Market Risk

Market risk encompasses current and prospective impact on earnings or capital, arising from changes in the value of the Group's portfolio due to adverse movement in interest rates, foreign exchange rates or prices of bonds, equities or commodities.

Market-risk evaluation measures

The Group's market risk measurement allows monitoring of all of the risk types, that is generic risk (including interest rate risk, foreign exchange risk, equity risk), non-linear risk, specific risk and commodity risk. In 2014 the nonlinear risk and commodities risk did not exist in the Group. The equity risk assumed to be irrelevant since the Group's engagement in equity instruments is immaterial.

Each market risk type is measured individually using an appropriate risk model and then integrated measurement of total market risk is built from those assessments without considering any type of diversification between the four risk types (the worst case scenario).

The main measure used by the Group to evaluate market risks (interest rate risk, foreign exchange risk, equity risk) is the parametric VaR (Value at Risk) model – an expected loss that may arise on the portfolio over a specified period of time (holding period) and with specified probability (confidence level) from an adverse market movement.

The Value at Risk in the Group is calculated considering the holding period of 10 working days and a 99% confidence level (one tail). In order to adapt to regulatory requirements of CRDIV / CRR, since April 2014 the volatility associated with each market risk vertex considered in the VaR model (and respective correlation between them) has been estimated by the equally weighted changes of market parameters using the effective observation period of historical data of last year. Previously applied EWMA method (exponentially weighted moving average method) with effectively shorter observation period is now only justified by a significant upsurge in price volatility.

In order to monitor and limit the positions in instruments, for which it is not possible to properly assess market risk with the use of the VaR model (non-linear risk, commodity risk and specific risk), the appropriate assessment rules were defined. The non-linear risk is measured according to internally developed methodology which is in line with the VaR methodology – the same time horizon and significant level is used. Specific and commodities' risks are measured through standard approach defined in supervisory regulations, with a corresponding change of the time horizon considered.

The market risk measurement is carried out daily, both on an individual basis for each of the areas responsible for risk taking and risk management, and also in consolidated terms considering the effect of the diversification that exists between the particular portfolios.

To ensure that the VaR model adopted is appropriate for the evaluation of the risks involved in the open positions, a back-testing process has been instituted and is carried out daily.

All reported excesses are documented. This includes an explanation of their causes and their incorporation in one of the three classes of excess explanation: adequacy of the model, insufficient model accuracy or unanticipated market movements.

Parallel to the VaR calculation the portfolios are subject to a set of stress scenarios, in order to:

- Estimate the potential economic loss resulting from extreme variations in market risk factors,
- Identify the market risk movements, possibly not captured by VaR, to which the portfolios are more sensitive,
- Identify the actions that can be taken to reduce the impact of extreme variations in the risk factors.

The following types of market scenarios are being applied in the stress test analysis:

- Parallel shifts of the yield curves;
- More steep or flat shape of the yield curves;
- Variations of the exchange rates;
- Historical adverse scenarios.

The VaR calculation process is carried out using Web-based software, which allows having on-line access to the risk exposures in terms of VaR in all market risk management areas.

The VaR is used as a measure in assessing the risks incurred by the positions in consolidated terms and separately for the Trading and Banking Book. In addition, each Book is divided into the risk management areas. The global limit is expressed as a fraction of the consolidated Own Funds and then limit is divided into the books, risk management areas and various types of risk, which enables the Group for full measurement, monitoring and control of market risk. The market risk exposure (VaR) together with the limit utilization is reported daily to all areas responsible for management and control of market risk in the Group.

The market risk limits are revised at least once a year and in order to take into account, inter alia, the change of the consolidated Own Funds, current and projected balance sheet structure as well as the market environment. The current limits in place have been valid since 1st November 2014.

In 2014 the VaR indicators for the Group remained on average at the level of PLN 29.1 million (12% of the limit) and PLN 61.0 million (22% of the limit) as of the end of December 2014. The VaR indicators presented in the table below reflect joint exposures to market risk in the Group, that is Trading Book and the Banking Book. The diversification effect applies to the generic risk and reflects correlation between its constituents. The low level of diversification effect is connected with the fact that the Group's market risk is mainly the interest rate risk. The figures in the Table include also the exposures to market risk generated in subordinated companies, as the Bank manages market risk at central level.

The market risk in terms of VaR for the Group ('000 PLN):

VaR measures for market risk ('000 PLN)	VaR (from 31st December 2013 to 31st December 2014)				
	End of 2013	Average	Maximum	Minimum	End of 2014
Total risk	**17.316**	**29.084**	**62.717**	**13.215**	**61.005**
Generic risk	14.506	26.363	60.232	10.416	58.499
Interest Rate VaR	14.503	26.376	60.254	10.404	58.492
FX Risk	132	159	1.471	12	107
Diversification Effect	0,9%				0,2%
Specific risk	2.810	2.721	2.814	2.485	2.497

The corresponding exposures as of 2013 respectively amounted to ('000 PLN):

VaR measures for market risk ('000 PLN)	VaR (from 31st December 2012 to 31st December 2013)				
	End of 2012	Average	Maximum	Minimum	End of 2013
Total risk	**11.419**	**27.202**	**60.812**	**11.419**	**17.316**
Generic risk	8.399	24.270	57.907	8.399	14.506
Interest Rate VaR	8.397	24.282	57.915	8.397	14.503
FX Risk	18	184	5.077	13	132
Diversification Effect	0,2%				0,9%
Specific risk	3.020	2.932	3.037	2.810	2.810

The market risk exposure divided into Trading Book and Banking Book together with risk type division is presented in the table below ('000 PLN):

Banking Book:

VaR measures for	VaR (from 31st December 2013 to 31st December 2014)				
market risk	End of 2013	Average	Maximum	Minimum	End of 2014
Total risk	**17.232**	**27.433**	**58.808**	**11.376**	**58.442**
Generic risk	14.422	24.715	56.328	8.579	55.962
Interest Rate VaR	14.422	24.720	56.328	8.579	55.962
FX Risk	0	22	136	0	0
Diversification Effect	0,0%				0,0%

VaR measures for	VaR (from 31st December 2012 to 31st December 2013)				
market risk	End of 2012	Average	Maximum	Minimum	End of 2013
Total risk	**11.764**	**23.923**	**56.326**	**11.764**	**17.232**
Generic risk	8.760	20.993	53.447	8.760	14.422
Interest Rate VaR	8.760	20.993	53.447	8.760	14.422
FX Risk	0	8	133	0	0
Diversification Effect	0,0%				0,0%

Trading Book:

VaR measures for	VaR (from 31st December 2013 to 31st December 2014)				
market risk	End of 2013	Average	Maximum	Minimum	End of 2014

Total risk	**1.124**	**3.708**	**8.651**	**500**	**5.350**
Generic risk	1.124	3.705	8.649	498	5.323
Interest Rate VaR	1.118	3.705	8.699	434	5.316
FX Risk	132	147	1.471	12	107
Diversification Effect	11,2%				1,9%

VaR measures for market risk	VaR (from 31st December 2012 to 31st December 2013)				
	End of 2012	Average	Maximum	Minimum	End of 2013
Total risk	**2.676**	**5.842**	**20.911**	**878**	**1.124**
Generic risk	2.661	5.840	20.911	878	1.124
Interest Rate VaR	2.665	5.832	20.919	816	1.118
FX Risk	18	180	5.077	13	132
Diversification Effect	0,8%				11,2%

In 2014, total market risk limits in terms of VaR were not breached - neither for the whole Group nor for the Banking Book and Trading Book, separately.

All eventual excesses of market risk limits are always reported, documented and ratified at the proper competence level.

Open positions mostly included interest-rate instruments and FX risk instruments. The FX risk covers all the foreign exchange exposures of the Group. According to the Risk Strategy approved in the Group, the FX open position is allowed, however should be kept at low levels. For this purpose, the Group has introduced a system of conservative limits for FX open positions (both Intraday and Overnight limits) and allows keeping FX open positions mainly in Trading Book.

In 2014, the FX Total open position (Intraday as well Overnight) remained below the maximum limits in place.

Evolution of the total FX open position (Overnight) in Trading Portfolio (PLN thousand):

Total position	Period Average	Period Minimum	Period Maximum	The Last Day of Period
2014	7.075	1.727	34.258	6.598
2013	8.318	1.431	63.984	7.287

In addition to above mentioned market risk limits, the stop loss limits are introduced for the financial markets portfolios. The aim is to limit the maximum losses of the trading activity of the Group. In case the limit is reached, a review of the management strategy and assumptions for the positions in question must be undertaken.

In the back-testing calculation for VaR model, no excesses were detected during the last twelve months (see table below, PLN thousand).

Reporting Date	VaR (generic risk)	Theoretical change in the value of the portfolio (absolute values)	Number of excesses in last 12 months *
2014-12-31	58.499	659	0
2013-12-31	14.506	303	2

* The excess is said to happen whenever the difference between the absolute change in portfolio value and VaR measure is positive.

VaR assessment is supplemented by monitoring the sensitivity to the above-mentioned stress tests scenarios of portfolios carrying market risk.

In keeping with principles adopted by the Group the limits for stress test results based on the probability of the scenario materialization are triple as high as limits for daily management of market risk. In 2014 the limits for market risk exposure under stress scenarios were not exceeded.

In case of the Banking Book, the main component of the market risk is interest rate risk. As a rule, FX position generated in the Banking Book is fully transferred to the Trading Book where is managed on a daily basis. Conservative limits applied to FX position guarantees that the market risk generated by open FX positions is residual in the Group and does not occur in the Banking Book (see table above).

Exposure to interest rate risk in the Banking Book are primarily generated by the unbalance between assets and liabilities (including equity) that have fixed rate (or zero rate) and also, to a lower extent, by the different repricing dates of assets and liabilities as well as its reference indexes, if contractually existing. Additionally, due to specificity of the polish legal system, the interest rate of consumer credits cannot exceed four times the Lombard interest rate of the National Bank of Poland. In situations as the one faced in October 2014 (cut of the reference rate by 50 bps and of Lombard rate by 100 bps) the Bank is subject to asymmetrical impacts on its Net Interest Income which depend on the percentage of the loan portfolio that is affected by the new maximum rate.

Regarding the interest rate risk in Banking Book, the following principles are in place:

- The market risk that results from the commercial banking activity is hedged or transferred on the monthly basis to areas that actively manage market risk and that are measured in terms of risk and profit and loss,
- The Bank uses natural hedging between loans and deposits as well as fixed rate bonds and derivatives to manage interest rate risk with the main purpose of protecting the net interest income.

The variations in market interest rate have an influence on the Group's net interest income, both under a short and medium-term perspective, affecting also its economic value in the long term. The measurement of both is complementary in understanding the complete scope of interest rate risk in Banking Book.

For this reason, apart from daily market risk measurement in terms of value at risk, the scope of the additional measurement of interest rate risk covers both earnings-based and economic value measures, that is quarterly:

- the economic value of equity that measures the theoretical change in the net present value of all Group's positions resulting from different upward/downward parallel basis points shocks applied to market interest rates curves (0% floor in a low interest rate environment is assumed*). Therefore, the results shows the impact on the Group's economic value resulting from the interest rate change,

and monthly:

- the interest rate sensitivity in terms of BPVx100, that is the change of the portfolio's value for the parallel movement in the yield curve by 1 basis point multiply by 100,
- the impact on net interest income over a time horizon of next 12 months resulting from one-off interest rate shock of 100 basis points.

The measurement is carried for all the risk management areas in the Bank, with the particular attention on Banking Book. For the purpose of above mentioned analysis for non-maturing assets and liabilities or for the instruments with Client's option embedded, the Group is defining specific assumptions, including:

- Due date for non-maturing deposits is defined on the basis of historical data regarding customer behaviour, taking into account the stability of the volumes and with assumption of a maximum maturity of 3 years,
- In the interest rate risk measurement process a tendency to faster repayment of receivables than contractually scheduled is taken under consideration. On the basis of historical data a prepayment rate is determined in respect to all relevant Bank's loan portfolios. It should be noted, that mortgages loans that are the Group's loan product with a dominant share, are indexed to floating interest rate. This causes that the tendency to early repayment is less important for the interest rate risk.
- The equity, fixed and other assets are assumed to have repricing period of 1 year.

The results of the above mentioned analysis as of the end of 2014 and 2013 are presented in Table below (ths PLN). The internally defined limits were not exceeded.

Additionally, for position in Polish Zloty, in Banking Book, in a scenario of immediate parallel yield curve decrease by 100 bps, the impact on net interest income in the next 12 months after 31st December 2014 is negative and equal to 12.4% of the annualized 4Q2014 net interest income. The relatively high impact is connected mainly with the specificity of the polish legal system mentioned above. The Lombard rate is currently set at 3%, so that in case of decrease by additional 100 bps the maximum interest rate for loan portfolio could not exceed 8% annually.

Sensitivity of the Banking Book to changes of interest rates was as

follows ('000 PLN):

	31.12.2014			31.12.2013		
	BPVx100	-200 bps	+200 bps	BPVx100	-200 bps	+200 bps
PLN	-85.511	177.203	-164.137	-2.678	16.983	-3.892
CHF	15.536	-228	30.712	14.133	-307	27.914
EUR	13.755	-2.443	26.741	11.409	-6.983	22.224
USD	4.528	-5.594	8.733	4.754	-3.616	9.191
Other	1.282	-1.187	2.479	1.196	-10.538	2.316
TOTAL	**-50.410**	**167.751**	**-95.471**	**28.815**	**-4.461**	**57.753**
Equity, fixed and other assets	50.914	-92.616	99.875	42.910	-87.531	84.189
TOTAL	**504**	**75.134**	**4.404**	**71.725**	**-91.993**	**141.941**

* According to Consultation on guidelines on technical aspects of the management of interest rate risk arising from non-trading activities (IRRBB) (EBA/CP/2013/23).

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