

ITALIAN BANKING ASSOCIATION COMMENT

"CP 12 ON STRESS TESTING UNDER THE SUPERVISORY REVIEW PROCESS"

September 2006

Introductory

Generally speaking, the Italian banking industry agrees on the need for a stress testing procedure as part of the internal risk evaluation and control process. The introduction of a regulatory requirement to explore particularly unfavourable events (stress tests and scenarios) is useful as a means of supplementing methodologies and attenuating pure model risk. For if the internal models were burdened with excessively rigid roles or improper institutional tasks, this could prevent any further development or innovation. Stress scenarios (historical or hypothetical) for regulatory purposes complement the terms of reference for determining the adequacy of the "second pillar" of the New Capital Accord, leaving banks greater freedom for methodological development and dialogue with the supervisory authorities.

At the same time, however, we must consider that:

1) The introduction of stress testing gives supervisors a good deal more freedom in determining mandatory supervisory resources. Central banks have not specified the limits within which stress testing must be conducted or to which the tests must refer. Thus the depth and intensity of the stresses are basically "unrestricted" and may reflect circumstances whose realism and whose probability of occurrence can vary greatly. **We must therefore reiterate the request for improved clarity:**

- on the scenarios for which banks must guarantee stability and resilience with their own capital resources;
- on extreme scenarios, beyond which system stability must be guaranteed by joint strategic action of intermediaries and regulators or by regulators alone, through previously agreed recovery actions (not necessarily explicit or publicly announced).

We realize how complicated and delicate the matter is (bearing on themes of theoretical relevance that have been examined using game theory applied to market supervision). Nevertheless, it is central to correct management of financial intermediaries and resource planning in a framework of certainty and predictable checks by supervisors.

2) **The implementation of the guidelines must be seen as a long-term process.** In an initial phase some "sensitivity analyses" with just a few simple "scenario tests" could be enough, in view of the greater difficulty of conducting the latter sort of stress test (and obviously without prejudice to proportionality).

In any case, in our view a number of essential concepts bear reiteration:

- Stress tests are useful exercises to development strategy and modes of response to extreme but still plausible events. THEREFORE THEY DO NOT

SERVE THE PURPOSE OF DETERMINING CAPITAL RESOURCES THAT MUST BE HELD, SAVE AT THE LEVEL ESSENTIAL TO PRODUCE THE OVERALL STRATEGIC RESPONSE FRAMEWORK. Capital resources are determined by rules and standards that refer to a current operations framework; they are intended to meet mainly idiosyncratic events (involving the liabilities of an individual bank towards other intermediaries) and not systemic crisis.

- FOR SYSTEMIC EVENTS, ESPECIALLY "CATASTROPHIC" ONES, THERE MUST BE PROVISION FOR COORDINATED EXTERNAL INTERVENTION. No bank, even at system level, can guarantee business continuity in these situations, which must therefore be dealt with by other means, such as consultations between supervisors, government and the financial industry.
- The modes and procedures for stress tests must therefore derive from a definite idea of where this key threshold lies, which can only be done by concerted action among those involved (the financial industry, regulators and supervisors).
- THE INTENSITY THRESHOLDS OF STRESS TESTS MUST BE INTERNATIONALLY COORDINATED, because competition itself is international and it is unthinkable that one system (or one national supervisory authority) could select its modes and levels of prudence (making them mandatory for domestic banks, including internationally active ones and multinationals) without coordination with other national markets; these must be thoroughly and publicly justified.

These considerations are especially important with regard to liquidity risk, both because in this matter the regulations rely almost exclusively on stress testing and because the legal framework is still uncertain and unstable, with the opinions delivered by supervisory authorities ranging between far-distant extremes of strictness and openness. To better clarify our position, these considerations are summarized, at the end, in a diagram.

Credit risks

The fundamental purpose of CP 12, from the banks' viewpoint, is to present in comprehensive fashion the entire issue of stress tests envisaged by the capital requirements directive and offer additional indications on how stress testing is to be conducted in the various spheres. In what follows we offer brief comments on the points that emerged from an initial reading as particularly important.

Paragraph II

The definition of stress test is given as a technique of risk management that is used to estimate the possible financial effects of a specified event or occurrence within a set of financial variables, emphasizing that the focus is on events that are exceptional but plausible. Further, it is noted that stress testing is conceived first of all as an internal instrument of risk management, with no regulatory rules on methodology or implementation.

As to the use of stress testing, scenario and/or sensitivity analysis leads to ambivalent application: is the point to produce better knowledge of the bank's risk profile or an assessment of internal capital adequacy for regulatory or operational purposes¹?

¹ Inherent in capital planning through a forward looking vision of risk.

One could add that, especially as regards credit risk and concentration risk, stress testing through internal models can be useful in determining not only loss given default but **also economic capital, to be compared with supervisory capital.**

Paragraph III, ST 5, asks banks to gauge the impact of the lack of future profitability in stress situations on their capital. This **implies the need to estimate the effect of a stress scenario on the bank's future business opportunities.** In an initial phase this would appear to be quite difficult to achieve, insofar as the common stress test techniques described in the academic literature refer to the effect of a stress scenario on possible losses, not possible lost profits. **We ask that this point be re-examined or deleted.**

Paragraph IV

The importance of macroeconomic stress tests is emphasized, leaving it to the banks themselves to choose the sphere of application, which must in any case be sufficiently granular to permit simulation of all material risks identified. Which macroeconomic variables may have more explanatory power is not specified, but their fundamental role as regards credit risk, capital planning, and provisioning in general is underscored.

In this regard, let us not **the need for additional indications from the supervisory authorities on stress scenarios.** In other words, it would be a good thing if the central authority indicated the **macro-economic variables** that should be subjected to stress and the amount of stress, as in fact was done in the IMF's stress tests. It will still be up to the bank to estimate the effect of this scenario on the key variables for credit risk (PD, LGD, exposures and correlations). A single stress scenario for all banks, moreover, would seem to be better also for supervisors, who can thus compare the results of all banks more uniformly.

For credit risk specifically, what is new is the introduction of three distinct types of stress test:

- Concentration risk: CP11 dealt with this as concerns default on large exposures and contagion risk due to excessive sectoral, geographical, currency and possibly legal-commercial correlation and concentration between borrower firms. In this case, a procedural and model structure is needed that can pick up the danger of excessive interdependence, which may originate in economic downturns. CP12 notes the second aspect of concentration risk, defined as loss of value of financial collateral on large exposures. Stress models should therefore contemplate the creditworthiness of the issuer, the loss of value due to the cyclical downturn (e.g. "mild recession").
- Macroeconomic stress: No prescription for the model is given, only reference to the general guidelines on macroeconomic stress. The empirical literature is indispensable in terms of macroeconomic models for credit risk (e.g., CreditPortfolioView, Merton-style models with asset value dependence on macroeconomic variables).
- IRB stress test: This test is connected with the validation of rating models under Pillar I, where the adequacy of operating capital is evaluated relative to credit risk. The main tests include recession (mild recession), identify common drivers and drivers specific to given asset classes (such as for mortgage loan assets and corporate lending assets) and scenarios in which the economic cycle directly affects migration matrices.

The most likely interpretation, therefore, with specific reference to the last two types of stress, is that macroeconomic stress testing focuses on the overall capital adequacy of the bank (thus comprising the entire set of types of risk and focusing on the entire portfolio) from the standpoint of sustainability of economic capital, while IRB stress concerns single models and evaluates each segment or portfolio as such. **We ask for confirmation of this interpretation.**

In the light of these guidelines, we would like to make some methodological observations.

- **Monte Carlo simulation models based on common latent geographical or sectoral factors, and generally used to calculate internal economic capital, already contain scenario information sufficient for adequate exploration of the tails of credit risk distribution.** Many present applications thus implicitly offer elements that complete (by stress explorations) extreme situations or situations that result from “unthinkable” combinations.
- As for the impact of stress on financial collateral, **the treatment for stress test suggested by CP12 seems to be going too far; in our view the method for calculating haircuts envisaged in Pillar I is sufficiently conservative and prudent. We ask that this point be re-examined or deleted.**
- When we speak of stress testing for IRB institutions, we must consider that introduction of stress testing is already required for authorization to use the internal rating system to calculate capital requirements under the IRB method fore Pillar I. So, to repeat what we noted in the general introductory remarks, **at least at first** it would be possible in these cases to limit the requirement to more easily realized stress tests. **We would like to see this principle drafted in the CP12 final version.**
- Finally, we request the provision of further explanations concerning the **depth and intensity of macroeconomic factors and concerning the decisive drivers.**

Financial and liquidity risk

For the first time, concrete examples of possible market and liquidity crisis scenarios based on “reasonable assumptions” are presented. **However, there is no comparably clear and precise definition of the concept of “exceptional but plausible” risk event. We ask for an enrichment of the test in this regard.**

In addition, while we understand the importance of giving banks the greatest possible freedom to define stress test or sensitivity analysis scenarios so that they can adapt their analyses to the complexity and risk of their portfolio, one suspects that the same goal could be attained, at less cost to the banks, by laying down a predetermined basic method and allowing for the possibility of internal models. Specifically, the standardized method could have contemplated definition by the supervisory authorities of a **set of scenarios or shocks** to be applied to the various risk factors, while the advanced method could have allowed banks to development their own ad hoc methodologies. For example, in the case of stress testing of macroeconomic factors that are not characteristic of the individual bank but common to the system, the definition of a “plausible” hypothetical scenario could be determined more by supervisors than by

individual banks. **We would like CEBS to re-consider the hypothesis of a defined set of scenarios or shocks.**

Other risks

In Paragraph V, which speaks of other types of risk, it should be considered that there are types of risk that cannot be quantified but estimated using scenario analysis or qualitative methodologies (operational risk too, in some cases, uses estimation methods based on qualitative hypotheses or possible loss scenarios, in particular worst-case scenarios). In these cases, that is to say, a stress testing technique is already being used to estimate risk. **The text should thus be amended to include an indication that in these cases the creation of an additional stress process is not required.**

Technical matters

At least at first, we ask that simplified aggregation methodologies be used. For instance, assuming a correlation of 1 between different types of risk, i.e. assuming that the aggregate impact is equal to the simple sum of the impacts on the individual types of risk. Positing a correlation of 1 between different types of risk, moreover, seems to be the most conservative assumption.

(ST5.30). The definition of exceptional but plausible events, except for those historically observable, is powerfully affected by qualitative and subjective judgments: **How can the supervisory authority assess the goodness of the choice of the scenario? Will a quantitative evaluation be required?**

It is also said that a bank will be able to choose whether or not to hold a capital buffer adequate to the results of the stress test, but that if it opts not to do so it must be able to explain to the supervisor how it intends to deal with that stress situation. Going back to articles 44 and 46, **is it sufficient to cite the resolution of the relevant committee of the bank?**

(ST8.35). The paper says that the time horizon for the stress test is a function of the maturity and degree of liquidity of the position subjected to stress and that the market risk accordingly requires monitoring every day or at least every ten days, while credit risk can be stress-tested on a longer time horizon. Questions: (i) Assuming the bank decides to use the results of these stress tests to calculate the capital requirement, **how can these results be reduced to a single ultimate result?** (ii) As for testing of interest rate risk on the banking book, **what is the most appropriate time horizon?**

A reference framework

The diagram below is intended to help determine the role and locate the thresholds for stress tests, which the consultation paper still leaves vague and hard to pin down.

The schema confronts the situations that the individual financial intermediary may face with the external context. The classification of market situations refer, as a general approach, to those given in the "Corrigan Report" presented in July 2005 as concerns **counterparty risk in financial activity.**

As the second chart shows, stress tests must be supplementary to internal instruments already in use (short-term forecasts on the bank's position), limited to simulating more or less severe market disturbances but extending to critical situations of severe liquidity restrictions or exceptional declines in exchanges with counterparties. The extent and depth of the scenarios to use may be based on historical experience. Situations beyond a certain threshold, in this view, would serve only to agree on contingency plans. These plans comprise response strategies, which means conduct, systems and procedures, and in any event NOT capital requirements, not even in the cases in which internal instruments would not appear completely adequate; in these cases what needs to be supplemented is the bank's analytical capacity, not its capital.

- First dimension: (micro level) the severity of the liquidity event at the company level, identifying
 - Business as usual situation
 - P&L impact only
 - P&L and tension on pricing/funding situations
 - Threat to Payment continuity
 - Mis-payment or "failure to pay" circumstances

- Second dimension: (macro level) the deepness of the market/system event, separating
 - Normal market conditions
 - Fly to quality situations (market disturbances)
 - Liquidity crunch (market turbulences)
 - Serious liquidity shortage (market crisis)
 - Liquidity collapse (market disruption)

The frame is used to differentiate the description of various circumstances and to highlight internal management tools and the potential approach for regulators.