The new Principle I

The amendment of Principle I announced on October 29, 1997 by the Federal Banking Supervisory Office will enter into force on October 1, 1998, replacing the old Principles I and I a.

In accordance with the provisions of the new Principle I, the credit institutions and financial services institutions being supervised will be required to back their market price risks with capital, too, under internationally harmonised standards in future. This is the case both at the level of individual institutions and on a consolidated basis. The old Principle I a only envisaged a limitation of such risks. Moreover, with the amended version of Principle I, the capital charges for credit risks have also been adapted to the forthcoming amendments to the EC Solvency Ratio Directive.

Adequacy of institutions' capital

The banking supervisory norm Principle I is used to determine whether banks (and, in future, what are known as financial services institutions, too) have adequate capital. The contents of Principle I are largely in accordance with the Basle Capital Accord of 1988 and/or the EC Solvency Ratio Directive and the EC Own Funds Directive of 1989.

Protection against insolvency and safeguarding of the system

The aforementioned regulations basically stem from the microeconomic reasoning that, to avert a case of insolvency, the entirety of a bank's risks must ultimately be backed by its capital, and that an adequate supply of capital stabilises not only the institutions them-

selves but also the banking system as a whole. In prudential terms, an approach is being followed which is more general and quantitative in nature, in the knowledge that besides other such components (e.g. risk concentration, liquidity, profitability), qualitative factors (particularly the quality of the management and the institutions' internal controlling system) may also have an impact on the stability of the institutions and the system.

Previously only capital charges for credit risks

In ascertaining the amount of capital considered necessary up to now, the Principle I referred solely to the main risk category of a bank, credit risks. The other quantitative and qualitative risks were considered to be less significant or are difficult to measure; for that reason, they have not been taken into consideration up to now. The risks not captured yet should likewise be implicitly covered with the capital which is required to back credit risks.

Simple approach

The Basle Capital Accord and the Solvency Ratio Directive expressly take a simple approach to risk measurement (standardised measurement method) – also as a result of an international compromise – in order to limit the administrative time and expense on the part of the banks and to avoid excessive interference in the banks' individual risk management strategies. The level of the credit risk arising from balance-sheet positions and off-balance-sheet positions is determined using different risk weightings (100 %, 70 %, 50 %, 20 %, 10 %, 0 %), with a privileged status being granted to positions vis-à-vis most OECD countries ("zone A").

Definition of risk categories

The risks, which have been measured and assigned risk weightings, must be backed by at least 8 % of capital. That means in the specific risk categories, it is assumed that the likelihood of counterparty default will be, on average, 8 %, 5.6 %, 4 %, 1.6 %, 0.8 % and 0 %, respectively. The existence of a widely distributed credit portfolio in risk terms is assumed, in which risk overestimations and risk underestimations in individual positions mostly offset one another.

Change in the measurement of credit risks

Some details regarding the measurement of credit risks in Principle I (see also adjacent overview) have been amended in reference to two EU Directives amending the Solvency Ratio Directive, which have yet to be passed but will likely enter into force before October 1998.

Reduced risk weighting for investment firms

Up to now, a 20 % risk weighting has already been applied to claims on credit institutions in zone A countries. This will apply in future to investment firms from those countries, too, provided they are governed by the Investment Services Directive and the Capital Adequacy Directive or similar prudential rules. Thus the hitherto unequal treatment of credit institutions and investment firms, which has led in the past to different capital costs and thus to distortions of competition, has been abolished. The Basle Capital Accord was also amended accordingly in April 1998.

Capital charges for counterparty risks and market price risks under Principle I

	Non-trading book institutions		Trading book institutions			
Risks	Counterparty risks	Market price risks	Counterparty risks		Market price risks	
Captured positions	Banking and trading book risk assets	Banking and trading book foreign exchange and commodities positions	Banking book risk assets	Trading book risk positions: Trading book counterparty risk positions	Trading book risk positions: Interest and equity positions	Banking and trading book currency and commodities positions
Calculation method	Standardised method	Standardised method or institutes' internal risk models	Standardised method		Standardised method or institutes' internal risk models	
Required backing	Liable capital of 8 % of the weighted risk assets	Own funds to the tune of the capital charges for market price risks	Liable capital of 8 % of the weighted risk assets	Own funds to the tune of the capital charges for market price risks and/or trading book counterparty risks		
Required overall capital ratio [1]	at least 8 %		at least 8 %			

1 Overall capital ratio = $\frac{\text{Eligible own funds}}{\text{Weighted risk assets + 12.5 x capital charges for market risk positions}} \times 100$

Here, eligible own funds are available liable capital, i. e. not needed for other purposes (e. g. to cover breaches of large exposure limits), and the eligible tier 3 capital being used. Tier 3 capital may thus only be taken into account provided it is being used to support market risks. It is necessary to multiply the capital charges for market risk positions by a factor of 12.5 in order to make them comparable to risk assets.

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Mortgage loans assigned lower weightings

Mortgage loans secured by real estate will continue to be given preferential treatment, i. e. a reduced risk weighting of 50 % in the new Principle I (instead of 100 %). For industrial mortgage lending, this type of privileged status had previously been restricted to the period up to January 1, 1996 under EU law. Now this arrangement is to be extended up to December 31, 2006 with a forthcoming amendment directive. In the same manner, the new Principle I also favours mortgage-backed securities, which are considered to have the same counterparty risk status as mortgage lending.

Counterparty risks arising from derivatives

The capital charge for counterparty risks arising from derivative off-balance sheet business will in future be classified to a greater extent according to individual risk categories as follows:

– currency contracts, including gold contracts (as before)

– interest rate contracts (as before)

– equity contracts

– precious metal contracts except gold contracts

– commodities contracts.

The weighting applied to the new types of contracts has been set in accordance with their risks. At the same time a higher capital

charge has been introduced for longer-term business (over five years).

Reduction of capital charge through netting agreements

The counterparty risks arising from derivative business can be reduced by the institutions by netting agreements recognised by the banking supervisory authority. As part of what is known as the marking-to-market method, according to which the counterparty risk for OTC derivatives is calculated from the current replacement cost in the event of an assumed default of the counterparty ("positive market value") of the contracts plus an add-on for potential risk increases, the new Principle I provides for further relief. Up to now only the netting of current positive and negative market values of the contracts captured in a close-out netting agreement vis-à-vis a counterparty was permissible. The new Principle I expands the netting possibilities to include add-ons for possible future counterparty risks (see overview on page 69).

Capital backing for market price risks

Implementation of international market risk requirements

With the amendment to the Basle Capital Accord to incorporate market risks and the EC Capital Adequacy Directive[1], there are now internationally harmonised market risk regulations which also require market risks to be backed by own funds and which are translated into national law with the new Principle I. An important risk category has thus been added to the formerly risk-based approach to prudential measurement of capital. At the same time, the approach follows the concept of risk and capital management used often in practice, which is geared not to the type of business but rather to individual types of risks.

Comparable competitive conditions for banks and investment firms

An important objective of the Capital Adequacy Directive in conjunction with the Investment Services Directive is the creation of a level playing field for banks and investment firms in EEA countries. Whereas the Investment Services Directive mainly adapts the authorisation procedure and the prudential rules for investment firms in the EEA countries to those that apply to banks, the Capital Adequacy Directive introduces the same own funds requirements for the same business when done by banks and by investment firms. Since the activities of investment firms largely relate to securities transactions (securities trading and issuing) involving interest-rate-related and equity-price-related contracts, in future banks will also have to include these areas of business in what is known as the trading book, i. e. separating them from the remaining business (banking book). The own funds requirements to be applied to the trading book are equally valid for banks and investment firms.

Principle I a repealed

The limit of market price risks under Principle I a currently in force which was set in October 1990, particularly in view of the sharply expanding business in financial derivatives at that time, as a German interim solution until internationally harmonised market price risk provisions could be enacted, can thus be abolished.

1 An amendment directive to the Capital Adequacy Directive (CAD II) which has yet to be passed will lead to a close adaptation to the Basle market risk regulations and is already taken into account in the new version of Principle I.

Netting *: Reduced add-on when using the marking-to-market method

Without a close-out netting agreement	With a close-out netting agreement	
Marking to market of transactions with one counterparty	Marking to market of transactions with one counterparty	
Sum of positive market values of all contracts (no credit risk if market values are negative)	Sum of the positive market values less the sum of negative market values of all contracts captured	→ Already permissible
⇩	⇩	
Replacement cost	Replacement cost (if positive)	
+ Add-on for possible future increase in risk	+ Reduced add-on for possible future increase in risk [1]	→ New
= Credit equivalent amount		
x Risk weighting assigned to the counterparty (e.g. 20 % for a zone A credit institution)		
= Capital charge under Principle I (to be backed by 8 % liable capital or, for trading book positions, by own funds)		

* Under Principle I, netting agreements can only be recognised as having a risk-reducing effect for derivatives business. — **1** Depending on the degree R of the current replacement expenditure reduced by netting (R = ratio of netted replacement expenditure to the sum of the non-netted – only positive – replacement expenditure), the sum of the add-ons (S) calculated without taking netting effects into account for all contracts with a counterparty captured in a netting agreement can be reduced according to the following formula:
Reduced add-on = 0.4 x S + 0.6 x S x R.

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Trading book institutions/ non-trading book institutions

The future capital charge for market price risks will be classified according to individual market price categories, for one thing. For another, the size of trading book business will play a decisive role. Smaller and medium-sized institutions with insignificant trading book business (non-trading book institutions) will be exempted from using the complex methods of calculating trading book positions with interest-rate and equity price risks through an arrangement for minor trading book business.

Currency and commodity price risks arising from the overall book

In the field of currency and commodity price risks, however, all institutions are required to combine all forms of business in each case, regardless of whether they are trading book or banking book business ("global position").

Interest rate and equity price risks arising from the banking book

Non-trading-book positions involving interest rate and equity price risks (banking book) are only captured with regard to their credit risks. The classic interest rate risk of a bank arising from lending and deposits is exempt from capital charges, as in the past. Particularly methodological difficulties of adequately capturing the interest rate risks arising from such business have prevented a relevant internationally harmonised capital standard from being agreed up to now.

Capturing of market risk positions

Choice between standardised methods and internal risk models

Trading book institutions and non-trading book institutions can calculate the capital backing for their respective market risk positions either according to standardised

methods or using their internal risk models which have been recognised by the banking supervisory authorities. This is generally the case for currency risks and commodity price risks and, for trading book institutions specifically, also for interest rate and equity price risks (see overview on page 67).

Counterparty risks arising from the trading book

Moreover, trading book institutions are allowed to cover certain counterparty risks arising from trading book positions (e. g. from OTC derivatives or from repurchase agreements and securities lending transactions) also using tier 3 capital instead of high-quality tier 1 capital and tier 2 capital (see overview on page 73). The relevant business is excluded when calculating credit risks (risk assets) that are to be backed with liable capital.

"Building block approach"

The risks arising from interest rate and equity positions are each to be calculated separately for the general market risk and – if present – the specific market risk. The resulting value-at-risk is to be backed with own funds.

General market risk

The general market risk is that part of the overall risk which is dependent on macroeconomically induced interest rate changes and/or equity market developments (also called index risk).

Specific market risk

The specific market risk, by contrast, is based on issuer-related factors, for example, if the movement of a security's price differs from market trends due to good or bad corporate news or the particular market liquidity of a certain security.

If the standardised methods are used, net positions in interest rate instruments which involve issuer-related (specific) risks are largely assigned the same risk weightings as the relevant credit risks (risk assets). The difference is, however, that for backing particular price risks, weightings under 20 % are envisaged for shorter-term positions in qualifying paper (generally 20 % counterparties). Moreover, the privileged assets also include securities positions traded on at least one regulated market in the EU or a recognised market of another zone A country and which the institution considers sufficiently liquid.

Reduced risk weightings in trading book

On balance, trading book securities are given a lower risk weighting for their specific market risk than comparable banking book positions. This seems justified, since such risk positions can be dissolved or closed faster owing to their higher degree of liquidity than, say, credit positions.

Equity and stock index positions

The capital charge for the specific market risk arising from equity positions is to be calculated from the sum of all long and short positions and to be multiplied by 4 %. For stock index positions, however, specific market risks are largely eliminated by spreading risks over a basket of equities (diversification), which is why here no capital charge is requested by the supervisory authority regarding this risk. Well-diversified portfolios containing qualifying highly liquid equities, too, are given preferential treatment in the form of a reduced rate of 2 %.

Option price risks

Option price risks are more difficult to quantify than those arising from other financial in-

struments. In order to capture such risks, the new Principle I incorporates two procedures from the Basle market risk regulations, the delta-plus method and the scenario matrix method.[2]

Option positions are, in principle, included up to their delta equivalent in the relevant calculations under the standardised methods for the individual risk categories (currency risks, commodity price risks, interest rate risks, and equity risks). The delta equivalent is expressed as:

the delta factor of the option x nominal amount of the delivery right and/or payment right.

The delta factor shows the change in the option value given only a slight change in the price of the underlying instrument.

Delta-plus method

Trading book institutions, when using the delta-plus method, must additionally back the gamma and vega risks of their option positions with own funds. The changes in the value of options are non-linear when the prices of the underlying instruments change. With the delta factors, which only linearly approximate the changes in the option prices, but which themselves change if the price of the underlying instrument changes, the option price risk would only be depicted incompletely. The risk of changing delta factors must therefore be taken into account by incorporating gamma risks.[3] In addition to the prices, the price volatilities of the underlying instruments are also an important factor in the formation of the option price. The vega risks capture the risk of changes in these price volatilities.[4]

Scenario matrix approach

As an alternative method of determining the capital charge for the general market risk arising from options, trading book institutions may also use the scenario matrix approach, with the prior approval of the banking supervisory authority. In this approach, option positions, together with associated hedging positions from other business as appropriate, are revalued according to predefined scenarios of assumed changes in the volatility and prices of the underlying instruments. The largest loss of a scenario in each case equals the capital charge for the option portfolio in question.

Internal risk models

Alternative to the standardised methods of capturing market price risks

As an alternative to the standardised methods, the institutions may use their internal risk models for computing the capital charge for market price risks required by the banking supervisory authority – and, under

2 Here the Capital Adequacy Directive – even after CAD II is adopted – departs from the Basle market risk regulations by not containing any predefined methods of capturing option price risks.
3 The gamma risk of an option is calculated as

$\frac{1}{2}$ x gamma factor x $(VU)^2$.

The gamma factor shows the change in the delta value caused by a slight change in the price of the underlying instrument (2nd derivative of the option price formula according to the price of the underlying instrument). The term VU gives the changes in the values of the underlying instruments to be assumed.
4 The vega factor risk of an option is calculated as vega factor x assumed volatility change of ± 25 %.
The vega factor shows the change in the option value owing to a slight change in the price volatility of the underlying instrument (first derivation of an option price formula according to the price volatility of the underlying instrument).

certain conditions, also for parts of the market risk positions ("partial use"). The banking supervisory authority has thus created for the first time the precondition for the ascertaining of the risk and/or the necessary capital to be based directly on the values calculated by the bank itself. Duplicate calculations for internal and prudential purposes are thus largely avoided and additional costs drastically reduced. Certain disadvantages of standard banking supervision methods, such as misallocation of capital through "false" incentives, are thus eliminated.

Approval by the banking supervisory authority

The institutions' internal risk models, with which the "value at risk" of market risk positions is calculated under assumptions made according to the theory of probability, have to be approved by the banking supervisory authority before they can be applied for the first time to calculate capital charges. In line with international rules, specific qualitative and quantitive requirements must be met. These include the regular verification of the predictive quality of the models used by backtesting the estimated risk values with the actual losses, and stress testing with which the risks of exceptional market movements not captured by the models can be estimated.

Capital requirements when using models

The required capital to be calculated daily when using internal models is the higher of the following two amounts:

– the previous day's value-at-risk number, or

– the average of the daily value-at-risk numbers on each of the preceding sixty business days, multiplied by a factor of 3.

Specific market risks

If an institution uses its internal risk model for calculating the capital charge for specific market risks, too, and if this has likewise been approved by the banking supervisory authority, the multiplication factor for the resulting value-at-risk is 4.

Both multiplication factors should offset the inaccuracies when calculating the value at risk within the context of deriving the minimum capital required by the banking supervisory authority.

Model and organisational risks

In individual cases, the banking supervisory authority may set higher weighting factors if, for instance, a backtest of the estimated value-at-risk against the actual losses shows that the predictive quality of the models is not sufficient. Organisational inadequacies resulting particularly in the beginning phase of the introduction of internal risk models would warrant the use of a higher factor. In both cases, it should cover the resulting model and organisational risks.

Eligible own funds

Extension of eligible capital to include tier 3 capital

At the same time the own funds requirements were extended to include market risk positions, the definition of the previously liable capital was extended to include what is known as tier 3 capital. Tier 3 capital consists of short-term subordinated liabilities and net profits (book profits) of the trading book. Tier 1 capital and tier 2 capital (liable capital) and the eligible tier 3 capital all make up own funds (see adjacent overview), which can be used to cover market price risks.

Limitation of tier 3 capital

The use of tier 3 capital is restricted, however. Tier 3 capital may only be used as coverage by the institutions provided it does not exceed 2.5 times the tier 1 capital not needed to cover counterparty risks arising from the banking book or for other purposes (e. g. capital charge for large exposures).

Extended scope of Principle I

Inclusion of financial services institutions

Principles I and I a only needed to be observed by the credit institutions up to now. With the implementation of the Investment Services Directive and the Capital Adequacy Directive by the Sixth Act Amending the Banking Act, now financial services institutions are also subject to supervision comparable with that of the credit institutions. For this reason, in future these institutions, too, must observe Principle I if they conduct trading for their own account or, as investment intermediaries, contract intermediaries or portfolio managers, have access to customers' assets.

Consolidated Principle I

As in the past, the new Principle I is to be observed both by individual institutions and on a consolidated basis. In future, this applies also to market risk positions, which up to now did not have to be consolidated in a group-wide manner under Principle I a. As part of consolidation, though, the institutions are able to offset two-way market risk positions between different enterprises within a group. However, the preconditions are that the enterprises are included in the central risk management of the parent company, the own funds of the group are adequately distributed, and the capital movements between the countries of domicile are not restricted.

Composition of own funds (section 10 of the Banking Act)

	Tier 1 capital (core capital)
+	Tier 2 capital (additional capital)
–	Deduction positions [1]
=	Liable capital
+	Tier 3 capital [2]
=	Own funds

1 Deductions of participating interests (sections 10 and 12 of the Banking Act); breaches of the large exposure limits (sections 13, 13a and 13b of the Banking Act). — **2** Tier 3 capital is only eligible to the extent that it does not exceed 2.5 times the tier 1 capital not needed to cover banking book counterparty risks or for other purposes (e. g. as capital backing for large exposures) (unused tier 1 capital).

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Principle I reports

Limitation of reporting burden

In order to limit the time and effort of the institutions' reporting, only an overview providing the main details of the risk assets, market risk positions and the own funds ratios must be submitted monthly starting October 31, 1998, along with a sheet containing information on own funds. More comprehensive reports are only envisaged on a quarterly basis, starting on December 31, 1998.