



Monetary policy, exchange rates and stock prices in the Middle East region



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ABSTRACT

A structural vector autoregressive model is employed to investigate the impact of monetary policy and real exchange rate shocks on the stock market performance of Kuwait, Oman, Saudi Arabia, Egypt and Jordan. In order to identify the structural shocks both short run and long run restrictions are applied. Unlike previous literature the contemporaneous interdependence between the financial variables is left unrestricted to give a more accurate depiction of the relationships. The heterogeneity of the results reflects the different monetary policy frameworks and stock market characteristics of these countries. Mainly, monetary policy and the real exchange rate shocks have a significant short run impact on the stock prices of the countries that apply a relatively more independent monetary policy and flexible exchange rates.

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1. Introduction

The debate between academics and policymakers regarding whether or not monetary policy should respond to the developments in the financial markets has been ongoing for quite a while with no consensus reached. The main motivation behind this dispute is the potential impact that asset price fluctuations could have on the real economic sector, mainly output and inflation. The 2007 US Subprime crisis and its repercussions throughout the world financial markets, and the spillover effects of the rise and later collapse of asset prices on real economic activity, has only led to the reignition of this debate.

On the one hand, proponents¹ of a proactive monetary policy response to asset price booms and busts argue that such cycles can be costly, creating distortions in investment and consumption decisions and leading to excessive fluctuations in output and inflation. They propose a policy where monetary authorities “lean against the wind”, that is raising and lowering interest rates in times of rising and falling asset prices beyond that warranted by fundamentals in the hope of achieving macroeconomic stability. On the other hand opponents² of a proactive monetary policy argue that it is difficult for monetary authorities to identify when asset

price misalignments occur, and if possible, whether monetary policy can in fact bring asset prices back in line with their fundamentals without creating a recession. Accordingly, monetary policy should follow a reactive approach where the authorities wait and see whether asset price reversals occur, and react in an ex post accommodative manner to the extent that these reversals affect output and inflation stability. In either case both approaches effectively assume that monetary policy can affect asset prices. Therefore from the perspective of monetary policymakers it is important to have reliable estimates of how asset prices react to monetary policy instruments for policy decisions to be effective.

Most studies that set out investigating the relationship between asset prices, mainly stock prices, and monetary policy have done so for developed economies, while only a few papers have attempted to empirically verify this relationship for emerging markets. This study investigates the relationship between monetary policy and stock prices in five emerging Middle Eastern economies; Kuwait, Oman, Saudi Arabia, Egypt and Jordan.

The number of studies examining monetary policy for these countries is very scarce. For the members of the Gulf Cooperation Council (GCC), Kuwait, Oman and Saudi Arabia, the emphasis of these studies is mainly on the traditional monetary transmission mechanisms such as the interest rate and bank lending channels. For instance *Cevik and Teksoz (2012)* find that these channels are relatively effective in influencing non-hydrocarbon output and consumer prices while the exchange rate channel does not appear to play an important role. *Prasad and Espinoza (2012)* examine the pass-through of policy rates to retail

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¹ See for example *Bordo and Jeanne (2002)*, *Cecchetti, Genberg, Lipsky, and Wadhvani (2000)*, *Roubini (2006)* among others.

² See for example *Bernanke and Gertler (1999, 2001)*.

rates and find that it is on the low side. The main reason for the lack of motivation for such studies is that a peg to the US dollar provides a nominal anchor for monetary policy in these countries. Therefore given the openness of capital accounts it is reasonable to expect that their policy rates closely follow the US rates with limited scope for monetary independence. Bova and Senhadji (2009) have investigated the interest rate convergence between the GCC rates and the US and find that the covered interest rate parity³ holds, although with some difference across countries. However they also note that in the short run there is some degree of maneuvering space where negative and positive interest rate spreads have been purposely maintained by central banks to reduce inflation, counter exchange rate speculation and stimulate economic activity and stock market performance, as was the case after the stock market crash in 2006. They also conclude that Kuwait, which allows for a relatively more flexible exchange rate, and Oman which imposes relatively stricter restrictions on capital movements, have followed the US monetary policy less closely than the rest of the GCC countries.

Poddar, Khachatryan, and Sab (2006) consider the interest rate, bank lending, exchange rate and asset price channels in Jordan. They use a structural vector autoregressive (SVAR) approach and identify the exogenous shocks using a standard recursive ordering where stock prices is ordered before the policy rate. They find that monetary policy is generally ineffective in affecting output, the exchange rate or asset prices. Like the GCC countries Jordan also pegs its currency to the US dollar, however Maziad (2009) finds that the Jordanian central bank maintains some autonomy over the short run to respond to developments in inflation and output.

The Egyptian financial sector is relatively more developed and inflation targeting is the main framework anchoring monetary policy. Al-Mashat and Billmeier (2008) also employ a structural vector autoregression model to examine the effectiveness of monetary policy. They find that the exchange rate channel plays a strong role in propagating monetary shocks to output and prices, while the bank lending and asset pricing channels are weak. Policy rates are also ordered last in their identification scheme, restricting stock prices to respond only with a lag to monetary shocks. Arbatli and Moriyama (2011) find similar results however they do not consider asset prices in their model.

The current paper attempts to fill the gap in the literature on monetary policy by being the first to consider the interaction between monetary policy and stock prices in Kuwait, Oman and Saudi Arabia using the structural vector autoregression approach. In addition, there exists a simultaneity problem when trying to empirically investigate the relation between stock prices and monetary policy. Given the forward looking nature of stock prices it does not seem reasonable to assume that stock prices will not respond immediately to a monetary policy shock, at the same time it is also not reasonable to assume that monetary policy only responds with a delay towards stock price shocks. Therefore using recursive short run restrictions to identify structural shocks in a VAR framework greatly undermines the empirical investigation. This paper follows Bjørnland and Leitemo (2009) in employing Blanchard and Quah (1989) long run restrictions to identify the structural shocks between stock prices and monetary policy. By assuming that money neutrality holds in the long run, the short run relationship governing stock prices and monetary policy is left unrestricted. Thus contrary to Poddar et al. (2006) and Al-Mashat and Billmeier (2008) it is assumed that monetary policy and stock prices can respond to each other's shocks in the short run, thus providing a more accurate empirical depiction of the relationship. Moreover many firms operating in the individual countries may be import or export oriented, thus the real exchange rate might play an important role in influencing these firms' profitability and consequently their stock prices. For this reason the SVAR model is extended to include the real exchange rate.

³ Under the assumption of free capital flow and perfect substitutability between domestic and foreign assets, the covered interest rate parity states that the forward premium of a foreign currency should be equal to the interest rate differential between the two assets.

The next section discusses the relationship and simultaneity problem between monetary policy and stock prices and exchange rates, and between stock prices and exchange rates in more detail. Section 3 presents the SVAR method and the different identification schemes it uses to solve the simultaneity problem, while this paper's identification scheme is presented in Section 4. Section 5 discusses the data and model specification and the results are presented in Section 6. Finally, the last section provides a brief discussion of the results and concludes.

2. Monetary policy and asset prices

2.1. The effect of monetary policy on stock prices

There is a general consensus among economists that monetary policy plays a significant role in stock price movements.⁴ Starting from the dividend discount model for stock valuation, monetary policy which affects market interest rates is predicted to affect stock prices through two main channels (Smirlock & Yawitz, 1985). First a contractionary monetary policy which may be conducted through increasing policy rates, will eventually lead to a rise in the market interest rates that are used by investors to discount expected future cash flows resulting in lower stock prices. The second channel is through its impact on expectations of future cash flows such as earnings of the firm. To the extent that a monetary policy contraction can influence real economic activity it will affect the future earning potential of firms. As explained by Bernanke and Gertler (1995) for instance, a rise in interest rates caused by a monetary tightening can reduce firm's net cash flows by the extent that it leads to a fall in aggregate demand and consumer spending and an increase in interest expenses paid. Additionally the market interest rate rise would lead to a deterioration of the firm's financial position, causing it to face a higher external finance premium. This forces it to cancel or postpone profitable investment opportunity and thus lowering its potential future earnings. On the other hand the tight monetary condition can curtail the supply of credit provided by commercial banks to firms.

Bernanke and Kuttner (2005) also empirically investigate through which channels monetary policy affects stock prices. In addition to those previously mentioned they find evidence supporting a third channel which operates through the risk premium on stocks. The looming expectations of a recession brought about by the tightening monetary conditions could lead investors to view stocks as more risky investments especially with the increased volatility during the downturn. To compensate for the increase in perceived riskiness investors will demand a higher return which can only be achieved through lower stock prices.

Finally monetary policy can affect stock prices through the traditional liquidity channel as in Hamburger and Kochin (1972) and Mishkin (1996). Monetary policy that curtails liquidity will in general force the public to liquidate assets to increase their money holdings. Among these assets are stocks which would eventually lead to a reduction in their prices.

2.2. The response of monetary policy to stock prices

The main focus of monetary policy is to respond to actual and forecasted inflation and the output gap in order to minimize economic fluctuations. However there are a number of reasons why monetary authorities may consider asset prices in general and stock prices in particular when setting monetary policy.

Stock prices play an important role in the transmission of monetary policy. For instance Tobin (1969) defines q as the ratio of a firm's market value to replacement cost of capital and asserts that a rise in q makes

⁴ Given the forward looking nature of financial market participants, it is expected that it is the unanticipated monetary policy changes that can impact stock prices as anticipated or expected monetary policy would have already been incorporated in stock prices.

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