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## The effect of US bank holding companies' exposure to asset-backed commercial paper conduits on the information opacity and systemic risk



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#### 1. Introduction

#### ABSTRACT

This paper analyzes information opacity and systemic risk for the U.S. Bank Holding Companies (BHCs) in the context of the asset-backed commercial paper (ABCP) between 2001:Q2 and 2012:Q4. Banks which set up costly ABCP conduits might have benefited from the regulatory capital relief and from providing financing alternatives to their clients. However, BHCs faced costs in terms of the increase in information opacity through the provision of the credit enhancements and liquidity lines to their own and third-party sponsored ABCP conduits, which in turn increased BHCs' systemic risk.

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The recent financial crisis brought to the surface fundamental flaws in the design of the shadow banking system (Adrian and Ashcraft, 2001). Shadow banking was perceived as stable and non-risky because of the guarantees provided by the private sector.<sup>1</sup> However, since the solvency of the guarantee providers was questioned shadow banking has undergone a major collapse, partly because credit rating agencies, risk managers and investors underestimated the tail risks in the guarantees to the securitization structures.

What became apparent after the crisis erupted is that there was high uncertainty about banks' holdings and inter-bank connections that contributed to the financial turmoil. Governments that did not account for the fact that some banks were too interconnected, often ended up with too many "too big to fail" banks. Significant amounts of short-term lending via ABCP collapsed during the financial crisis. Credit losses on subprime mortgages affected the ABCP market via the runs on programs that were exposed to these assets. As investors lost confidence and ABCP could not roll over, support provided by the banks was called on which increased the pressure on bank balance sheets even more. As banks were called to extend liquidity lines to ABCP conduits, they had to reduce their lending to each other which added to the liquidity crunch. ABCP

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<sup>&</sup>lt;sup>1</sup> Credit guarantees are structured to align the risk and control excessive risk taking of banks, a view consistent with the optimal allocation of control rights under asymmetric information (Acharya et al., 2010). This ensures that sponsors have incentives to screen the conduit's asset purchases (Ramakrishan and Thakor, 1984; Calomiris and Mason. 2004). Guarantees also ensure that ABCP qualifies for the highest ratings from credit rating agencies. In turn, the highest ratings ensure that some financial institutions, for example, money market funds are legally allowed to invest in ABCP (Kaperczyk and Schnabl, 2009). That is, guarantees were a crucial factor that facilitated the rapid expansion of the market by injecting the large doze of confidence into assets for investors (e.g. Levitin and Wachter, 2012).

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played a much more significant role than for example the repo market in supporting both the expansion and contraction of the shadow banking sector (Krishnamurthy et al., 2014; Schroth et al., 2014). The crisis in the ABCP market had a profoundly negative effect on banks—directly because they invested in ABCP, and indirectly because they insured the ABCP by providing credit and liquidity enhancements<sup>2</sup> to ABCP conduits<sup>3</sup> sponsored by other banks.

In this paper, I contribute to the growing empirical literature on the relationship between off-balance sheet activities, asymmetric information and systemic crisis. I examine whether exposure to ABCP conduits increased the information opacity of BHCs and whether exposure to ABCP and information opacity added to the accumulation of systemic risk. It is natural to expect that a higher degree of uncertainty was costly for the banks, as it may have deterred investors from investing into these opaque banks.<sup>4</sup> This study is timely, given the scale of the ABCP market and the government bailouts that followed the eruption in this relatively "safe market". I also contribute to the discussion of the increased disclosure of the banks and share this function with regulators. Different market participants may have different expectations about the probability of a change in ABCP market conditions and a different assessment of issuers' dependence on securitization funds may be reflected in the bid–ask spread, commonly used in the literature as a measure of information asymmetry (e.g., Mohd, 2005; Leuz and Verrecchia, 2000).

Existing studies have focused mainly on the benefits that may arise as banks engage in the ABCP market. In contrast, I focus mainly on the costs to the banks stemming from extending guarantees to ABCP conduits.

To my knowledge, this is the first paper to examine the costs of exposure to ABCP and the relationship between bank opacity, exposure to ABCP and systemic risk. A recent format change in quarterly 9-YC forms filed with regulators allows me to directly evaluate the effect of the credit and liquidity enhancements to own and third-party ABCP conduits on banks' opacity.

The structure of this paper is as follows. First, I present the institutional background of the ABCP market. Second, I discuss the data, methodology and my chosen dependent and control variables. In the third section, I present the results of the regressions and discuss their implications. The fourth section deals with robustness checks. The fifth section summarizes and concludes.

#### 2. Overview

#### 2.1. Institutional background of ABCP

The introduction of the bank-advised ABCP conduit in 1983 was perhaps the most important decade's financial innovation of the 1980s (Kavanagh et al., 1992). ABCP is a form of senior secured, short-term borrowing while the ABCP conduit is a SPV typically structured as a limited purpose company. This SPV funds a portfolio of assets using a standard securitization framework where the financing of assets is accomplished through the issuance of ABCP as their primary liability. Generally, ABCP is a security with a term to maturity usually no longer than 270 days in the U.S. However, often ABCP is issued for under 30 days. In contrast to term securitizations, which have a fixed life span, ABCP programs are intended to be essentially perpetual. Most maturing ABCP is repaid with the proceeds of a newly issued ABCP, thus the entire process is "rolling". ABCP provides corporations with alternatives to direct debt issuance and term ABS. Although the majority of ABCP conduits have expanded to include extendible CP (usually single seller programs that finance credit card receivables or mortgages), medium-term notes, and in some cases, subordinated debt to provide credit enhancement (Moody's Investors Service, 2003a; Moody's Investors Service, 2003b).<sup>5</sup> There are other important differences between ABCP and ABS. ABS for example usually has exposure to a single sector (e.g. mortgages, student loans, credit cards) while the majority of ABCP conduits have diversified portfolios of assets. In addition, ABCP conduits benefit from more levels of credit enhancements than ABS and thus they are considered to be a safer investment.

Many of the assets included in the ABCP program do not have rating agencies' explicit ratings. For instance, Moody's Prime 1 rating on the ABCP program refers only to the CP notes issued by the ABCP program. That is, Prime 1 rating applies only to the conduit as a whole, and not to any particular asset. Generally, ABCP<sup>6</sup> programs are subject to two major risks: credit risk (the likelihood that the receivable will incur losses and thus they will not be fully collectible) and liquidity risk

<sup>&</sup>lt;sup>2</sup> In the United States, bank regulators historically made a distinction between credit and liquidity guarantees. Credit guarantees were estimated to cover credit risk and, thus, were considered equivalent to on-balance sheet financing. Assets covered by credit guarantees, therefore, had the same capital requirements as assets held on the balance sheet. Liquidity guarantees were considered to cover liquidity risk but no credit risk. Regulators required practically no capital for liquidity risk. This regulation generated a sharp discontinuity between the capital requirements for credit guarantees and other types of guarantees. Over time, banks developed guarantees that were classified as liquidity guarantees but effectively covered credit risk. Banks created these guarantees by defining asset default in such a way that ABCP almost always matured before assets were declared in default (Acharya et al., 2013a, 2013b).

<sup>&</sup>lt;sup>3</sup> ABCP conduits are special purpose vehicles (SPVs) set up by banks that issue short-term paper to finance medium- and long-term asset claims.

 <sup>&</sup>lt;sup>4</sup> Although I am aware of the differences between a bank and a bank holding company, I use these two terms interchangeably throughout the paper.
<sup>5</sup> Moody's Special Report "The Fundamentals of Asset-Backed Commercial Paper", 2003.

<sup>&</sup>lt;sup>6</sup> Total amount of outstanding commercial ABCP is available from Board of Governors of the Federal Reserve System, at http://www.federalreserve.gov/releases/cp/about.htm.

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