposed capital flow measures to preserve foreign exchange reserves. However, in light of the persistent pressures, the official exchange rate was devalued in January 2021 and most capital flow measures were removed. Taken together, these measures reduced the gap between the parallel-market rate and the official rate.[3]

Libyan dinars to 1 US dollar

Sources: Haver and Central Bank of Libya

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[1] Prepared by Apostolos Apostolou (MCD). The paper has benefited from comments and suggestions from the Central Bank of Libya.

[2] The Libyan dinar is fixed to the IMF Special Drawing Rights (SDR) basket, which consists of the US dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

[3] Since January 2021, the official rate has been SDR 0.1555 per LYD 1.

3.   This paper seeks to identify and quantify the sources of exchange market pressures on the LYD in recent years. This paper uses an exchange market pressure index to identify the idiosyncratic sources of exchange market pressure in Libya and to quantify this pressure in the past few years.

B.   Overview of the Literature

4.   Exchange market pressure (EMP) indices are widely used in the economic literature to measure both appreciation and depreciation pressure on a country's exchange rate. EMP indices are commonly used to assess financial outflow pressures and policy responses in emerging markets (see Aizenman and Hutchison (2012)). These policy responses include the use of foreign exchange reserves, interest rate policy and capital flow measures. These measures have varying impacts on activity and the exchange rate in the affected economies. EMP indices have been applied also to circumstances of appreciation pressure on exchange rates, including in the context of the large capital inflows in Eastern Europe, Switzerland, and other regions (see Hegerty (2009), WEO (October 2007), and *IMF Country Report 18/174*).

5.   EMP indices measure the weighted average of policy responses. The literature generally uses three policy responses such as the exchange rate, the policy rate, and foreign exchange market intervention. In a fixed exchange rate regime such as Libya's, the EMP indices identify changes largely due to changes in foreign exchange reserves with little contribution from exchange rate movements. Several methodologies have been developed to calculate the weights of the components to aggregate policy responses, such as from a structural macroeconomic model (Girton and Roper (1977), Weymark (1995) and Goldberg and Krogstrup (2023)), empirically-derived weights (Patnaik and others (2017)) and relative volatility weights, based on the inverse of the standard deviations of each of the components (WEO (2007)). In this paper we weigh the individual EMP components by the inverse of their standard deviations over the entire sample.

C.   Exchange market pressure in Libya

6.   We adapt the EMP index to the idiosyncrasies of Libya where there is no policy interest rate and foreign exchange reserves are used to absorb exchange market pressures. The EMP index adopted here is constructed as the weighted changes in the exchange rate, official foreign exchange reserves and the difference between the official and parallel exchange rates. Specifically:

$$EMP_t = \frac{1}{w_e}\frac{\Delta e_t}{e_t} - \frac{1}{w_R}\frac{\Delta R_t}{R_t} - \frac{1}{w_{e/pe}}\frac{\Delta(e/pe)_t}{(e/pe)_t}$$

Where,

> e is the LYDUSD bilateral exchange rate, defined as number of US dollar per one Libyan dinar[4]

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[4] The IMF SDR basket is widely traded and given Libya's economy idiosyncrasies the most important exchange pair is with the US dollar.

R is international reserves (measured in US dollars)

$(\Delta(e/pe)\_t)/(e)\_t$ is a proxy for the capital flow measures (CFM) is the difference between the official and parallel market exchange rates.

w is the standard deviation of each variable over the 2016–2024 sample period.

Δ is the first difference operator.

Appreciation pressure is associated with a positive EMP. It is reflected in a combination of a strengthening exchange rate and reserves, and/or a decrease in the gap between the official and parallel exchange rates.

Depreciation pressure is associated with a negative EMP. It is reflected in a combination of a weakening exchange rate and reserves, and/or an increase in the gap between the official and the parallel rates.

Needless to say, in both the appreciation and depreciation pressure incidents, one or more components may move in the opposite direction to the overall EMP. In the case of Libya, foreign reserve accumulation is a policy target and the increase in official reserves has a depreciating effect on the LYD since there are limited private inflows in the country.

7.   We compute EMP indices for Libya for the period 2016–2024, using monthly data. Both point-in-time and cumulative EMP indices are calculated for the period January 2016–March 2024, and the results are shown in the accompanying figures.

6-month moving average Exchange Market Pressure
(units)

Sources: Haver; Central Bank of Libya and IMF staff calculations

8.   The point-in-time EMP index for Libya indicates that depreciation pressure generally prevailed prior to the devaluation of the dinar in early 2021. As shown on the chart, the EMP index for Libya was mainly negative during 2016-2020. The negative value of the EMP indicates depreciation pressure on the LYD. Faced with sustained depreciation pressure, the CBL devalued the dinar in January 2021.
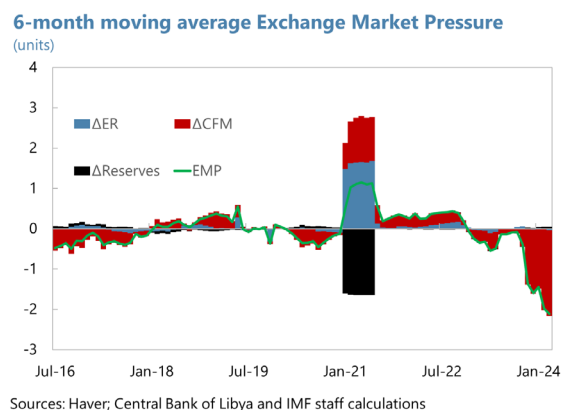
9.   Years 2021–22 saw appreciation pressures. Following the 2021 devaluation, the depreciation pressures abated and the EMP index turned positive. In 2022, the price of oil, Libya's main export, increased substantially, which led to current account surpluses and further appreciation pressure on the LYD. In late-2022, however, the global increase in inflation led to higher interest

rates worldwide and that brought back depreciation pressure on the LYD, leading the EMP index to turn negative.[5]

10.   For Libya, the cumulative EMP index is negative, suggesting that tighter policies were warranted during 2016–24.[6] While Libya had periods of both depreciation and appreciation pressures, overall it faced substantial depreciation pressure. In other words, Libya's policies over the medium term were not in line with the three-pronged macroeconomic objective of maintaining high foreign reserves, a pegged official exchange rate, and a narrow gap between the parallel and the official exchange rates.

Cumulative Exchange Market Pressure
(units)
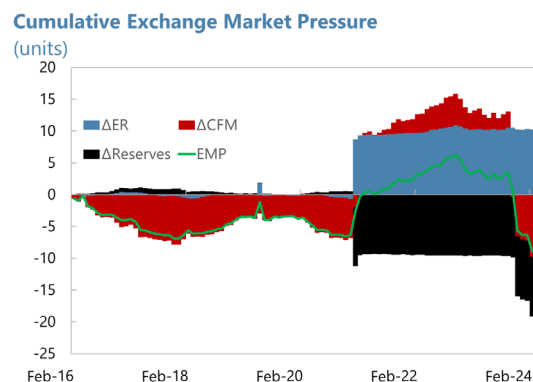
Sources: Haver; Central Bank of Libya and IMF staff calculations

D. Conclusion

11.   The results of this work point out to the need for the Libyan authorities to develop additional policy tools. The authorities' toolkit is limited: they strive to maintain the stock of reserves at a high level and to keep the exchange rate peg intact, all without the use of fiscal policy or of conventional monetary policy instruments. Therefore, developing conventional monetary policy tools and making sure that fiscal policy is consistent with the overall macroeconomic objectives would help the authorities achieve their goals without resorting to capital flow measures.

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[5] Since the CBL lacks a policy rate as a monetary policy tool, the implied interest rate differential between Libya and global currencies widened, making it more attractive to switch out of holding LYD assets.

[6] The starting date of our index plays a role in the cumulative EMP calculation, and it underestimates the exchange rate pressure the LYD faced during 2011–15. However, we do not have reliable data before 2016.

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