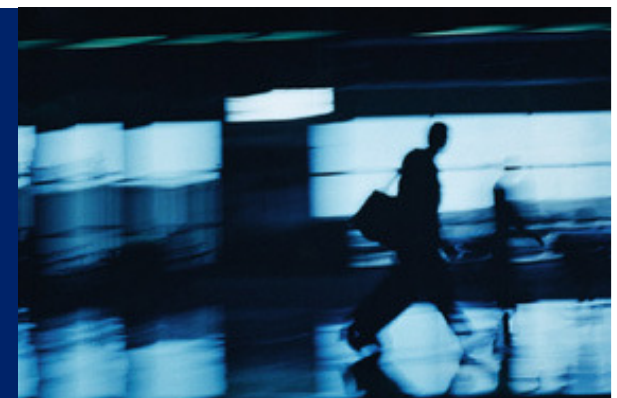


Commodity Hedge Accounting – An Introduction

Risk Management Breakfast

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Accounting, Compliance and Corporate Finance
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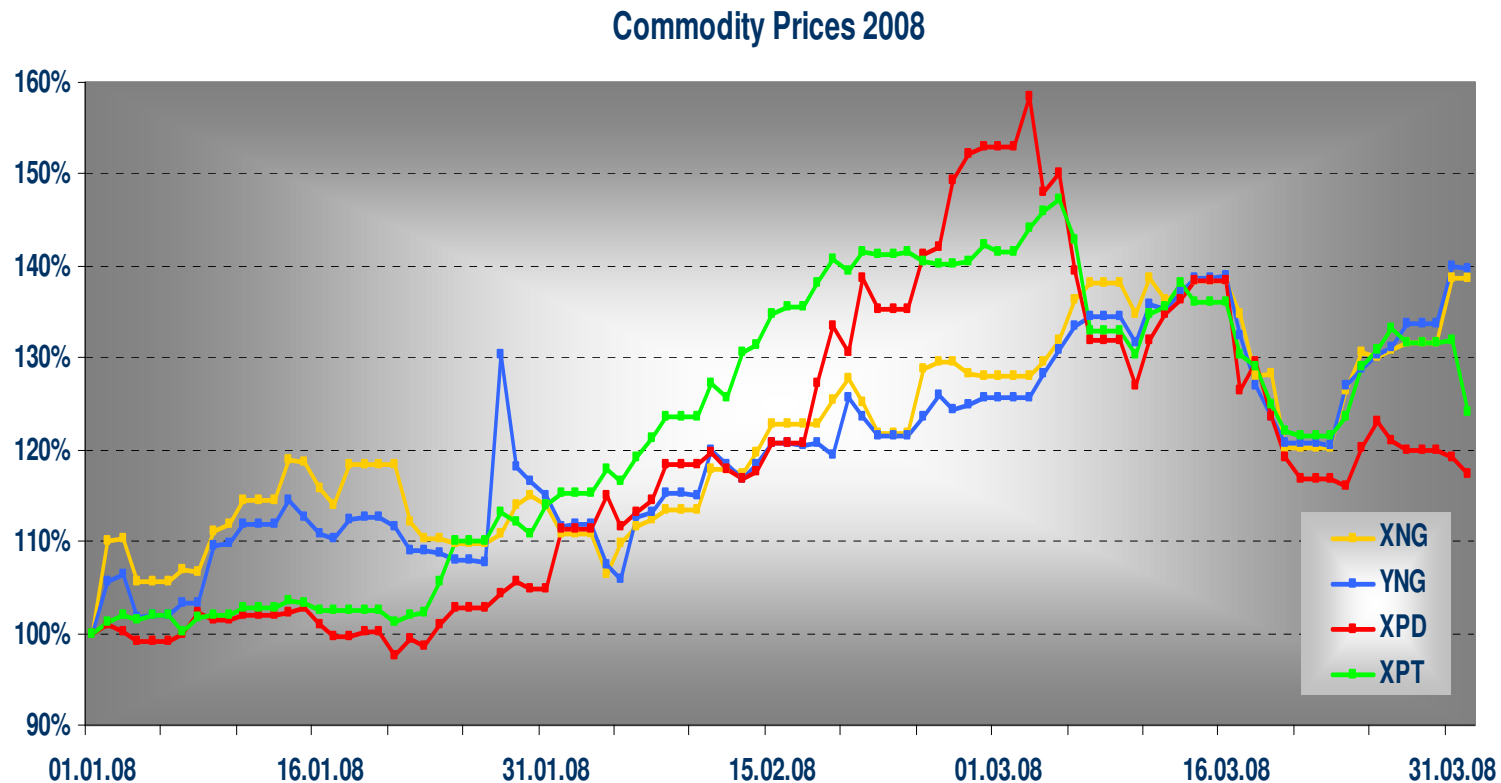
Agenda

Commodity Hedge Accounting

- Introduction & Motivation
- IAS 39 Financial Instruments – Basics
- Hedge Accounting – Process Model
- Commodity Hedge Accounting – Specific Aspects
- Commodity Hedge Accounting – Example
- Prospects
- Summary

Introduction & Motivation – Economic Trend

Economic hedging of commodity inventory, firm commitments, and/or forecast transactions using derivatives due to strong increases and high volatility of commodity prices.



IAS 39 Financial Instruments – Basics

Hedging instruments are in general commodity derivatives

Differentiation: Own-use contracts vs. financial instruments according to IAS 39

- Own-use contracts: Changes in fair value are not recognised in PnL
- IAS 39 financial instruments: Measurement according to classification



Financial commodity derivatives have to be classified as “Held for Trading”

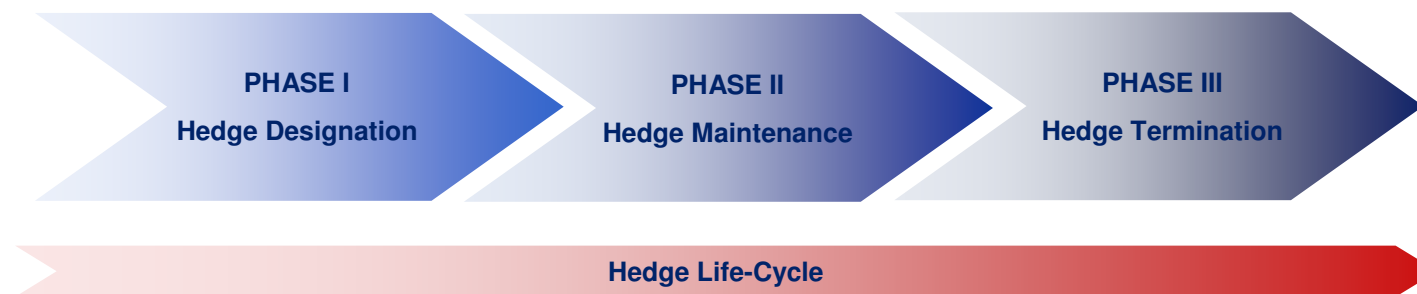
Hedge Accounting – Process Model

Aim of specific hedge accounting rules: Elimination of accounting mismatches (reduction of non-economic PnL-volatility)

Accounting mismatches due to asymmetric treatment of economic hedges

- IAS Mixed Model Approach, i.e. fair value vs. amortised cost measurement, and
- Off-balance non-financial hedged items/underlyings

General hedge accounting process – 3 Phase Model



Phase I – Hedge Designation

Phase I.I : Formal designation and documentation of hedge

- Risk management objective/strategy for undertaking the hedge
- Type of hedge, i.e. fair value, cash flow, or portfolio hedge
- Risk being hedged
- Specification of hedged item/underlying
- Specification of hedging instrument/derivative
- Designation date
- Assessment of effectiveness testing, i.e. specification of prospective and retrospective method, testing frequency

Phase I.II : Prospective test at inception of the hedge

Phase II – Hedge Maintenance

Phase II.I : Retrospective hedge assessment/measurement

- Performed at each reporting date using the formally documented method ► verification of high effectiveness

Phase II.II : Generation of specific hedge accounting entries

- Fair value hedges: Compensation of the derivative PnL-volatility via hedge fair value/basis adjustment of the underlying
- Cash flow hedges: Effective part of derivative fair value changes recognised in equity, other comprehensive income (OCI), ineffective part in PnL

Phase II.III : Assessment of prospective effectiveness at each reporting date

Phase III – Hedge Termination

Phase III.I : Specifying the cause for the hedge termination

- Non-qualified hedge, retrospective hedge effectiveness failed
- Expiration or close-out of the hedging instrument
- Expiration or close-out of the hedged item
- Forecast transaction is no longer expected to occur
- Designation is revoked by management decision

Phase III.II : Generation of specific termination postings

- Fair value hedges: Discharge vs. amortisation of cumulative basis adjustment
- Cash flow hedges: Discharge vs. release of OCI to PnL

Commodity Hedge Accounting – Specific Aspects (I)

Commodity risk is generally linked to non-financial instruments which can only be hedged in its entirety or for FX risk only according to IAS 39

Type of hedging depends on the hedged item/underlying

- Commodity inventory: Fair value hedge
- Commodity firm commitment: Fair value hedge for “own-use” contract
- Commodity forecast transaction: Cash flow hedge

Commodity cash flow hedges based on forecast transactions

- Commodity exposure based on information of planned operation in business units
- Generation of highly probable forecast transaction: Transformation of exposure into cash flow equivalents using actual sale or purchase contracts

Commodity Hedge Accounting – Specific Aspects (II)

Critical points regarding commodity cash flow hedges

- Economic hedging strategy for multi-variable commodity exposure, e.g. car battery
- Availability and quality of market data, e.g. commodity forward curves
- Setup of robust hedge effectiveness methods based on statistical analysis
- Modelling of OCI-release
 - Immediate release: Modification of inventory via basis adjustment
 - Delayed release: PnL recognition when hedge asset affects PnL
- Back-testing of exposure to validate highly probable forecast transactions
- Validation of economic hedging strategy for portfolio hedges

Commodity Hedge Accounting – Example (I)

Hedging a highly probable purchase of platinum with a forward contract

Nature of Risk: Company A is purchasing platinum (XPT) for its operating units. The purchase price for XPT will vary on the London Platinum and Palladium Market (LPPM) fixing. Therefore, company A is exposed to market fluctuation in the LPPM prices over time.

Objective: Protection of the USD value of a highly probable physical XPT purchase.

Type of Hedge: Cash flow hedge.

Risk being Hedged: The USD variability of a very likely future cash flow.

Designation Date: Trade date of the hedging instrument 11-April-2008.

Commodity Hedge Accounting – Example (II)

Hedged Item: Highly probable XPT purchase – notional amount: 2.500 Oz., purchase date: 05-April-2010, purchase price: Monthly average LPPM a.m. fixing in USD

$$FV_{\text{Underlying}}(t_0; T) = DF(t_0; T + t_s)_{USD} \left[\frac{1}{N} \sum_{i=0}^{N-1} f_{USD/XPT}(t_0; T - i) + \Delta_{XPT} \right] \cdot Exposure_{XPT}$$

Hedging Instrument: XPT cash settled commodity forward – notional amount: 2.500 Oz., trade date: 11-April-2008, maturity date: 05-April-2010, deal rate: 1.400 USD/Oz.

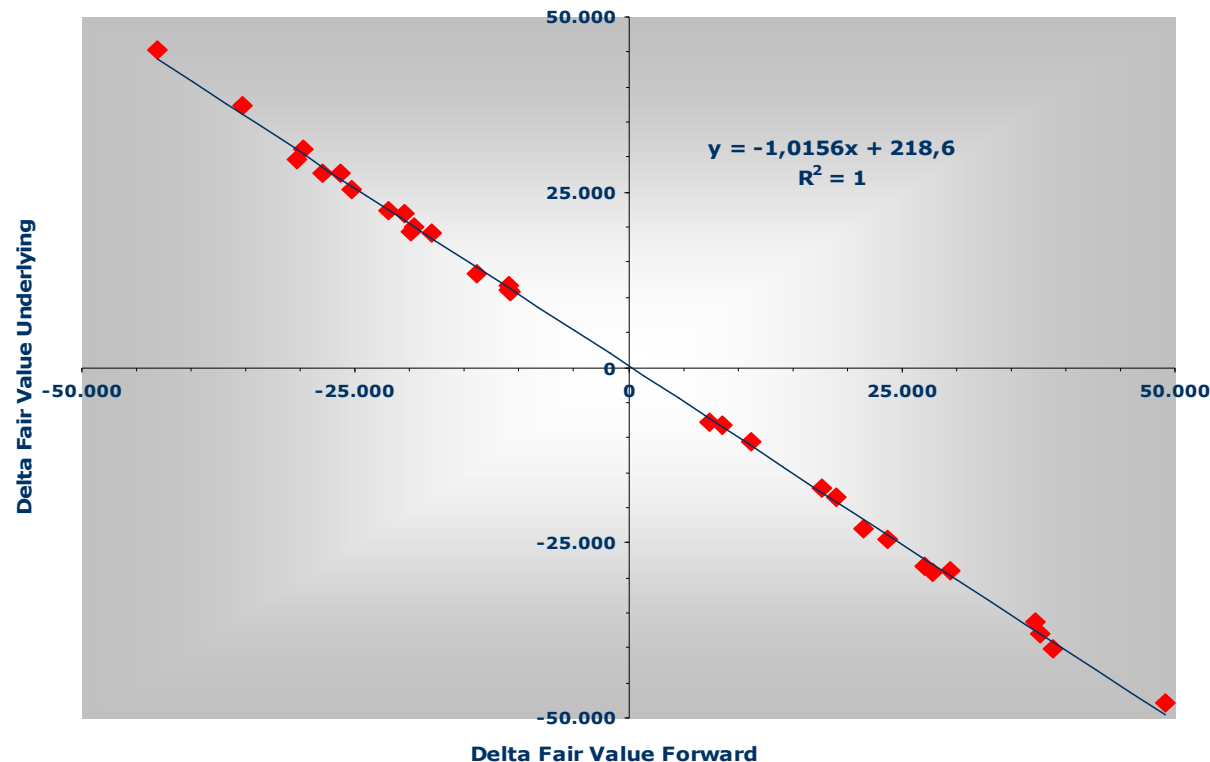
$$FV_{\text{Forward}} = DF(t_0, T + t_s)_{USD} \left[\frac{1}{N} \sum_{i=0}^{N-1} f_{USD/XPT}(t_0, T - i) - K_{\text{Contract}, USD} \right] \cdot \text{Nominal}_{\text{Contract}, XPT}$$

t_0 valuation date, T plan period, t_s spot days, N business days of fixing month, $f_{USD/XPT}$ XPT forward rate, DF_{USD} discount factor using USD IR curve, $K_{\text{Contract}, USD}$ USD deal rate, Δ_{XPT} fixed additional charge.

Commodity Hedge Accounting – Example (III)

Prospective hedge effectiveness assessment: Regression analysis – hedge is effective

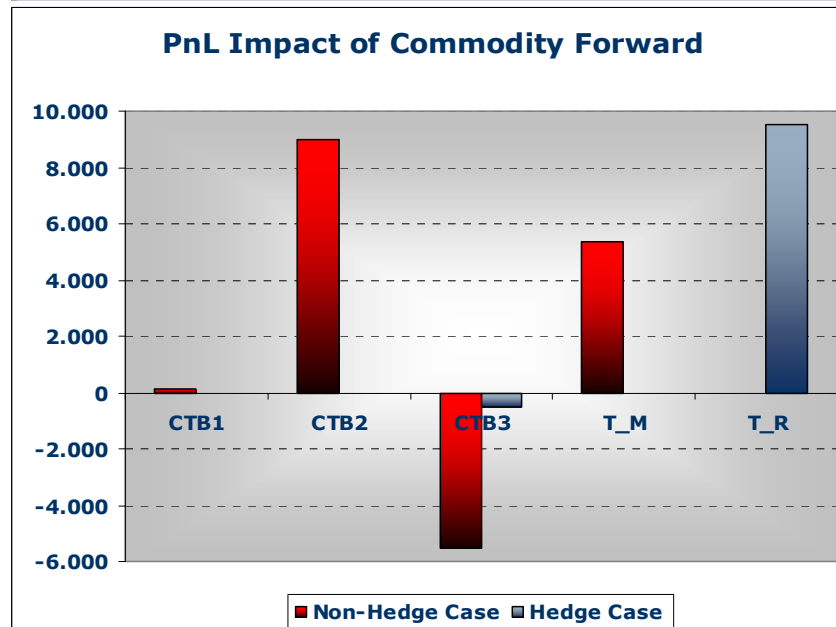
- Regression slope is within the range of -0,8 and -1,25,
- The R-squared of the regression is equal or greater than 80%, and
- The F-statistic is significant at the 95% confidence level



Commodity Hedge Accounting – Example (IV)

Retrospective hedge effectiveness assessment: Dollar-offset method with threshold

	CTB01	CTB02	CTB03	Maturity Date Forward
$\Delta FV_{\text{Underlying}}$	(100)	(10.000)	5.000	(5.500)
$\Delta FV_{\text{Forward}}$	150	9.000	(5.500)	5.350
Effectiveness	Threshold	90 %	110%	97%
Effective $\Delta FV_{\text{Forward}}$	150	9.000	(5.000)	5.350
Ineffective $\Delta FV_{\text{Forward}}$	-	-	(500)	-



CTB01:	
<i>Future (Asset)</i>	150
<i>Cash Flow Hedges (Equity)</i>	150

CTB02:	
<i>Future (Asset)</i>	9.000
<i>Cash Flow Hedges (Equity)</i>	9.000

CTB03:	
<i>Cash Flow Hedges (Equity)</i>	5.000
<i>Hedge Gain & Loss (PnL)</i>	500
<i>Future (Asset)</i>	5.500

Maturity Date Forward:	
<i>Future (Asset)</i>	5.350
<i>Cash Flow Hedges (Equity)</i>	5.350
<i>Cash (Asset)</i>	9.000
<i>Future (Asset)</i>	9.000

Reclassification Date:	
<i>Cash Flow Hedges (Equity)</i>	9.500
<i>Hedge Gain & Loss (PnL)</i>	9.500

Prospects

Exposure Draft of Proposed Amendments to IAS 39 Financial Instruments: Recognition and Measurement – Identification of Exposure Qualifying for Hedge Accounting

- Comment letters – discussion related to portion, one-sided risk of cash flows of non-financial items or partial-term hedges

First stage in IAS 39 replacement project: Discussion Paper: Reducing Complexity in Reporting of Financial Instruments

- Approach 3: Simplifying hedge accounting rules – reclassification to earnings of deferred gains and losses based on hedge documentation

Summary

Reduction of non-economic PnL-volatility by setting up a commodity hedge accounting solution for highly probable forecast transactions

- High automation due to bulk business
- High quality models and market data
- Definition of robust hedge effectiveness test methods – hedge effectiveness is limited by economic hedging strategy for multi-variable commodity exposure
- Modelling of OCI release – immediate release: Interface between Treasury sub-ledger and commodity inventory management system necessary
- New regulatory development regarding measurement and representations of financial instruments

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