

CHAPTER ONE

Introduction

I BEGIN WITH A STORY of the failure of a bank that is a major dealer in securities and derivatives. Our dealer bank will be unable to stop the drain of cash caused by the departures of its short-term creditors, over-the-counter (OTC) derivatives counterparties, and client hedge funds. The most immediate examples are the 2008 failures of Bear Stearns and Lehman, but the failure mechanics at work could apply to any major dealer bank, once it is sufficiently weakened. There are further lessons to be learned from the major dealers such as Morgan Stanley that did not fail despite severe stresses on their liquidity shortly after the Lehman bankruptcy.

We pick up the story several months before the demise of a hypothetical dealer bank, which we shall call Beta Bank. Beta's capital position has just been severely weakened by losses. The cause need not be a general financial crisis, although that would further reduce Beta's chance of recovery. Once weakened, Beta takes actions that worsen its liquidity position in a rational gamble to signal its strength and protect its franchise value. Beta wishes to reduce the flight of its clients, creditors, and counterparties.

Beta's first move is to bail out some clients from the significant losses that they suffered through investments arranged by Beta. This is an attempt to maintain the value of Beta's reputation for serving its clients' interests. As time passes, and the cracks in Beta's finances become apparent to some market participants, Beta notices that some of its OTC derivatives counterparties have begun to lower their exposures to Beta. Their transactions slant more and more toward trades that drain cash away from Beta and toward these counterparties. Beta believes that it must continue to offer competitive terms on these trades, for to do otherwise would signal financial weakness, thereby exacerbating the flight. Other dealer banks are increasingly being asked to enter derivatives trades, called "novations," which have the effect of inserting the other dealers between Beta and

its original derivatives counterparties, insulating those counterparties from Beta's default risk. As those dealers notice this trend, they begin to refuse novations that would expose them to Beta's default. As a result, the market gossip about Beta's weakness begins to circulate more rapidly.

Beta has been operating a significant prime-brokerage business, offering hedge funds such services as information technology, trade execution, accounting reports, and—more important to our story—a repository for the hedge funds' cash and securities. These hedge funds have heard the rumors and have been watching the market prices of Beta's equity and debt in order to gauge Beta's prospects. They begin to shift their cash and securities to better-capitalized prime brokers or, safer yet, to custodian banks. Beta's franchise value is thus rapidly eroding; its prospects for a merger rescue or for raising additional equity capital diminish accordingly. Potential providers of new equity capital question whether their capital infusions would do much more than improve the position of Beta's creditors. In the short run, a departure of prime-brokerage clients is also playing havoc with Beta's cash liquidity, because Beta has been financing its own business in part with the cash and securities left with it by these hedge funds. As they leave, Beta's cash flexibility declines to alarming levels.

Although Beta's short-term secured creditors hold Beta's securities as collateral against default losses, at this point they see no good reason to renew their loans to Beta. Potentially, they could get caught up in the administrative mess that would accompany Beta's default. Moreover, even though the amount of securities that they hold as collateral includes a "haircut"—a buffer for unexpected reductions in the market value of the collateral—there remains the risk that they could not sell the collateral at a high enough price to cover their loans. Most of these creditors fail to renew their loans to Beta. A large fraction of these short-term secured loans are in the form of repurchase agreements, or "repos." The majority of these have a term of one day. Thus, on short notice, Beta must find significant new financing, or conduct costly fire sales of its securities.

Beta's liquidity position is now grave. Beta's treasury department is scrambling to maintain positive cash balances in its clearing accounts. In the normal course of business, Beta's

clearing bank would allow Beta and other dealers the flexibility of daylight overdrafts. A clearing bank routinely holds the dealer's securities in amounts sufficient to offset potential cash shortfalls. Today, however, Beta receives word that its clearing bank has exercised its right to stop processing Beta's cash transactions, given the exposure of the clearing bank to Beta's overall position. This is the last straw. Unable to execute its trades, Beta declares bankruptcy.

Beta Bank is a fictional composite. In what follows, my goal is to establish a factual foundation for the key elements of this story. In addition to providing institutional and conceptual frameworks, I will propose revisions to regulations and market infrastructure.

ECONOMIC PRINCIPLES

The basic economic principles at play in the failure of a large dealer bank are not so different from those of a garden-variety run on a typical retail bank, but the institutional mechanisms and the systemic destructiveness are rather different.

A conventional analysis of the stability of a bank, along the lines of Diamond and Dybvig (1983), conceptualizes the bank as an investor in illiquid loans. Financing the loans with short-term deposits makes sense if the bank is a superior intermediary between depositors, who are usually interested in short-term liquidity, and borrowers, who seek project financing. The equity owners of the bank benefit, to a point, from leverage. Occasionally, perhaps from an unexpected surge in the liquidity demands of depositors or from a shock to the ability of borrowers to repay their loans, depositors may become concerned over the bank's solvency. If the concern is sufficiently severe, the anticipation by depositors of a run is self-fulfilling.

The standard regulatory tools for treating the social costs of bank failures are the following: supervision and risk-based capital requirements, which reduce the chance of a solvency threatening loss of capital; deposit insurance, which reduces the incentives of individual depositors to trigger cash insolvency by racing each other for their deposits; and regulatory resolution mechanisms that give authorities the power to restructure a bank relatively efficiently. These regulatory tools

not only mitigate the distress costs of a given bank and protect its creditors, but they also lower the knock-on risks to the rest of the financial system. We will consider some additional policy mechanisms that more specifically address the failure risks of large dealer banks.

Although I will simplify the discussion by treating large dealer banks as members of a distinct class, in practice they vary in many respects. They typically act as intermediaries in the markets for securities, repurchase agreements, securities lending, and over-the-counter derivatives. They conduct proprietary (speculative) trading in conjunction with these services. They are prime brokers to hedge funds and provide asset-management services to institutional and wealthy individual investors. As part of their asset-management businesses, some operate “internal hedge funds” and private equity partnerships, for which the bank acts effectively as a general partner with limited-partner clients. When internal hedge funds and other off-balance-sheet entities such as structured investment vehicles and money-market funds suffer heavy losses, the potential for a reduction in the dealer’s reputation and franchise value gives the dealer bank an incentive to compensate investors voluntarily in these vehicles.

Dealer banks may have conventional commercial banking operations, including deposit taking as well as lending to corporations and consumers. They may also act as investment banks, which can involve managing and underwriting securities issuances and advising corporate clients on mergers and acquisitions. Investment banking sometimes includes “merchant banking” activities, such as buying and selling oil, forests, foodstuffs, metals, or other raw materials.

Large dealer banks typically operate under the corporate umbrella of holding companies. These are sometimes called “large complex financial institutions.” Some of their activities are therefore outside of the scope of traditional bank-failure resolution mechanisms such as conservatorship or receivership.¹ New U.S. legislation, particularly the Restoring American Financial Stability Bill, extends the authority of the government to restructure large failing bank-holding companies and other systemically important financial institutions that were not already covered by traditional resolution mechanisms.

When the solvency of a dealer bank becomes uncertain, its various counterparties and customers have incentives to reduce their exposures to the bank, sometimes quickly and in a self-reinforcing cascade. Although their incentives to exit are similar to those of uninsured bank depositors, the mechanisms at play make the stability of a dealer bank worthy of additional policy analysis, especially considering the implications for systemic risk. Dealer banks have been viewed, with good reason, as “too big to fail.” The destructiveness of the failure of Lehman Brothers in September 2008 is a case in point.

Although all large dealer banks now operate as regulated banks or within regulated bank-holding companies that have access to traditional and new sources of government or central-bank support, concerns remain over the systemic risk that some of these financial institutions pose to the economy. Although access to government support mitigates systemic risk associated with catastrophic failures, the common knowledge that too-big-to-fail financial institutions will receive support when they are sufficiently distressed—in order to limit disruptions to the economy—provides an additional incentive to large financial institutions to take inefficient risks, a well-understood moral hazard. The creditors of systemically important financial institutions may offer financing at terms that reflect the likelihood of a government bailout, thus further encouraging these financial institutions to increase leverage.

Among the institutional mechanisms of greatest interest here are those associated with short-term “repo” financing, OTC derivatives, off-balance-sheet activities, prime brokerage, and loss-of-cash settlement privileges at a dealer’s clearing bank. Counterparty treatment at the failure of the dealer is a boundary condition that may accelerate a run once it begins.

As counterparties and others begin to exit their relationships with a distressed dealer bank, not only is the cash liquidity position of the bank threatened, but its franchise value also diminishes, sometimes precipitously. If the balance sheet or franchise value has significant associated uncertainty, potential providers of additional equity capital or debt financing, who might hope to profit by sharing in a reduction in distress losses, may hold back in light of adverse selection. They would be purchasing contingent claims whose prospects could be much

more transparent to the seller (the bank) than to the investor. For example, during the 2008 financial crisis, when Wachovia was searching for a potential buyer of its business in order to avoid failure, a Wachovia official described the reluctance of Wells Fargo by saying² “They didn’t understand our commercial loan book.”

Another market imperfection, known as “debt overhang,” further dampens the incentive of a weakened bank to raise new equity capital in order to lower its distress costs. Although large potential gains in the total enterprise value of a distressed bank could be achieved by the addition of equity capital, these gains would go mainly toward making creditors whole, which is not the objective of the current equity owners. Debt overhang is discussed in more detail in chapter 4.

In a normal distressed corporation, debt overhang and adverse selection can be treated by a bankruptcy reorganization, which typically eliminates the claims of equity owners and converts the claims of unsecured creditors to new equity. Attempts to restructure the debt of a large dealer bank, however, could trigger a rush for the exits by various clients, creditors, and derivatives counterparties. This may lead to a large fire sale, disrupting markets for assets and over-the-counter derivatives, with potentially destructive macroeconomic consequences. An automatic stay, which tends to preserve the enterprise value of a distressed non-financial company, can also limit the ability of a large dealer bank to manage its risk and liquidity. In any case, in many significant jurisdictions such as the United States, large classes of over-the-counter derivatives and repurchase agreements (short-term secured claims) are exempt from automatic stays, as explained by Krimminger (2006) and the International Swaps and Derivatives Association (2010). Jackson and Skeel (2010) analyze the efficacy of this exemption from automatic stays, from a legal viewpoint. The efficacy of this “safe harbor” for derivatives and repurchase agreements is a matter of significant debate.

Throughout this book I will pay special attention to reforms that go beyond those associated with conventional capital requirements, supervision, and deposit insurance. Among the additional mechanisms that might be used to address large-bank failure processes are central clearing counterparties for OTC

derivatives, dedicated “utilities” for clearing tri-party repurchase agreements, forms of debt that convert to equity contingent on distress triggers, automatically triggered mandatory equity rights offerings, and regulations that require dealer banks to hold not only enough capital, but also enough liquidity, that is, enough uncommitted liquid assets to fill the hole left by sources of short-term financing that may disappear in a run.

In the next chapter, I review the typical structure and lines of business of a bank holding company whose subsidiaries intermediate over-the-counter markets for securities, repurchase agreements, and derivatives, among other investment activities that play a role in their failure mechanics. Chapter 3 then describes those failure mechanics. Chapter 4 reviews some impediments to the voluntary recapitalization of weakened financial institutions, and some contractual or regulatory mechanisms for automatic recapitalization when certain minimum capital or liquidity triggers are hit. Such automatic recapitalization mechanisms are among the main policy recommendations that are summarized in chapter 5. Other recommendations in this last chapter include minimum liquidity coverage ratios that incorporate the liquidity impact on a dealer bank of a potential flight by short-term secured creditors, derivatives counterparties, and prime-brokerage clients. I also recommend utility-style repo clearing banks. Another key recommendation, the central clearing of OTC derivatives, is described in more detail in the appendix.