
Project	Financial Instruments: Hedge Accounting
Topic	Macro Hedge Accounting: Managing Portfolios

Introduction

Background and purpose of this paper

1. Many comment letters emphasised that even with the current exposure draft on hedge accounting it is still not possible to fully represent some risk management strategies applied on a portfolio basis.
2. One of the main concerns raised relates to the management of a portfolio of items that contain optionality in favour of counterparties to influence the volume and/or timing of transactions.
3. The most common example in this context is a portfolio of loans that offer the obligors the possibility for an early repayment (pre-payable loans). Many respondents pointed out that those loans are managed differently on a portfolio level compared to a single loan basis.
4. This paper analyses the risk management of items with optionality on the basis of expected behaviour at a portfolio level, to describe potential consequences for a macro hedge accounting model reflecting those strategies. For illustrative purposes the paper uses pre-payable loans as an example. However, the topic is not limited to particular products or risks but relates to any hedged item that contains volume and/or timing optionality.
5. There are no questions to the Board in this paper.

This paper has been prepared by the technical staff of the IFRS Foundation for discussion at a public meeting of the IASB.

The views expressed in this paper are those of the staff preparing the paper. They do not purport to represent the views of any individual members of the IASB.

Comments made in relation to the application of an IFRS do not purport to be acceptable or unacceptable application of that IFRS—only the IFRS Interpretations Committee or the IASB can make such a determination.

The tentative decisions made by the IASB at its public meetings are reported in IASB *Update*. Official pronouncements of the IASB, including Discussion Papers, Exposure Drafts, IFRSs and Interpretations are published only after it has completed its full due process, including appropriate public consultation and formal voting procedures.

IASB Staff paper

Structure of this paper

6. The paper is structured as follows:
 - (a) Comparison of risk management strategies for individual items and on a portfolio basis.
 - (b) Possibilities to manage uncertainty on a portfolio level.
 - (c) Comparison of risk management approaches with hedge accounting requirements.
 - (d) Relevance for risks other than interest rate risk.

Comparison of risk management strategies for individual items and on a portfolio basis

Hedging on the basis of an individual item

7. To illustrate the risk management considerations for a hedged item that includes optionality the following example is used: A fixed rate loan with a maturity of 2 years that can be pre-paid in full after one year. The lender wants to hedge the interest rate risk of the loan and assesses the likelihood of actual prepayment to be 10%.
8. There are four potential strategies to hedge the interest rate risk of this loan:
 - (a) Enter into an interest rate swap that mirrors the embedded option in the loan, eg allows the lender to extend the swap at the end of the first year for another year if the loan is not pre-paid. This strategy covers the entire interest rate risk irrespective of whether or not the option is exercised. For transferring the uncertainty regarding prepayment to the swap counterparty an option premium must be paid. The amount of the premium is based on interest rate volatilities.
 - (b) Hedging only the interest rate risk of the first year as there is uncertainty about the existence of the loan in the second year. With a

IASB Staff paper

likelihood of 90% this strategy will lead to an un-hedged interest rate risk position in the second year.

- (c) Hedging the interest rate risk for the entire contractual maturity of two years. This is to reflect that it is most likely that the prepayment will not occur and therefore the premium payment (for an option in the swap) can be avoided. However, it leaves the lender with a 10%-probability of being over-hedged for the second year, ie holding a swap with no exposure to hedge.
 - (d) Hedging the loan for the entire interest rate risk in the first year and for 90% of the interest rate risk on the loan amount in the second year reflecting the 10% likelihood of prepayment. Although the strategy hedges the expected cash flow from a statistical point of view, it will never result in a properly hedged position – there will either be an over-hedge (loan prepayment) or under-hedge (no loan prepayment) for the second year.
9. This simple example shows that the only strategy that ensures that the interest rate risk is fully hedged on an individual loan basis is the one using a hedging instrument with a mirror-optionality. All other strategies would lead to under or over hedging even if the lender's estimate of the likelihood of prepayments is correct (eg correctly estimating the probability distribution).

Hedging on a portfolio basis

- 10. Assuming the lender has a portfolio of say 200 loans all sharing the identical terms of the loan as described above it is possible to hedge the interest rate risk of the loans on a portfolio basis.
- 11. The number of loans offers the opportunity to manage the interest rate risk on the basis of the expected behaviour of the counterparties. As a consequence the lender would assume that 10% of the entire portfolio (ie 20 loans the identity of which is unknown) will be prepaid after the first year while the remainder will remain outstanding for the entire two-year period.

IASB Staff paper

12. To hedge the interest rate risk of the expected cash flows the lender could enter into a two-year interest rate swap for 90% of the portfolio and a one-year interest rate swap for the remaining 10%. This risk management strategy treats the portfolio as one unit of account rather than focussing on the individual items within the portfolio. In other words, an expected cash flow profile representing the expected interest rate risk of the portfolio is hedged rather than each single loan.
13. For this strategy to work it does not matter which loan is subject to early prepayment as long as the overall expectation that 10% of the entire portfolio will be prepaid is met.
14. The consequence of a portfolio approach is that the number of items reduces the risk that the actual cash flows deviate from the expected ones. For example, even when the lender is right with the assessment of a 10% likelihood of prepayment it is impossible to achieve this outcome when the contractual terms of a single loan require repayment in full. In contrast to the example above with an individual loan, with a portfolio of 10 identical loans or more it is at least possible to end up with the statistically expected cash flow profile.
15. Statistically, the law of large numbers reduces the average deviation between actual and expected cash flows and therefore increases the level of predictability. This is because a higher number of items increases the likelihood of a scenario that reflects the expectation or is at least close to that. When considering as risk the deviation of the actual and expected result, the size of a portfolio can reduce this risk.
16. As a consequence, the portfolio approach offers the lender the opportunity to hedge the expected interest risk on the basis of statistical experience despite the uncertainties that result from the prepayment possibilities. The uncertainty can arise from different aspects:
 - (a) Even if the overall assessment of the likelihood of a loan being prepaid is correct, there is still a probability that the actual portfolio deviates from the expected average result.

IASB Staff paper

- (b) The assessment of the likelihood of prepayment could be wrong due to changes in parameters or an error in the design of the model like the selection of parameters or the assessment of their influence on the behaviour.

Assuming that the interest rate risk resulting from the portfolio's expected cash flows is hedged any deviation in actual prepayments from expectations would lead to an over- or under-hedge situation for the portfolio.

Possibilities to manage uncertainty on a portfolio level

- 17. There are various way to deal with uncertainty resulting from optionality on a portfolio basis other than using hedging instruments with offsetting optionality in addition to the approach set out in para 12.
- 18. A different approach is to split the portfolio into tranches with different levels of uncertainties based on previous experience. This allows the definition of separate strategies for each tranche in response to the distinct level of uncertainty.
- 19. Other potential strategies consider future developments like additions to the portfolio, interdependencies between parameters that correlate with the optionality as well as general expectations on future developments of parameters.
- 20. Furthermore, different approaches could result from the overall objective of the strategy, which might be to hedge cash flows, income or fair values. An influencing factor to this decision is often whether the portfolio is managed on a stand-alone basis or as an integrated part of a bigger unit like a net position.
- 21. As in the previous sections, the following discussion of the different approaches uses the 2 year loan portfolio prepayable at the end of year one as an example for illustrative purposes.

IASB Staff paper

Risk management with options

22. The easiest way to hedge the uncertainty resulting from prepayments is to enter into hedging instruments with offsetting optionality. This strategy is identical to hedging each loan individually (see para 8 (a)) and would not lead to any deviation in comparison to a portfolio approach. The advantage of this strategy is that the prepayment uncertainty is entirely absorbed. As a consequence the lender has to pay an option premium, the amount of which is usually determined on the assumption that the exercise is exclusively driven by interest rate changes.
23. However, the assumption that prepayment risk is solely driven by interest rate changes often does not hold true in practice. Otherwise a homogeneous loan portfolio would be prepaid entirely when the interest rates fall below the contractual rate of the loans while an increase would consequently lead to no single prepayment at all due to the lack of better alternatives. In addition to interest rate changes, other factors often influence the prepayment ratio. Those factors could depend on the kind of products, counterparties or the legal and taxation environment.
24. For example, a retail customer might not prepay a loan even in a situation where changes in interest rates would indicate it is rational to do so. The reason could be a lack of liquidity as the customer does not have cash available and an alternative cheaper funding source cannot be found or the borrower is not willing to look for one. Other factors could be an information gap or irrational behaviour of the borrowers. As a consequence hedging the entire portfolio with options could lead to overpaying for the risk as the option pricing does not properly reflect the actual behaviour of the counterparties.

Hedging the portfolio on the basis of tranches

25. An alternative that takes advantage of the described portfolio effect is to split the portfolio into tranches with different strategies for each layer. For example, based on an analysis of the likelihood of different scenarios the lender of the

IASB Staff paper

portfolio described above could assume that for 50% of the total volume the likelihood of a prepayment is remote, ie the probability that the prepayments will touch this threshold is below a certain tolerance level. As a consequence this layer can be hedged using vanilla interest rate swaps that have a fixed two year maturity. Another assumption might be that 5% of the portfolio will most likely be prepaid even when the prepayment rate is lower than expected. Consequently, vanilla interest rate swaps with a one year maturity are entered into. The remaining 45% covers the statistical uncertainty representing the portion of the portfolio for which prepayments can neither be expected nor excluded with sufficient certainty.

26. The tranche that bears the uncertainty might be hedged using hedging instruments with offsetting optionality. This would decrease the volume of costly options to the number needed when taking into account the other factors that influence the behaviour of the counterparties beside interest rate risk, as described above.
27. Alternatively, the lender might decide to take the risk resulting from uncertainty and hedge the probability-weighted expected cash flows. Furthermore the uncertain tranches might be left un-hedged for the uncertain second year leading to a systematic under-hedge of the risk. This strategy might be supported by the fact that the lender receives an extra spread from the borrowers to cover the prepayment risk.
28. The decision to accept the uncertainty is influenced by the size of the 'uncertain' tranche. For this the size of the portfolio and the volatility of the actual prepayment rate based on past experience potentially adjusted by future expectations are critical factors. Furthermore the frequency of monitoring and back-testing of the actual prepayment rates enables the lender to make adjustments to the hedging strategy as soon as deviations from the expected behaviour become obvious.

IASB Staff paper

Dynamic strategies and open portfolios

29. Other factors that improve the result of the strategy to hedge expected cash flows on a portfolio basis are to consider future developments and interdependencies between scenarios. Also, future expectations regarding the development of key parameters might be part of the risk management strategy.
30. The most common example for the consideration of future developments is to take into account additions to the portfolio that stabilise the risk. As long as the prepaid loans are replaced by new originations with similar interest rate exposures the risk of the overall portfolio remains stable. Therefore, projected additions might be taken into account as a mitigating factor for the uncertainty.
31. Another example is the existence of interdependencies between various factors that influence the likelihood of scenarios occurring. For example, changes in interest rates not only impact the prepayment rate of the current population of loans but also impact the extent of additions to the portfolio. Especially changes in interest rates often interact with or result from changes in other macroeconomic factors that influence the behaviour of customers and banks with a respective impact on future populations of loans.
32. Also, some risk management strategies consider expected future developments. For example, an expected increase of interest rates would indicate a decreasing prepayment rate to the extent that both are correlated.

Hedging cash flows versus hedging fair values

33. In general, the strategy for hedging a loan portfolio can either focus on the cash flows, income or the fair value of the portfolio.
34. For example, hedging the interest rate risk of a portfolio that consists of floating rate loans is usually aiming to achieve fixed interest rate cash flows or fixed interest rate income. However, for a portfolio that consists of fixed rate loans a strategy focussed on cash flows, income or fair values is possible.

IASB Staff paper

35. The objective of a fair value focus is to hedge the change in the fair value of the loans related to the interest rate risk of the portfolio. In contrast, the focus of a cash flow strategy is to change the expected fixed cash flows into floating. This approach is reasonable when the loan portfolio is managed in combination with the funding liabilities. When all interest cash flows in a portfolio respond to changes in market rates in the same way the net revenue of the portfolio is protected against interest rate risk. For example, a fixed rate loan portfolio at 5% is funded with floating rate liabilities at the current market rate of 4% leading to net interest margin of 1%. By entering into an interest rate swap that requires fixed interest payments at 4% (for the maturity of the fixed rate assets) and entitles to receive floating interest payments that correspond to the index the funding liabilities are based on, it is ensured that the target margin of 1% is achieved, even when interest rates change. This strategy is especially applied when assets and liabilities have different maturities but it can be assumed that these instruments will be replaced with others at current market rates in the future. Both strategies are highly correlated as hedging fixed cash flows stabilises the fair value of the portfolio and vice versa. However, the timing of cash flows is more important in a cash flow approach compared to a fair value approach.
36. A concept to hedge income like a stable net interest margin is similar to a cash flow approach. However, as the recognition of interest income and expense can deviate from the actual cash flow profile as with zero-bonds, timing differences in respect of the interest cash flows are acceptable.

Comparison of risk management approaches with hedge accounting requirements

Risk Management View

37. All risk management strategies described above have in common that the portfolio is viewed as one unit of account rather than the accumulation of

IASB Staff paper

individual items. Sometimes the separate items are not even tracked for risk management purposes as the focus is on the entire portfolio.

38. Consequently, changes in the population of the hedged portfolio do not cause any problems from a risk management point of view as long as they do not impact the overall hedged risk. When only the bottom layer of a pre-payable loan portfolio is hedged any prepayments that do not impact the existence of the hedged layer are treated as not being hedged as they do not influence the hedged risk. For example if the interest rate risk on CU 10m of loans is hedged in a portfolio of CU 100m of loans, as long as no more than CU 90m are prepaid the hedged risk would be unhedged. The same is true when the entire expected cash flows of the portfolio are hedged as long as the prepayments are in line with the expectations. In both cases the changes in population would not call into question the effectiveness of the strategy from a risk management perspective as long as the approach was considering those from the beginning.
39. When hedging a portfolio on the basis of expected cash flows the following sources of deviation between hedged items and hedging instruments can be identified:
- (a) Timing differences in the cash flow profiles of the instruments.
 - (b) Actual cash flows can deviate from expected cash flows.
 - (c) Changes of parameters may impact the expected cash flow assessment.
 - (d) Parameters used for the assessment of the expected cash flows or the weighting of those parameters are ultimately not appropriate.

These are considered in turn below.

40. Timing differences in the cash flow profile mean that the hedged expected cash flows of the portfolio might not occur at exactly the same point in time but rather throughout a specified time period (bucket), ie one month. The same is true for the offsetting cash flows of the hedging instruments. Deviations in cash flows can be managed through a narrow definition of the time period to keep the potential differences low or via discounting the cash flows to visualise and

IASB Staff paper

quantify timing differences. Another possibility is to create a hypothetical portfolio of various instruments that is supposed to replicate the hedged cash flows. Items or the entire portfolio can be designated as being hedged and the hedge relationship can be monitored. The occurrence of timing differences is independent from hedging a layer or the entire expected cash flows.

41. Even when the assessment of the probability-weighted expected cash flows is appropriate the actual cash flows can deviate. This is due to the fact that the expected scenario represents an average of various potential scenarios. As explained above, the portfolio size can lower the average deviation between expected and actual scenarios and therefore mitigate this risk to a certain extent.
42. Especially when hedging variable cash flows an additional source for deviations results from differences in the underlying index of the hedged items and hedging instruments (basis risk). For example, interest cash flows linked to 3M-Euribor are hedged with hedging instruments that are based on 3M-Libor. Although a high correlation between both indices can be expected it is almost certain that they will not be exactly the same.
43. The change in a parameter reflects the fact that although the parameter used for the assessment is correct, it might have changed in an unexpected way leading to different actual results. For example, the interest rate is supposed to be correlated with the amount of loans that are actually prepaid. Therefore it was assessed that based on interest rates remaining stable the probability of prepayments is 10%. However, a significant decrease in interest rates during the hedge period could push the actual likelihood of prepayments up to 15% of the portfolio. This uncertainty can be reduced through frequent monitoring of the development of parameters and respective adjustments of the hedging relationship.
44. Finally, the setup of the hedging relationship might not be appropriate. For example, the model created for the assessment of expected cash flows assumes that the prepayment might be solely dependent on the development of interest rates. However, the analysis of the actual results demonstrates that other factors

IASB Staff paper

influence the decision to prepay as well and need to be considered together with the interdependencies between them. This uncertainty could be mitigated through frequent monitoring and back-testing of the model assumptions.

45. All of the factors described above reflect uncertainty in the portfolio that might lead to mismatches in the hedge relationship. Timing differences and the basis risk impact layer approaches and hedges of the entire expected cash flows in a similar manner. Deviations between expected and actual cash flows always lead to ineffectiveness in the economic hedge when the entire expected cash flows are hedged. However, these deviations are often accepted as part of the risk management approach as long as they stay within pre-defined limits. With a layer approach ineffectiveness only occurs from a risk management perspective when the hedged layer is affected by the deviation.
46. As the management of portfolios on the basis of expected behaviour leads to the acceptance of uncertainty as part of the risk management approach it requires a close monitoring of the hedging relationship. Thus changes in expectations that become obvious typically trigger adjustments to the hedge position (eg interest rate swaps). However, to keep the number of adjustments reasonable from a cost-benefit perspective often risk limits are defined. As a consequence an unhedged position is accepted as long as it stays within pre-defined limits rather than determining a static hedge ratio or hedged volume. As long as the deviation between hedged portfolio and hedging instruments stays within the pre-defined limits no adjustments to the hedging relationships are required by the hedge management strategy.

Potential risk management implications for accounting requirements

47. One of the key features for portfolio hedge accounting under IAS 39 is the assumption that all items within the portfolio share the same hedged risk and therefore are equally hedged. When a layer approach is applied all items are treated as being hedged on a proportionate basis. As a consequence each addition or removal from the hedged portfolio has to be treated as a designation

IASB Staff paper

or discontinuation of the hedging relationship to comply with hedge accounting. The discontinuations have the following consequences:

- (a) The portion of the hedge adjustment or other comprehensive income that relates to the derecognised item has to be recognised in profit or loss.
 - (b) The hedge adjustment (fair value hedge) or other comprehensive income (cash flow hedge) related to the remaining population has to be amortised starting from the day of discontinuation of the hedging relationship at the latest.
48. From a risk management perspective changes in the population do not lead to an adjustment of the hedging relationship as long as the hedged risk is not affected. This is the case when the risk management approach anticipated the potential changes to the portfolio. So if the number of hedged items removed from the portfolio is still within the expected range (for example when the number of loans prepaid in the earlier example is within the expected level) or when the removed item is replaced by an addition keeping the overall risk unchanged, the hedge effectiveness of the risk management strategy is not impacted.
49. To reflect this risk management view in hedge accounting it would be necessary to treat the hedged portfolio as one unit of account in respect of the hedged risk. As a consequence, any item removed that was in line with expectations and thus accommodated in the hedging strategy would effectively be treated as unhedged. Any addition that replaces a removed hedged item and therefore leads to a stable hedged risk would be treated like a substitution and would ‘take over’ the related hedge adjustment or other comprehensive income portion to the extent that the overall risk position does not change.
50. Another assumption of the current hedge accounting regime in IAS 39 is that any change in the expected behaviour of a portfolio should lead to hedge ineffectiveness. However, as illustrated in this paper from a risk management perspective ineffectiveness only results from unexpected behaviour. For example, when hedging the probability-weighted expected cash flows of a

IASB Staff paper

portfolio any overall deviation of the actual cash flows from the expected ones creates an over- or under-hedge scenario and therefore causes ineffectiveness. However, with a layer approach that systematically under-hedges the expected cash flows to allow for unexpected deviations, ineffectiveness would only occur when the headroom is not sufficient. (For example, if 10% of the portfolio is expected to prepay to be 'safe' only 70% of the portfolio might be hedged for interest rate risk leaving a buffer of 20%. Only if more than 30% actually prepay ineffectiveness would be considered to arise from a risk management perspective).

51. The rebalancing concept introduced with the exposure draft on hedge accounting replaces the need to re-designate hedging relationships for changes of the hedge ratio. Given that portfolios are often managed on a dynamic strategy using risk limits rather than static hedge ratios or hedged volumes the rebalancing concept cannot simply be carried over to a portfolio approach. Frequent re-designations of the hedging relationship are required even within an unchanged (dynamic) risk management strategy. Therefore, for the macro hedge accounting model in order to properly reflect risk management it should be explored whether a hedge accounting approach could allow changes of the population of the portfolio as part of a continuing hedging relationship as long as those changes have been anticipated as part of the hedging strategy. That should also address risk management strategies that do not lead to an adjustment of the hedging approach as long as pre-defined risk limits are not breached.

An argument against the appropriateness of a bottom layer approach as described above to qualify for fair value hedge accounting purposes is that the optionality and the hedged risk are usually closely interrelated so that it is not possible to manage both independently. This implies that the behaviour of the counterparties is driven by the developments of the hedged risk, which might not always be a fair assumption.

52. In the same context some believe that for fair value hedges, the underlying risk management objective is to hedge entire fair value changes rather than cash flows. However, as described above, there are strategies that aim to turn fixed

IASB Staff paper

cash flows into floating without necessarily focussing on the overall fair value. This is especially the case when the objective is to end up with a stable or minimum margin out of a net position.

53. Similar to the determination of effectiveness for hedging relationships on a micro level, methods to determine the success of a macro hedging strategy should be derived from existing risk management approaches to properly reflect risk management. As explained above, major attributes of macro hedges are a higher level of complexity due to various different influencing factors as well as the hedge of risk components on the basis of statistical assumptions and expectations. This leads to more uncertainty within the hedging relationship and requires a more dynamic management strategy. As one consequence the use of risk limits rather than static hedge ratios or hedged volumes needs to be considered when assessing those strategies from an accounting perspective. Also, the objective often is to mitigate an existing risk like stabilising cash flows, income or fair values rather than removing the entire risk.
54. Furthermore the portion of the portfolio that is subject to the hedge is often reflected in a separate model that is supposed to behave in the same way as the hedged portion regarding return and/or fair value changes depending on the objective of the risk management approach. The replication model is used to manage and monitor the risk. This concept is similar to the determination of hypothetical derivatives for the purpose of effectiveness testing in cash flow hedging relationships. It might be considered to extend this concept to portfolio hedges given that the hypothetical derivative has been evidently derived from the hedged portfolio.
55. Finally, the exposure draft on hedge accounting introduced the possibility of designating net exposures as hedged items. This has to be considered when the risk management approach is to hedge a portfolio containing optionality together with other positions on a net basis.

IASB Staff paper

Relevance for other areas***Interest Rate Risk***

56. Especially with interest rate risk management there are a number of instruments that might be considered on the basis of expected cash flows rather than contractual ones when they are managed as part of a portfolio. The most typical examples are demand deposits as well as loan commitments and similar facilities.
57. Although demand deposits might be subject to repayment at any time on demand of the counterparty it can be observed that there is usually a stable minimum balance over time in a portfolio. In addition, although some of the demand deposits are floating rate instruments the contractual interest rates usually are not immediately adjusted for changes in market rates. Both characteristics lead to the fact that a portion of the total balance of demand deposits behaves like a liability with a fixed maturity. Dependent on the contractual terms they behave either like fixed rate instruments or like zero-coupon bonds when they are not subject to any interest payments. This is an important factor when the overall risk management approach is to stabilize net interest income.
58. Following the contractual terms of the deposits for risk management purposes would lead to the assumption that the entire balance of deposits must be replaced at short notice by alternative funding at market rates. As such the deposits would be treated like a floating interest rate position. However, for a fixed rate loan portfolio that is funded through demand deposits there is no need to hedge to achieve a fixed interest margin when it can be assumed that the balance and related interest cash flows of the deposits are stable in nature for the period the loans are outstanding.
59. A similar consideration is true for off-balance positions that will lead to interest cash flows as soon as they come on-balance. Typical examples are loan commitments or other loan facilities that lead to interest-bearing cash

IASB Staff paper

instruments once they are utilised. The likelihood of the number and timing of draw-downs might also be considered when hedging interest rate risk.

60. Although the parameters that determine the timing and volume of the expected cash flows might differ, the general principle is always the same. The interest rate risk is hedged on the basis of the expected cash flows, either entirely or with the consideration of headroom to protect against uncertainty.

Other risks

61. As indicated in the introduction, a risk management approach on the basis of expected cash flows for a portfolio of items is not limited to interest rate risk, but might occur in other situations as well where counterparty optionality exists.
62. For commodity risks this might apply to a portfolio of contracts that provide the purchaser with the option to determine the quantity while the price is already fixed. Typical examples of this are electricity contracts. Technically, those contracts contain a call option with electricity as the underlying exercised by the customer when required. Similar to the discussion on pre-payable loans customer behaviour is dependent on various factors other than the sole development of the price for electricity. As a consequence the related price risk might also be managed on the basis of expected behaviour.
63. Also of a similar nature are binding offers to customers that increase price risk or foreign exchange risk when the counterparty accepts. On a portfolio basis those offers can be hedged on the basis of past experience.