

Estimating Impact of Institutional Rigidities on Corporate Bond Returns after a Rating Change

Faculty Member: [Matthew Spiegel](#)

Proposal Description:

Since 2002 bond prices have been available on a trade-by-trade basis. However, unlike stocks, bonds trade infrequently. Many trade only a few times a year, others may not trade for over a year at a time. Calculating a bond's return relative to the market becomes a challenge in an environment like this. With stocks one can compare an individual stock's return with a group of similar issues using the daily recorded prices from all of the issues. For bonds this is not possible.

The project is currently looking at how well various methods price bonds. This starts with a bond trading on say March 4 and again on March 23. Given the price of the bond on March 4 and information available up to March 23, predict the price that the bond trades at. For each method the difference between the predicted price and the actual transaction price is recorded. The method that yields the lowest average mean squared error is the winner. Once a winning method is determined, the results will be used to see how bond prices move in response to rating changes and how this has changed since the implementation of the financial industry's regulation via Dodd-Frank.

One of the pricing methods being tested is known as distance weighted repeat sales. This technique has a long history in the pricing of real estate assets. While the code for employing this method has been written and is working, it takes a long time to process data. One aspect of the project will be to see if the code can be modified to run more efficiently. Also, the data currently runs through 2016. Another part of the project will seek to update the data and if possible automate more of the process than has currently been done.

Requisite Skills and Qualifications:

The existing programs for estimating bond returns need to be modified to allow for a comparison across methods. The code is in primarily in R. While RAs need not have extensive experience with R they do need to be familiar with writing code and willing to learn R.

Award: James Chung

Tobin Application Link: [Tobin Application](#)

Project Type: Tobin RA

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