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A shot at regulating securitization☆

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ABSTRACT

In order to incentivize stronger issuer due diligence effort, European and U.S. authorities are amending securitization-related regulations to force issuers to retain an economic interest in the securitization products they issue. This paper contributes to the process by exploring the economics of equity and mezzanine tranche retention in the context of systemic risk, moral hazard, accounting frictions and funding distortions. It shows that loan screening activity is maximized when the loan originating bank retains the equity tranche. However, in case capital structure irrelevance does not hold a profit maximizing bank is likely to favor retention of the less risky mezzanine tranche. From a regulator's perspective this is a problem because the implied loan screening activity is substantially lower in this case. Policy attention is even more warranted if performing due diligence is costly, the economic outlook is positive or loan profitability is high.

1. Introduction

In the aftermath of the global financial crisis, European and U.S. authorities are putting in place new regulations that will force securitizers to retain economic exposure to the assets they securitize in order to better align their interests with those of investors. More specifically, Article 122a of the European Capital Requirements Directive and Section 941 of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act both impose a five percent minimum credit risk retention rate. Both allow for several options, including retaining just the equity tranche, or equal amounts of all tranches.[1]

However, a number of recent papers have shown that both the size and form of the retention are critical to incentivizing due diligence. They imply, for example, that the implementation should be flexible in order to achieve broad-based incentive alignments. Fender and Mitchell (2010) identify conditions under which mezzanine tranche retention best incentives loan screening but note that the best incentive mechanism depends on the size of the respective tranches, the quality of the loan pool and the economic conditions expected during the life of the securitization. Kiff and Kisser (2010) illustrate that even if the loan quality and the economic outlook are known, it is impossible to design specific policy recommendations in case tranche sizes are exogenous. The Board of Governors of the Federal Reserve System (2010) stresses the importance of considering the economics of the underlying assets and securitization structure and, along with International Monetary Fund (2009), the potential for other incentive alignment mechanisms to complement various forms of mandated risk retention.

The new risk retention regulations will affect all forms of securitization, i.e. asset-backed securities and mortgage-backed securities. They do not affect covered bonds, because they already involve 100 percent risk retention.[2] Ayotte and Gaon (2010) show that bankruptcy remoteness is a key feature of asset backed securities as securitization completely transfers the underlying assets (and risks) to a special purpose vehicle (SPV) in exchange for cash. Secured debt, on the other hand, only provides weaker protection as after entering Chapter 11, the underlying assets are part of the overall bankruptcy estate. Before bankruptcy, covered bonds

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[1] Securitization is a process in which different assets or portfolios of cash flow generating securities are pooled together and then sold to third parties. This paper focuses on structured finance which further implies that cash flows of the entire portfolio are tranched into several slices which differ with respect to their risk-return characteristics. Tranche holders are paid in a specific order, starting with the senior tranches (least risky) working down through various levels to the equity tranche (most risky). If some of the expected cash flows are not forthcoming (e.g., some loans default), then, after any cash flow buffers are depleted, the payments to the equity tranche are reduced. If the equity tranche is depleted, then payments to the mezzanine tranche holders are reduced, and so on up to the senior tranches.

[2] They will also require that securitizers disclose the amount and nature of the risks they retain upfront and on an ongoing basis. This was not case prior to the crisis.

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transfer less risk as the originator has to replace a pool of loans in case of defaults and prepayments. Carbo-Valverde et al. (2012) provide a detailed comparison of covered bonds and mortgage-backed securities and find that they are used for different purposes. Banks are more likely to issue covered bonds in case of liquidity needs whereas mortgage-backed securities are issued if a more complete risk transfer is required or in case of agency costs.[3] Ex post, they find that the issuance of mortgage-backed securities increases the likelihood of being bailed out, thereby underlying the importance of frictions in this market.

This paper explores the economics of securitization and it compares the implications of equity and mezzanine tranche retention in the context of systemic risk, moral hazard, accounting frictions and funding distortions. We derive both the optimal loan screening activity and retention size of a loan originating and securitizing bank and thereby provide a clear characterization of its optimal policies. The paper shows that equity tranche retention maximizes due diligence and thus generates the highest possible loan screening effort. While modeling a social welfare function is outside the scope of this paper, we take this first-best screening activity as a proxy for the social optimum. We then assess the impact of various market frictions and analyze whether equity or mezzanine tranche retention maximizes bank profits. This is important because if the bank chooses mezzanine tranche retention it will exert less screening effort than what would be optimal from a social point of view.

The analysis shows that if capital structure irrelevance does not hold and the wedge between the cost of debt and equity is too large, then mezzanine tranche retention is more likely to maximize bank profits. The intuition for this result is similar to the arguments made in Admati et al. (2011). That is, as long as the cost of debt is publicly subsidized, i.e. with tax incentives and mispriced bailout guarantees, the bank will find equity to be more expensive and this in turn increases the likelihood of retaining the mezzanine tranche. From a public policy perspective, regulators have two options to remedy the problem. First, they can remove distortions which decrease the cost of debt, i.e. by reducing tax benefits of debt or by improving the ex ante pricing of other subsidies such as bailout guarantees.[4] Second, a regulator could impose higher capital charges for banks which benefit from these subsidies more heavily than others, i.e. institutions with close to risk-free borrowing rates but very high leverage ratios.

The distortion between what would be optimal for society (maximizing due diligence) and for the bank (profit maximization) gets more pronounced when the economy is expected to perform well. The intuition for this result is that a more favorable environment allows the bank to optimally save on loan screening activities in case of mezzanine tranche retention and this in turn increases profit. A public policy implication would be to impose countercyclical retention requirements, i.e. to advise equity retention in case the economy is expected to perform well and mezzanine tranche retention during economic downturns.[5] Also, the magnitude of loan screening costs has a first order effect on the choice between equity and mezzanine tranche retention. This implies that regulation should consider the cost of performing due diligence. Put differently, an unanimous imposition of equity tranche retention might run the risk of shutting down certain areas of securitization markets in case the cost of performing due diligence is excessively high.

Furthermore, the paper shows that vertical slice retention is unlikely to dominate equity tranche retention and that for all the cases analyzed in this paper, even mezzanine tranche retention is expected to generate higher screening activity. Finally, we present an alternative risk specification which isolates the impact of loan quality on default risk and thereby abstracts from the distortions stemming from the systemic risk component. Under this more simple setup, the difference in implied screening effort becomes even more extreme and equity tranche retention clearly better incentivizes loan screening. Put differently, the robustness check underlines the importance of considering the joint impact of systemic risk and loan quality on the incentives to screen loans.

The paper closely relates to literature dealing with principal agent problems and credit risk transfer (CRT). Innes (1990) models a principal-agent problem between a risk-neutral entrepreneur with access to an investment project and an outside investor. The entrepreneur can exert costly effort to influence the probability of success of the underlying project but this action is unobservable and thus non-contractible. Given limited liability of the entrepreneur, Innes (1990) shows that debt financing is the corresponding optimal contract. Chiesa (2008) models a loan originating bank which needs outside financing and extends the setup to allow for a systemic risk component. Because a high return does not necessarily mean that the bank has engaged in monitoring but instead can be the result of a favorable realization of the systemic risk factor, Chiesa (2008) is able to show that a pure debt contract is not optimal whereas CRT with limited credit enhancements fosters loan monitoring and expands financial intermediation.

Fender and Mitchell (2010) adapt the principal agent problem of Innes (1990) to the case of asset securitization and introduce a systemic risk component into the analysis. They derive optimal screening effort under various retention mechanisms and show that equity tranche retention does not necessarily maximize loan screening activity. Using a dynamic model, Hartman-Glaser et al. (2012) focus on the optimal contract for mortgage backed securities between an originator and outside investors. Under some technical assumptions, they are able to show that the optimal contract consists of a one time payment to the originator after having observed a default-free waiting period.

The empirical evidence on the effect of securitization on screening behavior mostly reveals a decline in the quality of securitized loans prior to the recent crisis. Krainer and Laderman (2009) focus on mortgage loans originated in California for the period from 2000 to 2007. Using loan-level data, they show that underwriting standards for private label securitizations are worse than for U.S. non-securitized loans or securitizations conducted by the government sponsored entities. This is confirmed by Demyanyk and Van Hemert (2011) who analyze subprime mortgage loans issued between 2001 and 2007 and show that loan quality deteriorated in the years leading up to the financial crisis. Keys et al. (2010) compare the performance of loans with credit scores just above or below a certain threshold and find that loans above the threshold suffer from a worse ex post performance. Given that these loans had a higher likelihood of being securitized, the paper argues that securitization reduced the bank's loan screening incentives.

Another strand of literature relates to the effect of informational asymmetries, signaling and pricing of securities. The "lemons problem", as coined by Akerlof (1970), shows that markets may break down in the presence of informational asymmetries. Leland and Pyle (1977) use a signaling model to show how agency costs can

[3] Specifically, the authors find substantial evidence of herding behavior for the market of mortgage-backed securities.

[4] For a more detailed discussion, see Admati et al. (2011).

[5] The current proposals (Article 122a of the European Capital Requirements Directive and Section 941 of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act) are silent regarding an implementation of countercyclical capital requirements. In effect, Section 946 Geithner (2011) only states that "in practice, a dynamic framework would be adjusted more frequently in a counter-cyclical manner". No further details are provided. For a more general discussion on countercyclical capital requirements, see Basel Committee on Banking Supervision (2011).