



Stock market response to monetary and fiscal policy shocks: Multi-country evidence



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ABSTRACT

A Structural VAR model is employed to investigate the effects of monetary and fiscal policy shocks on stock market performance in Germany, UK and the US. A significant number of past studies have concentrated their attention on the relationship between monetary policy and stock market performance, yet only few on the effects of fiscal policy on stock markets. Even more we know little, if any, on the effects of fiscal and monetary policies on stock market performance when the two policies interact. This study aims to fill this void. Our results show that both fiscal and monetary policies influence the stock market, via either direct or indirect channels. More importantly, we find evidence that the interaction between the two policies is very important in explaining stock market developments. Thus, investors and analysts in their effort to understand the relationship between macroeconomic policies and stock market performance should consider fiscal and monetary policies in tandem rather than in isolation.

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1. Introduction

The aim of this paper is to examine the effects of fiscal and monetary policies on stock market developments in the UK, the US and Germany. It is widely believed that monetary policy should not be examined in isolation from fiscal policy, and vice versa, as both their individual stances, as well as their interaction, play an important role in the economy and thus, we argue, that they also influence stock market performance. Even though a significant number of past studies have concentrated their attention on the relationship between monetary policy and stock market performance (see, inter alia, Bjornland and Leitemo, 2009; Conover et al., 1999; Fama and French, 1989; Gali and Gertler, 2007; Gertler and Gilchrist, 1993; Jensen and Johnson, 1995; Patelis, 1997; Thorbecke, 1997), only few investigate the effects of fiscal policy on stock markets (see, for example, Afonso and Sousa, 2011, 2012; Agnello and Sousa, 2010; Darrat, 1988; Jansen et al., 2008). In addition, we know little, if any, on the effects of fiscal and monetary policies on stock market performance when the two policies interact (Jansen et al., 2008). The aim of this study is to fill this void.

Monetary policy authorities in their effort to maintain low inflation will mainly influence the economy's interest rates. This established, it

is argued that stances of monetary policy can influence stock market returns via five possible channels, namely (i) the interest rate channel, (ii) the credit channel, (iii) the wealth effect, (iv) the exchange rate channel and (v) the monetary channel.

On the other hand, fiscal policy stances can also influence stock market performance. Fiscal policy used in a Keynesian manner can support aggregate demand, boosting the economy and potentially driving stock prices higher. In contrast, classical economic theory focuses on the crowding out effects of fiscal policy in the market for loanable funds and of the productive sectors of the economy. Hence, fiscal policy could potentially drive stock prices lower through the crowding out of private sector activity. Furthermore, from a Ricardian perspective (Barro, 1974, 1979) fiscal policy is impotent and as such will have no effect on stock markets.

However, as aforementioned, the literature in this area of research has neglected the complex relationship between monetary and fiscal policies (Agnello and Sousa, 2010; Darrat, 1988). Examining the effects of monetary policy or fiscal policy on stock market performance is only half of the picture, unless the interaction of the two policies is also considered. This interaction can be rather complex as there are both direct and indirect channels through which fiscal policy could have an impact on monetary policy and vice versa. For example, fiscal policy may interact with monetary policy via (i) the impact of the government inter-temporal budget constraint on monetary policy and (ii) the effect of fiscal policy on monetary variables, such as inflation, interest and exchange rates.

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In this regard, the main contributions of the paper to the existing literature can be described succinctly. First, we examine the role of both fiscal and monetary policies on stock market performance, considering their interaction, by employing a structural VAR framework. Second, we verify that the contribution of fiscal policy is indeed important and thus it is instructive to be considered in tandem with monetary policy. Third, in contrast with the previous studies we also consider a global demand shock, so as to allow for an exogenous shock to the economies under investigation. In addition, we include an income and a price shock as we consider these to be important in capturing the full dynamics of both monetary and fiscal impulse mechanisms to the stock markets.

In short, results show that both fiscal and monetary policies influence the stock market performance in the countries under investigation, via either direct or indirect channels. More importantly, though, we find evidence that the interaction between the two policies is very important in explaining stock market developments.

The rest of the paper is organised as follows: Section 2 reviews the literature, Section 3 describes the methodology and data used, Section 4 presents the empirical findings of the research and Section 5 concludes the study.

2. Literature review

2.1. Monetary policy and stock market performance

Stock markets have a multidimensional role to play in connection with monetary policy decision making. On one hand, stock market performance is greatly affected by innovations in monetary policy through several channels, while, on the other hand, stock prices reflect economic developments to a great extent and thus can be considered by monetary policy authorities in the conduct of policy decisions. In this regard, stock market performance not only responds to monetary policy decisions and affects the economy, but also provides feedback to central banks regarding the private sector's expectations about the future course of key macroeconomic variables (Mishkin, 2001).

One of the main channels through which monetary policy propagates the economy is the interest rate channel. This channel suggests that a change in interest rates will have an impact on the corporate cost of capital, which will eventually influence the present value of firms' future net cash flows. Consequently, higher interest rates lead to lower present values of future net cash flows, which, in turn, lead to lower stock prices. This channel represents the traditional Keynesian view of the transmission mechanism of interest rates.

Another indirect monetary policy transmission channel, related to interest rate adjustments, is the credit channel. This channel suggests that the central bank can influence the level of investment taking place in a country by altering interest rates. In this regard, it is understood that the level of corporate investment will affect the market value of firms. This argument is predicated upon the fact that the market value of firms is affected by the present value of its future cash flows. In this sense, higher corporate investment activity should lead to higher future cash flows, thus increasing the firm's market value.

An additional transmission mechanism is via the wealth effect, which suggests that a rise in interest rates will cut the value of long-lived assets, i.e. stock prices. The exchange rate channel also helps explain the way in which interest rates may influence stock prices. In particular, higher interest rates will lead to an appreciation of the domestic exchange rate, resulting in higher imports and lower exports. The latter has a negative effect on the competitiveness of the country, leading to a reduction in production, which will eventually lead to lower asset prices.

Finally, according to Tobin (1969), and the Tobin's Q theory of investment, higher interest rates will lead to lower stock valuation. A more Keynesian approach to Tobin's Q theory suggests that increased interest rates will cause a transfer of funds from the stock market to the bond market – assuming that only these two assets exist in the market – pushing stock prices down.

For a thorough analysis of the main channels through which stock market prices disseminate monetary policy dynamics on the economy the reader is directed to the theoretical work of Mishkin (2001). Other contributors to this line of research include Bernanke and Gertler (1995), King and Watson (1996), Iacoviello (2005), as well as, Sousa (2010).

In recent years, a growing number of studies have analysed the effects of monetary policy on financial markets. Authors such as Fama and French (1989), Jensen and Johnson (1995), as well as, Patelis (1997), concentrating particularly on the relationship between monetary policy decisions and stock market performance, argue that the predictability of the latter is greatly influenced by the monetary sector. Thorbecke (1997) and Conover et al. (1999) report a strong positive relationship between expansionary monetary policy and stock market returns. In a similar fashion, Ehrmann and Fratzscher (2004), Rigobon and Sack (2003), and more recently, Sousa (2010) provide evidence that there is a negative relationship between contractionary monetary policy and stock market performance.

In addition, monetary policy decisions affect stock prices not only through the trade-off between interest gains and stock returns, but also through their influence on investors' expectations. Gali and Gertler (2007), Bjornland and Jacobsen (2008), Bjornland and Leitemo (2009), Kurov (2010), as well as, Castelnovo and Nisticò (2010) maintain that stock market prices are mainly forward looking and contain relevant information regarding expectations about the future. In this regard, monetary policy innovations can greatly affect these expectations.

Pertaining to the readily available information incorporated in the financial markets, Rigobon and Sack (2003) and Bjornland and Leitemo (2009) opine that a reverse positive causation runs from the stock market to monetary policy, as well. By the same token, evidence that asset prices could constitute a source of turmoil and trigger the Central Bank's response can be found in the empirical work of Bernanke et al. (1999) and Bernanke and Gertler (1989, 2000).

Turning to the countries under investigation in this particular study, it is worth noting that Tarhan (1995) and Laopodis (2010) report the absence of a consistent dynamic relationship between US monetary policy actions and US stock market responses. They further argue that the volatile nature of this relationship is mainly the product of changes in monetary policy authorities' operating regimes. Most studies however suggest that there exists a strong negative relationship between monetary policy innovations and stock market performance in the United States. In this respect, Poole and Rasche (2000), Kuttner (2001), Bomfim (2003), as well as, Bernanke and Kuttner (2005), among others, support the view that monetary policy decisions may influence financial markets in more than one way; that is, through their effects on real interest rates, expected future dividends, as well as, expected future stock returns.

As aforementioned, Bjornland and Leitemo (2009) provide strong evidence of a simultaneous interaction, in the short-run, between changes in the monetary policy and stock market returns in the US. To be more explicit, on one hand, positive innovations on interest rates seem to exercise a negative effect on stock market returns, whereas, on the other hand, a positive shock in stock market returns positively affects interest rates. Crowder (2006) reports that positive innovations in the federal funds rate lead to a decline in equity returns. A systematic relationship between monetary policy and stock market returns in the US is also suggested by Becher et al. (2008). Authors such as Bohl et al. (2008) and Kholodilin et al. (2009) have investigated the said relationship for four major economies of Europe.¹ In assessing the effects of the European Central Bank's decisions on European financial markets these authors propose a negative and statistically significant relationship.

¹ France, Germany, Italy and Spain.

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