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Money market funds, shadow banking and systemic risk in United Kingdom[☆]

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ABSTRACT

Shadow banking entities have been repeatedly charged with the breaking up of the recent financial crises. This paper examines the contribution of the money market funds, an important part of the shadow banking entities, to the systemic risk in United Kingdom by using the CoVaR methodology (Adrian and Brunnermeier, 2016). Using a sample of 143 money market funds, continuously listed between 2005Q4 and 2013Q4, we investigate the impact of institutional corporate variables on the systemic risk. Our results show that liquidity mismatch increases the average systemic risk over the whole period, but decreases the risk during the Great Financial Depression.

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1. Introduction

Financial literature has recently devoted an increasing attention to the issue of shadow banking, exploring institutional features in the United States (Poszar et al. 2012; Adrian and Ashcraft 2016), United Kingdom (Jackson 2013), and the Euro area (Bakk-Simon et al., 2012).

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In particular, the supposed involvement in the triggering of the recent financial crisis[1] has been investigated by considering the relationships between shadow banking and the traditional banking system during the financial crisis (Hsu and Moroz 2010; Meeks, et al. 2014). The main differences between the two lie in the distinction between relationship based lending versus actuarially based lending (Hancock and Passmore 2015) and the nature of core liabilities in the traditional banking system versus the noncore liabilities in the shadow banking system (Harutyunyan et al., 2015). Despite the significant bulk of research dedicated to this issue, many distinguishing features of the shadow banking activities are still unexplored, and an empirical assessment of their contribution to systemic risk is yet to come.

In particular, Money Market Funds (MMFs henceforth), ascribed by financial literature as a part of the external and independent shadow banking entities, according to the definition introduced by Poszar (2008), Poszar et al. (2012) and Adrian and Ashcraft (2016), and representing a significant part of the listed shadow banking entities, have been often criticized for having contributed to spread systemic risk. Kodres (2015) notices that during the crisis we observed runs - not the usual retail runs but wholesale funding runs - on MMFs that had provided funding to commercial and universal banks (both in United States and in Europe).

MMFs are collective investment schemes which invest in “money market” instruments, with a very negligible risk, such as short-term high credit quality and liquid debt instruments, government securities, commercial paper, certificates of deposit and short-term securities or provide repurchase agreement (repo) financing. The returns to investors in the mutual fund are a straightforward function of the gain and losses of the mutual fund’s investment portfolio. Money market mutual funds are a sort of “open end” funds in which investors get back their funds redeeming their shares.[2]

The main aim of this paper is to identify the main determinants of MMFs contribution to systemic risk. There are several reasons of why focusing on MMFs is of interest. On the one hand, these shadow entities are directly involved in a revised form of risk and maturities transformation, and are therefore likely to be identified as financial devices potentially increasing systemic risk of the financial sectors. On the other hand, they are typically seen as entities with very negligible risk, because their assets are not characterized by maturity mismatch. Therefore, following the arguments in previous literature (Macey 2011; Kodres 2015), in this paper we investigate whether the liquidity mismatch characterizing these entities lead to a positive or negative contribution to systemic risk, discriminating what we can observe during ordinary periods or during financial crises.

To this purpose, in this paper we adopt the Conditional Value-at-Risk (CoVaR) measure introduced by Adrian and Brunnermaier (2016). The CoVaR quantifies the contribution of a financial institution to systemic risk and its contribution to the risk of other financial institutions. CoVaR indicates the Value-at-Risk (VaR) of financial institution i, conditional on financial institution j being in distress. Adrian and Brunnermeier (2016) argue that this is a more complete measure of risk since it is able to capture alternative sources of risk which affect institution i even though they are not generated by it. Furthermore, if we consider that institution i is the whole financial system, then ΔCoVaR is defined as the difference between the CoVaR and the unconditional VaR and it captures the marginal non-causal contribution of a particular institution to the overall systemic risk.

In this paper, we build on the CoVaR methodology, which allows us to generate time-varying estimates of the systemic risk contribution of MMFs as a specific sector of the financial industry. We employ micro data from 143 MMF listed on the London Stock Exchange from 2005Q4 to 2013Q4. While our time span allows us to cover the different phases of the recent financial crises, namely the Subprime crisis and the Great Financial Depression, the United Kingdom’s context is chosen because it represents one of the most developed shadow banking system among the European countries with a relevant presence of listed money market funds.

To anticipate some findings, our empirical applications allow us to identify what institutional features of shadow entities are correlated to systemic risk. As a contribution to previous literature, we find that liquidity mismatch plays a major role as determinant of ΔCoVaR: it increases systemic risk over the whole period, while mitigates risk during the Great Financial Depression.

The reminder of the paper is organized as follows. Section 2 describes the nature and the main features of the shadow banking system and its relationship with the systemic risk literature. Section 3 introduces the methodology and the data used in our analysis. Section 4 reports the main empirical findings. Section 5 concludes.

2. The contribution of MMFs to systemic risk

2.1. Shadow banking entities and systemic risk

One of the main challenges of recent financial literature on the topic has consisted in the identification of shadow banking activities and of features that banks do not have.

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[1] According to *The Economist*’(10/5/2014, p. 9), Mark Carney, Governor of the Bank of England and head of the Financial Stability Board (FSB), identifies the shadow banking in emerging markets as “the greatest danger to the world economy”.

[2] The value of a share in a mutual fund can be identified in the “Net Asset Value” of the fund. The Net Asset Value of a mutual fund is the net value of all of its assets divided by the number of shares outstanding. Thus the NAV approximates the liquidation value of an investor’s shares in a fund. It is the price at which investors can buy fund shares or sell them back to the fund. The fund managers calculates the NAV of the fund each day, and when an investor wants his money back, the fund buys (or redeems) the investor’s shares at the price per share (Macey, 2011).

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