Economic Commentary
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**Inflation in MENA Region: Causes, Policy Responses and Challenges**

1. After a long period of relative price stability inflation risks have reemerged as a global challenge with potentially serious socio-economic implications around the world. MENA region is no exception to this trend. In particular, petroleum-exporting countries, which have until recently enjoyed mild to moderate inflation, have mostly seen their situation deteriorate rapidly. This is not totally unrelated to the large increases in oil and gas export prices. Despite having set their budgets well below expected revenues, both governments and the private sector have enjoyed unprecedented levels of liquidity supported by strong growth in money supply. This begs the question of whether or not accommodative monetary policies should be seen as potential source of inflation? Or is this assumed cause just one of many internal and external contributing factors?

2. In addressing these questions and the policy implications they lead to we hope to contribute to a better-informed public policy debate. Part one of this commentary introduces inflation as a monetary phenomenon. Part two tests the validity of an excess-money-supply hypothesis and explore the effect of external factors by reviewing the case of Saudi Arabia and Kuwait. Part three deals with the policy responses and challenges.

**A monetary perspective on inflation**

3. Inflation, which is defined as a rise in the general level of prices, is a broad and complex topic that needs to be put into perspective to start with. As with other major macroeconomic issues, its determinants and the policies and instruments to deal with it have been ideologically riven by disagreements between Keynesians and Monetarists. Nowadays, however, professional economists tend to support Friedman’s assertion that “inflation is always and everywhere a monetary phenomenon”, in the sense that it occurs whenever the quantity of money increases more rapidly than output. Except that they probe deeper into causality: why governments pursue inflationary monetary policies in the first place? The short answer is that, with money supply being the key determinant of output, employment, and price levels, those governments whose fiscal and monetary policies aim at growth and employment end up with a high rate of money growth and thus with higher inflation as an undesirable side effect.

4. In an open economy that interacts to some degree with the rest of the world, external factors may affect domestic inflation as well. Key among these factors are imported price inflation, which is exogenous, and the exchange rate pass-through, which is arguably endogenous to a country’s monetary policy regime.

5. While the above characterization may be regarded as an oversimplification of the inflation process, it is useful in providing a framework for our analysis. This will be articulated as follows:

- What influence could external factors have on domestic inflation?
- What are the policy implications?

Before proceeding further, however, we need a more precise definition and mapping of inflation within the region.

**Mapping inflation in MENA region**

6. Although inflation is defined, as noted earlier, as a rise in the general level of prices, news media and other general information sources in the region have recently tended to be selective. The focus has been put on food prices and housing rents that have risen most, ignoring items whose prices have been stable or slightly dropping such as transportation and telecommunications services. Since prices do not vary to the same degree or even in the same direction during a given economic business cycle, the ideal indicator of inflation should cover price changes for as much goods and services traded in the economy as possible. Among various such measures, the Consumer Price Index (CPI), or its equivalent in some MENA countries - the Cost of Living Index (CLI), are the standards for gauging inflation. Both reflect the price of a typical basket of goods and services (including imported consumer goods) purchased by households.

7. Country-specific variations in consumer baskets and index weightings should not deter us from taking a cross-section to test for possible similar patterns within MENA. The figure below, which plots the pace of inflation during the 2002-07 period against current inflation, revealing, despite the high dispersion of the observations, three distinct clusters of countries.

8. The data used are annual changes in CPI-CLI in the main MENA countries. Due to its polynomial expression, the pace of inflation (percentage change of the CPI-CLI rates) is calculated as the difference between the log of the 2007 value minus the log of the 2002 value, divided by 5. Current (annual) inflation is that estimated for mid-year 2008. The three clusters are differentiated as follows:

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1 This commentary by Ali Aissaoui, Head of Economics & Research, and Wichai Turongpun, Economist, at the Arab Petroleum Investments Corporation, is published concurrently in the Middle East Economic Survey, dated 15 September 2008. The opinions are those of the authors only.

2 The Implicit Price Deflator (IPD) is among other significant indexes. IPD measures changes in the prices of goods and services included in the Gross Domestic Product (GDP). It is used to convert nominal GDP to real GDP. Because IPD deals with goods produced, not consumed, and includes investments and exports, it may diverge from CPI-CLI levels.
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- Cluster One: Mild-to-moderate inflation (rate <8%):
  - Slow pace: Morocco, Sudan, Tunisia, Syria, Mauritania.
  - Medium pace: Lebanon, Bahrain, Algeria.
- Cluster Two: High inflation (rate ≥8% and <15%):
  - Slow pace: Yemen.
  - Medium pace: Jordan.
  - High pace: Egypt, UAE, Kuwait, Saudi Arabia, Libya, Oman, Qatar.
- Cluster Three: Run-away inflation (rate ≥15%):
  - Slow pace: Iran.

9. The focus will be on the two clusters whose inflation is higher than 8%. The choice of this threshold stems from empirical evidence that, even though inflation is felt across the social spectrum at moderate level, it is more costly in terms of impact on GDP growth when it surges above 8%. Cluster Two is composed of the GCC countries (minus Bahrain, which has so far experienced a mild to moderate inflation) plus Yemen, Jordan, Egypt and Libya. Cluster Three is composed of Iran, which has witnessed the highest and most persistent inflation. Countries in these two clusters have in common the fact that they have directly or indirectly (in the case of Jordan) benefitted from exceptionally high petroleum revenues. As a result, and despite having set budget resources significantly below prevailing oil prices to match their absorption capacity, both governments and the private sector have enjoyed unprecedented levels of liquidity supported by strong growth in money supply and relatively low interest rates.

Inflation and excess money supply

10. As discussed previously, we first test the proposition that every country facing a persistently high inflation must have its money supply growing at an excessive rate, ignoring for the moment external effects. Using data for Cluster Two and Three for the period 2002-2007, we assume the existence of a correlation between the pace of inflation taken as the response variable (the pace is as defined and calculated above) and the pace of money supply growth taken as the explanatory variable. A simple regression analysis reveals the relative strength of such a correlation (R-Square = 0.85) and its significance (F-Ratio = 47.07 and P-Value = 0.0001). The correlation would certainly be stronger if we introduce a lag to take into account the fact that it takes generally some time for the general price of goods and services to adjust to changes in the supply of money. For this, however, we need at least quarterly data, which are, unfortunately, not available for all countries within the sample.

11. As the scatter plot of the Figure below shows, the countries that fit best the regression line are Qatar, Oman, Libya, Jordan, the UAE and Yemen. To some extent, this is also the case of Iran and Egypt. However, Saudi Arabia and Kuwait appear relatively far and apart from the regression line. This is confirmed by a formal analysis of the pattern of residuals, which suggests that other explanatory variables should be added to improve the correlation. Therefore, while inflation trends in most countries within our sample may be attributed to a highly accommodative monetary stance aimed at supporting economic growth and employment, other factors are likely to play a role. The nature of these factors has been suggested by several econometric studies. The most recent and most relevant for our arguments is the one published by the IMF in August 2008.3

Other factors: The case of Saudi Arabia and Kuwait

12. IMF’s study for Saudi Arabia and Kuwait presents econometric evidence of a correlation between inflation and a series of domestic and external variables. The econometric model used is of the Error Correction Model (ECM) variety. Simply put, an ECM distinguishes between the long run relationship among the determinant variables and the short run dynamics. The most statistically-significant long run determinants of inflation are found to be price levels in trading partners (capturing imported inflation) and the nominal effective exchange rate (capturing the exchange rate pass-through effect into domestic prices). Positive demand shocks and excess money supply are found to exert upward pressures on inflation in the short run.

13. As summarized in the Table below, the analysis concludes to the similarity of results for the two countries. On the one hand, excess money supply and excess aggregate demand play a relatively limited role in driving inflation in the short run. In addition, even when sustained demand and excess money supply tend to create inflationary pressures, their effect dissipate rapidly with time. In the long run, on the other hand, higher inflation in countries’ trading partners is found to be the most significant cause of inflation, while contributions from the exchange rate pass-through factor, although important, tend to be lower. The negative sign for the impact of the pass-through stems from the fact that an increase in the exchange rate (measured in units of foreign currency per one local currency) represents an appreciation of the local currency.

<table>
<thead>
<tr>
<th>Source: IMF</th>
<th>Factors</th>
<th>Saudi Arabia</th>
<th>Kuwait</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short run</td>
<td>Money supply</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Aggregate demand</td>
<td>0.03</td>
<td>0.10</td>
</tr>
<tr>
<td>Long run</td>
<td>Imported inflation</td>
<td>0.83</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Pass-through factor</td>
<td>-0.19</td>
<td>-0.15</td>
</tr>
</tbody>
</table>

14. IMF’s study does not address explicitly Kuwait’s decision in May 2007 to shift the peg of its currency from the US dollar to a trading-partners’ weighted basket of currencies. However, for reasons detailed subsequently by the IMF authors (see next footnote), Kuwait’s move would hardly affect the main results and conclusions of their study.4 A further remark is that the IMF authors assume that given the similarities of the GCC economies the above results may help develop a better understanding of the inflationary process in the area. While such a generalization is plausible, the IMF authors’ suggestion should not be construed as an invitation to infer their results to other GCC countries.

Policy responses and challenges

15. Policy makers in MENA region face serious challenges as they strive to contain mounting inflationary pressures. While soaring world prices and the resulting imported inflation seem beyond their control, they have little room for maneuver to influence the pass-through effect. Furthermore, the fiscal and monetary policies needed to address internal factors appear beset with quandaries.

16. Indeed, fiscal policies face a challenging balancing act. On the one hand, fiscal authorities have to propose some very unpalatable spending cuts to which most governments have committed in principle. On the other hand, they have to allocate further resources to address structural supply bottlenecks they perceive as the primary cause of inflation. In addition, they have come under increasing pressure to deal with the immediate consequences of inflation by inter alia compensating public service workers for lost purchasing power and propping up pension and subsidy funds.

17. Similarly, but in a different way, monetary policies are hampered by limitations. This is particularly the case of the highly open economies of the GCC countries where monetary policies are subordinated to the exchange rate regimes. This makes achieving the stability of local currencies against the peg currency, or basket of currencies, a major objective of policy. Except the Central Bank of Kuwait (CBK), which can arguably be seen as having a little more room for maneuver, all others have to align their monetary policies with that of the USA, the country of the currency peg. In practice this translates into their benchmark interest rates closely tracking the Funds rates set by the Federal Reserve. Such a limitation has been particularly felt in the wake of the US mortgage crisis, when the Federal Reserve’s aggressive monetary expansion has put tremendous pressure on exchange rates in the region.

18. Some central banks have specific schemes to manage liquidity in the banking system. They do so by injecting liquidity through short-dated repos (repurchase agreements), or absorb liquidities through overnight reverse repos. This is the case of the Saudi Arabian Monetary Agency (SAMA), which accommodate banks’ liquidity needs at the repo rates and in volumes it determines.5 Judging from recent notifications, the repo window seems to have been made more expensive to the Saudi banks. Indeed, as shown in the Figure below, while SAMA has set the Reverse Repo to closely track the US Fed Funds rates, at 2% at the moment of writing, the Repo rate has since December 2007 been kept unchanged at 5.5%.

19. A further adjunct of the monetary policy tool kit used in this context is prudential regulation. In recent months, a number of central banks in the region, including CBK and SAMA, have raised the minimum reserve requirements of commercial banks (funds they have to set aside at the central bank) or lowered their loan-to-deposit ratios. This appears to be an ultimate move to contain excess liquidity in the banking system and keep credit expansion under control.

Conclusions

20. We have attempted in this commentary to provide some insight into the causes of inflation in MENA region, starting with a monetary perspective which centered on excess money supply as a key determinant. We then drew on a recent IMF’s study, for the case of Saudi Arabia and Kuwait, to find out about other factors. These include aggregate demand, imported inflation and exchange rate pass through. While exchange rates will do little to offset imported inflation, mitigating the effect of other factors poses significant challenges to policy decision makers.

21. Fighting inflation is normally the primary objective of monetary policies. Even so, central banks in MENA region lack a well-established framework to achieve this objective. Furthermore, those in the GCC area, which place a higher priority on stabilizing a pegged exchange rate, have reduced as a result the functionality of their interest rates instruments. Their efforts to use other tools of monetary policy are unlikely to be effective without fiscal authorities delivering on their commitments. The real challenge, in this regard, is curbing governments’ spending in times of plenty.

4 In a correspondence with the authors of this commentary, the IMF’s staff members clarified this point as follows: “pegging to a single currency or a basket of currencies would not have any impact on trading partners’ inflation [...]. In addition, the pass-through effect is measured using the nominal effective exchange rate (NEER) which represents the relative value of the Kuwaiti dinar compared to Kuwait’s trading partners’ currencies and hence its measurement is not sensitive to the exchange rate regime. Moreover, the basket peg regime existed in Kuwait pre 2003 and post May 2007 and hence the [underlying data] time span captures well the basket regime episode including in 2007.”  