## Discussion

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My comments will not be of a scientific nature, but should be viewed as a number of observations that I hope will provide some guidance for researchers in the area of the microstructure of financial markets.

Toni's paper examines the differences between the microstructure of equity and fixed-income markets. A lot of research has been conducted and published on the equity markets, both dealership and auction-type markets, but much less on the fixed-income markets—which is not surprising, given the limited availability of data. Fixed-income markets are dealership markets, and thus might be similar to certain equity markets, Nasdaq, for instance.

This raises the question of whether or not the models and results of equitymarket research are applicable to fixed-income markets. The paper attempts to answer this question by looking at the differences between the two markets.

Gravelle argues that an important difference is the existence of inside information in the equity markets, and the absence of it in fixed-income markets. I agree with the latter: there is hardly any private information in the fixed-income markets, apart from some flow information that dealers reap from their activities in secondary trading. But I am surprised to learn that there is a dominant role for inside information in the trading process for equities. There are, of course, different views among the various parties, but I find it difficult to accept that non-public information is the dominant motive for trading, particularly given the relative importance of retail investors in the stock markets.

The different nature of the product is also discussed in the paper. Since, unlike equities, bonds have a finite maturity, they attract a certain category of investors—those who buy and hold assets until they mature. This means

that the effective supply, available for trading in the secondary market, diminishes, making it more difficult for market-makers to run a book. I think it is worthwhile to point out—be it for different reasons (mainly strategic investments)—that a similar situation prevails in the equity markets. Just this week, in fact, Morgan Stanley Capital International introduced a fundamental change to its indexes to reflect the fact that the free float of stocks can differ significantly from the amount originally issued. In some countries, the free float is less than 50 per cent, whereas the average is 85 per cent!

Perhaps a more fundamental difference in the nature of equities and bonds is that the risk profile of a bond is not constant over time. A ten-year bond, for example, will be a nine-year bond in one year's time. On the other hand, a particular stock is the same now and in one year from now, i.e., its risk characteristics don't change. And since market-makers manage exposures rather than individual securities, this has a bearing on how market-makers in the fixed-income and equity markets manage their inventories.

Another aspect where the two markets differ is the decentralized nature of the bond markets versus the centralized equity markets. Decentralized trading could lead to different prices for the same bond at the same moment, which is unlikely for equities, given the centralized price information. However, this difference should not be exaggerated, for several reasons. Investors in bond markets tend to be sophisticated players, with more than one price source available—increasingly so, with the advent of multi-dealer electronic platforms such as TradeWeb. Furthermore, correlations within the bond markets are much higher than in the stock markets. Government bond futures are traded on exchanges, which are fully centralized trading places. Every market participant knows exactly what the futures price is at any moment. Given the high correlations in bond markets, sophisticated investors would have a pretty good idea where the price of ten-year bonds, for example, should be.

The final issue that I will discuss is transparency. The paper argues that, with the different natures of the two markets under review, a different level of transparency is needed. In general, one can say that whenever there is a change in transparency, some market participants win and others will lose. Thus, there is plenty of scope for vested interests to try to prevent such changes. The current level of transparency in the stock markets is mainly the result of regulation. In most bond markets, on the other hand, there is not much regulation, as far as I know. And the dealer community itself is not likely to be a driving force for more transparency. The biggest stimulus to transparency has come from Michael Bloomberg and his associates. Consequently, an important distinction between bond and stock markets is the level of regulation. When assessing transparency in both markets, this factor should not be overlooked.

I agree with the paper's conclusion that there are many differences between bond and equity markets, even those that are organized as multi-dealerships. One should therefore be careful about using the results of equity-market research to draw conclusions regarding bond markets. But I will add one observation: bond markets are becoming more centralized. We are currently in a hybrid situation. It would be interesting to hear some views on where this is going and what factors will determine the outcome. Perhaps we can learn something from the equity markets.

Finally, the paper assumes that there is a role for regulators in the fixedincome markets. But is there really a need for regulators to step in, or should we leave it to the competitive forces to create an optimal trading environment in the fixed-income markets?