‘My paper deals with differences between interest rate spreads documented in empirical studies and those predicted by existing theoretical models of credit risk’.

With a Ph.D in Economics from IDEA, Universitat Autònoma de Barcelona, and a B.Sc. in Mathematics from the University of Bucharest, Ariadna Dumitrescu is Professor of Corporate Finance, Fixed Income Securities, and Futures and Options at ESADE. Dr. Dumitrescu summarises the main findings of her research paper.

**Ariadna Dumitrescu**  
Professor of Corporate Finance, Fixed Income Securities, and Futures and Options at ESADE
What idea motivated your research paper “Valuation of defaultable bonds and debt restructuring”? What were your main research objectives?

The evaluation of credit risk has always been important for banks and other financial institutions. Recently, banks have been allocating a great deal of resources to this important and difficult task. This is because, in compliance with the New Basel Capital Accord, the regulatory capital for credit risk can now be determined using internal models to evaluate the probabilities of creditors defaulting. The motivation for my paper arises from the differences between interest rate spreads documented in empirical studies and those predicted by existing theoretical models of credit risk. The main objective was, therefore, to develop a model that partially explains such differences.

Could you briefly state the main conclusions you reached in this research paper?

The model I developed in the paper belongs to the class of structural credit risk models. It shows that the strategic behaviour of creditors and a more complex capital structure can explain the largest spreads in interest rates obtained in the empirical studies in comparison to Merton’s (1974) credit risk model and its extensions. The evaluation of credit risk is an essential requirement for the granting of loans, because it ensures a desired level of quality in asset portfolios and an adequate pricing of risks. The paper emphasises the role of debt maturity and the position that creditors’ rights have in the hierarchy of a company’s debt.

Do you believe you achieved your objective through the publication of this paper?

Yes, the results obtained in the paper provide an explanation for the observed interest rate spreads and show that strategic behaviour on the part of creditors can increase the value of the company and hence the value of its debt.

What methodology did you use for your research paper?

The paper uses the methodology to value companies developed by Black and Scholes (1973) and Merton (1974). The technique consists of valuing assets (both the company's debt and equity) by using the option pricing model of Black and Scholes (1973). This technique is commonly employed in the development of structural models which are extensively used in the valuation of corporate debt. The idea is that the value of corporate debt depends on the company's cash flow, which is also contingent on operational cash flow.

I also incorporated game theory in the paper. In particular, to model the process of renegotiation I use a non-cooperative game in which creditors can decide to liquidate the company or renegotiate the debt. This process is only initiated when companies are not able to meet their short-term obligations. When this happens, shareholders transfer control to bondholders.

What information sources were used for the paper?

The paper's sources are previous research results contained in articles published in journals such as Journal of Finance, Review of Financial Studies, or Journal of Financial Economics.

Did you experience any difficulties while working on the paper?
I only experienced the usual difficulties which arise when writing original scientific research papers.

**Did you receive assistance from ESADE while working on the paper?**
Yes, my colleagues at ESADE contributed with very useful comments that were reflected in the published version of the paper.