CHAPTER 7

Large Banks and the Volcker Rule

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7.1 OVERVIEW

In announcing an agreement between the House and Senate on the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Senator Christopher Dodd noted that "the American people have called on us to set clear rules of the road for the financial industry to prevent a repeat of the financial collapse that cost so many so dearly."

Most of the systemic risk in the United States today emanates from the six largest bank holding companies—Bank of America, JPMorgan Chase, Citigroup, Wells Fargo, Goldman Sachs, and Morgan Stanley.[1] Critics have argued that the Act does not adequately address this risk. For example, none of these institutions are to be broken up, and efforts to lower their systemic risk, such as charging them up front for the risk they create, have been heavily diluted. Indeed, as a result of the crisis some of the leading U.S. financial institutions have become even bigger, broader, and more complex.

Moreover, these large, complex financial institutions (LCFIs) will still report to the same regulators as before, whose effectiveness in averting prior crises was sorely lacking. To impose serious sanctions on the banks, the regulators will now have to go through a lengthy process involving a two-thirds vote of the new 10-member Financial Stability Oversight Council, which is subject to appeal in the courts. They will still escape having to pay a market price for the implicit cheap-money subsidy they receive from government

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guarantees. They will probably have to face tougher capital adequacy standards in the future, but not for a number of years—plenty of time to devise innovative ways to avoid them. They will be subject to more consumer-products regulation in the future, but will probably be able to pass the cost on to their clients. And although subject to an orderly liquidation authority, there is enough uncertainty about putting LCFIs through a receivership process that its credibility to impose market discipline is questioned.

LCFIs can be defined as financial intermediaries engaged in some combination of commercial banking, investment banking, asset management, insurance, and/or the payments system, whose failure poses a systemic risk to the financial system as a whole (see, for example, Saunders, Smith, and Walter 2009; Duffie 2010). Banks and other LCFIs enjoyed many years of deregulation, globalization, consolidation, and the freedom to engage in multiple business lines and to invest their own capital in a variety of nonbanking activities. This activity helped encourage the great disintermediation from bank balance sheets to increasingly efficient capital markets that widened access and lowered capital costs to market users. It also drove LCFIs to engage in mergers and other corporate actions that greatly increased their size, complexity, and influence.

Table 7.1 lists the market value and assets of the largest 24 U.S. financial firms in June 2007, just prior to the start of the financial crisis. The top 13 names cover two-thirds of all the assets of the top 100 firms ($21 trillion), and constitute a who's who of the crisis that subsequently emerged. Specifically, we have, in order of size, Citigroup, Bank of America, JPMorgan Chase, Morgan Stanley, Merrill Lynch, American International Group (AIG), Goldman Sachs, Fannie Mae, Freddie Mac, Wachovia, Lehman Brothers, Wells Fargo, and MetLife. Bear Stearns and Washington Mutual come in at Nos. 15 and 17, respectively. Of these 13 firms, one could convincingly argue that nine of them either failed or were about to fail in the absence of government intervention during the financial crisis.

Table 7.1 also shows that U.S.-based LCFIs include not just commercial banks but other such financial colossi as AIG and MetLife in the insurance sector; the government-sponsored enterprises Fannie Mae (FNMA) and Freddie Mac (FHLMC); finance subsidiaries tied to real-economy firms such as General Motors Acceptance Corporation (GMAC) and General Electric (GE) Capital;[2] and, putting aside their newly minted bank holding company status, the two premier investment banks Goldman Sachs and Morgan Stanley. None of these firms in early September 2008 were subject to banking regulations, but all were considered large and interconnected enough to be too big to fail (TBTF) and thus were covered by an implicit government guarantee that turned out to save the day.

TABLE 7.1 Largest Financial Firms (by Total Assets, $ Billions, June 2007)

Financial Firm	Assets	Market Equity	Assets/ Equity	Contribution	Cumulative Proportion
Citigroup Inc.	$2,347.4	$253.7	9.3	10.9%	10.9%
Bank of America Corp.	1,618.4	217.0	7.5	7.5	18.4
JPMorgan Chase & Co.	1,504.3	165.5	9.1	7.0	25.4
Morgan Stanley Dean Witter & Co.	1,250.0	88.4	14.1	5.8	31.2
Merrill Lynch & Co. Inc.	1,111.3	72.6	15.3	5.2	36.4
American International Group Inc.	1,111.2	181.7	6.1	5.2	41.6
Goldman Sachs Group Inc.	996.4	88.5	11.3	4.6	46.2
Federal National Mortgage Ass'n	889.7	63.6	14.0	4.1	50.3
Federal Home Loan Mortgage Corp.	843.1	40.2	21.0	3.9	54.2
Wachovia Corp.	748.7	98.1	7.6	3.5	57.7
Lehman Brothers Holdings Inc.	625.3	39.5	15.8	2.9	60.6
Wells Fargo & Co.	610.0	117.5	5.2	2.8	63.5
MetLife Inc.	566.8	47.8	11.9	2.6	66.1
Prudential Financial Inc.	483.9	45.0	10.7	2.2	68.3
Bear Stearns Companies Inc.	427.0	16.7	25.6	2.0	70.3
Hartford Fin'l Services Group Inc.	358.2	31.2	11.5	1.7	72.0
Washington Mutual Inc.	326.1	37.6	8.7	1.5	73.5
Berkshire Hathaway Inc.	272.8	119.0	2.3	1.3	74.8
U.S. Bancorp.	260.5	57.3	4.5	1.2	76.0
Countrywide Financial Corp.	224.0	21.6	10.4	1.0	77.0
American Express Co.	196.4	72.7	2.7	9.0	77.9
Lincoln National Corp Inc.	195.0	19.2	10.2	9.0	78.8
Suntrust Banks Inc.	194.0	30.6	6.3	9.0	79.8
Allstate Corp.	176.3	37.4	4.7	8.0	80.6

Table 7.1 lists the 24 largest financial firms in terms of assets in June 2007, prior to the emergence of the financial crisis. Assets are quasi-market values, calculated by book value of assets minus book value of equity plus market value of equity. Also provided are market value of equity, leverage (i.e., quasi market value of assets divided by market value of equity), % contribution of assets to the total assets of the largest 100 firms (based on their market value of equity), and the cumulative proportion based on the firm's ranking. *Data source*: Bloomberg.

7.2 LCFIs AND THE FINANCIAL CRISIS OF 2007 TO 2009

The global financial crisis of 2007 to 2009 was, beyond doubt, the worst episode of financial distress since the 1930s. It was also a clear example of systemic failure, despite two decades of effort by central bankers around the world to put into effect risk-adjusted minimum capital adequacy standards for banks. The crisis spread from the banking sector through the whole of the financial world to the real economy, driving it into a steep recession—and U.S. LCFIs, deregulated less than a decade before, as well as Europe-based LCFIs, stood at the epicenter.

Why? The short version is that a large number of banks and other major intermediaries managed to shift risks by exploiting loopholes in regulatory capital requirements to take an undercapitalized, highly leveraged, one-way bet on the economy—particularly tied to residential real estate, but also to commercial real estate and consumer credit. (See, for example, Acharya and Richardson 2009; Acharya, Cooley, Richardson, and Walter 2010.) This massive bet was financed largely by debt holders who correctly anticipated de facto government guarantees. They included insured and uninsured depositors and creditors of Fannie Mae, Freddie Mac, and too-big-to-fail banks, which figured they would be bailed out no matter what. They were more or less indifferent to the consequences if they were wrong.

Things turned out pretty much as the creditors expected. Except for Lehman Brothers (and long-term debt holders of AIG and WaMu), there was a bailout of creditors of virtually all the heavily exposed financial intermediaries, including Bear Stearns, Fannie Mae, Freddie Mac, Merrill Lynch, Citigroup, Bank of America (through its purchase of Merrill Lynch), Wells Fargo (via Wachovia), and, to a lesser extent, GMAC and GE Capital—as well as Goldman Sachs and Morgan Stanley—which were all in danger without government support.

As necessary as it may have seemed after the fact, the moral hazard from government guarantees has only become worse. The emergency mergers and acquisitions during the crisis have created even larger systemic institutions, exacerbating the problem: Bank of America merging with Countrywide and Merrill Lynch; JPMorgan with Bear Stearns and Washington Mutual; and Wells Fargo with Wachovia. MetLife, the largest U.S. life insurer, entered into an agreement to buy AIG's international life insurer, ALICO, for $15.5 billion, which allowed the nation's largest life insurer to expand its business into Japan, Europe, and the Middle East. The deal increased MetLife's assets by almost 15 percent. Even if many of these firms are well run in the future, it would take only a few isolated cases to again put the entire system at risk.

7.3 THE ECONOMICS OF LCFIs

The LCFI Business Model

The industrial economics of financial intermediation suggests that the structural form of competition between firms active in a given financial intermediation function or in multiple functions should follow the dictates of institutional comparative advantage. If there are significant economies of scale or economies of scope with respect to either costs or client segments, we would expect to see the advantages reflected in, respectively, the size, the range of activities, or the geographic scope or client breadth of those firms that are the most successful.

Figure 7.1 depicts the market for financial services as a matrix of clients, products, and geographies (e.g., Walter 1988). Financial firms clearly will want to allocate available financial, human, and technological resources to those cells in the matrix (market segments) that promise to yield the highest risk-adjusted returns. In order to do this, they will have to attribute costs, returns, and risks appropriately to specific cells in the matrix, and the cells themselves must be linked together in a way that recognizes and maximizes what both analysts and practitioners commonly call synergies.

- *Client-driven linkages* (horizontal arrows) exist when a financial institution can, as a result of serving a particular client or client group, supply financial services more efficiently to either the same or another client in the same group in the same or different geographies. Risk mitigation results from spreading exposures across clients, along with greater earnings stability to the extent that income streams from different clients or client segments are not perfectly correlated.

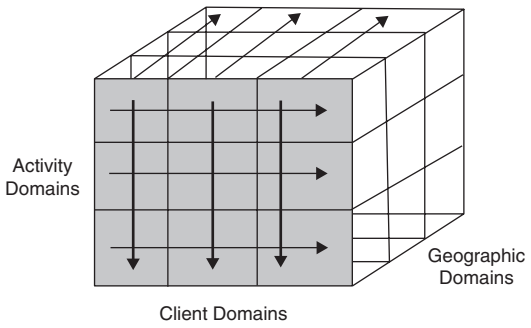

FIGURE 7.1 LCFI Strategic Positioning Matrix: Extracting Size, Scale, and Scope Economies

- *Product-driven linkages* (vertical arrows) exist when a firm can supply a particular financial service in a more competitive manner because it is already providing the same or a similar financial service in other client or geographic dimensions. Here again, there is risk mitigation to the extent that net revenue streams from different products are not perfectly correlated.
- *Geographic linkages* (lateral arrows) are important when an institution can service a particular client or supply a particular service more efficiently in one geography as a result of having an active relationship with that client, or presence in that financial product, in another location. Once more, the risk profile of the firm may be improved where business is spread across different currency, macroeconomic, and interest-rate environments.

To extract maximum returns from this strategic positioning matrix, firms need to understand the size, growth, and competitive dynamics of specific market segments, as well as the costs and the risks embedded in their overall portfolio of activities. Optimizing the linkages between the cells—in order to maximize potential joint cost and revenue economies—can be an especially challenging task, although the market dominance of LCFIs in many areas of financial activity suggests that these operating economies must have some degree of traction in the real world. At the same time, exploiting the potential of the market matrix across revenue, cost, and risk synergies engages the firm in higher levels of managerial complexity, conflicts of interest, and other issues that could well be value destroying.

The existence of large and complex systemic financial intermediaries suggests one of several possibilities: (1) that the benefits of size and complexity do in fact exceed their costs, (2) that there are widespread failures in market discipline and effective corporate governance, or (3) that size and complexity give rise to an unpriced subsidy representing a transfer of wealth from society at large to the shareholders and employees of financial intermediaries. Before discussing these issues, it is worthwhile to take a step back and consider the emergence of LCFIs from a historical perspective.

Glass-Steagall and the History of LCFIs

For almost seven decades, LCFIs were virtually banned from the U.S. financial system, decades that for the most part spanned periods of robust growth and relative financial stability. The Glass-Steagall provisions of the Banking Act of 1933 mandated a virtually complete separation of investment banking from deposit-taking activities. The Act thus eliminated involvement by firms with a commercial banking charter in the securities business—specifically,

underwriting and dealing in corporate debt and equity securities, a business that expanded dramatically during the investment bubble of the late 1920s, and was dominated by an amalgam of universal banks such as J.P. Morgan, Chase Manhattan, and National City Corporation and broker-dealers such as Goldman Sachs and Lehman Brothers. The former were listed companies engaged in a full array of universal banking activities, and the latter were private partnerships engaged mainly in securities underwriting and trading and in investing their partners' capital. (See Walter 2010.)

Senator Carter Glass and other contemporary critics of the universal banking model feared that bank involvement in securities underwriting had directly and indirectly led banks to ramp up (warehouse) their holdings of long-term financial instruments, exposing themselves to potentially dangerous market, credit, and liquidity risk. When this risk materialized with a vengeance, it was thought to have contaminated the entire U.S. financial system by triggering the collapse of banks nationwide, which in turn had disastrous consequences for the real economy. About 40 percent of all U.S. banks failed during this period, undermining their role as financial intermediaries and cutting off the air supply to the real economy.

The fact is that the big universal banks did increase their holdings of equities and long-term debt securities during the 1920s, but there is little evidence that the quality of bank securities holdings was responsible for the cascading bank failures of 1930 to 1933. Under the circumstances that existed at the time, most of the banks that failed would have collapsed even if they had held no long-term bonds at all (e.g., Walter 1985). Evidence that commercial banks' securities activities somehow directly caused the Great Depression has remained elusive. The indirect causality, however, is an entirely different matter.

The Glass-Steagall Act forced the dissolution of the universal banks—for example, the breakup of J.P. Morgan into the Morgan Bank (which in 1959 merged with the Guaranty Trust Company to form the Morgan Guaranty Trust Company of New York) and Morgan, Stanley & Company. Continental Europe, in contrast, engaged in no such functional separation and largely continued with the universal banking tradition. The United Kingdom went its own way with a commercial banking structure centered on a short list (determined by the Bank of England) of publicly listed clearing banks and a long tradition in the securities sector of single-capacity jobbers (dealers), brokers, and merchant banks. In 1948, Japan was forced under the U.S. occupation to adopt a version of the Glass-Steagall Act, which contained strict separation of commercial and investment banking.

Without access to the markets for deposits and commercial loans, but protected from competition by commercial banks, U.S. investment banks' share of financial intermediation grew rapidly as financial flows progressively

shifted to the financial markets. They in turn had a great deal to do with accelerating this process. Commercial paper markets, high-yield securities, asset securitizations, money market mutual funds, and similar innovations were in part the products of investment banks' successful incursions into the market share of credit institutions, aided by the substantially lighter regulatory burdens they bore as (nonbank) securities dealers.

By the 1980s, the U.S. financial system had become heavily market-dominated while other financial systems remained dominated by universal banks. For example, local banks in continental Europe were strongly resistant to cannibalization of profitable business at home. While this structural difference may have had something to do with a persistently higher U.S. rate of economic growth during the 1980s and 1990s, the so-called Anglo-Saxon financial architecture was arguably more efficient, more disciplined, and more innovative than the bank-dominated system of continental Europe. If true, then the Glass-Steagall legislation may have paid handsome growth dividends for over half a century, dividends that might have been forgone if the United States had persisted with a universal banking model after 1933.

Internationally as well, a consequence of Glass-Steagall may have been the progressive dominance of U.S. investment banks in rapidly evolving global capital markets. American broker-dealers, whose competitiveness was enhanced by the disappearance of fixed brokerage commissions in the New York Stock Exchange's "Mayday" financial reforms in 1975, began a sustained offensive in foreign and offshore financial markets. Penetrating the fortresses of universal banking in one country after another, they mounted a sustained 20-year battle to wean European and later Asian corporations from their reliance on *Hausbank* relationships with universal banks, offering lower funding costs and innovative financings. Meanwhile, they cultivated the buy side of the market—insurance companies, pension funds, and other institutional investors—with new investment alternatives and ideas to improve portfolio efficiency. The offensive was so successful that virtually all the major universal banks in Europe mounted vigorous efforts to develop investment banking divisions of their own, but without having been battle-tested or having a viable footprint in the United States, the world's largest securities market.

By the early 1990s, American investment banks basically dominated their industry worldwide, with a market share of about two-thirds. Investment banking developed into one of the top U.S. export industries—arguably another fortuitous consequence of Glass-Steagall. Had universal banking remained in place in the United States after 1933, the lack of competitive pressure across very different strategic cohorts might well have involved significant opportunity costs for the U.S. economy.

Predictably, U.S. wholesale commercial banks—notably Morgan Guaranty, Bankers Trust, Chase Manhattan, and Citicorp—began to agitate for reinstatement of universal banking powers to redress what they had come to regard as a debilitating competitive disadvantage. While they could and did compete vigorously in government bond, foreign exchange, and other permitted markets as well as corporate advisories, they were hamstrung in the corporate securities sectors of the market. So the 1980s saw a spate of political initiatives to get the rules changed. These included high-road arguments that the structure of financial intermediaries should be driven by competitive and strategic consideration, not anachronistic legislation (e.g., Saunders and Walter 1996). They also included low-road initiatives such as Bankers Trust's technically illegal underwriting of commercial paper in 1985, and then letting the courts decide on the merits (Bankers Trust won).

By the late 1980s, commercial banks had gained the limited right to sell investment and insurance products to retail customers, as well as the right to operate separately capitalized, size-constrained wholesale securities subsidiaries under various safeguards—so-called Section 20 subsidiaries—to prevent their commercial banking units from contamination by possible investment banking losses. This came in the form of administrative rulings on the part of the regulators, not legislative change. Perhaps a dozen of the major wholesale commercial banks took early advantage of this progressive liberalization to build significant securities subsidiaries, especially in the bond business, to complement their powerful wholesale commercial banking and government bond activities and their emerging presence in corporate advisory work.

One key area in which the commercial banks made little headway was equities, a highly profitable growth market that was far removed from their traditional expertise in debt finance, and in which they had little sales and trading expertise and few natural relationships with companies undertaking initial public offerings (IPOs). Moreover, lack of a market presence in equities seriously hampered their ability to build a competitive fee-based corporate finance business. This gap in their activity range lent even more urgency to removal of the remaining Glass-Steagall restrictions through legislative action.

With the political landscape lined up for deregulation and many large banks already engaging in broker-dealer-type services through subsidiaries, the merger in April 1998 of Citicorp and Travelers—illegal at the time but permitted under a two-year extendable grace period—simply ignored the remaining functional barriers on the assumption that they would soon be lifted. This bold preemptive strike was soon validated by passage of the Gramm-Leach-Bliley Financial Services Modernization Act of 1999 (GLB), which repealed Glass-Steagall.

Passage of GLB by an overwhelming congressional vote of 343 to 86 put the final nail in the coffin of functional separation in U.S. financial intermediation. At the retail level, it allowed commercial banks to gather assets into both bank deposits and securities accounts such as money market mutual funds, helping to stem the incursion by broker-dealers into their traditional client base and broadening their ability to respond to changes in client preferences. At the wholesale level, GLB allowed commercial banks to underwrite and trade in corporate debt, corporate equities, and municipal revenue bonds and to compete head-on with the broker-dealers. Together with repeal of the McFadden Act (which had limited interstate branching) through passage of the Riegel-Neal Interstate Banking and Branching Efficiency Act of 1994, this set the stage for a return to full-blown universal banking in the United States with few regulatory constraints on scale and scope in financial intermediation.

Among the remaining constraints, the 1999 deregulation did not remove the restrictions on banks under the Bank Holding Company Act of 1956 (BHC), which prevented financial institutions from owning nonfinancial corporations. It conversely prohibits corporations outside of the banking sector from entering deposit taking and commercial lending. This prompted many nonfinancial corporations such as General Electric and BMW to set up industrial loan corporations (ILCs), mainly chartered in Utah, which enabled them to take Federal Deposit Insurance Corporation (FDIC)–insured deposits and make commercial loans despite the BHC prohibition. It also allowed broker-dealers and investment banking units of financial conglomerates to set up FDIC-insured ILCs to offer their clients in the form of brokerage sweep accounts. Remaining in place was a cap of 10 percent on total U.S. deposits booked by any single bank holding company, although the largest financial conglomerates soon lobbied for the cap to be lifted. Bank of America, for example, argued that the cap rendered U.S. banks vulnerable to foreign acquirers by limiting their ability to buy non-U.S. banks that have significant domestic deposits.[3]

As with the imposition of Glass-Steagall 66 years earlier, GLB's reversal of functional separation in financial services had some dramatic, if unintended, consequences. Within two years of deregulation, every major commercial bank that took full advantage of its new access to investment banking was involved in the most serious spate of corporate scandals of modern times—including the collapse of Enron and WorldCom—resulting in large losses for the banks themselves and their investor clients, major fines and legal settlements, and a general erosion of confidence in financial markets. Using their enormous balance sheets, the new financial conglomerates had become fee-chasing Goliaths, with clients playing them off against each other and against the five remaining independent investment banks—Bear Stearns,

Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley. As well, each was embroiled in major regulatory violations and exploitation of conflicts of interest, including corrupted equity research, facilitation of late trading and market timing by hedge funds against the interests of ordinary shareholders of in-house mutual funds, and acting simultaneously as investor and intermediary in corporate transactions.

Moreover, less than a decade after deregulation, these same financial conglomerates were at the epicenter of the global financial crisis that began in 2007 as they chased market share in the securitization business and aggressively followed along as the action increasingly involved riskier credits ranging from subprime mortgages to leveraged loans. Besides encountering securitization pipeline exposure to market, credit, and liquidity risk in pursuit of a booming business, the financial conglomerates also took substantial "warehouse" exposure on their balance sheets or in off-balance-sheet conduits set up to avoid regulatory capital requirements (see Acharya and Richardson 2009). Most would have failed in 2008 had they not by then become systemic institutions and beneficiaries of the largest corporate bailouts in U.S. history, passing on to the public the massive risks that they had assumed in executing their financial conglomerate strategies.

The archetype of U.S. financial firms, Citigroup, soon became the poster child for failed financial conglomerates, virtually wiping out its shareholders, depending entirely on taxpayer life support for its continued existence during the worst of the crisis, and ultimately being partially nationalized with a 34 percent government shareholding.

Systemic Risk of LCFIs

The size and power of LCFIs is worrisome. For example, in 2009, the world's five largest wholesale banks were responsible for the origination of nearly 60 percent of all capital market transactions and, as mentioned earlier, the six largest U.S. banks (in order, Bank of America, JPMorgan Chase, Citigroup, Wells Fargo, Goldman Sachs, and Morgan Stanley) accounted for $8.97 trillion of assets, or approximately 55 percent of all assets held in the entire U.S. banking system.

They operate aggressively because they have to—the global financial marketplace is now extremely competitive, and mandates are won or lost based less on the ideas proposed than on the tightness of the pricing and the willingness to bear risk. Their big balance sheets allow for diversification of risk, but only as long as risks do not become highly correlated (as they now tend to be in moments of panic that engender liquidity crises).

Without government restraint, how can anyone be sure that LCFIs won't repeat the behavior they exhibited in the financial crisis of 2007 to 2009 in

the next period of rising asset prices and liquidity? The idea that LCFIs can or will regulate themselves prudently has been shown to be distorted by the industry's competitive dynamics, embedded agency conflicts, and ever-present moral hazard.

Chapter 5 of this book, "Taxing Systemic Risk," argues that the optimal policy for systemic risk regulation of LCFIs is for the regulator to charge a premium that forces the LCFI to internalize the costs of its guaranteed liabilities and the systemic risk they produce. The Dodd-Frank Act, however, does not follow this route. The Act remains largely dependent, as it is now, on effective on-the-spot regulation by systemic regulators and the insulating bulwark of revised capital adequacy standards. These approaches were not particularly effective in averting the most recent crisis. Indeed, they may have sent false signals of comfort based on the banks' having met certain capital metrics that proved to be illusory in the midst of a full-scale liquidity and solvency crisis.

If imposing regulatory incentives on LCFIs—as the most likely form of too-big-to-fail financial organization—is unlikely to succeed in reducing the systemic risk they generate, it may not be premature to ask what options will have to be considered after the next major financial crisis. Specifically, what are the relevant trade-offs of a return to some form of Glass-Steagall, functionally separated world of banking?

It seems clear that the regulator must weigh the systemic risk of a particular functional activity undertaken by a financial institution against the benefit of that activity. Before presenting these trade-offs in more detail, it is useful to provide a framework for thinking about this issue.

First and foremost, most activities of financial institutions have some degree of systemic risk associated with them. We can consider breaking up their functions into several areas in order to better understand the nature of their systemic risk. Specifically, these firms:

- Act as intermediaries, that is, dealers in security markets, repos, and over-the-counter (OTC) derivatives.
- Conduct commercial banking—deposit taking and lending to individuals and institutions.
- Operate investment banking businesses—underwriting security issues and providing advisory services.
- Offer asset management services—managing assets for institutions and individuals.
- Offer brokerage services to individuals, and particularly prime brokerage for hedge funds and other professional investors.
- Conduct proprietary trading—trading on their own accounts, which may include internal hedge funds, private equity partnerships, or asset holdings of unhedged securities.

Some of these activities, like proprietary trading and lending to individuals and institutions, directly risk the firm's capital. To the extent that the portfolio of trading positions and loans generates aggregate market risk—and that leverage is used to accumulate the holdings—systemic risk emerges.

At first glance, it may seem that activities based solely on fee revenue, such as asset management, advisory roles, or brokerage services, are not systemic in nature. This is incorrect. If the stream of revenues from these businesses is capitalized by the equity market and the firm can borrow against this capitalization, then a loss in the present value of revenues can have an effect similar to investing one's own capital.

Consider the asset management business. Since, through its fee structure, asset management revenues are a function of the value of the underlying assets being managed, any market risk of these assets will get passed through to the value of the asset management business. If the market risk of the assets is high, then this can be a particularly systemic activity, not only because of asset risk, but also because of the risk that the underlying business can fall off.

Moreover, some activities are a combination of capital- and fee-based business (e.g., dealer activities, underwriting, and prime brokerage). Consider financial firms acting as dealers. While a majority of their revenue may derive from the spread between buying and selling securities, this activity is rarely without some capital at risk. The firm may have to hold a security for a time while it searches for a counterparty to the trade and thus exposes itself to both idiosyncratic and market risk. Of course, to reduce this risk, firms could hedge the macro or aggregate risk of such a position. The systemic risk would then emerge only from the impact of a systemic crisis on the franchise value of the dealer business. In other words, in a systemic event, OTC derivative trading and other security markets might dry up, causing a loss in revenues.

A secondary issue is that regulators need to identify the relevant cost-benefit analysis of combining different financial activities. It is not clear that one size fits all, so the same rule applied to many institutions may be highly inefficient. As noted earlier, our preferred approach is for financial institutions to be forced to internalize the systemic risk externalities they produce through being charged a fee, or tax, or surcharge, or levy, or whatever one wants to call it. Nevertheless, for the discussion to follow, we are going to put this particular argument aside and focus on the underlying value of promoting functional separation on the part of systemic financial firms.

One of the arguments favoring LCFIs is that the securities markets, especially debt markets, have become highly integrated and fluid as a result of securitization, global linkages, derivatives, and new forms of market innovation. This integration has been beneficial to capital markets, increasing competition, arbitrage trading, and price discovery. Giving up these

efficiency gains by going back to a variant of the Glass-Steagall world might seem like a risky strategy. And in any case, it is now almost impossible to draw distinctions between loans and securities, differences that were essential in imposing and enforcing Glass-Steagall in its time.

A second argument is that to return to some sort of Glass-Steagall world in today's globalized marketplace, universal banking would have to be prohibited everywhere, not just in the United States. Otherwise separated American banks and investment banks would be forced to give up their market leadership positions in global finance, something they would surely object to. Even so, the industry would simply reform itself outside of the United States as affected American banks are sold to foreigners and relocated to Europe, or the bankers are recruited away. The LCFIs would still be there. They just wouldn't come under the American regulatory purview. They would still impose systemic risk, but if that risk is concentrated outside the U.S. governmental safety net, they could pose an even more dangerous situation.

On the other hand, countries that would be home to non-U.S. LCFIs (notably Switzerland, the United Kingdom, Germany, Italy, France, Spain, and Japan—and possibly China in the future) are if anything less well positioned than the United States in serving as a credible lender of last resort. Based on the socialization of risk in the 2007 to 2009 crisis, it seems doubtful that taxpayers in these countries would be rushing to provide unpriced or underpriced guarantees for their universal banks to gain global market share.

Restricting activities along the lines of a new Glass-Steagall Act would be particularly detrimental if these activities were ones that created value to the financial system (i.e., diversification or synergies that could not occur outside the LCFI model). What does the existing evidence suggest in this respect?

In terms of systemic risk, the diversification argument seems particularly weak. The fundamentals of modern finance tell us that there are two types of risk: idiosyncratic or firm-specific risk, which is diversifiable, and systematic or marketwide risk, which is not. While it is certainly true that the expansion of financial firms into multiple business lines may reduce the volatility of their overall asset portfolios, this is not necessarily what society most cares about. Because an economic crisis is the realization of marketwide risk, the problem society really cares about is whether banks—large and small—can withstand such risk and continue to perform critical intermediation functions. When the economy craters, banks' loans become impaired, the value of their securities holdings falls, their underlying investment banking business produces far less revenues, and the value of their asset management business plummets. So in a crisis do banks collapse along with everything else?

Wagner (2009) argues that, while diversification makes individual bank default (and distress costs) less likely, it actually increases the likelihood

of systemic risk. (See also Freixas, Loranth, and Morrison 2007.) Recent empirical work supports this theory. For example, De Jonghe (2009) documents that the tail betas of diversified financial institutions are higher and therefore these firms create more systemic risk. In a series of papers, DeYoung and Roland (2001), Stiroh (2004, 2006), and Stiroh and Rumble (2006) find that movement away from traditional banking activities toward other financial services increases the volatility and market risk of the firms. This work argues that the costs more than outweigh the benefits. Chapter 4 of this book, "Measuring Systemic Risk," also documents that the systemic risk of LCFIs is higher compared to the risk associated with simpler organizational structures.

The argument for synergies has a better grounding. At face value, if one puts conflicts between shareholders and the firm's managers aside, as noted earlier, the very growth of LCFIs suggests that shareholders believe there is some synergistic value when a firm engages in multiple business lines. It is a reasonable position to take. For example, many analysts would argue that it is important for firms that are active in the primary market for securities (i.e., underwriting) to be important participants in the secondary market (i.e., dealers). Nevertheless, the empirical evidence remains decidedly mixed.

Notably, Laeven and Levine (2007) report evidence that contradicts the existence of wide-scale synergies in LCFIs in the banking sector. They argue that there is a financial conglomerate discount; in other words, the whole is worth *less* than the sum of the parts. See also Delong (2001), who performs an event study on diversifying bank mergers. In a study that goes beyond banks and looks at all financial intermediaries, Schmid and Walter (2009) document similar evidence. Interestingly, they find a premium for the very large firms, indicating that there is most likely a too-big-to-fail guarantee that supports the market value of these firms. Therefore, the reason for the growth in LCFIs may simply be due to the below-market cost of financing through the central bank or public guarantee agency.

From a societal point of view, the benefits to LCFIs of a too-big-to-fail guarantee are clearly not a valid reason to oppose reinstitution of some form of Glass-Steagall, since too-big-to-fail standing encourages moral hazard. In contrast, Baele, De Jonghe, and Vander Vennet (2007) and Elsas, Hackethal, and Holzhauser (2009) provide evidence that the LCFI model does improve bank profitability, and generally argue that these gains are due to economies of scale. The reasons for the different findings can be attributed to both different data sources and different methodologies. In this chapter, we are not going to be able to resolve this current debate. Indeed, the recent studies mirror the findings of the survey article by Berger and Humphrey (1997) some 15 years earlier, which argued there was no predominance of evidence either for or against economies of scale in the financial sector.

What is less controversial in the literature, however, is that the expansion to multiple functions, the LCFI model, produces greater systemic risk. As noted earlier, there is now a plethora of research—including Chapter 4 of this book, DeYoung and Roland (2001), Stiroh (2004, 2006), Stiroh and Rumble (2006), De Jonghe (2009), and even papers loosely in support of the LCFI model such as Baele, De Jonghe, and Vander Vennet (2007)—that finds the LCFI model more risky. Unless the financial legislation along the lines described in Chapter 5 (bank levies) and Chapter 6 (capital and liquidity requirements) are successful in reducing the LCFIs' asset risk and leverage, there is a strong economic case for some form of return to Glass-Steagall and functional separation.

The foregoing analysis aside, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 does not in fact represent a return to a Glass-Steagall world. There is no call for a breakup of today's massive, complex financial conglomerates as a way to reduce the likelihood of future financial crises. The functional separation argument may not have won the day in the ongoing array of financial reforms, but it is likely to be resurrected after the next major financial crisis down the road. That said, written into the 2010 legislation are some Glass-Steagall-like restrictions.

7.4 THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT OF 2010

Size Constraints

First, there is the prohibition on the size of financial institutions through mergers if the combined firm's total liabilities exceed 10 percent of aggregate consolidated liabilities of all financial companies in the United States. As noted, only Bank of America and JPMorgan Chase would surpass this rule, with Citigroup and Wells Fargo representing additional candidates if a future merger or acquisition were sufficiently large. We have also noted the (perhaps inevitable) irony that government actions in the 2007 to 2009 crisis have encouraged even larger systemic institutions (e.g., Bank of America merging with Countrywide and Merrill Lynch, JPMorgan Chase with Bear Stearns and Washington Mutual, and Wells Fargo with Wachovia). Going forward, expected intense lobbying activity by firms actually or potentially subject to the 10 percent ceiling could well succeed in having the limit raised, triggering even greater industry consolidation and exposure to systemic risk.

If implemented as written, the U.S. size constraint does reduce the growth prospects of such entities into ever larger firms even though it does not call for breaking up large financial institutions into smaller

(not-too-big-to-fail) entities. Restricting growth of the liabilities of the very largest institutions is entirely reasonable, in our view. It is almost certainly true that any institution with more than 10 percent of the entire financial sector's liabilities is systemic. The size cap would therefore help limit the too-big-to-fail problem. Of course, the reverse is not true, as a number of institutions with less than 10 percent of liabilities in the system are also systemic. Thus, hard-and-fast rules like the 10 percent ceiling may carry with them potential costs and unintended consequences.[4]

In terms of a more restrictive approach, we do not know enough about the optimum size of a financial institution conducting a multitude of activities in our contemporary global financial system to feel comfortable about advocating an across-the-board breakup of banks and financial conglomerates. Moreover, certain activities like dealer functions and intermediation between large institutions require a high degree of interconnectedness and scale for firms to compete effectively and reduce risks by diversifying them across a number of counterparties. So blanket size constraints are likely to involve substantial efficiency losses. They would also be unilateral in the sense that only a few U.S. and perhaps UK and continental European banks would be subject to such scale reductions.

Breaking Up LCFIs

The Dodd-Frank Act provides that if, after new prudential standards have been implemented, a financial firm is deemed to represent a systemic threat, activities that constitute the source of that threat could be terminated, carved out, or sold to separate unaffiliated financial firms. Possible remedies include terminating one or more activities; imposing conditions on the manner in which a financial holding company subject to stricter standards conducts one or more activities; limiting the ability to merge with, acquire, consolidate with, or otherwise become affiliated with another company; and restricting the ability to offer a financial services or products.

According to the legislation, preemptive breakups and the disposal of specific LCFI holdings are last-resort measures that have to be approved by a two-thirds vote of the Financial Stability Oversight Council (described in Chapter 1) on recommendation of the Federal Reserve, based on their presenting a grave threat to the financial stability of the United States. It also envisages bringing nonfinancial companies posing a systemic threat under the Federal Reserve regulatory umbrella, again by a two-thirds vote of the Financial Stability Oversight Council.

This part of the legislation recommends a breakup based on *activities* of financial firms and possibly nonfinancial firms. It includes two qualifiers. The first allows for judicial review of the regulator's decision. The second

requires that any decision made by the regulator must take into account the international competitiveness of the U.S. financial services industry in the context of comparable regulatory developments taking place elsewhere.

This loophole leaves open the possibility that firms will lobby successfully against any structural interference on the grounds that it affects their global competitiveness. It is of course arguable whether the taxpayers in other countries that are home base for major financial intermediaries would be willing to underwrite the safely and soundness of LCFIs or their affiliated units following the massive losses and risk bearing forced on them during the crisis of 2007 to 2009. So the competitiveness loophole may in the end represent a red herring.

The Modified Volcker Rule

The provision of the Dodd-Frank Act that comes closest to reinstating the 1933 Glass-Steagall provisions is the so-called Volcker Rule. Paul Volcker, the highly respected former Federal Reserve chairman, had long urged that the scope of any implicit federal guarantee be limited to a relatively small number of important banking institutions and to core banking functions, rather than extended across the spectrum of financial intermediaries and risky activities. In exchange for the banking safety net, Volcker recommended that banks be allowed to engage in the full range of commercial and investment banking functions as financial intermediaries, but not be permitted to engage in such nonbanking activities as proprietary trading, principal investing, commodity speculation, and hedge fund and private equity fund management. These activities would be spun off to nonbank asset-management firms and would be subject to whatever regulation is necessary for those types of institutions. The legacy banks would be allowed to have no economic interest in the spun-off entities.

Paul Volcker's proposals were the subject of hefty debate as the House and Senate bills advanced though the legislative process and ultimately the reconciliation of the two versions for the President's signature. Popular opinion seemed heavily in favor of the rule, and LCFIs were in vociferous opposition, supported by many in the administration. Slowly but surely the pendulum swung in the Volcker direction, propelled by resurgent bank earnings, renewed revelations of LCFI conflicts of interest, and several local elections that made clear the depth of popular antipathy to the dominant banks. This opened the way for Blanche Lincoln of Arkansas to amend the legislation to limit bank derivative transactions to separately capitalized affiliates whose failure would presumably be less likely to cause a systemic crisis. The Lincoln Amendment was likewise heatedly opposed by the banks,

convinced that capitalizing a separate derivatives subsidiary would be far more costly that running a derivatives book on the bank's core capital.

As written, the Dodd-Frank Act requires federal agencies to issue rules that prohibit systemic banks and other financial firms from engaging in proprietary trading or investing and sponsoring hedge funds or private equity funds incorporating coinvestments in excess of 3 percent of their capital. Additionally, banks are prohibited from lending and other exposures to sponsored hedge funds and private equity funds. Specifically, the firms covered by these provisions include all depository institutions, their holding companies, any company treated as a bank holding company as defined by the Bank Holding Company Act (such as foreign banks with U.S. operations), and any of their subsidiaries. The rule is also extended to nonbank financial institutions that are systemically important albeit in a different fashion. In particular, while not banning proprietary trading, the Federal Reserve is required to impose greater capital requirements and some limits on these activities. In general, the restrictions would be phased in over a period of seven years.

There are several exemptions to the proprietary trading provisions, most notably:

> *the purchase, sale, acquisition, or disposition of securities and other instruments . . . in connection with underwriting or market-making related activities, to the extent that any such activities permitted by this subparagraph are designed not to exceed the reasonably expected near term demands of clients, customers, or counterparties . . . risk-mitigating hedging activities in connection with and related to individual or aggregated positions, contracts, or other holdings of a banking entity that are designed to reduce the specific risks to the banking entity in connection with and related to such positions, contracts, or other holdings.*[5]

Moreover, any trading in government-issued obligations—U.S. government bonds and obligations of government agencies, government-sponsored enterprises (GSEs), and state and municipal issuers—is also exempt. While the Volcker Rule does in theory cover insurance companies, for the most part their trading is exempt as long as it is consistent with insurance regulations and the Financial Stability Oversight Council. Proprietary trading and investing and sponsoring hedge or private equity funds offshore by a foreign company are likewise not covered by the legislation.

While the Dodd-Frank Act called for the Financial Stability Oversight Council to undertake a six-month study to make recommendations

regarding restrictions on proprietary trading, it is clear from the legislation that the Council does not have authority to substantially change the rule. Moreover, *sponsorship* is defined explicitly as serving as a general partner, managing director, or trustee of a private equity fund or hedge fund, and except for the coinvestment provision contains little leeway. These changes would have to be enacted within two years of the legislation's enactment.

Like the hedge funds and private equity funds restrictions proposed by the Volcker Rule, the Lincoln Amendment on derivatives trading through separately capitalized subsidiaries was likewise softened. Banks are only required to spin off swaps desks for equities, commodities, and low-grade credit default swaps into separately capitalized subsidiaries. There is an exemption for foreign exchange derivatives, high-grade credit default swaps, gold, silver, and other asset classes considered relatively low-risk—see Chapter 13 for a detailed discussion.

Given the wide variety of activities performed by financial companies, why choose to restrict only proprietary trading, certain derivatives trading, and limited investments in sponsored hedge funds and private equity funds? And will these functional restrictions actually make a difference when the thunderheads begin to form in advance of the next financial crisis?

We have argued earlier that regulators must weigh the systemic risk of a particular functional activity of a financial institution against the benefit of that activity. Based on this type of cost-benefit analysis, proprietary trading seems like a reasonable choice for a Glass-Steagall-type restriction. Many proprietary trading operations housed within large financial institutions are already subject to so-called Chinese walls and insulated from the information flow within the firm. So a form of separation has already existed. This is not to argue that there are no possible synergies from having proprietary trading in-house. For example, proprietary trading and other functional areas might share common inventories of securities and infrastructure, such as information technology and trade settlement operations, which would lead to economies of scale. Equally, proprietary trading may improve access to financial information like market prices and liquidity, which can help the firm serve investor clients or even as an issuer.

But are such synergies important enough to offset the argument that proprietary trading adds systemic risk to the activities of a financial conglomerate? Academic research has found few credible economies of scope. This argues against investment management (either internal or external funds) being located inside a financial conglomerate. And there are systemic costs when one activity's failure endangers performance of others (see, for example, DeYoung and Roland 2001; Stiroh 2004; De Jonghe 2009).

Moreover, there are well-developed capital market specialists that focus on proprietary trading activities. Numerous hedge funds, private equity

funds, and other alternative asset managers can perform these functions outside the corporate boundaries of large financial institutions. This is in addition to the key systemic disadvantage of such activities being housed within LCFIs in light of the low cost of funding attributable to government guarantees, enabling these institutions to take on risky activities that would be unprofitable in the absence of such guarantees.

Proprietary Trading The first practical issue in implementing this part of the Dodd-Frank Act is what exactly defines proprietary trading.

The intuitive definition is that proprietary trading constitutes any trading conducted by the firm for its own account. The Dodd-Frank Act states that:

> *The term "proprietary trading," when used with respect to a banking entity or nonbank financial company supervised by the Board, means engaging as a principal for the trading account of the banking entity or nonbank financial company supervised by the Board in any transaction to purchase or sell, or otherwise acquire or dispose of, any security, any derivative, any contract of sale of a commodity for future delivery, any option on any such security, derivative, or contract, or any other security or financial instrument that the appropriate Federal banking agencies, the Securities and Exchange Commission, and the Commodity Futures Trading Commission may . . . determine.*[6]

While the aforementioned exemptions for excluding customer-related trading and hedging are logical, they create a gray area for implementing the rule. For example, when an LCFI acts as intermediary between buyers and sellers, especially for less liquid securities, the firm will often be exposed to one side of the transaction. In fact, a number of normal market- and client-oriented transactions, such as trading in foreign exchange, fixed-income securities, and derivatives, as well as services like bridge financing, prime brokerage, and the like, might result in the firm technically trading on its own account but doing so to serve client needs.

This gray area also invites manipulation. What is to prevent a bank from accumulating a large exposure in a given security or derivative in expectation of an eventual customer demand for the asset? How are regulators to distinguish between identical trades where the intent of one is clearly customer-driven and the intent of the other is proprietary? Should there be a time limit set on holdings related to customer-related trading? Should there be the requirement that the aggregate market exposure associated with these

holdings be hedged? How can such holdings be differentiated from those related to pure trading bets in the real world?

Skeptics are right to worry about the distinction between permissible and impermissible trading, and most LCFIs have already moved some of their proprietary traders to client desks that nevertheless use the firm's own capital. Equally troubling, traders in that position now have privileged insight into client trades and, by stretching the rules, can front-run them. It seems doubtful that highly compensated practitioners, backed by phalanxes of lawyers and lobbyists well versed in putting pressure on regulators, will take very long to find ways to erode the practical force of the Volcker Rule's proprietary trading restrictions. Time will tell.

LCFIs had already prepared the ground by arguing that proprietary trading operations were not the cause of the 2007 to 2009 financial crisis and that, in addition, proprietary trading is not an important part of the banking business. To the contrary, trading on the firm's account has everything to do with the crisis and the misaligned incentives in the financial system. These activities involve risky position taking (such as the substantial, nearly fatal proprietary investments in asset-backed securities made by Citigroup, UBS, Merrill Lynch, Lehman Brothers, and Bear Stearns), and were arguably not necessary for banking operations.

To better understand this point, it is helpful to focus on the business model of the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac. As Chapter 14 shows, the GSEs invested approximately $1.5 trillion in bank-originated pools of mortgages at a leverage ratio of roughly 25 to 1. Because of the implicit government guarantee of their debt (made explicit in September 2008 when they were brought into conservatorship), the GSEs were able to take these bets at a low financing cost. It is now widely recognized that this model was a recipe for disaster, since it combined private profit taking with socialized risk.

The banking sector during the crisis looked almost identical to the GSEs. A Lehman Brothers report from April 2008 shows holdings of residential mortgage-backed securities of U.S. banks and thrifts. These holdings included $901 billion of agency securities and $483 billion of subprime AAA-rated securities, versus $741 billion and $308 billion held by the GSEs. In addition, broker-dealers held a further $230 billion of subordinated subprime securities, exposures even the GSEs refused to touch. And like Fannie Mae and Freddie Mac, these positions held by the banks and thrifts were funded at a lower cost of capital than the underlying risk because of either explicit government guarantees of bank deposits or implicit (and now explicit) too-big-to-fail guarantees.

Beyond this access to cheap financing, the banking sector ended up holding these types of securities because, through regulatory loopholes, the

warehousing of ill-fated securities required less regulatory capital and, as a result, the financial intermediaries were free to lever up to the hilt. These securities offered a large spread over the financing rate precisely because they were less liquid and faced systemic risk.

This point is just as relevant after the financial crisis. A quick look at the 2009 balance sheets of the four largest banks—JPMorgan Chase, Bank of America, Citigroup, and Wells Fargo—shows holdings of $1.1 trillion worth of available-for-sale securities. While banks will argue these holdings are necessary for liquidity, if this were in fact the case, then they would be holding Treasuries or cash. Instead, many of these available-for-sale securities are asset-backed securities funded using overnight repos.

However, in the unlikely event that bad times occur and liquidity and market risk surface, these securities would lose value. Since there is little or no capital underlying these positions—and bank-type levered entities would already be facing trouble from loan losses—systemic risk emerges. Commingling systemically risky security holdings with economically important financial intermediation at banks and other large financial institutions was one of the main causes of the recent crisis. This is why finance theory argues persuasively that the business model of securitization never intended asset-backed securities to be held on banks' balance sheets, and especially not to skirt capital requirements. Not all researchers, however, agree with this assertion about the securitization model (see, e.g., Gorton and Metrick 2009).

This aside, an expanded Volcker Rule that extends the definition of proprietary trading to asset-backed security holdings by financial intermediaries represents a logical fix. Other institutions without guarantees such as mutual funds, pension funds, hedge funds, sovereign wealth funds, and nonsystemic insurance companies can step into the breach as banks withdraw from the asset-backed security market.

But there is reason to be less than optimistic. Written into the Dodd-Frank Act is the definition of a firm's proprietary trading account:

> *any account used for acquiring or taking positions in the securities and instruments . . . principally for the purpose of selling in the near term (or otherwise with the intent to resell in order to profit from short-term price movements), and any such other accounts as the appropriate Federal banking agencies, the Securities and Exchange Commission, and the Commodity Futures Trading Commission may, by rule . . . determine.*[7]

This description reads like a green light for continuing carry trades, in other words longer-term holdings of spread bets between liquid versus

illiquid assets, market credit versus idiosyncratic credit, long maturity versus short maturity, and so forth. Of course, as described earlier, carry trades are particularly dangerous for financial institutions with government guarantees.

Hedge Funds and Private Equity Funds With respect to the second Volcker Rule issue—ownership or sponsorship of hedge funds and private equity funds—these businesses can be highly leveraged and are likely to falter in a crisis, thus adding to the systemic risk of the firm. This is especially the case to the extent that these internal businesses have access to leverage at below-market financing costs. Indeed, the first major institutional collapse of the 2007 to 2009 financial crisis was Bear Stearns, a part of the failure being triggered by problems in two of its hedge funds.

A recent study by Fang, Ivashina, and Lerner (2010) provides some confirmation of this view by looking at private equity funds managed within banks. They find that between 1983 and 2009 these bank-affiliated funds were responsible for almost 25 percent of all private equity investments. As expected, it turns out that private equity investments are financed at better rates when an affiliated bank is involved, consistent with the bank's access to cheap financing. The study also documents that these investments are more likely to go bankrupt and generally do a little worse than private equity funds not affiliated with banks. Given such findings and the well-developed market for private equity outside the LCFI model, the systemic costs of private equity within LCFIs would seem to outweigh any benefits. We conclude that the Volcker Rule applied to private equity is consistent with common sense.

One could make a similar argument for hedge funds, especially those supported by the banking firm's own capital. If the primary advantage for running internal hedge funds arises from their access to cheap financing due to implicit government guarantees of their debt, then both the benefits (i.e., the guarantee) and the costs (i.e., the added systemic risk) are carried by taxpayers. Given the well-developed external market for hedge funds, again the Volcker Rule would seem to be reasonable.

The more controversial case is that of sponsoring hedge funds and private equity funds—that is, funds run by the LCFIs exclusively using outside investors' capital. As described earlier in this chapter, the argument that these activities are not systemic is wrong. In the case of managing alternative investment funds, the LCFI income generated from running these funds represents a proportion of its assets under management (AUM). The value of managing such funds is equivalent to a contingent claim on the underlying assets (see Boudoukh, Richardson, Stanton, and Whitelaw 2005). Such

values therefore inherit the respective risk-return characteristics of the AUM. Moreover, because the amount of AUM depends on performance, the valuation has properties that resemble a levered claim on the assets, further increasing systematic risk. If the value of this business is capitalized in its market value of assets, and the LCFI can borrow against this value, then the distinction between running the LCFI's capital and outside investors' capital is not material.

More to the point, what is special about hedge funds versus mutual funds? Many LCFIs have large-scale asset management businesses. The argument for or against them being housed in an LCFI is virtually identical to that of hedge funds and private equity fund sponsorship—arguments that may have contributed to divestitures of asset management businesses by firms like Barclays and Citigroup in the aftermath of the financial crisis.

The New York University Stern School of Business Vlab (at http://vlab.stern.nyu.edu/welcome/risk) provides systemic risk calculations for the 100 largest financial institutions, some of which are publicly traded money management firms. (See Chapter 4, "Measuring Systemic Risk," for a description of Vlab.) Estimates attained from NYU Stern's Vlab show that the per-dollar risk of these firms is quite high. This is because such firms have high tail betas in a crisis. For example, of the 102 largest financial firms in June 2007, four money management firms—T. Rowe Price, Janus Capital Group, Franklin Resources, and Legg Mason—were in the top 20 in terms of their expected relative equity losses in the crisis, the "marginal expected shortfall" (MES). And when tracking these same four firms ex post during the crisis from July 2007 to December 2008, the firms' equity fell 29.8 percent, 71.1 percent, 51.2 percent, and 77.0 percent, respectively. The relevant question therefore is whether the capitalized value of asset management business within LCFIs is leveraged. If so, then these results for the MES and ex post crisis performance of asset management firms argue for the ban to be extended beyond just hedge funds and private equity funds to asset management activities in general.

The Dodd-Frank Act fails to incorporate the original Volcker Rule objective that LCFIs cease their sponsorship of hedge funds and private equity funds, implying that the risks of such affiliations exceed the gains in an environment that includes vibrant hedge fund and private equity fund cohorts to carry out these functions. Instead, LCFIs can continue to sponsor such funds and indeed invest in them up to an amount equal to 3 percent of their capital. We have argued that the actual exposures associated with in-house hedge funds and private equity funds, including exposure to reputational risk, is far in excess of the nominal exposure, and that the original Volcker Rule should have been applied as a matter of public interest.

Derivatives Trading Chapter 13 of this book considers the impact of the derivatives provisions of the Dodd-Frank Act, concluding that their social benefits significantly exceed their social costs. The surviving Lincoln Amendment in the Act takes a belt-and-suspenders approach on the interface between derivatives markets and involvement in them on the part of LCFIs. As noted, under the Act, banks can conduct business in foreign exchange derivatives, high-grade credit default swaps, gold, silver, and other asset classes considered relatively low-risk within the bank itself. They are only required to spin off swaps desks for equities, commodities, and low-grade credit default swaps into separately capitalized subsidiaries.

In our view, the Lincoln Amendment in its original form was probably unnecessary, since the associated risks are already covered by other safety and soundness provisions of the Act, notably capital adequacy and beefed-up systemic risk regulation. However, nobody knows where the next source of risk to the financial system will come from (e.g., commodities markets), so an extra ounce of prevention probably outweighs the incremental costs with respect to exceptionally risky derivatives. This assumes, of course, that the separately capitalized derivatives unit can be ring-fenced from the capital of the parent institution.

Overall, we view those components of the Volcker Rule incorporated into the Dodd-Frank Act as a moderate success. Success of the proprietary trading ban will depend on the hard slog of successful implementation and enforcement in the real world of political economy against the smartest guys in the room and their lawyers and lobbyists. Continued hedge fund and private equity fund involvement by LCFIs, albeit with limited equity participation, is a clear failure. There is no shortage of independent firms conducting these businesses, and the residual risks facing LCFIs as sponsors are potentially damaging. And we view the limited segregation of certain risky derivatives transactions in separately capitalized subsidiaries as a potentially useful firewall in an uncertain future trading environment.

International Perspective

In terms of international legislation on possible activity limitations and LCFI restructuring, the Group of Twenty (G-20), Bank of England (BoE), Financial Services Authority (FSA), European Central Bank (ECB), Bank for International Settlements (BIS), Financial Stability Board (FSB), International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), and European Commission (EU) have all considered the regulatory options and the need for international coordination. But given the universal banking traditions in most other countries, there is little appetite for reductions in the scope of systemic financial firms.

The one exception is the EU Commissioner for Competition, which has mandated carve-outs by bailed-out financial conglomerates in order to restore a more competitive playing field—in contrast to the Antitrust Division of the U.S. Department of Justice, which has been conspicuously silent on the issue.

Breaking up the largest LCFIs into smaller firms, however, has been proposed by the governor of the Bank of England, by the chairman of the Financial Services Authority of the United Kingdom, and by a number of others in Europe. Further, the European Commissioner of Competition sued ING Group, a Dutch bank holding company now substantially owned by the Dutch government, after bailout funds were received, to break up the group because EU antitrust rules prohibit government assistance to large privately owned businesses. In response to the suit, in October 2009 ING raised additional capital to reduce government ownership, and split itself into two companies. The EU competitive distortion principle, however, would appear to apply to several other LCFIs with substantial government ownership, including the Royal Bank of Scotland (RBS), Lloyds Banking Group, and Citigroup.

Without some type of international cooperation on restrictions such as the modified Volcker Rule, one could argue that such activity limits applied only in the United States would provide a competitive advantage to foreign financial companies. Under the Dodd-Frank Act, foreign financial companies that are active in the United States could continue to own or sponsor hedge funds and private equity funds, and/or engage in proprietary trading as long as it is offshore with respect to the United States. Of course, if there is little evidence in support of these activities being housed within LCFIs in the first place, then it is not clear what is being given up, other than the ability to take excess risk backed by implicit government guarantees and the unpriced negative externality of systemic risk.

7.5 THE DODD-FRANK ACT AND LCFIs: LOOKING FORWARD

As part of any effort to seriously address excessive systemic risk, we find the logic of limiting government guarantees to core banking activities and segregating nonbanking risk-taking businesses to be fundamentally sound and in the public interest. This approach is akin to that of the 1930s, but adapted to the modern financial activities and the ready availability of financial specialists to conduct proprietary activities in a way that can be effectively regulated. It is a development that would be in line with the public interest as well as common sense, and one that is unlikely to trigger significant

social costs in terms of financial efficiency and innovation. Indeed, based on a careful reading of the unintended consequences of the Glass-Steagall restrictions of 1933, quite the opposite could be the case. The Dodd-Frank Act represents a small step forward in this direction.

Similar to the Dodd-Frank Act, we do not favor breaking up large, complex financial institutions based on arbitrary size restrictions. But in contrast to the Act, we do favor more stringent market concentration limits as a matter of competitive structure as well as systemic risk exposure. We also support targeted scope restrictions on functional activities conducted by systemic financial firms, certainly in line with the Volcker Rule but with additional reach.

For example, an additional rule would require a complete separation of not only proprietary trading but also asset management businesses—activities that facilitate high-powered and opaque risk taking and are also highly cyclical—from commercial banking operations, which have access to government-guaranteed deposits and lender-of-last-resort support in crises, and which provide financial intermediation services to the real economy. Any commingling of these activities is harmful to the public interest.

It is most important, however, to assess guarantee insurance premiums on LCFIs that are commensurate with the systemic risk contributions of various activities and then let financial firms break up organically if they find it profitable to do so.[8] This approach considers that commingling of different activities may be socially desirable for at least some firms but not for others, and faced with higher premiums for riskier activities, the latter group of firms (or some of them) may carve out these activities as a matter of strategic redirection.

For their part, the wholesale financial industry has argued that the major changes in regulatory structure of the Dodd-Frank Act—likely to suppress earnings in the interest of preserving systemic integrity—already achieve this goal. A recent research report issued by Goldman Sachs before the Dodd-Frank Act was signed estimated that all large banks will incur regulatory cost increases equal to approximately 7 percent of net income, but the cost to the four or five largest U.S. banks would rise to about 15 percent, even before taking into account higher costs of capital after Basel III, which could increase the estimate by several additional percentage points. JPMorgan Chase, in a similar research report, estimated that—after allowing for all of the costs of reforms proposed so far—the return on investment of the largest banks would drop to 5.4 percent from 13.3 percent. The final version of the Dodd-Frank Act was less restrictive and less costly than these early estimates, but there is no doubt that complying with the new law will involve considerable additional expense to LCFIs over the next decade that will reduce their returns on investment.

Perhaps, because of the expectation of such added costs and restrictions, the stock market has turned to a very skeptical view of LCFIs and their ability to recover the economic power, political influence, and stock market valuations they enjoyed before the crisis began. At the time of the announcement of their second quarter results in 2010, the six largest U.S. LCFIs traded at an average price-to-book value ratio of 0.9 times (ranging from a high of 1.28 for Wells Fargo—an LCFI that is not a global wholesale player—to a low of 0.33 for Citigroup), well below the 2 to 3 times price-to-book ratio they enjoyed before the crisis.[9] The more erratic and volatile price-to-earnings ratios of these six LCFIs averaged 14.7 in July 2010. By contrast, these ratios compare poorly with an average price-to-book ratio of 7.8 and a price-to-earnings ratio of 20.5 for nine leading publicly traded asset management firms measured at the same time. Some observers (Baele, et al. 2007) have suggested that the stock market has never attributed value to large banks for diversification.

In summary, while the commingling of commercial banking with investment banking activities such as underwriting and market making was ruled out in the financial reforms of the 1930s, such commingling did not contribute to the recent financial crisis. Our position falls short of narrow commercial banking (which would be stripped of any investment banking activity altogether), but regulators should prudentially observe, and wherever possible keep in check, likely spillovers from investment banking to the payment system and real-sector lending. The Volcker Rule as originally proposed—banning both proprietary trading and the sponsoring of hedge funds and private equity funds by firms benefiting from access to the government safety net—has been watered down in the Dodd-Frank Act. We support the original Volcker proposals as the best chance for limiting the spillovers. Even so, the modified Volcker Rule that allows proprietary trading in certain public obligations and sponsorship with limited equity interest of hedge funds and private equity funds seems a defensible second-best solution. The same is true of the limited requirement for trading high-risk derivatives through separately capitalized subsidiaries.

Even so, the structural basis for significant systemic risk exposure is likely to remain. Along with their commercial banking activities, restructured and slimmed-down banking institutions (or hedge funds) will continue to perform normal market-oriented and client-oriented transactions, such as trading in foreign exchange, fixed-income securities, and derivatives, as well as intermediation services like bridge financing, prime brokerage, and the like. The key benefit of the U.S. regulatory outcome, despite its limitations and loopholes, is that it may cause key firms to rethink their business models, and the population of less systemic financial specialists in the financial system will increase. Chances are the surviving businesses would be far

simpler and their accounts far more transparent (and more easily subject to regulation) than those of today's LCFIs, a business model that appears to have outlived its purpose. This, in turn, would give banking regulators a better shot at understanding and containing the risks that might result in a need for future bailouts.

Perhaps most important, the firms' ability to abuse government guarantees intended for one activity by supporting riskier ones would be limited. Either way, the endemic problem of government guarantees having the effect of compromising market discipline and engendering future crises would have been alleviated.

NOTES

1. Chapter 4, "Measuring Systemic Risk," describes a methodology for estimating the percent contribution of a financial firm to the systemic risk of the financial sector. As of July 2009, putting aside government-backed institutions like AIG, Fannie Mae, and Freddie Mac, these six bank holding companies capture over 50 percent of the systemic risk of the financial sector and are ranked among the nine most systemic firms with insurers Prudential Financial, Hartford Financial Services, and MetLife included in the mix.
2. Table 7.1 does not include GMAC and GE Capital, given that these entities were subsidiaries of larger real-economy firms.
3. Sybil White, "Riegle-Neal's 10% Nationwide Deposit Cap: Arbitrary and Unnecessary," http://studentorgs.law.unc.edu/documents/ncbank/volume9/cybilwhite.pdf.
4. Suppose a large financial firm wished to increase its size. The firm could break into two firms and accomplish this goal. It is not clear that the systemic risk of the former conglomerate, and thus the de facto government guarantee, would not carry over in some way to the collection of surviving firms.
5. HR 4173, Title VI, "Improvements to Regulation of Banks and Savings Association Holding Companies and Depository Institutions," Sec. 619, "Prohibitions on proprietary trading and certain relationships with hedge funds and private equity funds."
6. HR 4173, Title VI, Sec. 619.
7. Ibid.
8. See Chapter 5, "Taxing Systemic Risk."
9. Many bank executives consider price-to-book value ratios to be a better valuation standard than price-to-earnings ratios.

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