

# Capital Management - 4Q 2013

Saxo Bank A/S Saxo Bank Group

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## 1. Introduction

The purpose of the Bank's capital management practice is to ensure that the Bank has sufficient capital at all times to cover the risks associated with its activities. The framework for the Bank's capital management is rooted in the Capital Requirement Directive's (CRD) Pillar I, II and III. Pillar I contains a set of rules for calculating the minimum capital requirement. Pillar II describes the framework for the Bank's Internal Capital adequacy assessment process and the supervisory review, while Pillar III contains the disclosure aspect.

## New regulation in 2014

The Fourth editions of the Capital Requirements Directive (CRD IV) and Capital Requirements Regulation (CRR) were approved by the EU Council of Ministers end of June 2013 and applicable from 2014. The CRR introduces the first single set of prudential rules for banks across the EU. It applies directly to all banks in EU member states. It should help to ensure that the Basel III international standards for bank capital adequacy are fully respected in all EU member states. EU Banks will be supervised by EU member states' competent authorities, in collaboration with the European Banking Authority (EBA), whose supervisory powers will be expanded.

CRD IV and CRR require Saxo Bank Group to monitor and report new capital requirements and buffers. The Group will be required to set aside more and better capital as a cushion against hard times. Furthermore, the Group will also be required to hold a "capital conservation buffer" to absorb losses and protect the capital, and a "countercyclical capital buffer" to ensure that in times of economic growth, the Group accumulates a sufficient capital base to enable it to continue supplying a stable supply of credit in stress periods. In Denmark the "capital conservation buffer" is phased in from 2016 and the "countercyclical capital buffer" from 2015. In addition, member states may require additional buffers.

The final implementation of CRD IV in Danish legislation is delayed including some of the Danish Member State's transition rules and will first be effective end of March 2014. In addition some of the regulation standards from EBA are also delayed. Based on draft regulation and draft transition rules issued the estimated ICAAP primo 2014 is disclosed. The change in capital calculations is disclosed in Risk Report 2013. The Risk Report 2013 is available at www.saxoworld.com/investorrelations.

# Internal Capital Adequacy Assessment Process (ICAAP)

Saxo Bank's ICAAP process follows four steps:

Step 1: Capital requirements using CRD (Pillar I)

Step 2: Self assessed capital requirement using a quantitative approach

Step 3: Capital requirements using the 8+ methodology

(Pillar II)

Step 4: Self assessed capital requirement using a scenario based approach

Step 5: Capital adequacy determination

Step 6: Disclosure (Pillar III)

#### **Business Activities**

The Bank carries out the following main activities

 Online trading and investment and other investment services within capital markets to retail clients, corporations, financial institutions and white label clients.

 Classic bank services in Denmark, primarily to retail clients, hereunder bank accounts and debit/credit cards, mortgage credit, bank advice services and pension products.

The Bank is exposed to a number of risk types stemming from these activities, which can be categorised as follows:

Market Risk: The risk of loss due to movements in market risk factors.

**Credit Risk:** The risk that counterparts or clients of the Bank fail to fulfil their obligations.

**Operational Risk:** The risk of loss resulting from inadequate or failed processes, people or systems, inaccuracy and improper disclosure of data. (including Legal and Information security risk)

**Liquidity Risk:** The risk of loss resulting from lack of liquidity.

**Leverage Risk:** The risk of loss resulting from to high leverage.

**Business Risk:** reflects the risk of direct or indirect loss, or damaged reputation as a result of changes in external circumstances or events. Business risk includes all risks not mentioned under other risk categories.

Each risk category is described in details in the coming sections including a description of the

measurement methods.

2. Capital requirements, Pillar I

This first step calculates the minimum capital using the Danish implementation of the Capital

Requirements Directive (CRD), pillar I. From primo 2014 the Danish implementation of the Capital

Requirements Directive (CRD) is replaced by the Capital Requirements Regulation (CRR).

Saxo Bank uses the following methods to calculate risk-weighted assets for the three types of pillar I risks:

Credit risk: The standard method

Market risk: The standard method

Operational risk: Basic indicator method

Saxo Bank does not take diversification effects between the risk types into account. The capital charge for

each risk category is simply aggregated.

Saxo Bank Group

At the end of the quarter, the risk-weighted assets calculated using the CRD method (old regulation),

totalled at 12,555m. The capital requirement is 8%, equal to an overall capital requirement of 1,004.5m.

The capital contribution in each of the main risk categories were as follows; Credit risk: 339.5m, Market

risk: 157.6m and Operational risk: 507.4m.

Primo 2014 the risk-weighted assets calculated using the CRR method (new regulation), totalled at

13,310m. The capital requirement is 8%, equal to an overall capital requirement of 1,064.9m. The capital

contribution in each of the main risk categories were as follows; Credit risk: 409.1m, Market risk: 173.6m

and Operational risk: 482.2m.

Saxo Bank A/S

At the end of the quarter, the risk-weighted assets calculated using the CRD method (old regulation),

totalled at 9,921m. The capital requirement is 8%, equal to an overall capital requirement of 793.7m. The

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capital contribution in each of the main risk categories were as follows; Credit risk: 302.4m, Market risk: 121.2m and Operational risk: 370.1m.

Primo 2014 the risk-weighted assets calculated using the CRR method (new regulation), totalled at 10,285m. The capital requirement is 8%, equal to an overall capital requirement of 822.8m. The capital contribution in each of the main risk categories were as follows; Credit risk: 348.0m Market risk: 137.2m and Operational risk: 337.5m.

#### Changes from old to new regulation

The increase in credit risk is primarily due to changes in the capital calculations where some exposures are moved from capital deductions to RWA as specified in the Risk Report. Secondary from CVA adjustment (addition to counterparty risk). The increase in market risk is due to additional requirements on options.

The change in operational risk is the normal primo change (not regulatory change). Calculations end 2013 are based on income in 2010, 2011 and 2012 annual reports, and primo 2014 are based on income in 2011, 2012 and 2013 annual reports.

# 3. Risk self-assessment, Pillar II

The second step is to assess the actual risks to which the Bank and the Group are exposed.

Different risk types that the Bank is exposed to have been examined and split into ICAAP risk categories as shown in table 1 on next page.

CRD IV and CRR require Saxo Bank Group to report and monitor their leverage ratios. From 2014 leverage ratios will be assessed under Pillar II (ICAAP requirement).

Different methods are applied to assess the Bank's capital need in each category which is described below.

Table 1: Risk types mapped in ICAAP risk categories

| Risk categories                | Credit Risk | Market Risk | Operational Risk | Business Risk | Liquidity Risk |
|--------------------------------|-------------|-------------|------------------|---------------|----------------|
| General                        | ٧           | ٧           | ٧                | ٧             | ٧              |
| Earnings                       |             |             |                  | ٧             |                |
| Growth                         |             |             |                  | ٧             |                |
| Credit risk                    | ٧           |             |                  |               |                |
| Market risk                    |             | ٧           |                  |               |                |
| Concentration risk             | ٧           | ٧           |                  | ٧             |                |
| Group risks                    | ٧           | ٧           | ٧                | ٧             |                |
| Liquidity risk                 |             |             |                  |               | ٧              |
| Operational risk               |             |             | ٧                |               |                |
| Control risk                   |             |             | ٧                |               |                |
| Business size                  |             |             |                  | ٧             |                |
| Settlement risk                | ٧           |             | ٧                |               |                |
| Strategic risk                 |             |             |                  | ٧             |                |
| Reputational risk              |             |             | ٧                | ٧             |                |
| Non-trading interest rate risk |             | ٧           |                  |               |                |
| External risk                  | ٧           |             | ٧                | ٧             |                |
| Other conditions               | ٧           |             |                  | ٧             |                |
|                                |             |             |                  |               |                |
| Stress testing                 | ٧           | ٧           | ٧                | ٧             | ٧              |

### **Credit Risk**

To assess the credit risk that the Bank is exposed to, the different counterparty types have been examined, and the outstanding counterparty risk has been determined in each case or each segment.

For retail and institutional clients, credit exposure at default (EAD) is estimated based on derived client loss distributions (across actual daily individual client portfolios). EAD is calculated as the average of losses exceeding the collateral placed for margin. For banks and brokers the exposure is the outstanding cash and unrealized profit amount on open positions. For credit lines it is the issued line.

For retail and institutional clients, exposure at default is used as a conservative capital measure, for all others the risk has been assessed using impact and likelihood, based on empirical data, expert judgement and credit ratings wherever applicable.

A Monte Carlo simulation has been utilized, running a statistically significant number of simulations with a 30% event correlation on bank and broker counterparties, and full event correlation on trading clients, to determine the loss distribution of credit risk events. Correlation is applied to simulate a stressed credit environment. The Bank uses expected shortfall, less expected loss (average of events greater than VaR) with a 99.9% confidence level on a one year time horizon. This means that all events in the tail of the distribution are considered when determining the adequate capital level. Credit risk outside the traded portfolio, domicile building, tangible assets and off balance sheet items, have been added using the standard method under the CRD.

Subsidiaries' credit risk has been included based on the underlying business activity. Subsidiaries within online trading and investment and other investment services within capital markets, are included using the same approach, in essence running simulations on the group's combined portfolio. Domicile buildings, tangible assets and off balance sheet items, are included using the standard method under the CRD. Subsidiaries offering professional portfolio, fund and asset management or classic bank services have been included using their respective individual capital adequacy numbers. These are aggregated at a group level using simple addition, offering no diversification effects.

In addition the board sets additional adjustments to cover other credit risks not covered by the above calculations.

#### Saxo Bank Group

At the end of the quarter, the self-assessed credit risk capital charge within online trading and investment services and classic bank services was 623.4m for the Group.

Primo 2014, based on new regulation credit risk increased to 675.4m. The increase in credit risk is due to changes in the capital calculations where some exposures are moved from capital deductions to RWA (and ICAAP).

#### Saxo Bank A/S

At the end of the quarter, the self-assessed credit risk capital charge within online trading and investment services and classic bank services was 409.9m for the Bank.

Primo 2014 based on new regulation, credit risk increased to 438.0m. The increase in credit risk is due to changes in the capital calculations where some exposures are moved from capital deductions to RWA (and ICAAP).

#### Market Risk

The market risk in the Group has been determined using an exponentially weighted moving average VaR approximation to derive Expected Shortfall (ES) on the Bank's actual outstanding exposures. To better reflect the Bank's risk appetite the most recent monthly and weekly averages are compared and the largest number is selected as being representative of the Bank's current market risk appetite. The model uses actual correlations within the traded portfolio. ES is determined with 99.97% confidence, and a one day time horizon on foreign exchange, and a two day time horizon for products traded on an exchange, as the vast majority of the trading exposure can be eliminated within one or two days respectively.

Subsidiaries interest risk has been included based on the above methodology. Subsidiaries' other market risk has been included based on the underlying business activity. Online trading and investment and other investment services within capital markets, are included using a CRD Pillar I approach where applicable. Results are aggregated at a group level using simple addition. Portfolio, fund and asset management or classic bank services have been included using their respective individual capital adequacy numbers. These have been aggregated at a group level using simple addition, offering no diversification effects.

To cater for concentration risk in the trading portfolio, if appropriate, a buffer consisting of a 2% USD stress, is added to offset for price moves beyond what is embedded in the market risk ES calculation

#### Saxo Bank Group

At the end of the quarter, the self-assessed market risk capital charge within online trading and investment services and classic bank services was 144.9m for the Group.

Primo 2014, based on new regulation, there is a minor change in market risk to 139.9m due to regulatory changes.

#### Saxo Bank A/S

At the end of the quarter, the self-assessed market risk capital charge within online trading and investment services and classic bank services was 134.9m for the Bank.

No change primo 2014.

### Operational, Compliance and Legal Risk

The risk from the Group's operations is assessed through an interview process where likelihood and impact levels of events are determined in co-operation with applicable stakeholders. The risks have been assessed using the same simulation model as described under credit risk. The operational risk in the Bank has been determined using a portfolio approach and Monte Carlo simulation with a 0% event correlation. To incorporate stress, a number of combined event scenarios have been introduced in the simulation. These scenarios imply 100% correlation between underlying events, and consider severe impacts, setting impact and probability levels at average, worst out of 20 occurrences and worst out of 100 occurrences. The events are constructed using external data sources, and expert advice. A one-year time horizon and expected shortfall, less expected loss, with a 99.9% confidence level has been applied.

Subsidiaries' operational risk has been included based on the underlying business activity. Subsidiaries within online trading and investment and other investment services within capital markets, are included using the same simulation approach, in essence running simulations on the group's combined portfolio. Subsidiaries offering professional portfolio, fund and asset management or classic bank services have been

included using their respective individual capital adequacy numbers. These are aggregated at a group level using simple addition, offering no diversification effects.

In addition the board sets additional adjustments to cover other operational risks not covered by the above calculations.

#### Saxo Bank Group

At the end of the quarter, the self-assessed operational risk capital charge within online trading and investment services and classic bank services was 426.3m for the Group.

No change primo 2014.

#### Saxo Bank A/S

At the end of the quarter, the self-assessed operational risk capital charge within online trading and investment services and classic bank services was 392.7m for the Bank.

No change primo 2014.

### **Business Risk**

The key potential business risks are identified as part of the budgeting process. The outcome of this process forms the basis for sensitivity analyses of the net income, which is published in the annual budget report. Business risk is covered by the budgeted income. However, if the income is not sufficient, capital must explicitly be set aside. Throughout the year the performance is evaluated to determine whether capital should be set aside. Furthermore capital is set aside in recognition of the granted, unutilized, market risk exposure limits, not included under Pillar I.

#### Saxo Bank Group

At the end of the quarter, the self-assessed business risk capital charge within online trading and investment services was 195.5m for the Group.

Primo 2014 there is an increase in business risk to 230.4m corresponding to the increase in the minimum requirement.

#### Saxo Bank A/S

At the end of the quarter, the self-assessed business risk capital charge within online trading and investment services was 195.5m for the Bank.

Primo 2014 there is an increase in business risk to 230.4m corresponding to the increase in the minimum requirement.

# Liquidity Risk

The liquidity risk is determined as the increased cost of raising capital in a very illiquid market. The Saxo Bank Group has determined the liquidity risk based on scenarios with a liquidity shortfall within the Group.

To the extent that the events cannot be absorbed by the budgeted income, capital will be explicitly allocated to cover the risk.

#### Saxo Bank Group

At the end of the quarter, no explicit capital charge within online trading and investment services, beyond the budgeted income, has been set aside to cover liquidity risk.

No change primo 2014.

#### Saxo Bank A/S

At the end of the quarter, no explicit capital charge within online trading and investment services, beyond the budgeted income, has been set aside to cover liquidity risk.

No change primo 2014.

#### **New regulation**

CRR/CRD IV implies that requirements for a short-term Liquidity Coverage Ratio (LCR) must be set to ensure that institutions always have an adequate holding of liquid assets to cover imbalances arising between incoming and outgoing cash flows in stressful situations over a thirty-day period.

In Denmark, the LCR will be phased in, i.e. a gradual phasing-in of 60% of the full requirement in 2015, 70% in 2016, 80% in 2017 and 100% in 2018. The existing Danish liquidity requirement is to be maintained up to, and including, 2016, provided that the final definition of LCR means that some institutions can be granted relief in relation to their existing liquidity requirements.

Saxo Bank A/S and Saxo Bank Group expects the future liquidity regulation to be more restrictive than the current Danish regulation due to expected higher liquidity requirements on investment bank activities which is the Group's core business. The Bank is monitoring the final regulation and interpretations closely and has taken action based on the estimated impact on the future liquidity regulation.

#### **Leverage Risk**

CRD IV and CRR require Saxo Bank A/S and Saxo Bank Group to report and monitor their leverage ratios. From 2014 leverage ratios will be assessed under Pillar II (ICAAP requirement).

Basel III's leverage ratio is defined as the "capital measure" (the numerator) divided by the "exposure measure" (the denominator) and is expressed as a percentage. The capital measure is currently defined as Tier 1 capital and the minimum leverage ratio is 3%. Saxo Bank A/S and Saxo Bank Group expected to fulfill this requirement from primo 2014 which is why the additional capital requirement for Saxo Bank A/S and Saxo Bank Group regarding leverage is 0m primo 2014.

#### Other risk

Other risk covers strategic risk, and risk not included in the previous categories. Methodologies for assessing capital requirement vary depending on the underlying risk event type. In addition the board sets additional adjustments to cover other risks not covered by the above calculations.

#### Saxo Bank Group

At the end of the quarter, the self-assessed capital charge within classic bank services was 150m for the Group.

No change primo 2014.

#### Saxo Bank A/S

At the end of the quarter, the self-assessed capital charge within classic bank services was 150m for the Bank.

No change primo 2014.

#### **Total capital**

The capital needs for each risk category are aggregated using simple addition, without considering potential diversifying benefits from portfolio effects and before using the 8 + method.

#### Saxo Bank Group

At the end of the quarter, the total self-assessed capital charge is 1,540.1m for the Group.

Primo 2014 on the new regulation, the total self-assessed capital charge was 1,622.0m for the Group.

#### Saxo Bank A/S

At the end of the quarter, the total self-assessed capital charge was 1,283.0m for the Bank.

Primo 2014 on the new regulation, the total self-assessed capital charge was 1,346.0m for the Bank.

# 4. Capital requirements, 8+ methodology

The third step calculates the capital requirement in line with the requirements of the Danish Financial Supervisory Authorities capital adequacy requirement guideline (referred to as 8+).

Each defined risk category is examined, in order to determine whether additional capital beyond the Pillar I requirement should be set aside, and as determined by the internal Pillar II calculation.

#### Saxo Bank Group

At the end of the quarter, the total capital charge using the 8+ method was 1,633.8m for the Group.

Primo 2014 on the new regulation, the total capital charge using the 8+ method was 1,711.5m for the Group.

#### Saxo Bank A/S

At the end of the quarter, the total capital charge using the 8+ method was 1,283.0m for the Bank.

Primo 2014 on the new regulation, the total capital charge using the 8+ method was 1,346.3m for the Bank.

# 5. Scenario based approach

The fourth step in the ICAAP estimates the capital and earnings effects of stress test scenarios regardless of the previous capital adequacy levels.

Stress tests are developed on the basis of the risk register. One or more stress scenarios are made in the major categories, consisting of one or more events from the register in the applicable risk category. Furthermore, Saxo Bank uses a number of combined stress scenarios, combining multiple events across risk categories. One of the combined events entails a close to unlikely chain of events, in order to ensure the utmost degree of stress. Where applicable, the stress test takes insurance coverage into account.

The stress scenarios are updated and reviewed according to changes in the market and economic environment, and at least once a year.

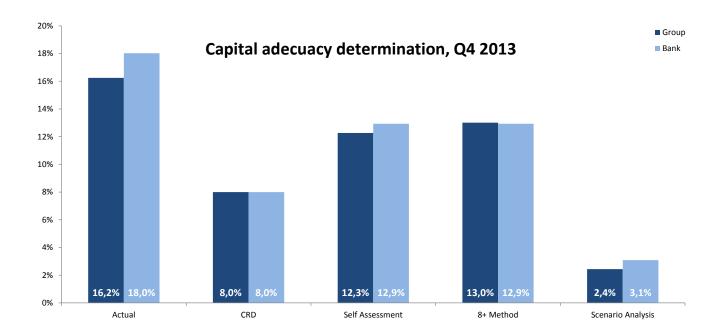
At the end of the quarter, the most severe stress scenario, on the simulated events, represented a capital impact of 306m both for the Group and the Bank.

# 6. Capital adequacy determination

To determine the appropriate level of capital, the results of the four steps are compared – both in nominal terms and as percentages. The percentage is determined by using the risk weighted assets calculated in step one as denominator. This represents the minimum regulatory required 8% of the risk weighted assets.

The largest percentage is determined and is considered as the capital level within which the Group should operate.

#### Capital adequacy determination, Q4 2013



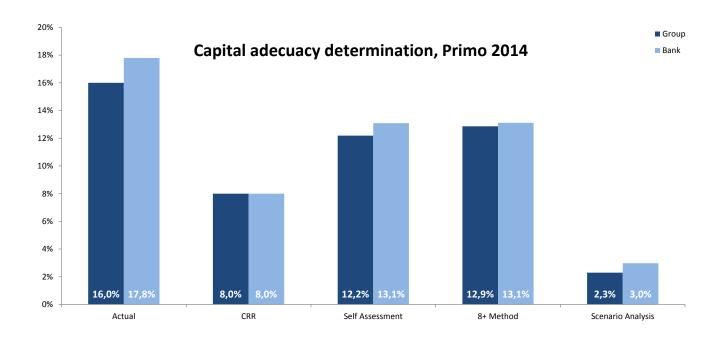
### Saxo Bank Group

At the end of the quarter, the method that gave the largest capital requirement was the 8+ methodology based approach. This led to a capital requirement of 1,633.8m equal to a 13.0% of RWA. At that time the Group had total capital (capital base) of 2,039.7m corresponding to 16.2% of RWA.

#### Saxo Bank A/S

At the end of the quarter, the method that gave the largest capital requirement was the 8+ methodology based approach. This led to a capital requirement of 1,283.0m equal to a solvency of 12.9%. At that time the Bank had a total capital (capital base) of 1,788.0m corresponding to 18.0% of RWA.

#### Capital adequacy determination, Primo 2014



#### Saxo Bank Group

Primo 2014, the method that gave the largest capital requirement was the 8+ methodology based approach. This led to a capital requirement of 1,711.5m equal to a 12.9% of RWA. At that time the Group, (based on assumption listed in the Risk Report), had a total capital (capital base) of 2,129.6m and an actual total capital of 16.0% of RWA.

#### Saxo Bank A/S

Primo 2014, the method that gave the largest capital requirement was the 8+ methodology based approach. This led to a capital requirement of 1,348.3m equal to a solvency level of 13.1%. At that time the Bank, (based on assumptions listed in the Risk Report), had a total capital (capital base) of 1,830.4m corresponding to 17.8% of RWA.

Capital planning

Part of the ICAAP is planning future capital needs in relation to the business environment, growth and

strategic plans in the years to come. Potential major changes to the risk profile, and thereby the future

solvency need, are estimated using the ICAAP. This could be changes in the business strategy or

competitive landscape, significant increases in traded volumes, fundamental changes in the market

conditions, changes in the internal organisation, M&A activity, material changes in regulatory

requirements or introductions of new products. This input is used in the strategic decision-making process

by the Board of Directors and the Board of Management.

Furthermore the result of the ICAAP is used as input to the capital plan and the capital contingency plan.

The capital plan is a function of the estimated (budgeted) forecast of capital, risk and earnings.

The result of the ICAAP step three (scenario based approach) is used as input to the capital contingency

plan. The financial consequences following the various scenarios and potential management actions are

estimated using the methodology described under the ICAAP step two - whereby the most likely net

financial consequences from a scenario appear. The potential management actions are revised should the

estimated net financial consequences bring Saxo Bank below the required minimum capital level.

A full ICAAP is performed as often as required, but at least once a year. Capital adequacy levels adjusted

according to the on-going limit utilisation are published and reported to the Danish FSA on a quarterly

basis.

Hellerup, March 2014

Saxo Bank