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ON RISK-BASED CAPITAL

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ABSTRACT

Intergovernmental regulatory cooperation is fundamentally cartel behavior and subject to principal-agent conflict. In negotiating the 1988 risk-based capital agreement, most Western officials' unstated goal may arguably be described as postponing the pain of adapting their domestic regulatory schemes to successor officials' watch. They hoped they could buy time by raising book-value capital requirements for Japanese banks.

Efficient-market theory indicates that the market value rather than the book value of a bank's capital impacts its funding cost. It also clarifies that restrictions on domestic and foreign bank competition for Japanese deposits unfairly enhance Japanese banks' ability to intermediate that country's massive capital exports.

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Regulators make rules and enforce them. Financial regulators are expected to monitor, discipline, and coordinate the behavior of client financial-services firms to serve a communal good. Historically, financial institutions and systems of financial regulation have had a country-specific character (Wilson, 1986). This national flavor has been protected by costs that may be interpreted as barriers to entry for foreign financial firms. These costs relate to distance and to differences in culture, currency, and language. Although technological change has dramatically reduced the significance of these barriers in recent years, they still impose nonnegligible switching costs and continuing coordination costs on multinational enterprises (Kindleberger, 1984). Nevertheless, the irreversible downward trend in these costs implies shrinking spheres of autonomy for economic policymakers in individual countries.

The resulting globalization of real and financial markets is often defined as if it were a process of moving ever closer through time to an idealized state in which transnational coordination costs would vanish for private financial and nonfinancial firms. We might call this utopian state the global village. However, in terms of observable consequences, globalization is better seen as a process in which increasing international competition imposes market discipline on government regulators. This discipline constricts the freedom of financial regulators in different countries to impose or to maintain burdensome differences in the rules of financial competition.

In recent years, government officials have portrayed their loss of autonomy as if it were an obvious and direct threat to the stability of the world financial system (see, for example, Lamfalussy, 1989). As globalization has proceeded, government officials in Europe, Canada, and the United States have repeatedly proclaimed a "clear need" for increased communication and cooperation among financial regulators in different jurisdictions (see Corrigan, 1989). It seems not to disturb these officials that many of them live in societies that have adopted antitrust laws that outlaw equivalent communication and cooperation among the financial firms they are asked to regulate. Unless it is supposed that government officials are heroically selfless individuals, it is hard to understand why European or North American publics should consider market discipline to be bad for society when it affects government financial regulators, but innately beneficial when it affects private firms.

Economic theorists are well aware of the possibility that international regulatory cooperation may prove undesirable (Rogoff, 1985; Kane, 1987; Kehoe, 1989). The essential difficulty is that the elected politicians and top bureaucrats who must negotiate and ratify intergovernmental agreements operate under shorter time horizons than the taxpayers for whom authorities are presumed to act as agents in a representative democracy. Public officials are always actual or potential short-timers. As such, their career and reputational interests often diverge systematically not only from one another, but from the long-run interests of society as whole. In addition, it is hard to impose fully enforceable constraints on future government

actions. The turnover observed in elective and appointive offices and the substantial discretion that modern officials enjoy makes it difficult to negotiate fully credible regulatory commitments.

There is little reason to doubt that a globally integrated pattern of financial regulation would exist in the global village.<sup>1</sup> What can be doubted is that authorities either know how to minimize or always strive to minimize unfavorable movements in the long-run safety and soundness of the financial system as it moves toward a globally integrated pattern. Economic analysis supports the view that incentive incompatibilities inherent in representative democracy make it less dangerous for the adjustment process to be driven by world-wide competition among differentially regulated private firms pursuing opportunities for diversification and growth than to be led by multilateral cooperative agreements negotiated from time to time by imperfectly accountable national regulatory entities.

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1. In the global village, the assumed convergence of strictly national interests implies that equilibrium regulatory arrangements would constrain the behavior of existing nation states. To whatever extent the convergence of regional interests remains incomplete, constraints on the autonomy of nation states would reduce their status toward that of provinces within a confederation or even neighborhoods within a city. Ignoring the possibility that transnational restraints could be imposed and maintained by exploitive military force, this paper assumes that restrictions on national autonomy develop as a voluntary equilibrium.

## Assumed Patterns of Financial Competition and Regulation

It is convenient to treat supervision as part of regulation and to distinguish two classes of regulation, termed structural and prudential regulation by Revell (1981). By structural regulation is meant limitations on regulated firms' freedom of entry and exit, product lines, office locations, and product prices. Prudential regulation comprises balance-sheet restrictions aimed at assuring liquidity and solvency. Structural regulation is portrayed in this paper as a dichotomous choice between two systems of empowering financial institutions: a European-like system of universal banking (which is assumed to dispense with structural regulation altogether) and an American/Japanese system that seeks to enforce functional and perhaps regional specialization in the strictly domestic operations of domestic institutions. Prudential regulation is portrayed as financing a system of blanket government deposit-insurance guarantees (buttressed by lender-of-last-resort facilities) and levying explicit premiums and capital requirements on insured firms.

Regulatory performance tends to be compromised by important defects that exist in governmental accountability. These defects create incentives for a nation's politicians and regulators to engage in self-serving and short-sighted behavior. For example, regulatory changes may be designed to benefit specific politicians, regulators, or regulatory clienteles at the expense of taxpayers as a whole. Structural regulation may be used to effect a domestic regulatory cartel, without passing the resulting rents through the budget as government revenues. Similarly, prudential regulation may be

distorted by society's failure to require an explicit funding of deposit-insurance losses as they accrue. When insured institutions experience massive de facto losses, officials may be attracted to strategies that protect their reputations by using accounting tricks to cover up the de facto losses and deferring appropriate but painful regulatory responses as long as they can.

The perversity of these strategies is that they win short-run benefits for politicians, regulators, and particular regulatory clienteles at the expense of fostering financial instability and allocational inefficiency over longer periods. These perverse incentives make it likely that governments whose deposit-insurance schemes have been supporting cartel-like rents and concealing substantial taxpayer losses will use international regulatory agreements as yet another device for postponing regulatory adjustments that their society desperately needs. Applying the analysis to the international Risk-Based Capital Framework (see Exhibit 1) established by the 12-country agreement of 1988 suggests that the benefits of this agreement have been severely oversold.

#### Financial Institutions and Their Regulators

Depository institutions perform four generic functions: deposit-taking, raising nondeposit forms of debt and equity capital, funding customer credit needs or enhancing debt obligations that customers issue to other parties, and performing a variety of other customer services. Nondepository financial institutions perform these same basic functions, except that for them the

equivalent of deposit-taking proceeds through charter-specific deposit-substitute instruments such as paid-in insurance reserves or checkable shares in a money-market mutual fund.

Regulators restrain the activities of individual financial-services firms (FSFs) in order to develop both public and hidden benefits for various parties in society. Regulators' public goals may be described as promoting the stability, efficiency, and fairness of the financial industry. Hidden benefits typically originate in unresolved conflicts of interest among regulators (including politicians), regulatees, FSF customers, and other taxpayers. These conflicts of interest can create incentives to undertake antiegalitarian redistributive efforts that enrich some politicians, some bureaucrats, and/or some segments of society at the expense of society as a whole.

Poor regulatory outcomes sometimes trace to slips by regulators and sometimes to their pursuit of hidden agendas. To model a hidden-goals scenario explicitly, economic analysis can consider managers of a regulatory enterprise as maximizing their public mission, subject to technological, market, and statutory restraints and a number of principal-agent difficulties. Such a model can also portray individual regulatory enterprises as being locked in competition with one another for whatever measure of value they maximize (Scott, 1977). Their objectives may embody tradeoffs between the performance of the entity's mission, its managers' reputations and particular career interests, and its jurisdiction, its budget, or the capitalized value of what we may call its net income.



Costs of Arbitraging Regulatory Arrangements. Looked at enterprise by enterprise, regulators' public and hidden goals translate into: (1) cost-reducing benefits from regulators' efforts to foster or improve customer confidence and convenience and (2) cost-increasing restraints that arise ostensibly from regulators' efforts to stop discriminatory, anticompetitive, or destabilizing behavior. At an individual client institution, the net balance of these benefits and costs constitutes the opportunity cost of its inherited regulatory relationship. This opportunity cost may be interpreted as a value added when the net balance is positive and a net burden when it is negative. Other things equal, firm managers may be expected to maximize regulatory value-added or minimize regulatory burdens.

In a dynamic world in which regulated firms face exogenous changes in the technological, regulatory, or competitive constraints under which they operate, an FSF may be supposed regularly to reorganize its corporate form, to relocate its operations, and to revise its product line, debt structure, and distribution processes to minimize its overall burden of regulation. It is instructive to think of this adaptive restructuring as a form of arbitrage in which a regulated firm incurs switching costs to transform itself so as to transact successfully with the low-cost suppliers of each layer of regulatory service. In this regulatory or structural arbitrage, an FSF moves some or all of its existing business to a different regulator. Switching costs reduce the degree of market discipline that an individual regulator feels and make regulatory relationships more stable than they would be otherwise. Following Klemperer (1987), switching costs may be

partitioned into three types: transactions costs, learning costs, and inhibiting/promotional costs that are specified in particular regulatory contracts.

Transactions costs comprise the execution costs of restructuring an enterprise to qualify for a regulatory switch. A useful analogy is to think of the firm as having to wire up a new system of legal connections and dispose of at least some parts of its pre-existing system of organizational adaptations. For example, in the U.S. a federal savings and loan association may have to recharter itself as a bank or state-chartered thrift and to strengthen its capital position before it can formally petition to switch its deposit insurance from the Federal Savings and Loan Insurance Corporation's successor fund (the Savings Association Insurance Fund, SAIF) to the Bank Insurance Fund (BIF) of the Federal Deposit Insurance Corporation (FDIC).

Learning costs consist of the expense of researching these restructuring transactions and identifying and mastering the many differences in the supervisory framework and regulatory operations of the new supplier. For example, a bank's knowledge of how to operate under Federal Reserve supervision is less than fully transferable to potential relationships with foreign banking regulators.

Contractual switching costs consist of penalties imposed or boons offered by specific regulators to members of their client base. In practice, some of these costs may be properly interpreted as transactions costs. For example, in switching from SAIF to BIF, an institution may have to pay both

an exit fee to SAIF and an entrance fee to BIF. The properly transactional parts of these contractual fees serve merely to compensate SAIF for the fair value of past premiums whose collection its administrators might have deferred and to transfer to BIF a pool of reserves calibrated to underwrite the true risk of loss inherent in the firm's existing operations. Penalties or boons designed simply to discourage or encourage switching may be called inhibiting or promotional, respectively.

Regulatory Competition. A firm's equilibrium net burden from regulation is determined mutually by its efforts to reduce the burden and by regulators' willingness to accommodate regulatee interests as a way of building or maintaining their client base. This conception clarifies that the interests of a regulator and its regulatory clientele are intertwined (Stigler, 1971). It also clarifies that the producers of financial regulatory services constitute an industry, the members of which establish an equilibrium market structure (Kane, 1987). This industry consists of private self-regulatory associations and state, federal, foreign, and international bureaus. We may envision these entities as continually making adjustments in the services and regulatory burdens they offer, in hopes of winning regulatory business away from each other. We may also envision their managers as occasionally getting together in smoke-filled rooms to investigate possibilities for establishing some kind of cartel.

Consumers instinctively mistrust private cartels and support laws to control them, but tend to trust government officials to behave nobly. They hope financial regulators will be transcendently uncompromising and heroic

servants of the public interest. This exercise in wishful thinking imparts an indiscriminate and dangerous blessing to intragovernmental and intergovernmental efforts to monopolize regulatory markets. Such efforts -- which are marketed to the public as "harmonization", "cooperation," and bureaucratic "streamlining" -- are not subject to ordinary antitrust restrictions.

Nevertheless, regulatory cooperation is fundamentally cartel-like behavior. A private cartel constrains member firms to behave in ways that maximize the joint profits earned by its membership. A regulatory cartel constrains regulators in different jurisdictions to maximize profit-like joint objectives. However, variation in the regulatory goals and constraints of different countries makes the cartel's objectives difficult to summarize.

Any cartel can foster socially harmful distortions and can eventually be torn apart by the competitive pressure it seeks to bottle up. During the life of a cartel agreement, competitive pressure tends to express itself by shifting the focus of competitive activity toward outside suppliers and toward activities the cartel agreement fails to cover adequately.

Using the cartel analogy, the rest of this article analyzes the fruit of one major international regulatory accord: the risk-based capital framework summarized in Exhibit 1. The analysis seeks to show that the alleged benefits of establishing this common supervisory framework were misadvertised. The new capital requirements will not as claimed noticeably raise the funding cost of rapidly growing Japanese banks. What the agreement will do is to paper over and to prolong serious tensions in individual

countries' regulatory tactics and strategies in the short run (particularly, the existence of deposit-insurance subsidies to risk-taking and barriers to foreign entry into Japanese deposit markets) and to refocus rather than to curtail international regulatory competition.

#### International Agreement on Risk-Based Capital Requirements

Bank for International Settlements (BIS) General Manager Alexandre Lamfalussy (1989, p. 6) ties the case for common bank capital standards to the hypothesis that, when capital requirements are set in isolation, competitive pressure leads authorities to set capital requirements too low relative to the aggregate riskiness of bank portfolios and leads financial institutions to migrate to regulators that set low capital requirements. His industrial-organization analysis treats the risk-based capital agreement as a way of reining in individual-country regulators whose capital requirements have been too low (codewords principally for the Japanese) and preventing multinational banks from frustrating regulators in different countries by setting them against one another. Corrigan (1987) describes the purpose of the BIS negotiations more plainly: "...the single item on which I place greatest emphasis relates to bank capital adequacy standards and specifically the goal of moving Japanese bank capital standards into closer alignment with emerging international standards."

Japanese banks' sudden emergence as important players in world financial markets is shown in Table 1. The low core-capital ratios recorded for the various classes of Japanese banks in Table 2 give the Lamfalussy-Corrigan argument considerable plausibility. However, the argument neglects

two important distinctions and incorporates what appears to be a counterfactual assumption. First, the argument fails to distinguish the market value from the book (or accounting) value of a bank's net worth or capital. For regulatory purposes, a bank's capital represents the net value of whatever resources stand in front of both the government insurance fund and any uninsured creditors whose claims are not subordinated to this fund. Assuming perfect information and a given set of business and portfolio risks, the higher the market value of a bank's capital ( $MV_K$ ), the lower its funding cost and the less asymmetrically will unanticipated gains and losses be shared between deposit insurers and bank stockholders. On the other hand, for given risks and market value of capital, increases in the book value of a bank's capital should have no effect on its funding cost or on the prospective distribution of gains and losses between stockholders and insurers. Second, the argument fails to distinguish the separate effects of bank capital, capital requirements, and deposit-insurance guarantees on bank funding cost and risk-taking behavior. BIS and Western capital requirements apply only to book-value capital  $BV_K$ , so that increases in capital requirements need not require any increase in  $MV_K$  or any decrease in funding cost or risk-taking. On the other hand, in any country where deposit insurance is underpriced or misadministered, banks have a continuing incentive to exploit accounting options that let them substitute deceptive forms of book-value capital for market-value capital and to load up on portfolio and business risk (Buser, Chen, and Kane, 1981). Third, the

argument fails to explain why banks that are poorly capitalized on a market-value basis and previously low-requirement regulators should not reasonably be assumed to find and exploit loophole methods of circumventing the agreement.

Alternative Analysis. Regulatory authorities in the U.S. and Europe conceived of international capital-adequacy standards partly as a way to restrain Japanese penetration of European and American financial markets by raising their capital ratios to 8 percent. These standards may be seen as a reaction to a sustained redistribution of financial market shares toward Japanese banks and securities firms, which now dominate lists of the world's largest institutions in each category.

Declines in the international market share of nonJapanese firms wrought simultaneous declines in the market shares of these firms' home-country regulators. Once this decline was recognized, it created pressure for regulatory innovation in the world's other financial centers (Kane, 1987). This pressure was all the stronger because for national regulators and politicians exit is an overwhelmingly distasteful option.

We may define a regulator's market share as the proportionate value of aggregate financial-services business that is captured by firms that fall within its jurisdiction. Jurisdiction is inevitably shared for multinational firms, as a consequence of their adapting their operations to span and integrate financial markets in different countries. It is as natural for regulators in different countries to compete for the business of such firms as it is for such firms to play individual-country regulators off against

one another. Macroeconomic events made restraints on international financial competition more burdensome to regulatees at the same time that technological change made traditional restrictions easier to circumvent. As a result, restrictions lost force. It became harder to shut out foreign financial-services firms and to keep a nation's domestic firms from expanding their off-shore activities.

Negotiated under the auspices of the BIS, the risk-based capital agreement embodies Western regulators' relatively short time horizons and serious misconceptions about the sources of Japanese banks' relatively low funding cost. Economic analysis indicates that Japanese deposit interest rates are low relative to parallel rates in other countries for three interconnected reasons:

1. Japan has been (as Table 3 shows) a nation that possesses a high rate of saving, a condition that by itself would tend to place its domestic interest rates below those of low-saving, weaker-currency countries. In free markets, competition would only allow the resulting flow of capital exports to deficit countries to be intermediated by Japanese banks if these institutions were more-efficient intermediators than banks from other nations;
2. Japanese regulators assist Japanese banks not to compete as aggressively against each other for low-denomination domestic deposits as free foreign-bank entry would require. Table 4 shows that interest rates reported on both loans and deposits



at Japanese banks are relatively low. Japanese authorities energetically enforce deposit-rate ceilings and severely limit entry by foreign banks and domestic securities firms into their domestic deposit markets (Cargill and Royama, 1988). In fact, efforts to circumvent this energetic enforcement of domestic interest-rate controls by booking business offshore has simultaneously helped to enlarge and to distort the apparent growth of Japanese banks in freer markets such as Britain and the United States (Terrell, Dohner, and Lowrey, 1989). Japanese banks have used their branches in foreign money centers as flexible funding sources and as locations where they can transact business freely with large domestic firms. Much as we saw in the United States during the 1970s and early 1980s, over time these and other efforts to circumvent deposit-rate ceilings created incentives for Japanese banking regulators gradually to lower the minimum account size that qualifies for exemption from deposit-rate ceilings and to authorize a proliferation of other types of exempt accounts (Feldman, 1986);

3. Japanese banks are known to possess a relatively high level of market-value capital. In recent years,  $MV_K$  has averaged several times the value of book-value net worth at Japanese banks (Baer and Mote, 1989). Kane, Unal, and Demirguc-Kunt

(1990) show that in 1987 and 1988 the ratio of book-value to market-value capital peaked at over 7.5 for each of the three largest size categories of Japanese banks. This strong market-value position generates two complementary benefits. First, it lowers Japanese banks' cost of raising debt capital at home. Second, outside of Japan, a high level of bank capital gives foreign depositors an important form of comfort. While the banks of all major countries receive at least conjectural back-up guarantees of their deposits and other debt from their home-country governments, Japanese banks offer corporate and other large customers for deposits and loan commitments the additional prior protection of substantial amounts of stockholder-contributed capital.

The hope that the risk-based capital agreement would check the international growth of Japanese banks is rooted in a false theory of corporate finance. U.S. and European regulators blamed defects in Japanese patterns of capital regulation rather than anticompetitive elements in Japanese patterns of entry and deposit-rate regulation as the principal reason for the real and apparent lesser international competitiveness of U.S. and European banks. They claimed that the relatively low levels of book-value capital for large Japanese banks shown in Table 2 constituted a funding advantage conferred on them unwisely by growth-minded Japanese regulators.

Such a view is strikingly at odds with the efficient-market theory of corporate finance. This theory holds that increases in the market value of capital (whether or not these increases are formally booked by bank accountants) lower the cost of issuing or rolling over formally uninsured deposit debt, but that exercising accounting options that serve to inflate artificially the book value of a bank's capital (e.g., by amortizing current losses to shift their recognition into future years) does not favorably affect deposit interest rates.

The bottom line is that Japanese banks' substantial level of hidden capital and previously hidden earnings made them high-capital rather than low-capital institutions. As such, their market capitalization greatly exceeded their accounting net worths, making it easy for them to float the new issues of equity capital the agreement mandated. The Modigliani-Miller model of corporate finance (1958, 1963) makes it clear that, in the absence of market imperfections such as asymmetric information and underpriced deposit insurance, substituting equity for debt finance has little effect on a firm's average cost of financing their assets.

Efforts to persuade Japanese officials to join the U.S. and European countries in harmonizing capital standards foundered for a while on how to treat unbooked or "hidden" capital gains and losses, which the agreement calls revaluation reserves. Revaluation reserves are off-balance-sheet sources of value in the form mainly of net unrealized capital gains on securities, loans, or real estate. These reserves are on average positive and substantial for Japanese banks (due principally to large amounts of

unrealized gains on equity investments) and negative and substantial for large U.S. and some European banks. Although Japanese authorities traditionally counted 70 percent of a bank's revaluation reserves as regulatory capital, American and British authorities appear to fear the consequences of acknowledging to their own taxpayer-citizens the greater relevance of market-value as opposed to book-value measures of bank capital. Such an acknowledgement would threaten in the long run to narrow these authorities' capacity to hide from their own citizens evidence of cumulative weakness in their regulatory performance.

In foreign markets, Japanese banks' and securities firms' advantage is partly real and partly apparent. The merely apparent part of Japanese financial firms' international growth is rooted in the dialectical efforts of Japanese banks and their large customers to lessen the regulatory burdens of domestic controls on interest rates. Booking what is fundamentally domestic banking business in foreign offices provides a straightforward way to circumvent burdensome ceilings on loan and deposit interest rates. When and as domestic nonbank and foreign competition for Japanese saving forces Japanese authorities to complete the process of interest-rate deregulation, much of this business may eventually revert to domestic offices (Terrell, Dohner, and Lowrey, 1989).

However, Japanese banks' real and potentially lasting advantage lies in their having privileged home-turf access to domestic saving and being more strongly capitalized on a market-value basis. Market values are the relevant measures of a bank's ability to absorb losses and/or to withstand a

depositor run. Moreover, there is no reason to believe that hidden reserves are more vulnerable to market fluctuations than fully booked sources of bank capital. Concerns for asset volatility should apply symmetrically to all elements of an institution's portfolio. Although in measuring a client's financial strength, regulators might scale down the market value of especially volatile items, it makes no sense for British and American regulators to assign a zero weight to hidden reserves per se.

Desirability of Policies to Open Japanese Deposit Markets. Wright and Pauli (189, p. 205) see Japanese strategies for penetrating world financial markets as conditioned on "government policies that both protect the home market and actively promote the position of Japanese financial institutions abroad." In Japan, deposit-rate ceilings, branch-banking laws, and depository-institution charter segmentation greatly limit the size of the deposit base a foreign bank can hope establish (Glick, 1987). While Japanese banks operating in the U.S. have been able to progress to more than 10 percent of the U.S. market for commercial-bank deposits, foreign banks operating in Japan have gained only about 3 percent of the corresponding Japanese market.

Foreign governments and trade associations of "guest" firms have placed mounting international political pressure on Japanese officials to widen foreign access to their domestic financial markets. However, foreign governmental pressure has focused on opening securities markets rather than opening low-denomination deposit markets in Japan.

The U.K. moved to halt branching in Britain by Japan's regional banks until Japan more fully liberalizes British firms' ability to participate in the Tokyo Stock Exchange (Evans, 1989). France is reported to have held up an application by a Japanese bank to establish a branch office in Paris until Credit Lyonnais received a seat on the same Tokyo Exchange (Evans, 1989).

Similarly, the U.S. Congress passed legislation in 1988 that called on the Fed not to recognize as "primary dealers" in U.S. government securities financial institutions from countries that deny similar competitive opportunities to U.S. firms. This Congressional action is more symbolic than real. All four major Japanese securities firms already enjoy primary-dealer status and the Fed may be expected to recognize others more or less as they apply. Foreign regulatory pressure and a strong yen inevitably induce Japanese regulators to relax restrictions on foreign entry into Japanese financial markets to some degree (e.g., into markets for bonds and commercial paper) and to begin accommodating foreign demand for Euroyen instruments. It is easy for federal regulators to herald such minor acts of liberalization as evidence of growing Japanese regulatory cooperation.

What should disturb U.S. and European citizens about the strategies being pursued by Western regulators is that, without an open debate, authorities are trading banking privileges in their countries for securities privileges in Japan. Because in the long run securities markets would in the face of modern financial technology be impossible for the Japanese effectively to insulate in any case, this strikes a series of prototypically

short-sighted regulatory bargains. These deals perpetuate Japanese banks' capacity to exploit Japanese savers domestically and to use this funding-cost advantage to compete advantageously for foreign business with Western banks outside of Japan.

Expanded Powers for U.S. Commercial Banks. In contrast to the movement toward unified financial markets and universal banking powers underway at the European Commission, Japanese and U.S. regulators remain reluctant to grant comprehensive financial-services powers to a single set of firms. It is ironic that the costs that U.S. banks face in trying to arbitrage Japanese restrictions on the operations of their branches and affiliates in Japan are reinforced by parallel U.S. limitations on these institutions' domestic activities.

The effects of these restrictions are lessened but not eliminated by structural arbitrage. For example, large U.S. banks (such as Morgan) have adapted their foreign securities affiliates to develop and support a variety of domestically impermissible securities activities on an offshore basis. Federal Reserve restrictions on interaffiliate transactions and the higher costs of exercising expanded powers in convoluted ways make structural arbitrage an imperfect substitute for direct entry into a product market. The easier it becomes for U.S. banks to enter U.S. and foreign securities markets as banks, the less costly they should find it to adapt their organizations and operations to penetrate Japanese banking markets and to compete with Japanese banks in third countries.

The downside to relaxing U.S. restrictions on bank activities comes from unrepaired weaknesses in the federal deposit insurance system (Kane, 1987). Difficulties that government deposit insurers face in trying to police innovative forms of client risk-taking mean that new activities often are able to extract large unintended subsidies from the federal deposit insurance funds. However, Benston et al. (1986) make it clear that the solution to this problem is to fix the defects in the deposit insurance system, not to make it hard for U.S. firms to compete effectively in financial markets around the world.

#### The Need for Market-Oriented Global Regulatory Strategies

This article offers an industrial-organization perspective on the recent acceleration of financial and regulatory change observed in the global economy. This acceleration reflects the response of different regulatees and regulators to exogenous and endogenous decreases in the costs of entering and exiting different financial product markets. The argument portrays product-line and geographic-market expansion by suppliers of financial regulatory services as following and supporting rivalry between client financial-services firms within and across countries, regions, and various kinds of administrative boundaries. Supplementing strictly bureaucratic theories of regulatory behavior (e.g., Niskanen, 1971), our conception takes as its motive force regulators' efforts, subject to bureaucratic, market, and technological constraints, to extend or to defend their share of the market for regulatory services in the face of exogenous and endogenous disturbances in the economic environment.



An individual regulatee's net regulatory burden is the counterpart of its regulators' price for regulatory services. In a competitive market for regulatory services, regulatory burdens would be subject to the law of one price. Around the world today, capital regulation, geographic restraints, and activity restrictions are the cutting edge both of regulatory burdens and of the equalizing effect of regulatory competition.

The market structure for financial regulatory services is characterized by dominant firms, influenced by market power conferred temporarily on elected politicians, and distorted by various subsidies these politicians deliberately or inadvertently permit to be transferred to those who sign up for specific types of regulation.

For many years, U.S. structural regulation has sought to build and maintain walls between different types of financial-services firms (such as banks, securities firms, and insurance companies) and between the geographic markets served by deposit institutions in different cities and states. During the last 25 years, these walls have been undermined by technological change and by competition from foreign and state regulators. Parallel secular declines have occurred in barriers to entering related financial-services fields and in distance-related costs of running complex interregional businesses. These declines have made it increasingly less costly for financial firms to penetrate U.S. and foreign regulators' administrative fences. This can be done merely by making clever adaptations in firms' institutional and geographic structures that serve to squeeze them through loopholes in the system of activity prohibitions. Regulatory

responses to these adaptations often focus on increasing the effective level of switching costs. Recent efforts to prevent well-capitalized U.S. thrift institutions from leaving the Federal Savings and Loan Insurance Corporation and its successor institution, the Savings Association Insurance Fund, exemplify how explicit exit fees, administrative delays, and outright prohibitions can be used as policy instruments for preserving the market share of an inefficient regulator.

Although acts of structural arbitrage incur such transition costs, competition among regulators serves as a kind of social insurance against excessively burdensome regulation. Opportunities for regulatory migration protect financial firms and their customers from having to bear the high regulatory burdens that a perfected cartel or monopoly supplier might be expected to impose.

U. S. officials presumed that structural arbitrage could be contained by negotiating a formal harmonization of individual countries' approaches to financial regulation. This paper's industrial-organization perspective indicates why such regulatory agreements do not necessarily promote the common good. It also clarifies that the difficulty of arranging durable patterns of international regulatory cooperation reflects difficulties inherent in forming and maintaining a world-wide cartel in any product or service. Moreover, in the long run, whatever effects the sponsors of a regulatory cartel might think they can accomplish by negotiation, market forces will reshape the result.

Improvements in regulatory or tax burdens that structural arbitrage attains for multinational and multipurpose financial firms are often generated by shifting real costs onto underinformed or lethargic taxpayers. Most important of these hidden costs are unintended subsidies that flow from the improper pricing of explicit and implicit government and international financial guarantees. Concealing them from taxpayers may allow such subsidies to burgeon out of control so that their long-run effects become destabilizing. Systematic governmental disinformation policies designed to conceal unfunded losses by government deposit-insurance funds make it hard for taxpayers to fill the disciplinary role that stockholders and creditors play in a private firm. Ironically, inefficient regulators can and do perversely mine the periodic policy crises they and their predecessors cause for new powers and larger budgets.

Increased accountability for individual-country financial regulators is the missing ingredient in current efforts at financial harmonization. It is a mistake for society to let regulators be judged merely by their stated intentions. Of course, we should not suppose that improving the quality of information about financial regulatory performance would put an end to regulatory subsidies. But economic theory does promise us that selective subsidies can be constrained by making their production more costly to those who currently benefit from their creation.

Western financial-services firms and regulators counted on the international regulatory agreement examined in this paper and increased foreign entry into Japanese securities markets to slow down future

penetration of international financial markets by Japanese banks and securities firms. Financial markets have been teaching them some unpleasant lessons about how differently from U.S. and European regulators the markets themselves analyze an institution's net capital position.

## Exhibit 1

## Description of Risk-Based Capital Framework Adopted in July 1988

Stated Purposes

1. To link a bank's capital requirements systematically to the riskiness of its activities, including various off-balance-sheet forms of risk exposure.
2. To coordinate supervisory definitions of capital, risk assessments, and standards for capital adequacy across countries to promote world financial stability.

Two-Tier Definition of Capital

1. Tier-One or Core Capital: Stockholder equity broadly defined (includes: common stock, related surplus, and retained earnings; noncumulative perpetual preferred stock; and minority equity in consolidated subsidiaries), less deductions primarily for good will.
2. Tier-Two or Supplementary Capital: includes items such as: general reserves for losses on loans and leases; cumulative perpetual and term preferred stock; hybrid debt-capital instruments; subordinated term debt; and revaluation reserves.

### Weights Assigned to Four Broad Categories of Risk

The value of each category of on-balance-sheet assets is assigned a risk-weight of zero, 20, 50, or 100 percent. Off-balance-sheet risk exposures are first converted to putative on-balance-sheet amounts by application of percentage factors of zero, 20, 50, or 100 percent intended to reflect their degree of "equivalence" to a direct credit instrument. The calculated equivalent amounts are then risk-weighted as if they measured an on-balance-sheet position.

### Standard Ratio of Capital to A Bank's Weighted Risk Aggregate

The minimum standard is 8 percent of the weighted risk aggregate, with at least half (i.e., 4 percent) contributed by core capital and with other mandatory and optional limitations on the contribution of specific forms of supplementary capital. This ratio is targeted to be phased in by yearend 1992. Transitional rules apply in the meantime.

Note: For further description, the reader is directed to Benston (1989) and Millard and Semkow (1989).

Table 1  
 Changes in Cross-Border Bank Claims and Liabilities, 1982-Third Quarter 1988<sup>1</sup>  
 (In billions of U.S. dollars)

	1982	1983	1984	1985	1986	1987	1988	
							First	Third
							quarters	quarters
Total change in claims <sup>2</sup>	186	150	182	275	527	793	587	664
Industrial countries	123	96	127	208	417	550	405	392
Of which:								
United States	61	40	36	55	94	106	76	49
Japan	...	10	20	40	154	223	170	184
Total change in liabilities <sup>3</sup>	188	178	184	300	596	750	546	410
Industrial countries	150	96	113	194	432	491	386	296
Of which:								
United States	107	35	7	22	82	58	36	31
Japan	...	15	12	42	114	146	130	133
Change in total net claims <sup>4</sup>	-2	-28	-2	-25	-70	44	41	55
Industrial countries	-26	-	14	13	-15	59	19	90
Of which:								
United States	-46	5	29	32	11	49	41	18
Japan	...	-5	8	-2	40	75	38	51

Source: International Monetary Fund Staff, 1989, p. 84.

<sup>1</sup> Data on changes in bank claims and liabilities are derived from stock data on the reporting countries' liabilities and assets, excluding changes attributed to exchange rate movements.

<sup>2</sup> As measured by differences in the outstanding liabilities of borrowing countries defined as cross-border interbank accounts by residence of borrowing bank plus international bank credits to nonbanks by residence of borrower.

<sup>3</sup> As measured by differences in the outstanding assets of depositing countries, defined as cross-border interbank accounts by residence of lending bank plus international bank deposits of nonbanks by residence of depositor.

<sup>4</sup> Difference between changes in bank claims and liabilities.

Table 2  
Ratio of the Book Value of Stockholder Equity to Total Assets  
at Japanese Banks, 1975-1989

	13 City Banks	3 Long- Term Credit Banks	7 Trust Banks	Regional Banks
1975	.0269	.0276	.0671	.0422
1976	.0262	.0267	.0645	.0414
1977	.0270	.0258	.0583	.0401
1978	.0268	.0273	.0590	.0390
1979	.0261	.0275	.0551	.0386
1980	.0223	.0249	.0473	.0356
1981	.0218	.0246	.0415	.0350
1982	.0203	.0233	.0319	.0336
1983	.0187	.0217	.0257	.0327
1984	.0190	.0213	.0263	.0323
1985	.0180	.0191	.0218	.0317
1986	.0195	.0191	.0221	.0315
1987	.0193	.0186	.0234	.0310
1988	.0220	.0233	.0297	.0317
1989	.0251	.0285	.0375	.0335

Source: Kane, Unal, and Demircug-Kunt (1990), using data supplied by Nihon Keizai Shimbun America, Inc.

Notes: Entries are for March 31 of each year. The book value of capital is the sum of accounting entries for stock subscription, legal reserves, and earned surplus.

This four-class partition of banks is conventional in Japan and corresponds broadly to a partition by size, with city banks largest. While the first three classes of banks show no change in membership over 1975-1989, the number of regional banks expands from 44 to 91.



Table 3

Average Ratio of Gross Savings to Gross National Product  
in Countries with Major Financial Markets, 1973-76 and 1983-86

	<u>United States</u>	<u>Japan</u>	<u>France</u>	<u>Switzerland</u>	<u>United Kingdom</u>	<u>West Germany</u>
1973-76	17.1	35.0	26.0	29.2	18.3	25.5
1983-86	14.5	31.5	19.7	28.8	17.7	23.6

Source: Watson, et al. (1988), p. 94.

Table 4  
 Commercial-Bank Deposit Rates and Lending Rates  
 to Prime Borrowers Reported in Countries with Major Financial Markets  
 1987-1989  
 (in percent per annum)

	<u>United States</u>	<u>Japan</u>	<u>France</u>	<u>Switzerland</u>	<u>United Kingdom</u>	<u>Germany</u>
<u>Deposit Rates</u>						
Dec. 1987	7.10	4.36	8.63	3.37	8.81	3.50
Dec. 1988	9.18	4.47	8.38	4.69	12.94	5.05
Oct. 1989	8.51	6.50	9.95	7.63 <sup>a</sup>	15.13	7.80
<u>Lending Rates to Prime Borrowers</u>						
Dec. 1987	8.75	3.38	9.60	5.00	8.50	6.25
Dec. 1988	10.50	3.38	9.25	5.50	13.00	6.00
Oct. 1989	10.50	4.88	10.50	8.25 <sup>a</sup>	15.00	9.50

<sup>a</sup>September 1989.

Source: Morgan Guaranty Trust Company (1989), p. 18.

## REFERENCES

- Baer, Herbert, and Larry Mote, 1989. "Preparation for Globalization: The U.S. Domestic Market," Handout at Conference on Financial Globalization sponsored by Federal Reserve Bank of Chicago and Mid-America Institute (November 2-3).
- Bank for International Settlements, 1986. Recent Innovations in International Banking, Prepared by a Study Group (chaired by Sam Cross) established by the Central Banks of the Group of Ten Countries, Basle.
- Benston, George, Robert Eisenbeis, Paul Horvitz, Edward Kane, and George Kaufman, 1986. Perspectives on Safe and Sound Banking: Past, Present and Future. Cambridge, Mass.: MIT Press and American Bankers Association.
- Benston, George, 1989. "International Bank Capital Standards," Atlanta: Emory University (August, unpublished)
- Buser, Stephen, Andrew H. Chen, and Edward J. Kane, 1981. "Federal Deposit Insurance, Regulatory Policy, and Optimal Bank Capital," Journal of Finance, 35 (March), pp. 51-60.
- Cargill, Thomas F. and Shoichi Royama, The Transition of Finance in Japan and the United States: A Comparative Perspective, Stanford: Hoover Institution Press, 1988.
- Corrigan, E. Gerald, 1987, Statement, U.S. Congress, Senate Budget Committee, Hearings, Washington, D.C. (May 6).
- Corrigan, E. Gerald, 1989. "Remarks before the 61st Annual Mid-Winter Meeting of the New York State Bankers Association," New York: Federal Reserve Bank of New York, Jan. 26.

- Evans, John, 1989. "Japanese Regionals Say U.K. is Limiting Branches," The American Banker, 154 (October 23), pp. 3 and 23.
- Feldman, Robert A., Japanese Financial Markets: Deficits, Dilemmas, and Deregulation, Cambridge, Mass.: MIT Press, 1986.
- Glick, Reuven, 1987. "Foreign Financial Institutions in Japan," FRBSF Weekly Letter, Federal Reserve Bank of San Francisco (April 24).
- International Monetary Fund Staff, 1989. International Capital Markets: Developments and Prospects, World Economic and Financial Surveys, Washington: International Monetary Fund.
- Kane, Edward J., 1987. "Competitive Financial Reregulation: An International Perspective" in R. Portes and A. Swoboda (ed.), Threats to International Financial Stability, Cambridge: Cambridge University Press, 1987, pp. 111-145.
- Kane, Edward J., Haluk Unal, and Asli Demirguc-Kunt, 1990. "Analyzing Hidden Capital at Japanese Banks," Paper prepared for the Federal Reserve Bank of Chicago's 1990 Conference on Bank Structure and Competition.
- Kehoe, Patrick J., 1989. "Policy Cooperation Among Benevolent Governments May Be Undesirable," Review of Economic Studies, 56, pp. 289-296.
- Kindleberger, Charles P., 1984. Multinational Excursions, Cambridge, Mass.: MIT Press.
- Klemperer, Paul, 1987. "Markets with Consumer Switching Costs," Quarterly Journal of Economics, 101 (May), pp. 375-394.

- Lamfalussy, Alexandre, 1989. "Globalization of Financial Markets: International Supervisory and Regulatory Issues," Economic Review, Federal Reserve Bank of Kansas City, 74 (January), pp. 3-8.
- Millard, Neal S., and Brian W. Semkow, "The New Risk-Based Capital Framework and Its Application to Letters of Credit," Banking Law Journal, 106 (Nov./Dec. 1989), pp. 500-514.
- Modigliani, Franco, and Merton Miller, 1958. "The Cost of Capital, Corporation Finance and the Theory of Investment," American Economic Review, 48 (June), pp. 261-297.
- \_\_\_\_\_, 1963. "Corporate Income Taxes and the Cost of Capital: A Correction," American Economic Review, 53 (June), pp. 433-443.
- Morgan Guaranty Trust Company, 1989. World Financial Markets, 4 (Nov. 10).
- Niskanen, William. Bureaucracy and Representative Government. Chicago: Aldine, 1971.
- Pearce, David W. (ed.) The MIT Dictionary of Modern Economics, Third Edition. Cambridge, Mass.: MIT Press, 1986.
- Revell, Jack R.S., 1981. "The Complementary Nature of Competition and Regulation in the Financial Sector," in A. Verheirstrateten (ed.), Competition and Regulation in Financial Markets, New York: St. Martin's Press, pp. 16-31.
- Rogoff, Kenneth, 1985. "Can International Monetary Policy Coordination Be Counterproductive?," Journal of International Economics, 18, pp. 199-217.

- Scott, Kenneth E. "The Dual Banking System: A Model of Competition in Regulation." Stanford Law Review 30 (1977): 1-50.
- Stigler, George. "The Theory of Economic Regulation," Bell Journal of Economics, 2 (Spring) (1971): 3-21.
- Terrell, Henry S., Robert S. Dohner, and Barbara R. Lowrey, 1989. "The U.S. and U.K. Activities of Japanese Banks: 1980-1988," International Finance Discussion Papers No. 361, Washington: Board of Governors of the Federal Reserve System (September).
- Watson, Maxwell, Donald Mathieson, Russell Kincaid, David Folkerts-Landau, Klaus Regling, and Caroline Atkinson, 1988. International Capital Markets: Developments and Prospects, World Economic and Financial Surveys, Washington: International Monetary Fund.
- Wilson, J.S.G., 1986. Banking Policy and Structure: A Comparative Analysis, New York: New York University Press.
- Wright, Richard W., and Gunter A. Pauli, 1989. "International Trade in Financial Services: The Japanese Challenge," in Bruce R. Guile and James Quinn (ed.), Technology in Services: Policies for Growth, Trade, and Employment, Washington: National Academy Press, pp. 187-210.