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Ethical Failures in Regulating and Supervising The Pursuit of Safety Net Subsidies

Edward J. Kane

Abstract: This paper traces the financial institution crisis of 2007-2008 to a breakdown in the incentives of regulators, supervisors, managers, and investors to perform adequate due diligence on securitized investments. Investors allowed their trust in the reputations of credit rating firms and the giant financial firms that manufactured highly rated tranches of securitized loan pools to blind them to the casino ethics of these firms' managers and line employees. Government credit allocation schemes generate incentive conflicts that undermine the effectiveness of government supervision and eventually produce financial crisis. In 2007-2008, technological change and regulatory competition led incentive conflicted supervisors to outsource much of their due discipline to credit rating firms and accountants. This outsourcing encouraged institutions to leverage and securitize their loans in ways that pushed credit risks on poorly underwritten loans into hidden corners where supervisors and credit ratings firms were not obliged to look for them and failed to discern the dangers posed until it was too late.

About the Author: **Edward J. Kane, Ph.D.** is the James F. Cleary Chair in Finance in the Carroll School of Management, Boston College. He received his Ph.D. from Massachusetts Institute of Technology. Previously, Kane occupied the Everett D. Reese Chair of Banking and Monetary Economics at Ohio State University and also taught at Princeton University and Iowa State University. Kane has also held several visiting professorships and is a past president and fellow of the American Finance Association, a former Guggenheim fellow, and a Research Associate of the National Bureau of Economic Research. He serves on the editorial boards of several journals and is a founding member of the Shadow Financial Regulatory Committee. Currently, he consults for the World Bank and is a Senior Fellow in the FDIC's Center for Financial Research.

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“Grub first, then ethics.”
Bertolt Brecht, *The Threepenny Opera* (1928)

Like Brecht, economists presume that regulators, supervisors, and everyone else pursue their self-interest with only a secondary concern for the abstract duties they might owe to other parties. Regulation focuses on writing rules; *supervision* looks to their enforcement. In every country, governments make rules that define formally what a bank is, what different kinds of things banking organizations may and may not do, how and where bankers may and may not do permissible things, and what reciprocal rights and duties bankers and regulators owe to one another. However, for compelling historical, cultural, economic, and political reasons, these definitions and the ethical duties they imply vary across countries—often greatly (Barth, Caprio and Levine, 2006).

Differences in rules and enforcement support what has become a worldwide market for regulatory services and the safety net subsidies to risk taking that these services generate. Just as commercial and investment banks explore the market for every support service that they outsource, they study alternative regulatory schemes to ascertain the particular jurisdiction that offers the best mix of costs and benefits for particular pieces of their product lines. Only the existence of economic and political switching costs prevents each institution from engineering a bundle of substitute asset, liability, and hedging instruments and ruthlessly exploiting weaknesses in different governments so that every deal they write could be booked in the most favorable jurisdiction.

To sort out cross-country differences in the goals and motives that govern bank and regulatory behavior, this paper features the existence of incentive conflicted national *regulatory cultures*. The broad outline of each culture is determined by slowly changing ethical norms that govern individual, industry, and government behavior. These norms influence the institutional details that constitute a particular *regulatory scheme* and mold its particular policy instruments. The operative costs and benefits of financial safety nets develop cooperatively in response to the push of taxpayer interests and the pull of lobbying pressure. The conflict between abstract regulatory duties and dilutive political

forces generates systems of contradictory safety net controls and subsidies that, when left unchanged through time, tempt client institutions to expose themselves to the same set of highly correlated dangers and to seek safety in numbers when these concentrated risks materialize.

Many countries experienced a subsidy induced crisis in recent years. The upside of each such crisis is that in exposing inefficient, contradictory, and antiegalitarian elements of regulatory competition in particular countries, a crisis generates pressure for effective reform. The downside is that, if and when a substantial portion of the financial sector appears to be at risk, it is far easier to patch up the weaknesses in the system with *ad hoc* loans and guarantees than to negotiate genuine reform. This is why subsidy induced crises usually end up expanding the safety nets of countries that experience them.

I. Ethics of Supervision

Economic theory presumes that, subject to external constraints, individuals choose a series of behaviors that maximize through time a personal objective function. Rules come into existence in situations where people fear that gaps in other individuals' ethical standards might allow them to behave in ways that would jeopardize the goals of a rule making community to which they belong.

To constrain the choices that targeted parties make, rules must be backed up by supervision. Supervision entails surveillance and enforcement. Regulated parties ("regulatees") must be supervised when—and to the extent that—their objective functions tempt them to make themselves better off by disobeying either the spirit or the letter of particular rules. A bank's incentive to circumvent or violate a given rule increases with the weight of the burdens that full compliance threatens to impose on its efforts to create value and manage risk. Dutiful enforcement revises bank incentives by rewarding compliance, punishing evasion, and searching out and closing loopholes that regulatees might use to skirt the rules.

Rule makers spell out the behaviors that they wish either to avoid or to promote in capital letters and usually in language almost anyone can understand. However, most rules contain a set of loopholes that is communicated either in very small print or in coded language that only the lobbyists that sponsored them can immediately see or

understand. To quantify the economic burden of any rule, one must study not only the costs and benefits of compliance, but the opportunity costs of circumvention as well.

Loopholes sustain gaps in supervisory enforcement that generate a second set of rules. These secondary rules are at least partially conjectural. For example, although the formal speed limit on a given highway might be posted at (say) 55 miles per hour, drivers confidently expect the limit that police actually enforce to be higher than the posted one and to adapt predictably to exceptional circumstances as these unfold.

Common law and the commonsense school of ethical theory maintain that, across any contract in which one-party delegates authority to one or more others, agents and principals owe one another duties of loyalty, competence, and care. On this hypothesis, supervisors owe four key duties to the community that employs them:

1. A duty of vision: they should continually adapt their surveillance systems to counter regulatee efforts to disguise their rule breaking;
2. A duty of prompt corrective action: they should stand ready to discipline rule breakers whenever a violation is observed;
3. A duty of efficient operation: they should produce their services at minimum cost; and
4. A duty of conscientious representation: they should be prepared to put the interest of the community they serve ahead of their own.

In principle, supervisors committed to the fourth duty would bond themselves to disclose enough information about their decision making to allow the community to make them accountable for neglecting or abusing these responsibilities. In practice, institutional arrangements do not hold supervisors strongly accountable for the distributional effects of how they resolve incentive conflicts. To the contrary and in country after country, politicians require bank lending to favor designated sectors of the economy. To obtain a *quid pro quo*, bank stakeholders expect these loans to be supervised with a lighter hand, especially in times of banking turmoil (Kane, 1989).

Traditionally, supervisory duties have been exercised locally and—in a narrow and formal sense—schemes for regulating and supervising commercial and investment banks are still shaped and administered on a nation by nation basis. Changes in rules and duties respond to the interplay of economic events with changing governmental goals and

with the waxing and waning of industry pressure to relax burdensome rules or to control disruptive behaviors. Kane (1977 and 1988) describes a dialectical process in which regulation induced innovation slowly engenders regulatory adjustments and, in turn, regulatory adjustments (termed re-regulation) rapidly engender new forms of regulatee avoidance.

Today, national schemes and resulting regulatee burdens are increasingly influenced by competition from foreign regulatory systems. In world markets, movements of financial capital and changing asset values overlay onto the domestic policy scene a series of unfamiliar political, economic, and reputational pressures that individual country regulatory decision makers must take into account. Arguably, these pressures have persuaded authorities in financial center countries to acquiesce in off balance sheet risk transfers that render loophole ridden agreements for coordinating cross-country supervision (Basel I and II) relatively toothless.

This paper introduces the concept of a subsidy induced financial crisis and uses it to explain how offshore regulatory competition can either reinforce or attenuate inefficient or antiegalitarian elements of incentive conflicted banking supervision in individual countries. Regulatory competition does this mainly by inducing increases and decreases in the banking business a country's banks can capture. With technological change intensifying the influence of offshore regulators, missteps promise to come to a boil sooner, but may still have severe and long-lasting effects on ordinary taxpayers.

This paper explains the financial crisis of 2007-2008 as a product of regulation induced innovation that pushed financial business into unregulated and short funded "shadow affiliates" that competition for regulatory clients encouraged supervisors to tolerate. Complex forms of securitization multiplied as a way for regulated institutions to lower their effective capital requirements (i.e., to increase their *de facto* leverage) by moving loss exposures only nominally off their balance sheets. Rather than challenging this avoidance behavior, incentive conflicted supervisors covered their acquiescence by outsourcing their due discipline to private parties. Regulators allowed profit oriented credit rating firms (inappropriately labeled "agencies") to monopolize the task of risk assessment and allowed profit oriented accounting firms to decide whether or not the shadow institutions created by particular securitization structures were sound enough to

take the associated risks completely off sponsor balance sheets. This outsourcing encouraged some banks and numerous less regulated lenders to originate low quality loans for commercial and investment banks to securitize in ways that temporarily pushed correlated credit risks into corners of the universe where supervisors and credit ratings firms were not obliged to look for them.

II. The Market for Regulatory Services and Its Imperfections

Although some economists treat financial regulation as if it were merely a *tax* on an institution's income, bankers understand that banking regulation is better conceived as a back office financial *service* that, for participants in financial markets, generates benefits as well as costs. Its benefits lie in three realms: improving customer confidence, improving customer convenience, and supporting or resisting bank efforts to accumulate and exercise market power. Because banking regulation requires resources to produce, authorities can both produce it more or less efficiently and finance it more or less fairly. Whether or not the costs of producing regulation are minimized, political activity determines its level and allocates its production costs across society. Any firm or individual implicitly pays an endogenously determined price for regulatory services. This price corresponds to the difference between the benefits that a firm or household receives from bank regulation and the costs that regulation imposes on it. We conceive of this variable as an entity's "net regulatory benefit from financial regulation," or NRB.

Parties that feel a stake in financial regulation routinely join together into political coalitions and lobby collectively for improvements in their NRBs. In principle, each sector's lobbyists compete self-interestedly with lobbyists from other sectors to generate regulatory benefits for their members and to shift the costs of financing their production toward parties located in other sectors.

In a world in which financial markets are globalized, services that provide regulatory benefits are available both from foreign suppliers and from domestic regulators of differently chartered firms. Hence, the struggle by citizens and firms in any one country or industry sector to maximize net benefits spills across conventional borders into what is now a worldwide and industry wide market for regulatory services.

The market for regulatory services comprises a body of persons that carry on extensive transactions in the specific activity of promulgating, enforcing, and accepting regulatory restrictions. Regulation is supplied competitively and accepted voluntarily to the extent that entry and exit opportunities exist for banks willing to incur the transaction costs of switching all or part of their regulatory business to another supplier. Hence, a regulator's clientele is fixed only in the very short run. Over long periods, the jurisdictions in which a regulated institution books its business are perfectly mutable. Geographic overlaps in the global market for financial regulatory services have expanded as entry and exit costs for foreign financial institutions have declined around the world. Ongoing downward trends in costs of entering and exiting offshore financial markets render the margin of regulatory competition—even in developing countries—increasingly global.

Rules and enforcement systems are continually tested and reshaped by changes in the net regulatory burdens that other jurisdictions offer. Nevertheless, jurisdictional competition for most financial products is imperfect. An incumbent regulator may be said to have market power in any line in which it can lower the net benefits it offers clients without completely surrendering its clientele to another regulator. Alternatively, we might say that the *leaders* of a regulatory agency have market power whenever the various labor, capital, and political markets from which they draw economic resources cannot hold them (and the elected politicians that appoint, sustain, and sometimes scapegoat them) accountable for policy decisions that simultaneously lower net regulatory burdens for their clientele of lenders and borrowers and increase them for other important economic sectors.

The vigor of regulatory competition is enhanced by technological change and diminished by information asymmetries, leadership turnover, and various sources of principal-agent conflict that are inherent in governmental decision making. The essence of a government's social contract is that taxpayers—as principals—award financial resources and coercive powers to governmental agents. Taxpayers hope that government officials will exercise the assigned powers to promote the “common good.” However, the common good is a slippery concept that cannot be observationally defined. Especially in

the short run, safety net managers' conception of the common good is routinely distorted by sectoral pressures.

Regulators prefer reporting systems that make it difficult for citizens to gather information either about subsidiary goals that policymakers might be pursuing or about sectoral, bureaucratic, or personal benefits that regulatory activity might generate. Even when evidence of discriminatory or inefficient performance surfaces, it is difficult for outside observers to sort out its root causes or to correct the incentive defects responsible for it.

The value of regulatory competition lies in supplying indirect economic checks on the evenhandedness and efficiency of net regulatory burdens. On the demand side, competition encourages parties that feel overburdened by their government's system of regulation to reconfigure their business to slide it into the jurisdiction of a more advantageous supplier of regulatory services. It does not matter whether the new supplier is a domestic agency or a foreign one. What matters is that the regulatees gain some relief, the new regulator gains budgetary resources, and the old regulator loses them. The lower the transition costs of moving to a less burdensome regulatory supplier, the more complete the demand side check becomes.

On the supply side, entry and exit costs confer competitive advantages on incumbent regulators. In competing with would-be private regulatory enterprises, government entities are advantaged by the financial strength imparted to them by their ready access to the coercive power of the state. This access allows clients to presume that, in a debacle, regulators will assign catastrophic losses to taxpayers. In 2008, this presumption was confirmed in spades by the expansion of the Federal Reserve Bank's (Fed) lending facilities and the rescues of Bear Stearns, Fannie Mae, and Freddie Mac. To a nontraditional regulator, the costs of actively gearing up to oversee more than a few categories of banking deals can be substantial. The existence of these start-up costs means that in a given country the number of entrants that can economically supply regulatory services to commercial and investment banks is relatively limited in the short run.

Successful entry requires more than a capacity for exercising disciplinary power. To displace a seasoned regulator, would-be entrants need specific skills, a source of

moral authority, and substantial financial and reputational capital. Entrants must be able to promise—and promise credibly—that they can produce regulatory services fairly and efficiently and that they are committed and able to sustain this promise for a long while. They must also be able to fashion a system of rewards and punishments that is strong enough to change the behavior of client regulatees. Within a country, entry usually occurs when government regulators of differently chartered firms authorize their clients to offer substitute products (such as money market funds or cash management accounts) for the signature products of another industry segment. The entry of newly chartered *private* regulators into regulatory arenas is discouraged by the costs of accumulating sufficient public standing and moral authority to be trusted with coercive authority.

In brief, the inherited market structure for regulatory services is distorted by market power that the law freely gives to government enterprises and by reputational advantages enjoyed by incumbent private regulators (such as credit rating organizations and accounting firms). On the one hand, representative democracy confers renewable monopoly power on elected politicians and the regulatory leaders they appoint. Because policymaking authority may be canceled by voters or limited *ex post* by the courts, this authority becomes all the stronger, the more confidently incumbent politicians may count on holding power and the more that top bureaucrats may count on holding onto their offices and avoiding vigorous prosecution or public censure for questionable acts.

Even in the private sector, market power is conferred in lasting fashion on a successful regulatory enterprise. It is interesting that such traditionally hard to dislodge incumbent regulators as a country's major stock and commodities exchanges are being subjected today to pressures from foreign exchanges eager to partner up as a way to establish foothold positions from which they might take over the partner's franchise. It is unfortunate that, for key regulatory bureaus, central banks, and ministries of finance, contractual possibilities for partnering with and taking over the franchises of poor performers are much more limited.

III. The Role of Incentive Conflicts and Regulatory Subsidies in Banking Fragility

Financial environments and protocols for regulating them vary greatly from country to country. Financial institution supervision combines a capacity to observe fluctuations

in balance sheet values (“vision”) with a capacity to influence managerial actions (“control”) and an *incentive system* that governs the pursuit and exercise of these capacities. Even when portfolios and attendant risks are concentrated within a single country, regulation induced innovations make it difficult to establish a combination of adequate oversight of institutional balance sheets, adequate authority to intervene in timely fashion, and bureaucratic incentives to detect and resolve insolvent institutions in ways that adequately protect taxpayer interests. As a result, individual countries solve this contracting problem in different ways. Although many commonalities of interest exist, systems for setting and enforcing financial rules are infested with incentive conflict. Even within a country, conflicts exist between and among:

1. Regulators and the firms they regulate;
2. Particular regulators and other societal watchdogs;
3. Regulators and the politicians to whom they must report;
4. Taxpayers and the politicians and regulators they put in office.

How a country approaches and resolves these conflicts is in part hardwired into its political and institutional structure. For example, while many E.U. countries supervise banks separately from other financial institutions, some do not. A few European countries (Austria, Denmark, Germany, Netherlands, Sweden, and the United Kingdom, in particular) have established agencies that supervise bank and nonbank financial institutions in an integrated way; others have to some degree integrated the oversight of at least their bank and securities sectors (Schüler, 2003).

Every country relies on its ethical norms, government regulators, and other professional watchdogs to bridge gaps in the bonding, deterrent rights (deterreny), and transparency inherent in its private contracting environment. Over time, the interaction of private and government watchdogs generates a *regulatory culture*. A culture may be defined as customs, ideas, and attitudes that members of a group share and transmit from generation to generation by systems of subtle and unsubtle rewards and punishments. A regulatory culture constrains the ways in which an uncooperative or even unscrupulous individual bank can be monitored and disciplined. It comprises a matrix of attitudes and beliefs about how regulators should act. These slowly changing attitudes and beliefs often express a distrust of government power that traces back to abuses observed in a

possibly distant past when the country was occupied, colonized, or run by a one-party government. The culture's taboos and traditions define standards for the fair use of government power. Behind these standards are higher order social norms that underlie a nation's political and legal environments.

The character of a country's Regulatory Culture is spanned by six specific components:

- Legal authority and reporting obligations;
- Formulation and promulgation of specific rules;
- Technology of monitoring for violations & compliance;
- Allowable penalties for material violations;
- Duties of consultation: to guarantee fairness, regulated parties enjoy a right to procedural due process that specifies burdens of proof that regulators must meet before they can penalize violators; and
- Regulatee rights to judicial review: to bond the fairness guarantee, penalized parties have access to inside and outside appeals procedures.

In large part, the details of each component are shaped by:

- a. Recognition and response lags generated by the interaction of evolving weaknesses in the transparency of the nation's accounting system with bureaucratic incentives and statutory and bureaucratic checks and balances;
- b. Regulatory competition brought about by the entry of foreign or differently regulated institutions;
- c. Regulatory personnel's exposure to influence activity from a discipline resistant firm's political clout, consultation rights, and appeal privileges;
- d. Social norms that protect fraudsters and bumblers against prompt regulatory discipline.

Lobbying activity seeks to reshape the particular norms that officials stress and to constrain the tradeoffs they make. Within limits set by a country's regulatory culture, how particular policy strategies actually work is determined by regulatees' ability to delay or stymie decisive interventions and to find and exploit circumventive loopholes. Some of these loopholes involve the ability to relocate loss exposures that are more

closely supervised either by the home country (or by a particular host) to venues that monitor or discipline risk taking less effectively.

The regulatory cultures of almost every country in the world today embrace, in one form or another, three strategic elements:

1. Politically directed subsidies to selected borrowers: the policy framework either explicitly requires—or implicitly rewards—institutions for making credit available to selected classes of borrowers at a subsidized interest rate;
2. Subsidies to bank risk taking: the policy framework commits government officials to providing on subsidized terms explicit or implicit conjunctural guarantees of repayment to depositors and various other counterparties;
3. Defective monitoring and control of the subsidies: the contracting and accounting frameworks used by banks and government officials fail to make anyone directly accountable for reporting or controlling the size of either subsidy in a conscientious or timely fashion.

Taken together, the first two elements in the strategy tempt commercial and investment banks to extract wealth surreptitiously from taxpayers. Although the bulk of these subsidies can be promptly divided out to shareholders, loan officers have to pass some of the benefits to politically favored borrowers. Favored borrowers tend to be blocs of voters regularly courted by candidates for political office or financial supporters [such as builders and would-be homeowners (especially low income households) in the U.S.] and a few influential government officials and their “friends.”

The third piece of the framework minimizes regulators’ exposure to blame when things go wrong. It makes it impossible for outsiders to hold supervisors culpable for violating their ethical duties. It prevents outsiders from readily monitoring the true costs and risks generated by the first two strategies and interferes with efforts to subject the intersectoral flow of net regulatory benefits to informed debate. This gap exists because accounting systems do not report the value of regulatory benefits as a separate item for banks that receive them. In modern accounting systems, the capitalized value of regulatory subsidies is treated instead as an *intangible* source of value that, if booked at all, is not differentiated from other elements of a bank’s so called “franchise value.” Of course, some of the subsidy is offset by *tangible* losses that politically influenced loans

eventually force onto bank balance sheets and income statements. In principle, a tangible reserve for expected losses ought to be set up as part of the process of making a poorly underwritten or deliberately underpriced loan.

Although officials resist the idea, creating an enforceable obligation for regulators to estimate in transparent and reproducible ways the ebb and flow of the dual subsidies would empower external watchdog organizations in the private sector to force authorities to explain whether and how these subsidies benefit taxpayers. Not reserving for losses imbedded in a loan's preferential terms may be conceived as introducing the equivalent of a colony of termites into the asset and net worth accounts carried on conventional commercial and investment bank balance sheets. Over time, at more and more individual institutions, the cumulative damage from politically favored loans becomes harder and harder to hide, especially if the flow of subsidy benefits is distributed to shareholders more or less as it accrues. Between one crisis and the next, the size of government favored loans looms larger and larger in bank portfolios. Eventually, an emerging shortfall in borrower payments makes it hard for owners of the short funded pools of mispriced and poorly structured loans to gain rollover financing. The surfacing of this rollover risk for poorly underwritten mortgage backed securitizations in the U.S. and Europe began during the summer of 2007.

IIIa. How Silent Runs Extract Safety Net Support

Funding difficulties developed first at highly leveraged conduits (exemplified by Structured Investment Vehicles) that had been invented as a way for sponsors to avoid capital requirements on the assets parked in them. For sponsoring institutions, the debt of these "shadow entities" (SEs) was a subsidy induced off balance sheet substitute for on balance sheet debt. By holding assets whose duration averaged two or three times as long as the duration of their liabilities, highly leveraged SEs exposed their net worth to the same kind of rising interest rate risk that generated the savings and loan (S&L) mess a few decades ago.

When credit spreads on SE assets rose in August 2007, estimates of the market value of SE net worth sank like a stone. If the SEs had been match funded, decreases in the value of their assets would have passed through without protest to SE creditors. But because the SEs were short funded, holders of maturing debt had an opportunity to

escape. Of course, paying off the maturing debt of an insolvent SE on a first come, first served basis worsened the positions of its remaining creditors, most of whom had received implicit or explicit assurances of liquidity and solvency support from SE sponsors. Rather than suffer the long run loss of prestige and future business that might come from renegeing on these assurances, SE sponsors generally chose to consolidate the accounts of their insolvent SEs back onto their own balance sheets. Doing this delayed the need to recognize the full extent of SE losses, but it also revealed how treacherously the nation’s largest institutions had been gaming the capital requirement system.

Savvy large denomination creditors began to worry about the depth of the hole that overvalued and leveraged loans were imbedding in the opportunity cost value of the sponsors’ enterprise contributed net worth (NW_E). By NW_E , we mean the value that an informed buyer would pay for the bank if safety net guarantees did not exist. This value is usually highly uncertain. In principle, the point estimates that accountants prepare are statistically insufficient. Each point estimate ought to be supplemented by an estimate of their margin for error. When interval estimates of a bank’s NW_E begin to include more and more negative territory, it becomes a “zombie” institution. A zombie is an insolvent institution that stays active only because the black magic of government guarantees leaves its creditors with no reason to force it into a corporate grave. A zombie’s ability to renew its deposit funding and other debt depends entirely on the continuing credibility of the explicit and implicit government guarantees that safety net managers attach to its obligations.

Systemwide fragility (F) increases with the number of zombies or near zombies (Z) and with the aggregate size of the losses (L) that might be imbedded in their economic balance sheets. We conceive of L as the probability weighted sum of possible losses (L_j) at individual zombies ($j=1, \dots, Z$). Let $f_j(x_j)$ represent the probability distribution of $NW_E(j)$:

$$L_j = \int_{-\infty}^0 x_j f_j(x_j) dx_j . \tag{1}$$

$$F = F\left(Z, \sum_{j=1}^Z L_j\right). \tag{2}$$

For large and complex firms, funding problems begin *not* when an institution first becomes a zombie, but when suppliers of large denomination funds begin to doubt whether officials can or will continue to support its and its confreres' existence. An institution's funding problems intensify if doubts exist about arrangements for making taxpayers absorb the cost of paying off its counterparties. In 2008, the emergence of such doubts induced the explicit rescue of Bear Stearns, Fannie Mae, and Freddie Mac. The triggering condition was a spreading fear that the upper bound on the uncertain value of implicit and explicit government guarantees (G) might have risen so high that taxpayer resistance might make it politically dangerous for Congress to make the commitments needed to pay the bill promptly or in full.

Massive withdrawals by sophisticated creditors are sometimes described as "silent runs," because servicing demands for repayment submitted by large creditors generates far less publicity than the queue of panicked small depositors that impatiently mills about in a conventional run. However, silent runs greatly weaken institution balance sheets. The cash outflows that troubled enterprises experience must be financed by selling liquid assets and issuing more costly debt. A troubled institution's first line of defense against a silent run is to arrange loans from government institutions or from relatively well-informed institutions with which it has correspondent relationships. Private rescuers usually insist on receiving appropriately high interest rates and demand collateralization for their claims. In deciding to help a correspondent bank to weather a silent run, a foreign bank is apt first to lobby the International Monetary Fund, the host government, and even its own government for assurances that it will not be stuck with the bill for whatever losses the rescue effort might incur.

Until officials increase the transparency and credibility of their credit support, silent runs on weak institutions tend to escalate. Troubled institutions' sales of good assets and increasing funding costs reduce future income and make the fragility of their condition apparent to more and more outside observers. When a troubled institution collateralizes its good assets at or above their market value, its unbooked losses on poorly performing loans become a larger proportion of the assets that remain unpledged. The more funding a troubled institution obtains at high credit spreads, the more severely its future accounting and economic profits are squeezed and the more likely it is to engage in

go for broke lending and funding activities that squeezes the profit margins of healthy competitors.

A silent run puts pressure on regulators because it progressively undermines the willingness of taxpayers and stronger banks to tolerate the regulatory *status quo*. As a silent run unfolds, reduced profit margins spread zombieness and disturbing information is revealed about the size of taxpayers' potential involvement. At the same time, net regulatory benefits for weak and strong institutions diverge more and more widely. Weak institutions receive safety net subsidies from central bank loans and government guarantees that stronger competitors and taxpayers eventually have to pay for.

The longer a silent run proceeds, the more deeply supervisory efforts to retard the exit or to delay the formal recapitalization of inefficient and insolvent deposit institutions push the net regulatory benefits of other economic sectors into negative territory. The economic and political forces exerted when a large institution suffers open and silent runs are nicely illustrated by the British government's response to the Northern Rock debacle. In September 2007, an open depositor run on this bank was stopped by the government's promise to provide emergency funding to the £114 billion institution and to "guarantee all existing deposit arrangements." However, a silent run persisted. By year-end, emergency loans from the Bank of England reached about £25 billion and Treasury guarantees had been extended to cover most of the bank's nondeposit obligations as well. Well-publicized efforts to persuade stockholders and outside acquirers to inject private capital into the bank showed little progress. In February 2008, the bank was "temporarily" nationalized and in August 2008 the government explicitly increased the size of its equity position.

IV. Three Exculpatory Norms of Modern Crisis Management

A crisis occurs when misfortune impacts a large industry whose managers have made their institutions vulnerable to this amount and type of bad luck. A severely overleveraged financial system may be portrayed as an accident waiting to happen. Exhibit One breaks the evolution of a subsidy induced financial crisis into five stages.

Exhibit One: Five Stages of a Subsidy Induced Banking Crisis

1. Rent seeking generates aggressive loss exposures at highly leveraged institutions:
 - Pursuit of safety net subsidies tied to government promoted forms of lending;
 - Pursuit of subsidies tied to other kinds of leveraged risk taking.
2. Adverse events and industry problems upset financial markets:
 - Banks and regulators keep losses from registering on anyone's books by accounting trickery and cover-up;
 - Large denomination creditors test the strength of the safety net;
 - Fragility of system rises as good and even questionable assets are collateralized and endgame incentives induce go for broke gambling;
 - Threat of shortages in safety net funding rises over time.
3. Supplementation of traditional safety net support mechanisms:
 - Loans from central bank discount window can't carry the load;
 - Inventive accounting loopholes and forms of public credit expand.
4. Recapitalization of troubled firms and safety net institutions:
 - A. Stopgap partial recapitalizations: half measures move the financial sector back into stage two of the cycle;
 - B. Transformation of private losses into explicit taxpayer obligations or explicit nationalization of zombie firms.
5. Final cleanup of the mess:
 - Reprivatization of zombie institutions;
 - Blame heaped politically on designated scapegoats;
 - Credible safety net reforms are adopted.

The 2007-08 breakdown of arrangements for financing for structured securitizations in the U.S. and Europe, and banking crises that rolled through Latin America, Japan, Korea, the Philippines, Malaysia, Indonesia, Thailand, and Russia during 1997-1998 passed through the first three and one half stages of this model of crisis generation and response.

In 2007-2008, German, British, and American authorities showed again that politicians are reluctant to move beyond the stopgap partial recapitalization stage (stage 4A). As long as the hopelessness of an institution's situation can be covered up, outsiders cannot easily distinguish a wave of financial institution insolvencies from a transitory shortage of aggregate liquidity. In either circumstance, a group of economically significant firms find it exceedingly difficult to roll over maturing debt on profitable terms. It is an accepted first response practice for central bankers and other regulators to provide liquidity to distressed institutions as a way to buy time for supervisory staff members to investigate the extent to which irreparable insolvencies might underlie the distress. This time buying strategy is supported by three exculpatory norms whose ethical force intensifies in times of political, market, or institutional turmoil: (1) a mercy norm; (2) a nationalistic norm; and (3) a nonescalation norm.

The mercy norm holds that it is bad policy and unacceptably cruel behavior for regulators to abandon the employees, creditors, and stockholders of institutions they oversee before they can convincingly establish whether the distress is too fundamental to be remedied by subsidized loans. This norm gives regulators the discretion (if not the duty) to alleviate the initial pains of any client institution that experiences a silent run. To exemplify the sway of this norm, we need only cite the huge amount of relatively low cost loans that the Federal Home Loan Bank System provided Countrywide Financial Corporation prior to its acquisition by Bank of America.

The nationalistic norm presupposes that regulators should help domestic institutions and market makers to cope with foreign competition. In practice, this norm is reinforced by community resistance to foreign control of national credit decisions and by lobbying pressure from politically favored sectors which suspect that foreign banks will not serve their interests very well. The operation of this norm can be illustrated by Fed efforts to dissuade Deutsche Bank from competing with Morgan for the Bear Stearns franchise.

The nonescalation norm allows authorities to lend on subsidized terms to distressed institutions (such as Fannie Mae and Freddie Mac) as long as officials can popularize the view that doing anything else would invite a national or global financial disaster. In invoking this norm, officials must and do spread fear. They argue that,

without a large injection of subsidized funds, market forces will do terrible things: set prices for troubled assets that are unreasonably low, set prices for private credit to institutions that hold troubled assets that are unreasonably high, and transmit these price pressures to strong and healthy institutions in ways that would throw them into turmoil.

Though customary, it is politically and economically dangerous for government officials to make these exaggerated claims and to deny the increasingly transparent flow of subsidies that partial recapitalization entails. When and if an official is discovered to have been misrepresenting the need for and extent of the antiegalitarian redistribution of wealth that bailouts entail, he or she becomes a convenient scapegoat for the mess as a whole. For high ranking regulators to want to keep churning out increasingly visible safety net subsidies, two conditions must hold. First, they must be able to control the flow of information, so as to keep taxpayers and the press from convincingly assessing either the magnitude of the implicit capital transfer or the antiegalitarian character of the subsidization scheme. Second, their commitment to these policies must be continually nourished by praise and other forms of tribute from the bankers, borrowers, and investors whose losses are being shifted to less influential parties.

Authorities are reluctant to undertake a full recapitalization until overwhelming losses reveal themselves in the form of irrepressible crisis pressures. The longer the game goes on, the greater the risk that the reputations of incoming policymakers and the particular politicians that appoint them will be saddled unfairly with the sins of their predecessors. Although it is unwise to draw inferences from a sample of two, the U.S. S&L mess and the most recent Argentine crisis cast some light on how costs are allocated during the final stages in the life cycle of a subsidy induced crisis.

Formally, continuations and breakdowns in the burden shifting process may be analyzed as two states of an evolutionary process. Though small on any given day, the probability (p) of a breakdown during an incentive conflicted regulator's term in office increases with the fragility of the system for making good on implicit and explicit safety net guarantees. It is convenient to represent the value of these guarantees as G and the cumulative size of the taxpayer's hidden responsibility for supporting the liabilities of troubled institutions as T . T and G increase with system fragility (F). In turn, whenever F grows, p also rises. During the early stages of an incipient crisis, increments in the

probability of breakdown depend on the informativeness (A) of the accounting principles that financial institutions and safety net officials use to report losses and loss exposures:

$$p=p[G,T,F;A] . \quad (3)$$

During these early stages, financial institutions and their regulators are tempted to seek and provide “accounting relief.” However, once market participants begin to recognize partial recapitalizations and accounting cover-ups as half measures, weaknesses in A compound the problem and improvements in A become a critical part of the crisis resolution process.

Rolling and incompletely resolved crises sound at least three alarms. First, the frequency and geographic extent of banking crises convincingly demonstrate that, around the world, many institutions have found it reasonable to book potentially ruinous risks. Looking at the period 1977-1995, Caprio and Klingebiel (1996) cite 58 countries in which the net worth of the banking system was almost or entirely eliminated. Second, in country after country, domestic (and sometimes foreign) taxpayers have been billed to bail out banks, depositors, and deposit insurance funds. Honohan and Klingebiel (2003) confirm that, in recent crises, taxpayers’ bill for making good on implicit and explicit guarantees typically ran between 1 and 10 percent of GDP. The size of these bailouts establishes that, at least in crisis countries, banks managed to put large bets on the table and were able to shift a substantial amount of the downside of these bets to taxpayers. In many cases, authorities were eventually blamed for the size of the bills taxpayers were asked to pay. Officials were seen to have shirked their duties to expose and stop loss causing patterns of credit allocation and to have compounded the damage from credit losses by not addressing individual bank insolvencies until their situation had deteriorated disastrously.

In times of financial turmoil, weaknesses in ethical controls on the job performance of government regulators responsible for protecting the safety and soundness of financial institutions encourage regulatory forbearance. The high cost of modern crises indicates how far the risk taking preferences of officials responsible for managing taxpayer exposures to risk from the safety net diverge from those of large denomination creditors in private financial markets. Although institutional mechanisms

for financing safety net loans and guarantees differ across countries, poor information flows and incentive conflict in government policymaking complicate the treatment of financial crises everywhere.

Special problems of accountability and incentive conflict arise in managing cross-country risk exposures. Financial regulators subject foreign institutions and the foreign operations of domestic institutions to patterns of regulation that differ in two important ways from those that apply to strictly domestic operations. First, most developed countries are willing to allow their domestic institutions to book a wider range of risks in foreign subsidiaries than they are prepared to tolerate in home country offices. This is because relationships with internationally active customers are a geographically footloose part of the banking business and because government officials don't expect to confront responsibility for foreign losses in domestic political arenas. This creates incentives for offshore institutions to "overlend" into foreign markets. Second, though weakened by technological change and outside political pressure, obstacles to the entry of foreign financial firms in most banking markets still exist.

V. Globalization and Securitization of Funding Opportunities

Contemporary theories of industrial organization seek to explain how a product's market structure evolves through time to permit *efficient firms* and *efficient contracting instruments* to reshape or displace relatively less efficient alternatives. The force of these theories is particularly easy to grasp when we focus on hypothetical markets that meet a set of ideal conditions that Baumol, Panzar, and Willig (1986) call "perfect contestability."

A market is perfectly contestable when entry and exit costs are each zero *and* incumbent firms exit quickly whenever they find themselves faced with negative profits. In perfectly contestable markets, low cost firms readily displace high cost firms and incumbent competitors are prevented from setting monopoly prices by the threat of hit and run entry by other equally efficient firms. Financial markets are never perfectly contestable. Customers face switching costs and would-be entrants must adapt their systems before they can safely expand their customer base. Incumbents cannot easily abandon the pipeline of advance commitments they have promised to customers and the

regulatory foundations on which inherently nontransparent financial markets must be built are inescapably burdened with entry and exit costs.

During the last thirty years, particularly in wholesale funding markets, technological change has steadily lowered entry costs for foreign and nontraditional competitors. Most of these firms undertook banking activities in innovative ways, making creative use of substitute products, substitute organizational forms, and substitute offshore locations. In some countries, the viability of a new entrant's business plan was temporarily enhanced by longstanding restrictions on how banks could compete domestically.

Chief among the innovative methods of doing business was structured securitization. With help from appraisers, accountants, investment banks, credit rating organizations, mortgage insurers, and hedge funds, lenders sliced and securitized titles to the cash flows from their loans in ways that assigned the slicing (or "tranching"), reslicing, and servicing of flows of interest and principal to separately capitalized conduit vehicles. By placing important tranches of their loans through and with foreign and nonbank firms, banks permanently layered the institutional character and broadened the geographic span of their funding arrangements.

Innovative funding technologies benefited borrowers by integrating loan pricing within and across countries. However, outsourcing the funding side of a bank's balance sheet weakened its staff members' due diligence by severing the link between the income a lender could make from originating securitizable loans and the quality of its system for underwriting the loans it originated. Investors in a securitized pool of loans tended not to rely on either the lender's or their own due diligence. Instead, they expected a credit rating organization to assess properly the risks in the positions they were offered and they expected investment banks and mortgage insurers to make sure that the returns offered would respond appropriately to differences in loan quality. Unfortunately, the naïveté with which these expectations were held was undermined by the lack of agents' incentives to meet them. Compensation for tranching, rating, and pricing individual securities was collected as soon as the securities were floated, with little exposure to *ex post* blowback for personnel that might later be shown to have made a serious rating or pricing mistake. With supervisors closing their eyes to the weakening of agents'

contractual incentives to execute faithfully their duties of loyalty, competence and care, few investors had reason to doubt that they were purchasing titles to well-rated and well-priced securities.

Securitization also brought firms that were supervised in different regulatory cultures and jurisdictions into sharper competition with one another. This mutual invasion of traditional markets by institutions headquartered in different regulatory cultures put pressure on particular regulatory enterprises (especially at enterprises whose leaders' remaining terms in office promised to be short) to relax vigilance as a way of defending their bureaucratic turf. In retrospect, it is clear that banking supervisors did this by regularizing and legitimating cutting edge ways to hide or transfer risk without fully exploring the threats that nominally uninsured shadow affiliates and complex new contracting structures imposed on individual country safety nets.

Whenever a regulator acquiesced in innovative entry by a foreign or nontraditional firm, it had to relax restraints that might make it hard for its traditional clients to compete with the new entrants. Institutions pressed politicians to make this happen sooner rather than later. Authorities' positive response to this competitive pressure has been labeled *financial deregulation*, but our ethical perspective makes it clear that the response is better described as *desupervision*. In most countries, defects in accountability led supervisors of commercial and investment banks to assess the risks of innovative instruments of risk transfer with less watchfulness than these instruments deserved. With respect to structured securitizations, the SEC, banking supervisors, and mortgage insurance firms outsourced their duty of vision to appraisers, accountants, and credit rating organizations without adequately bonding the obligations they were asking these firms to undertake. Authorities did this despite these firms' obvious conflicts in goals and outsized delays in anticipating problems or downgrading distressed securities in past downturns (Portes, 2008).

The contestability of financial markets is greatly reduced by the ability of supervisory entities to bill government safety nets for the losses their heedlessness might engender. In crises, safety net subsidies disadvantage less subsidized competitors and unreasonably sustain the operations of decapitalized banks. The contestable markets' portrayal of market structure evolution makes it clear that, in most countries, deregulation

focused on entry and that supervisory efforts to resist the exit of domestically important commercial and investment banks attenuated the benefits to society that entry relaxation would otherwise have produced. Financial crises teach foreign and nontraditional competitors the need to allow for supervision generated exit resistance. By standing ready to absorb the losses of spectacularly unprofitable clients, a regulator (especially a central bank) can prevent low cost entrants from earning the profits needed to justify hit and run entry.

VI. Dialectics of a Subsidy Induced Crisis

For any policymaker, a crisis may be described as a time of upheaval that generates strong pressure for decisive changes in policy strategy. Exhibit Two portrays a subsidy induced financial crisis as an evolutionary process that is driven in Hegelian fashion by dialectical collisions of irreconcilable market and regulatory adjustments.

EXHIBIT TWO: DIALECTICS OF A SUBSIDY INDUCED CRISIS

THESIS: UNSUSTAINABLE POLICY MIX:

- Expansionary monetary policy and loss causing credit allocation scheme (“politically sabotaged loans”) vs. adverse effects of desupervising risks on the costs of providing safety net support for loss making institutions.

ANTITHESIS: SKEPTICAL INVESTORS AND DEPOSITORS TEST GOVERNMENTS’ ABILITY TO MANAGE THE EXPANDING COSTS OF NATIONAL SAFETY NETS:

- In a financial crisis, market tests consist of silent runs (symptomized by a generalized flight to quality and simplicity);
- The probability of a deepening crisis rises the longer authorities refuse to contain damage and continue to help zombie institutions to stay in play.

SYNTHESIS: REFORM OCCURS WHEN AUTHORITIES CAN NO LONGER QUELL MARKET DOUBTS ABOUT THEIR ABILITY TO SUSTAIN THE CONTRADICTIONARY POLICY MIX:

- Credit allocation scheme unravels;
- Size and incidence of the bill for sustaining decapitalized institutions become manifest.

For any regulated institution, change—not rest—represents the path of profit making equilibrium. The Hegelian model of regulation assumes that the conflict between regulated parties and their regulators can never be completely eliminated. The contradictory forces at work in each round of adjustments are labeled the “thesis” and the “antithesis.” Every sequence of adjustment and response produces a temporary “synthesis” that serves in turn as the “thesis” for a new round of action and response.

In the U.S., policies designed to promote homeownership encouraged borrowers and lenders alike to operate with a “perilously high degree of leverage” (Shadow Financial Regulatory Committee, 2008). For borrowers, the value of the subsidies that they could derive both from tax deductions for mortgage interest and from federal programs supporting mortgage credit increased with the amount they borrowed. For lenders, federal programs supported the securitization of home mortgages by offering cheap or even unpriced guarantees and by making it possible for banks to avoid capital requirements on mortgages that they chose to securitize. The SEC and bank supervisors did not require institutions either to estimate or to hold capital against the implicit obligations that structured securitization vehicles passed back to their sponsor’s net worth. The high degree of leverage on borrower positions meant that, if and when they suffered substantial adverse shocks to their cash flow (from mortgage rate resets in particular), marginal borrowers would be unable to service their obligations. Similarly, if housing prices declined by more than a few percent, such borrowers might have an incentive to default. Once a sharp increase in delinquencies and foreclosures by subprime borrowers occurred, savvy investors reassessed the value of securitized mortgage pools and began to cut back their positions in debt backed by mortgage instruments. Their efforts to reduce their particular exposures to default lowered the price of mortgage backed securities and gradually alerted other investors to the scope of the problem.

Once the ongoing revaluation wiped out the equity of securitization conduits, reputational concerns persuaded many commercial and investment bank sponsors to move conduit losses back to their own balance sheets. Besides absorbing the bill for conduit losses, institutions that had been heavily involved in originating mortgages for sale to conduits were stuck with losses on pipelines of ongoing mortgage commitments

that they could no longer profitably securitize. Inevitably, silent runs on these firms tested the ability of safety net officials to manage a spreading crisis and the willingness of taxpayers living on “Main Street” to pay the bill for Wall Street excesses.

The appropriate policy response to crisis pressures depends on the nature of the policy contradictions that occasioned the crisis. A perennial issue is to assess the potential insolvency of troubled institutions and to determine how rapidly their net worth is being undermined by falling prices on crisis creating loans. Asset price meltdowns are most likely to occur when incentives for overlending by domestic and offshore institutions confront a national policy regime that offers incentives for overborrowing at domestic households and firms. In such cases, downward pressure on asset prices is apt to generate insolvency and a crisis intensifying run from claims issued by the overleveraged borrowers and lenders.

It is superficial to conceive of the silent runs that triggered this and other crises as manifesting an underprovision of aggregate “liquidity.” By the time a crisis emerges, the central bank will have, for many years, accommodated overspending in the favored sector and also financed a long run of current account deficits. A central bank can prolong a payments deficit by letting the country’s currency decline and by drawing down the country’s foreign exchange reserves and foreign lines of credit. In any consumption driven currency devaluation, the need to rebuild the central banks’ currency reserves may or may not be urgent. If it seems urgent, authorities can shrink the current account deficit in two complementary ways: (1) by allowing the exchange rate to decline even further and (2) by tightening their mix of fiscal and monetary policies.

But when a money center country is experiencing a crisis, this prescription is unattractive. These policies would impose a sizeable opportunity loss on foreign and domestic holders of the country’s financial assets. The currency adjustment half of this strategy would put inflationary pressure on domestic prices. To pile on the tight money half of the prescription would induce a decline in aggregate economic demand, whose effects would reduce the real value of a country’s financial assets in general and the net worth of its financial system in particular. This would further undermine asset values by raising prospective rates of default and delinquency on troubled assets. In crisis

circumstances, it is politically impossible for authorities to ignore the effects that macroeconomic policy adjustments would have on safety net loss exposures.

In a financial center country, authorities face a three-way policy dilemma about how to control a silent run:

1. Choice One: try to finance the runs with minimal adjustment in the loss causing parts of the policy mix. We may characterize this strategy as disinformatinal. Authorities may temporarily nationalize one or more insolvent institutions and deny that many other zombies exist. They may or may not soften the potential decline in their exchange rate by drawing down reserves or borrowing from private and official foreign sources.
2. Choice Two: rebalance the policy mix to make it more sustainable, but only with respect to a narrowly defined window of time (e.g., until after the next election). Authorities may resolve or strengthen some of the weakest institutions and may slow monetary growth. We describe this strategy as “partial recapitalization.”
3. Choice Three (unlikely to be chosen unless prior efforts to use one or both of the other strategies have failed disastrously): confront and eliminate the most obvious contradictions in the policy mix. The new policy regime should aim for a full cleanup of insolvent institutions and to establish a more incentive compatible supervisory system going forward.

Leaving financial institution and corporate insolvencies unresolved fosters further malinvestment and enhances the likelihood that a still deeper crisis will emerge down the line. Still, it is dangerous to acknowledge and resolve corporate and financial institution insolvencies in the midst of a national recession. In crisis circumstances, politicians are strongly tempted to reflate demand and to strengthen the credibility of safety net guarantees, without doing much to resolve the incentive distortions that widespread insolvency creates.

VII. The Role of Regulatory Competition in Financial Crises

Around the world, financial institutions and markets are supported by regulatory systems that show numerous country specific features (Wilson, 1986; Dermine, 2003;

Barth, *et al*, 2006). Differences in patterns of financial regulation address differences that exist in the various economic, political, and bureaucratic deficiencies and inefficiencies that each country's regulatory system is overtly or covertly expected to correct (Garcia and Nieto, 2006; Herring and Schuermann, 2006).

However, the survival of differences in regulatory patterns is limited by the tendency of funding and loan making opportunities to flow to markets and institutions that offer their customers the best deal. The extent to which net regulatory burdens on financial markets and institutions differ across industry segments and countries is narrowed by the regulatory arbitrage that interjurisdictional deal flows can effect. When and as technological change in information processing and telecommunications lowers the cost of transacting with differently supervised and foreign entities, adverse flows of capital and financial deal making help to persuade a nation's authorities to lower the net burdens that their regulatory framework imposes on the savers and investors that book deals in its financial markets.

Contradictory policies misallocate capital in the household, financial, corporate, and government planning sectors. The result is that asset values and financial institution net worth eventually have to be written down. Had asset values either been supported by a sustainable expansion in productive capacity or been written down promptly when and as unfavorable information surfaced, silent runs would not have become large enough to test the safety nets of financial center countries.

The seeds of the 2007-2008 securitization crisis were sown over many decades. They did not flower into a crisis until persistent doubts began to surface about authorities' willingness and ability to measure and absorb the losses and loss exposures that were suddenly seen to have decapitalized the financial system. Uncertainty of loss measurement plays an important part in sustaining crisis pressures once they emerge. As in the 1980s S&L mess, resolution costs are going to prove much larger than accounting reports of loss making institutions and safety net managers intimate.

What the press describes as a "financial crisis" may be more accurately described as a scramble for help that is generated by the continuing efforts of loss making institutions to force the rest of society to accept responsibility for the bills they owe their creditors for making bad loans. In U.S. mortgage markets, longstanding systems for

subsidizing poorly underwritten loans to builders and overleveraged households impose unbooked losses initially on financial institutions, but also and ultimately on supporting national safety nets.

In recent years, financial and currency crises have rolled around the world for three reasons. First, advances in information and communications technology have simultaneously globalized financial markets and markets for government guarantees. Second, the globalization of markets for financial and guarantee services has made it less costly for domestic corporations and wealthy investors to mount silent runs on zombie institution. Third, appraisers, accountants, lenders, securitizers, credit rating organizations, and supervisory authorities are not compensated in ways that make them accountable for the slow developing but inevitable losses that shortcutting due diligence engenders.

In 1997-1998, crises in Korea, Indonesia, Malaysia, the Philippines, and Thailand were hastened by the technologically driven absorption of these countries into an international market for loanable funds that allowed large depositors to protect themselves against the burdens of inefficient or discriminatory patterns of national regulation. Globalization put the costs and benefits of financial regulation in these countries into closer competition with the regulatory systems of offshore financial centers.

Offshore banking competition shortened in two ways the crisis gestation period featured in traditional crisis models (such as Krugman, 1979). First, even limited entry by foreign firms expanded the stock of well-priced domestically available substitutes for deposits that local citizens had previously held in host country banks. This lowered the cost to Asian depositors of participating in a silent run on their domestic banks. Second, the relative safety of foreign bank deposit substitutes demonstrated the greater reliability of the performance guarantees written for each offshore entrant by the regulatory systems of its homeland.

Each crisis constitutes an exit cost that society incurs to shrink the domain of a high cost or discriminatory regulator. Subsidy induced crises are triggered by efforts to avoid the inefficiencies and inequities that political maneuvering as interjected into particular markets for regulatory services. Squeezing the equilibrium rents that

shortsighted or corruptible officials can extract and distribute to their supporters disciplines an incumbent regulator, but only at the margin. For example, one way to improve supervisory monitoring in the U.S. would be to require the Federal Deposit Insurance Corporation to issue debt or derivative securities whose value would be contingent on the health of the deposit insurance fund (Wall, 1997). Deterioration in the value of these instruments would signal an increase in the risk that the Treasury might be called upon to supplement the fund. However, this signal would not have addressed the costs that the Treasury and the Fed incurred in rescuing Bear Stearns, Fannie, and Freddie.

To improve public service contracting in the longer run will require authorities to expose themselves to blowback for the delayed effects of policy mistakes. This can be done at the managerial level by instituting an appropriate performance-based scheme of deferred compensation. Exploitive regulation drives sophisticated depositors, unsubsidized borrowers, and other financial institution stakeholders to book at least some of their business elsewhere: either abroad or in informal or differently regulated domestic markets. Such regulatory arbitrage limits the extent to which politicians can promote a distribution of regulatory burdens that cynically narrows opportunities for important sectors of a national economy to accumulate and manage their wealth.

The normative goal of financial reform should be to induce nondiscriminatory and efficient patterns of regulation and supervision. Regulators should be made accountable not just for producing a stable financial economy, but for providing this stability fairly and at minimum long run cost to society. In practice, this means establishing contractual incentives that would lead authorities to follow “market mimicking” standards of supervisory performance. In the absence of explicit or implicit government guarantees, markets would insist that any bank that experiences a spate of opportunity cost losses do one or more of three things: shrink, raise more equity capital, or pay higher interest rates for its debt. The public policy problem is to design employment contracts that would make it in supervisors’ self-interest to invoke market mimicking disciplines when and as a country’s important institutions weaken.

Although officials understand that strengthening financial supervision is part of crisis resolution, they seem reluctant to identify the behavioral norms and incentive

structures that made a crisis country's supervision weak in the first place or to recommend public service contracting and reporting reforms that would be strong enough to make tougher supervision serve an incentive conflicted regulator's self-interest.

For any regime, the size of tolerable deviations from a fair and efficient distribution of net regulatory burdens increases with the opportunity costs its citizens face in engaging in capital flight. In turn, the benefits and costs of capital flight evolve with information technology, the volatility of the real economy, and the fluidity of the political environment. The information revolution that is underway in finance today makes it shortsighted and inequitable to adopt credit allocation schemes that inexorably eat away at the capital of a country's commercial and investment banks and that require taxpayers to subsidize weak institutions and uneconomic patterns of real investment. Credit rating organizations and the Basel Committee on Banking Supervision would be well-advised to stop using models that presume that asset risks are relatively stationary over time. They should focus instead on designing and using information revealing credit derivatives whose market prices could more reliably track the odds that a wave of defaults threatens individual countries or industries (Kane, 2003).

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