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## INTERNATIONAL FINANCIAL MARKETS

# Financial Markets at the Crossroads: Fears of a Great Crash

by Beate Reszat, Hamburg\*

**Not so long ago the international financial markets were being acclaimed as the cure-all for debt crises and interest rate and exchange rate risks, but new developments are giving increasing cause for concern, as the Deutsche Bundesbank<sup>1</sup> noted recently. Pessimists are spreading a mood of disaster and are already predicting the collapse of the world financial system.<sup>2</sup> What is the basis for such fears? How serious is the danger of a crash?**

Whenever doubts are cast on the stability of the international financial markets, the main attention generally focuses on two aspects – the risks arising from financial innovation, which are not reflected in banks' balance sheets, and the consequences of technological advance in the financial sector, which are now almost impossible to assess.<sup>3</sup> There is a close link between these two developments, since the risks inherent in each are heightened by the very existence of the other.

Off-balance-sheet financial innovations comprise not only new-style hedging instruments such as financial futures, interest rate options and currency options, but also forms of financing such as interest rate and currency swaps and, above all, the conversion of bank claims into negotiable securities. Dubbed "securitization",<sup>4</sup> the latter development has come to occupy the most prominent place in discussions on financial innovation.

Securitization relieves bank balance sheets of an excessive volume of lending, which would cause the banks to look to their own capital ratios and oblige them to set aside liquid reserves. Instead of granting loans, the banks are acting increasingly as pure intermediaries who primarily give borrowers the opportunity to raise funds in the capital markets. Since market liquidity is high, owing mainly to the decline in the flow of resources to developing countries as a result of the international debt crisis, and competition for attractive investments is keen, would-be borrowers of sufficiently high standing are much sought after. This largely explains the multitude of new forms of financing, which are highly

flexible as regards interest rates, currencies, maturities and amounts and as far as possible are tailored to suit the individual borrower.<sup>5</sup>

### Securitization and Swaps

Examples of securitization include floating rate notes (FRNs), certificates of deposit (CDs) and various forms of Euro-note facility, such as note issuance facilities (NIFs), revolving underwriting facilities (RUFs) and so forth.<sup>6</sup> FRNs are Euro-bonds at variable rates of interest, listed medium or long-term bearer securities with maturities of up to 25 years. The coupon is generally set quarterly or half-yearly, an arrangement strongly reminiscent of that used for roll-over credits, which were traditionally the dominant form of lending in the Euro-markets. CDs are negotiable certificates evidencing bank deposits; they generally have maturities of between three and six months. Euro-note facilities may take a variety of forms, but they differ from long-term FRNs and short-term CDs in that they combine a

<sup>1</sup> Neue, nicht-bilanzwirksame Finanzinstrumente und ihre Bedeutung für die Kreditinstitute in der Bundesrepublik, in: Monatsberichte der Deutschen Bundesbank, Vol. 39, No. 4, April 1987, pp. 23-27.

<sup>2</sup> See for example: Deregulierung kam zu hastig und unüberlegt, in: Handelsblatt, 20-21. 3. 1987.

<sup>3</sup> See Federal Reserve Bank of New York. Annual Report 1986.

<sup>4</sup> See also A. R. D o m b r e t : Securitization, in: Zeitschrift für das gesamte Kreditwesen, No. 8, 1987, pp. 326-330.

<sup>5</sup> See G. E v a n s : Why New Products Come and Go, in: Financial Innovations Made to Measure, Supplement to Euromoney, January 1987, pp. 2-19.

<sup>6</sup> In this connection and generally, see A. R. D o m b r e t , op. cit., p. 328. A detailed description of the various instruments is to be found in: Bank for International Settlements: Recent Innovations in International Banking, Basle, April 1986.

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medium or long-term bank financing commitment with the raising of funds by means of revolving issues of short-term securities. The banks generally commit themselves either to take up any securities that cannot be placed or to lend the issuer an equivalent amount.

Swaps arranged by the financial institutions are not reflected in their balance sheets either. A swap entails a medium to long-term exchange of two financing instruments to exploit different market conditions enjoyed by the parties involved. It may be a swap of two currencies for a stated period – in other words a currency swap, in which the parties sell each other a currency spot and at the same time repurchase it forward – or an exchange of two loans in the same amount at different interest rates, in other words an interest rate swap in one or more currencies.<sup>7</sup>

Swaps are mainly concluded for market participants who have limited or no access to the market they prefer or who, because of the level of their outstanding debts in that market, would be able to obtain less favourable terms than the other party to the swap.<sup>8</sup> The swap is thus designed to exploit the comparative advantage that each party enjoys in the finance the other seeks. For a fee, banks set up the contact between the two parties and negotiate the terms of the swap. However, some banks have now begun to act as “market makers”, in other words they sometimes take in swaps without having a counterparty to hand.

### Financial Futures and Foreign Currency Options

Financial futures and interest rate and foreign currency options are instruments that either protect the parties against interest rate and exchange rate fluctuations or exploit rate changes, depending whether they are concluded for hedging or speculative purposes. They too do not appear in the banks' balance sheets, since they are classed as so-called “difference transactions”.

Financial futures are standardised, exchange-traded forward transactions in which all the contract terms except the price are identical for all market participants. They relate to the purchase or sale of a currency or short

or long-term interest-bearing security at a future date and at an agreed price.<sup>9</sup> These instruments are equally attractive to hedgers and speculators, for every interest rate or exchange rate movement causes the price of the future contract to move in the opposite direction, thus either offsetting an existing interest rate or exchange risk or, if price movements have been anticipated correctly, holding out the prospect of a profit.

By contrast, interest rate and foreign currency options convey the right – but not the obligation – to buy or sell a specified financial instrument at a previously agreed price before or at a certain future date. For this right the purchaser pays a premium to the option seller.<sup>10</sup> Since options do not have to be exercised, they are more flexible than futures contracts.

One aspect common to all of the above-mentioned financial instruments is that they are frequently considered to be particularly risky, although the dangers associated with the individual types of transaction differ widely.

### Four Risks

There are essentially four kinds of risk that can be distinguished:<sup>11</sup>

□ There is always a market or price risk if the market value of a financial instrument can decline as a result of interest rate or exchange rate changes. This is particularly true of financial futures and interest rate and currency options, although other instruments are also affected, such as tradable interest rate and currency swaps. Financial futures entail a particularly high risk of loss in the event of price changes because of the low margin requirement and the resulting leverage. In the case of options, the buyer's risk is limited to the premium, but in extreme cases that of the seller is unlimited.<sup>12</sup>

□ A performance or credit risk is always present if the counterparty to a transaction cannot fulfil his contractual obligations, for example owing to bankruptcy. There is no performance risk in the case of exchange-traded financial futures and options, since in principle the exchange clearing house acts as counterparty or guarantees performance. The risk exists in all other cases, primarily for the holder of an instrument or the participant in a swap. However, the banks also bear

<sup>7</sup> See D. Wermuth, W. Ochynski, *Strategien an den Devisenmärkten*, Wiesbaden 1984, pp. 154 ff. In fact, in an interest rate swap the principal of the loans is not swapped, but each party merely takes over the interest payment commitments of the other. See G. Eilenberger: *Währungsmanagement und Devisenkursicherung*, Frankfurt am Main 1986, pp. 175 ff.

<sup>8</sup> See Bank for International Settlements, op. cit., p. 10.

<sup>9</sup> See D. Wermuth, W. Ochynski, op. cit., pp. 132 ff. In contrast to the classification used in the article, Wermuth and Ochynski regard only interest rate contracts as financial futures and deal with currency futures separately.

<sup>10</sup> For details, see Bank for International Settlements, op. cit., pp. 61 ff.

<sup>11</sup> *Ibid.*, pp. 189 ff.

<sup>12</sup> See the example of currency options, in D. Sondermann: *Kurssicherungsverfahren: Hedgen von Optionen*, in: W. Krelle (ed.): *Ökonomische Prognose-, Entscheidungs- und Gleichgewichtsmodelle*, Weinheim 1986, p. 134.

performance risks if they have given a performance guarantee in their role as intermediary or granted a back-up line.

□ There is a market liquidity risk if a negotiable or assignable financial instrument cannot be sold quickly enough in an emergency, so that it does not realise anything approaching its original market value. The mere attempt to sell may cause the price of the instrument in question to fall so sharply that the holder faces heavy loss. It is an ever-present risk if the market is very thin, a description that applies to a greater or lesser extent to all the financial innovations under examination here.<sup>13</sup> The danger is particularly great for banks that in the course of securitization have taken up securities that they were not immediately able to place in the market and which they have refinanced at short term. Whereas adequate liquidity provision would have been made if the funds had been extended in the form of a loan, little or no provision is made for Euro-note facilities, since it is assumed that the securities can be sold at any time. If interest rates rise, the banks are in a dilemma; their refinancing costs increase and at the same time the value of the securities declines, so that the liquidity of the paper decreases at the very time when it is most needed.

□ Finally, a settlement risk arises at maturity when one party has performed his obligations under a transaction but cannot be certain of receiving consideration from the other party. Here one is thinking less of insolvency than of the possibility that settlement will be impeded or interrupted by operational or technical faults in the payment system or in the communications network, causing at least temporary illiquidity.

### Declining Market Transparency

There is nothing new in banks bearing risks; this has always been one of their functions. What does cause concern is the fact that they are actually exposed to greater risk than the innovations described above appear to suggest, perhaps because they "only" act as intermediaries. The risk deriving from the provision of funds is not eliminated by securitization, for example; it is only transferred from the bank, which would previously have borne it as lender, to the holder of the security in question, and not even then if the bank has issued guarantees. Moreover, the risk remains with the bank if it holds the paper in its own portfolio, it may rebound upon the bank owing to its wider relations with the customer in question or it may harm the bank in a chain reaction within the financial system. Protection

<sup>13</sup> See Bank for International Settlements, op. cit., p. 195.

against this danger appears to be hardly feasible; however, even if banks can in principle safeguard against the dangers inherent in financial innovations by using appropriate hedging instruments, as in the case of price risk, defensive measures may fail simply because it is impossible to determine clearly whether there is even a need for protection, how high this should be in case of doubt and what should be done.<sup>14</sup>

One of the reasons why securitization gives rise to increased risk is that it reduces market transparency. Relations between debtors and creditors are generally less close and it is not possible to obtain as clear a picture of the debtor's situation as in loan negotiations between banks and their customers. In addition, some banks still lack experience with the new financial instruments, so that they do not always appreciate the risks they are running. The profits that can be earned from such business often bear no relationship to the risks described, since they are determined by competitive pressure in the international financial markets.<sup>15</sup>

If market transparency declines and at the same time earnings do not adequately reflect the risks incurred, there appears to be a need for increased banking supervision. Up to now, banking supervision has been based primarily on balance-sheet ratios and has thus actually stimulated the expansion in instruments that do not affect the balance sheet. This explains why comprehensive control of the latest developments cannot yet<sup>16</sup> be expected from this direction, a circumstance that increases the unease about such instruments.

Moreover, even without the risks described above, the situation facing the banks has shown that at least some of them are singularly ill-equipped to cope with crises. Problems are brewing primarily as a result of the debt situation of the Third World, but also owing to the incipient cyclical downturn in industrial countries,

<sup>14</sup> For example, where there is a risk of changes in interest rates, it is not always easy to decide whether an interest rate futures contract will provide protection or which would be best. See M. Desmond Fitzgerald: *Financial Futures*, London 1983, pp. 89 ff. Currency options are another example; the seller of a European option might conclude a forward transaction as a hedge in the belief that the option was highly likely to be exercised at maturity, only to find that the reverse was the case the next day because of changing conditions in the foreign exchange markets, so that he was left with an open forward position that now itself bore an exchange risk.

<sup>15</sup> See also Merril Stevenson: *A Game of Skill as Well*, in: *The Economist*, 21st March 1987, *International Banking Survey*, pp. 4 ff

<sup>16</sup> In Germany financial innovations such as Euro-note facilities have begun to be subject to banking supervision since the third amendment of the Banking Law in 1986. See also Ulrike Denny: *Die Deregulierung des internationalen Finanzsystems seit 1975*, to be published in: *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik*, Vol. 32 (1987)

growing protectionist tendencies in world trade and the conflicts associated therewith. They further reduce the international banks' opportunities to earn profits from conventional transactions and make their business as a whole appear more risky.

### Technology and Market Growth

The rapidity with which the financial markets have grown as a result of deregulation and the introduction of new technology also seems perilous to many observers. The main attention here is focused on the load the payment systems can bear. It is reported that CHIPS (the clearing network for banks with offices in New York) and Fedwire (the US Federal Reserve's clearing network) together handle an average of between \$1 and 1.5 billion a day.<sup>17</sup> Transactions are sometimes very large and the speed with which payments are made and positions created once direct computer-to-computer links have been established between system users is breathtaking.

One of the problems is that a large proportion of this daily transaction volume is only transient, consisting of open positions awaiting settlement by the Federal Reserve in the late afternoon. If one of the major members of the clearing house gets into serious payment difficulties in the meanwhile, its credit relations with other banks may quite easily cause the problems to

snowball and bring the entire system to a halt. The second problem is that technical faults in one user's equipment might block the system; if the hold-up lasted for several days, it could raise contractual and legal questions that could affect payments of hundreds of billions of dollars. All in all, the settlement risks are therefore very high here. An incident in 1985, when computer failure forced the Bank of New York to borrow \$22.6 billion from the Federal Reserve so that it could continue to meet its obligations, demonstrates that such fears are not imaginary. The teething problems with the system of computer-based stock trading at the time of the "Big Bang" on the London Stock Exchange in October 1986 give some idea of the potential problems.<sup>18</sup>

### Possible Chain Reactions

All of these developments are disturbing, because they endanger individual banks. But do they for that reason alone create the danger that the international financial system as a whole will collapse, in other words that there will be a "crash"? For many observers, the answer to that question depends on the probability of chain reactions in a crisis.

<sup>17</sup> For details on this and subsequent points, see Federal Reserve Bank of New York, *op. cit.*, pp. 15 f.

<sup>18</sup> Merrill Stevenson, *op. cit.*, p. 4

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One of the favourite scenarios among all the hypothetically conceivable disasters that pessimists love to paint is the one describing how sooner or later a large bank will suffer a technical failure that will prevent it from settling its net position with CHIPS at the close of the day. The system will then cancel all of that bank's payment orders. As a result, other banks to which it owes money will also be unable to meet their commitments and the ripples will continue outwards until the central bank is eventually forced to intervene.<sup>19</sup> At this point the vision ends, and no-one knows whether the Federal Reserve would be able to save the system from collapse. Similar chain reactions are also predicted in the event that the bankruptcy of major debtors endangers the existence of their creditor banks and in turn damages other banks. But are crises bound to develop in this way?

### Chronology of a Financial Crisis

Financial crises and bank collapses in the past have been due to a wide variety of causes,<sup>20</sup> such as overheating of the economy or the ending of a wave of speculation triggered by exceptional political, natural or technical developments. However, not every bank collapse at a time of cyclical change or every bankruptcy as a result of speculative excesses is synonymous with a general financial crisis;<sup>21</sup> as the Herstatt affair showed, the collapse of individual institutions can leave the system as a whole unscathed and its overall stability will not be endangered, provided the public's confidence in the banking system is not undermined and their deposits appear fundamentally safe.

A financial crisis always means that there is a shortage of liquidity which, though perhaps short-lived, arouses a general fear that in a very short time absolutely no funds will be available, whatever the price. This is usually accompanied by a run on the banks and a general loss of public confidence in the financial system. Bank reserves contract, and in an effort to replenish them the banks call in loans, refuse to renew maturing claims and attempt to sell securities from their portfolios. As a result, securities prices fall and the

liquidity shortage grows more acute. The first collapses occur, further exacerbating the situation.<sup>22</sup> It is often suggested that the central bank should react swiftly and firmly in such a situation by intervening as lender of last resort to alleviate the temporary liquidity shortage; only by immediately providing sufficient funds to restore public confidence can it halt the train of events.<sup>23</sup>

### Conclusions

The risks banks are now assuming are quite capable of triggering a financial crisis of the kind portrayed. In view of the increasing internationalisation and the technological changes, it is perfectly conceivable that the collapse of individual banks would bring down others. If this caused a crisis, it is doubtful whether the solution indicated here would be successful, however. A distinction has to be made between two factors that may potentially trigger chain reactions – a psychological factor in the shape of a loss of public confidence, which puts the banks in a self-reinforcing spiral, and a technical factor, whereby a mere breakdown within the computer network can start a chain reaction without any human intervention, as has been seen. In the latter case, the question is how quickly the central bank will hear of it and how much damage will already have been done. If it is a fault that has affected only a small number of banks so far and if its repercussions are correspondingly limited, the provision of liquidity is probably quite sufficient to prevent the crisis spreading. On the other hand, if the damage is already quite extensive, it is doubtful whether the central bank will be able to halt it or will have sufficient funds. The more doubts are voiced in this respect, the greater the likelihood that psychological factors will intensify the crisis. In such circumstances there is little to be gained by increasing the banks' liquidity. The only protection against such an occurrence lies in observing the market in order to spot the signs as early as possible and nip the crisis in the bud.

Banks are now bearing more risks than ever before, some of which are very difficult for outsiders to envisage. At the same time, it is not certain that the banks themselves have sufficient experience to handle these risks. There is now a greater probability that the collapse of one or two institutions will have a knock-on effect and jeopardise the system as a whole. Even if the scenarios sketched here appear rather fanciful at first sight, there appears to be an urgent need for the authorities to keep a much closer watch not only on the business behaviour of banks in general but also on day-to-day events in the markets and the interaction of all the parties involved.

<sup>19</sup> *Ibid.*, pp. 3 f.

<sup>20</sup> See for example the essays in Forrest Capie, Geoffrey E. Wood (eds.): *Financial Crises and the World Banking System*, London 1986; Charles P. Kindleberger: *Manias, Panics, and Crashes*, New York 1978, has now become a standard work on the subject.

<sup>21</sup> On this and subsequent points, see also Anna J. Schwartz: *Real and Pseudo-financial Crises*, in: Forrest Capie, Geoffrey E. Wood (eds.), *op. cit.*, pp. 11 ff.

<sup>22</sup> See also Anna J. Schwartz, *op. cit.*, p. 11.

<sup>23</sup> *Ibid.*, p. 28.