Banks' Interactions with Highly Leveraged Institutions

Basle Committee on Banking Supervision

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Executive summary

I. Summary and objectives of the report

In recent years, the activities of highly leveraged institutions (HLIs) have grown in both magnitude and complexity. The scope of the interactions between HLIs and mainstream financial institutions, such as banks and securities firms, has also expanded, underscoring the need for a full understanding and management of the risks generated from these activities – risks both to direct creditors and, under certain market conditions, to the financial system as a whole. However, recent events, most notably the near-collapse of Long-Term Capital Management (LTCM), have highlighted deficiencies in banking institutions' risk management practices with respect to some HLIs. The Committee recognises that banks have the principal responsibility for managing their exposures to these and other counterparties in a safe and prudent manner. However, to the extent that certain activities of HLIs can pose particular risks, not only to direct counterparties but, under certain market conditions, to the financial system as a whole, supervisors should ensure that the proper incentives, procedures and standards are in place to encourage a prudent management of these exposures by banking institutions. The Committee recommends that supervisors consider these issues carefully. Furthermore, given the potential for systemic disruptions, the Committee has also considered the desirability and feasibility of direct regulation of HLIs. However, assessment of the costs, benefits and effectiveness of such direct measures would require a comprehensive review of the potential impact on financial markets and market participants. Moreover, the formulation of any such regulatory approach would clearly extend beyond the competency of bank supervisors and require a political initiative.

This report serves three primary objectives:

Evaluating the potential risks resulting from the activities of HLIs, with particular regard to their interactions with banks.

Assessing the deficiencies in banks' risk management practices in respect of HLIs.

Evaluating alternative policy responses for addressing these risks, including the encouragement of sound practice on the part of banks.

While it is virtually impossible to provide a precise definition of an HLI, for the purpose of this paper the focus will be on large financial institutions that have the following characteristics: (a) they are subject to little or no direct regulatory oversight, as a significant

proportion operate through offshore financial centres; (b) they are subject to limited disclosure requirements; and (c) they take on significant leverage. The Committee recognises that not all so-called hedge funds have these characteristics while many mainstream financial institutions exhibit some of them. As such, the recommendations of the report refer to banks' dealings with institutions that pose the particular counterparty risks arising from such characteristics, however they may be classified.

II. Nature of banks' relationships with HLIs

While the case of LTCM was exceptional in a number of respects, it highlights the nature of the interactions between banks and HLIs, and the associated risks. These risks can be broken down as follows:

In the case of LTCM, by far the largest exposures were those arising from OTC derivatives and repo positions. In these dealings, banks typically transacted on a collateralised basis. Thus, *direct exposures* to LTCM, measured as the replacement value of instruments net of collateral, did not comprise a large percentage of the overall trading and derivatives activities of individual banks.

However, in the event of default or disorderly liquidation, banks may have been further exposed to losses resulting from the liquidation of collateral and the rebalancing of portfolios under adverse market conditions. With regard to LTCM, these potential *secondary exposures* were significant, given the prevalent market volatility and the potential for a major adjustment in prices once the liquidation process commenced. (Nevertheless, the potential losses would have been manageable at the individual counterparty level.) Furthermore, the limited transparency of LTCM prevented creditors from obtaining a complete picture of its investment positions, and consequently limited their ability to gauge such secondary exposures.

The potential for systemic risks following default or disorderly liquidation of an HLI may be based on a number of variables, including the size of the HLI, its leverage, the concentration of its portfolio in particular markets and the prevailing market conditions. Such systemic or *stressed-market exposures* may result from a rapid or disorderly deleveraging of large positions, against the background of already volatile and illiquid markets. This process may lead to higher volatility, the drying-up of liquidity in related markets and subsequent knock-on effects on the portfolios of creditors as well as third parties. Furthermore, the potential increase in risk aversion and uncertainty following such events may contribute to extended distortions in the market.

III. Quality of banks' risk management practices with regard to HLIs

Transactions with HLIs pose particular challenges to the risk management process, given the relative opaqueness of their activities, the absence of a common measure with which to calculate leverage and exposure, and the dynamic nature of their trading strategies. Furthermore, as the case of LTCM highlights, the vulnerability of banking institutions to HLIs may be magnified by the existence of a strong competitive environment in which creditors are tempted to compromise important elements of the risk management process and to agree to generous credit conditions.

Deficiencies in due diligence procedures

Banks generally did not appear to possess effective policies and guidelines for managing exposures to some HLIs in a manner consistent with their overall credit standards. The initial analysis of HLIs' creditworthiness was constrained by the limited availability of financial information; credit decisions were, to some degree, based on non-systematic and largely qualitative assessments of risks, and on the reputation and perceived risk management capabilities of the HLI concerned. These shortcomings appear to have compromised the accuracy and rigour of subsequent stages of the credit process, including the setting of limits and the collateral and margin arrangements.

Other contractual arrangements - such as standard ISDA documentation which specifies acceptable collateral and defines events under which contracts may be closed out - were generally applied. However, certain elements of the close-out clauses – such as limits on deterioration in net asset values - were adjusted to a less prudent level.

Ongoing exposure monitoring

A number of weaknesses were also prevalent in this category. For example, while collateral management systems appeared to adequately measure and provide cover for direct exposures, the Committee did not find a commonly used framework for accurately estimating secondary market exposures. Furthermore, banks did not generally conduct stress tests on their exposure to HLIs.

The frequency as well as the comprehensiveness of counterparty reviews also appeared inadequate in many cases. Annual reviews were typically supplemented by ad hoc updates; banks generally obtained little information on HLIs' off-balance-sheet exposures or risk management strategies.

IV. Potential policy responses

Since certain activities of HLIs can generate significant risks, not only to direct creditors but, under certain circumstances, also to the financial system as a whole, the Committee considered three broad categories of policy responses to address these risks. The first set of responses could be characterised as *indirect* approaches focused on the major counterparties of HLIs (primarily banks and securities houses). The second approach would aim at enhancing the transparency of HLI activities. The third approach would aim directly at and would involve the creation of a framework for the regulation and supervision of such institutions.

Indirect approaches

(a) Promotion of sound practices through the supervisory process

- Many of the risks associated with the activities of HLIs can be addressed through better risk management processes at banks and securities firms. It is important that both banks and supervisors analyse the various risks inherent in transactions involving HLIs and evaluate the deficiencies in existing risk management and controls.
- The committee recommends that supervisors encourage banks to pursue more prudent risk management policies through various means. These include: (a) formulating and implementing standards for sound practices in bank/HLI dealings. A key motivation for articulating such sound practices would be to ensure that improvements seen since the LTCM incident are "locked in" over time; (b) developing a more comprehensive due diligence process, paying

attention to the particular counterparty risks involved in dealings with HLIs; (c) formulating a more consistent process of stress testing; and (d) studying and implementing improved and consistent methodologies for measuring potential future exposure. Progress on this front may also provide the basis for a more effective and consistent setting of limits. A separate sound practices paper which is being released together with this report addresses these issues in more detail.

- The Committee notes that more prudent risk management by banks with respect to their involvement with HLIs could have the additional benefit of limiting or reducing the leverage of these unregulated institutions. This, in turn, may contribute to limiting the riskiness of HLI portfolios and, consequently, to reducing possible third-order or systemic effects resulting from the deleveraging of positions.

(b) Regulatory and supervisory measures

- In addition to promoting sound practices, supervisors may wish to review existing regulatory standards to ensure that these do not provide banks with distorted incentives in dealing with HLIs. The report considers the capital treatment of the credit exposures arising out of derivatives and repurchase transactions with HLIs, as well as the treatment of unsecured lending, lending with inadequate financial covenantsand equity participations. A case can be made for strengthening several of these areas. These need to be evaluated in the context of the Basle Committee's overall review of the Capital Accord.

- The Committee also notes that national bank supervisors have a number of instruments at their disposal to influence banks' involvement with HLIs. For instance, in some cases supervisors impose more stringent capital requirements than those of the Basle Accord, or rely on a differentiated supervisory treatment of individual banks (e.g. capital and reporting requirements, large exposure limits) depending on the riskiness of their particular lines of business. In some instances, supervisors may use other formal or informal approaches to prohibit banks from engaging in certain activities, such as lending to a particular class of risky counterparty. Supervisors could therefore evaluate the discretionary instruments available to them to provide proper incentives and disincentives to banks in order to ensure that they deal with HLIs that provide adequate information and do not pose excessive legal or reputational risk. Indirectly, such approaches may have the benefit of stimulating HLIs to manage their risks in a more "responsible" way.

Enhancing transparency

- The Committee recognises the importance of enhanced transparency concerning the activities of HLIs. One possibility would be to conduct a general review of the adequacy of public disclosures provided by global players. Another possibility that has been considered is whether the concept of a credit register for bank loans could be extended to the HLI context. The Basle-based Euro-currency Standing Committee is currently examining a number of options in this area. A number of private sector institutions are also looking at related issues.

Direct approaches

- More direct regulation of HLIs may be necessary should the indirect measures, together with enhanced market transparency, prove to be insufficient. If deemed appropriate, direct regulation could take a number of forms, including licensing requirements, fit and proper tests, and minimum standards for capital and risk management.
- While some of these alternatives hold a certain appeal, there exist a number of key obstacles for these direct approaches. These include (a) arriving at a workable definition of an HLI and (b) establishing jurisdiction over the activities of institutions that are typically located in offshore centres. Overcoming these obstacles would require a high level of political initiative and involve consideration by political, legislative and judiciary bodies.

Introduction

This report, prepared by a small Working Group of the Basle Committee on Banking Supervision*, analyses the risks posed by highly leveraged institutions (HLIs) both to direct creditors and, under certain market conditions, to the financial system as a whole. The report focuses on the interactions between HLIs and mainstream financial players (i.e. banks and securities firms).

Part I of the report provides a description of the characteristics of HLIs and explains the nature of their interactions with banks, using the case of Long-Term Capital Management (LTCM) as an example. Part II assesses the quality of banks' risk management practices with respect to HLIs. Both the credit approval process and ongoing exposure monitoring are examined. Part III discusses possible supervisory and regulatory responses to the weaknesses identified in bank practices and to the overall risks posed by HLIs. In this part, three possible approaches are discussed: (1) promoting sound practices, possibly supplemented through other specific regulatory responses (such as creating proper incentives through capital requirements); (2) enhanced transparency of the activities of large HLIs and possibly other global financial institutions; and (3) direct regulation of HLIs.

The paper accompanying this document presents sound practice standards that address the types of weaknesses identified in banks' dealings with HLI counterparties.

1. Banks' interactions with HLIs and resulting supervisory issues

This section describes banks' involvement with highly leveraged institutions and the potential risks associated with such counterparty relationships. While the discussion focuses on HLIs, some of the observations made apply to banks' credit relationships more generally. The LTCM case is used to illustrate the types of exposures and risks that can arise in connection with counterparty exposures to large HLIs. Such exposures can take many forms, including secured and unsecured credits (both on and off-balance-sheet) and direct investments. As with all counterparty exposures, exposures to HLIs raise safety and soundness issues at the level of individual institutions if they are not managed well. Moreover, in the case of large HLIs such as LTCM, default and rapid liquidation of individual positions could lead to a significant increase in market volatility and a reduction in liquidity, indirectly affecting other financial institutions and potentially the capacity, performance and

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* The list of members of the Working Group is included in this report.

stability of markets more generally. The remainder of this section discusses these issues in greater depth.

1.1 Characteristics of HLIs

It is difficult to provide a precise definition of a highly leveraged institution. Rather than attempting to define HLIs in a very specific manner, the Committee was of the opinion that it would be preferable to adopt a broader definition that would also apply to relevant institutions with similar characteristics.

For the purpose of this paper, the focus is on those types of *large* financial institutions that generally have a combination of the following attributes (none of which individually is unique to HLIs). *First*, they are subject to very little or no direct regulatory oversight. In the case of hedge funds, this limited regulatory oversight results from such entities being structured as limited partnerships, investors being either institutions or sophisticated high net worth individuals and the securities issued taking the form of private placements. Moreover, a significant proportion of hedge funds operate through offshore financial centres. *Second,* the HLIs considered in this paper are generally subject to very limited disclosure requirements, compared with regulated financial institutions and/or publicly traded companies, and are not subject to rating by credit-rating agencies. *Third,* such institutions often take on significant leverage, where leverage is the ratio between risk, expressed in some common denominator, and capital. Significant leverage increases HLIs' exposure to large movements in market prices and consequently can expose creditors to significant counterparty risk

Leverage can be achieved through conventional means, such as obtaining cash through unsecured or partially secured debt, but in reality much of the leverage of HLIs is created through the types of trading strategies undertaken and the transaction terms they receive from their counterparties. For example, an HLI effectively leverages its activity when it sells Treasury bonds short and uses the proceeds to establish a long position in corporate bonds against the short position in Treasuries, thus adding basis risk to its position.

Leverage, in itself, is not unique to HLIs. Moreover, leveraged exposures of investors with high-risk appetites can enable a larger number of other investors to reduce their risks. While the leverage that supports the reallocation of risks provides benefits, it can be fragile. In particular, leverage can raise concerns when combined with poor transparency and little or no prudential supervisory oversight as in the case of HLIs. Particularly because of the latter, counterparties must perform the critical role of assessing the leverage employed in the

risk-taking activities of HLIs and of understanding the concentration of positions and trading strategies. For counterparties to fulfil this role, a reasonable degree of transparency is essential. In the absence of public disclosure requirements, such transparency must be achieved through private agreements between HLIs and their counterparties.

Hedge funds are currently the primary example of HLIs, as defined above, though it should be noted that not all of them are highly leveraged (some hedge funds such as LTCM would clearly fall within the HLI definition used) and that HLIs are not necessarily confined to hedge funds. The attraction of such funds for particular types of investors is that they allow them to diversify their portfolio into high-risk investment opportunities. Transactions by hedge funds have also brought additional liquidity to financial markets, at least under normal circumstances.

Hedge funds can be classified into various categories, based primarily on the nature of their trading strategies. But in the broadest sense they can be broken down into two general groups. The first category of institutions comprises macro or directional funds, which take positions based on assumptions about the appropriate level and likely direction of fundamental economic indicators. Such funds are typically active in stock, bond or foreign exchange markets, both cash and derivatives. Many macro/directional funds engage in global trading strategies, with growing emphasis on emerging markets in recent years. Such funds are exposed to outright movements in market prices.

The second group could be characterised as comprising relative value or arbitrage funds. These funds take offsetting positions in comparable financial instruments, betting on changes in their relative value. For example, a fund might take a position based on the spread of a corporate bond narrowing relative to that of a government bond of comparable maturity. Such a position could entail going long on the corporate bond and short on the government bond. Similarly, this type of position could be replicated using derivatives, going long on the swap spread and short on the government futures contract. The larger funds also employ such types of trading strategies across different countries and markets. Relative value funds typically attempt to hedge out exposure to movements in general market risk, but remain exposed to changes in spreads and the liquidity risk associated with the unwinding of the long and short positions of a trade. While these risks are generally seen as smaller than the risks in a set of outright positions in similar instruments and notional amounts, the leverage, size and use of dynamic trading strategies can greatly magnify exposure to the risks of relative value trading, particularly in periods of market stress.

1.2 The case of LTCM

The near-collapse of LTCM highlights certain types of risks that counterparty dealings with HLIs can pose, both for individual institutions and for the financial system more generally. For counterparties, the usual credit risks in transactions were magnified in particular by LTCMs size, its use of extensive leverage, its reliance on a high degree of market liquidity, its concentration in certain markets and instruments, and its highly secretive nature. The combination of these risks may have made LTCM a unique case, but they also raise a number of important issues about the adequacy of counterparties' credit risk management procedures more generally.

Clearly, one of the most noteworthy aspects of the LTCM case relates to the size of its positions, especially taking into account its off-balance-sheet exposures. LTCM is reported to have had a very large number of trades on its books with total assets of $125 billion. Notional off-balance-sheet positions amounted to well over $1 trillion, consisting primarily of futures contracts on various exchanges, interest rate swaps and various other types of OTC derivatives positions (although many of the contracts were in fact offsetting).

In addition to sheer size, LTCM appears to have been highly leveraged. LTCM had an equity/balance-sheet asset ratio of about 25 to 1 at the beginning of 1998. This is of course only a very incomplete measure of leverage since it does not account for the impact of LTCM's derivatives portfolio. It is not clear how large LTCM's true leverage was, based on a more meaningful measure that relates capital to some comparable measure of risk for the whole portfolio. (It should be noted that LTCM had also paid back a substantial amount of capital around end-1997 so as to increase gearing in an attempt to enhance the return on capital.)

The question can be posed as to how LTCM managed to become so large and assume so much leverage. With the benefit of hindsight, it is possible to point to a number of factors. First, the lack of transparency made it difficult for individual counterparties to obtain a full picture of LTCM's overall operations and risks. Second, despite this lack of transparency, a strong competitive environment and a strong desire to gain insight into LTCMs trading strategies appear to have led counterparties to compromise important elements of their credit risk management process. Third, some counterparties may have taken excessive comfort by assuming that the relative value strategies of the fund meant that effective leverage was less than that normally implied by the size of the balance sheet and outstanding off-balance-sheet transactions. Fourth, the terms offered by counterparties on margin agreements for repos and OTC derivative instruments – including no initial margin,

two-way margining and other favourable terms – were generous. Fifth, counterparties placed heavy reliance on collateralisation of mark-to-market exposures. And finally, there was an excessive degree of confidence in the reputation and risk management capabilities of LTCM's principals. What cases like LTCM show is that, even when arbitrage or market-neutral strategies are pursued, the large size of positions and the consequent heavy reliance on market liquidity can, in themselves, create substantial risk. These risks include exposure to large margin calls when market volatility increases and the liquidity risk associated with the simultaneous unwinding of large long and short positions.

What also characterised LTCM was the scope of its activities, with involvement in a number of geographic and product markets, in some cases involving quite concentrated positioning within a given instrument class, maturity band or risk factor. LTCM was active in numerous markets, including: (a) government, corporate and emerging market bonds; (b) equities; (c) futures, with positions in over a dozen futures exchanges worldwide (in some cases positions were quite large in relation to total open interest); (d) OTC derivatives, in which it conducted business with about 50 counterparties; and (e) options, with volatility positions in a number of markets, including short volatility positions in equity markets.

A notable feature of LTCM was the extremely secretive nature of its dealings with counterparties and investors. While each counterparty knew its own positions with respect to the fund, none of LTCMs counterparties appear to have had a comprehensive view of its concentrations in particular assets, its major risk positions or its overall risk profile. As a result, it was not possible for counterparties to arrive at meaningful assessments of their true credit exposure.

Contrary to perceptions, LTCM does not, furthermore, appear to have had risk management systems equal to the challenge of its extensive and complicated positions. Moreover, LTCM's models assumed that correlations across major markets and products were relatively low and, consequently, that the portfolio was well diversified. In fact, following the Russian rouble devaluation and debt moratorium, global markets simultaneously moved in the same direction, with credit spreads widening, equity markets declining and volatility increasing in various equity and interest rate markets. The confluence of these events, together with a reduction in liquidity in many markets, ultimately produced the large losses experienced by LTCM.

1.3 Counterparty risks

The LTCM case demonstrates that the activities of large HLIs can result in significant exposures if the counterparty risks are not well managed and understood. At the time of LTCM's near-collapse, the risks to counterparties could be viewed in schematic terms as consisting of three levels: (1) direct exposures; (2) secondary exposures resulting from the potential liquidation of transactions under margining agreements, factoring in volatile markets and higher-than-normal liquidation costs; and (3) stressed-market exposures, factoring in the impact of a potentially broader systemic disturbance on counterparty exposures.

(a) Direct exposures

For banks, the most significant exposures to LTCM arose out of their trading and derivatives activities. Banks' direct exposures covered the exposure inherent in the various types of transactions conducted with LTCM. Such exposures arose from OTC derivatives, repurchase agreements, prime brokerage, futures clearing and lending. Moreover, a few banks had equity investments or structured equity-like positions in LTCM.

In the case of OTC derivatives, exposure typically is calculated as the sum of the current mark-to-market exposure, taking into account legally enforceable netting agreements, and potential future exposure (PFE), which provides a measure of how far the contract could move into the money over some defined horizon (typically over the life of the contract) and at some specified confidence interval. When default occurs, the mark-to-market exposure at that time essentially becomes the exposure.

When thinking about the types of exposures arising from LTCM's OTC derivatives transactions, it makes sense to distinguish between collateralised and uncollateralised positions. In the case of LTCM and other HLIs, OTC contracts were conducted primarily on a collateralised basis. Counterparty measurements of current replacement value, net of collateral, generally resulted in minimal exposures. However, as is discussed in more detail below, such a measure of exposure does not capture the potential costs associated with liquidating/replacing positions under adverse market conditions and possible legal obstacles to the liquidation of collateral posted by an insolvent HLI.

For most banks, direct exposures to HLIs, net of collateral, were modest both in absolute terms and as a percentage of overall trading and derivatives activities. Nevertheless, for some, LTCM was among the largest counterparties in a given product category.

(b) Secondary exposures

While counterparties largely dealt on a collateralised basis in their trading and derivatives activities with LTCM (both OTC and exchange-traded derivatives as well as repurchase agreements), there was nevertheless a significant amount of unsecured exposure inherent in these types of transactions. In the event of a default by LTCM (or perhaps even of a disorderly wind-down of its positions), these counterparties would have had to liquidate positions and rebalance their portfolios. Counterparty losses would have been a function of the prices at which such transactions could be executed in relation to those prevailing at the time of the last receipt of collateral. The potential size of such losses depended significantly on the assessment of two factors.

The first relates to the overall market liquidity prevailing at the time of LTCM's near-collapse. There was an overall decline in market liquidity around September 1998, affecting markets in which LTCM was active. As a result of the market turmoil in the summer, a number of large firms had experienced significant trading losses, affecting their willingness to assume relatively risky trading positions. Markets were experiencing a general flight to quality and to liquidity, evidenced by substantial widening of yield spreads on corporate and emerging market bonds. Moreover, implied volatilities in equity indices and interest rates increased substantially over this period. LTCM itself was experiencing difficulties reducing its risk positions, even though it was not attempting to reduce all its positions at the same time.

Second, there was significant uncertainty about the impact on counterparties' direct exposures in the case of a rapid unwinding of LTCM's portfolio against the background of already highly volatile and illiquid market conditions. As mentioned earlier, LTCM's positions were large in absolute terms and, in a number of markets, the large size of LTCM's positions created concentrations. Moreover, LTCM held substantial OTC derivatives positions in instruments for which there was little liquidity, even under normal market conditions. This was due in particular to the long-dated nature of certain types of transactions, the fact that these positions entailed the use of dynamic hedging techniques and the fact that some positions could not be hedged at all.

While it is difficult to fully assess the impact of these various factors, LTCM's major counterparties developed rough estimates of the possible additional losses associated with their direct exposures under such adverse market conditions. In total, these estimates ranged from about $3 to 5 billion for the institutions participating in the consortium to rescue LTCM.

(c) Stressed-market exposures

While counterparties' direct and secondary exposure to losses appeared to be manageable, these could have been magnified by a number of broader risks associated with the default of an HLI the size of LTCM, against the background of the deleveraging and liquidity reduction already in train in the markets since the Russian default. In particular, these include:

(i) The impact of rapid deleveraging of positions on markets more generally. This could lead to higher volatility and a drying-up of liquidity in related markets beyond those in which LTCM was directly involved.

(ii) The impact of greater volatility and reduced market liquidity on third parties not directly exposed to LTCM. Moreover, third parties could be destabilised because of rumours about their exposures to LTCM as well as to other HLIs, especially in the absence of clear disclosures.

(iii) The impact of (i) and (ii) could in turn affect the value of counterparties' other trading positions.

(iv) A decline in firms' revenues due to overall risk aversion and uncertainty in the markets, resulting in a slowdown in various types of capital market activities (for example, debt and equity underwriting).

These broader, system-wide risks were generally not quantified by institutions in the LTCM context and many, such as the slowdown in revenues, were in evidence even before LTCM's near-collapse. However, some institutions indicated that their measure of potential losses from an LTCM failure could have increased significantly if these broader risks had been included in their measures of exposure.

2. Quality of banks' risk management practices with regard to HLIs

Part I used the LTCM case to discuss the different types of risks arising from counterparty dealings with HLIs. This part examines how well banks managed these risks, focusing on two broad areas. The first relates to the credit analysis process, that is, the steps undertaken in the initial assessment of the counterparty's credit quality and the terms under which credit is granted. The second relates to the monitoring and management of exposure after the initial credit-granting process. Collateral arrangement and management processes are considered in the discussion of these two areas.

The Committee recognises that a number of institutions had not dealt with or had significantly restricted their activities with HLI counterparties. The findings discussed below therefore focus on those institutions with a significant exposure to HLIs. It should also be pointed out that not all institutions showed the same shortcomings in their involvement with HLIs as identified below.

Banks and other financial intermediaries have a key role to play in monitoring the risk-taking activities of HLIs and other types of counterparties as part of their credit risk management process. However, in the case of HLIs, this can be particularly challenging, given the relative opaqueness of their activities, the significant use of leverage (which can be difficult to measure) and the dynamic nature of their trading positions.

In fact, banks' risk management processes displayed a number of weaknesses with respect to LTCM and, to some extent, HLIs more broadly. In general, there was a lack of balance between the key elements of the credit risk management process, with a heavy reliance on collateralisation of direct mark-to-market exposures. This in turn made it possible for banks to compromise other critical elements of effective credit risk management, including upfront due diligence, exposure measurement methodologies, the limit setting process, and ongoing monitoring of counterparty exposure, especially concentrations and leverage.

In managing relationships with HLIs, banks clearly relied on significantly less information on the financial strength, condition and liquidity of these counterparties than is common for other types of counterparties. To a significant extent, this compromising of credit standards was the result of a highly competitive market environment and the appetite to conduct business with certain counterparties. Moreover, the quality of credit assessments did not keep pace with the changing risk profile of HLI portfolios (which reflected a general increase in risk through instruments such as complex derivatives and non-dollar repurchase agreements), the implications of rapidly changing market conditions and structural changes in HLI strategies.

2.1 Credit approval process

An effective credit approval process consists of a number of elements, including: (a) sound policies, procedures and documentation; (b) effective upfront analysis of counterparty credit quality; (c) limit setting; (d) establishment of collateral arrangements; and (e) establishment of other contractual provisions. Banks' dealings with HLIs reveal

weaknesses in each of these areas. In many cases, the issues raised here have implications for the credit management process more generally.

(a) Policies, procedures and documentation

Many banks did not have in place effective policies and procedures that provide clear guidelines for managing counterparty credit risk with HLIs consistent with the firm's overall credit standards. In a number of cases, policies tended to be very general, providing inadequate parameters for the types of credit standards to be applied to different classes of counterparty. Moreover, in some cases, the balance between the role of the credit function and that of the business lines appears to have been weighted more heavily towards the latter.

Documentation of initial and ongoing counterparty relationships was poor in many instances, making it very difficult to validate the credit decision-making process and the extent to which credit standards reflected the banks' overall risk appetite. Credit files tended to be more comprehensive at banks that had a more traditional lending franchise than those focusing more heavily on trading and investment banking activities.

(b) Analysis of counterparty credit quality

Upfront analyses of HLI credit quality varied significantly based on the size and reputation of the counterparty. Smaller, more recently established HLIs tended to provide better information than the larger, established ones. Overall, however, counterparty credit assessments can be characterised as highly subjective, relying heavily on qualitative judgement.

Quantitative financial information obtained from LTCM and other large HLIs was relatively limited. Typically, counterparties received monthly information on HLI profitability, expressed in terms of changes in net asset values (NAVs) and adjusted for increases and decreases in capital, unaudited balance-sheet information on a quarterly basis and audited balance sheets on an annual basis. LTCM and other large HLIs did make available to banks some information with which to assess balance-sheet leverage. However, information about off-balance-sheet positions tended to be provided only infrequently (i.e. annually), and it was presented in a relatively aggregated manner, making it difficult to assess the counterparty's risk concentrations in products or markets. Other types of information reviewed included a fund's capital structure and fund offering documents, which discuss issues like redemption procedures and lock-in rules, as well as the types of products that may be traded.

Counterparties received very little financial information to enable them to form a more comprehensive picture of the true risk profile of LTCM and some other HLI counterparties. Nor do counterparties appear in many cases to have required or received risk management reports or other summary measures of market and other risks. In particular, counterparties did not generally receive meaningful information about leverage or the concentration of exposure in certain types of positions, risk factors, trading strategies and risk management capabilities. As a result, counterparties were required to rely largely on qualitative assessments of these risks, typically through meetings and telephone conversations with HLI management and traders. The rigour of the credit review process was therefore largely a function of the willingness of HLI management to provide information.

Based on an assessment of these quantitative and qualitative factors, banks would establish an internal rating for the counterparty. The size of the fund, its track record and the reputation of the principals tended to be associated with higher counterparty credit quality as measured by banks credit-rating systems.

(c) Limit setting

The setting of initial limits for HLI counterparties is based on a combination of qualitative and quantitative considerations of the type discussed in (b) above. Thus, the quality of information received has implications for the effectiveness of the limits applied to HLI counterparties. In the case of OTC derivatives, the methodology for specifying limits is generally based on loan equivalent amounts, that is, the sum of current and potential credit exposure, calculated over the life of the contract. As is discussed below, this appears to be an excessively conservative measure that, because it is ignored, can compromise the effectiveness of the limit setting process.

(d) Collateral arrangements

While one could observe a loose relationship between the rating of an HLI counterparty and the type of collateral arrangement offered, such arrangements have been, to a significant degree, the result of the interaction of competitive market conditions, internal assessments of counterparty credit quality, and the overall size and reputation of an HLI counterparty.

Many transactions with established HLIs are subject to two-way margining arrangements. Such arrangements may be accompanied by an initial loss threshold amount, which means that collateral must be posted only after exposure has reached a certain level. The major HLIs are not generally required to post initial margin, but may be required to do so

for more exotic transactions. Some established HLIs appear to have negotiated highly favourable terms with credit counterparties, including securities firms and banks.

Lower-rated HLI counterparties may be required to post initial (excess) margin on trading and derivatives activities. Transactions with these counterparties have not generally been subject to a loss threshold amount. In addition, margining arrangements may be on a one-way basis, which means that the HLI will have to post margin for the mark-to-market exposures it creates for the counterparty but not vice versa. However, even collateral arrangements for the lower-rated counterparties appear to have been subject to a significant degree of negotiation and competitive pressure.

Some institutions have developed methodologies for determining the size of initial margins to be applied to lower-rated counterparties. These provide a measure of the volatility inherent in the position to be transacted and are generally expressed as some percentage of the notional amount. Some counterparties calculate measures of potential future exposure using short time horizons. However, in many cases, the ultimate margins applied to lower-rated counterparties have tended to be the outcome of a negotiating process between the bank and the counterparty.

(e) Other contractual provisions

In general, banks apply standard ISDA documentation to their relationships with HLIs, with cross-references to other agreements, for example the PSA for repurchase agreements. In addition to specifying the types of collateral arrangement and acceptable collateral to be delivered, such agreements also define the types of events under which contracts may be closed out. The major close-out provision used in the HLI context is one based on a decline in NAV. While the standard NAV close-out trigger for most HLI counterparties has been a decline in NAV of around 20%, some of the larger HLIs brought competitive pressure to bear and were able to negotiate declines in NAV considerably in excess of this. Of course, this significantly reduces the capital cushion available at the time of a close-out event.

Another problem has been the methodology used to calculate NAV close-out provisions. In some cases, these were calculated using annual returns at either year-end or on a 12-month rolling average basis. Given the potential smoothing of near-term poor performance over a longer time horizon, such a methodology may not be very sensitive to a rapid decline in counterparty credit quality. This problem is magnified when combined with

the 40%-50% close-out triggers that some of the largest counterparties have managed to negotiate.

Beyond NAV thresholds, banks generally did not have flexible contractual provisions that could become more stringent as the credit quality of the counterparty deteriorated. For example, covenants with LTCM did not require the posting of, or increase in, initial margin as the risk profile of the counterparty changed, for instance as leverage increased.

2.2 Ongoing exposure monitoring

Credit assessments of HLIs are likely to have relatively short shelf-lives, owing primarily to the dynamic nature of their business activities. In addition, HLIs are not subject to additional external monitoring on a periodic basis, such as by credit-rating agencies. This raises the importance of ongoing exposure monitoring by the counterparties of HLIs. However, as in the case of the due diligence process, a number of weaknesses have been evident in this practice. These relate in particular to the methodology used to measure exposures, the resulting implications for the limit setting, the frequency and depth with which counterparty reviews are conducted, and the scope and quality of information made available under such reviews.

(a) Exposure measurement methodologies

As discussed earlier, HLI counterparties face various types of exposures, which have been characterised as direct exposures (current replacement cost plus potential future exposure), secondary (close-out and liquidation) exposures and stressed-market exposures.

Direct exposures

Banks generally measure total exposure to a counterparty as the sum of the current mark-to-market exposure and PFE. However, in measuring and managing derivatives activities with LTCM and other HLIs, most banks focused almost exclusively on the timely collateralisation of current mark-to-market values.

Thus, exposures were generally managed on a net-of-collateral basis and not in gross terms, even though the absolute size of positions can present significant risks in itself, as was illustrated by the LTCM experience Banks looked primarily to their daily collateral management systems as a means to manage and control their exposure.

In general, such collateral management systems have performed well over recent periods of stress, and most banks had their direct exposure secured with cash or marketable securities. This performance of collateral management systems reflected the significant investments made in this area in recent years as well as the automation and centralisation of collateral management functions at many institutions. However, an important challenge for some banks is to ensure that collateral management systems capture all material positions in a timely manner. Moreover, some still do not mark to market all their positions with HLI counterparties on a daily basis.

There would be a clear benefit in the banking industry devoting additional resources to developing more meaningful measures of PFE. Sound measures of PFE are essential for a disciplined process of setting and monitoring overall limits on the size of derivatives activities and exposures with individual counterparties. In particular, it is essential that banks have an effective measure for assessing whether the counterparty's financial capacity is sufficient to meet plausible levels of margin calls, as well as for understanding the full extent of the bank's involvement with the counterparty. This is something which daily marking to market of derivatives exposures cannot provide.

When this concept was developed in the mid-1980s, PFE was frequently measured by the peak exposure of a simulation over some long period, such as five years or the life of the swap, where the peak exposure was defined at a high confidence level such as 95%. While, over time, some banks have introduced refinements to this approach such as simulating the entire portfolio of swaps vis-à-vis a single counterparty and incorporating the effects of legally enforceable netting agreements, the PFE is still seen by some banks to overstate the exposure in OTC derivative contracts. This perception raises the question of whether peak exposure over a long horizon is sufficiently comparable to loan principal amounts to serve as a "loan equivalent" measure. The perception of overstatement of exposure can further be exacerbated by insufficient use of netting, by the failure to effectively capture portfolio effects across products, risk factors and maturities, and by the absence of analysis of PFE at multiple time horizons. In addition, there are major differences across banks in terms of the confidence interval used, the historical period over which volatilities are calculated and the frequency with which such volatilities are updated.

Measures that appear to overestimate exposure, especially when the extent of overestimation is unclear, tend not to be incorporated into the management decision-making process or tend to be used in only a highly judgemental manner. Indeed, relatively few banks appear to monitor their mark-to-market exposures by counterparty against initial estimates of

PFE. The process of establishing and monitoring meaningful limits, especially an upper bound on exposure by counterparty, also appears to be jeopardised by the lack of precision and comparability of exposure measures across a bank's various activities. This is an area requiring further attention by the industry.

Secondary exposures

Even with effective systems for daily collateralisation of mark-to-market exposure, banks can face significant unsecured (or secondary) exposure in their trading and derivatives activities with HLIs, which in the event of default can produce a direct loss, along with the cost of liquidating collateral. Such unsecured exposures can arise in many ways, for example through the use of initial loss thresholds before margin has to be posted, the period it takes to receive margin after a call is made, and the time it takes to liquidate collateral and rebalance collateralised derivatives positions in the event of a counterparty default. Thus, under sufficiently volatile market conditions, even positions subject to initial and daily variation margin requirements can have a high level of inherent unsecured exposure.

Many banks have resorted to the use of loan equivalent PFE measures to assess the risk inherent in their collateralised derivatives transactions. While it is recognised that such calculations are more suitable than those based on a percentage of notional amounts or some other crude measure, they may be less meaningful when trying to quantify exposures highly dependent on margining for repayment. In particular, the use of peak life-time PFE estimates does not in many cases provide a meaningful measure of the possible losses associated with the liquidation and rebalancing of derivatives positions over more relevant, shorter time horizons. Nor may PFEs provide a meaningful tool on the basis of which management can take decisions specifically with respect to setting and monitoring limits on unsecured exposures, calibrating initial margins and setting loss threshold amounts on collateralised derivatives transactions. Greater industry effort is needed to come up with more effective tools for measuring and limiting the unsecured exposure inherent in collateralised derivatives positions.

Stressed-market exposures

This type of exposure can result from any major market disruption, including the impact of the default of a major counterparty on other financial institutions and markets and the feedback effects on an institution's other portfolio positions. To measure these impacts effectively, banks need to conduct a highly sophisticated form of scenario analysis. Probably the only way to truly assess such broader risks is through the use of comprehensive stress

testing, for example evaluating a flight to quality scenario and its impact not only on markets and counterparty credit quality but also on a firm's revenues. Some banks are beginning to explore the joint impact of large market moves, deterioration in credit spreads and a drying-up of liquidity on overall trading positions. Generally, HLI portfolios are subsumed in these broader stress testing exercises. Banks generally did not conduct stress tests on the exposures to major HLI counterparties before the collapse of LTCM.

(b) Monitoring of HLI risk profiles

In many cases, monitoring of HLI counterparty credit quality was conducted as part of the annual credit review process. This was supplemented by monthly analysis of changes in NAVs, quarterly review of unaudited financial statements and annual review of audited financial statements. In the case of LTCM and other HLIs, little information was provided on off-balance-sheet exposures. This relatively limited amount of regular financial information was supplemented through ad hoc qualitative information, typically taking the form of telephone discussions and periodic meetings with the management of HLIs. The information received was generally insufficient to allow banks to assess changes in leverage or the concentration of trading strategies or risk exposures.

In most cases, banks had little insight into the risk management and operational capabilities of HLI counterparties, and this was also the case for LTCM. Most banks did have "checklists" that broadly covered these areas, but in retrospect these proved inadequate. In particular, many banks did not have sufficiently rigorous standards for assessing the quality of HLI risk management methodologies and capabilities relative to their strategies and risk-taking activities. For example, banks did not have a detailed understanding of the types of risk management methodologies employed and the types of parameters and assumptions used (e.g. for VaR calculations). Nor did they have detailed information about the stress testing capabilities of major HLI counterparties. As a result, assessments of risk management were based primarily on qualitative discussions and, in the case of LTCM, largely on the reputation of the principals.

3. Supervisory and regulatory response

As discussed in the previous two parts, certain activities of large HLIs can generate sizable risks, both to counterparties and, under certain market conditions, to the financial system as a whole. In this sense, the overall cost resulting from the failure of a large HLI may not be limited to the private cost of a depreciation of investors' and creditors' assets.

These broader risks cannot be disregarded by supervisors and require careful consideration of the possible policy responses.

Three broad categories of possible policy responses are discussed in this part of the report. The *first* set of responses could be characterised as *indirect* supervisory approaches focused on the major counterparties of HLIs (primarily banks and securities houses). The Basle Committee believes that this is an area where it can take near-term steps to influence the process by which banks manage their HLI relationships, focusing in particular on the articulation of sound practices to the industry and on a review of the incentives created by regulatory capital requirements. Moreover, such indirect measures could go a long way to addressing the various risks to HLI counterparties and the financial system. The *second* set of responses involves enhanced disclosure by global financial institutions, including HLIs. Enhanced market transparency by HLIs and other large financial market participants could be achieved in several ways, a number of which are being reviewed by other international bodies such as the Euro-currency Standing Committee. A *third* set of responses could be aimed *directly* at HLIs through a framework of regulation and supervision of such institutions. Although such direct approaches might have their merit in principle, the Basle Committee is of the view that they may be difficult to implement in practice.

3.1 Indirect supervisory approaches

The Committee believes that many of the risks associated with the activities of large HLIs could be addressed through indirect measures aimed at the counterparties of such institutions (i.e. banks and securities firms). In particular, this could be achieved by addressing some of the weaknesses in these counterparties' management of their credit risk with HLIs. While most counterparties have reviewed and tightened their credit standards for HLIs following the near-collapse of LTCM, a key motivation for articulating sound practices is to ensure that these improvements are "locked in" over the longer term and that the lessons of the HLI experience are applied to the management of counterparty credit relationships more generally.

A key assumption underlying this approach is that, first and foremost, it is the responsibility, indeed it is in the self-interest, of counterparties to manage their risk exposures in a prudent manner. Effective counterparty credit risk management processes at the individual firm level may contribute significantly to ensuring that HLIs do not assume excessive risks and leverage. Should a major HLI default, sound risk management at the counterparty level could contribute considerably to limiting the destabilising effect on

markets, even though there would remain risks of contagion through the indirect impact on markets. In short, sound credit management and monitoring practices by the counterparties of HLIs can help reduce the potential for the types of stressed-market exposures that supervisors and central banks are most concerned about.

In considering regulatory reactions to the risks posed by banks' interactions with HLIs, the Committee recognises the potential role some incentive structures may play in improving the quality of credit management. For example, some supervisors make routine use of variable capital ratios as a supervisory tool, enabling them to adjust required capital holdings in line with perceived risks, many of which may arise from dealings with HLIs. Supervisors can in some instances also use other formal or informal approaches to prohibit banks from engaging in certain activities, including undertaking transactions with particularly risky counterparties, without exercising appropriate controls. This means that, in addition to promoting sound practices and checking on the extent to which they are adhered to, supervisors could in these circumstances use the flexibility already available to provide banks with incentives to deal only with HLIs that provide adequate financial and risk information and that do not pose excessive legal and reputational risks. Such approaches would have the additional benefit of encouraging HLIs to manage their risks in a more effective manner.

(a) Promotion of sound practices at HLI counterparties

The paper accompanying this document presents sound practice standards that address the types of weaknesses identified in banks' dealings with HLI counterparties. In many cases, the issues raised are not unique to HLIs but relate to the credit risk management process more generally. Moreover, it is important that the implementation and monitoring of general sound practice standards be coordinated with securities supervisors, both internationally and domestically. It is primarily the responsibility of individual banks and industry groups to ensure that such practices are fully and meaningfully implemented, including in particular in those areas where further conceptual work is needed, such as the development of more meaningful exposure measurement methodologies. However, where clear deficiencies in risk management practices are identified, these would be corrected through the supervisory and/or examination process (in some countries, examinations are conducted by independent external auditors).

The Committee wishes to highlight the following important areas where practices at many banks need to be enhanced, and which are discussed in greater detail in the sound practices document accompanying this report:

- Establishing clear policies and procedures that define the bank's risk appetite and drive the credit standard setting process.
- Obtaining adequate information from which to make sound judgements of counterparty credit quality.
- Performing adequate due diligence, including setting standards for risk management by counterparties commensurate with the level of sophistication and complexity of their activities.
- Developing more rigorous measures of PFE and using such measures to help set and monitor meaningful overall limits for derivatives counterparties.
- Adequately assessing and measuring unsecured exposure under collateralised derivatives transactions and setting meaningful credit limits based on such assessments.
- Adequately stress testing counterparty credit risk under a variety of scenarios that take into account liquidity effects, with the results incorporated into management decisions about risk taking and limit setting.
- Closely linking non-price terms, including collateral arrangements, covenants (especially regarding leverage) and termination provisions, to assessments of counterparty credit quality.
- Timely monitoring of counterparty transactions and credit exposure, including frequent reassessment of the bank's large exposures, as well as counterparty leverage and the concentration of the counterparty's activities and strategies.

Where credit concerns are identified with regard to a counterparty, or where information on counterparty credit quality is inadequate, a bank should either not conduct business or take appropriate steps to limit and manage the exposure consistent with the firm's overall underwriting standards and risk appetite. If a bank chooses to conduct business on a collateralised basis with counterparties that provide less information about their risk profile, this should be done subject to tougher credit conditions, including, for example, initial margin, no loss threshold, a narrower range of assets deemed acceptable for collateral purposes and a wider range than usual of financial covenants.

(b) Regulatory responses

In addition to promoting sound practice through the supervisory process, supervisors should review existing regulatory standards to ensure that these do not provide distorted incentives for banks to engage in risk activities with HLI counterparties. A particularly important area in this regard is the type of incentives created by regulatory capital requirements.

Regulatory capital requirements for HLI exposures

As discussed in Part I, bank exposures to HLIs result largely from OTC derivatives transactions, repurchase agreements, loans and direct equity participations. In each of these cases, there are questions about whether the existing regulatory capital treatment of these positions adequately reflects the risks involved, and whether it results in perverse incentives that fail to encourage banks to take proper account of counterparty risk and leverage.

Issues that might be considered in the review of the Basle Accord include:

- The maximum risk weighting of 50% for non-bank OTC derivatives exposures. Given the expansion in the OTC derivatives markets and the greater range of counterparties now active in them, the general assumption of uniform credit quality that justified a lower weighting ten years ago is unlikely to hold good today.

- The absence of capital charges for possible unsecured exposures resulting from repo transactions. In this context, maximum collateral valuation rules could be established which would reflect the price volatility of underlying securities and the frequency with which positions are marked to market. It would, inter alia, imply the acceptance of OECD government securities against somewhat less than 100% of market value. This would encourage the payment of initial margin on repo transactions to cover potential unsecured exposures arising from adverse market conditions. Furthermore, it would increase the scope for differentiation in the capital treatment of exposures resulting from repo transactions, as any shortfalls from appropriate levels of collateral would be weighted according to counterparty type.

- The adequacy of the 100% risk weightings for HLI counterparties. Exposures to HLIs will often be significantly more risky in view of the shortage of information about these counterparties and where exposures are not accompanied by financial

covenants, in particular where there are no covenants which limit leverage to a prudent level. Possibly all exposures to all counterparties not covered by covenants on leverage should carry a higher weight.

Large exposure measures

The current large exposure rules of member countries are intended to provide only a rough outer limit for credit risk concentrations (for example, the 1991 Basle Committee paper on large exposures recommended limiting exposures to a single counterparty to 25% of capital). Within these broad limits, supervisors expect banks to have in place more refined internal measures of counterparty exposures and limits, and these are subject to review as part of the regular supervisory process. Clearly, events in the second half of 1998 suggest that the leverage and lack of transparency of HLI counterparties represent common risk factors that make such institutions a potential concentration in banks' portfolios. The Committee encourages the industry to continue making progress in developing effective measures of risk concentrations. Increasingly, such measures need to factor in the linkages between adverse market moves and the credit quality of groups of counterparties that may be exposed to common risk factors.

3.2 Enhanced transparency

The Committee recognises the importance of enhanced transparency concerning the activities of HLIs and other large financial institutions with global activities. Indeed, it could be argued that HLI counterparties may not receive sufficient information about HLI risk exposures through the due diligence and exposure monitoring process – even if it were enhanced to allow banks to fully assess and manage their exposure to the types of stressed-market events discussed in Part I – and that additional measures may be necessary to enhance market transparency.

One possibility would be to conduct a general review of the adequacy of public disclosures provided by global players, with an eye to enhancing the type of information that would improve the stability of financial markets. The Euro-currency Standing Committee is at present studying various approaches for enhancing disclosure by financial market participants. This exercise is likely to involve a broader group of market participants than HLIs, and will assess the type of data that could usefully be collected, both with respect to individual market participants and on aggregate market positions.

Another possibility that has been considered is whether the concept of a *credit register* for bank loans could be extended to the HLI context with adequate assurance of confidentiality. The register would entail collecting, in a centralised place, information on the exposures of international financial intermediaries to single counterparties that have the potential to create systemic risk (i.e. major HLIs). Exposures would cover both on and off-balance-sheet positions. Counterparties, supervisors and central banks could then obtain information about the overall indebtedness of the single counterparty.

Such initiatives, if appropriately designed, could contribute to filling information gaps, for both banks and supervisors, in respect of dealings with HLIs. The challenge in all such initiatives would be to ensure that the information was timely and sufficiently meaningful to add value for making assessments about counterparty risk. In particular, there would have to be a clear definition of the types of institutions that would have to report, a universal format for reporting transactions, and clear authority to collect and disseminate the information. In addition, it would be necessary to ascertain whether periodic collection and dissemination of information could provide a meaningful picture of the risk profile of HLIs, which are primarily active in trading and derivatives activities and whose exposures can change daily.

3.3 Direct approaches

The measures discussed in the preceding section are aimed at improving banks' risk management practices with respect to HLIs. Moreover, such improvements should contribute significantly to alleviating potential systemic risks arising from HLI activities. Nevertheless, more direct regulation of HLIs may be necessary should these indirect measures, together with enhanced market transparency, prove to be insufficient.

Consideration of the costs, benefits and effectiveness of such direct measures would require a comprehensive review of the regulatory environment and the potential impact on financial markets and market participants. The formulation of any such regulatory approach would clearly extend beyond the competency of bank supervisors and would require a political initiative. Moreover, direct regulation would require national legislation and/or regulatory changes in the countries where HLIs are based.

If deemed appropriate, direct regulation could take a number of forms, including licensing requirements, fit and proper tests, minimum capital standards, and minimum standards for risk management and control. The regulatory regime would have to focus on the main concern generated by HLI activities, i.e. their potential to generate systemic risk. The

objective of direct regulation would therefore be to avoid an excessive expansion in the size and risk-taking activity of HLIs to a level that might endanger financial stability.

There are, however, a number of critical obstacles to the direct regulation of HLIs. The first relates to the question of how to define an HLI. For the purpose of this report, the Committee has focused on large financial institutions that are subject to little or no regulatory oversight and disclosure requirements, and that take on significant leverage (see Part I). In order to regulate such entities directly, however, a more workable definition will be required. A complicating factor in this respect is that the nature of the activities of an HLI can change significantly over a short period (for instance, the degree of leveraging can increase sharply). Another challenge to this approach is that it is not clear that these institutions would not be able to restructure themselves so that they no longer meet the regulatory definition. While a definition that would place all potential HLIs under regulation would clearly be excessively burdensome, even if it could be made operational, limiting the regulation to those entities that actually engage in the type of activities that give rise to potential systemic risks requires a system of monitoring and policing that would also require considerable effort to maintain.

The second obstacle is that, even if it were possible to arrive at a workable definition of an HLI, it is likely that these institutions would be able to circumvent regulation. Given that the majority of HLIs are registered in offshore centres, any direct regulation would therefore have to extend to these jurisdictions in order to be effective. Such an extension would require a high level of political initiative and would involve consideration by political, legislative and judiciary bodies.

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