Liquidity risk and specialness

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Abstract

Repo contracts, the most important form of collateralized lending, are widely used by financial institutions and hedge funds to create short-selling positions and manage their leverage profile. Moreover, they have become the primary tool of money management and monetary control of several central banks, including the Bundesbank and the newly born European Central Bank. This paper is an empirical study of this market. More specifically, we study the extent to which the current term structure of long term “special” repo spreads discount the future collateral value (specialness) of Treasuries. We ask whether repo spreads embed a liquidity risk premium and whether such a risk premium is time-varying. We quantify the size of the average liquidity risk premium and we provide empirical evidence of the extent of its time-variation. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

The collateral value\(^1\) of Treasury bonds can vary quite substantially across different issues. Squeezes, auction cycles, deliverability against future contracts, short covers, and cornerings can make the collateral value of specific Treasury issues vastly different from the collateral value of a “general” Treasury bond.

Repo rates reflect the collateral and liquidity value of traded securities as the repo market is the most important form of collateralized lending. The extremely fast development of a very active market in derivatives has been paralleled by an increased demand for instruments that can facilitate the implementation of dynamic hedging strategies. Repos are widely used by financial institutions and hedge funds to create and manage their risk profile. Although the repo market is one of the most important markets by size, it has been overlooked by the empirical literature. In this paper, we would like to explore some empirical regularities of this market. In particular, we ask the following two questions: (a) to what extent do long term-repo spreads anticipate and price the future relative scarcity value of bonds? and (b) is liquidity risk priced by the term structure of repo spreads and, if this is indeed the case, is the liquidity risk premium also time-varying?

Longstaff (2000b) finds that the expectation hypothesis is not rejected for extremely short rates (up to three months). These results contrast with the evidence on long term yields and shed new light on the behavior of fixed income markets. Longstaff interprets his finding saying, “Our results support the widespread view that much of the apparent term premium in Treasury Bills is actually due to other factors such as liquidity”. His findings are very important and in this study we focus directly on the empirical behavior of what is widely considered in Wall Street to be a good proxy for liquidity: the repo spread. This study is made possible by a unique data set that contains daily data on term-repo rates on all the individual German Government bonds which traded special, with tenors up to three months. This allows us to construct a term structure of repo spreads and explore the extent to which forward repo spreads anticipate the future specialness of Treasury bonds.

Duffie (1996) discusses the relationship between the value of a bond in the repo market and in the cash market. He shows that a bond that trades “special” in the repo market should trade at a price premium in the cash market. The size of the cash premium should be a function of two factors: (1) the extent of future specialness measured by the size of the future repo spread and (2) the length of time during which the bond will trade “special”. Jordan and Jordan (1997) regress the special bond price premium on the overnight “specialness” and find strong support for the fact that the overnight specialness in the repo market is reflected in a cash premium in the spot market.

\(^1\)We say that two bonds have different collateral value if the cost of borrowing in a collateralized loan contract differs depending on the type of bond offered as collateral. The bond specific financing cost is referred to as the “special” repo rate; the difference between the “general collateral” and the “special” repo rate is defined as the “repo spread” and it is a particular form of convenience yield.
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