

The Human Factor and Systemic Risk: A *Memento* *

MARIO SARCINELLI

1. Introduction

In the first chapter of a rightfully celebrated work of his, Charles Kindleberger (1991, p. 3) describes international financial crises as an "evergreen". And looking back over the last 400 years it is hard not to get a sense of regularity, or better, of invincible fate, in the series of failures and panics stretching from the 17th century Dutch tulip craze to the problems of East Asian financial systems in mid-1997. Though each is a case unto itself, there is nevertheless a single strand linking such episodes, which, through system-wide contagion, have caused or just threatened serious damage to the global financial system and the world economy.

There is thus certainly nothing new in talk of systemic risk and consequent international financial crises. Nonetheless, the radical structural transformations that the markets are both causing and undergoing in the course of globalization tempt one to ponder the fresh shoots of that "evergreen" of systemic risk. This is the intent behind the notes that follow. After a few semantic and theoretical premises, I shall look into the role of the human factor in the prevention and control of the risk of a crisis spreading from the original insolvency to the system as a whole.

Indeed, the human factor is the key to identification of the common features of systemic threats and to more effective diagnosis and treatment. Following this approach, I shall describe cases in which – within global undertakings, the institutions responsible for

□ Banca Nazionale del Lavoro, Rome (Italy).

* My warmest thanks to Dr. Giovanni Ajassa, without whom neither this paper nor the notes for the task force on which it is based would have seen the light.

their supervision and the market generally – organizational consistency and the quality of corporate governance, shared purposes and a common culture, and sufficient transparency are important to containing systemic risk and curbing financial panics.

The appendix presents the recommendations of two authoritative international institutions, the Group of Thirty and the Institute of International Finance, for containing systemic risk.¹ Both works largely share the concern for the human factor, capitalizing on a 'bottom up' approach.

2. Questions of semantics and theoretical coordinates

The concept of 'systemic risk' is the object of largely convergent interpretations. The present note takes the recent definition of the Group of Thirty (1997, p. XX) of systemic risk as "the risk of a sudden, unanticipated event that would damage the financial system to such an extent that economic activity in the wider economy would suffer".

In addition to the Group of Thirty paper, which draws substantially on previous work of the BIS (Bank for International Settlements 1992), it may be helpful to recall two special, if only marginal, variants. One, drafted by a group of monetarist economists (Bordo, Mizrach and Schwartz 1995) defines systemic risk as a situation in which disturbances in one part of the financial system cause alterations elsewhere, triggering a general rush for liquidity that jeopardizes the stability of the real economy and makes intervention by the monetary authorities unavoidable. Without necessarily implying the final step of lending of last resort by the central bank, systemic risk as defined by Davis (1992) is a disturbance of the financial markets that provokes unexpected changes in the prices and quantities of credit and assets. This raises the danger of failure of financial undertakings, which in turn threatens to spread far enough to perturb payments circuits and damage the financial system's capacity for efficient capital allocation.

¹ Group of Thirty (1997) and Institute of International Finance (1997). The present reflections take off from the author's contribution to the task force that drafted the Group of Thirty report. Banca Nazionale del Lavoro, as a participant in the IIF survey, provided valuable analysis and reflection in that context.

This semantic convergence does not carry over to the theoretical identification of the determinants of systemic risk and international financial market panics. A distinction between the old and new approaches may be useful (Bordo, Mizrach and Schwartz 1995).

Traditional models tend to be divided between monetarist explanations focusing on the link between bank panic and the failure of a major institution (Friedman and Schwartz 1963, Cagan 1965) and analyses rooted in classical economics (Fisher 1932, Minsky 1977, Kindleberger 1991), which underscore the intrinsic vulnerability of the financial system to speculative crazes and the market's oscillation between boom and bust, with periods of overtrading regularly followed by sharp price falls for financial assets and contraction of trading.

A common feature of recent work is heightened attention to microeconomics, hence to the source of potential or actual systemic contagion. In this reading, a key contribution is the thesis that informational asymmetries may be the decisive factor in banking panics (Diamond and Dybvig 1983, Mishkin 1991) and in speculative bubbles (Stiglitz 1990).²

Asymmetry or incompleteness of the information set available to the participants in the global financial market underlies the formation of centres of potential contagion and delays their discovery by the broader financial community. The sudden, unexpected triggering of a potentially systemic disturbance finds fertile soil in three kinds of contingency, arising either alone or in combination (Padoa-Schioppa 1996, Sarcinelli 1996a): *i*) unexpected macroeconomic shocks or simply brusque inversion of the trend in fundamental local or international variables; *ii*) inconsistency or inefficacy of the institutional and regulatory frame of reference for the international financial market; *iii*) shortcomings of internal governance on the part of undertakings operating on a global scale.

More specifically, in the first contingency it is self-evident that there is very little to be said, much less done, about unexpected macroeconomic shocks to the markets and the related issue of the dangers of agents' presumable one-way expectations.

² A common denominator between the old and new approaches is represented by the elaboration of the Keynesian idea of uncertainty. The sense of continuity between the classics and later studies is noticeable especially in the work of Hyman Minsky.

Repeated calls by the G-7 for greater international economic policy concertation encounter an objective barrier not only in national interests and national sovereignty but in the cramped manoeuvring room that globalization leaves to government policy intervention. Faced with the sheer magnitude of international capital flows – every day the world's foreign exchange markets transact a volume of business roughly equivalent to Italy's entire public debt –, the ammunition of the central banks (their reserves) is certainly not enough to counter a speculative attack on any given currency, quite apart from the disturbance to the regular conduct of monetary policy owing to insufficient sterilization. Nor, in my view as in that of others (Garber and Taylor 1995), is it realistic to imagine throwing sand in the wheels of speculation with a global transaction tax (Eichengreen, Tobin and Wyplosz 1995) or, worse still, the introduction or restoration of non-interest-bearing deposits on foreign currency transactions (Eichengreen and Wyplosz 1993).

Similarly, it is hard to imagine a way of making agents' expectations less unidirectional, more varied, as they always make up their minds on the basis of the same, limited, immediate information; especially as long as the US economic and financial system continues to dominate the attention of the world market. This perilous conformism could be upset, however, in the years to come, by the creation of the euro and the progressive establishment, on the global scene, of a European financial and political actor of potentially almost equal strength (Sarcinelli 1996b).

In examining the relations between the state of the overall economy, the mechanisms of expectation formation and the rise of systemic risks, one is bound to ask whether exposure to such risks has not been aggravated in recent years by the combination of market globalization, financial innovation and the communications revolution. Some authoritative observers (Levich 1988, Goldstein 1994) contend that the rapid growth and internationalization of the bond markets has heightened price volatility and made the entire system more vulnerable to turbulent shifts in expectations. In the same fashion, especially in the wake of the US stock market crash of 1987, the growing incidence of derivatives trading has been viewed with great concern (Gorton and Rosen 1995). I myself maintained the same thesis in the 1980s (Sarcinelli 1987).

On the other side, equally reliable statistical studies have shown that the main recent episodes of global systemic risk – above all the Wall Street crash of 1987 (Greenwald and Stein 1988) – display no structural differences from pre-globalization crises. Indeed, there are sound theoretical and practical arguments (Crane *et al.* 1995) that globalization and the spread of derivatives contribute to better allocation of risks within the world economy, more extensively and efficiently redistributing risks to the parties best able to sustain them.

Futures can serve either for hedging or for speculation. From this banal consideration one can argue that the various positions offset one another and thus assert that globalization and financial innovation are essentially 'neutral' in terms of additional systemic risk insofar as such risk is generated by macroeconomic shocks and fuelled by the herd instinct in expectations formation.

However, globalization and innovation may have a specific incidence in sparking and propagating risk in relation to models, regulatory inconsistencies and problems of governance within global corporations. As we shall see, in both cases the chances of observing and countering the risk of systemic contagion depend strictly on suitable organizational arrangements for operators and supervisors and on the efficacy of practices, more than on the mere rigid application of rules or mechanical apparatuses. In a word, to meet the emerging challenges of globalization and incessant innovation in technology and products, the best antidote to systemic risk lies in the human factor, i.e. in the qualities of the men and women involved and in convinced cooperation. But isn't the human factor itself, at least in certain conditions, also a cause of systemic risk?

3. The multinationals

Globalization and innovation have erased most of the geographical and institutional borders within the world financial system. The variety of product combinations in the financial intermediation continues to proliferate. New agents appear on the global markets, often coming from areas relatively untouched by financial activities and financial supervision.

In this new scenario, controlling systemic risk poses a largely joint challenge to the major global undertakings and to the authorities assigned to oversee the markets. It is easy to see why the executives of a multinational conglomerate should be greatly concerned to prevent and contain contagion; the risk is that the effects of an adverse event may spread to domestic and foreign subsidiaries and affiliates, and the failure of a peripheral unit could jeopardize the entire group.

The problems common to firms and supervisors embrace a central informational and 'cultural' terrain. With all due distinctions, just like supervisory authorities the boards of directors of the multinational conglomerates need: *i*) sufficient awareness, both static and dynamic, of the map of all the risks to which they are exposed, with attention to the entire information set and updated knowledge of the operational techniques of the units they control or supervise; *ii*) organizational arrangements, in terms of shared culture and staff incentives, that are consistent with the risk control objectives.

The commonality, or at least contiguity, of the problems facing supervisors and supervisees may be more immediately intelligible by reference to the failure of the Barings investment bank, bankrupted in March 1995 by the enormous losses accrued by just one of its traders, in Singapore, in speculations on Nikkei index futures.

The failure of Barings, and earlier of Herstatt, and the losses of Daiwa, Sumitomo, NatWest and other more or less illustrious international 'houses'³ did not trigger devastating system-wide crises, panics, or generalized disorder in international payment systems. Nevertheless, given the far-flung web of these institutions' global relations, these cases certainly did entail a serious risk of systemic contagion, causing moments of widespread worry in the financial community.⁴

The Barings failure can certainly be traced to shortcomings in management, internal controls and supervision (Bank of England 1995). Specifically, both the head office in London and the British

³ In this succession of episodes and institutions, the author could certainly not be excused if he failed to recall the grave crisis that shook Banca Nazionale del Lavoro itself in the late '80s owing to fraudulent conduct of a few officers at the Atlanta branch, who granted unauthorized loans totalling over US \$ 2 billion, including interest accrued.

⁴ The right mind-set for the prevention of systemic risk is the one that should be taken *vis-à-vis* major ecological risks, such as the destruction of the ozone layer. The unlikelihood of an event or the lack of sufficient scientific and statistical evidence must not be allowed to induce indifference or scepticism. Once an ecological or financial disaster has happened, it is too late for anything except regrets and recriminations.

supervisory authorities lacked the informational and perhaps even the technical instruments to see and comprehend exactly what was happening at trading desks in Singapore and elsewhere around the world.

In the case of this grand old English banking house, informational asymmetry was compounded by a culture gap. The London management embodied skill, competence, and the typical values of corporate finance, while the hot-shot young traders at these foreign branches followed the impulses and the time frame of much shorter-term speculative activity. These differences, in turn, were confirmed by a lopsided set of incentives that awarded very large bonuses to traders making speculative profits but set no price on the risks. Comparable disparities and misunderstandings (Large 1997a, p. 9) accentuated the difficulties of the British supervisory authorities in ascertaining and updating the risk exposure of Barings and other financial institutions based in London but operating worldwide. These technical and cultural problems were compounded by the more serious problem of national and functional fragmentation of jurisdiction among the many agencies responsible for oversight over the firm.

The case of Barings is a convenient jumping-off point for a more detailed examination of the problems that containment of systemic risk poses to financial undertakings and supervisory authorities. For financial institutions, the high road is the design and refinement of corporate governance methods modelled on international "best practices".⁵ This is a bottom-up approach for developing and updating an industry framework focusing on internal control systems to curb the "excesses of human nature" (Group of Thirty 1997, p. 13) in taking risks for the firm.

In these circumstances (Sarcinelli 1997b) the logic of internal controls on the activities of a financial undertaking, typically a bank, will have to be increasingly based on a regular flow of information adequate to trigger early warning systems for crisis prevention in given territories or business segments. The endogenous ability to assess and manage risk has been recognized, the supervisory authorities now allowing banks to use their own internal models of market risk evaluation and control as an alternative to the standard method of calculating capital ratios.⁶

⁵ Codes of corporate governance based on best practices have already generated quite a substantial literature (Ajassa 1997). Notable are the British Cadbury Report, the CoSO Report for the United States, and the Viénot Committee Report in France.

⁶ This change was adopted in an amendment to the BIS capital adequacy accord at the end of 1995.

In the future the use of internal models will very likely spread beyond the area of market risk, to the benefit of supervisors and financial undertakings alike. For banks above all, developing an individual method for measuring and controlling risks will have three main benefits: *i*) it will facilitate the establishment, in transparent and shared fashion, of a uniform culture of risk management (Sarcinelli 1996c and 1997b); *ii*) it will attenuate the worrisome tendency to reduce risk assessment to a black-or-white schema in which soundness is divided from pathology by a thin line, a fixed capital adequacy ratio "above which the bank is secure and below which it should be shut down" (Goodhart 1996); *iii*) it will prompt the diversification of behaviour among financial intermediaries, which should attenuate systemic risk (Szegö 1997).⁷

Nevertheless, this growing reliance on self-evaluation exposes the system to risks acutely summed up in the observation that "it is every taxpayer's dream to be free to devise his own income tax form" (Padoa-Schioppa 1996). The point is that only by first creating a consistent set of incentives can the shift to internal controls be accomplished without simply lowering rather than improving the standards of banking security and stability. The incentives that can make it economic for banks to exercise serious self-evaluation and internal controls could consist in "reputational" benefits, such as higher ratings for the most secure banks (Group of Thirty 1997), in the "personalization" of capital adequacy ratios in consideration of the bank's own past and present risk performance and evaluation (Goodhart 1996, Group of Thirty 1997), or even in less frequent inspections and longer reporting periods (Large 1997a).

All in all, self-evaluation will require global financial undertakings to make large-scale investment in hardware and software. They will have to develop integrated data bases to pick up, aggregate and sift massive quantities of data relating to the different areas of business (functional, geographical, currency, etc.).⁸ An equally stre-

⁷ There are those who present a radical critique of the traditional approach to capital ratios (Szegö 1996, p. 137), arguing that the Basle rules on capital adequacy, "created like Frankenstein's monster, with good intentions, have proved completely counterproductive". To support this thesis, they point to a certain reluctance on the part of banks to write off uncollectable loans, because the original capital requirement against bad loans has been doubled.

⁸ Of course, not even the most perfect information system is a guarantee against fraud or employee dishonesty; no manager should forget that, according to tradition, the Mongol hordes breached the Great Wall of China thanks to the treachery of a guard commander.

nuous effort will have to be made in the refinement and harmonization of accounting standards, in stepped-up auditing by a single agency (both solo and consolidated), and in achieving greater transparency on banks' risk preferences (Group of Thirty 1997). They must also create effective structures, i.e. special 'monitoring units' with a capacity for consistent control and management of the entire set of risks. They must conform to bank policy but must be sheltered from possible conflicts of interest, i.e. independent both from loan officers and from the top decision-makers, i.e. boards of directors, executive committees, managing directors, general managers (Sarcinelli 1997b).

Certainly, the agenda is an imposing one. The essence of the challenge of risk control in the largest international financial undertakings, in my view, lies in the human factor. Only with the right training and qualifications, motivation and incentives for staff can banks assure the proper functioning of the complicated system of self-evaluation and controls set forth above. This implies, for instance (Group of Thirty 1997), making sure that careers in risk control are not penalized by comparison with those in the 'front line' of banking business, i.e. lending and investment officers. In the area of training (Large 1997a), there is a need to defuse the danger of a discrepancy between the perceived and the real powers of officers with critical roles in risk decisions; and a need for constant updating and circulation of information and knowledge about risk, especially within the top management. In terms of internal communications, finally, we must work to forge and disseminate throughout each bank and banking group a single cultural base and sound, universal ethical values.

The truly crucial point is ethics. In a globalized world dominated by economic incentives, ethics appears to lack the socio-cultural foundations that made it, for centuries, the control mechanism of human action. Given the diversity, weakening or outright demise of religious beliefs, of the restraints stemming from social conditioning, and of *esprit de corps* or at least some sense of loyalty to the firm one works for, the control of human resources is entrusted increasingly to market mechanisms. Salary, fringe benefits and bonuses are not the only incentives to which financial agents can respond; these may be flanked by reputational advantages, provided that the market can efficiently mete out both economic and professional rewards and punishments for operators' performance and conduct. However, the

market presumes a cooperative attitude of good faith on the part of all participants; it can punish opportunism and fraud after the fact but it cannot forestall them. This is the job of the entrepreneur or the manager and, to some modest extent, also of the auditor and the statutory supervisor. But in the multinational, multiproduct, multi-time-zone corporation, the ancient problem of who shall guard the guards is joined by the tougher one of *how* to guard the guards. Moral hazard and agency problems can certainly be managed, but they are certainly not reduced by greater emphasis on the human factor.

4. The supervisors

In a 'first best' world where all the large global financial undertakings already met the theoretical requirements of self-evaluation and control, it would be hard to justify any sort of supervisory activity directed to systemic risk. Deposit protection schemes against the risks of asymmetric macroeconomic shocks could be retained (Szegö 1997). Yet, to rehearse our initial remarks, the lengthy list of fairly recent bank failures suggests that some supervisory function of safeguarding stability and transparency needs to be retained. At the same time, this series of failures also demonstrates that not only financial undertakings but also the supervisory procedures governing international financial markets are at some remove from the ideal.

In a financial world where geographical and functional borders are increasingly blurred when not virtually dissolved, the theoretically optimal model could be a single global supervisor to oversee the global market and global undertakings. Yet the idea of a sole planetary supervisory authority is unconvincing to this writer, for one, both because it would be next to impossible to realize and because of the "monolithic and bureaucratic" nature (Large 1997b) that such a body would inevitably have, bridling market participants' own capacities for innovation and, as noted, paradoxically heightening systemic risk. Yet the present situation is equally unsatisfactory, with the geographical and functional pulverization of prudential controls, which undermines the efficacy of supervision, perhaps transforming it into a

source of danger. This may occur where supervisory disparities generate dangerous concentrations of high-risk assets, business and/or banks in the geographic or functional areas – in some cases, veritable "regulatory havens" – where controls are least strict. Similarly, there is added danger when the exchange of information between authorities is poor or where legislation and law enforcement action against organized crime are weak.

Recognizing the difficulties and risks of the present situation (Padoa-Schioppa 1995, 1996), in recent years banking and securities market supervisors have initiated a drive for international coordination. The aim is to increase the transparency of financial operations on the global scale, to refine reference parameters, to encourage and facilitate information exchange and to improve defences and risk control systems.⁹

All things considered, the transformation of supervisory functions has been sweeping. From structural supervision, we have moved to prudential controls and now to 'internal models', which for true efficacy must see the individual supervisor at arm's length both from the supervised firms and from other supervisors. The key concept here cannot be anything but interdependence (Large 1997b).

Liaison between the various financial supervisors is especially necessary to enable them to keep technical and operational instruments up to date and to keep from losing touch with the incessant product innovation of the market. One should thus not be startled by the idea of institutionalizing professional exchanges and cooperative training experiences involving supervisors and supervisees (Group of Thirty 1997). Getting closer to the market is essential to hone supervisors' ability to detect potential new risks and thus enable them to engage in 'preventive medicine' rather than 'epidemic control'.

Adequate interdependence between supervisors is thus important both to prevention and to the control of infections when they do occur.

Beforehand, prior to the outbreak of a systemic contagion, cooperation serves to ensure the flow of information needed to safe-

⁹ Called for by the G-7 summits in Halifax in 1995 and Lyon in 1996, international and interfunctional cooperation and coordination on risk control (Large 1996) is being advanced by a number of bodies, notably the Joint Forum constituted by the three organizations grouping national bank supervisors (the Basle Committee), securities supervisors (the International Organization of Securities Commissions, IOSCO) and insurance supervisors (International Association of Insurance Supervisors, IAIS).

guard transparency and stability and to harmonize procedures, techniques and requirements of preventive control, across national and functional borders. In this framework, the tendency towards more uniform supervisory methods may also result in significant savings for multinational financial undertakings, freeing them from a multiplicity of requirements under a multiplicity of authorities.¹⁰

More generally, cooperation is needed to overcome legal and regulatory inconsistencies between countries and sectors as regards some especially delicate aspects of the global financial system: e.g., the transition to gross settlement systems¹¹ and the reduction, thanks to common standards, of inconsistencies in bankruptcy legislation (Group of Thirty 1996).

After the fact, i.e. following the actual outbreak of an episode of potential systemic crisis, international and interfunctional cooperation is essential to designate a lead regulator responsible for coordinating emergency operations. Experience shows that in the hardest cases, when systemic contagion is already advanced, the ultimate remedy can only be an injection of liquidity, as in the easing of monetary conditions in the West following the Wall Street crash of 1987, with its inflationary repercussions. In Europe's anti-inflationary post-Maastricht scenario, central banks' reluctance to step up monetary creation combines with an appreciation of the problems of moral hazard and opportunism that might derive from unconditional acceptance of the role of lender of last resort.

In the end, therefore, while there may be new variants, the terms of the supervisory authorities' problem in curbing an incipient contagion remain the same as in the long past history of financial crises, the essence of which (Kindleberger 1991, p. 14) is that "the lender of last resort should exist, but his activity should be carefully calibrated". This prudent dosage, in my view, should also govern recourse to other instruments for curbing contagion, such as trading freezes or other automatic circuit breakers for the financial markets (Sarcinelli 1996a). Though preferable to total inaction, such 'first aid' should be

¹⁰ A survey of 66 financial institutions operating on a global scale (Group of Thirty 1997) has found that nearly half of them have more than 500 reports a year to compile for various supervisory authorities.

¹¹ A helpful example of cooperation between supervisory authorities in the prevention of systemic risk is the European central banks' TARGET project for gross settlement of large-value transactions. In addition to cooperation among supervisors, a significant role in the development of TARGET has also been played by the future users of the system (Sarcinelli 1996a).

restricted to reasonably brief periods when the information content of prices and the stability of market infrastructures are jeopardized by the rapid spread of systemic infection.

4. Conclusion

In swinging back and forth between rules and discretionary powers, as regards systemic risk the position of the pendulum, today as in the past, is somewhat uncertain.

In the framework of financial globalization and innovation, prudential rules – rules that are consistent and largely ratified by the direct experience of self-evaluation by the supervised institutions – appear to be the only way to reconcile market stability with growth and to ensure adequate prevention of systemic risk. Yet the increasing reliance on bottom-up risk management methods based on internal models and best practices injects significant flexibility into the interaction between supervisors and supervisees. Carefully calibrated discretionary power, finally, remains the linchpin of effective intervention to prevent any crisis that does break out from infecting the entire system.

In a world where free markets and regulatory constraints must continue to coexist, safeguarding both efficiency and stability (Sarcinelli 1997a), a durable and fruitful equilibrium between the various needs will depend on appropriate investment in human resources – the human factor – by supervisors and supervised institutions to create a solid common base of information, skills, and hopefully shared values. On the foundation of this single culture, the rationalization of supervisory methods for the international financial markets can proceed expeditiously but step-by-step, in the firm belief that the management and control of risk, especially systemic risk, remains more of an art than a science.

APPENDIX

THE RECOMMENDATIONS OF THE GROUP OF THIRTY
AND THE INSTITUTE OF INTERNATIONAL FINANCE

Two major, authoritative analyses on the containment of systemic risks on global financial markets have appeared this year, those of the Group of Thirty and the Institute of International Finance. Albeit with some different shadings of emphasis, the reports concur on the need for a bottom-up approach to designing consistent, uniform standards for assessing the risk of financial undertakings operating on a multinational scale.

The Group of Thirty conducted a survey of a significant sample of institutions (mainly investment and deposit-taking banks) in 13 countries, all global players in the world financial markets. The most interesting findings were as follows: *i*) an estimate of a 20 percent probability that there will be a systemic crisis in global markets within the next five years; *ii*) the opinion that the most likely trigger of a potential crisis is the failure of a single financial institution, due primarily to a collapse of operational infrastructure and/or the lack of adequate control systems to prevent excessive risk-taking; *iii*) company-level risk monitoring and control systems that are still somewhat tentative and largely dependent on human intervention; *iv*) recognition of the practical absence of globally consolidated supervision, due to the fragmentation of powers and jurisdictions among supervisors; *v*) broad support for the idea of assigning powers of coordination to one of the authorities involved, especially for the organization of emergency intervention in case of systemic crisis; *vi*) support for action to set guidelines for risk management and control drawn from the best practices of global financial undertakings.

From these preliminary findings, the Group proceeded to formulate 11 recommendations for financial undertakings (3), auditing firms (2), supervisory authorities (5), and legislators (1, in 4 points).

For financial undertakings, the main recommendation is to create internal structures for continuous information, monitoring and management of the entire map of risks sustained worldwide. This requires a qualitative change in the contribution of outside auditors who, in cooperation with the undertakings themselves, should upgrade their certifications of company health, guarantee full geographical and functional coverage of their evaluations and investigate the most important types of risk more thoroughly.

In its recommendations to supervisory authorities, the Group of Thirty stresses the need to reduce present inconsistencies and, through intensive cooperation between supervisors and supervisees, devise a common frame of reference describing the security of the banks' activities and of the market infrastructures, and above all to agree on the choice of a coordinator among supervisors of global financial institutions.

In the same way, establishing a common body of principles and rules, via legislation, would appear necessary to harmonize the treatment of insolvencies, customer protection, the validity of guarantee contracts and of payments via settlement of net balances.

The conclusions of the IIF are on the same wave length, with a focus on supervision of the largest international financial conglomerates. The analysis stresses the transition from supervision based on type of intermediary (investment bank, deposit-taking institution, etc.) to a risk-based framework. There would have to be an intense interchange of information among the distinct authorities assigned to oversee the various members of a given financial group, in order to assess the overall risk of the conglomerate. Finally, the IIF experts call on financial undertakings to give ample publicity and information – to supervisors, market analysts, counterparties, investors – on the features of their risk management systems.

REFERENCES

- AJASSA, G. (1997), "Codes of governance: some examples", in *Property, Control and Corporate Governance of Banks, Special Issue of Banca Nazionale del Lavoro Quarterly Review*, March, pp. 281-87.
- BANK FOR INTERNATIONAL SETTLEMENTS (1992), *Recent Developments in International Interbank Relations* (Promisel Report), Basle.
- BANK OF ENGLAND (1995), *Report of the Board of Banking Supervision into the Circumstances of the Collapse of Barings*, London, July.
- BORDO, M.D., B. MIZRACH and A.J. SCHWARTZ (1995), "Real versus pseudo-international systemic risk: some lessons from history", *NBER Working Paper*, no. 5371.
- CAGAN, P. (1965), *Determinants and Effects of Changes in the Stock of Money: 1975-1960*, Columbia University Press, New York.
- CRANE, D.B. *et al.* (1995), *The Global Financial System: A Functional Perspective*, Harvard Business School Press, Boston.
- DAVIS, E.P. (1992), *Debt, Financial Fragility and Systemic Risk*, Clarendon Press, Oxford.
- DIAMOND, D.W. and P.H. DYBVIK (1983), "Bank runs, deposit insurance, and liquidity", *Journal of Political Economy*, vol. 91, no. 3, pp. 401-19.
- EICHENGREEN, B. and C. WYPLOSZ (1993), "The unstable EMS", *Brookings Papers on Economic Activity*, no. 1, pp. 51-145.
- EICHENGREEN, B., J. TOBIN and C. WYPLOSZ (1995), "Two cases for sand in the wheels of international finance", *The Economic Journal*, vol. 105, no. 428, pp. 162-72.
- FISHER, I. (1932), *Booms and Depressions*, Adelphi, New York.
- FRIEDMAN, M. and A. SCHWARTZ (1963), *A Monetary History of the United States*, Princeton University Press, Princeton.

- PADOA-SCHIOPPA, T. (1996), "Intervento del Presidente del Comitato di Basilea per la vigilanza bancaria", *Bollettino Economico*, n. 27, pp. 79*-92*.
- SARCINELLI, M. (1987), "Sconsigliabile opporre resistenza alla globalizzazione dei mercati", *Bancaria*, anno 43, n. 1, pp. 71-76.
- SARCINELLI, M. (1996a), "Potential systemic risk: some comments", memorandum for the Group of Thirties, mimeo.
- SARCINELLI, M. (1996b), "From the eurodollar to the dollar and the euro: a quick trip beyond the pillars of Hercules", address to the conference organized by The Phillip Morris Institute for Public Policy Research: "Europe's Global Currency", Rome, 1st July.
- SARCINELLI, M. (1996c), Concluding remarks at presentation of NEWFIN research project "La gestione del personale nei gruppi bancari", Rome, December, mimeo.
- SARCINELLI, M. (1997a), *Capitalismo, mercati, banche*, Edizioni Angelo Guerini, Milano.
- SARCINELLI, M. (1997b), "Banks governance: models and reality", in *Property, Control and Corporate Governance of Banks, Special Issue of Banca Nazionale del Lavoro Quarterly Review*, March, pp. 249-79.
- STIGLITZ, J.E. (1990), "Symposium on bubbles", *The Journal of Economic Perspectives*, vol. 4, no. 2, pp. 13-18.
- SZEGÖ, G. (1996), "Il Frankenstein di Basilea", *Rivista di Politica Economica*, anno LXXXVI, pp. 121-40.
- SZEGÖ, G. (1997), "A critique of the Basel regulation, or how to enhance (im)moral hazard", address to the conference on "Risk Management and Regulation in Banking", Bank of Israel, Jerusalem, 17-19 May, mimeo.