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EXTERNAL AND INTERNAL DETERMINANTS OF INFLATION: A CASE STUDY OF SAUDI ARABIA

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Saudi Arabia experienced double digit inflation in recent years, especially in 2007 and 2008, after decades of average annual inflation rate of less than 1 per cent. The paper describes some of the plausible causes of inflation in Saudi Arabia. Besides identify some common causes of inflation such as money supply, the paper identifies some other determinants of inflation that are relevant to the current economic setting of the country. Though the Saudi riyal (along with some other currencies of the GCC countries) was officially pegged to the SDR till the end of 2002 but effectively pegged to the US dollar. From the beginning of the 2003, the riyal is officially pegged to the US dollar. Pegging the riyal to the US dollar seems to be the major determinant of the recent inflation in Saudi Arabia. Empirical results indicate money supply, interest rate and the riyal depreciation (with the depreciation of the US dollar against major currencies) are the main causes of inflation in Saudi Arabia. However, these causes are all ultimately tied to the pegging of the riyal. In other words, Saudi Arabia experienced imported inflation.

JEL classification: *E31, E42.*

Keywords: *Inflation, Exchange rates, Depreciation, Imported Inflation.*

1. INTRODUCTION

There are conflicting studies on the causes of inflation in different countries over different time periods given the evolving dynamics of a globalized economic system. Saudi Arabia acceded to the World Trade Organization (WTO) in 2006 and agreed to reduce tariffs and barriers on imports which theoretically should have reduced prices and benefited local consumers. In reality, the period 2007-2008 was characterized by rising commodity prices worldwide and a decline in the value of the US dollar. Given that Saudi Arabia maintains a fixed exchange rate against the US dollar, both of these factors adversely affected Saudi Arabia which relies heavily on imported non- oil commodities, mostly food. Therefore, understanding and controlling the root causes of inflation Saudi Arabia have become an interesting important task.

The literature on inflation and its causes are extensive and varied, and have some relevance to the Saudi setting. De Mendonça and Filho (2007) discuss the effect of economic transparency of central banks on alleviating poverty and have argued that increasing central bank transparency contributes to the convergence of inflation expectation and inflation target. Hernandez-Verme (2004) studies the effect of alternative exchange rate regimes in small open economies; she has found that under floating exchange rates the rising domestic inflation may increase production if credit is rationed.

She also argues that there are inflation thresholds where increasing inflation beyond the threshold level will reduce domestic output.

Lommatzsch and Tober (2006) have analyzed the causes of varying inflation rates in the European Union and have tried to explain the inflation drivers between different European countries and different industries. They have tested the Balassa–Samuelson effect to see whether productivity increase in services relative to industries would push prices upward. They found that differences in productivity growth, and thus the difference in the size of the relative price adjustment between countries, do not have unambiguous consequences for the overall inflation rate.

Oatlay (1997) carried out statistical analysis to test the validity of the assumption that central bank independence causes low inflation. He pointed out that the empirical tests supporting this theory were unsatisfactory, since they did not include control variables and some important political variables. He used a political-economic model of inflation and the results support the underlying theory through the inclusion of such variables. Iversen (1997) presented a game-theoretic model of wage bargaining and monetary policy making to test the hypothesis that the two are complementary in inflation theory. He addressed that the causes of inflation are usually analyzed as a function of either wage bargaining or the independence of central banks and provided empirical evidence that there might be merit to both arguments.

Pelagidis and Toay (2007) tried to test whether the introduction of the Euro was the reason for high inflation in Greece as many believed. They found that inflation can be attributed to domestic issues such as strong seasonal effects and product market rigidities. Therefore, they have recommended for the relaxation of the regulations to open the domestic markets and break the oligopolistic nature of many Greek industries.

High rates of inflation can have both direct and indirect well-known consequences. These tend to operate through three main channels:

- **Fiscal** – Inflation, if unanticipated, can have a beneficial effect on a government's debt burden as the stock of local currency debt is eroded in real terms. This played a role in the past when some countries (e.g. some Latin American countries in the 1980s) attempted to "inflate their debt away". This effect is often offset over the longer term, however, by a range of negative developments. Governments can find it difficult to maintain fiscal discipline during inflationary periods as citizens demand compensatory increases in salaries, subsidies, and welfare payments to offset their decaying purchasing power. Governments' creditors can demand higher and more flexible interest rates. Inflation can also undermine confidence and cause an exchange rate depreciation which can swell the cost of servicing foreign currency debt in local currency terms.
- **Political** – High rates of inflation often raise social tensions as the purchasing power of citizens, especially those on lower incomes, is undermined. Governments, public and private employers are sometimes reluctant to raise wages, subsidies, and welfare payments quickly enough in order to offset this, partly because of a justified fear that such increases will exacerbate inflationary pressures and lead to further demands. The social impact of inflation can be

particularly harmful if surging inflation damages the real sector and causes higher unemployment.

- **Economic** – High rates of inflation can jeopardize growth by deterring productive investment, perverting market incentives, encouraging wage hikes, and disrupting activity through strikes or more serious political unrest. The free functioning of markets can also be hampered by the introduction of unorthodox economic measures such as price controls, as governments attempt to stem inflation through alternative means.

The rest of the paper is organized as follows. Section 2 discusses impact of inflation on Gulf countries. An overview of the Saudi Arabian economy and its central bank and potential determinants of Saudi Arabia inflation are discussed in sections 3 and 4, respectively. Empirical results are reported in section 5. Section 7 concludes the paper.

2. INFLATION AND ITS IMPACT ON GULF OIL PRODUCERS

The oil producing countries of the Middle East have experienced a strong resurgence of inflation not seen since the mid-1970s oil boom era (Moody's 2008). This seems to have been due to several factors including a preponderance of fixed or heavily managed exchange rates, oil fueled liquidity expansion, widespread infrastructure bottlenecks and a reliance of most countries on food imports. Of all the international Monetary Fund's regional groupings, the Middle East experienced the highest inflation rate in 2007 (10.4 per cent) and this continued to accelerate in 2008.

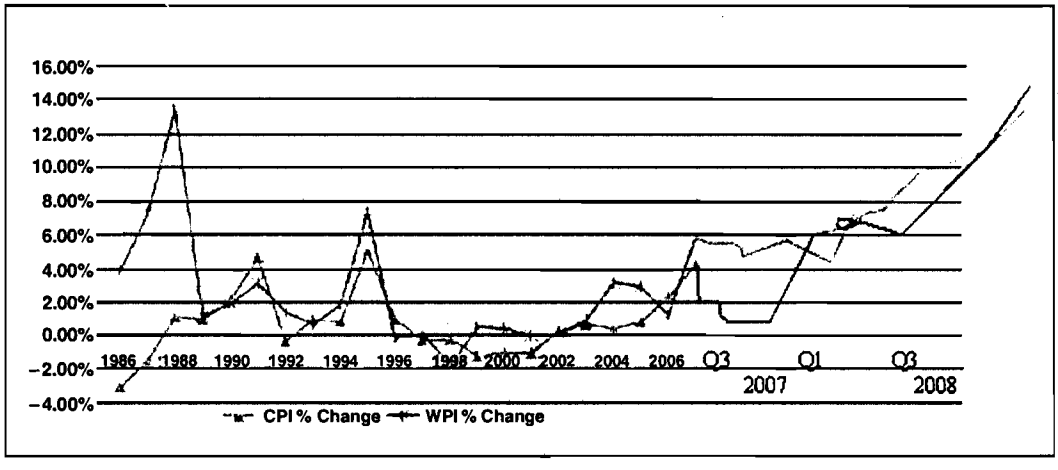
Although the oil-exporting countries of the Gulf can currently afford to raise rates of government expenditure in order to cushion the social cost of inflation for their citizens, such actions are gradually making governments to rely on higher and higher oil prices in order to balance their budgets. This may constrain their ability to adjust to a potential future downturn in oil prices, as happened during 2008 when oil prices fell to $50 pb from peaks of $147 pb. Accelerating price growth also erodes economic competitiveness, particularly in non-hydrocarbon sectors. This could potentially undermine governments' efforts to develop their non-oil sectors and thereby diversify away from oil. Unorthodox economic measures that the Gulf governments are imposing, such as price controls, in an effort to contain inflation, could affect real activity by distorting economic incentives.

The government of Saudi Arabia was not overly concerned about inflation until 2006 when rising inflation started to make the headlines after reaching nearly an annual rate of 10% from an average annual inflation rate of just under 1% in the previous decade (SAMA, 2008). Inflation was becoming a social concern that affected the economic wellbeing of Saudi families by negatively affecting their purchasing power. Although the majority of the population did not know the primary reasons for the inflationary bout, they held the impression that the government can take action to keep prices from getting out of control and thereby putting internal pressure on the government to act.

Blame was placed squarely on the shoulders of businessmen and other so-called black marketers, but businessmen argued that the rise in prices was in fact reducing their profit. In their opinion, price control of many of their products did not allow them easily to pass all of the increasing costs to consumers, forcing traders to accept lower

margins than before, regardless of higher selling prices. This seems to be the case as supported by the fact that the Saudi Wholesale Price Index (WPI) had risen more than the Consumer Price Index (CPI) during the last two decades, as illustrated in Figure 1 below. It is noticeable that the gap between the two measures of inflation has virtually disappeared over the last two quarters of the year last year 2008.

Figure 1
Saudi CPI Inflation and Wholesale Price Inflation, 1986-2008



3. OVERVIEW OF SAUDI ARABIA ECONOMY AND SAMA

The biggest shifting point in the Saudi Arabian economy was by far the discovery of oil in the last century. The new Kingdom was reunited under one entity containing the small emirates and tribes of the Arabian Peninsula and economic activity varied from region to region. Farming was the major activity in areas having abundant water such as *Al-Ahsaa* and *Al-Qaseem* while arid towns relied more on trade and governmental support. The western region was the richest at that time from businesses serving the pilgrims of the holy mosques in *Makkah* and *Madina*. That period also witnessed major internal immigrations among the Kingdom's regions specifically from poor small towns to the big cities. All this has changed shortly after the discovery of oil (Presley 1984, Cleron 1978).

Extracting and selling crude oil has been the main source of income for Saudi Arabia since oil was discovered (Cleron 1978). In addition, a significant portion of the industrial, contracting and service industries serve the oil industry. The government also invested and encouraged the private sector to invest in downstream products such as petrochemicals to leverage its strategic resource and to allow more diversification in its economy. This strategy allowed the Saudi Arabian Basic Industries (SABIC) to be founded in 1977 as a petrochemical giant which was the seed of a major industry in the Saudi economy (SABIC 2007). Oil is extracted and sold by Saudi Aramco, the largest oil company in the world, which was owned by American oil companies, but was later transferred completely under Saudi government ownership. Saudi Aramco employs thousands of

Saudis and is a main customer (and in some cases the only one) for many businesses and contractors.

The discovery of oil has also affected the nature of the work force in the Kingdom. When oil revenues increased sharply, the government allocated significant amount of money for infrastructure development. This included building new roads, airports, schools, hospitals, and even whole new cities. These projects required qualified labor that could not be met by local citizens, leaving only the choice of bringing expatriates in almost all fields, including for government bureaucratic work (Ramady 2005).

The availability of cheap workers and the sudden increase in average income have changed the life style of Saudis. While the pre-oil generations accepted any type of jobs and wages to survive, the new generation was choosier in their choices, but seemed to have no problems finding suitable jobs and positions due to the country's economic condition.

For young Saudis nowadays, things are a bit different. The population is much larger due to a high population growth rate that contributed to the GDP per capita to drop from SR65,000 in the early 1980s to SR40,000 now. In addition, the economy is more developed compared to earlier periods; average education levels are higher than before. Under these competitive conditions, it is now harder for Saudis to find suitable jobs. However, the social effect of the previous boom still affects the work choices of Saudis, and it seems psychologically difficult for them to accept physical jobs or jobs located in remote areas. This has resulted in high unemployment rates (Ramady 2005).

The boom of the seventies did not only "spoiled" Saudi workers but also Saudi businesses. Companies got used to employing expatriates for years and it has become difficult for them to think of recruiting Saudis for some positions. The Saudi Minister of Labor Dr Al Gusaibi once described the situation in a simple phrase: "our problem is that we are trying to match job seekers unwilling to take the jobs with employers who are unwilling to recruit them."

Central bank responsibilities in Saudi Arabia are performed by the Saudi Arabian Monetary Agency (SAMA) which was established in 1952 and is managed by a Governor supported by a board of directors. All board members, including the Governor and Vice Governor, are nominated and appointed by the Council of Ministers which limits the independence of SAMA and the Governor to some extent (Ramady 2005). The role of the SAMA at the beginnings was limited but it faced major challenges in the 1960s until the introduction of the Banking Control Law. Since then, it has the responsibility of monitoring and supervising the commercial banks and developing a healthy financial system. SAMA also acts as a banker for the Saudi government and it manages the country's foreign exchange reserves (Ramady 2005). It used to manage and supervise other areas such as the stock market but this is now supervised by the Capital Market Authority since 2006 (CMA 2007). A key stated objective of SAMA is to maintain price and exchange stability. This makes controlling inflation is a major role SAMA is supposed to play.

4. POTENTIAL FACTORS AFFECTING INFLATION IN SAUDI ARABIA

There are many factors that could possibly affect inflation in Saudi Arabia. Some of these factors are internal to the economy or are controlled by the SAMA such as the

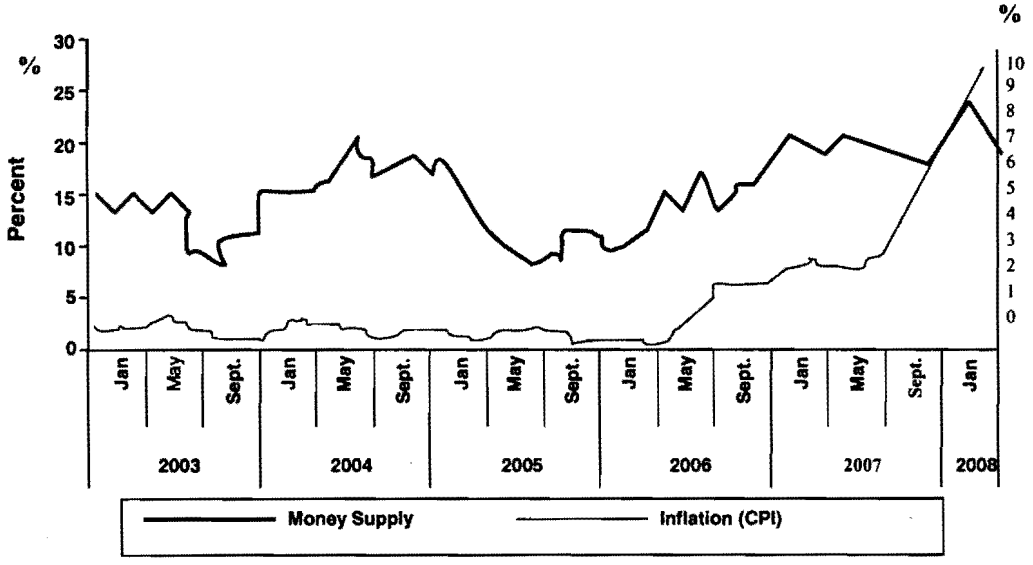
level of money supply while others are external and SAMA has no direct control over them. The paper focuses on three internal factors and three external factors to determine the significance of each of the factor's effect on Saudi inflation.

4.1 Internal Factors

Three internal factors such as money supply, stock market, and Saudi riyal interest rates are considered.

Money Supply: Money supply is arguably one of the most direct determinants of inflation. As more money circulates in the economy, more goods can be purchased and aggregate demand increases which pushes prices upward (Lipsey 1999). There are several measures for money supply, ranging from the narrowest definition (M1 in most countries and M0 in UK), to broader definitions such as M2 and M3. The SAMA uses M1 definition as money outside banks plus demand deposits, while M2 includes M1 plus time and saving deposits, and M3 comprises M2 plus residents' foreign currency deposits, marginal deposits for Letters of Credits, outstanding remittances, and banks Repo transactions with private parties (SAMA 2007). Figure 2 below seems to demonstrate a close correlation between increased Saudi money supply growth and a higher level of inflation. Left hand scale in figure 2 shows the money supply growth and right hand scale shows inflation rate.

Figure 2
Money Supply Growth and Inflation



Source: SAMA, 2007.

In order to counter the rising inflationary effect of increased money supply, the SAMA recently has started to use changes in bank reserve requirements for the first time since 1982 (Ramady 2005). The reserve requirements for commercial banks were

raised four times during 2007 and 2008 that can be seen as an attempt by the SAMA to absorb the liquidity generated by lower interest rates. After being held unchanged for 27 years, commercial bank reserve requirements have become one of the main tools that the SAMA has used to offset the impact of lower interest rates. Increasing the reserve requirement raises the amount of money banks have to keep as statutory deposits at the central bank that reduces the total they have available to lend and thereby slowing credit growth and ultimately inflation.

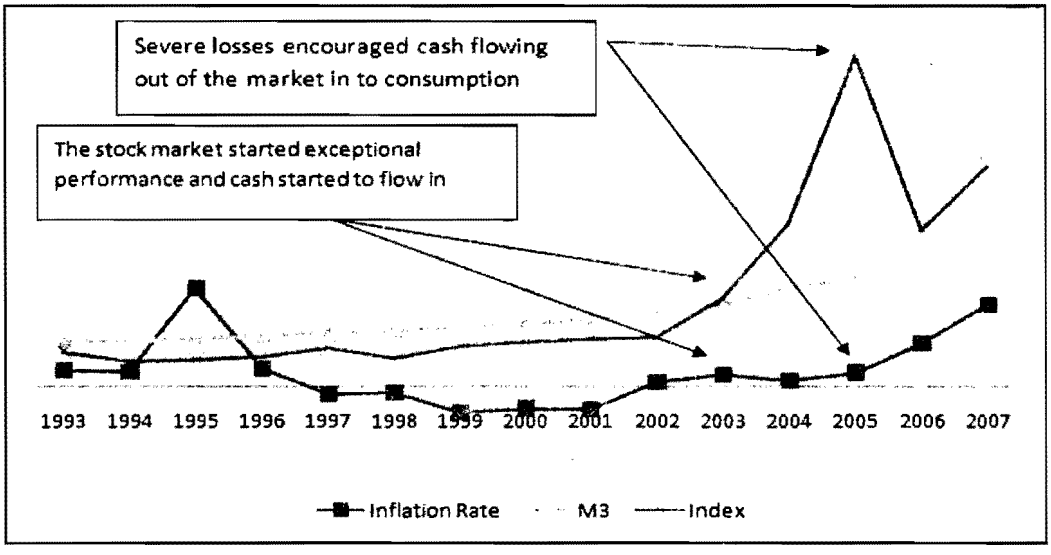
Some money supply data show that the two earlier hikes, in the reserve requirement in 2007 for current accounts which took it to 10 per cent from 7 per cent, had little effect. Commercial banks statutory deposits at the SAMA rose to SR42.4 billion in February, 2008 from SR28.8 billion in November, 2007 but banks were also able to increase other deposits at the SAMA over this period by SR15.5 billion (SAMA 2008). Money supply growth fell to a three-month low of 23 per cent in March, 2008 but private sector credit continued to rise and bank lending to the private sector as a proportion of total deposits was higher than before the reserve requirement was increased.

After a two percentage increase in the reserve requirement for current accounts in April, 2008, the SAMA raised the reserve requirement for current accounts again on May 3, 2008 to13 per cent; and for the first time raised the reserve requirement for time and savings deposits to 4 per cent from 2 per cent. These two moves required banks to raise their statutory reserves by SR16.1 billion. Since November 2007, banks have been required to set aside an additional SR25.1 billion as reserves, equivalent to 2.1 per cent of total bank assets (SAMA, 2008). Following the 2008 global financial crises, the SAMA reversed its statutory reserve requirements and reduced the level back to 7 percent by November 2008 in order to increase money supply and liquidity in the local markets despite the inflation rate still hovering around 10 per cent (*Arab News* , November 22, 2008). This action, combined with reducing its Repo rate in line with U.S. Fed actions, underscores the fact that the SAMA has little to maneuver in controlling domestic interest rates to counter the exogenously induced monetary policy actions due to its pegged exchange rate policy.

Stock Market: Although the first Saudi public company was formed in the 1930s, it was as late as the 1970s when the Kingdom began to establish a more formal stock market. There were 14 companies listed in 1975, but the number gradually increased to 115 by 2007. The turning point was in 2001 when the new electronic *Tadawul* trading system was introduced. The new computerized system facilitated electronic trading and allowed for (T + 0) settlement. This convenience attracted a lot of individual investors to trade using the new system. Furthermore, with the burst of the dot.com bubble in the international markets, considerable Saudi funds were transferred back to Saudi Arabia to escape losses in addition to the fear that Saudi accounts would be frozen as a consequence of the September 11, 2001 attack (Jibril 2006). The new funds kept flowing into the market and pushed stock prices up. In addition, Saudi companies were generating good results that attracted even more money and the trade volume jumped more than 40 times from 2001 to the end of 2005 (SAMA 2007). As illustrated in figure 3 below, the stock market may not have contributed to inflation directly, but the market's boom had probably delayed the onset of more severe inflation for a few years (Al-Sultan 2008).

Figure 3 shows that the growth rate of money supply (M3) started an exceptional increase in 2002 but the stock market was showing even more unusual gains that attracted more investment especially from individual investors and it absorbed a great deal of the increased money supply. As more citizens seemed to favor investing in the stock market and real estate (which was also booming) than to spend cash on consumable goods, the CPI was not severely affected. This phenomenon may have held the CPI stable for a while, but it allowed a bubble to form in the stock and real estate markets.

Figure 3
The Effect of the Saudi Stock Market on Cash Allocation



Source: SAMA, 2008.

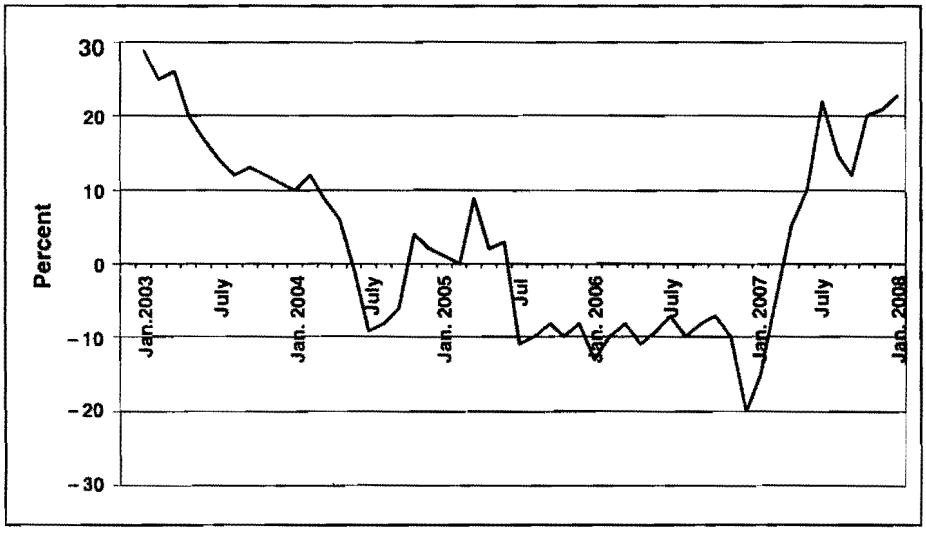
Once the stock bubble burst in early 2006, the flow of cash shifted direction and funds left the market, or at least new money stopped flowing into the market. In addition, new cash from higher oil revenues was spent on huge infrastructure projects, which raised government expenditures that eventually raised money supply (Al Rajhi Bank 2008).

Rapid expansion of private sector credit, particularly consumer credit, is fueling recent rise in inflation in Saudi Arabia as domestic banks, flooded with government driven money supply expansion, expanded their loan books. Figure 4 below shows an exceptional growth in consumer spending starting from January 2007.

While retail sales figures are not published in Saudi Arabia, data on point of sales transactions are available (SAMA 2008). Figure 4 shows that growth in consumer spending (measured as the three-month average of the average value of transactions per point of sale terminal) remained strong over the first quarter of 2008 when inflation rates were rising strongly. Figure 4 confirms our earlier findings (Figure 3) that the Saudi stock market volume trading might not be a major factor affecting inflation as it appears from the consumer spending patterns. Rather than spending, consumers put

most of their spare funds into the stock market from the mid-2004 and then cut back on spending due to the shock crash of the early 2006 before accelerating the spending from the beginning of 2007.

Figure 4
Recent Growth in Saudi Arabia Consumer Spending



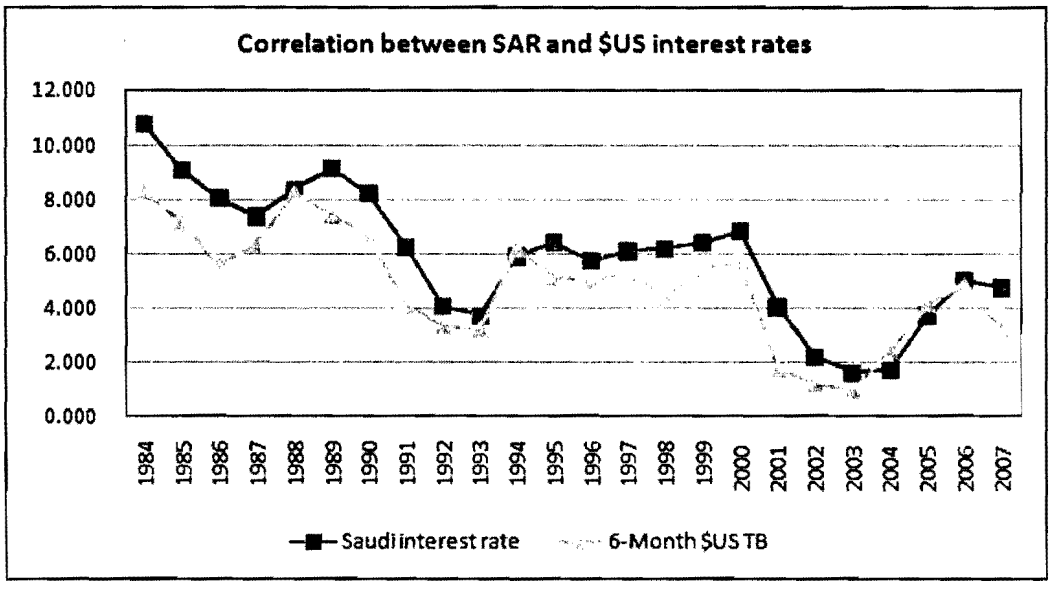
Source: SAMA, 2008.

Saudi Riyal Interest Rates: One classic tool for central banks to control inflation is through increasing interest rates. However, the SAMA has little room to maneuver when it comes to interest rate adjustment due to the pegging of the riyal to the dollar. When the Fed makes a decision regarding interest rates for the U.S. dollar, it affects the Saudi interest rates due to the fixed exchange rate with the US dollar. The pegging of the Saudi riyal with the US dollar affects inflation in two ways: first by reducing the purchasing power of riyals when the dollar weakens (as discussed below), and second by forcing a potentially unwelcome Saudi monetary policy for interest adjustment.

Facing a recession in the US in 2008 and the Fed kept on lowering interest rates to stimulate the economy. On the other hand, Saudi Arabia was entering a prosperity era fueled by increased oil revenues. A more appropriate monetary policy would have been to keep interest rates high to stabilize the economy and avoid overheating the economy and thereby inflation. As the Fed kept on lowering interest rates, the SAMA had no choice but to reduce it as well. Pegging the Saudi riyal to the US dollar, the Saudi interest rates have basically shadowed the US interest rates as shown in Figure 5 below.

The SAMA has made it clear on several occasions that it might need to change its policy of pegging the riyal with the dollar in the long term, but in the short term the governor of the SAMA announced that floating the riyal will not do much in slowing inflation rate, and the costs of doing so would be much higher than the benefits.

Figure 5
Movements of Saudi Riyal and U.S. Dollar Interest Rates 1984-2007



Source: SAMA, 2008.

4.2 External Factors

In addition to the internal factors discussed above, three external factors would have affected inflation in Saudi Arabia. These are currency exchange rate, US dollar interest rate and oil prices.

Currency Exchange Rates: Saudi Arabia relies heavily on imported goods. Therefore, changes in the exchange rates of the Saudi riyal against other currencies will directly affect the cost of many goods, with the exception of goods coming from the U.S.A. as the SR/$ rate is fixed. With the continued weakening of the dollar during 2006-2008 against most major currencies, the riyal which is 100% pegged with dollar also weakened. Importers had to pay more riyals to buy the same amount of goods, and they passed on the extra cost to the consumers by raising their domestic prices. A considerable portion of the goods in the Saudi CPI are imported from non-US countries implying that the CPI will rise with the weakening of the dollar.

U.S. Dollar Interest Rates: Since the riyal is pegged to the dollar, U.S. dollar interest rates as (discussed above) affect Saudi riyal interest rates, and consequently, affect money supply in the Kingdom. We test the significance of U.S. dollar interest rate impact on inflation in Saudi Arabia.

Oil Prices: For oil producing countries such as Saudi Arabia, higher oil prices seem to be a blessing on the surface as oil is a major contributor to the country's GDP and balance of payment. Oil is an input for the majority of the industries. When crude

oil is expensive, refined oil products become expensive in turn, and industries such as petrochemicals relying on them face increasing costs that force them to increase their prices. In addition, oil is still the major energy source that powers modern life, and when it becomes expensive, businesses have to pay an extra cost to pay for electricity, fuel and to compensate their staff for an increased cost of living; all that lead to inflation.

There is another dimension for oil price effect on inflation is that previously expensive alternative fuels are now feasible. For example, ethanol powered machinery and cars are starting to be produced and the demand for bio-fuel is increasing. This in turn increases the demand and price of vegetables that are used to produce the new fuel. In addition, this new derived demand on farming lands in some countries has increased the prices of farming lands forcing the farmers to raise prices (Al Sultan 2008).

5. EMPIRICAL RESULTS

6.1 Correlation Results

Table 1 reports correlation coefficients between CPI and other variables namely money supply (M1, M2, M3), stock trading volume in Saudi stock exchange, stock index (TASI index) both current and lag by one year, Saudi interest rate, SR/Euro exchange rate, SR/£ exchange rate, SR/¥ exchange rate, US interest rate and oil price. Numbers in parentheses are p-values. Data were taken from the SAMA, Bloomberg and the Fed and IFS websites. All are annual data from 1986 to 2007 with the exception of Euro exchange rate which was from 1999, as this was the year that the Euro was first introduced.

Table 1
Correlation Coefficients Between CPI and Other Determinants

M1	*M2*	*M3*	*Stock trade volume*
0.684	0.686	0.69	0.417
(0.000)	(0.000)	(0.000)	(0.053)
Stock Market Index (current)	*Stock Market Index (lag)*	*SA Interest Rate*	*SR/Euro Exchange Rate*
0.33	0.362	0.518	0.732
(0.23)	(0.2)	(0.013)	(0.025)
SR/£ Exchange Rate	SR/¥ Exchange Rate	US Interest Rate	Oil Price
0.055	0.553	0.495	0.545
(0.79)	(0.007)	(0.019)	(0.009)

Results in Table 1 show that the Saudi CPI is significantly correlated with the money supply irrespective of the definition of money used. CPI is not significantly correlated with either stock trade volume or stock market index (current or lag). CPI is also significantly correlated with Saudi interest rate, SR/Euro and SR/¥ exchange rates, US interest rate and oil price. However, CPI is not significantly correlated with SR/£ exchange rate.

6.2 Regression Results

Variables considered above (Table 1) are all non-stationary so that the results in Table 1 need to be interpreted carefully. Also, since the main purpose of the paper to identify the factors that determining inflation in Saudi Arabia, the following equation is estimated:

$$\pi_t = X_t \beta + \varepsilon_t,$$

where π_t is the inflation rate (percentage change in the CPI) at time t, X_t is the vector of other variables that include percentage changes in M3 money supply (dm_t), stock price index (ds_t), an index of nominal effective exchange rate against the Saudi riyal (de_t), and oil price (dp_t). The symbol 'd' in front of a variable means the percentage change in that variable. It also includes the US interest rate R_t^* (Treasury bill rate) and ε_t is the error term. The estimated results are as follows (absolute t-statistics in parentheses):

$$\begin{array}{cccccccc} \pi_t = & -1.289 + & 0.469\pi p_{t-1} + & 0.086 dm_t + & -0.019 ds_t - & 0.316 de_t + & 0.345 R_t^* - & 0.019 dp_t \\ & (2.11) & (4.22)^{**} & (2.31) & (2.63)^{*} & (6.24)^{**} & (3.62)^{**} & (1.82) \end{array}$$

$$R^2 = 0.80 \qquad \bar{R}^2 = 0.68 \qquad D-W = 2.21 \qquad LM(1) = 0.54$$

The Breusch-Godfrey LM-test statistic shows there is no further problem of serial correlation. Superscripts "**" and "*" indicate coefficient estimates are statistically significant at the 1 percent and 5 per cent level, respectively. Results support the earlier discussion that the growth rates of money and stock price index, Saudi riyal depreciation (de_t) against major currencies, and the US interest rate all significantly affect the Saudi inflation rate. However, the values of coefficient estimates of the growth rates of money and stock price index and oil price are negligible; moreover, coefficient estimate of oil price is statistically insignificant and does not have the expected sign. Whenever the US dollar depreciates against the major currencies, the Saudi riyal depreciates as well because of the pegging of the riyal with the US dollar. Results indicate riyal depreciation (de_t)is the major cause of the Saudi inflation. In other word, Saudi Arabia experiences the imported inflation due to its fixed exchange rate policy.

6. CONCLUSIONS

Slowing down inflation rates is not a simple task, and taking immediate reactions without careful consideration may harm the economy in the long run more than what current inflation rates do. Governments can cut expenditure to control money supply, but this would be at the cost in economic and social development. However, since money supply is one of the drivers of inflation, the SAMA can take action to reduce money supply. As interest rate adjustments are out of SAMA's control, it could raise reserve requirements for commercial banks, which can reduce money supply. SAMA has in effect carried out this policy by gradually increasing the reserve requirement on current account liabilities as well as on saving accounts.

The stock market showed that it can absorb a great amount of cash when people are bearish about it. However, the number of listed companies is still small relative to the size of the Saudi economy, and further cash entering the market can create another asset bubble that may have a disastrous social impact. This in fact happened during the

stock market crash of 2006 and the crash of 2008 which fell in line with international stock market declines.

Interest rates also showed a significant impact on inflation, but SAMA is constrained in using this monetary tool. Intuitive thinking would suggest that the SAMA should float the riyal by changing its policy of direct peg with the US dollar, but in practice, the SAMA has maintained its internal control on Saudi interest rates by reducing the reverse Repo rate (the rates at which banks deposit with the SAMA), and raising the Repo rate (the rate at which they borrow from the SAMA), to discourage further lending to the private sector.

The empirical results highlight the fact that domestic inflation is influenced by exogenous inflation drivers, specifically dollar pegged exchange rates. The weakening of trade-weighted nominal exchange rate of the Saudi Riyal in line with a weaker U.S. dollar has tended to amplify the effects of imported inflation in the Kingdom, especially from the Eurozone and Japan which represent significant trading partners with Saudi Arabia. At the same time, fixed dollar rates have tended to act as a shackle on Saudi monetary policy requiring that interest rates to be in line with U.S. interest rates. This has led to substantially negative real interest rates in Saudi Arabia of around 4-5 per cent for the period 2007-2008. Negative real interest rates are in turn encourages asset price inflation in both local stock markets and real estate prices, despite occasional sharp corrections in stock market prices.

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