Available online at www.sciencedirect.com

SciVerse ScienceDirect

Mathematics and Computers in Simulation 93 (2013) 86–97

MATHEMATICS AND COMPUTERS IN SIMULATION

www.elsevier.com/locate/matcom

Original article

The matching of lead underwriters and issuing firms in the Japanese corporate bond market

C.R. McKenzie [a,b], Sumiko Takaoka [c,*]

[a] Faculty of Economics, Keio University, 2-15-45 Mita, Minato-ku, Tokyo 108-8345, Japan
[b] Centre for Asia, the Pacific, Africa and the Middle East, Sciences Po, 27, rue Saint-Guillaume, 75337 Paris, France
[c] Faculty of Economics, Seikei University, 3-3-1, Kichijoji Kitamachi, Musashino, Tokyo 180-8633, Japan

Received 15 May 2012; received in revised form 14 July 2012; accepted 30 April 2013
Available online 10 May 2013

Abstract

The purpose of this paper is to examine the role of reputation in the matching of lead underwriters and issuing firms in the straight corporate bond market in Japan. While the existing literature already investigates how the issuing firm chooses its lead underwriter at the time of issue, this paper uses successive issues of straight corporate bonds to examine how the matching of lead underwriters and issuing firms changes over time.

Data on individual issues of straight corporate bonds publicly issued in Japan between 25 February 1994 and 31 December 2009 are used to estimate models which explain how issuing firms match with lead underwriters. We measure the reputations of underwriters and issuing firms using each underwriter's percentile rank in the underwriting market and the issuer's percentile rank in the issuing proceeds, respectively. We construct a data set of straight corporate bond issues which includes many repeated issues. One of the contributions in this paper is to take account of these repeated issues by treating the data as a panel data set, and allowing for an issuer random effect in both probit and logit models of switching. This random effect is found to be significant.

The estimation results show that issuing firms match with the same lead underwriter when the difference of the issuer's reputation and the current reputation of the previous lead underwriter is small. Issuing firms with an AAA rating at the time of issue are less likely to match with the same lead underwriters. In addition to reputation effects, there is strong evidence to suggest that issuing firms continue to stay matched with the same underwriter if the lead underwriter is a subsidiary of the issuing firm's main bank.

Keywords: Corporate bonds; Japan; Matching; Reputation; Underwriter

1. Introduction

This paper investigates the importance of how the reputation of issuers and underwriters influence an issuer's choice of underwriter. The importance of reputation in capital markets has been repeatedly emphasized. If a firm is only ever going to make one security issue before it goes out of existence and it knows this and investors do not, that is a "one-off" game, the issuer may not worry about its reputation in the bond or stock market. However, if the issuer knows it will be a repeated issuer in the securities markets, then the issuer's reputation can become important. Reputation effects can help partially resolve some of the important issues of asymmetric information that arise between issuers and

* Corresponding author. Tel.: +81 422 37 3684; fax: +81 422 37 3874.
E-mail address: takaoka@econ.seikei.ac.jp (S. Takaoka).

0378-4754/$36.00
http://dx.doi.org/10.1016/j.matcom.2013.04.009

investors. The use of underwriters to underwrite an issue is another way to resolve the asymmetric information issue. The reputation of the issuer may be even more important if it strongly influences the reputation of the underwriter that will underwrite the issuer's issues. These reputation effects have the potential to influence the commission the issuer pays to underwriters for underwriting the bond, the launch spread on the bond itself, and the size of the bond issue (see [11]).

When we look at the frequency with which issuers come to the Japanese straight corporate bond market over the period between 1994 and 2009, we find that some issuers come only once, while the most frequent issuer, Tokyo Electric Power Company (TEPCO), has 136 issues in the same period.[1] The reputations of the frequent issuers and the infrequent issuers are likely to be quite different. When we look at underwriters that bring the bond issues to the market, we see that some issuers like Nomura Securities bring many issues to the market every year, and over the 16 year period from 1994 and 2009 brought 888 straight corporate bond issues to market,[2] but there are some underwriters that brought only one or two issues to the market over the 16 year period. Again we expect these differences in the number of issuers handled by the underwriter to be reflected in the underwriter's reputation in the market.

The choice of lead underwriter has been analyzed mainly for issues in the equity market and this literature contains some discussion of the importance of issuer and underwriter reputations (for example, [14,5,2]). The problem of how the reputations of the issuing firm and lead underwriter for equity offerings can affect the matching between issuers and underwriters between the initial public offering (IPO) and seasoned equity offerings (SEOs) issues has also been examined. For example, Fernando et al. [3] develop a model based on matching theory to explain the mutual choices made by issuing firms and underwriters, and find strong evidence that higher quality issuing firms associate with higher ability underwriters, and lower quality issuing firms associate with lower ability underwriters.

Some existing research on an issuing firm's choice of lead underwriter for straight corporate bond issues focuses on the choice of the lead underwriter type. For example, Hamao and Hoshi [6] analyze whether or not issuers have a propensity to choose an underwriter which is a bank subsidiary, and whether or not the underwriter is a main bank subsidiary. Yasuda [16] investigates which particular securities company is chosen as the issuing firm's lead underwriter. While these papers consider the static analysis of underwriter choice at the time of an issue, McKenzie and Takaoka [9] examine the switching of underwriters between the initial public issue of a corporate bond and the second public issue of a corporate bond. McKenzie and Takaoka [10,11] are the only papers we know of that focuses on the impact of underwriter reputation on the underwriter switching choice in the corporate bond market. Given that many issuers issue many bonds over the sample period, McKenzie and Takaoka [10] analyze underwriter switching by focusing on question of testing for issuer random effects in probit models and estimating models with issuer random effects, while McKenzie and Takaoka [11] aims to provide a comprehensive examination of Fernando et al.'s [3] matching model for the Japanese corporate bond market.

This paper seeks to investigate the robustness of the results reported in McKenzie and Takaoka [10] in two key respects, the distribution assumed for the underlying switching model, and whether the parameters are really time-invariant as McKenzie and Takaoka [10] implicitly assumes. In particular, in addition to re-estimating McKenzie and Takaoka's [10] reported probit models with random effects after correcting for a data error, we also estimate identical models assuming a logit distribution with random effects. The sample period is divided into two halves, 1994–2001 and 2002–2009, to see whether the parameters of all these models have changed over time.

Much of the existing literature on underwriter choice focuses on how underwriter choices change between the IPO and SEO issues. Here, every straight bond issue made by a firm over a 16 year period is included in the analysis, so the data set includes many repeated issues. One of the contributions in this paper is to take account of these repeated issues by treating the data as a panel data set, and allowing for an issuer random effect. As in [10], this issuer random effect is found to be highly significant regardless of whether we assume a probit or a logit model.

While we confirm some of the results reported in [3] relating to reputation effects, not all the matching in our data set can be explained by transaction-based matching which implies that issuers and underwriters rematch only when firm characteristics and underwriter abilities are relatively stable over time. When an issuer matches with an underwriter that is a subsidiary of the issuer's main bank, there is a significant tendency to rematch with the same underwriter even

[1] Since these 136 issues involve multiple issues of bonds on the same day, the number of times TEPCO actually "came to the market" is only 118 times.

[2] The figures quoted here relate to the final data set used in the analysis in Sections 4 and 5, so the actual numbers are slightly higher.