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## Basel II and Data Management: Telekurs at the Starting Blocks

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**The new accord on capital standards for banks will shortly be completed: by mid-2004, the BIS (Bank for International Settlements) will finalize these standards – the product of a consultative process that has been in progress for a number of years – and forward them to the national supervisory authorities for implementation in accordance with specific local regulations. The supervisory authorities of the G-10 countries and the EU member states will then oversee implementation by the banks, and will treat the solutions implemented as final as of end-2006.**

The New Basel Capital Accord, also known as "Basel II", covers all currently identifiable sources of risk that might jeopardize the security and reliability of the financial system. Basel II supersedes the Basel Capital Accord dating from 1988 in that it promotes a more refined classification of risk categories and properties and thus creates a more risk-sensitive link between minimum capital requirements and banking activities. Moreover, financial institutions will be given a degree of freedom in determining the risk management models they adopt; the method they choose, however, must be approved by the national supervisory authority. All models place high demands on data availability. In respect of credit risk and operational risk in particular – two areas that are affected by the principal new features of the Accord – Telekurs Financial is making available securities data and operational data feeds that will help banks to implement the Basel II rules. This article focuses in particular on those aspects of the new system where Valordata Feed can make a valuable contribution.

### The new Accord in brief

The new capital standards laid down by Basel II rest on three "pillars":

Firstly, the rules on *minimum capital requirements* (Pillar 1) specify the capital ratio to be calculated. One requirement that has not changed from the existing rules is the minimum capital ratio of 8%. However, the definitions of the risk-weighted assets – i.e. the parameters expressing the degree of risk entailed in specific claims – have been changed. Whereas most types of risk (especially market risk) have not been redefined, there are particularly conspicuous changes in the treatment of credit risk and operational risk. The latter is now explicitly included in the total eligible risk to be covered by a bank's equity.

Secondly, the *supervisory review process* (Pillar 2) ensures that the capital requirements calculated in connection with the first pillar are sufficiently robust even in a constantly changing business environment. A bank's operating environment may be affected by cyclical

fluctuations or be modified by the development of new areas of business. Consequently, the supervisory authorities require banks to subject the risk management models they develop to regular stress tests and to present the results in detail.

Thirdly and lastly, the principle of *market discipline* (Pillar 3) supplements the two other pillars by obliging banks to disclose their risk profile and capital adequacy. By doing so, important information about the banks is made accessible to all market players, thus helping to promote the stability of the financial system. Like the supervisory review process, the market discipline requirement is based primarily on the principle that Basel II gives banks a great deal of scope in assessing their capital requirements: if the banks apply their own risk calculation methods, their results must be tested by way of stress scenarios. If required, total equity is then adjusted again on the basis of these results.

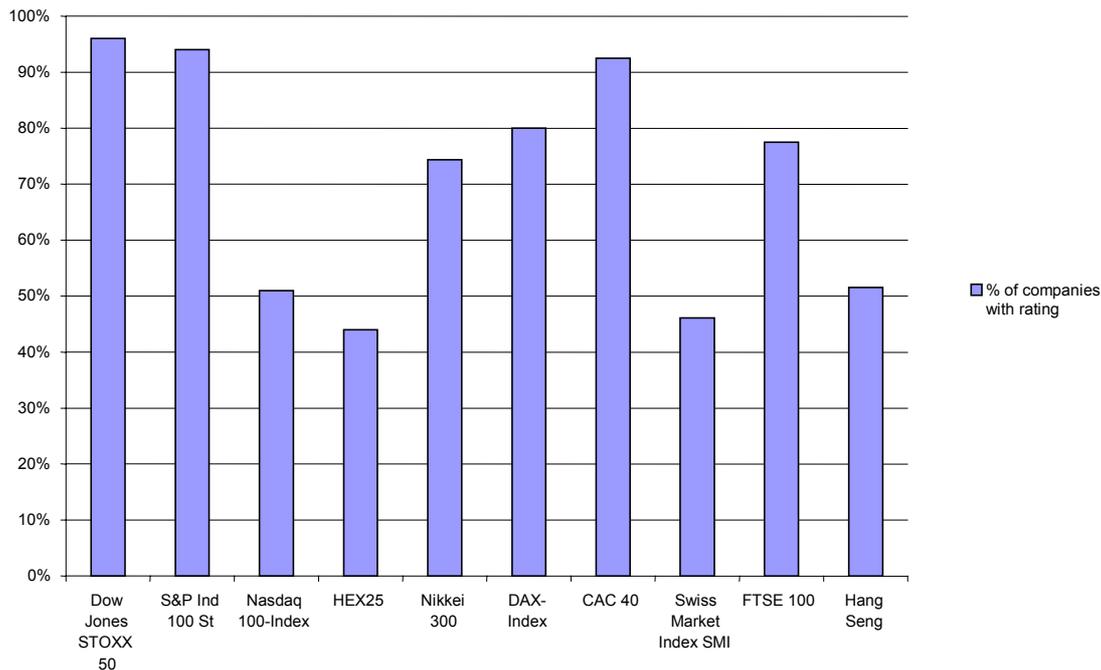
In other words, capital requirements are basically calculated with regard to Pillar 1. The purpose of the provisions in Pillars 2 and 3 is to refine – or, as the case may be, supplement – those of Pillar 1. The rest of this article will focus on the first pillar – the minimum capital requirements – and give special consideration to the newly regulated types of risk: credit risk and operational risk.

### **Credit risk: assessment methods and relevant parameters**

Credit risks are assessed on the basis of the identifiable characteristics of loans. Under Basel II there are three different approaches to rating borrowers and hence determining the capital required as a cushion against risk. The ratings typically accorded by external rating agencies such as Standard & Poor's, Moody's and Fitch are a fundamental consideration in all cases. These ratings are an assessment of whether a company is able to repay its creditors when the loan matures. The main way in which the three approaches differ is that they draw on other, bank-specific methods of assessing creditworthiness in addition to the external rating.

The simplest approach – known as the standardized approach – is based purely on external ratings and on the borrower category: governments and public sector entities are given a lower risk weight than banks and other companies. The minimum capital requirement varies according to the rating of these borrower categories. If the S&P rating is BB+/B-, for example, the risk weight is precisely 8% of the loan. The higher the rating, the lower this percentage becomes, and vice versa; and the degree of deviation varies according to the borrower category. Claims on unrated borrowers are generally risk-weighted at 8% in the case of sovereigns or companies, 4% in the case of banks and 6% in the case of private individuals. The relevance of these standardized values will emerge in particular when assessing borrowers outside of the American market, as a relatively large number of companies active on the capital market do not have a rating. The following chart shows the percentage of companies for which Valordata Feed contains at least one rating from S&P, Moody's or Fitch. These are companies that figure in the major indices of the international financial markets.

Percentage of companies in Valordata Feed™ which are represented in indices and have at least one rating (corporate rating from S&P, Moody's or Fitch)



The second, somewhat more complex approach is known as the IRB (Internal Ratings Based) approach. Here, internally developed risk measures take the place of external ratings, though agency ratings may be used for reference purposes. The banks calculate their own ratings on the basis of quantitative factors – especially data obtained from the analysis of balance sheets of loan applicants – and from qualitative factors such as management assessments or a company's market position. The internal rating is supplemented by the loss rate. This indicates how great the loss of a credit is if the borrower is unable to repay the loan at the due date. A low loss rate is achieved when sufficient collateral is lodged to compensate the lender in the event of default. Conversely, the loss rate is high when unsecured credit is granted. Other factors that determine the overall risk weighting are the remaining maturity of the loan and the actual loan amount outstanding. The latter reduces the risk weight if a loan has already been repaid. Aside from ratings they have calculated themselves, banks also base their IRB approach on the parameters set out by the supervisory authorities.

The third approach is known as the "advanced IRB approach". While based on the second method explained above, it is distinguished by the fact that the bank calculates virtually all the risk assessment parameters itself.

### **Mitigation of credit risk by means of collateralized transactions**

Under Basel II, there are a number of ways of reducing the original credit risk from the levels initially stated in the books. Here, we discuss one of the most innovative options it makes available: the principle of substituting credit risk by collateral. Here the borrower's risk weighting is replaced by a risk weight corresponding to the collateral securing the loan ("simple approach"). There is also an extended version (the "comprehensive approach") in which, instead of exchanging the risk weights of the loan and the collateral, the value of the collateral is subtracted from the outstanding value of the loan so as to reduce the total credit volume outstanding. Not the entire value of the collateral is eligible, however, but only a proportion that has been corrected by the deduction of a safety margin ("haircut").

With both of these risk-reduction approaches, acceptable collateral includes cash deposits, securities or real estate which the borrower (or a third party appointed by the borrower) supplies to the bank for the duration of the loan to secure its repayment. Securities are particularly suitable in that they can easily be classified, as is required when assessing the risk of the actual loans. The credit risk is then comparable to the risk attached to the securities deposited. A number of conditions must be met, however, for securities to be acceptable for securing all or part of a loan and hence to be recognized as risk-reducing. First of all, these requirements define the types of securities that are acceptable as collateral at all. Minimum requirements for each of these types of securities then apply. The requirements are set out in the following table:

Table 1: Requirements for the recognition of eligible collateral

<i>Properties</i> <i>Types of securities</i>	<b>Rating</b>	<b>Issuer</b>	<b>Trading, valuation</b>	<b>Seniority</b>	<b>Inclusion in an index</b>
Government debt paper <i>with</i> rating	BB-	Sovereign state or public sector entity with similar status			
Other debt paper <i>with</i> rating	BBB-	Others			
Debt paper <i>without</i> rating	(If rated paper of the same issuer exists, the rating must be at least BBB-)	Bank	On a recognized stock exchange / sufficient market liquidity	Senior	
Equities			(* on a recognized stock exchange)		Component of a major index (*)
UCITS (limited to investments in instruments listed in this table)			Daily unit prices		

(\*) In the "comprehensive approach", equities not featuring in a major index are eligible if they are listed on a recognized stock exchange.

Finally, the maturity of the loan and the remaining term of the security pledged as collateral should be congruent if the security is not a perpetual debt paper. In such cases, therefore, the **remaining terms to maturity** of the securities must be determined.

Taken together, the criteria set out above serve to identify those securities that are eligible as collateral under Basel II. As it largely supports these criteria, Valordata Feed permits

evaluations for characterising financial instruments as securities eligible as "Basel II collateral" in the context of risk reduction measures.

### **Operational risk: reduction of risk by active data management**

Basel II introduces the term "operational risk" to describe all risks associated with the failure of internal processes and systems, human error and with external events. Two sources of risk in particular that arise in connection with the trading and administration of securities have been highlighted by the Basel Committee: First, business interruptions and system failures that can arise from hardware or software errors and from telecommunications and network problems; and second, errors in process management or in the execution and transmission of transactions which, for example, can be caused by incorrect data input or unsupervised access to systems.

As with credit risk, Basel II sets out three different methods for calculating the capital charges for operational risk. The banks are largely free to choose and implement the method which they deem most suitable. However, they are not permitted – without the prior consent of the supervisory authority – to revert to a simpler method after initially adopting a more sophisticated one.

The first and simplest method, the **Basic Indicator Approach**, requires the bank to hold capital equivalent to a percentage (15%) of average annual gross income over the last three years.

The **Standardized Approach** – the second method – segments the bank into different business areas, each of which has a capital requirement equivalent to a certain percentage of that area's gross income. The highest requirements are for *Corporate Finance, Trading & Sales* and *Payment & Settlement* (18% each), which are thus implicitly ranked as the areas with the greatest operational risk. At the other end of the scale are areas like asset management, for which a capital charge of just 12% is required.

The **Advanced Measurement Approaches** (AMA) constitute the third and most complex method. In assessing this procedure for approval, the supervisory authorities ascertain whether the bank is able to estimate unexpected losses through a combination of internal and external loss data, scenario analyses, checks and controls. Based on the results of these investigations, the regulatory capital requirements are set individually.

In the management of securities information, Valordata Feed offers a number of features that help banks to mitigate operational risk. The exceptionally high content of machine-readable data elements helps to minimize interruptions in data flows across the entire securities transaction chain (i.e. from trading through to settlement and corporate actions management). In particular, the wealth of reference data facilitates the operation of a descriptive data management system that is compatible with other data sources and permits automated processing: as Valordata Feed maintains more than eight million securities identification numbers and trading symbols, a security can be unambiguously identified at any time and the required descriptive data fed through to other systems. Thanks to broad support from a host of reference data, such as currency and country symbols, various securities and trading-place classifications (CFI, MIC codes) and company identifiers, Valordata Feed provides a highly integrated data structure on which to run various bank-wide operations. Moreover, it offers a sophisticated "data controlling" feature: its daily updating mechanism allows users to identify which individual data elements have changed, and when the change took place. If, for instance, a bank has generated faulty instructions relating to a payment settlement (e.g. for an

interest payment, stock dividend, etc.), Valordata Feed will indicate the last status of the corresponding message along with the time of the change and the previous message content.

### **Evaluable securities information and delivery forms to aid compliance with the Basel II rules**

First and foremost, Basel II sets out rules on how the banks should deal with credit risks. The main focus is on monitoring loans to corporate clients and private individuals. With corporate clients, the ratings awarded by external agencies form the basis for the rules on capital requirements. Over and above this, many banks will apply an internal rating system of their own, based on their own risk evaluation mechanisms. This process is in fact one of the banks' core competencies. Basel II also allows for the offsetting securities and other fungible assets used to secure a loan against the outstanding credit risk – or, as the case may be, to substitute them. The comprehensive and granular data elements supplied by Valordata Feed make it possible to closely define the requirements applicable to this collateral. Players on the financial market thus receive information that helps them to evaluate items of relevance to Basel II. In the field of operational risk, Telekurs Financial makes delivery mechanisms available that can be used first and foremost as a preventive measure to reduce these risks. The exceptionally high percentage of machine-readable securities information provides valuable support for all units aiming at seamless automatic processing. With its content-rich reference data, Valordata Feed gives users a wealth of basic data that can subsequently be fed into their own applications for interpretation or combination with other data.