ARTICLE IN PRESS

Economic Modelling xxx (2017) 1–11

Contents lists available at ScienceDirect

Economic Modelling

journal homepage: https://www.journals.elsevier.com/economic-modelling

Dichotomous stock market reaction to episodes of rules and discretion in the US monetary policy[☆]

Ion-Iulian Marinescu [*], Alexandra Horobet, Radu Lupu

Bucharest University of Economic Studies, Calea Dorobanţi, no. 15-17, District 1, Bucharest, 010552, Romania

ARTICLE INFO

Jel Codes:
G14
G18
E52
E43
D61

Keywords:
Monetary policy
Event study
Risk-taking channel
Discretion
Rules
Forward guidance

ABSTRACT

We investigate the microeconomic effects of the monetary policy conduct in the United States by observing the response of the domestic capital market with respect to unexpected changes in the Fed Funds rate target in discretionary as opposed to rules-based policy eras. These dichotomous situations are identified by means of a model with structural breaks applied on the deviations of the effective Fed Funds target rate changes from the Taylor (1993) rule implied rate change. Employing an event-study analysis, we measure the response of the S&P500 index to unexpected Fed Funds rate changes, determined from comparison with the futures rates. We find strong evidence which suggests that the monetary policy based on rules spawns consistent rational stock market reactions, while a discretionary policy increases microeconomic uncertainty. We analyze the implications of this dichotomous effect at the level of the risk-taking monetary transmission channel and also provide evidence with respect to the accounts of a monetary policy based on forward rate guidance on the equity market.

1. Introduction

The traditional monetary policy actions of the Federal Reserve (hereinafter the Fed), i.e. changes in the target Fed Funds rate, aim to poise macroeconomic variables such as inflation, real output, employment level[1], nominal or real exchange rate in their pursuit to ensure financial stability. Dissemination of these decisions urges investors to reprice their expectations, thereby conveying their beliefs to the financial markets. We can therefore conjecture that the changes in these prices represent a raw measure of the impact they have on people's beliefs. Featured by substantial levels of liquidity, the foreign exchange and equity markets are mostly reflective of these reactions, hence they can be considered as perfect candidates for the assessment these impacts.

The rules versus discretion dichotomy in monetary policy has always been an intriguing subject in the academic community. With the introduction of the Taylor-rule (1993), it has become increasingly evident that a monetary policy that follows a predetermined rule ultimately improves the performance of the overall economy, while a discretionary policy might have negative effects such as inflation persistence or increased output volatility, according to Taylor (1999). Moreover, the low yield environment spawned by the post-crisis dynamics of the global economy heightened the importance of forward guidance in the strategy pursued by most central banks around the world. The concept of "forward rate guidance" can be considered a proxy for a rules-based central bank decision making framework as it adverts to the process of transparent actions initiated by the policymakers with the innate purpose to signal a pathway for the future interest rate, in the attempt to match the central bank policy undertakings with the expectations of economic agents regarding the performance of the overall economy, under a general objective to reduce uncertainty.

In this context, the dynamic of equity prices acts as an important transmission channel for monetary policy to the real economy. Mishkin (1996) roots our understanding on the transmission mechanism of monetary policy actions through equity prices using concepts such as portfolio wealth effects on consumption and Tobin's Q theory of investment. This feature of equity prices is underpinned by the review of Levine (2005) on the theoretical and empirical research related to the connection between financial development and real growth, concluding that liquid equity markets facilitate effective corporate governance, capital accumulation, boost productivity and ultimately accelerate growth.

☆ We thank two anonymous referees for helpful comments and suggestions.
* Corresponding author.
E-mail addresses: iulian.marines@gmail.com (I.-I. Marinescu), alexandra.horobet@gmail.com (A. Horobet), radulupu.ase@gmail.com (R. Lupu).

[1] Employment and real output are connected by the Okun's law – see Okun (1962).

https://doi.org/10.1016/j.econmod.2017.10.009
Received 31 October 2016; Received in revised form 10 September 2017; Accepted 17 October 2017
Available online xxxx

Please cite this article in press as: Marinescu, I.-I., et al., Dichotomous stock market reaction to episodes of rules and discretion in the US monetary policy, Economic Modelling (2017), https://doi.org/10.1016/j.econmod.2017.10.009

This paper provides new insight on the debate concerning the distinction between rules and discretion in monetary policy decisions. Our objective is to investigate the response of capital market participants to Federal Open Market Committee (FOMC) decisions in periods that we depicted as rules-based vis-a-vis periods described as discretion-based. We found evidence which suggests that market participants have the tendency to change their interpretations of policy actions, as a function of the degree to which the Fed policy followed the Taylor rule. Additionally, their reaction during periods when the Fed policy rate deviated significantly from the rate implied by the theoretical Taylor (1993) rule appears to be in opposition with the efficient markets hypothesis.

The interpretation of the results of our event-study analysis is threefold: (i) explain the macroeconomic performance experienced in monetary rules periods, as shown by Taylor (2012), on the extent to which we acknowledge efficiency of equity markets, (ii) provide evidence for the effectiveness of the risk-taking monetary policy transmission channel; (iii) provide evidence on the functionality of the forward rate guidance for equity markets.

Based on Fed monetary policy events that unfolded during a period of more than 20 years, we argue that macroeconomic performance was superior when the Fed policy followed the Taylor rule[2] by means of heightened microeconomic efficiency of resource allocation in the capital market. This view induces the interpretation that pursuing a well-acknowledged rule could be instrumental for the policy rate decision making mechanism.

Secondly, our research heeds the implications of the risk-taking transmission channel of monetary policy on equity markets, as depicted by Borio and Zhu (2012). In their view, the risk taking channel operates through: (i) the effects of interest rates on valuations, incomes and cash flows, (ii) the relationship between market rates and target rates of return and (iii) the communication policies and reaction function of central banks. They also indicate that changes in the interest rate and the characteristics of the central bank's reaction function (i.e. the monetary policy regime) can also influence the pricing of risk performed by economic agents. We find empirical evidence which shows that the risk-taking channel materializes at the level of the equity market as well. Our results suggest that market participants do not price in market risk adequately in periods of monetary discretion. These periods of discretion are characterized by uncertainty about future interest rate decisions, as the policymaker does not usually communicate transparently, having immediate negative effects on capital market valuations.

Following the logic presented above, a monetary regime rooted on rules is seen as a commitment from policymakers to follow a predetermined monetary principle and generally implies more transparency regarding monetary policy actions and the future target interest rates. By associating a rules-based regime with the forward rate guidance policy instrument, we present evidence that equity market uncertainty is generally lower in periods when Fed was following the Taylor (1993) rule.

These objectives are achieved by employing a methodology that allows us to identify rules-based and discretionary monetary policy eras objectively by using a structural breaks approach that follow the lines of Bai and Perron (1998, 2003a, 2003b) on the deviations of the effective Fed Funds rate from the theoretical Taylor-rule rate previously used by Nikolsko-Rzhevskyy et al. (2014). Next, we extend the event-study methodology used in Bernanke and Kuttner (2005), and run a battery of regressions of the daily return of the US stock market index against the surprise changes in the Fed policy rate in the periods identified as dictated by either rules or discretion. The option to extend existing well-acknowledged methodologies makes our approach consistent with the theory of rational expectations, Lucas critique (1976) and the efficient market hypothesis. The value added of this paper consists on the interesting results observed by combining these well-acknowledged methodologies, improving our understanding with respect to the risk-taking monetary transmission channel and underpinning the relation between the stock market and a monetary policy that relies on forward rate guidance.

The paper is structured as follows: Section 2 consists of the review of the relevant literature regarding the links between monetary policy, capital market and macroeconomic performance; Section 3 presents the research methodology, including the structural breaks approach for the identification of periods of rules and discretion in monetary policy and the event study that quantifies responses of the stock market in the two distinctive eras; Section 4 presents the main results of the paper; the robustness analysis is included in Section 5 and Section 6 is dedicated to conclusions and directions of future research.

2. Literature review

The complex relationship between the conduct of monetary policy and the capital market dynamics is widely captured by previous research. In this section we highlight the literature connected to our research objectives: (i) a review of monetary policy rules and discretion in a macroeconomic framework, (ii) an assessment of the complex relationship between monetary policy and capital markets, (iii) an analysis regarding the usefulness of forward rate guidance in influencing stock market participants reactions and (iv) an examination of the current literature that deals with the risk-taking channel and its accounts.

2.1. Rules, discretion and macroeconomic performance

The option between rules and discretion in economic policy has received increased attention in the academic community with the seminal work of Kydland and Prescott (1977) that advances the time-inconsistency argument in favor of the rules-based policy, which led to an important subsequent body of research, mainly validating rules over discretion.

The debate regarding the distinctive effectiveness of rules as opposed to discretion in monetary policy for the purpose of boosting macroeconomic performance is instrumental for our analysis as it offers tools for the discrimination of periods based on rules and discretion. Building on the so-called Taylor formula (1993), Taylor (1999) employs the quantity of money approach to derive a formula that allows for the characterization of policy rules designed to respond adequately to current economic conditions. Moreover, relying on cross-sectional data in a regression analysis from several developed economies, Taylor (2009) presents strong evidence showing that the discretionary monetary policy period that started in 2000, measured in terms of deviations from the Taylor rule, is correlated with higher housing investment and implicitly facilitated the financial crisis that emerged in late 2007.

In the same vein, using a structural breaks approach on a series of deviations from multiple well-acknowledged policy rules, Nikolsko-Rzhevskyy et al. (2014) find a better economic performance in the US in periods characterized by rules as opposed to periods of discretion. Barro and Gordon (1983) introduce a model of monetary rules, discretion and central bank reputation, arguing that discretionary actions can lead to persistent inflation levels, while Woodford (2003) augments the importance of central bank actions to reflect the commitment for a transparent and clear policy rule with sound objectives. Moreover, Chortareas et al. (2002) present evidence in favor of a transparent monetary policy and associate it with lower average inflation.

The consensus over the superiority of monetary policy rules in terms of macroeconomic performance is enforced by the results of this paper as well, which imply that macroeconomic performance can be explained in part by the fact that equity markets seem to provide efficient signals in periods dictated by rules. Also, the advances in the literature spurred innovative methodologies that permit an objective assessment of rules

[2] Taylor (2012) investigates the macroeconomic accounts in periods when the Fed followed the Taylor (1993) rule and determines that performance was better on average when Fed followed a policy rule.