Interaction of Financial and Regulatory Innovation
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interaction of financial and regulatory innovation

by edward j. kane*

what i find surprising about the phenomenon of “financial deregulation” is economists’ insistence on thinking about regulatory adjustments that affect financial firms as exogenous disturbances to a general economic equilibrium. far from being a politically self-contained disturbance to financial markets, “deregulation” is an endogenous response by regulators to changes in the economic constraints that financial markets impose upon them.

my perspective on financial and regulatory innovation may be grasped by visualizing the front window of a large financial-services firm. in this window are four signs. three of the signs constitute electronic displays. the messages on these three signs as well as the equipment used to display them are continually updated by the firm’s employees. the three signs display respectively the following information:

1) the product lines the firm offers: different types of deposit or investment accounts, credit arrangements, and other customer services; 2) the prices the firm currently attaches to each type of product; 3) the name, office locations, and organizational form of the institution itself.

what about the fourth sign? this one is painted permanently on the window in gold letters. it says that the debts of this institution are guaranteed in full by either its home or host government because the firm is too large for affected politicians to allow it to fail.

this image hints at two points. first, the permanence of the information conveyed by the fourth sign and the slowness with which politicians and bureaucrats adjust their monitoring of institutions’ risk-taking activity to changing opportunities for taking risk help to explain the impermanence or volatility of the information displayed on the other three. underpriced and insensitively monitored government guarantees cushion the penalties from failure that ordinarily constrain innovative behavior. second, government guarantees and supporting regulatory activity are only part of the story. the other major forces are volatility in financial firms’ macroeconomic and microeconomic environments, particularly the rapid technological change symbolized by the electronic signs whose form and content the firm’s managers directly control.

financial theory holds that financial firms exist to reconcile in an economical fashion the funding needs of entities that want to spend more than their income with the desire for credit-enhanced savings vehicles on the part of entities that want to accrue a surplus. conventional theory portrays society’s savings propensities, the productivity of real capital, fiscal and monetary policy, and the technology of information processing and financial transacting as determining both the prices at which a financial-services firm could afford to offer untaxed and unsubsidized financial products and the essential economic functions it seeks to perform. my research (1984; 1987) takes these elements of the problem as given. it stresses that, overlaying the pattern of financial opportunities, regulatory competition helps to shape the formal organization of the firm. by “organization,” i mean the details of a financial intermediary’s corporate structure, the locations and processes it uses to produce and distribute financial services, and the names and contractual details of the financial instruments that constitute its product line. my analysis stresses further that regulatory burdens and subsidies and regulatee adaptation to them simultaneously determine each other.

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I. Concepts With Which to Contemplate the Changing Landscape of Finance

To encapsulate the expanding range of activities being undertaken by contemporary financial organizations, we need generic definitions of a financial-services firm (FSF) and of financial regulation. An FSF produces informational and transactional products for a base of customers with whom it establishes client relationships. To deliver any financial service, an FSF must exchange information with its customers. This definition clarifies why technologies of communication, information storage, and data processing stand in the forefront of modern financial activities. To exchange information requires information media. These media specifically connect the customer with the FSF product that is desired. Information media run a gamut from person-to-person contacts, paper evidences, and telephonic messages to magnetic coding, keyboard-actuated video displays, and sophisticated kinds of electronic imagery. The increasing use of robotic mechanisms to exchange information and effect transactions in the financial industry suggests the whimsical possibility of a bank robber sending out a robot to hold up an automated teller machine for him.

The perceived quality of an FSF’s products increases with the confidence and convenience its customers attach to them. Economic efficiency is served by an FSF’s arranging to produce financial services jointly with an external supplier of regulatory services. Third-party monitoring, disciplinary, certification, and guarantee services aim either at promoting customers’ confidence in an FSF’s ability to perform or at coordinating competitor activity to enhance the transactional convenience of an FSF’s products.

Also useful in understanding financial change are Schumpeterian distinctions between inventors and entrepreneurs and invention and innovation. An invention is an unfolding technological opportunity: the discovery either of a way to do something that has never been done before or of a better way to perform a longstanding function. Innovation is the act of applying an invention: putting an inventive idea into profitable operation. Typically, delays occur between the appearance of an invention, the discovery of its commercial potential by an entrepreneur, and its embodiment in a concrete innovation. Delays between invention and innovation may be termed discovery and execution lags.

The financial-intermediary business used to be a comfortable, largely noninnovative one. Managers of financial institutions operated within a relatively fixed environment and at a fairly leisurely pace. Now they have to develop reliable information more quickly, to make quicker decisions, to watch their competitors more closely, and to look constantly for new ways to serve customers and to organize their firm’s affairs. They need to possess more knowledge, more imagination, and fancier equipment. They have to identify new powers that could make their business more profitable and transform the names of their firms in ways that can communicate to customers and staff the expanded geographic and functional reach to which the firm now aspires. Finally, they must develop the political savvy to persuade politicians and regulatory authorities to let them move into new turf.

Parallel comments apply to financial regulators. Within and across countries, existing patterns of exclusionary regulation are crumbling. In attempting to rebuild their domains, authorities are finding regulatory positions in financial markets hard to sustain. To analyze financial and regulatory innovations in parallel fashion, it is instructive to conceive of regulatory entities as multiproduct firms and to explore the evolution of entry and exit costs in the market for financial regulatory services in which regulators operate.

A market may be defined as a collection of persons carrying on extensive and at least partly voluntary transactions in a specific good or service. William Baumol, John Panzar, and Robert Willig (1986) define an individual market as "perfectly contestable" when the costs of entering or exiting that market are zero. In any such market, the
threat of hit-and-run entry by outside potential competitors holds the profit margin sought by incumbent firms to competitive levels, irrespective of the number of incumbent competitors or of how concentrated industry output might happen to be.

Regulatory services are typically delivered in the context of an ongoing client relationship rather than sold on a transaction-by-transaction basis. Regulatees contract for a vector of contingent services without necessarily haggling specifically over the prices of individual services. Nevertheless, in an important sense, some of a regulator’s clients are always shopping for a better regulatory deal. Whenever a regulatee fears that its traditional regulator’s prices stack up poorly to the competition, it must study its options for switching some or all of its business to a new servicer. In practice, such study puts pressure on an FSF’s current principal regulatory supplier to develop a more favorable set of prices or an improved level of service.

Markets for regulatory services are demonstrably not perfectly contestable. Significant exit costs exist. The incompleteness of public accounting systems allows government regulators to conceal large implicit losses in the short run. Economically unprofitable government regulators can, when pressed for survival, deliver subsidies that hold old clients and attract new ones. Even in the absence of subsidies, regulatees that try to switch to a new supplier of regulatory services often incur substantial transition or switching costs.

Analysis of financial change must focus on the capacity of different regulatees and regulators to adapt to exogenous and endogenous decreases in the costs of entering and exiting different financial product markets. Product-line and geographic-market expansion by suppliers of financial regulatory services follows and supports rivalry between client FSFs within and across countries, regions, and various kinds of administrative boundaries. Without denying bureaucratic aspects of regulatory behavior (William Niskanen, 1971), my explanation of regulatory innovation focuses on regulators’ efforts to improve their market position. A convenient way to model these efforts is to posit that, subject to defective financial reporting and profitability constraints that permit government entities to conceal implicit costs and to accelerate implicit revenue, regulators seek to extend or to defend their share of the market for regulatory services in the face of exogenous and endogenous disturbances in their economic environments.

II. Globalization and Product-Line Fusion as Structural Arbitrage

These definitions and distinctions clarify why financial regulation is endogenous. To call the global integration of financial markets the result of either exogenous deregulation or exogenous technological change is to miss the interactive nature of the adjustments that are taking place. On one side of the process, regulatees are changing their product lines, office locations, production and delivery processes, and organizational forms both to take advantage of emerging technological opportunities and to lighten net tax and regulatory burdens. Calling this adaptation structural arbitrage underscores the notion that timely changes in the structure of a firm’s operations can create profits just as surely as the activity of buying something cheap and selling it dear. From regulators’ perspective, structural arbitrage creates costs and benefits for their enterprises that change their ideas of what constitute optimally designed national or subnational tax codes and regulatory arrangements. Recognizing this leads us to see realignments in applicable tax and regulatory frameworks as largely reactive acts of competitive reregulation.

Regulatory interference imposes entry restrictions and corresponding avoidance costs on expanding firms. But, in a free society in which multiple legislatures and regulatory agencies compete for regulatees, tax receipts, and budget funds, authorities can only induce great or long-lasting divergences between the actual and the cost-minimizing global financial-market structure when the costs of structural arbitrage are high. As
these costs fall toward zero, efficient patterns of resource allocation displace inefficient ones.

During the last twenty years, technological advances in information processing, robotics, and telecommunications have regularly lowered the distance-related entry and enterprise-coordination costs confronting firms that operate in diverse and far-flung financial-services markets. During the same interval, increasing volumes of multinational production and world trade combined with shifting patterns of balance-of-payments surpluses and deficits to increase greatly the rewards that large FSFs could expect to earn from adapting their operations to span and integrate financial markets multinationally.

Around the world, FSFs have been circumventing regulatory barriers to entering each other’s traditional lines of business and geographic markets and transforming their front offices into partially robotized multi-product bazaars and their back offices into electronic transactions and communications centers. Advances in electronic and financial-contracting technology have played a major role in these developments by creating unregulated or less-regulated “loophole” substitutes for tightly regulated traditional products and ways of doing business.

Transformation of front- and back-office production and delivery systems is exemplified by the expanding transactional capabilities of successive generations of automated teller machines (ATMs). Today, ATMs can be supported by partially automated loan-application processes and online back-office computer systems employing credit-decision software and linked through multinational networks and interchanges. Users of an ATM network can transact (often via satellite transponders) with their local deposit institution from a substantial subset of roughly 175,000 ATMs.\(^1\) In effect, a shared ATM is not just a robot substitute for a teller, but a loophole substitute for a limited-service branch office at the ATM’s location and for offers of higher explicit rates of interest.

Entry into nontraditional lines of business is exemplified by development of loophole financial instruments and loophole forms of corporate organization that fuse what used to be institutionally and regulatorily disparate product lines. Among the sharpest symbols of this fusion are securitized loans and deposits and the diversified financial-services holding company.

Securitized loans are a fund-raising technique that substitutes for asset sales or loan participations. A loan is “securitized” when it is packaged into an intelligible (i.e., rateable) collateral pool, whose cash flows back an issue of securities sold by the loan’s originator or servicer. Although securitization has been most widely used to borrow against the collateral of consumer mortgages and automobile loans, pools of commercial mortgages, equipment leases, junk bonds, insurance-premium cash flows, and even poorly performing loans have also been securitized. Securitization can be used to unbundle a traditional lender’s origination, servicing, credit-rating, risk-bearing, and financing functions. The borrower’s obligations and rights under a loan contract can be unbundled too, by pledging various time-dated cash flows to different “strips” of a collateralized securities package as in a collateralized mortgage obligation. One U.S. lender (Perpetual Mortgage Co.) has gone so far as to make its borrowers sign a series of separate notes at the loan closing.

A deposit is securitized when the return it promises is linked to an index measuring the performance of a specific portfolio of risky

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\(^1\)According to Jeffrey Kutler (1987) seven principal ATM networks exist: Express Cash (20 countries, 23,795 machines, and 25 million cardholders); Visa (21 countries, 19,203 machines, and 150 million cardholders); Cirrus (U.S. and Canada, 17,300 machines, and 62 million cardholders); Plus (U.S. and Canada, 14,000 machines, and 70 million cardholders); Master Teller (6 countries, 9,462 machines, and 130 million cardholders); ADP Exchange (U.S. and Canada, 4,500 machines, and 8 million cardholders); Eurocheque (Europe and Middle East, 2,500 machines, and 31 million cardholders).
assets. First offered by Chase Manhattan Bank in March 1987, indexed deposits cross the downside protection of a government-insured deposit with the upside potential of a securities investment (typically the Standard & Poor’s 500 index). Whereas securitized loans raise funds by selling deposit-institution debt that is backed by concrete assets into wholesale capital markets, indexed-deposits sell limited participations in a hypothetical short or long position in a securities portfolio both into wholesale markets through securities firms and to a deposit institution’s traditional customer base. Issuers of indexed deposits hedge the product by purchasing options and future contracts on the underlying portfolio. Although volatile world stock markets should offer a near-ideal environment in which to market what are principal-protected “bear” and “bull” bets on the course of future stock prices, volatility increases the issuer’s cost of hedging. These costs limit the proportion of an index’s appreciation or depreciation an issuer can afford to pay out to depositors.

Changes in corporate form can change restrictions on product line and office locations and even the particular government or self-regulatory agencies that write, administer, or enforce these restrictions. In selecting a particular set of structural options, an FSF chooses what we may presume to be an optimal “tax and regulatory microclimate.” The dimensions of this climate include: charter type (for example, bank vs. security firm), chartering agency (typically, a national or subnational governmental entity), ownership structure (mutual vs. stock; direct vs. indirect ownership) and cross-organization control linkages (branch office or other forms of corporate presence vs. subsidiaries vs. holding-company affiliation).

III. The Regulatory Dialectic: Economic Constraints on Regulators

Regulation endeavors to set unwelcome rules on someone else’s behavior. These rules seek either to forbid or to compel particular kinds of behavior on the part of a designated set of regulatees. Regulatees (including most children) learn a series of what we may call circumvention or avoidance behaviors. Regulation and avoidance are as hard to separate as Siamese twins. Rules and loopholes coexist in every legal text and in every regulatory system.

The tandem nature of regulation and avoidance is featured in a conceptual framework designed to dramatize the process of financial and regulatory innovation: the regulatory dialectic. Dialectic is philosopher’s shorthand for a process driven by tension between a succession of paired opposites. Dialectical outcomes are governed by the push and pull of opposing forces. Movement comes from ongoing conflict and conflict resolution between opposing ideas and the logical, physical, political, or economic forces associated with them.

The philosopher Hegel named the opposing ideas the thesis and antithesis, and called the idea that develops to resolve their conflict the synthesis. The restlessness featured in dialectical thinking comes from the notion that each synthesis becomes a thesis in a new dialectic. This view sees the evolution of thinking on any issue as driven by a three-stage cycle in which every idea first calls forth opposition from a conflicting idea. Then, whatever idea resolves a given conflict is immediately confronted with a contradictory proposition so that the cycle is perpetually renewed.

I can illustrate the same point by drawing an analogy with playground games such as chase or tag. When these games are pursued by serious players, opponents work hard to stay out of each other’s reach and to unbalance the inherently temporary victory won at each change of initiative.

To apply dialectical thinking to the regulatory scene, the thesis and antithesis may be identified with regulation and avoidance, and the third stage renamed reregulation. In the dialectical view, all regulation becomes reregulation, whose shape is determined by the precise history of prior reregulatory problems. Over any finite time interval, two alternative sequences may be distinguished, depending on whether regulators or regulatees are viewed as kicking off the adaptive process: 1) Regulation-avoidance-reregulation and 2) Avoidance-reregulation-avoidance.
The regulatory dialectic portrays regulation as one side of a game of strategy with sequential moves. In this game, the players on the various sides react to one another in creative ways. Exploiting the Schumpeterian distinction between invention and innovation, we can enrich the model by positing differences in the speed with which different types of players characteristically respond to their opponents' moves.

Hypothesize first that innovation discovery and execution lags are typically shorter for regulatees than for regulators. Also hypothesize that discovery and execution lags are shorter for less-regulated competitors than for a specific regulation's targeted set of regulated players and that regulatory lags are shorter for industry self-regulators than for government bureaucrats. To justify these hypotheses, let us appeal to differences in relevant information costs, differences in the extent of managerial commitment to the goals of regulation, and differences in the extent to which principal-agent conflicts can be resolved in government and private enterprises.

IV. Financial Instability as the Cost of Inefficient Financial Regulation

The strength of a dialectical vision is the evolutionary perspective it gives us for confronting and interpreting change. The regulatory dialectic has two policy implications. First, in the face of exogenous changes in technology and economic volatility, rooting policies in concepts of stationary equilibrium is unreliable. Even if (as U.S. authorities desperately wish) a global cartel in financial regulatory services were successfully to be negotiated, the cartel would contain the seeds of its own future destruction. Second, the problems being experienced by any set of regulatees and regulators is rooted in the detailed history of their prior conflict. For this reason, would-be regulatory reformers need to look beyond immediate problems to assess the long-run consequences of the policies they wish to install.

The regulatory dialectic emphasizes that, in the long run (by which is meant a period long enough that adjustment and information-acquisition costs become irrelevant), survivable patterns of regulation must be economically efficient ones. But even though the invisible hand eventually punishes over- and under-regulators alike, in real time the process can produce considerable turmoil. The sequential search for efficiency can take a long time to unfold and can impose substantial pain of FSFs, their customers, and the general taxpayer.

From the point of view of their regulatees, revenue losses imposed by regulators' explicit charges and various operational constraints reduce the net value of the regulatory services received. We may define the balance between the costs and benefits that a given regulator succeeds in imposing on its regulatees as their net regulatory "burden" (or subsidy). The regulatory dialectic posits a dynamic adjustment process that in the long run enforces a "law of one regulatory burden." Precisely because inefficient patterns of regulation impose excessively burdensome costs either on regulatees, their customers, or the general taxpayer, the burdened parties must be expected sooner or later to develop avoidance strategies by which to throw these burdens aside. However, the more effectively a given set of regulators can hide the financial burdens from those who ultimately bear them, the longer it will take for effective avoidance strategies to come into play.

The variable nature of burden discovery and avoidance lags clarifies both what can go wrong in regulatory competition and why it is nevertheless a mistake to view rivalry among alternative regulators for clients and budgets merely as wasteful duplication. A monopoly supplier or regulatory cartel would tend in the short run to overregulation. When burden-bearers and elected politicians are well-informed, overlaps in regulatory missions across different regulatory entities promote short- and long-run efficiency in the production and delivery of regulatory services, much as duplication of service functions across private institutions promotes efficiency in the provision of financial services. However, when a regulator and its clients can exploit and perpetuate impediments in burden-bearers' access to the infor-
mation needed to judge the regulator's performance, this competition can temporarily promote inefficiency instead. In the short run, inappropriately monitored regulators can deliver unintended and economically inappropriate subsidies. Only when the burden-bearers find a way to enforce their interest in preventing subsidies from being hidden, can we say that interregulator rivalry protects borrowers, depositors, and investors from the short-run as well as the long-run dangers of underregulation.

Some U.S. authorities are currently working very hard to prolong underpriced and misadministered deposit-insurance guarantees, selected restrictions on deposit-institution interest rates and product lines, and vestigial prohibitions against interstate banking. These efforts to prolong inefficient patterns of financial regulation help to conceal subsidies to risk bearing that increase economic volatility and threaten to disrupt world financial stability in the short run.

REFERENCES


