North American Journal of Economics and Finance 37 (2016) 248–266

Contents lists available at ScienceDirect

North American Journal of Economics and Finance

journal homepage: www.elsevier.com/locate/ecofin

The effect of investors' confidence on monetary policy transmission mechanism A Multivariate GARCH approach

Chiara Guerello *

Dipartimento di Economia (DIEC), Universita of Genova, via Vivaldi 5, 16126 Genova, Italy
Dipartimento di Economia e Finanza, LUISS Guido Carli, Viale Romania 32, 00197 Roma, Italy

ARTICLE INFO

Article history:
Received 21 July 2015
Received in revised form 9 May 2016
Accepted 10 May 2016
Available online 25 May 2016

Keywords:
Financial stability
Price–Earnings–Earnings Growth ratio
Monetary policy
Uncertainty
Multivariate GARCH-in-mean

ABSTRACT

This paper investigates the financial stability's effect on the monetary policy transmission mechanisms. The correlations between investors' confidence in the markets, money growth and economic growth are analyzed along with the correlations within their volatilities. Specifically, the heteroskedasticity of the errors is exploited in a Multivariate GARCH framework to obtain endogenously estimated measures of uncertainty. By a two-step estimator, the indirect interplay of money growth and financial markets is highlighted at different time horizons. The results contrast previous literature supportive of the "Great Moderation" as causing the recent financial crisis. Effectively, by accounting for the breaks in volatility series due to structural shifts in monetary policy, a low period of macroeconomic volatility is found not to drive directly low financial stability.

1. Introduction

The impact of uncertainty on money growth has received greater attention in recent years and it is a crucial issue for Central Banks, particularly for those who focus on monetary policy analysis. In the last decades, a large swath of literature has largely debated whether the behavior of the main Central Banks (FED,[1] ECB,[2] etc.) in the last decades might have contributed to the recent financial turmoil.

* Address: Dipartimento di Economia e Finanza, LUISS Guido Carli, Viale Romania 32, 00197 Roma, Italy.
E-mail address: chiara.guerello86@vodafone.it

[1] US Federal Reserve.
[2] European Central Bank.

http://dx.doi.org/10.1016/j.najef.2016.05.003
1062-9408/

Stylized facts show that, since the 1990s, a passive interest rate rule and, eventually, targeting output stabilization around its long run trend, although subordinated to the primary target of price stability, have generated very low macroeconomics volatility. Since several empirical analysis argued that passive policy and low money's variance lead to high instability in the financial markets, the loosing monetary policy and the consequent high macroeconomic stability observed in the last two decades and called *Great Moderation* might have contributed to the recent financial turmoil. However, in opposition to the main empirical findings, theoretical contributions still argue in favor of both monetary stock and output stabilization.

Since several factors affect the transmission mechanism of the monetary shocks to the financial markets, the problem is more complex and articulated than what appears. Specifically, this paper focus on the interrelations among the uncertainty shocks and tries to shed light on the question with an accurate empirical analysis.

The contribution of the *Great Moderation*, to the extent of a prolonged period of joint low monetary and macroeconomic uncertainty, to the 2008-09 financial crisis is investigated through the analysis of both unconditional and conditional first and second moments of GDP growth, money stock growth and investor's confidence. Eventually, if it is possible to exclude the *Great Moderation* from the causes of recent turmoil, the crisis might been interpreted as unrelated to the last decades Central Banks' behavior, to the extent of high output stabilization. However, if with a different monetary policy the crisis life- cycle would have been smoothed is still an open question.

Several channels, through which the monetary policy affects the financial markets, have been identified in the last decades, but the relation between monetary policy, real economy and financial markets volatility has not been clearly disentangled yet. Even if there are several partial equilibrium models including the three uncertainty measures among the exogenous shocks,[3] the empirical evaluation of the three-side relationship has not caught much the attention and the most influential papers have focus on the second order correlation between monetary policy and economic growth.

Serletis and Rahman (2009) shed light on the controversial impact of monetary policy on the economy during the last decades: they found money growth volatility to have a significant negative effect on the growth rate of real GDP.

Although the early theoretical literature emphasized the interest rate channel as the main transmission mechanism of monetary volatility shocks to the real economy, influential papers as Mascaro and Meltzer (1983) and Evans (1984) argued that, since monetary volatility increases interest rates volatility, it adds to bonds' riskiness as well. Increasing the risk of holding bonds affects the demand for money and, hence, it increases interest rates, leading to a period of a disinvestment and recession.

Recently, Bekaert, Hoerova, and LoDuca (2010) and Jovanovic (2011) have found that the monetary policy directly affects the risk aversion of investors and the latter is linked by a non-linear relation to financial uncertainty.

Finally, recent analysis have revealed a growing interest in the effects of financial stability on macroeconomic activity. Puhan (2011) provides evidence that shifts in the real-economy and in monetary policy related variables help to explain the time varying patterns in assets valuations during the last decades.

The difficulties in measuring uncertainty are at the basis of the small literature over the topic. Endogenously estimated measures of uncertainty have not been largely used for the analysis of the impact of financial markets stability,[4] but previous studies have often employed either "ad hoc" estimates (i.e. Giordani & Söderlind, 2003; Arnold & Vrugt, 2008, 2010; Bachmann, Elstner, & Sims, 2013; Dick, Schmeling, & Schrimpf, 2013, etc.) or sample's measures of volatility.

[3] Among the other Choi and Oh (2003) analyzed the effect of second order shocks in money and output growth in case of both low and high financial market volatility. Bekaert, Engstrom, and Xing (2009) considered also the joint second moments analyzing the relations among financial markets, consumption growth, and dividend yields. A more detailed description of the theoretical literature is provided in Section 2.

[4] Since the work of Elder (2004), an increasing strand of the literature has employed GARCH model to recover endogenous measure of uncertainty but always for bi-variate models (i.e. Serletis & Shahmoradi, 2006; Bekaert et al., 2009; Fountas, Karanasos, & Kim, 2006; Serletis & Rahman, 2009; Cronin, Kelly, & Kennedy, 2011) because stochastic volatility models become computationally expensive as the number of variables increases.