

Security Design Revisited: The Role of Exclusivity and Commitment

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Abstract

We study the problem of a seller with private information about her asset quality who can design securities backed by her asset cashflows to raise funds from investors in non-exclusive markets. When markets are non-exclusive, bilateral contracts between the seller and a particular investor cannot be made contingent on the contracts traded with other investors. This feature is natural in an opaque marketplace or in a dynamic environment where commitment is limited. We show that in such an environment full separation of seller types cannot be obtained. In any equilibrium, all seller types issue the same debt contract. While high-quality types retain the remaining cashflows on their balance sheet, low-quality sellers tranche their cash flows and sell the debt contract (senior tranche) and the remaining cashflows (junior tranche) separately to different investors. The model can rationalize the practice of tranching securities, and it generates new empirical predictions on the relation between the types of securities sold in markets and the quality of their underlying assets.

Keywords. Securitization, tranching, adverse selection, liquidity, security design, information asymmetries.

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1 Introduction

Markets for securitized assets have played an important role in providing lending capacity to the banking industry and the real economy.¹ In 2007, for example, more than 25 percent of outstanding consumer credit in the U.S. had been financed through the securitization of consumer loans. Some common examples include MBS, CMBS, CLOs, and consumer credit ABS.² In the financial crash of 2008, however, in which some of these securities played a crucial part, we witnessed a collapse in issuance of securitized assets. As a response, policy makers geared their efforts towards reviving these markets. The Financial Stability Board stated that “re-establishing securitization on a sound basis remains a priority in order to support provision of credit to the real economy and improve banks’ access to funding.”³

In this paper, we study the problem of a seller with private information about her asset quality who can design securities backed by her asset cashflows to raise funds from investors. To capture some of the opacities inherent to financial markets, we assume that markets are non-exclusive. That is, bilateral contracts between the seller and a particular investor cannot be made contingent on the contracts traded with other investors. This setting is natural in markets that are opaque or in dynamic settings where commitment is limited. We show that in such an environment full separation of seller types cannot be obtained. In any equilibrium, all seller types issue the same debt contract. While high-quality types retain the remaining cashflows on their balance sheet, low-quality sellers tranche their cash flows and sell the debt contract (senior tranche) and the remaining cashflows (junior tranche) separately to different investors. The model can rationalize the practice of tranching securities, and it generates new empirical predictions on the relation between the types of securities sold in markets and the quality of their underlying assets.

Our non-exclusivity assumption is meant to capture the difficulties associated with individual investors monitoring until contract maturity not only that the seller retains certain cashflows on balance sheet but also that she is not hedging the exposure to this cashflows with other financial assets.

We show that in any equilibrium some seller types issue multiple securities. This is in sharp contrast to standard security design problems with seller private information. In the two-type case, we find that standard debt (the senior tranche) is the security chosen by the seller with the

¹A securitized asset is a security whose payoff is derived from and collateralized by a specified pool of underlying assets. Securitization is the practice of creating and selling securitized assets.

²These are acronyms for: MBS: mortgage-backed securities, CMBS: commercial-mortgage backed securities, CLO: collateralized loan obligations (backed by debt, mostly corporate), ABS: asset-backed securities (backed by consumer loans: credit card, student, auto loans, residential equity lines, etc.)

³Financial Stability Board, Progress Since the Washington Summit in the Implementation of the G20 Recommendations for Strengthening Financial Stability, Report to G20 Leaders (Nov. 2010).

good asset since it minimizes the lemon's discount it receives from the market. Consequently, sellers of bad assets issue the same standard debt contract to mimic the issuance of good sellers and receive an implicit subsidy. In addition, they issue their remaining cashflows (junior tranches) in a separate market to further exploit gains from trade. Evidence of this behavior can be found in Ashcraft, Gooriah, and Kermani (2014), who document that (a) the amount of first-loss retention has a significant impact on the probability of more senior tranches defaulting, and (b) this risk is not priced at origination; i.e. interest rates on senior securities are uncorrelated with retention levels.⁴

Our work builds on the extensive literature on security design in the presence of adverse selection, started with Myers and Majluf (1984) and Nachman and Noe (1994), followed by Duffie and DeMarzo (1999), Biais and Mariotti (2005), and DeMarzo (2005). In contrast to these papers, we assume that markets are non-exclusive. As a result, our paper closely relates to the literature on non-exclusivity in markets with adverse selection (Atar, Mariotti, Salanie (2011)). In contrast to this paper, we allow the seller to optimally design the security she sells.

⁴They find evidence of this in the conduit Commercial Mortgage-Backed-Security (CMBS) Market.