



Valuation and systemic risk consequences of bank opacity

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ABSTRACT

We examine the effects of opacity on bank valuation and synchronicity in bank equity returns over the years 2000–2006 prior to the 2007 financial crisis. As expected, investments in opaque assets are more profitable than investments in transparent assets, and taking profitability into account, have larger valuation discounts relative to transparent assets. The valuation discounts on opaque asset investments decline over the 2000–2006 period only to be followed by a sharp reversal in 2007. The decline is coincident with a rise in bank equity share prices, decrease in transparent asset holdings by banks, and greater return synchronicity – evidence consistent with a feedback effect.

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1. Introduction

In a world without deposit insurance, the opaque nature of the banking industry makes banks vulnerable to runs because depositors cannot easily distinguish between healthy and sick banks. Credible deposit insurance averts depositor bank runs but invites moral hazard (Grossman, 1992; Wheelock and Kumbhakar, 1995), which regulation and periodic examinations mitigate. Because of the critical role that banks assume in overall economic activity, severe disruptions to credit flows can result from a large number of bank failures (Bernanke, 1983; Calomiris and Mason, 2003). For this reason, opaqueness is an important reason for regulating banks (Flannery, 1998).

With deposit insurance, does bank opacity still matter? We argue that it does because opacity makes it difficult for even the most sophisticated investor to accurately assess fundamental value and weakens the effectiveness of market discipline on banks.¹ Because of their higher risks, opaque assets should yield higher returns than

transparent assets and investors should apply a higher valuation discount to opaque assets. But when the discount is insufficient to offset a higher marginal risk, banks are rewarded for their investments in opaque assets with higher share prices, which can create a feedback effect that encourages banks to increase their investments in opaque assets. The overinvestment that results is a consequence of a market that underestimates the true risks of opaque investments.

Prior literature also shows that opacity, which makes it difficult for investors to discriminate across firms, creates price synchronicity (Morck et al., 2000). Markets use idiosyncratic information about one firm to update the valuation of other opaque but seemingly similar firms. The absence of reliable firm-specific information fosters price contagion that contributes to financial instability. Capital crises resulting from indiscriminate declines in equity values exacerbate cycles of speculative bubbles and subsequent crashes. Jones et al. (2012) find that between 2000 and 2006, intra-industry price revaluations in non-merger bank shares from announcements of bank mergers are higher for more opaque non-merger banks. Further, non-merger banks that gained most from intra-industry price revaluations also experience larger valuation declines in 2007–2008 during the subprime financial crisis. Deposit insurance, while largely effective at preventing depositor bank runs, does little to avert capital crises arising from a precipitous fall in equity values. Opacity still matters even with deposit insurance.

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¹ Evidence on the ability of markets to discipline banks is mixed. Some examples are Flannery and Sorescu (1996), Morgan and Stiroh (2001), Bliss and Flannery (2002), and Goyal (2005).

In this paper, we quantify the impact of opacity on bank profitability and valuation, and substantiate the increased risk-taking feedback effect from investments in opaque assets in the years preceding the 2007 financial crisis. We find that with bank profitability taken into account, the information uncertainty associated with investments in opaque assets entail higher required rates of return, and consequently, higher valuation discounts relative to transparent assets. Valuation discounts related to investments in opaque assets decline throughout our sample period (2000–2006) only to rise sharply in 2007 with the collapse of the real estate market and onset of the financial crisis.

In addition, we confirm the effects of opacity on price synchronicity during the 2000–2007 period. Larger investments in opaque assets intensified price synchronicity. Cross-correlations in equity returns and systematic (idiosyncratic) risks across banks increased (decreased) significantly as investments in transparent assets fell. Price synchronicity, which peaked in 2007, created systemic risk. The financial instability that resulted from a subsequent decline in share prices of banks posed a considerable threat to the real economy.

The remaining sections of the paper are organized as follows. Section 2 briefly discusses the central sources of bank opacity. Section 3 discusses the costs and benefits to banks and the economy as a whole from bank investments in opaque assets. Section 4 develops the hypotheses to be tested and describes the data used for our analysis. Empirical results appear in Section 5, and Section 6 concludes.

2. Sources of bank opacity

For investors, opacity results from information uncertainty that can arise in one of three ways. First, incomplete disclosure by a firm to investors creates information asymmetry. Second, when a firm does disclose information, investors may interpret the enigmatic quality and credibility of the disclosures in contradictory ways. Third, even with full and credible information disclosure, investor knowledge about the underlying profitability and risks of the firm can still be imprecise because of the inherent complexity of the business and/or the ability of managers to rapidly transform assets. Easley et al. (2002) and Easley and O'Hara (2004) show that information risk affects asset returns and the cost of capital.

Asset composition is widely acknowledged in the banking literature as an important determinant of opacity. Morgan (2002) shows that banks are relatively more opaque than non-banks. Examining dual-rated debt issued by banks and non-banks over the period 1983–1993, he finds that bank debt is more likely to be split rated than non-bank debt. More importantly, loans and trading assets, which increase the likelihood that newly issued bank debt will be split rated, represent significant sources of opacity for banks.²

Bank loans are the primary opaque assets for most banks. Loans are privately negotiated transactions between a bank and borrower. Consequently, banks have privileged information that investors do not have about the characteristics of the loan contracts and the creditworthiness of its borrowers (Campbell and Kracaw, 1980; Berlin and Loeys, 1988). Resolving the informational asymmetry between borrowers and lenders is a primary reason for the existence of financial intermediaries (Leland and Pyle, 1977). And as Sufi (2007) finds, greater informational asymmetry between borrowers and lenders substantially influence the structure

of syndicated loans, forcing lead arrangers to assume larger positions in the syndicate.

Trading assets represent another important source of opacity for banks. Unlike loans, trading assets are concentrated primarily at the largest banks. Opacity in trading assets arises for two reasons. First, some of these assets (for example, CMOs and CDOs) are intrinsically complex, making them difficult to value.³ Second, trading assets are often liquid⁴ and move on and off the books quickly, making them “slippery” and difficult for investors to monitor (Morgan, 2002). Even when periodic reports disclose all information about the firm's trading assets, investors cannot be certain of trading activities that occur between reporting dates. Given that effective monitoring of the positions is difficult, managers have opportunities to deviate from value-maximizing strategies (Myers and Rajan, 1998). The ability to “transform” trading assets allows managers to potentially expropriate wealth from outside investors in various ways. These can include outright theft, fraud, self-dealing, consumption either in the form of perks or excessive compensation, conversion of general-purpose assets into specific assets that have little value without the manager (Shleifer and Vishny, 1989), and risk shifting (Jensen and Meckling, 1976).

In short, opaque loans and trading assets are intrinsically more difficult for investors to value. The difficulty in valuation can arise from the absence of information, the interpretation of available information in contradictory ways, or fundamental complexity that makes accurate valuation nearly impossible.

3. Costs and benefits of investments in opaque assets

Managers and shareholders will evaluate the opacity associated with asset choice based on its relative costs and benefits. Opaque assets are riskier than transparent assets, and accordingly, more profitable on average. In competitive markets, prices of opaque assets will be determined by the willingness of shareholders to bear the risks associated with opacity. But risk pricing alone does not ensure socially optimal levels of investments in opaque assets. Bank managers' desired holdings of opaque assets might not always be in the best interests of shareholders. Principal-agent conflicts can lead to overinvestment in opaque assets. Wagner (2007a) notes that bank managers will seek to circumvent shareholder leverage constraints by holding opaque assets that allow higher risk assets to be substituted for lower risk assets.⁵

More importantly, investments in opaque assets can be inefficient because opacity imposes social costs that banks do not internalize.⁶ Kahn and Wagner (2010) argue that over-reliance by individual banks on the liquidity that can be provided by other banks in times of financial crisis raises the risk that the pool of bank liquidity will be exhausted. Investments in opaque assets can impair banks' collective ability to raise external liquidity in times of financial crisis. Moreover, Pagano and Volpin (2012) point out that asset securitization improves the liquidity of the primary market for opaque assets but at the expense of illiquidity in the secondary market

³ Accounting rules require that trading assets are marked-to-market on the balance sheet with market value determined by market transactions involving similar securities. When markets for trading assets cease to function and “dry up”, as with mortgage-backed securities recently, it becomes difficult to ascertain the true intrinsic value of these securities based on observed market prices. Banks are forced to model-driven methods for estimating “market” value. In such an environment, accountants and auditors may push for conservative estimates, which can result in large losses for banks.

⁴ Wagner (2007b) shows that increased bank liquidity can paradoxically contribute to financial instability because it allows banks to take on more risk.

⁵ Economy-wide inefficiencies in investments may result if the safer projects that banks reject are not financed by nonbank entities.

⁶ Even when banks use opaque assets to diversify and reduce individual bank risks, the prospect of a systemic crisis is still significant when all banks pursue diversification strategies that make them more exposed to similar risks (Wagner, 2010).

² Flannery et al. (2004), in contrast, find no difference between the market microstructure characteristics of banks and non-banks, concluding that banks are not more opaque. Banks are simply “boring.”

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