

Derivatives and Deregulation: Financial Innovation and the Demise of Glass-Steagall*

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Abstract

Just as regulation may inhibit innovation, innovation may undermine regulation. Regulators, much like market actors, rely on categorical distinctions to understand and act on the market. Innovations that are ambiguous to regulatory categories, but not to market actors, present a problem for regulators and an opportunity for innovative firms to evade or upend the existing order. We trace the history of one class of innovative financial derivatives—interest rate and foreign exchange swaps—to show how these instruments undermined the separation of commercial and investment banking established by the Glass-Steagall Act of 1933. Swaps did not fit neatly into existing product categories—futures, securities, loans—and thus evaded regulatory scrutiny for decades. The market success of swaps put commercial and investment banks into direct competition, and in so doing undermined Glass-Steagall. Drawing on this case, we theorize some of the political and market conditions under which regulations may be especially vulnerable to disruption by ambiguous innovations.

Introduction

In 1981, the investment bank Salomon Brothers brokered the world's first major currency swap. The \$210 million deal between IBM and the World Bank was some two years in the making. In the period leading up to the deal, IBM had issued bonds denominated in Swiss francs and Deutsche Marks that it wanted to convert to dollars. Salomon Brothers realized that IBM could save on transaction costs by avoiding the usual conversion method of issuing new bonds in dollars. Instead, the bankers at Salomon connected IBM with a party that had U.S. dollar-denominated bonds on hand and a hunger for European currencies—the World Bank—and arranged for the two organizations to swap payment obligations on each other's bonds.

Decades later, this deal is widely recognized as the origin of one of the most important and widespread modern financial innovations (Steinherr, 2000; Tett, 2009). Following the 1981 exchange between IBM and the World Bank, swaps diffused at a nearly incomprehensible rate. By 1999, the notional value of all outstanding interest rate and foreign exchange swaps was estimated to be a staggering \$58.3 trillion—more than six times the 1999 U.S. gross domestic product.¹

Although an investment bank brokered the swap between the World Bank and IBM, commercial banks like J.P. Morgan were key players in the takeoff of the market in the 1980s and pioneered many key innovations (Tett, 2009). The heavy involvement of commercial banks in swaps in the early 1980s is surprising because it preceded the repeal of major regulations—most notably the Glass-Steagall Act of 1933—that were designed to limit the ability of commercial banks to deal in instruments that share many properties of swaps. What relationship was there, if any, between innovation in swaps and financial regulation?

The effects of regulation on innovation have long been of interest to social scientists. For example, a prominent stream of research in economics and public policy focuses on the rela-

¹The notional value of a swap is the value of the underlying asset being exchanged. The market value of a swap is difficult to determine but usually much smaller, on the order of a few percent of the notional value.

tionship between regulation and R&D spending among firms in sectors like manufacturing and drug development (e.g., Grabowski, Vernon, and Thomas, 1978; Jaffe and Lerner, 2004). Organizational ecologists, likewise, show that deregulation enables and constrains new product introductions and market entry in finance and related industries (e.g., Haveman, 1993a, 1993b). And in studies of entrepreneurship in emerging fields like alternative energy, institutional theorists demonstrate that regulation bears heavily on the process through which new products come to market (e.g., Russo, 2001; Sine, Haveman, and Tolbert, 2005).

Despite much progress in research on the connections between regulation and innovation, existing studies focus almost exclusively on one side of this relationship—namely, on how regulation influences the process through which novel products, services, and organizational forms are created and introduced to markets. Far less is known about how innovation, in turn, shapes regulation.

We argue that innovations can play a central role in the process of *deregulation*. Here, we build on the insights of Kane (1977, 1981) who emphasized the constant interplay of the activities of regulated firms and their regulators, a phenomenon known as the “regulatory dialectic.” Innovations have the potential to challenge regulatory frameworks by allowing firms to engage in activities analogous to those that were once prohibited or restricted. In contrast to much of the political science and sociology literature, we thus emphasize the proactive role of firms in producing regulatory change through their market actions (and not only through their overtly political actions, like lobbying). We demonstrate these ideas by showing that swaps were not a response to the easing of regulatory controls, but rather a cause. Specifically, innovation in swaps contributed to the de facto end of Glass-Steagall and, eventually, to its formal repeal.

Our analysis makes two primary theoretical contributions. First, by placing innovation at the center of debates over regulation and deregulation, we add a novel perspective to institutional theories of legal and regulatory change. Following from the insights of agenda-setting works by Streeck and Thelen (2005), Mahoney and Thelen (2010), and Berk, Galvam

and Hattam (2013), research on institutional change has emphasized the manifold ways in which old institutional orders may give way to new ones, from simple replacement to more complex processes of layering and drift. Thus far, this research has adopted a perspective centered on the actions of policymakers; firms are treated as part of the environment, external to the process of change. Research in the sociology of law provides a major exception to this state-centered approach, but has focused on one relatively narrow mechanism in which firms' implementation of ambiguous legal mandates alters the meaning of those mandates by shaping judges views of what constitutes compliance (Edelman, Uggem, and Erlanger, 1999; Edelman et al., 2011). In contrast, we identify a novel mechanism of firm-led legal change by showing how ambiguities in the law not only provide an opportunity for organizations to define appropriate implementation, but also to innovate strategically in ways that undermine those laws.

Second, we draw on and contribute to recent debates about the role of categories and categorization in determining the success of organizational actions (Zuckerman, 1999; Hsu, 2006), especially in cases where organizations are judged simultaneously by multiple audiences (Kim and Jensen 2011; Pontikes, 2012). By taking advantage of the ambiguities that stem from the mismatch between formal regulatory categories encoded in written rules and the more informal cognitive categories employed by market actors, firms' innovations may simultaneously succeed in the market and bring about changes in the regulations governing firm behavior. This analysis suggests that scholars of categories and categorization should expand their theories to include both the informal, cognitive categories of the market and the formal, regulatory categories of the state.

To illustrate this interplay of innovations and regulatory categories, we document how swaps were influential in the process of financial deregulation at least in part because they integrated features of futures, securities, and loans, and therefore were ambiguous with respect to established regulatory categories. This ambiguity made it difficult for regulators to interpret swaps and led to persistent battles over jurisdiction and other issues, leaving

even those regulators who were suspicious of these novel financial innovations ill-equipped to respond.² At the same time, swaps were readily interpretable to market actors like commercial banks, who could leverage the ambiguous nature of swap’s category membership by arguing that the instruments were neither futures, securities, nor loans as convenient when regulators attempted to introduce oversight. Over time, as more and more market actors began to deal in swaps, the model of the world that Glass-Steagall was designed to govern changed, rocking the foundations of the law.

The remainder of this article is organized as follows. First, we provide an overview of existing perspectives on deregulation. Next, we build on and extend insights from theories of categorization to develop a framework for the study of innovation and the process of deregulation. We then present our data and methods, which we mobilize to offer a novel history of the interrelationship between swaps and financial regulation. We conclude with a discussion of the implications of this case for studies of innovation and regulation, categories and categorization, and the recent history of finance.

Theoretical Perspectives on Deregulation

Deregulation in the United States has been a topic of academic interest since the 1970s, but little existing research focuses on the role of innovation in the rollback of government oversight. Here, we briefly review prominent areas of research on deregulation in order to demonstrate the need for more systematic analyses of how—and under what conditions—innovation might contribute to the process of deregulation. We also discuss research on institutional change in political science and sociology that, while not explicitly linked to deregulation, provides useful insights for understanding the capacity of innovation to undermine or overturn existing rules.

²More precisely, swaps were difficult for regulators to interpret in the sense that it was hard for them to place swaps into an already existing regulatory category, and thus justify their regulation under the associated rules for that category. Regulators understood how swaps functioned as market transactions, but they could not readily understand swaps *as* some kind of already regulated transaction.

One established strand of scholarship focuses on the ideological and social movement aspects of deregulation. As Prasad (2006) has shown, the deregulation movement consisted of two major phases that targeted two very different forms of regulation.³ In the first period, starting in the 1970s, consumer advocates lobbied for the repeal of economic regulations that were seen as anti-competitive, and thus productive of monopoly rents and reduced consumer welfare. In the second period, starting in the early 1980s, the movement was captured by business interests and began to take aim at social regulations, especially those concerning the environment (e.g., the U.S. Environmental Protection Agency) and workplace safety (e.g., the U.S. Occupational Safety and Health Administration). Scholars understand this second wave of deregulation as part of the neoliberal agenda for rolling back state intervention into the affairs of big business, and for increasing the relative power of business vis-à-vis labor (Harvey, 2005; Mudge, 2008). In sum, this first strand of scholarship focuses on the large-scale movement and the social forces arrayed to produce it, not the day-to-day politics of deregulation. The actual businesses that were deregulated play relatively little role in the story apart from their broad lobbying efforts. Thus, innovation is not a central theme.

A second strand of research digs down into the guts of the policymaking process by focusing on the specific politics of deregulation in various industries. This research fits within the broader literature on public policy—especially on the role of business interests in policymaking (Hillmann and Hitt, 1999; Hart, 2004; Baumgartner et al., 2009)—and focuses on the more meso- and micro-level politics of the deregulatory process. Derthick and Quirk (1985) offer what is still one of the best-documented studies of deregulation, focusing on the air transportation, trucking, and telephone service sectors. Their analysis highlights the role of economists and economic ideas in promoting deregulation as a way to enhance consumer welfare and increase efficiency. Other scholars emphasize more traditional political

³Regulation has been defined very broadly in the literature as any action by the government that restricts individual or firm behavior (Meier, 1985). We narrow our focus to economic regulation, which we define as limitations on the products a firm can offer, the price at which it may offer those products, or the location where it may do business. We are primarily interested in deregulation as the elimination of these economic regulations.

coalitions and interactions between legislators, the presidency, regulators, and courts. For example, Garland (1985) highlights the interactions between courts and regulators, and the role of shifting standards of judicial review of administrative decisions in the process of deregulation.

A few scholars in this tradition focus explicitly on the deregulation of finance. Meier (1985) compares regulatory struggles across different industries — including depository institutions — to showcase the importance of the industry’s resources, the level of issue salience, ease of entry into the industry, and other factors. Recent studies, such as Suárez and Kolodny (2011), highlight the role of financial industry associations in collectively lobbying legislators for and against specific financial deregulatory proposals. Studies of financial deregulation also emphasize the role of “cognitive regulatory capture,” i.e., the idea that financial regulators became ideologically committed to a notion of finance as efficient and self-regulating and thus not in need of strong regulation (Carpenter and Moss, 2013; Kwak, 2013). These studies pay more attention to the explicitly political actions of firms, but still bracket those firms’ actual business practices and exclude them from systematic analysis. That is, firms enter into the deregulatory process primarily through their lobbying, not through innovation in product offerings or other normal market activities.

Although not explicitly framed around deregulation as such, recent work in political science and sociology on institutional change provides a useful perspective on the possible mechanisms by which deregulation might occur. Scholars in this area show how institutions may change both suddenly and gradually through various combinations of intentional action and unexpected shocks (Streeck and Thelen, 2005; Mahoney and Thelen, 2010; Berk, Galvam, and Hattam, 2013). Most notably for our purposes, Mahoney and Thelen (2010) emphasize the importance of studying gradual institutional change by focusing on the inherent ambiguity within systems of rules. They highlight the potential for both external shocks and action within institutions or fields to slowly reshape the functioning of the institutional order. This perspective identifies the process of “policy drift” as an important pathway

of institutional transformation. Policy drift occurs when the content and meaning of rules (particularly formalized regulations and laws) shift over time through the accumulation of changes in the activities those rules were designed to regulate rather than through explicit political processes (Mahoney and Thelen, 2010: 16; see also Hacker and Pierson, 2010).

While these perspectives are useful, their focus on the actions (or non-actions) of policymakers limits their direct application to the problem of innovation and deregulation. A related literature in the sociology of law provides a more helpful model. In a series of papers, Edelman and co-authors demonstrate the capacity for organizations to reshape the content and meaning of the laws governing their behavior through their implementation of ambiguous legal mandates and the subsequent sanctification of those interpretations by courts (Edelman, Uggen, and Erlanger, 1999; Edelman et al., 2011). Like Mahoney, Thelen, and Streeck, this “legal endogeneity” perspective highlights the ambiguity inherent in the law and the potential for such ambiguity to be a source of change. Legal endogeneity usefully foregrounds the role of firms, but narrowly focuses on firms’ reactions to ambiguous social regulations around employee rights. We therefore adapt some of the insights from this literature to a novel empirical context (financial regulation), and in so doing, identify a mechanism (innovation) through which firms’ actions can produce change in the regulations governing their behavior. We turn now to this process.

Innovation and the Process of Deregulation

Drawing on the insights of Kane (1977, 1981), we suggest that regulation and business activities (including innovation) maintain a dialectical relationship. That is, just as businesses respond to regulation by complying with regulation (or not), and innovating (or not), regulators and legislators too respond to changes in the behaviors of business by enforcing existing regulations (or not) or creating new ones (or not). We argue that innovative activities undertaken by businesses may be especially important moves in this regulatory dialectic, ones

capable of undermining regulation in the absence of strong efforts by regulators to uphold the existing rules.

Following from the perspectives on deregulation above—which focus primarily on deregulation through the passage and implementation of new legislation—the story of Glass-Steagall in the 1980s appears to be one of relative stasis with only partial rollbacks. Although finance experienced significant deregulation in 1980 and 1982 with the repeal of Regulation Q and the relaxation of restrictions that separated the activities of various forms of depository institutions (e.g., thrifts, credit unions, and traditional commercial banks), the legal barriers between commercial and investment banking remained (Meier, 1985; Hammond and Knott, 1988). As will be discussed in detail below, Glass-Steagall was challenged, but no formal repeal was passed until 1999.

We argue that beneath this relative stability, changes in the actual business activities of financial firms substantially altered the effects of the law and catalyzed the process of deregulation. Financial firms actively produced policy drift: the field of finance underwent major transformations, and these transformations altered the actual effects of Glass-Steagall. Like all regulations, Glass-Steagall relied on *a particular theory of what the market was, what kinds of actors were in it, and what their activities were*. Changes in firm behavior, including the invention and diffusion of new products, vitiated that understanding of the field and, in turn, disrupted the regulations built on that understanding.

What kinds of innovations are most capable of disrupting regulations? Clearly, not every innovation poses a significant challenge to the efficacy of regulatory regimes. Some innovations are actually the intended outcome of regulations, as when power companies search for more environmentally friendly ways of generating electricity in response to environmental policy (Jaffe and Palmer, 1997; Taylor, Rubin, and Hounshell, 2005). Here, the innovations reinforce the vision of the world held by regulators and are embedded in the regulations themselves.

Although all regulations are built on some understanding of the field being regulated, we

theorize that the distance between this conceptual map of the field and the actual practices of the field is especially important for economic regulations designed to maintain boundaries between fields. More concretely, regulations designed to separate *kinds* of activity—such as commercial and investment banking—rely on some model of what constitutes those activities at a given point in time. Innovations that are ambiguous with respect to these regulatory categories present problems for regulators, and opportunities for regulated firms.

Research on categorization finds that organizations, products, and innovations are usually most successful when they are readily interpretable through the lens of existing categories used by consumers and other market participants (Hargadon and Douglas, 2001; Negro, Hannan, and Rao, 2010; Smith, 2011); those that are ambiguous to market actors are more prone to failure or devaluation (Zuckerman, 1999; Hsu, 2006; Ruef and Patterson, 2009). Young actors, for instance, who work in multiple film genres have fewer opportunities later in their careers than their peers who appear in a more similar array films (Zuckerman, Kim, Ukanwa, and von Rittmann, 2003). Sellers on eBay who span multiple product categories see fewer sales than those who operate in just one (Hsu, Hannan, and Koçak, 2009). And French chefs who blend more techniques from rival cuisines are more likely to see a decline in their ratings by critics (Rao, Monin, and Durand, 2005). Studies attribute these devaluations to cognitive and cultural considerations: organizations, products, and innovations with ambiguous category membership are typically either difficult for consumers to understand or appear to violate cultural codes, thereby creating major barrier to their success.

In contrast to these streams of research on cultural and cognitive market categories, we argue that ambiguity with respect to *regulatory* categories may be beneficial to both the market success of innovations and to their capacity to disrupt regulations. Innovations that do not fit into regulatory categories may fall between the cracks of regulatory jurisdictions. To the extent that different activities or kinds of firms are regulated by different regulatory entities, ambiguous innovations are not clearly the responsibility of any particular regulator. When a regulatory entity does determine that a particular activity should fall under its

jurisdiction, it faces uncertainty about which rules should apply, and its determinations are subject to challenge as overreach of its statutory mandate.

Put together with existing findings, we thus argue that innovations are most capable of vitiating regulations when those regulations attempt to maintain boundaries between different types of activity, and when the innovations are readily interpretable by end-users but ambiguous with respect to regulatory categories. In what follows, we focus on the role of innovation in swaps in the disruption of Glass-Steagall's formal separation of commercial and investment banking, with particular attention to the blurring effect of swaps on the boundary between the actual practices of commercial and investment banking.

Data and Methods

Historical case studies are important tools for theorizing about the unfolding of processes over time, and thus are especially suited for understanding the relationship between innovations and regulations (Hargadon and Douglas, 2001; Eisenhardt and Graebner, 2007). Like many historical cases, we relied on a wide range of primary and secondary, qualitative and quantitative sources (Jick, 1979). Our efforts were both systematic and opportunistic. In a process parallel to that of qualitative researchers relying on snowball sampling, we expanded our data collection around a given event or process until we reached saturation (that is, when new sources added no new understanding).

Our study of the demise of Glass-Steagall began with both empirical and theoretical expectations informed by our readings of the literature in organizational theory, political science, sociology, and financial regulation. We began with the assumption that overt political action (e.g., lobbying and campaign contributions) would play a determinative role in the timing and nature of the repeal of Glass-Steagall, and that the formal repeal of Glass-Steagall would precede, rather than follow, major changes in the structure of commercial and investment banking. Our research revealed that these assumptions matched poorly with

the actual details of the case, and thus suggested that the fall of Glass-Steagall might offer opportunities for constructing new theories about corporate political activity and deregulation.

In order to first establish a general chronology of events, we began our research with a detailed examination of trade and general newspapers. We focused initially on *American Banker*, the trade newspaper of the banking industry, and the *New York Times* (*NYT*), the most prominent general newspaper in the United States during our period and the local newspaper of many key financial institutions. We read every article in each publication that included the term “Glass-Steagall”, “Banking Act of 1933”, and “Gramm-Leach-Bliley” and used these articles to identify relevant events and periods and to generate new search terms (such as “Section 20 subsidiary”). In total, we collected 4,267 *American Banker* articles and 723 *NYT* articles. We checked *NYT* coverage against a smaller sample of *Washington Post* articles ($N = 386$), as it is widely considered the second-most authoritative national newspaper, and is especially well-regarded for its coverage of federal policymaking. This first pass through the data suggested that the legal separation of commercial and investment banking was challenged in practice throughout the 1980s. Drawing on existing secondary research (especially Tett [2009]), we identified the history of derivatives as an important component of this blurring of boundaries, and thus broadened our search of newspapers to include the terms “swaps” and “derivatives.”

After establishing the overall narrative in the trade and general press, we then dug deeper into key moments of contention. We analyzed court documents and rulings, regulatory publications, Congressional Research Service reports, company annual reports, and scholarly publications on law and finance, among other sources. Every important event was covered by at least two sources, providing us confidence in our interpretation of events — none of our results rely on a claim or interpretation found in a single source, nor on any event for which there were widely discrepant interpretations within the data. At the helpful suggestion of an anonymous reviewer, we also re-did our initial systematic reading using the *Wall Street*

Journal (*WSJ*) to see if our analysis of major events would change with the addition of a new source identified more closely with big business. We searched the *WSJ* for “Glass-Steagall”, “interest rate swaps”, “currency swaps”, and related terms from 1979 to 2000. These searches yielded approximately 2,000 articles.⁴ These articles helped us to deepen our understanding of debates about the role of swaps in the 1980s, but did not uncover any substantially new events or causal linkages, which further convinced us that we had reached saturation in our data collection.⁵ Finally, we analyzed administrative data from the Federal Reserve to verify that smaller commercial banks played a relatively unimportant role, as suggested by the narratives found in the newspaper accounts.

We mobilize these diverse sources to establish six key empirical claims:

1. Regulators in the 1980s and 1990s were largely favorable to deregulating finance.
2. Swaps were ambiguous with respect to existing regulatory categories.
3. Swaps were a successful innovation, as judged by their dramatic uptake in the market.
4. Swaps were successful in part because they were ambiguous to existing regulations.
5. The market success of swaps contributed to the breakdown of distinctions between commercial and investment banks.
6. The breakdown of the distinction between commercial and investment banks led to the formal demise of Glass-Steagall.

Claims 1-3 take the form of relatively simple empirical assertions, the first and third of which are already well documented in the existing literature. Claims 4-6 are more novel, and take the form of causal assertions. Following Mahoney (2012), we employ the methodology of process-tracing (see also George and Bennett, 2005; Goertz and Mahoney, 2012). Process-tracing makes use of the rich within-case data generated through detailed analysis of a specific case, known as causal-process observations, to establish that the posited causal explanations

⁴Starting in the early 1990s, some articles appear in nearly identical forms across multiple editions of the *WSJ* (the Asia edition, the UK edition, and so on). The estimate of 2,000 includes these near duplicates.

⁵During the period of our investigations, another account of the political maneuvering behind the repeal of Glass-Steagall was published by Suárez and Kolodny, (2011). We were heartened to see that our narrative lined up almost exactly with theirs, with the exception of the important role of swaps, which Suárez and Kolodny may have missed due to their exclusion of the business press from their data.

are likely to explain the events of the case. For example, we focus on the unsuccessful attempts by banks to repeal Glass-Steagall in the 1980s to highlight the changes that needed to occur in order for the repeal efforts of the 1990s to succeed. Similarly, we use developments that occurred after the Dodd-Frank financial reforms of 2010 to offer further evidence of the interpretive flexibility of swaps transactions.⁶

Shifting Contexts of Commercial Banking and the Seeds of Innovation

In this section, we turn to the early history of Glass-Steagall to demonstrate that the seeds of contemporary financial innovations in interest rate and foreign exchange swaps can be traced back to regulatory environments established in the wake of the 1929 stock market crash. For reference, a timeline of major events in our case can be found in Table 1, although our discussion proceeds thematically rather than strictly chronologically.

Insert Table 1 about here

The rules set forth by Glass-Steagall and related legislation were widely accepted and upheld for many years by both regulators and the financial organizations those rules were intended to govern. The categories of activity embedded in the law—i.e., the particular model of the world of commercial and investment banking—remained relatively accurate descriptions of the actual activities of firms. Beginning in the 1980s, the emergence of alternative forms of financing weakened the traditional banking business model. Banks first sought to alter established regulations and expand the scope of their activities through traditional lobbying efforts. As we demonstrate below, when these efforts failed, incentives to

⁶These within-case counterfactuals offer us some measure of confidence in the causal sequence we have identified, but they are poorly suited for making strong claims about generalizability, and they do not provide sufficient leverage to apportion the precise causal weight of one factor over another. Given that our purposes are first, to identify a new mechanism linking innovation and deregulation, and second, to contribute to knowledge of the politics of financial reform in the 1980s and 1990s, we believe these limitations are not overly worrisome as long as we proceed with caution and modesty.

develop innovations—especially innovations that were ambiguous and ill defined with respect to contemporary regulatory categories—increased dramatically.

Glass-Steagall and the Separation of Commercial and Investment Banking

In 1929, the United States experienced a massive financial crisis, including a stock market crash and the subsequent failure of nearly 1,000 banks (Carnell, Macey, and Miller, 2008: 16). The crash led to declining confidence in financial institutions and bank panics were common for the next four years, leading to thousands more bank failures. In 1930, Senator Carter Glass of Virginia proposed legislation that would separate commercial and investment banking and eliminate “securities affiliates” (subsidiary organizations used by commercial banks to avoid existing restrictions on their securities activities). Glass successfully fought for the inclusion of a plank in the Democratic party platform in 1932, calling for “the severance of affiliated securities companies from, and the divorce of investment banking business from, commercial banks” (quoted in Perkins [1971: 518]).

Glass’s legislation went through two years of committee hearings before eventually passing the Senate in January 1933, two months before Franklin Roosevelt’s inauguration. While the Senate focused on the separation of commercial and investment banking, the House, led by Congressman Henry Steagall of Alabama, championed the creation of federal deposit insurance, and did not address Glass’s legislation, which stalled pending Roosevelt’s arrival.

In the beginning of 1933, on behalf of the Senate Committee on Banking and Currency, Ferdinand Pecora led an investigation into the causes of the crisis and uncovered extensive abuses by banks. The investigation focused in part on the conflict of interest presented by banks that were both taking deposits and making commercial loans and underwriting and dealing in corporate securities (Perino, 2010).⁷ Pecora exposed extensive abuses by a prominent New York bank, City Bank (precursor to the modern Citibank), and its securities

⁷Carnell, Macey, and Miller (2008: 130) define a dealer as a party that “engages in the business of buying and selling securities for its own account” while an underwriter “sells securities for an issuer...or buys securities from the issuer with a view to distributing them to the public.”

affiliate, National City. The investigation uncovered how National City sold investments to everyday consumers, often contacted because they were depositors at City Bank, without disclosing to them its own assessments of the worthiness of an offering or other material facts (Perino, 2010: 248). Pecora also showed that the distinction between City Bank and National City was a legal fiction—the two had the same board of directors, chairman, and other top management. Thus, when National City pushed investors to buy City Bank stock, the bank was effectively propping up its own share price. As a result of Pecora’s cross-examination, Charles Mitchell, the Chairman of City Bank and National City, was forced to resign, and Senator Glass’s legislation gained popular support.

In light of the Pecora Commission’s findings, Congress passed the Banking Act of 1933 in June. The law merged Congressman Steagall’s deposit insurance bill with Senator Glass’s bill separating commercial and investment banking, and thus is commonly known as the Glass-Steagall Act of 1933.

Glass-Steagall mandated sweeping changes to the financial industry (Cohen, 1982; Carnell, Macey, and Miller, 2008; Carpenter and Murphy, 2010). First, the Act created the Federal Depository Insurance Commission (FDIC), which insured bank deposits and had the authority to take over failing banks. Second, Glass-Steagall capped interest rates through “Regulation Q.” This regulation prohibited banks from paying more than a specified rate for interest on savings accounts and from paying any interest at all on checking accounts, with the aim of preventing ruinous competition for deposits. Third, and most important to our analysis, Glass-Steagall mandated the separation of firms that took deposits and made loans (commercial banking) and firms that underwrote and dealt in securities (investment banking). Sections 20 and 32 of Glass-Steagall prohibited firms involved in taking deposits from being affiliates (part of the same holding company) or subsidiaries of each other, and from sharing directors on their boards (“interlocks”) with firms “engaged principally...in the issue, flotation, underwriting, public sale, or distribution, at wholesale, retail, or through syndicate participation” of “ineligible securities,” meaning corporate debt and equity among

other things (but not government debt, which commercial banks were allowed to continue to trade). In response, large banks split up their commercial and investment banking divisions. For example, J.P. Morgan & Company divided into a commercial bank, J.P. Morgan, and an investment bank, Morgan Stanley, in 1935.

The Glass-Steagall Act has come to be associated mainly with the separation of commercial and investment banking required by Sections 20 and 32. Thus, for the rest of this discussion, we use “Glass-Steagall” to refer only to these provisions unless otherwise specified. Also, we will return to the phrase “*engaged principally*” in the quoted text of the law, as its contested meaning played an important role in the efforts of commercial banks to enter into the securities business in the 1980s.

Between the 1940s and the early 1970s, Glass-Steagall remained relatively unchanged. In 1956, the Bank Holding Company Act expanded Glass-Steagall’s reach to corporations that owned banks, i.e., bank holding companies, to ensure that such a company could not own both commercial and investment banks. An amendment in 1970 removed an exception for companies that owned a single bank, further entrenching the separation of commercial and investment banking (Carpenter and Murphy, 2010: 7). In this period, regulators and legislators worked together to patch holes in the Glass-Steagall framework, and investment and commercial banks largely acquiesced to the regime.

Following the economic turmoil of the 1970s, the competitive environment of commercial banks shifted dramatically, threatening the profitability of the industry. Non-financial firms began to rely more on their own internal financial expertise (Zorn, 2004) and on issuing their own debt in the commercial paper market rather than turning to commercial banks for loans (Davis and Mizruchi, 1999). Simultaneously, the deregulation of interest rates (Krippner, 2011) and the creation of new savings vehicles like money-market mutual funds created significant competition for savings deposits, and thus forced banks to pay higher interest rates on deposits (Berger et al., 1995).⁸ Improvements in communication technologies and

⁸The creation of money-market mutual funds and the increased use of commercial paper effectively expanded investment banks’ capacity to compete directly with commercial banks’ core businesses of deposit-

especially advances in electronic credit scoring and credit records made it easier for foreign banks to compete in the United States. In 1979, foreign banks held less than a quarter of the amount of U.S. nonfarm, nonfinancial corporate debt held by domestic banks; by 1994, they were roughly equal (Berger et al., 1995). Although commercial banks had fought for a few relaxations of Glass-Steagall in the 1950s and 1960s, these threats to profitability pushed banks to begin a struggle for outright repeal in the late 1970s (Davis, 2009: 116; Suárez and Kolodny, 2011).

In the same period when commercial banks' traditional business model came under increasing pressure from interest rate deregulation, foreign competition, and the financialization of non-financial firms, banks also encountered new opportunities to push for relaxing regulations. Together, the growing influence of the political right (Gross, Medvetz, and Russell, 2011) and of financial economics (MacKenzie, 2006) created a regulatory environment more friendly to deregulation. Specifically, although the status quo prevailed in Congress, regulators questioned the wisdom of Glass-Steagall and began to agree with banks that the separation of commercial and investment banks was no longer necessary or wise. Over the next twenty years, commercial banks learned to exploit opportunities in the regulatory arena through a combination of clever reinterpretations and ambiguous innovations, even while outright repeal of Glass-Steagall faced significant legislative resistance.

Failure of Early Repeal Efforts

Nearly a dozen measures designed to repeal Glass-Steagall were introduced in Congress between 1981 and 1999 (*New York Times*, 1999a), but each faced a different set of roadblocks.⁹ In the early period, from 1981 to 1988, large commercial banks (working through the American Bankers Association [ABA]) lobbied for a complete repeal, while investment

taking and lending. Thus, they could be understood usefully as parallel cases to innovations in swaps that allowed investment banks to partially erode Glass-Steagall. Here, we treat these developments as part of the history of swaps, rather than undertaking a full analysis of their own regulatory and market dynamics. We thank an anonymous reviewer for this point.

⁹See Suárez and Kolodny (2011) for a more detailed account of the congressional maneuvering surrounding Glass-Steagall in the 1980s-1990s.

bankers (represented by the Securities Industries Association, [SIA]), along with other industry groups, fought to maintain Glass-Steagall.

As early as 1981, commercial bankers organized to eliminate Glass-Steagall's restrictions entirely (*New York Times*, 1981). Early repeal efforts picked up steam quickly, winning a tentative endorsement from the Reagan administration in 1982 (*American Banker*, 1983a). Powerful congressional Democrats opposed outright repeal, as did trade associations for investment banks, insurance agents, and community banks. In 1984, SIA president Edward I. O'Brien wrote,

The repeal of Glass-Steagall. . . is neither compelling, logical, nor inevitable. The act's demise is advocated almost exclusively by a handful of large banks. Most corporate executives and, certainly, individual savers and investors couldn't care less about the issue, as they already have an almost bewildering choice of financial services, products, and providers to choose from. Repealing the act would be a radical and ill-conceived notion. (*American Banker*, 1984)

The SIA maintained this opposition throughout the 1980s, with strong support from key legislators. For example, in late 1987, in the wake of the "Black Monday" stock market crash, the SIA argued that the barriers between securities and commercial banking had prevented the crash from rippling outward and causing a larger economic downturn. The staff of New York Republican Senator D'Amato helped distribute buttons proclaiming, "Glass-Steagall Saved U.S. Again" (*American Banker*, 1987). Up through 1988, these forces prevented commercial banks from making significant congressional inroads on a repeal bill.

Although their efforts to gain complete entry into the securities industry through the repeal of Glass-Steagall were relatively fruitless, in the 1980s banks did manage to significantly weaken the separation of the two fields. The next section focuses on one important regulatory reinterpretation that allowed banks to begin engaging in previously prohibited securities activities. This regulatory reinterpretation did not disrupt the categories of the market—i.e., commercial versus investment banking—but it did allow commercial banks some limited access to previously restricted activities.

Rise of Section 20 Subsidiaries

Although Congress was reluctant to overhaul the venerable Glass-Steagall Act in the 1980s, most bank regulators felt quite differently. In this section, we document the partially successful efforts of regulators and banks to work out a way around Glass-Steagall without enacting legislative changes. As discussed above, Glass-Steagall prohibited affiliations between commercial banks and companies that were “engaged principally” in ineligible securities transactions such as underwriting and dealing in corporate equity (Carpenter and Murphy, 2010). Commercial banks were permitted to have subsidiaries which dealt in certain government securities like state and municipal bonds, and they competed with investment banks in these areas. In the early 1980s, three large commercial banks—Citicorp (*New York Times*, 1984a), J.P. Morgan, and Bankers Trust of New York (*New York Times*, 1984b)—sought permission from the Federal Reserve to expand the activities of these subsidiaries to include certain “ineligible” securities like commercial paper and mortgage-backed securities. These banks argued that as long as their subsidiaries did less than half their business in such securities they would not be “engaged principally” in ineligible activities, and thus would not be in violation of Section 20 of Glass-Steagall. This reinterpretation of Glass-Steagall would not involve the creation of any new products, and thus did not involve challenging traditional product categories such as “loan” or “security,” but would allow commercial banks to effectively own (smaller) investment banks.

Reagan administration regulators responded favorably to this interpretation. In 1985, the Justice Department’s Antitrust Division weighed in with the Federal Reserve in favor of the expansion of commercial banks into investment banking activities. Charles F. Rule, Deputy Assistant Attorney General in the Antitrust Division spoke on behalf of the Justice Department: “We believe that the proper interpretation of Glass-Steagall does not prohibit what Citicorp and Morgan want to do... And we also believe that interpretation is good public policy of free-market competitiveness” (*New York Times*, 1985). In 1987, the Federal Reserve Board agreed to allow commercial bank subsidiaries to do up to 5-10% of their

business in ineligible securities, as long as no single bank had more than a 5% share of the total market for any ineligible security.

Just one day after the Federal Reserve Board issued its decision, the Securities Industry Association petitioned to stop the decision from taking effect. The SIA argued that the phrase “engaged principally” should cover any affiliate created for the purpose of underwriting securities, no matter how small a share of its total revenue derived from such activities. The case eventually went to the Court of Appeals for the 2nd Circuit, where the Court ruled against the SIA, largely upholding the Federal Reserve’s decision.¹⁰ The Court upheld the 5% gross revenue restriction as a reasonable interpretation of the statute to which the Court owed deference.¹¹ The Supreme Court refused to hear the case, and so the 2nd Circuit’s decision held.

Over the next decade, the Federal Reserve would expand the range of securities commercial banks were permitted to underwrite, and increase the cap on the percentage of revenue that Section 20 subsidiaries were allowed to receive in previously ineligible securities (*Federal Register*, 1996).¹² Commercial banks had significant success in attaining a large market share in corporate underwriting—by 1996, 41 commercial banks had Section 20 subsidiaries (Carpenter and Murphy, 2010), and those subsidiaries underwrote approximately 20% of corporate debt offerings (Gande, Puri, and Saunders, 1999). And yet, this traditional underwriting business was already seen in the mid-1980s as decreasingly profitable, in part due to the increased competition, and in part due to the emergence of many new competing financial products such as swaps (*Wall Street Journal*, 1984).

The reinterpretation of Glass-Steagall by the Federal Reserve that allowed commercial

¹⁰*Securities Industry Association v. Board of Governors of the Federal Reserve System*, 839 F.2d 47 (2nd Cir. 1988).

¹¹In *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984), the Supreme Court laid out the logic of judicial deference to regulatory decisions. This logic, now known as “Chevron Deference,” holds that when Congress has plausibly given an agency the authority to promulgate a regulation, the Court should treat the agency’s ruling deferentially because the agency presumably has more technical expertise than the Court, and because the agency (deriving its authority from Congress) is more directly accountable.

¹²An earlier decision had already raised the cap to 10%.

banks to enter directly into investment banking offers one strong piece of evidence for the attitude of the Fed specifically, and regulators generally, towards the continued separation of commercial and investment banking. By the late 1980s, most regulators no longer believed that this separation was necessary, and often went so far as to believe it harmful to continued American competitiveness in the face of foreign competitors not bound by similar restrictions (*Wall Street Journal*, 1986a). This permissive attitude of regulators, combined with continued intransigence in Congress, provided the context in which swaps would become an important innovation.

Ambiguous Innovation and Regulatory Disruption

Since their introduction in the late 1970s and early 1980s, swaps have been difficult to classify within the categories of established regulatory institutions. As we describe below, swaps are part future, part security, and part loan. Because they were only part future, part security, and part loan, actors who dealt in swaps, including commercial banks, could effectively argue that the instruments were none of the above when convenient. In so doing, established regulations could be evaded. Moreover, swaps challenged the very categories on which these regulations were premised and thus contributed to their eventual elimination.

Brave New World of Commercial Banking

Much ink has been spilt about financial derivatives in the wake of the 2008 financial crisis. Derivatives are financial products whose value is somehow linked to an underlying asset, and they range from the venerable and reasonably well-understood option contract to the much-maligned credit default swap (Steinherr, 2000; Tett, 2009). Here, we trace the history of two important derivatives innovations pioneered in the early 1980s: interest rate swaps and currency swaps (also known as foreign exchange swaps). Unlike credit default swaps, interest rate and currency swaps have not been blamed for causing financial instability and

are now considered relatively safe and well-understood. We chart the tremendous success of swaps in the 1980s and 1990s, and argue that part of this market success is attributable to various forms of tax and regulatory arbitrage—that is, that swaps were preferable to traditional alternatives in part because of their ambiguous regulatory status.¹³ We also show how commercial and investment banks competed relatively equally in this large market, thus further confusing the boundaries between the two fields. In the following section, we document the slow and ambivalent response of regulators to these financial innovations.

Although the first swap transaction was completed in the late 1970s, their invention remained almost unknown to regulators and market actors alike until the early 1980s (Price and Henderson, 1984: 3-4). As discussed in the Introduction, in 1981, Salomon Brothers arranged a widely-publicized currency swap between IBM and the World Bank (Tett, 2009: 11-12; Sercu, 2009: 240-243). IBM had an excess of Swiss and German-denominated bonds that had appreciated in value and that it wanted to turn back into U.S. dollars; the World Bank was interested in issuing bonds in those currencies. Rather than IBM paying off its bonds and issuing new ones in dollars, the World Bank instead issued dollar bonds, and the two swapped payments. IBM would service the World Bank's debt in dollars, and the World bank would service IBM's debt in Swiss francs and German marks.

This currency swap had several benefits for IBM and the World Bank. First, there were fewer transactions involved. IBM did not have to pay off its existing bonds and issue new ones, saving it the trouble of issuing a new bond. Notably then, this swap also denied commercial banks the possibility of making such a loan and investment banks the opportunity to underwrite it. Second, by swapping, IBM managed to delay paying capital-gains taxes for as much as five years (Sercu, 2009: 241). A third benefit, common to all swaps in the 1980s although less emphasized in the IBM-World Bank deal, was that the entire transaction was off-balance sheet.¹⁴ Early swaps thus proved effective at both reducing transaction costs,

¹³Swaps are not the only financial innovation whose market success rests on tax or regulatory advantages. For a more general discussion, see Miller (1986), Tufano (2003), and Frame and White (2004).

¹⁴The term “off-balance sheet” refers to assets or liabilities that are not reported on a company's balance sheet. For example, banks generally report traditional loans on their balance sheets, but may move those

and evading tax and regulatory frameworks.

Just as the market for foreign exchange swaps began to take off, numerous banks began arranging interest rate swaps in a single currency. In an interest rate swap, the counterparties typically swap a floating rate asset for a fixed interest rate asset. For example, the quasi-governmental Student Loan Marketing Association (also known as “Sallie Mae”) used interest rate swaps in 1982 to raise floating-rate money to help fund its portfolio of floating-rate student loans (*American Banker*, 1983b). Interest rate swaps allowed companies to alter their exposure to rising or falling exchange rates or to change the maturity of obligations without having to issue new debt. Thus, arranging swaps directly competed with the more traditional activities of dealing and underwriting in corporate equities and debt (Steinherr, 2000).

Swaps of both types took off quickly. Figure 1 shows the growth of the total notional value of interest rate and foreign exchange swaps contracts outstanding from 1983 to 2000, on a log scale.¹⁵ The data reveal an exponential increase in swaps activity, from just a few billions dollars in 1983, to around a trillion dollars in 1986, up to an almost incomprehensible \$63 trillion in 2000. Figure 2, also on a log scale, shows the notional value of swaps held by commercial banks, as reported to the Federal Reserve. The pattern here is similar, an exponential increase throughout the 1980s and 1990s.

Insert Figure 1 about here

Insert Figure 2 about here

The reasons for this incredible takeoff in swaps transactions were hotly debated in the business press and finance journals. Smith and colleagues (1986: 24-27) offer a useful summary of four categories of explanation: financial arbitrage, completing markets, exposure

loans off-balance sheet by bundling them into securities and selling them to specially created subsidiaries.

¹⁵As noted above, the notional value of a swap is much higher than the market value. Unfortunately, as far as we are able to determine, no historical data exist on the total market value of swaps from this early period.

management, and, most important to our analysis, tax and regulatory arbitrage. From its beginnings in the IBM-World Bank deal described above, swaps produced favorable tax and regulatory outcomes. Smith and colleagues (1986: 24) describe the benefits through an example:

The introduction of the swap market allows an “unbundling,” in effect, of currency and interest rate exposure from the regulation and tax rules in some very creative ways. For example, with the introduction of swaps, a U.S. firm could issue a yen-denominated issue in the Eurobond market, structure the issue so as to receive favorable tax treatment under the Japanese tax code, avoid much of the U.S. securities regulation, and yet still manage its currency exposure by swapping the transaction back into dollars.

Finance scholars and regulators at the time agreed that swaps boomed in part because of their favorable regulatory treatment and lack of reporting requirements, and not just because of their ability to reduce transaction costs (e.g., Grant, 1985; Wall and Pringle, 1989). Less commented on at the time was the way that swaps and other derivatives complicated distinctions between traditional commercial and investment banking. Swaps are part security, part future, and part loan. While investment banks were seen as especially competent at the trading aspects of swaps, commercial banks had the advantage in understanding credit risk—especially important given that in a swap, unlike a loan, both sides of the transaction face credit risk (Daigler and Steelman, 1988). In a traditional loan, the borrower does not have to worry about whether the lender will default. In a swap, both parties face potential losses if the other becomes insolvent. Commercial banks had the techniques and experience needed to assess swap counterparties and high credit ratings that made them attractive swap parties. Investment banks came up with new tricks to boost their swap divisions’ credit ratings to compete with commercial banks (*Wall Street Journal*, 1991a).

Although data from the early 1980s are scarce, it appears that interest rate swaps were initially arranged roughly equally by commercial and investment banks. For example, *American Banker* reported that Morgan Stanley (an investment bank) and Morgan Guaranty (a commercial bank) were the most active arrangers of interest rate swaps, together accounting

for about half of all swaps issued in mid-1983 (*American Banker*, 1983b). In a series of 1983 articles on the attempts by money-center commercial banks to enter more fully into investment banking, *American Banker* emphasized the relative strength of Citicorp (*American Banker*, 1983c), Morgan Guaranty (*American Banker*, 1983d), and Bankers Trust (*American Banker*, 1983e) in the new markets for interest rate and currency swaps. Note that these three banks were also the first to petition to form Section 20 subsidiaries. Further, these portrayals (and other similar trade press accounts) treat arranging interest rate and currency swaps as a form of investment banking, and thus frame commercial banks' entrance into these market as a challenge to Glass-Steagall.

Some commercial banks initially confined their swap activities to overseas investment banking subsidiaries, which were largely free of Glass-Steagall's restrictions. But commercial banks soon realized that swaps were simply not covered by U.S. regulatory institutions. For example, early in the 1980s, J.P. Morgan brought its London-based derivatives group to the U.S., as "managers had realized, to their utter delight, that there was no explicit provision in Glass-Steagall against trading in derivatives products" (Tett, 2009: 17-18).

By the late 1980s, more data sources are available that demonstrate commercial banks' success in the swaps market. In this period, swaps continued to be dominated by a few key players, including several of the largest commercial banks. Table 2 presents data on 15 top derivatives dealers investigated by the U.S. General Accounting Office (GAO, 1994). At this time, and to present, interest rate swaps were the largest part of the over-the-counter (OTC) derivatives market. The seven commercial banks account for almost 70% of the 15 firm total, and 90% of the derivatives business of commercial banks. Figure 3, drawn again from reports made to the Federal Reserve, shows that the proportion of all commercial banks using swaps remained quite low, ranging from 2% to 7% before falling back a bit as a wave of mergers between big banks reduced the number of separate firms engaging in swaps. Our picture of the swaps market in the 1980s-1990s is thus one dominated by a small number of increasingly large commercial banks in competition with a small number of prominent

investment banks.

Insert Figure 3 about here

Insert Table 2 about here

Overall, we see here how Glass-Steagall created the conditions of its own demise. The regulatory framework introduced by Glass-Steagall made swaps attractive financial instruments; but, as swaps grew in importance, they blurred the distinction between commercial and investment banking and ultimately destroyed the categories upon which that regulatory framework was built. While commercial banks faced stiff resistance to a full repeal of Glass-Steagall in the legislature in the 1980s, and had only partial success at entering explicitly into impermissible investment banking activities through Section 20 subsidiaries, swaps offered a route into a new, profitable, and investment-banking like market that was completely outside the scope of Glass-Steagall, and initially, most other regulatory frameworks. In the next section, we document the slow, patchwork, and mostly ineffective attempts by U.S. regulators to tame the swaps market and manage the inherent ambiguities of these financial innovations.

Regulators Meet Swaps

Regulators responded slowly and with uncertainty to the emergence of swaps. Since the 1980s, scholars and regulators have debated whether swaps should be treated as securities, futures, insurance, speculation or something else entirely (Klein, 1986; Olander and Spell, 1986; Romano, 1996; Hazen, 2005). When regulators did attempt to claim jurisdiction over swaps and add order and transparency to the market, they were quickly dissuaded by lobbying efforts and the threat of the market leaving the United States. In this section, we focus primarily on the back and forth at the Commodity Futures Trading Commission (CFTC) and its largely failed attempts to define swaps as futures and force swap trading

onto exchanges, thus resolving the ambiguity of swaps by forcing them into a particular category.

Some of the first regulatory responses came from the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB). In 1985, the SEC sought public comments on a proposed rule to treat swaps as securities requiring similar disclosure and transparency to more traditional securities (*Wall Street Journal*, 1985). In 1986, FASB began similar public deliberations on the creation of rules to bring swaps onto balance sheets and to standardize valuation practice (*Wall Street Journal*, 1986b). These rule-making processes were bogged down for years, with the result that derivatives remained off-balance sheets and unregistered as securities as the market boomed. In 1991, proposed legislation, intended as a partial repeal of Glass-Steagall, would have clarified the SEC's capacity to regulate swaps, and other new securities but it failed to pass (*Wall Street Journal*, 1991b). As such, the regulatory status of swaps as securities continued to be murky throughout this period.¹⁶

In contrast, the Office of the Comptroller of the Currency (the primary regulator for some commercial banks) was much more permissive, arguing in favor of extending the allowed activities of banks to include a wide array of derivatives contracts (Omarova, 2009). These extensions were relatively uncontroversial for interest-rate and currency swaps, but more controversial for equity swaps which were less ambiguous violations of Glass-Steagall (Omarova, 2009: 1069-1072).

Swaps faced their most serious regulatory challenge from the CFTC. In 1987, the CFTC advanced the possibility of regulating OTC derivatives—including swaps—as futures and began an investigation into Chase Manhattan's derivatives dealing activities (*Federal Register*, 1987). The CFTC suggested that OTC derivatives might be unauthorized futures contracts, and thus legally unenforceable under the 1936 Commodities Exchange Act, which requires that futures be sold on organized, regulated exchanges. These investigations sent derivatives

¹⁶For a detailed discussion of debates at the SEC, see Russo and Vinciguerra (1990).

dealers overseas, which in turn put pressure on the CFTC to cease its efforts to regulate derivatives lest the United States lose out on a substantial new financial market (Romano, 1996: 55). In 1989, the CFTC backed down and issued a regulation exempting most swaps, under the relatively minimal conditions that the swap not be offered to the general public (but rather to large businesses, government entities, or sophisticated and wealthy investors), and that the swap be individually tailored, and thus not suitable to be traded on an exchange with a unifying market price (*Federal Register*, 1989).

This 1989 policy statement did not entirely quell fears around issues of legal enforceability of swaps contracts, and a January 1991 ruling by the British House of Lords stoked these fears much higher. The House of Lords ruled that British municipalities did not have the authority to enter into swaps transactions as part of their power to raise funds—for the House of Lords, swaps were pure speculation. Thus, the House of Lords voided swaps contracts with over 75 banks, causing losses to derivatives dealers estimated at \$179 million (Lynn 1994: 308-309). Although this ruling did not directly affect transactions solely within the U.S., swaps dealers feared that a similar analysis might someday be applied, and pushed for greater legal clarity on the status of derivatives. After some squabbling between advocates for the exchanges, who wanted to capture some of the OTC derivatives market share, and the major banks, who wanted to preserve their unregulated, OTC character, Congress passed the Futures Trading Practices Act (FTPA), which specifically authorized the CFTC to exempt swap transactions. The FTPA also retroactively exempted swaps from state “Bucket Shop” laws, under which their legal status could have been challenged as an unauthorized form of gambling, another source of legal uncertainty in the swaps market. In his statement on signing the FTPA, President George H.W. Bush made clear what was at stake:

The bill also gives the Commodity Futures Trading Commission (CFTC) exemptive authority to remove the cloud of legal uncertainty over the financial instruments known as swap agreements. This uncertainty has threatened to disrupt the huge, global market for these transactions. The bill also will permit exemptions from the Commodity Exchange Act for hybrid financial products that can compete with futures products without the need for futures-style regulation. (Bush,

1992)

In 1993, the CFTC followed through and issued regulations affirmatively exempting most swap transactions from regulation (Romano, 1996: 56).

The derivatives market continued to expand in the mid-1990s, with heavy competition between commercial and investment banks (even as those barriers were eroding), and relatively little intervention from federal authorities. In May, 1998, the market received another scare as the new head of the CFTC, Brooksley Born, issued a “concept release,” asking a series of questions and suggesting that the CFTC might once again pursue the regulation of derivatives (*Federal Register*, 1998). Born argued that derivatives contracts had become increasingly standardized, and thus the 1989 and 1993 exemptions from exchange-trading no longer made sense, and that market participants themselves were interested in moving to organized exchanges (United States Congress, 1999). For example, the International Swaps and Derivatives Association (founded in 1985) had created a “master agreement” which increasingly standardized swap contracts and facilitated the emergence of a secondary swaps market (*Wall Street Journal*, 1987). Additionally, Born noted that the CFTC was incapable of exercising its role in preventing fraud and misrepresentation without any record-keeping requirements (*PBS Frontline*, 2009).

This concept release brought about a swift reaction from bankers—and from other financial regulators—who were convinced that the regulation of derivatives was unnecessary. Federal Reserve Chairman Alan Greenspan, Treasury Secretary Robert Rubin, and SEC Chairman Arthur Levitt all disagreed vocally with both the authority of the CFTC to regulate derivatives and the need for such regulation. To quell the market, these regulators supported a successful Congressional effort to enact a moratorium on new regulations of the OTC derivatives market (*Washington Post*, 2009; Stout, 1999: 706-707). Born stepped down from the CFTC in April, 1999, and in 2000, Congress passed the Commodity Futures Modernization Act, affirmatively declaring that OTC derivatives would not be regulated as either futures or securities, and thus ending the possibility of CFTC regulation (Hazen, 2005:

388-395).

Swaps presented a problem for regulators, but also an opportunity. Because of swaps' ambiguous position spanning the categories of futures, securities, and loans, regulators who were favorable to financial deregulation could happily exempt such contracts from existing rules by declaring that swaps were not whatever it was that they were supposed to regulate. Regulators who wanted to bring swaps into an existing framework needed to either secure new authority from the legislature, or find a compelling justification for shoehorning swaps into an existing category of regulated activity. Either way, the process was slow and faced pressure from lobbyists armed with the threat of moving financial activities abroad. And in the meantime, the swaps market flourished.

The End of Glass-Steagall

As their popularity skyrocketed, swaps altered the landscape of contemporary banking. Through the use of such contracts, commercial banks were able to engage in various types of activities that had, for nearly half a century, fallen under the exclusive control of investment banks. Formal regulation, on the other hand, was much slower to change. Long after the separation of commercial and investment banking had been eroded in practice by the rise of swaps, the text of the law remained and was consequential—though increasingly ineffective—for shaping the business of banking. The categorical map of the field embedded in the law no longer reflected the actual business practices of the increasingly unified financial industry. As we describe in this last section of our case, commercial banks ultimately succeeded in overturning Glass-Steagall, facilitated by the practical blurring of the boundary between commercial and investment banking brought about by swaps.

Gramm-Leach-Bliley

By 1988, the effective separation of commercial and investment banks was fast becoming history. The vast new swaps market was open to commercial and investment banks alike, although the two had slightly different strengths. Section 20 subsidiaries allowed commercial banks to compete, albeit in a limited fashion, with investment banks in previously prohibited businesses, including underwriting corporate securities. These successful entries into investment banking reduced pressure on commercial banks to push for a full repeal of Glass-Steagall. As one staffer for Senator Proxmire noted, “Now that banks have gotten quite a lot through the regulatory process, it would be easy for them to kill a bill” that maintained too many restrictions on their activities (*American Banker*, 1988a; *American Banker*, 1988b).

Recognizing the shifting balance of power, in 1989 the Securities Industry Association backed down from their complete opposition to repealing Glass-Steagall, and instead proposed an alternative measure that would partially repeal the separation of commercial and investment banking, but maintain certain barriers within companies between the two activities (*American Banker*, 1989b). The ABA rejected the SIA’s proposals as too restrictive, effectively replacing “the Berlin wall with a high-powered electrical fence” (*American Banker*, 1989b). From 1990-1994, the SIA, ABA and other lobbying groups fought over the specifics of a repeal bill, but made little headway, in part due to continued resistance from Democrats in the House of Representatives. The 1995 Republican takeover of the House cleared out several hostile committee chairmen (*American Banker*, 1995a; Suárez and Kolodny, 2011), but insurance industry lobbyists and the ABA continued to fight over barriers between banking and insurance, another part of the Glass-Steagall repeal discussions (*American Banker*, 1995b). The ABA used its increased leverage from winning so many regulatory victories to kill partial repeal attempts that imposed too many restrictions on commercial banks’ activities. The ABA would wait for a full repeal, and in the meantime commercial banks would take advantage of the new powers granted to them by regulators to enter into competition

with investment banks.¹⁷

In 1998, Citicorp (a commercial bank) and Travelers Group (an insurance company that owned a major investment bank) announced a merger that would form a company that directly violated Glass-Steagall. Because Travelers Group was an insurance company and not a bank holding company, it was able to apply to the Federal Reserve to become a bank holding company and thus be granted an automatic two year grace period to divest itself of impermissible activities—or to get the law changed (Carnell, Macey, and Miller, 2008: 460). The Federal Reserve approved the petition, and the D.C. Circuit Court upheld the Fed’s decision over the objections of the Independent Community Bankers of America.¹⁸ It did not matter that the newly formed Citigroup had no intentions of divesting itself of its impermissible activities; the provisions of the Bank Holding Company Act gave the new company a two year grace period.

As divisions between securities firms, insurance companies, and traditional banks continued to weaken (or in the case of Citigroup, collapsed entirely), the three lobbies united behind a proposal to repeal Glass-Steagall. Reports estimate that in 1997 and 1998 alone, financial firms spent \$300 million lobbying for the repeal (*New York Times*, 1999b). In 1999, Congress repealed the already-weakened separation of commercial and investment banking through the Financial Services Modernization Act, known popularly as Gramm-Leach-Bliley. Although there were a few hurdles involving privacy concerns, specifically around medical records held by insurance companies (*American Banker*, 1999), and the Community Reinvestment Act (*American Banker*, 1998),¹⁹ once the major lobbying groups for the investment banks, commercial banks, and insurance companies signed on to the bill, its passage was relatively uncontroversial. The final vote in the Senate was 90-8; in the House, 362-57.

¹⁷Although investment banks were less concerned with entering commercial banking than the reverse, investment banks did fight throughout this period for a repeal bill that allowed them maximum entrance into commercial banking. That is, investment banks decided that if the separation of commercial and investment banking was going to erode, they wanted to ensure complete access to other side’s market.

¹⁸*Independent Community Bankers of America v. Board of Governors of the Federal Reserve System.*, 195 F.3d 28 (D.C. Cir. 1999).

¹⁹The Community Reinvestment Act, an anti-redlining law passed in 1977, encouraged banks to invest in low-income communities.

Financial innovation, specifically the emergence of the market for swaps, along with with favorable regulatory reinterpretations of existing rules changed the balance of power inside finance, which produced a political coalition united around overturning Glass-Steagall.²⁰ By disrupting the effectiveness of Glass-Steagall, swaps in turn contributed to its eventual formal repeal. Innovation in day-to-day business operations preceded deregulation, and contributed to the political maneuvers necessary to achieve that deregulation.

Coda: The Futurization of Swaps

In 2010, a decade after the Commodity Futures Modernization Act ended the CFTC's attempts to regulate swaps as futures and two years after a major financial crisis blamed on unregulated swaps, Congress passed the Dodd-Frank Act. Among many other provisions, Dodd-Frank required that swaps transactions be cleared through organized exchanges. Although it is too early to say exactly how the new rules will affect the market for swaps, one clear trend has already emerged: swaps dealers have started converting their swap deals into futures (*Bloomberg Businessweek*, 2013a). After arguing for two decades that swaps were not futures, what convinced dealers to “futurize” their swaps? Favorable regulatory treatment:

For interest rate swaps and credit default swaps, the CFTC now requires traders to post margins equal to five day's worth of maximum potential trading losses. For comparable futures contracts, the collateral is one to two days of potential losses. (*Bloomberg Businessweek*, 2013a)

The post-Dodd Frank futurization of swaps highlights the difficulty of regulating financial transactions through categorical distinctions. Without continual vigilance, market actors may be able to strategically manipulate which category their activity falls under, vitiating the effectiveness of boundary-maintaining regulation. Finally, that swaps could be futurized provides further evidence for the claim that the “innovation” of swaps was, at least in part,

²⁰It is difficult to say to what extent commercial banks conceptualized derivatives as a strategy for overturning Glass-Steagall. Drawing on Tett (2009), it seems likely that derivatives were an “emergent” strategy for vitiating Glass-Steagall's effectiveness, as part of commercial banks general strategy of entering into investment banking-like activities in any way possible.

successful in the market because swaps were ambiguous to existing regulatory categories rather than because they offered market actors an entirely new financial product.

Discussion

We began this article by noting that although research on the interconnections between regulation and innovation has a rich history in organizational theory, existing scholarship focuses largely on one dimension of this relationship. Namely, prior studies attend primarily to the ways in which various rules and laws designed to restrict the behavior of particular actors influence the creation and development of novel products, services, and even organizational forms. Put differently, there exists relatively little systematic work on how innovation shapes regulation. This oversight is problematic for several reasons. Perhaps most importantly, it is difficult to reconcile the largely static picture of regulation painted by many organizational theories that address innovation with observations about the relentless interplay of the activities of regulated firms and their regulators (Kane, 1977, 1981). Moreover, to the extent that innovation shapes regulation, existing studies may mask an important endogenous process, whereby firms engage in novel activities that alter the effects of standing rules and laws in ways that subsequently influence the kinds of innovations they create and develop.

In this article, we worked to develop novel theoretical insights about the effects of innovation on regulation by showing how, under certain conditions, innovations can play an important role in the process of deregulation. Specifically, we demonstrated that the creation and diffusion of interest rate and foreign exchange swaps contributed to the demise of Glass-Steagall, a Depression-era law that, for decades, mandated the separation of commercial and investment banking activity among U.S. financial firms. Although other forces like shifts in the global banking industry also weakened Glass-Steagall, several factors made swaps especially important in this particular process of deregulation. First, at the time of their introduction, swaps were novel financial instruments that integrated properties of futures, securities, and

loans, and therefore were ambiguous with respect to established regulatory categories. This ambiguity led to persistent questions about the appropriate regulatory responsibilities and made it difficult for regulators who were suspicious of these novel financial innovations to respond. Second, as more and more market actors—including commercial banks—began to deal in swaps, the categories baked into the model of the world that Glass-Steagall was designed to govern began to erode, shaking the very foundation of the law.

Our focus on Glass-Steagall has helped us to derive insights about an important case of deregulation and to make broader theoretical observations about one way in which regulations can be shaped by innovation. However, our reliance on a single case presents a number of limitations that suggest the need for future research. Perhaps most importantly, our analyses were undertaken in the context of the U.S. banking and financial industry. Although we believe the basic insights of our approach will be helpful in many empirical contexts, the details will likely differ in times and places far removed from the contemporary U.S., as nations differ markedly in their legislative and regulatory institutions. Therefore, our observation about the role of ambiguous innovations in the process of deregulation is best viewed as an existence proof, not a strong claim about propensities or pervasiveness. Future work should attempt to identify the prevalence of this phenomenon in different industrial, national, and historical contexts. More broadly, because our empirical investigation focused exclusively on the banking and financial industry, we were unable to clearly disentangle the magnitude of the effects of trends that were happening in the sector as a whole (e.g., the rise of commercial paper and increasing foreign competition) on the demise of Glass-Steagall from those that were exclusively attributable to innovation in swaps. Future research might usefully work to more precisely characterize the potential effects of ambiguous innovations on the process of deregulation through, for instance, comparisons across different sectors or by focusing on more narrow regulations that target smaller segments of a particular industry.

Despite these limitations, we believe our analysis has several notable implications for organizational theory, which we discuss in greater detail below. In closing, we then turn to

a brief overview of the novel empirical findings that emerge from our study.

Innovation and Regulation

Our findings suggest that institutional research on legal and regulatory change may benefit from more systematic study of innovation. Although there are parallels to this idea embedded in the notions of drift, layering, and others developed in recent work by political scientists, that line of inquiry tends to center on the action (or non-action) of policymakers (Mahoney and Thelen, 2010; Hacker and Pierson, 2010); organizations are part of the broader environment in which policymakers operate, but they are not seen as a focal point of legal and regulatory change. Sociological research on endogenous legal change puts organizations in a central role (Edelman, Uggan, and Erlanger, 1999; Edelman et al., 2011), but focuses more on how organizations shape the content and meaning of laws and regulations through their efforts and implementation and compliance, rather than through the creation of products or services.

In contrast to this existing work, we focused our attention on the consequences of innovation for the efficacy and long-term stability of regulation. At the most general level, we claimed that innovations have the capacity to undermine regulations. The case of swaps and Glass-Steagall serves as an existence proof for this relatively broad and modest claim. Innovation should thus be understood as, at least potentially, a previously unrecognized form of corporate political action, and a move in the “regulatory dialectic” (Kane, 1977, 1981).

Digging into the details of the case, we can begin to theorize about the conditions under which innovations are more likely to undermine regulations. These conditions include the type of regulation being analyzed, the alignment of political forces capable of maintaining the existing regulatory framework, and the relative clarity or ambiguity of the innovation vis-à-vis market and regulatory categories.

We hypothesize that regulations designed to maintain the boundaries between categories of activity are particularly susceptible to disruption by ambiguous innovations. By boundary-

maintaining regulations, we mean rules that prohibit certain kinds of actors from engaging in certain kinds of activities (rather than rules banning or limiting *any* actor from engaging in a particular activity). Banks themselves are defined by strong boundary-maintaining regulations that separate banking and banking-related activities from other forms of commerce (Carnell, Macey, and Miller, 2008). Ambiguous innovations—those that do not fall into the existing categories of activity apportioned up by boundary-maintaining regulations—overthrow the “status quo bias” that pervades much of the political system, and thus shift the political burden onto those who would maintain the existing regulatory framework. In our case, although there was not sufficient political will to pass legislation overturning Glass-Steagall in the 1980s and early 1990s, there was also insufficient political will to write new legislation capable of bringing swaps into the Glass-Steagall framework (that is, defining swaps as *either* loans, futures, *or* securities).

This analysis extends most naturally to the study of other boundary maintaining financial regulations. For example, financial regulators in the United States recently implemented the so-called “Volcker rule” designed to stop banks from engaging in proprietary trading, an activity traditionally associated with hedge funds (*New York Times DealBook*, 2013). Although it is too early to tell, one might predict that commercial banks will attempt to innovate around this rule by inventing new activities and products designed to replicate the effects of proprietary trading. Historically, we can see similar innovations in the 1960s and 1970s as banks created money market mutual funds and other instruments designed to evade the Regulation Q ceiling on interest rates (Frame and White, 2004; Krippner, 2011).

Finally, given that some innovations attribute their success in part to their capacity to disrupt regulations, we believe scholars should be cautious in generalizing findings and theories about innovation broadly writ to the context of finance. Less cryptically, scholarship, as well as popular discourse, tends to assume that innovation is a net social good (Engelen et al., 2010). The fact of an innovation’s widespread use tends to serve as sufficient warrant of its social utility. But for innovations that owe their success to tax or regulatory arbitrage,

the link between widespread use and social value is much more tenuous. For a relatively pure case, consider the brief history of the “zero-coupon bond.” In 1981, U.S.-based banks discovered a tax loophole that allowed corporations to issue bonds sold below face value that pay no interest (hence, “zero-coupon”) and gain substantial tax benefits (Fisher, Brick, and Ng, 1983). Zero-coupon bonds became immediately popular. When the tax loophole was closed in 1982, corporations largely ceased to use the new instrument; the major exception was a similar loophole for zero-coupon bonds issued in Japan which persisted through 1985 (Finnerty, 1985). Not all cases are so clear: swaps, for example, continue to be widely used long after the repeal of Glass-Steagall and the clarification of their tax treatment, although the recent move to increase transparency in the swaps market has induced a shift from swaps to futures (as discussed above). Nonetheless, we believe the capacity for innovations to be successful because of their opacity to existing regulations should give scholars some pause in their assessment of the value of innovations, and especially financial innovations.

Categories and Categorization

Our findings also speak to the growing literature on categories and categorization. Much research in organizational theory emphasizes that actors who span multiple categories or otherwise fail to send clear signals of membership encounter “difficulty as [they] face pressure to demonstrate that they and the objects they produce conform to recognized types” (Zuckerman, 1999: 1398-99) and therefore are devalued by market participants relative to their inherent value or usefulness (Rao, Monin, and Durand, 2005; Hsu, Hannan, and Koçak, 2009). More recent work extends these earlier findings by showing that the consequences of ambiguity may depend on audience backgrounds and preferences (Beunza and Garud, 2007; Kim and Jensen, 2011). For example, Pontikes (2012) demonstrates that in the software industry, venture capitalists (i.e., “market-makers”) value ambiguity because it grants flexibility to the organizations in which they are investing. By contrast, because products, organizations, and other objects with ambiguous category membership are challenging to

interpret and understand, consumers and product analysts (i.e., “market-takers”) typically react unfavorably to them.

Building on and extending this recent work, we also find evidence that category spanning has different implications for different audiences. Despite their status as part future, part security, and part loan, *market participants* had little difficulty making sense of interest rate and foreign exchange swaps, as evidenced by their dramatic takeoff during the 1980s. *Regulators*, however, found it challenging to interpret swaps, at least with respect to established regulatory categories. Furthermore, in the case of Glass-Steagall, the fact that swaps were readily interpretable to one set of actors (market participants) but not another (regulators) appears to have made those financial instruments even more attractive. Put differently, one audience found swaps to be especially valuable because a different audience could not make sense of them. Future research on categorization in markets could build on this insight and attempt to identify the conditions under which market actors not only value ambiguity, but also leverage it for strategic purposes.

More broadly, research on categorization could benefit from more explicitly theorizing the consequences of spanning categories that belong to different institutional domains. For example, most existing research on categorization focuses on market categories, and finds that audiences evaluate market actors in terms of their fit with widely recognized, taken-for-granted types. Few studies consider how the dynamics of evaluation identified in prior work might play out, for instance, in the context of regulatory categories. Our findings suggest that regulatory categories may differ from more cultural and cognitive ones. Notably, regulatory categories are defined explicitly in the text of laws, rules, and policies. Although those texts are subject to reinterpretation over time, as we saw in the case of swaps, whether or not particular regulatory categories are consequential does not hinge on broad consensus among the members of a field or on the existence of widely recognized types. In fact, as long as they remain on the books, regulatory categories can still have consequences, even if the designations lose (or never even acquired) a taken-for-granted character.

Finance and Financial Regulation

In addition to its theoretical contributions, our analysis adds three insights to the history of recent financial deregulation. First, most existing work on the history of modern financial derivatives has not connected the growth of derivatives to the collapse of Glass-Steagall (e.g. Steinherr, 2000; Hazen, 2005; Tett, 2009). Drawing on previously unexplored data, we demonstrated that commercial banks and investment banks competed heavily in the early years of the interest-rate and currency swaps markets. Thus, without any changes to the text of Glass-Steagall, the effective separation of commercial and investment banking was eroded throughout the 1980s and 1990s as they competed in this new market.

Second, our research points to a need to de-center the legislature in studies of financial deregulation, and pay increasing attention to the interactions of regulators, courts, and financial innovation. Specifically, given the success of commercial banks at entering into competition with investment banks in the 1980s and early 1990s through swaps and Section 20 subsidiaries, our research suggests that scholars interested in the role of financial deregulation as a cause of the 2008 financial crisis may place too much emphasis on the formal repeal of Glass-Steagall in 1999. In agreement with the Financial Crisis Inquiry Commission (2011), we find that Glass-Steagall was largely ineffective well before the passage of Gramm-Leach-Bliley. Thus, even if the combination of commercial and investment banking activities in a single business was partially responsible for the crisis (itself a hotly contested claim), we find that such combinations predated Gramm-Leach-Bliley. More generally, our analysis suggests that scholars interested in financial deregulation should focus on the link between financial innovation and deregulation, especially in the presence of regulators friendly to the relaxation of restrictions. Ambiguous innovations, in particular, present regulators the opportunity to *not* regulate, and thus produce policy drift.

Third, the history of Glass-Steagall adds greater depth to our understanding of the financialization of the U.S. economy in the 20th century. In the 1980s, even large financial institutions came in a variety of distinct forms: commercial banks, investment banks, insur-

ance companies, and so on. The turn to finance in the 1970s-1990s affected these institutions differently; for example, the increasing use of commercial paper by non-financial firms threatened the profitability of commercial bank lending even as the aggregate profitability of the finance sector as a whole grew tremendously (Davis and Mizruchi, 1999; Krippner, 2011). By the end of the 1990s, however, the largest of these firms grew more similar as their core businesses began to overlap, creating what Wilmarth (2009) calls the “large, complex financial institutions” that dominate modern finance. Our analysis suggests that this unification of big finance resulted, in part, from the financial innovations of commercial banks that intentionally set out to disrupt the boundaries separating different types of financial institutions. These strategies culminated in an alliance between commercial and investment banks to complete the repeal of Glass-Steagall. Thus, our research suggests that big finance has not only become more profitable since the 1970s, but it has also become more politically and economically unified.

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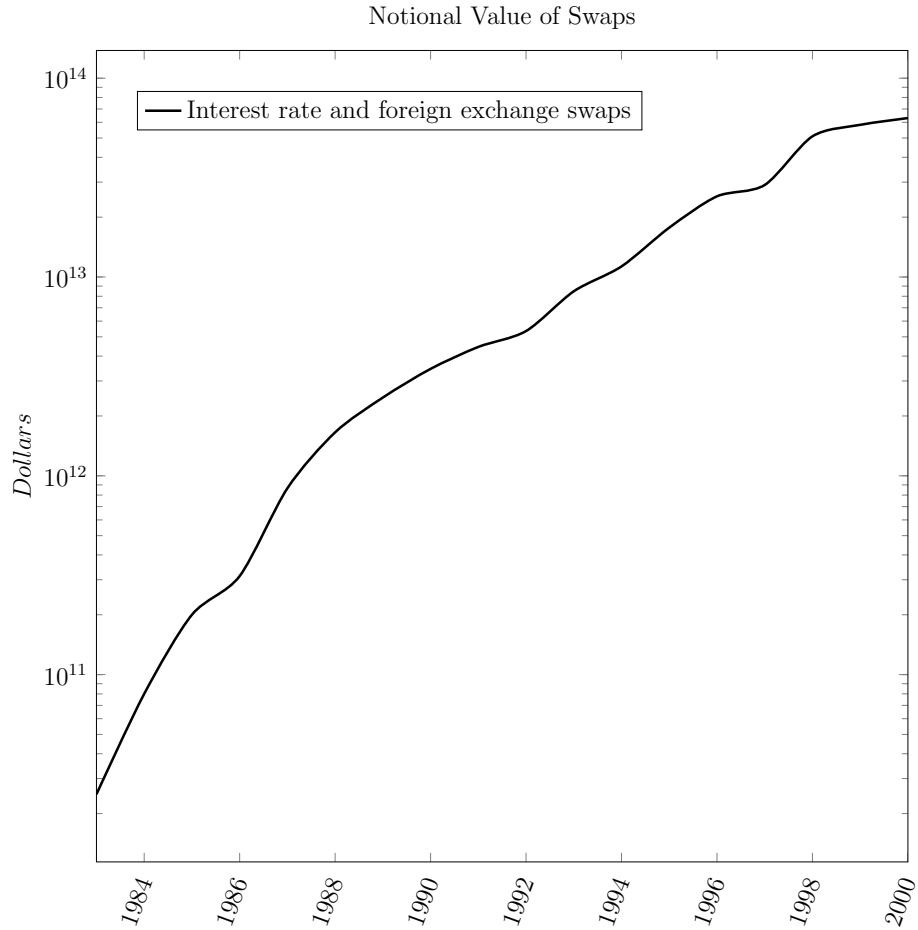


Figure 1: Notional value of outstanding interest rate and foreign exchange swaps over time. The data are drawn from the International Swaps and Derivatives Association 1987–2000 market surveys; 1983–1986 estimates are compiled by the authors from Watson (1986) and the *Wall Street Journal* (1986, 1987).

Notional Value of Swaps Held by Commercial Banks

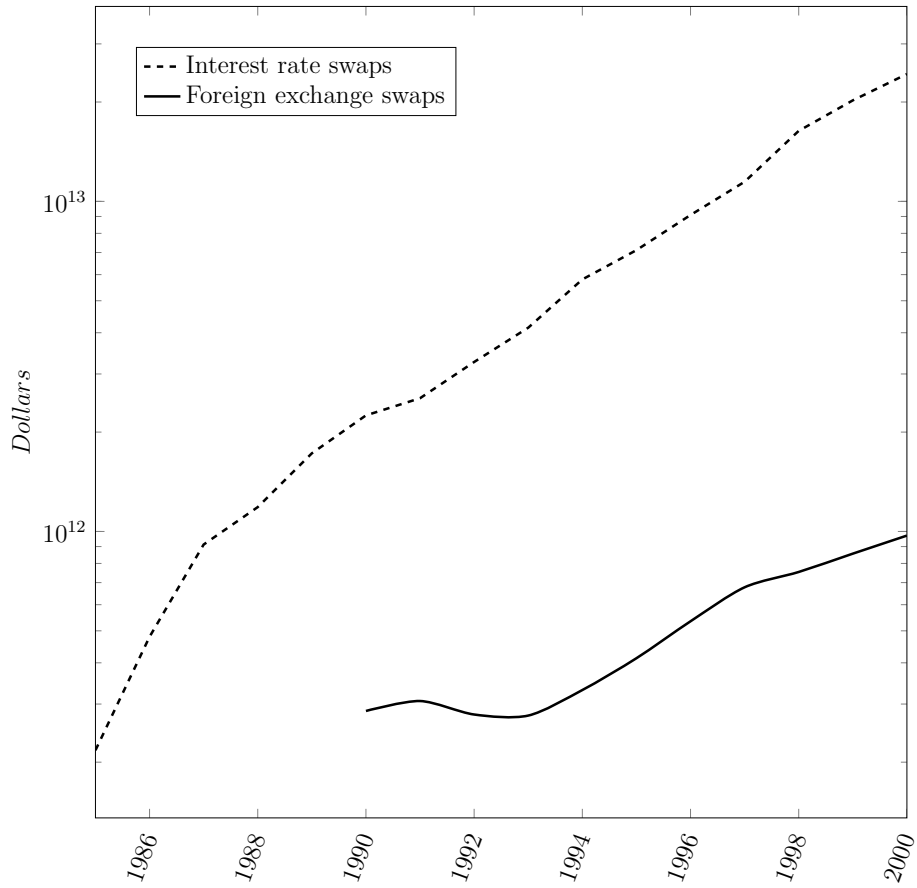


Figure 2: Notional value of outstanding interest rate and foreign exchange swaps held by commercial banks over time. The data are drawn from the Federal Reserve Board's quarterly statistical releases.

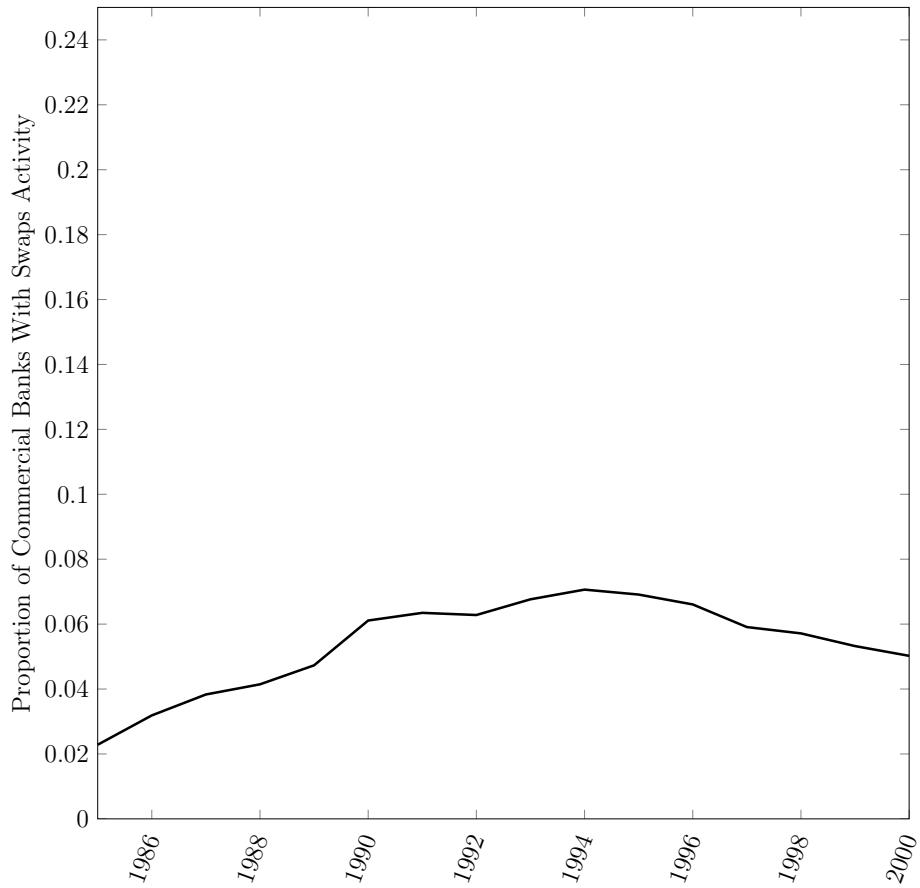


Figure 3: Commercial bank activity in interest rate and foreign exchange swaps. The proportions are derived from data reported in the Federal Reserve Board's quarterly statistical releases.

Table 1: Timeline of Events

Year	Event
1933	Glass Steagall enacted, forcing big banks to separate securities (investment banking) activities and commercial banking activities.
1933–1980	Glass-Steagall remains in force and is updated regularly to account for new activities and new legal forms.
1981	Large U.S. commercial banks declare outright war on Glass-Steagall.
1981	IBM and World Bank complete a currency swap arranged by Salomon Brothers.
1982	First attempts to weaken Glass-Steagall separations through new legislation die in Congressional committees, opposed by the securities industry and many Democrats.
1982	Reagan administration endorses repeal of Glass-Steagall.
1985	ISDA founded by large commercial and investment banks to monitor and standardize swaps transactions.
1985	SEC first considers regulating swaps by imposing disclosure requirements.
1986	FASB considers creating rules to standardize accounting treatment of swaps.
1987–1988	The Federal Reserve approves the creation of S20 subsidiaries, over the protests of the Securities Industry Association.
1987–1989	CFTC considers and eventually declines to regulate swaps as futures.
1989	SIA switches positions, now supports Glass-Steagall repeal.
1989–1991	U.K. courts void swap agreements between banks and local governments as unauthorized speculation, creating uncertainty in swap markets and driving business to U.S.
1992	Congress enacts new legislation specifically allowing the CFTC to exempt swaps from regulation.
1995	Republicans take over the House of Representatives.
1998–1999	Led by Brooksley Born, the CFTC reconsiders regulation of swaps. Born is forced out and swaps remain unregulated.
1998	Citicorp and Travelers merge in defiance of Glass-Steagall.
1999	Congress passes Gramm-Leach-Bliley, effectively repealing Glass-Steagall.
2000	Congress passes the Commodity Futures Modernization Act further enshrining the exemption of swaps from most regulation.

Major OTC Derivatives Dealers	\$	%
Banks		
Chemical Bank Corporation	1,620,819	14.7
Citicorp	1,521,400	13.8
J.P. Morgan & Company, Inc.	1,251,700	11.4
Bankers Trust New York Corporation	1,165,872	10.6
The Chase Manhattan Corporation	886,300	8.1
BankAmerica Corporation	787,891	7.2
First Chicago Corporation	391,400	3.6
Bank Subtotal	7,625,382	69.4
Securities Firms		
The Goldman Sachs Groups, L.P.	752,041	6.8
Salomon, Inc.	729,000	6.6
Merrill Lynch & Company, Inc.	724,000	6.6
Morgan Stanley Group, Inc.	424,937	3.9
Shearson Lehman Brothers, Inc.	337,007	3.1
Securities Firms Subtotal	2,966,985	27.0
Insurance Companies		
American International Group, Inc.	198,200	1.8
The Prudential Insurance Company of America	121,515	1.1
General Re Corporation	82,729	0.8
Insurance Companies Subtotal	402,444	3.7
Total	10,994,811	100

Table 2: 15 Major OTC derivatives dealers and their notional derivatives holdings in 1992. Dollar amounts in millions. Percents are of the 15 firm total, not of all OTC derivatives issued. The seven commercial banks accounted for 90% of OTC derivatives issued by commercial banks in 1992, while the five securities firms accounted for 87% of OTC derivatives issued by securities firms. Source: 1992 Annual Reports, compiled by GAO (1994: 36, 188).