Journal of Monetary Economics 56 (2009) 617–634

Contents lists available at ScienceDirect

Journal of Monetary Economics

journal homepage: www.elsevier.com/locate/jme

The alchemy of CDO credit ratings

Efraim Benmelech [a,b,*], Jennifer Dlugosz [a,c]

[a] Department of Economics, Harvard University, Littauer Center, Cambridge, MA 02138, USA
[b] NBER, 1050 Massachusetts Ave., Cambridge, MA 02138, USA
[c] Harvard Business School, Boston, MA 02116, USA

ARTICLE INFO

Article history:
Received 27 February 2009
Received in revised form
5 April 2009
Accepted 24 April 2009
Available online 15 May 2009

JEL classification:
G01
G12
G18
G24

Keywords:
Collateralized loan obligations
Credit rating
Leveraged buyouts securitization

ABSTRACT

Collateralized loan obligations (CLOs) were one of the largest and fastest growing segments of the structured finance market, fueling the 2003–2007 boom in syndicated loans and leveraged buyouts. The credit crisis brought CLO issuance to a halt, and as a result the leveraged loan market dried up. Similar to other structured finance products, investors in CLOs rely heavily on credit rating provided by the rating agencies, yet little is known about CLO rating practices. This paper attempts to fill the gap. Using novel hand-collected data on 3912 tranches of collateralized loan obligations we document the rating practices of CLOs and analyze their structures.

1. Introduction

Collateralized loan obligations (CLOs) are collateralized debt obligations (CDOs) backed predominantly by loans. CLOs played a key role in financing billions of dollars of private equity firms' leveraged buyouts around the world. As of 2006, Standard & Poor's Loan Syndications and Trading Association (S&P LSTA) estimated that structured investment vehicles like CLOs represented 60% of institutional participation in the syndicated loan market. The influx of capital from these investment vehicles was so extraordinary that the amount of capital committed to private equity in 2006 and 2007 reached record levels, surpassing the leverage buyout wave of the late 1980s (Kaplan and Stromberg, 2009). However, following the subprime mortgage crisis, investors lost confidence in structured finance credit ratings and CLO issuance virtually dried up. CLO issuance in the first quarter of 2008 was down 85% from the previous year's level.[1] Leveraged loan originations followed suit, falling 74% in the first quarter of 2008 compared to the same period in 2007. Leverage buyout (LBO) lending slowed down to a near standstill in 2008 with issuance levels being the lowest in almost a decade. The rise and fall (and potential resurrection) of the CLO market has important implications for private equity and leveraged loans lending.

One important aspect of structured finance markets in general, and of the CLO market in particular, is the extent to which investor demand is driven by credit ratings. CDOs contain hundreds of underlying assets and modeling the payoffs to these securities requires sophisticated cash-flow models. Investors rely on credit ratings as a focal point, yet there is little

* Corresponding author at: Department of Economics, Harvard University, Littauer Center, Cambridge, MA 02138, USA.
E-mail addresses: effi_benmelech@harvard.edu (E. Benmelech), jdlugosz@hbs.edu (J. Dlugosz).

[1] SIFMA Global CDO Issuance Tables: http://www.sifma.org/research/pdf/CDO_Data2008-Q4.pdf.

0304-3932/$ - see front matter © 2009 Elsevier B.V. All rights reserved.
doi:10.1016/j.jmoneco.2009.04.007

public information on how these ratings are calculated, and how ratings on CDO securities relate to the underlying collateral quality. While there is a growing body of literature that studies the credit ratings of residential mortgage-backed securities and CDOs,[2] less is known about the credit ratings of CLOs. Our paper attempts to fill this gap by studying the relation between CLO credit ratings and the quality of the underlying collateral backing these securities. Using novel hand-collected data on 3912 tranches of collateralized loan obligations we document the structure of CLO tranches and the credit quality of the underlying collateral supporting these tranches.

Collateralized loan obligations are interesting for several reasons. CLOs are the second largest segment of the CDO market, accounting for 30% of the dollar volume of securities issued.[3] While CLOs have not yet suffered downgrades or impairments as dramatic as those experienced by asset-backed CDOs and mortgage-backed securities, there is concern that the deepening recession may lead to deterioration in the credit quality of CLOs portfolios. We provide detailed information on the underlying structures of CLOs to further the understanding of these securities, their structures, and credit ratings.

Similar to other structured finance products, a large fraction of the securities issued by CLOs are AAA rated. 70.7% of the value of securities issued by CLOs in our sample is rated AAA. Excluding unrated equity tranches, AAA tranches account for 79.2% of the dollar value of securities issued. In contrast to mortgage-backed securities, the assets in the collateral pools of CLOs are rated on the same scale as the liabilities, which facilitates an examination of the credit enhancement achieved through structuring. There is a large gap between the rating of CLO tranches and the credit quality of the underlying assets supporting these tranches. We find that 85% of the CLOs in our sample have collateral pools with a weighted-average credit rating of B, 8% have a weighted-average credit rating of BB, and for 7% the information is missing. We use the term "alchemy" to describe the mismatch between the credit ratings of CLO securities and the credit quality of the underlying collateral. We also document a large degree of uniformity among cash-flow CLOs; 63% of the CLOs in our sample had one of four major liability structures or deal types. Moreover, there is very little variation in the required composition of the collateral pools in the CLOs. We speculate that the uniformity of CLO structures is driven by a boiler-plate model that was used to rate CLOs targeting the highest possible credit rating at the lowest cost, while catering to investor demand.

The rest of our paper is organized as follows. In Section 2 we describe the market for CDOs, presenting statistics on global issuance and the economic motivation for CDO issuance. Section 3 describes our data. Section 4 presents our empirical analysis of the structure of CDOs and their credit ratings. Section 5 discusses the demand for highly rated structured products tranches. Section 6 concludes.

2. The market for collateralized debt obligations

Collateralized debt obligations are special-purpose vehicles that buy portfolios of assets and issue securities backed by the cash flows from those assets. The collateral assets, in turn, are sold to a special-purpose entity, often located in the Cayman Islands or Ireland, to ensure bankruptcy remoteness from the issuer. While the first CDOs were created in the 1980s, global issuance remained low, under $100 billion annually, until the mid-1990s.[4] Since 2002, CDOs have been the fastest growing sector of the asset-backed securities market.

2.1. The economics of CDOs

The defining feature of CDOs and CLOs is their multi-tiered liability structure (see Fig. 1). CDOs and CLOs issue multiple classes of financial claims with differing levels of seniority against diversified pool of assets. When assets in the collateral pool miss payments or default, subordinate tranches absorb losses first. More senior tranches only suffer losses once the cushion below them has been depleted.

The process of pooling of assets achieves diversification as long as the assets are not perfectly correlated, while structuring of tranches with different levels of seniority reallocates risk across different securities. In a Modigliani–Miller world with perfect markets, there would be no benefit to this kind of repackaging by tranching, however in the presence of various market imperfections, gains from tranching may exist. DeMarzo (2005) lists three types of market frictions that are important in explaining securitization: (i) transactions costs, (ii) market incompleteness, and (iii) asymmetric information. According to DeMarzo and Duffie (1999) and DeMarzo (2005), asymmetric information plays a key role in explaining the existence of tranched securities. DeMarzo (2005) notes that market incompleteness cannot explain the existence of pass-through pools or most CLOs because they do not augment the span of tradeable claims; additionally, transactions costs explain why pooling is valuable but not tranching. DeMarzo (2005) presents a model of a financial intermediary that would like to sell assets about which it has superior information. When the number of assets is large and their returns are imperfectly correlated, the intermediary maximizes his revenue from the sale by pooling and tranching, as opposed to simply pooling or selling the assets individually. Similar to the intuition in Myers and Majluf (1984), tranching allows the intermediary to concentrate the default risk in one part of the capital structure, resulting in a large share of the liabilities

[2] See for example, Ashcraft and Schuermann (2008), Coval et al. (forthcoming, 2009), and Mason and Rosner (2007).

[3] Between 2005 and 2008, only structured finance CDOs (CDOs backed by structured securities like RMBS, ABS, other CDOs, or CDS) accounted for a larger share of issuance (56%). See SIFMA Global CDO Issuance statistics.

[4] See Fabozzi et al. (2006, p. 3).