ARCHITECTURE OF SUPRA-GOVERNMENTAL INTERNATIONAL FINANCIAL REGULATION

Edward J. Kane
Boston College
Finance Department
Chestnut Hill, MA 02467
(617) 552-3986
edward.kane@bc.edu

ARCHITECTURE OF SUPRA-GOVERNMENTAL INTERNATIONAL FINANCIAL REGULATION

ABSTRACT

Supra-governmental regulatory institutions (SNR) resemble bridges that span gaps in the jurisdiction of individual-country regulators. The most important bridges address cross-country problems of crisis management and development finance not just as forums, but as portfolio lenders as well.

At portfolio SNRs, traditional cash-flow accounting supports incentives to overlend to countries undergoing crisis and to direct insufficient development funds to the world's neediest countries. Better performance requires not so much a structural streamlining of SNR missions as a realignment of the bureaucratic incentive systems under which SNR managers function. To accomplish this, reformers must focus on identifying economically meaningful indexes of SNR achievement and experimenting with programs that link deferred managerial compensation at SNRs to sustained long-period movements in the selected indexes.

ARCHITECTURE OF SUPRA-GOVERNMENTAL INTERNATIONAL FINANCIAL REGULATION

Employing the word "architecture" to describe cross-border regulatory arrangements erects a metaphor of layered entailments. These entailments link at least four ideas: a specific set of "structures" (i.e., of things that are built); the process of styling the structures to serve one or more particular functions; the process of creating actual structures; and the job of maintaining and adaptively renovating the structures over time.

This paper begins by describing the particular supra-governmental institutional structures whose architecture is examined here and likening them to bridges intended to span gaps in the jurisdiction of financial regulators and supervisors in different nations. The paper focuses on the dysfunctional incentives that are communicated to bridge managers by failing to establish an adequate program of regular bridge inspection and by burdening bridge operators with an array of nonoperational developmental and stabilization goals. The resulting "architecture of incentive conflict" impairs performance, delays needed maintenance, and distorts renovation in ways that limit the ability of the bridges to carry regulatory and supervisory traffic fairly and efficiently. If world leaders genuinely want to coordinate cross-border traffic flows more effectively, they must focus on restyling not just institutional structures, but more importantly the performance-measurement and reward systems under which national and supra-national financial regulators operate.

1. Supra-Governmental Institutions that Affect the Worldwide Flow of International Finance

Financial traffic may be defined as trade in titles to money, credit, and capital. Metaphorically, cross-border trade in these titles is bridged by supra-governmental international

financial organizations. These bridging organizations may be divided into forums established primarily to debate, evaluate, and secure agreement on rules and standards for routing cross-border traffic and portfolio institutions that go on to book financial claims as well.

The principal world-spanning portfolio institutions are those established in 1944 at Bretton Woods in the course of winding up World War II: the International Monetary Fund (IMF) and the World Bank. At least five other worldwide coordinating forums deserve mention here: the World Trade Organization (WTO), the United Nations Conference on Trade and Development (UNCTAD), the Bank for International Settlement (BIS), the International Organization of Securities Commissions (IOSCO), and the International Association of Insurance Supervisors (IAIS).

1.1 Forums for Negotiation

We cite the WTO and UNCTAD because they are companion UN-based institutions to the IMF and World Bank. Their efforts to promote open and nondiscriminatory trade flows complicate the work of the other forums and the Bretton Woods twins in important ways. The first nexus flows from the codetermination of trade flows and capital movements. In every country's balance of payments, most individual trade flows either induce or are induced by a corresponding capital flow. The second nexus is that government officials in major capitalist countries ask all seven institutions to find ways to link freer flows of trade and financial services with putative efforts to reduce poverty in developing and transitional countries. For example, even though debates at recent meetings of the WTO and UNCTAD focused on proposals to reduce divergences in environmental and labor standards, they raised the prospect of providing international debt relief as a quid pro quo for concessions on these standards from heavily indebted developing countries.

The BIS, IOSCO, and IAIS provide forums for debating and coordinating country-level "supe and reg" activities for firms chartered respectively as banks, securities firms, and insurance companies. The BIS is by far the oldest and most important of these organizations. Moreover, its importance is likely to increase as more and more financial business comes to be booked in diversified multinational financial conglomerates.

Legally and logically, the BIS occupies a position that lies between a pure debating society and a full-fledged portfolio institution. Its contemporary mission is to coordinate the international financial policies and strategies for regulating and supervising banks adopted by member countries. However, it was chartered in 1930 by Switzerland as a limited-purpose bank. Its founding members were Belgium, France, Germany, Great Britain, Italy, Japan, and the United States (Schloss, 1970). The BIS holds assets, extends credit facilities to members and emerging-market countries when they are in trouble, and serves as a clearinghouse for financial information assembled by central banks in different countries (Fratianni and Pattison, 1999).

Although conceived primarily as a mechanism for collecting and recycling German war reparations, the BIS was involved from the outset in coordinating central-bank strategies, clearing international payments, and promoting economic development (Fratianni and Pattison, pp. 8-9). Its current "business plan" may be described as determining best-practice standards for preventing and resolving financial crises in individual countries and creating incentives for these standards to be adopted by member states, nonmember states, and other supra-national financial institutions. In terms of the bridge metaphor, the BIS is best regarded as part of the system for adaptively maintaining and redesigning substructures and lane-control systems over time.

Over the BIS's lifetime, the need for major renovation has been considerable. The international payments system has evolved from a network of fixed exchange rates backed up by

gold or gold exchange and widespread restrictions on the international movement of capital to the system of more or less freely floating exchange rates and increasing capital mobility that has held sway since 1973. Its principal accomplishment has been to win agreement on a common, but flawed approach to controlling risk-taking by regulating the capital positions of large internationally active banks chartered in different countries. This agreement on risk-based capital standards (which has been adopted by over 100 countries) evolved and is still evolving fitfully against a backdrop of rapid technological change and unprecedented growth in the geographic reach, asset size, product lines, and political clout of internationally active banks. Adaptations were further spurred by WTO efforts to reduce entry barriers for foreign financial-services firms and by competition from offshore financial regulatory havens in such places as Aruba, Bahrain, the Bahamas, the Caymans, Vanuatu, and (arguably) Luxembourg. Particular reforms were made especially urgent by evidence of unsustainable gaps in national and cross-national supervision and regulation that surfaced in the wake of each of a series of notable bank failures. The work of the BIS is important because incentive conflicts in global competition for regulatory jurisdiction impede the straightforward adoption and enforcement of best-practices regulatory and supervisory standards domestically and because the agreements the BIS helps to negotiate could be used as devices for securing cartel rents for regulators and financial-services firms in particular countries.

IOSCO and the IAIS are much newer institutions than the BIS. IOSCO dates from the mid-1970s and IAIS was conceived as recently as 1992. By 1998, IOSCO reported 158 member countries and IAIS had enrolled about two-thirds of that number. With the growing importance of financial conglomerates, competition and cooperation among the three organizations has expanded over time. The latest vehicles are a tripartite Joint Forum on Financial Conglomerates

established in 1996 and a more-inclusive Financial Stability Forum in 1999 which includes representatives from the IMF, the World Bank, and the Organization for Economic Development.

1.2 Bretton Woods Institutions

The IMF and the World Bank compete with and supplement financial-sector and country regulators in collecting data and in designing and promulgating standards for regulating and supervising banks. As lenders, these institutions compete with and supplement the activities of private lenders[1]. Their interest in standard-setting grows naturally out of their concern for assuring that the countries they finance use funds well and keep themselves in a position to service their debts in timely fashion.

The IMF began its career as an arbiter of occasional exchange-rate realignments and a revolving fund intended to provide liquidity to smooth temporary balance-of-payments adjustment problems faced by deficit countries in a fixed-rate system. With the spread of fluctuating exchange rates, the IMF turned to other tasks. Linking its original mandate to the desirability of crisis prevention and alleviation, it evolved into an overseer of financial-crisis management in the developing world, a de facto long-term post-crisis lender to troubled countries, and a de jure long-term lender to formerly Communist countries (IFIAC, 2000, p. 17-19). Though well-intended, these programs of crisis and transition lending have fostered an expectation of IMF bailouts that makes bank and countries reluctant to write down the debts of insolvent foreign borrowers when and as they become impaired (IFIAC, 2000, p. 23).

[1] Of course, as mechanisms for delivering capital and debt relief to developing countries, these institutions simultaneously compete with and supplement the work of an assortment of regional development banks (For details see IFIAC, 2000).

In principle, every lender must seek to control its borrowers' incentives to default. To support its lending activities, the IMF maintains a substantial economic database and monitors the policy behavior of actual and potential borrowing countries. The IMF uses the term "conditionality" to describe its practice of covenanting tightly focused policy advice as a trigger for scheduling multistaged loan disbursements.

Some governments value IMF conditionality for the blame-shifting possibilities it conveys. IMF restraints create an opportunity for crisis-country politicians to scapegoat IMF intervention for the unpopular and painful macroeconomic adjustments that efficient crisis management dictates that they introduce in any case. However, in practice, the terms of IMF conditionality have been unevenly conceived and enforced, and have had many unintended adverse incentive and distributional effects on borrowing countries (IFIAC, 2000, pp. 19-25). The strategy's most consistent effects have been to stagger the provision of liquid funds to crisis countries and to encourage sectoral and macroeconomic strategies of policy adjustment that disproportionately penalize workers and small businesses in recipient countries.

The ad hoc nature of IMF crisis assistance is mirrored in the agency's uninformative accounting for the effectiveness of its activities to the press and public of member nations. That a quasi-public institution could so dramatically transform its operative business plan without calculating the opportunity costs and benefits of its program for its sponsoring governments defies time-honored principles of effective corporate governance.

The World Bank (and various regional development banks) were established to make long-term loans on subsidized terms to deserving countries during the immediate post World War II era, a time when few developing countries had reasonable access to private capital markets. With improvements in information and contracting technology, the World Bank found

itself competing increasingly with private-market lenders and other supra-national entities. Responding much as the IMF leadership did, World Bank officials reinterpreted their formal mission to rationalize an involvement in the tasks of crisis prevention and management.

Making or enhancing worthy long-term project loans shades easily into making loans that build or keep alive domestic institutions that can promise (however weakly) to maintain or expand the internal flow of credit within a worthy country. Although "worthiness" has a political as well as an economic dimension, credit-system support translates into a World Bank business plan that adds to its mission of development finance the task of making or brokering emergency loans and policy advice to client countries who are either undergoing or palpably threatened by an open financial crisis. Although the World Bank does not account for its costs and benefits any more informatively than the IMF, its longer-term lending horizon appears to have extended the focus of its policy advice. The World Bank makes less effort than the IMF to dictate a debtor country's fiscal and monetary policies and appears to put more effort into persuading countries to fashion political and juridical systems that can credibly promise host-country enforcement of the cash-flow and control rights of foreign creditors and shareholders.

2. Understanding the Architecture of Supra-National Regulatory Incentives

Etymologically, the "archi" in architecture is a combining form that conveys the idea of a "principal" whose task is to direct or supervise "agent" builders ("tektons"). Financial contracting theory emphasizes that every principal must find ways to control opportunistic behavior by its agents (Jensen and Meckling, 1976; Diamond, 1984).

2.1 Viewing Regulatees as Imperfectly Controlled Agents for Regulators

To set bounds on the behavior of global financial firms requires regulatory officials to focus on the quality of their information flows and deal-making activity. To establish even limited control over a universe of individual regulatees, individual-country financial regulators have to establish and enforce protocols for verification, disclosure, truth-telling, promise-making, promise-keeping, and conciliation.

The principal tasks of individual-country financial regulators are:

(1) to limit risks of fraud, discrimination and contract nonperformance in financial transactions;

(2) to operate a safety net designed to minimize risks of fire-sale losses associated with financial-institution insolvencies and unjustified customer runs; and

(3) to operate the fraud controls and safety net honorably and at minimum opportunity cost to taxpayers.

Whether produced privately or publicly, regulatory services offer benefits in confidence and convenience to regulated firms and to their customers. Minimizing the opportunity costs of producing regulatory services entails marginal-cost pricing for all services performed specifically for particular constituencies and balancing increases in uncompensated current expenditures on enforcement and compliance against the decreases such expenditures might induce in the projected costs of future financial messes and crises. For government regulators, the optimal balance may be defined as the equilibrium tradeoff that would obtain if it were possible to align the incentives of regulators perfectly with those of taxpayers.

2.2 Viewing Supra-Governmental Regulatory Institutions as Clubs

The principal-agent relationship embodied in the supra-national regulatory institutions (SNRs) we have identified is that of a club rather than that of a public corporation. A club is an organization in which members voluntarily authorize a set of officials to produce and distribute services that are shared in some way and to assess the members for the club's costs (Buchanan, 1965). To control agency costs, a club must supplement its servicing arm with reporting and governance systems through which club members can observe and discipline the production, financing, and distribution decisions that club officials make.

From this perspective, each SNR becomes more precisely a "club that services other clubs." Its membership consists of the officials that it enrolls as delegates from selected national-level clubs. In each SNR, member-country governments implicitly or explicitly authorize SNR officials to produce global regulatory coordination, crisis-management, and redistributive services. SNR leaders decide what mix of services is actually produced and how to distribute the costs and benefits of their services across the membership.

Shares in the IMF and World Bank are owned by member governments. Because votes are allocated in proportion to a country's shareholdings, the U.S. and other high-income countries can control most important decisions (Kreuger, 1997, p. 6). Kho and Stulz (1999) develop event-study evidence that, during the 1997-98 Asian crisis, U.S. and Japanese banks frequently experienced positive abnormal returns when IMF programs for lending to crisis countries were announced.

For a club to be economically efficient, the transaction costs of determining and producing appropriate coordination, redistribution, and crisis-management services in other ways must exceed the costs the club generates (Coase, 1937; Ruys, van den Brink, and Semenov,

2000). For members to exert appropriate contractual discipline on SNR officials, the distribution of the costs and benefits of club services must be observable at least privately to designated country officials. However, the monitoring incentives of individual-country delegates are distorted both by the uneven allocation of voting power and by the fact that delegates are themselves officials of lower-level clubs, whose membership consists of financial institutions and imperfectly informed voter-taxpayers. For taxpayer-voters in the national-level clubs to exert appropriate contractual discipline on country officials, the costs and benefits of the supra-nationally augmented services of the country-level clubs must be publicly observable.

In choosing and operating a framework of rules and bureaucratic enforcement, the CEO of any regulatory enterprise faces three potential incentive conflicts. First, society usually assigns more than one mission to each regulatory enterprise. These separate missions may and sometimes do conflict with one another, allowing regulators to choose which ones to prioritize (Wall and Eisenbeis, 1999). Second, parties who might be harmed by a regulator's conscientious efforts to fulfill its social mission may be expected to circumvent risk controls and to find ways to retaliate against the personal and bureaucratic interests of any CEO who resists these counter-strategies (Kane, 1997). Especially when the true nature of a problem is poorly understood, a regulator's immediate personal and bureaucratic interests may be better served by a strategy of regulatory forbearance and coverup. Third, among top regulators job turnover is high. The brevity of a CEO's expected term of office implies a decisionmaking horizon that would on average overvalue the near-term effects of policy strategies and may do so ever more heavily the

longer a CEO stays in office. This means that pressures for shortsighted policies cannot be neutralized merely by giving top office holders the option of serving a lengthy term in office. [2]

Corporate-governance theory analyzes CEO incentive conflicts in a principal-agent framework. At SNRs, the ultimate principals are voter-taxpayers, for whom private and governmental regulatory agents act as fiduciaries or "public stewards" (Bear and Maldonado-Bear, 1993). In common-law countries, fiduciaries owe their principals duties of competence, loyalty, and care. These ethical duties oblige top regulators to exercise a high degree of vigilance and to strive energetically and fairly to protect their principals' interests. However, in most countries, coordination costs and civil law effectively insulate the CEOs of government regulatory enterprises from the threat of taxpayer lawsuits for engaging in negligent, deceptive, or manipulative behavior that arguably breaches these duties.

As we emphasize in Section III, the employment contracts under which individual-country regulators function should be designed to minimize the costs generated by their agency relationship (Jensen and Meckling, 1976). An ideal contract would contain provisions measuring, verifying, and rewarding performance in ways that would render regulators fully accountable to taxpayers for maximizing the net social benefits their decisions produce.

Defects in the chain of accountability make it possible for national and supra-national club officials to carve out private benefits from the operations of supra-national clubs. For officials to manage the national and supra-governmental clubs efficiently, they must calculate internally the benefits (B) and costs (C) of club services on an opportunity-cost basis. However, they cannot maximize their carveout of private benefits unless public reports on club operations

[2] For example, in the U.S., Governors of the Federal Reserve System are appointed to staggered 14-year terms. Nevertheless, it is rare for Governors to serve out a whole term. In fact, those whose terms actually expire have often been appointed to serve only a fractional term.

are framed in economically less transparent ways that reduce the efficiency and fairness of club decisionmaking.

Principal-agent theory explains why every SNR and national financial regulator tends to oppose the use of opportunity-cost concepts to measure its performance. In particular, IFIAC (2000, p. 38) emphasizes that the cash-flow principles of cost accounting portfolio SNRs use to value the services embodied in their assets and liabilities ignore the risks that member governments bear and the value of the alternative uses that exist both for the funds the SNRs employ and for the additional funds they are authorized to draw upon on an emergency basis. The result is that the distribution of the economic benefits and costs generated by emergency and development loans is grossly misrepresented in club budgets. These mismeasured budgets foster bad incentives all around.

Within each portfolio SNR, cash-flow accounting supports bureaucratic incentives to misallocate credit. SNR officials are encouraged to overlend to countries undergoing crisis. This disposition to overlending tends to crowd out private-sector loans and the better-disciplined market monitoring that private funding carries with it (Schwartz, 1998). SNR personnel are at the same time encouraged to make development loans rather than grants and to direct the loans disproportionately toward the more-creditworthy developing countries (IFIAC, 2000).

For countries undergoing a financial crisis, IMF conditionality often encourages already-myopic governments to act even more short-sightedly. IMF officials seem all too willing to encourage crisis governments to please rich households and large firms by guaranteeing the debt of insolvent banks rather than allocating imbedded losses promptly by realistically renegotiating bank and customer claims and by adopting macroeconomic programs that place the burden of adjustment on the household and small-enterprise sectors.

IMF officials understand that to the extent that they foster expectations of future debt relief, policies that alleviate an immediate crisis threaten to increase the frequency and depth of future crises. This means that strengthening future bank supervision is a critical part of crisis resolution. Unfortunately, the IMF's own political vulnerability supports a reluctance to publicize the particular incentive structures that made a crisis country's supervision weak in the first place. In a crisis atmosphere, it is apt to seem politically destabilizing for the IMF to stress the need for public-service contracting reforms and information-disclosure regimes for banks and regulators that would be strong enough to make tougher supervision in an incentive-conflicted crisis-country regulator's self-interest.

3. Rearchitecting Regulatory Institutions: Structures vs. Incentives

In intervening strongly in individual-country financial crises, the IMF and World Bank have assigned themselves featured roles in the production of cross-border regulatory and supervisory services. Putting aside the issue of whether this de facto extension of their lending authority oversteps the bounds of these institutions' de jure mandates, the IFIAC Report recommends that a carefully restyled IMF specialize in a crisis-management role, and asks a restyled World Bank to specialize in poverty-reducing activities.

The IFIAC Report (2000) recommends converting the World Bank into a World Development Agency and presents detailed blueprints for how the revamped agency should measure and report on its performance. Similarly, the Report (2000, pp. 24 and 31) stresses that accounting transparency should be increased in IMF programs, but it stops short of specifying operational principles for performance measurement.

The specialization of responsibility that IFIAC would assign to the World Bank and the IMF conforms to the core principles of banking supervision that are promulgated in BIS

documents. BIS officials espouse the optimistic hypothesis that clear objectives, managerial goodwill, and operational independence assure good regulatory outcomes.

The IFIAC's structural and accounting reforms would clearly enhance the performance of the IMF and World Bank. However, the plan forgoes benefits that might be achieved through regulatory competition and does not directly address the incentive conflicts inherent in the governance of either institution. A lifetime theme in Anna Schwartz's research has been to document that, especially in crisis situations, governmental and supra-national structures that merely presuppose altruistic and thoughtful behavior by their managers seldom produce good results. [See, in particular, Friedman and Schwartz, (1963) and Bordo and Schwartz, (1999)]. A complementary theme in my own research is that regulatory monopolies are dangerous and that competitive production of regulatory services is beneficial to the extent that the incentives of top officials can be aligned contractually with those of society.

There is nothing intrinsically wasteful in allowing the World Bank and the IMF to compete with each other and with private parties and national-level government officials in the provision of either crisis-management services or development finance. What is intrinsically wasteful is allowing these institutions to operate as secret societies whose goals and operations are accountable only to imperfectly accountable officials of national-level governments.

In Schwartz (1998), Anna argues that the IMF mishandled the crisis-management tasks it faced in the 1990s. She deftly explains that IMF mismanagement must be expected to recur (p. 8). As a mere club of national regulators, the IMF cannot be an effective international lender of last resort because:

1. it lacks the ability to issue high-powered money;
2. its leadership lacks the authority to act quickly;

3. its leadership faces overwhelming incentives to support the bailout of insolvent institutions and not just the rescue of solvent ones.

Adopting IFIAC's recommendations would treat the first two difficulties. However, to create an optimal structure for crisis and development lending by SNRs, the incentive systems under which the two layers of club officials operate and recruit need to be addressed as well.

Principal-agent theory implies that the scope for bureaucratic opportunism can be tempered by introducing opportunity-cost principles of performance measurement and employment contracts that link the compensation that top officials receive to operational measures of the quality of their work. In the face of outside criticism, bureaucracies find it far easier to change their structural appearance than their decisionmaking and recruitment processes. Adopting better-targeted performance measures would gradually translate into operational performance standards for individual jobholders that directly challenge previous ways of doing things. Perceptible changes in an organization's recruitment standards and compensation system make decisions about pay and promotion more accountable to inside and outside stakeholders. The proximate goal is to create a series of publicly observable "compensation events" that appropriately influence the incomes, reputations, and job satisfaction of good and bad performers. The ultimate goal is to alter the set of individuals the organization attracts and promotes and to empower individuals who embrace the challenges the merit-based standards pose (Wruck, 2000). Section IV sketches a rudimentary approach from which a workable scheme of performance-based compensation might be fashioned.

4. Building Blocks of Incentive Reform[3]

[3] This section draws on Kane (1999).

The possibility of incentive modification turns on taxpayers' ability to write managerial contracts for regulatory enterprises that mitigate the temptations to opportunistic behavior inherent in the ethical, legal, and informational environment in which SNR and country regulators operate. While designing and enforcing complex contracts is a costly process, taxpayers are paying a price for weaknesses in public-service contracting protocols in the form of poorer and more-opportunistic regulatory decisions.

Rock (1999, p. 3) establishes that in private corporations, "executive pay packages contain four basic components: a base salary, an annual bonus tied to accounting performance, stock options, and long-term incentive plans (including restricted stock plans and multiyear accounting-based performance plans)." It is reasonable to presume that, if these four elements are necessary and sufficient to span the space of stockholder-manager conflict, they would span the space of clubmember-club-manager conflict as well.

Information asymmetry makes it unwise for taxpayers to contract contingently over reported net opportunity-cost benefits with a short-horizoned and potentially opportunistic regulatory CEO. In poor performance states, such a contract would tempt even a moderately opportunistic CEO to overstate current regulatory performance. The CEO would do this, because he (or she) could rationally expect to escape to another job before events could bring the enterprise's disinformational reporting efforts fully to light and he could reasonably plan to deny responsibility for deterioration in accounting performance that surfaces after the CEO's departure. The more opportunistic the CEO's utility function and the longer on average the CEO believes the coverup can be sustained, the more enticing this temptation is apt to prove in stressful times.

In a similar information environment, Hart and Moore (1994, 1998) and Dewatripont and Tirole (1994) explain how to fashion a compatible incentive-compensation scheme. Their solution assigns a corporation's controlling managers claims to the income streams generated by appropriately structured securities issued by the firm. An earlier paper by Aghion and Bolton (1992) clarifies that the securities to be issued must carry both income and control rights. The most important control right is the right to terminate the contract of poorly performing managers and to choose new ones.

The essential feature of these optimal-contracting models is that the control rights of outsiders increase as the firm approaches and passes into insolvency. The incentive force of this scheme comes from the nonlinear structure of the penalty –loss of future income and control rights—that the insiders suffer for poor managerial performance. Kaplan and Strömberg (1999) show that these models can explain the structure of the contracts used by U.S. venture capitalists.

This research has immediate implications for the governance of any government enterprise (such as a deposit insurer) for which opportunity-cost earnings can constitute a fair proxy for regulatory performance. The first implication is that the tenure of CEOs should be limited. The second is that, to allow capital markets to express their opinion of managerial performance, these government enterprises should issue corporate debt that is backed exclusively by enterprise earnings. Such a policy has been sketched by Kane (1997) and Wall (1997). The third point is that each enterprise CEO must be required to take an appropriate position in enterprise debt. Kane (1997) suggests that in principle the last two conditions can be approximated by introducing a forfeitable fund of deferred compensation F that each regulatory enterprise owes to its current and past CEOs. The model presented in Kane (1999) provides a framework which can allow amounts less than F to be forfeited and which can trigger a series of

partial forfeitures in a staged fashion. To promote value maximization, the size of a sitting CEO's claims on the deferred-compensation fund should be adjusted each year in proportion to the enterprise's reported income. In the simplest case, any CEO's right to this debt would be forfeited if an observable index of the lagged impact of managerial performance (such as an operationally defined financial mess) were to occur within 3-to-5 years of the CEO's departure. Giving the CEO an explicit economic interest in reported earnings has the further advantage of exposing him or her to prosecution for fraud or negligent misrepresentation.

By itself, earnings-based compensation would encourage each CEO to overstate the problems existing at the start of his tenure and to understate the problems left behind at the end. To resolve this difficulty, incoming and outgoing CEOs might be required to audit the books of the enterprise and submit differences in their assessment of the value to a three-person arbitration panel. As an additional check on the process, incoming CEOs might be allowed the option of refusing the job if they deem the arbitrators' decision to be too far out of line.

The knowledge that hidden adverse information would be apt to surface as a verifiable compensation event during transitional audits –just when a CEO would be moving to another job—would promote interim truth-telling. This incentive could be reinforced by insisting that each CEO's claims on the fund be reduced by a penalty amount proportional (or even more than proportional) to misvaluations associated with each and every misrepresentation that is formally adjudged to have occurred during the CEO's tenure. Finally, to maximize the disciplinary force of performance penalties, all adjustments should be widely publicized and the money in the fund should not pass into the CEO's hands (i.e., the enterprise's debt should not mature) until a substantial number of years have passed.

This scheme addresses two important points. First, managers may easily overstate accounting performance in the current period at the expense of a deterioration in longer-run results, so that public-service contracting is deficient if it focuses only on base salary and accounting measures of current performance. Second, the scheme extends the space over which taxpayers and regulatory CEOs contract by introducing into managerial compensation a component that is conditioned explicitly on evidence of sustainable long-term performance. However, the plan neglects the possibility that conceptual agreement on opportunity-cost measures of net benefits may sometimes be hard to fashion.

As an alternate way to protect against accounting manipulation, taxpayers may write contracts that link CEO compensation to narrower measures of performance that are provided by externally constructed indices of component dimensions of regulatory success and failure. Bonuses for reducing world poverty could be tied to annual and cumulative changes in the mean, standard deviation, and skewness of real income per capita in developing countries. Moreover, the size of the bonus generated by movements in any particular index could be scaled to individual-country poverty levels in a nonlinear fashion.

Approximate measures of taxpayer loss exposure in individual countries may also be constructed. Where explicit deposit-insurance schemes exist, unfunded loss exposures may be calculated on a market-value basis. Moreover, the reliability of calculated values could be enhanced by testing them in related markets for reinsurance contracts and derivative securities. The IMF and World Bank could increase the scope for such tests by helping to create markets in appropriate regional and developing-country credit and insurance derivatives.

Even where deposit insurance is only implicit, movements in taxpayer loss exposure may be proxied by measures of the informational and contracting environments in which local banks

function. Kane (2000) suggests that country-level improvements in the quality of financial information (FI) and contract enforceability (CE) can be usefully proxied by externally constructed indices. Table 1 presents data on three measures of FI: accounting quality, transactional corruption, and press freedom. Table 2 lists five candidate measures of CE. Creating a fund of deferred compensation linked to movements in some or all of these indices would provide a crude, but immediately operational way for regulators to accumulate incentive-based compensation.

5. Would an Admittedly Imperfect Incentive Scheme Be Worth Adopting?

This paper emphasizes two correspondences: between governmental (and supra-governmental) enterprises and clubs, and between the governance of clubs and corporations. Corporate-governance theory concerns itself with the possibility of generating mutual benefits for a firm's inside and outside stakeholders by contractually penalizing opportunistic behavior by controlling insiders in a nonlinear fashion.

Even though incentive-based schemes for private managers are still being perfected, incentive compensation has been spreading rapidly within the finance industry (Hatch, 1995; Lutton, 1999). Moreover, the terms of post-government employment made available to ex-regulators in individual countries have the _ex ante_ force of offering incentive compensation to club officials for favoring industry interests at the expense of those of poorly informed taxpayer-voters.

It is incentive-incompatible for society to assign regulatory officials in SNRs responsibility for overseeing country behaviors that are themselves becoming increasingly incentive-driven without assigning these officials an explicit stake in society's net benefits from

their oversight decisions. John, Saunders, and Senbet (2000) show that implicit and explicit deposit-insurance premia cannot be optimal unless regulators directly consider the incentive features of a bank's managerial compensation structure.

Economists generally agree that the performance of the IMF and World Bank has been unsatisfactory. Wruck (2000) finds that in the corporate world the risks of changing the compensation system for the top management of an underperforming organization tend to be low, while mean payoffs tend to be high. Because economists could argue the merits of alternative schemes forever, it is costly to wait for research in contracting theory to certify an ideal scheme. The coordination of individual-country contributions to global poverty reduction and financial regulation promises to be improved and research into the effectiveness of different contractual provisions to be accelerated by quickly introducing even a jerrybuilt scheme of forfeitable deferred compensation for the top officials of the IMF and World Bank.

REFERENCES

Aghion, Phillippe, and Patrick Bolton. "An Incomplete Contracts Approach to Financial Contracting." Review of Economic Studies 77 (1992), 338-401.

Bear, Larry A., and Rita Maldonado-Bear. Free Markets, Finance, Ethics, and Law. Englewood Cliffs: Prentice-Hall. 1994.

Bordo, Michael D., and Anna J. Schwartz. "Under What Circumstances, Past and Present, Have International Rescues of Countries in Financial Distress Been Successful?." Journal of International Money and Finance 18 (1999), 683-708.

Buchanan, James M. "An Economic Theory of Clubs." Economica 4 (1965), 386-405.

Coase, R.H. "The Nature of the Firm." Economica 4 (1937), 386-405.

Dewatripont, Matthias, and Jean Tirole. " A Theory of Debt and Equity: Diversity of Securities and Manager-Shareholder Congruence." Quarterly Journal of Economics 109 (November 1994), 1027-1054.

Diamond, Douglas. "Financial Intermediation and Delegated Monitoring." Review of Economic Studies 51 (July 1984), 343-414.

DiNoia, Carmine, and Giorgio DiGiorgio. "Should Banking Supervision and Monetary Policy Tasks Be Given to Different Agencies?." Rome: Commissione Nazionale per la Società e la Borsa (unpublished, October 1999).

Fratianni, Michele, and John Pattison. "An Assessment of the Bank for International Settlements." Bloomington, IN: Indiana University (unpublished, December 1999).

Friedman, Milton, and Anna J. Schwartz. A Monetary History of the United States, 1867-1960. Princeton: Princeton University Press for the National Bureau of Economic Research. 1963.

Hart, Oliver, and John Moore. "A Theory of Debt Based on the Inalienability of Human Capital." Quarterly Journal of Economics 109 (November 1994), 841-879.

_____. "Default and Regulation: A Dynamic Model of Debt." Quarterly Journal of Economics 113 (February 1998), 1-41.

Hatch, James A. "Banks Lead in Linking Top Execs' Pay to Performance." American Banker, 160 (July 24,1995).

International Financial Institution Advisory Commission (IFIAC). Report of Commission Chaired by Allan H. Meltzer. Washington, D.C.: U.S. Treasury Department. 2000.

Jensen, Michael C., and William Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." Journal of Financial Economics 3 (June 1976), 305-360.

John, Kose, Anthony Saunders, and Lemma Senbet. "A Theory of Bank Regulation and Management Compensation." Review of Financial Studies 13 (Spring 2000), 95-125.

Kane, Edward J. "The Ethical Foundations of Financial Regulation." Journal of Financial Services Research 12 (August 1997), 51-74.

_____. "Improving the Ethics of Financial Regulation." Prepared for Conference on Measuring and Managing Ethical Risk at the University of Notre Dame (September1999).

_____. "Designing Financial Safety Nets for Countries in Different Circumstances." Research Report prepared for the World Bank (March 2000).

Kaplan, Steven N., and Per Strömberg. "Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture capital Contracts." Graduate School of Business: University of Chicago (July 1999).

Kho, Bong-Chan, and René M. Stulz. "Banks, the IMF, and the Asian Crisis," Cambridge, MA: National Bureau of Economic Research Working Paper (September 1999).

Krueger, Anne O. "Whither the World Bank and the IMF?," Cambridge, MA: National Bureau of Economic Research Working Paper (December 1997).

Lutton, Laura P. "Mellon Latest Bank to Offer Rank and File Stock Options Carrot." American Banker 164 (June 22, 1999).

Ruys, Peter, René van den Brink, and Radislav Semenov. "Values and Governance Systems." Tilburg, the Netherlands: Tilburg University (unpublished, February 2000).

Schloss, Henry H. "The Bank for International Settlements," The Bulletin, New York University Institute of Finance, Nos. 65-66 (September 1970).

Schwartz, Anna J. "Time to Terminate the ESF and IMF: Declaration for Lawsuit Challenging the Mexican Bailout of 1995." in A. Schwartz, R.C. Whalen, and W.F. Todd. Time to Abolish the International Monetary Fund and the Treasury's Exchange Stabilization Fund. Charlotte: Committee for Monetary Research and Education, Inc. 1998. pp. 4-34.

Wall, Larry. "Taking Note of the Deposit Insurance Fund" A Plan for the FDIC to Issue Capital Notes." Economic Review. Federal Reserve Bank of Atlanta 82 (First Quarter 1997), 14-31.

Wall, Larry, and Robert Eisenbeis. "Financial Regulatory Structure and the Resolution of Conflicting Goals." Journal of Financial Services Research 16, Nos. 2-3 (forthcoming 2000).

Wruck, Karen H. "Compensation, Incentives and Organizational Change." in Michael Beer and Nitin Nohria (eds.). Breaking the Code of Change. Boston: Harvard Business School (forthcoming 2000).

TABLE 1
MEASURES OF CROSS-COUNTRY VARIATION IN THE QUALITY OF ECONOMIC INFORMATION

	Accounting Standards	Corruption Index	Index of Restrictions on Press
High Income			
Australia	75	5.11	8.8
Austria	54	5.14	14.6
Belgium	61	5.29	8.8
Canada	74	6.00	15.2
Cyprus		2.60	21.2
Denmark	62	6.00	9.4
Finland	77	6.00	15.4
France	69	5.43	25.6
Germany	62	5.36	14.4
Greece	55	4.36	28.4
Hong Kong	69	5.11	32.75
Iceland		3.60	12.4
Ireland		5.11	17.8
Israel	64	5.00	29.2
Italy	62	3.68	27.8
Japan	65	5.11	20.2
Korea	62	3.18	26.4
Luxembourg		3.60	10.4
Netherlands	64	6.00	14.8
New Zealand	70	6.00	6.8
Norway	74	6.00	6.6
Portugal	36	4.43	17
Singapore	78	4.93	63.6
(continued)			
Spain	64	4.43	18
Sweden	83	6.00	10.2
Switzerland	68	6.00	9.2
Taiwan	65	4.11	28.4
United Kingdom	78	5.46	22.2
United States	71	5.18	12.8
Middle-Upper Income			
Argentina	45	3.61	31.2
Brazil	54	3.79	29.8
Chile	52	3.18	29
Malaysia	76	4.43	61
Mexico	60	2.86	54.4
South Africa	70	5.35	30.6
Trinidad & Tobago		1.80	27.6
Uruguay	31	3.00	38.6
Venezuela	40	2.82	35
Middle Lower			
Bolivia		1.35	18.4
Botswana		2.30	27.4
China		2.55	83.8

TABLE 1 (continued)

	Accounting Standards	Corruption Index	Index of Restrictions on Press
Middle Lower (continued)			
Colombia	50	3.00	52.2
Costa Rica		3.00	17.4
Ecuador		3.11	36.4
Egypt	24	2.32	75
Indonesia		1.29	71.4
Jamaica		1.40	14.8
Jordan		3.29	50.6
Morocco		1.80	52.4
Namibia		2.60	27.2
Panama		1.20	27.8
Peru	38	2.82	58
Philippines	65	1.75	44.6
Sri Lanka		3.00	46.8
Thailand	64	3.11	39.8
(continued)			
Tunisia		1.80	67.4
Turkey	51	3.11	68
Low Income			
Bangladesh		0.85	52.8
Cote d'Ivoire		2.30	69.2
Ghana		1.95	61.2
Honduras		1.20	45.6
India	57	2.75	42.4
Kenya		2.89	59.2
Nigeria	59	1.82	80.8
Pakistan		1.79	57.8
Zimbabwe		3.25	56.2

Accounting Standards: Index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items. These items fall into 7 categories (general information, income statements, balance sheets, funds flow statement, accounting standards, stock data and special items). A minimum of 3 companies in each country were studied. The companies represent a cross-section of various industry groups of which 70% are industrial companies and 30% are financial firms. Higher scores indicate better accounting standards. (Source: *International Accounting and Auditing Trends, Center for International Financial Analysis & Research, Inc.*)

Corruption: ICR's assessment of corruption in government. Lower scores indicate "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout the lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax, assessment, policy protection, or loans". Scale runs from 0 to 6, with lower scores indicating higher levels of corruption. (Source: *International Country Risk Guide*)

Restrictions on Press: Assessment of repressive actions and laws, regulations, controls, and political pressures that influence media content. Score reported is the average index assigned by Freedom House staff in Annual Press Freedom Reports, 1994-1998. Scale runs from 0 to 100, with lower scores indicating greater freedom.

TABLE 2
MEASURES OF CROSS-COUNTRY VARIATION IN COUNTERPARTY PROTECTIONS

Country	Risk of Expropriation	Rule of Law	Contract Enforceability	Efficiency of Judicial System	Bureaucratic Quality
High Income					
Australia	8.71	10.00	3.04	10.00	6.00
Austria	9.60	10.00	3.30	9.50	5.64
Belgium	9.48	10.00	3.29	9.50	6.00
Canada	8.96	10.00	3.27	9.25	6.00
Cyprus	7.50	5.98			4.32
Denmark	9.31	10.00	3.24	10.00	6.00
Finland	9.15	10.00	3.00	10.00	6.00
France	9.19	8.99	2.47	8.00	6.00
Germany	9.77	9.23	3.40	9.00	5.96
Greece	6.63	6.19	2.33	7.00	3.36
Hong Kong	8.82	8.21		10.00	4.14
Iceland	9.25	10.00			6.00
Ireland	8.96	7.80	3.17	8.75	5.46
Israel	7.54	4.82	3.00	10.00	4.29
Italy	9.17	8.33	2.10	6.75	4.43
Japan	9.69	8.99	3.16	10.00	5.89
Korea	8.59	5.36	2.19	6.00	4.18
Luxembourg	10.00	10.00			6.00
Netherlands	9.35	10.00	3.26	10.00	6.00
New Zealand	9.29	10.00		10.00	6.00
Norway	9.71	10.00	3.43	10.00	5.32
Portugal	8.57	8.69	1.92	5.50	3.70
Singapore	8.86	8.57	3.22	10.00	5.11
Spain	8.40	7.80	2.57	6.25	4.11
Sweden	9.58	10.00	3.30	10.00	6.00
Switzerland	9.98	10.00	3.59	10.00	6.00
Taiwan	9.16	8.52		6.75	
United Kingdom	9.63	8.57	3.43	10.00	6.00
United States	9.00	10.00	3.55	10.00	6.00

TABLE 2 (continued)

Country	Risk of Expropriation	Rule of Law	Contract Enforceability	Efficiency of Judicial System	Bureaucratic Quality
Middle-Upper Income					
Argentina	4.91	5.36	2.01	6.00	3.00
Barbados					
Brazil	6.30	6.31	1.97	5.75	4.00
Chile	6.80	7.02	2.44	7.25	3.36
Malaysia	7.43	6.79	2.26	9.00	3.54
Mauritius		0.00			
Mexico	6.55	5.36	1.77	6.00	2.89
Oman					
Saudi Arabia					
South Africa	7.27	4.42	2.67	6.00	6.00
Trinidad & Tobago	6.63	6.67			3.11
Uruguay	7.29	5.00		6.50	2.00
Venezuela	6.30	6.37	1.64	6.50	2.89
Middle Lower					
Bolivia	4.57	2.20	1.76		1.14
Botswana	6.71	8.33			3.71
China	6.29	5.97	2.00		3.04
Colombia	7.02	2.08	1.90	7.25	4.00
Costa Rica	5.79	6.67			2.89
Ecuador	5.18	6.67	1.86	6.25	3.00
Egypt	6.05	4.17	2.09	6.50	2.64
Indonesia	6.09	3.99	1.76	2.50	1.50
Iran					
Jamaica	6.46	3.51			3.04
Jordan	4.86	4.35		8.66	3.00
Morocco	5.43	4.46	1.95		2.93
Namibia	4.42	6.67			4.42
Panama	5.11	3.51			1.11
Peru	4.68	2.50	1.72	6.75	2.11

TABLE 2 (continued)

Country	Risk of Expropriation	Rule of Law	Contract Enforceability	Efficiency of Judicial System	Bureaucratic Quality
Middle Lower (continued)					
Philippines	4.80	2.74	1.75	4.75	1.46
Sri Lanka	5.25	1.90		7.00	3.00
Swaziland		0.00			
Thailand	7.57	6.25	2.23	3.25	4.39
Tunisia	5.54	4.64			3.00
Turkey	5.95	5.18	2.00	4.00	3.29
Low Income					
Bangladesh	4.09	2.26			1.21
Cote d'Ivoire	6.40	5.64	2.58		4.00
Ghana	5.77	3.33			2.71
Honduras	5.20	3.45			1.57
India	6.11	4.17	2.00	8.00	3.82
Kenya	5.66	5.42	2.16	5.75	3.61
Nepal		0.00			
Nigeria	4.36	2.74	1.68	7.25	2.29
Pakistan	4.88	3.04	1.69	5.00	2.71
Zimbabwe	5.04	3.69		7.50	3.43

Risk of Expropriation: International County Risk's (ICR) assessment of the risk of "outright confiscation" or "forced nationalization". Average of the months of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with lower scores for higher risks. Source: *International Country Risk Guide*

Rule of Law: Assessment of the law and order tradition in the country produced by the country-risk rating agency International County Risk (ICR). Average of the months of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with lower scores for less tradition for law and order. Source: *International Country Risk Guide*

Contract Enforceability: Measures the "relative degree to which contractual agreements are honored and complications presented by language and mentality differences". Scored 0-4, with higher scores for superior quality.
Source: *Business Environmental Risk Intelligence*

Efficiency of Judicial System: Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk-taking agency *Business International Corporation*. It "may be taken to represent investors' assessments of conditions in the country in question". Average between 1980-1983. Scale from 0 to 10, with lower scores for low efficiency levels.

Bureaucratic Quality: Average of "bureaucratic quality" assessment values assigned by ICRG between 1982-1995. Scored 0- 6, with higher scores for superior quality.