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Comments of all sorts are welcome

Un-Faithful Representations of Financial Statements: Issues in Accounting for Financial Instruments

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Un-Faithful Representations of Financial Statements: Issues in Accounting for Financial Instruments

Abstract

Both of International Financial Reporting Standards (IFRSs) and accounting standards for the US GAAP categorize hedging relationships as falling into several buckets. The two buckets of relevance in this paper are (a) hedging the volatility of fair values, and (b) hedging the volatility of future cash flow. In this paper, I argue in this paper that at least four accounting treatments of derivatives and hedging lead to serious distortion of actual transactions and violate adherence to the principle of "faithful representation." The four treatments relate to (1) *creating a fictional Hypothetical Derivatives Method,* (2) *establishing valuation adjustments reflecting credit risk prices in order to report estimates of the fair values of OTC derivative assets (CVA) and liabilities (DVA),* (3) *requiring subjective metaphysical separation of embedded derivatives, and (4) failing to report hedging as a substitution of risk. To remedy these resulting distortion and departures from the goals of financial reporting, both standards-setting boards must undertake significant revisions of accounting for financial instruments and hedging.*

1. INTRODUCTION

Accounting standards governing financial instruments and hedging became effective in 2000 (IAS 39 for international accounting standards, and FAS No. 133 for US GAAP). Both types of standards categorize hedging relationships as falling into several categories.[1] The issues of concern in this paper relate to accounting for fair value hedge and cash flow hedge:

[1] These categories are (1) Freestanding vs. Embedded Derivatives; (2) Hedging—General; (3) Fair Value Hedges; (4) Cash Flow Hedges; (5) Net Foreign Investment Hedges; (6) Contracts in Entity's Own Equity; (7) Weather Derivatives

A. *Fair Value Hedge* is for transactions hedging the volatility of fair values of (1) a recognized asset; (2) a recognized liability; or (3) an unrecognized firm commitment.

B. *Cash Flow Hedge* is for transactions hedging the volatility of future cash flow of (i) a recognized asset; (ii) a recognized liability; or (iii) a forecasted transaction.

More specifically, I address some concerns regarding the accounting treatments of (a) hedging forecasted transactions, (b) setting up valuation allowances, (c) separating embedded derivatives, and (d) failure to disclosure of hedging as substitution of risk. In addressing these concerns, the two overriding principles of utmost relevance in this paper are:

A. *Faithful Representation*: A fundamental quality in The Conceptual Framework of Financial Reporting is faithful representation. In the Statement of Financial Accounting Concepts No. 8, the FASB states:[2]

> Financial reports represent economic phenomena in words and numbers. To be useful, financial information not only must represent relevant phenomena, but it also must faithfully represent the phenomena that it purports to represent. To be a perfectly faithful representation, a depiction would have three characteristics. It would be *complete*, *neutral*, and *free from error*. [Emphasis Added, p. 17].

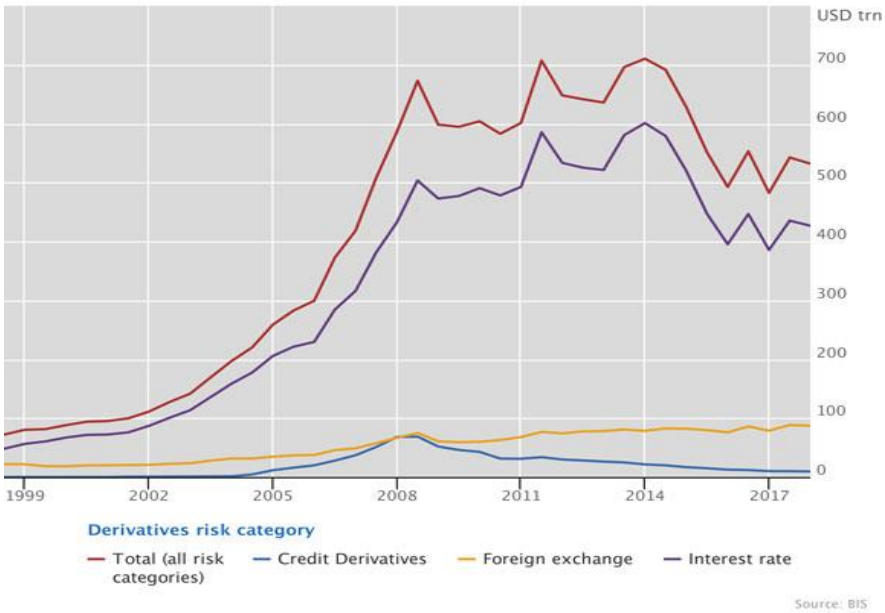
B. *Marking to Market*: The majority of financial derivatives are bilateral contracts deriving their values and risks from changes in prices or other indexes that give rise to rights (assets) and obligations (liabilities) of the two parties to the contract. Absent any other modification, both derivatives' assets and liabilities must be valued at fair value and the changes in fair values should be posted to the income statement. Certain uses of financial derivatives, such as hedging, may modify the cash flow related to derivative instruments and thus alter the application of this general principle.

[2] Financial Accounting Standards Board (jointly with the International Accounting Standards Board. "Conceptual Framework for Financial Reporting Statement of Financial Accounting Concepts No. 8." September 2010. https://www.fasb.org/resources/ccurl/515/412/Concepts%20Statement%20No%208.pdf

The objective of this paper is to show that the accounting treatments for these items result in (a) significant deviations from faithfully representing actual transactions and events; (b) distorting financial statements; (c) hindering transparency, and (d) impairing the comparability of financial statements over time and in relationship to other firms. In essence, the related standards grant the managements of the reporting entities the tools to alter the measurement and valuation of OTC financial derivative instruments as they wish.[3]

[3] Over-the-Counter derivatives are the source of major concerns for valuation and reporting. They are seven time the size of Organized-Exchange derivatives, change hands in private and have illiquid market. According to the Bank for International Settlements, the notional amounts of OTC derivatives stands at $549 trillion in the first quarter of 2018, which is down from a high of $712 trillion in 2011. The growth in these derivatives has overwhelmed all developments of transacting and accounting. About 45% of that amount is held by the largest 25 banks in the USA. The chart below is global OTC derivatives and is reproduced from a publication by the Bank for International Settlements.

OTC derivatives notional amount outstanding by risk category



https://www.bis.org/statistics/about_derivatives_stats.htm

2. ISSUE ONE

Hypothetical Derivatives and Mythical Accounting

A Prologue: Since 1982 any enterprise could use interest rate swaps to hedge cash flow risk including the risk of forecasted transactions. Accounting rules require the changes in the fair values of the swap contract flow through the income statement unless the hedge is effective in which case changes in fair values flow through Other Comprehensive Income (OCI) for a temporary "parking." A simple measure of effectiveness is relating the cumulative changes in the values of the derivative to the cumulative changes in the values of the hedged position. Because forecasted transactions are uncertain and their fair values are not measureable, accounting standards allow inventing a *fake derivative* to stand as a place holder for the hedged item. In turn, the resulting effects on the income statement and the balance sheet depart from reality.

Over the years, the management of reporting entities have lobbied hard to have accounting standards be set in ways to reduce the volatility of earnings. The pressure on the Financial Accounting Standards Board, for example, intensified after experiencing the earnings volatility of accounting for translation of foreign currency (FAS No. 8, 1975) which led to issuing a substitute statement of standard (FAS No. 52, 1983). An outcome of the new standard was to slice a segment of the income statement for temporary shelving of the balances of certain accounts in the equity section of the balance sheet. This section is what we know now as Other Comprehensive Income (OCI). The main objective of OCI is to park the gains or losses of foreign currency translation and other items that, if included in the income statement, would have increased the volatility of earnings. OCI became useful in designing accounting for financial derivatives and hedging (1998). To reduce adding volatility in the measurement of earnings, accounting standards permitted "parking" changes in the values of derivatives in OCI under certain conditions. These conditions include: (a) the derivative is designated as a hedge of cash flow risk; (b) the entity prepares a detailed documentation, (b) the hedged risk is well identified and connected to the firm-wide Enterprise Risk Management system, and (e) the hedging relationship is effective (successful). However, hedging forecasted transactions does

not a priori satisfy these conditions and require adding other modification.

2.1 Forecasted Transactions

The U. S. GAAP Master Glossary defines a forecasted transaction as[4]

> A transaction that is expected to occur for which there is no firm commitment. Because no transaction or event has yet occurred and the transaction or event when it occurs will be at the prevailing market price, a forecasted transaction does not give an entity any present rights to future benefits or a present obligation for future sacrifices.

:

> A transaction that is expected to occur for which there is no firm commitment. Because no transaction or event has yet occurred and the transaction or event when it occurs will be at the prevailing market price, a forecasted transaction does not give an entity any present rights to future benefits or a present obligation for future sacrifices.

In other words, a forecasted transaction has no real existence, past, present or future; there was no transfer or commitment for future transfers of resources either way. Thus, a forecasted transaction remains a highly undefined prospective event whose occurrence might be probable (US GAAP) or highly probable (IFRS). In this regard, the US GAAP and IFRSs share general similarities although not fully aligned.

2.2 Volatility of the Hedge Derivative => Volatility of Reported Earnings

Exhibit 1A presents an illustration in which a reporting entity (Company ABC) is forecasting probable cash payments that are expected to vary with a particular interest rate benchmark. However, the amounts and timing of expected cash outflow are indeterminable. Accordingly, the management

[4] FASB Codification of Accounting standards, Master Glossary. https://asc.fasb.org/glossary&letter=F

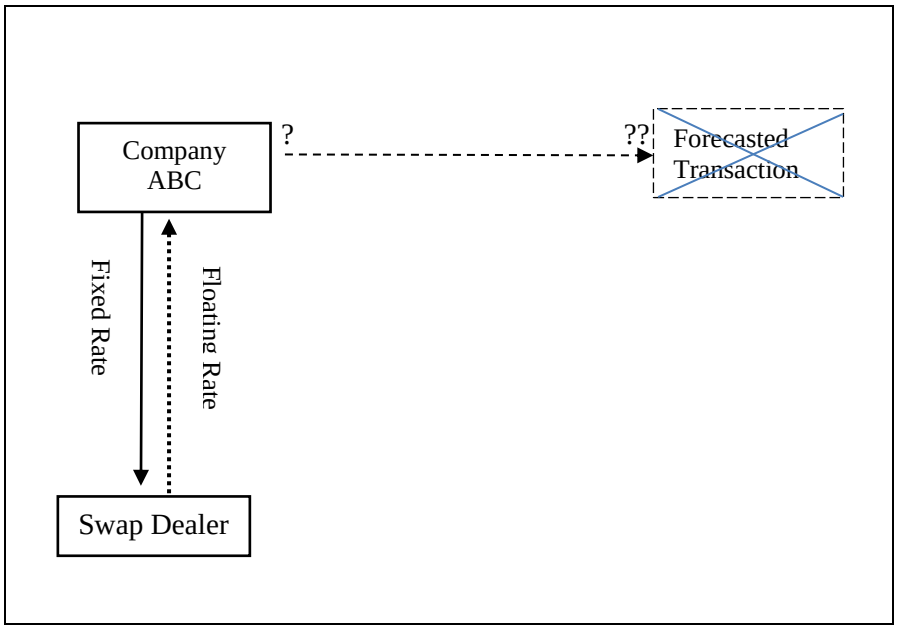
would have no basis for estimating a fair value for the forecasted transaction. Yet, prudent risk management led Company ABC to purchase an interest rate swap contract to pay (to the dealer bank) an amount of interest calculated at a fixed rate and receive interest calculated at a variable rate (e.g., LIBOR). As a plain vanilla swap, this contract would have zero fair value at inception and, if no other arrangements are made, the changes in fair value would flow through the income statement. Therein lies the management problem of adding to earnings volatility beyond what the management is willing to tolerate.

Insert Exhibit 1A about here

Exhibit 1A

Hedging a Forecasted Transaction:

Fair Value Changes Flow through the Income Statement



2.3 The Solution: Creating a Fictional Derivative

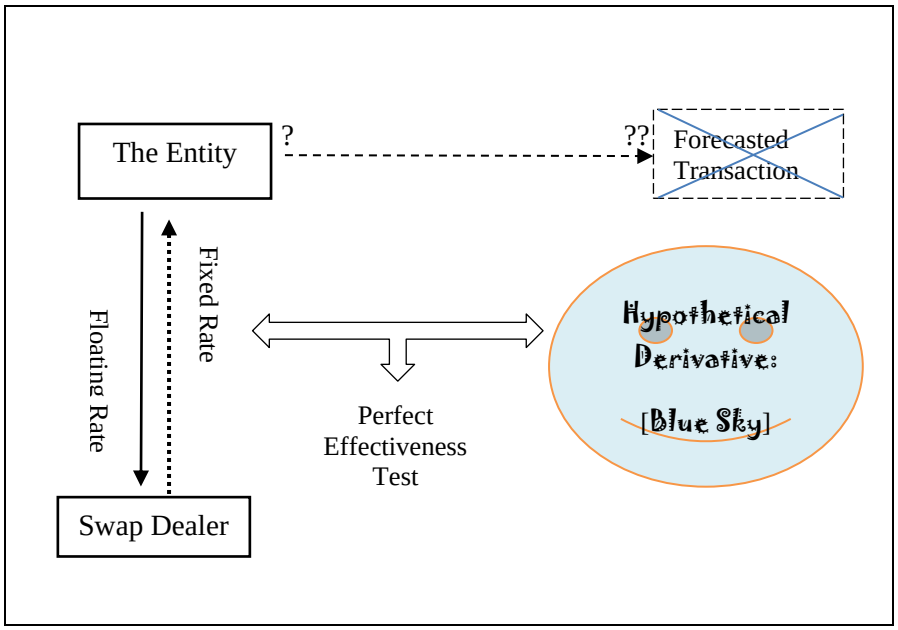
To shelter reported earnings from the volatility of the derivative acquired to hedge a forecasted transaction, the management must show that the hedge is effective. However, hedge effectiveness cannot be established because the changes in the fair values of the acquired derivative are not matched by corresponding changes in the fair value of the unknown forecasted transaction. Instead, the standards gave the management the option to establish a "*Voodoo Statue*" to play the role of the hedged item and provide an imagined "perfect hedge." Under these conditions, the management of Company ABC would have all the excuses it needs to defer the accumulated gains or losses of the hedge (real financial derivative) in OCI. Both the FASB and the IASB adopted the "*Voodoo Statue*" concept, but gave it the elegant name of "*The Hypothetical Derivatives Method*." Exhibit 1B augments Exhibit 1A by adding the magical hypothetical derivative that came down from a blue sky.

Insert Exhibit 1B about here

Exhibit 1B

Hedging a Forecasted Transaction:

A. Fair Value Changes of the Derivative are Posted to OCI



With perfectly effective hedge, even though it is a fake one, changes in the fair value of interest rate swap will bypass the income statement and be posted in an equity account (Other Comprehensive Income) instead.

The guide for creating the "*Hypothetical Derivatives Method*" is codified in ASC 815-35-25.[5]

FASB, 815-35-25

The hypothetical-derivative method measures hedge ineffectiveness based on a comparison of the following amounts:

a. The change in fair value of the actual interest rate swap designated as the hedging instrument

b. The change in fair value of a hypothetical interest rate swap having terms that identically match the critical terms of the floating-rate asset or liability, including all of the following:

1. The same **notional amount**

2. The same repricing dates

3. The same index (that is, the index on which the hypothetical interest rate swap's variable rate is based matches the index on which the asset or liability's variable rate is based)

4. Mirror image caps and floors

5. A zero fair value at the inception of the hedging relationship.

815-35-26

- …
- Thus, the hypothetical interest rate swap would be expected to perfectly offset the hedged cash flows.
- ….

Internationally, the IASB has adopted the same concept. Section B6.5.5 of IFRS 9, 2014 (page 143) states: [6]

> To calculate the change in the value of the hedged item for the purpose of measuring hedge ineffectiveness, an entity may use a derivative that would have

[5] This codification is essentially the same as the DERIVATIVES IMPLEMENTATION GROUP. STATEMENT 133 IMPLEMENTATION ISSUE NO. G7. "Cash Flow Hedges: Measuring the Ineffectiveness of a Cash Flow Hedge under Paragraph 30(b) When the Shortcut Method Is Not Applied." (July 11, 2000). http://www.fasb.org/derivatives/issueg7.shtml

[6] International Accounting Standards Board. *IFRS 9, Financial Instruments*, 2014. IFRS Foundation Publications Department 30 Cannon Street, London EC4M 6XH, United Kingdom

> terms that match the critical terms of the hedged item (this is commonly referred to as a 'hypothetical derivative'), and, for example for a hedge of a forecast transaction, would be calibrated using the hedged price (or rate) level.
>
> The hypothetical derivative replicates the hedged item and hence results in the same outcome as if that change in value was determined by a different approach. Hence, using a 'hypothetical derivative' is not a method in its own right but a mathematical expedient that can only be used to calculate the value of the hedged item.

The characterization of The Hypothetical Derivatives Method by the FASB and the IASB raises important questions:

1. If the terms of the forecasted transaction (the hedged item) are delineated well enough such that they could be replicated and valued, why would the standards suggest creating a hypothetical derivative as a "place holder" for the hedged item? There is no discussion in either U. S. GAAP or IFRS to shed light on this issue.

2. The only way that hedging a forecasted transaction be "a perfect hedge" is for the hypothetical derivate to be an opposite mirror view image of the actual hedge derivative. However, the Guide ASC 815-35-25 appears to use the term "perfect hedge" to refer to the relationship between the hypothetical derivative and the forecasted transaction.

The inference that the hypothetical derivative is measured as the inverse of the actual hedge derivative is not a speculation. Consider, for example, the practice described by the large technology-consulting firm "SAP" in using "*The Hypothetical Derivatives Method*," in one of its programs called the "*Bank Analyzer*."[7]

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[7] SAP. ***Bank Analyzer (FS-BA).*** Public 2018-6-28, Page 1047
https://help.sap.com/doc/abf8ebe023bc47ecabfd32dd14d62575/9.10/en-US/BankAnalyzer_EN.pdf

> The system uses the existing effectiveness methods but generates fictitious hedging relationships for them. These fictitious hedging relationships consist of a real hedging instrument and the corresponding hypothetical derivative. In the fictitious hedging relationship, the hypothetical derivative represents the hedged item, and the real derivative the hedging instrument. To be able to use the existing effectiveness test methods, the system compares the value changes in the hypothetical derivative with the real derivative. As these changes in value are always consistent, the system reverses the +/- sign before the final effectiveness indicator is derived. If this was not the case, the determined key figures would not be consistent with the results in the micro fair value hedging relationships. *The Hypothetical Derivatives Method* allows the management to defer the recognition of gains or losses of the actual financial derivative until the forecasted transaction is no longer a forecast.

Additionally, in one of his reports, Ira Kawaller acknowledged "The perfect hedge, then is not one that generally can be traded. It is commonly referred to as the hypothetical derivative and its settlement amounts are thus…… hypothetical." Yet, even with this qualification, Kawaller went on to show using regression analysis to "*to transform the features of the actual derivative to get the associated parameters of the hypothetical derivative*."[8]

In a more recent report, Kawaller discussed the improvements suggested by Accounting Standards Update in which he noted the following: [9]

> FASB has also clarified that whenever a company can assert that the hedging derivative and the hypothetical derivative are identical, no quantitative test is required; reporting entities must simply document that the qualifying conditions are satisfied. Again, this attestation is not a one-time event; reporting entities must revisit the issue quarterly to assure that the stated documentation is still valid.

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[8] Ira Kawaller. "Hypothetically Speaking: Accounting for Commodity Hedges." AFP Exchange. (March 2015), pp. 58-61. https://docs.wixstatic.com/ugd/de837a_c4a7ed959bb749a0811efd061af68cb3.pdf

[9] Ira G. Kawaller. "Update on Hedge Accounting Rules. FASB Addresses Effectiveness Concerns." CPA Journal, March 2018.
https://www.cpajournal.com/2018/04/11/update-on-hedge-accounting-rules/

2.5 Concluding Issue One

➔ The Conceptual Frameworks of IFRS and US GAAP offer "representational faithfulness" as *a fundamental principle for evaluating the quality of financial statements.*[10]

> QC12. Financial reports represent economic phenomena in words and numbers. To be useful, financial information not only must represent relevant phenomena, but it also must faithfully represent the phenomena that it purports to represent. To be a perfectly faithful representation, a depiction would have three characteristics. It would be complete, neutral, and free from error. Of course, perfection is seldom, if ever, achievable. The Board's objective is to maximize those qualities to the extent possible.

However, creating fictitious accounting treatments that change the geography of reported items between the income statement and the balance sheet could hardly be considered a faithful representation of the underlying transactions or economic conditions.[11]

➔ Additionally, for the same exact forecasted transaction, two firms could have very different treatments affecting the income statement and the balance sheet differently only by choosing to establish "The Hypothetical Derivatives Method." In his article "Hypothetically Speaking," Ira Kawaller recognized the resulting diversity and impairment of comparability as a result.[12]

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[10] Financial Accounting Standards Board (in collaboration with the International Accounting Standards Board). September. ***Statement of Financial Accounting Concepts No. 8. Conceptual Framework for Financial Reporting***. September 2010, page 17

[11] Clearly, there are no satisfactory responses to these queries because any negativity associated with creating "*The Hypothetical Derivatives Method*" had fallen by the wayside. I have raised this concern numerous times with the last time being in 2013 when I found it objectionable to build a "make believe" transaction that influences reported earnings and items reported on the balance sheet. See A. Rashad Abdel-khalik. ***Accounting for Risk, Hedging and Complex Contracts***. Routledge, 2013.

After coming across the information related to *The Hypothetical Derivatives Method*, one of my former colleagues in economics made his reaction clear in a private letter to me stating. "You report accounting numbers based on figments of imagination but criticize economists for making assumption to facilitate the tractability of their models."

[12] Kawaller, 2015. *Ibid*.

- ➔ Accounting standards state explicitly that derivatives could not be used as "hedged items." Yet, an implication of inventing the *Hypothetical Derivatives Method* is that financial derivatives may not be designated as hedged item except when they are fake!

3. <u>ISSUE TWO:</u>

CVA & DVA Add more Distortion of the Plastic Valuation of Derivatives Assets and Liabilities

A Prologue: Unlike other contracts, financial derivative instruments do not specify the amounts and timing of cash inflows or outflows. Instead, the inflows and outflows are expectations based on expected market-wide movements. Accordingly, the fair values of for derivatives not traded on organized exchanges are estimated by discounting the net expected cash flow. For Over-the-Counter derivatives, these values are completely a function of the forward yield curve and of the management strategies and goals. Therefore, these values are soft and malleable numbers. Adding to this plasticity is the use of valuation allowances for derivative assets (credit risk of counterparties) and for derivative liabilities (own credit risk). There are no guides for setting up these valuation allowances and all approaches used are homemade not verifiable against any objectively measured yardstick. Finally, these valuation allowances can be used as hedged items for which other derivatives would be acquired as hedge items. The accumulated cascade of subjectivity and management's exercising significant choices leads to reporting earnings and valuation numbers not representing any reality.

2.1 Plasticity of Valuation of OTC Derivative Instruments

Accounting standards define an asset as the right to receive resources, and a liability as the obligation to transfer resources out of the entity. Collectively, we had accepted these definitions almost for all assets and liabilities for which there is active and liquid markets. However, valuation problems arise in valuing specialized assets and transactions for which there are no active markets.

Of special interest is the valuation of Over-the-Counter (OTC) derivatives. Unlike exchange-traded derivatives, OTC derivative instruments trade privately between counterparties in a highly illiquid market. In this setting, the valuation of financial instruments are not based on prices generated by large numbers of market participants. Nor are they based on contractually determined cash flow. The amounts and timing of future cash inflows and outflows derive from market-wide indexes and benchmarks whose movements are not influenced by either one of the two contracting parties. For example, the projected cash flow associated with an interest rate swap contract at any point in time is conditional on the yield curve, the zero-coupon rates and forward rates—all are indexes determined by macro, not micro, economic factors. This feature renders financial derivative instruments totally unlike other contractual commitments in which contracts specify the amounts of resource inflows and outflows.[13]

Calculating expected values of assets and liabilities of bilateral derivative contracts draws on the industry guidance provided by *The Master Agreement* of the *International Swap and Derivatives Association* (ISDA) written in 1985 and revised in 2002.[14] Faced with a completely uncertain future, the *Master Agreement* provides alternative ways to calculate derivative assets and liabilities. However, all of the approaches provided hinge on one critical assumption: *the future will be an extension of the present*. Accordingly, it works out that the winner in the current period could be presumed to continue winning and accumulating rights (assets) and the loser in the current period is presumed to continue

[13] In general, entities enter into financial derivatives contracts to achieve one or more of the following goals:

- To hedge a known, specific risk.
- To manage expected risk.
- To speculate.
- To gamble—i.e., adding risk in the hope of profiting.

[14] A little known secret is that ten large banks established ISDA in 1985 and wrote the Master Agreement to serve their own interests. These banks are Bankers Trust, Citibank, First Boston, Goldman Sachs, Kleinwort Benson, Merrill Lynch, Morgan Stanley, Morgan Guaranty Trust, Salomon Brothers, and Shearson Lehman Brothers. Currently, the managing board of ISDA consists of 26 financial institutions, nineteen of which are big banks.

losing and accumulating liabilities for the remainder of the contractual maturity.[15] Based on these assumptions, the counterparties forecast various scenarios to estimate different series of "what could be" cash inflow and cash outflow, then net the expected cash inflows and outflows and discount the result to present value. The estimated present value is an asset for one party and a liability for the counterparty because financial derivatives are zero-sum games.[16]

This approach to generating values of derivatives "assets" and "liabilities" is highly problematic for several reasons:

a. For future periods, all of the intended services (hedging, managing risk, speculation or gambling) are contingent performance, i.e., continuation of the contract.

b. No transfer of resources between counterparties related to future periods had taken place beforehand.

c. The transfer of resources and performance of services in future periods are contingent on the realization of the expected macroeconomic factors, which are highly uncertain and are not controllable in the least by either counterparty.

Accordingly, OTC derivative assets and liabilities are simply *creatures of assumptions* and hypothetical expectations. It follows that the numbers that accountants report for OTC derivatives assets and liabilities are essentially assumed, soft, phantom numbers that do not, and could not have the same hardness and qualitative characteristics of other assets or liabilities on the balance sheet.

[15] The amounts are usually determined as the present value of amounts calculated on the basis of the current year's difference between the swap forward rate and the fixed rate of the contract times the numbers of years to maturity
[16] This is an oversimplification since the readers would need to learn about swap rate curve and other technical factors.

Given their unique characteristics, different entities could exercise creativity in estimating the values of OTC derivatives assets and liabilities by constructing the unknown future conditions in ways to fit their managements' goals. No other asset or liability on the balance sheet is a creature of assumptions in the same way or extent as OTC financial instruments. It is therefore not defensible to add the "plastic" estimates of assets and liabilities of OTC derivatives to other assets and liabilities that have harder measures.

2.2 Establishing Valuation Allowances for Derivatives Assets and Liabilities

In the measurement and reporting of fair values, accounting standards require incorporating "the assumptions of market participants" in estimating the exchange values.[17] In a liquid market with a large number of participants, there is no need to assess the participants' assumptions; the market already incorporates them in the observable transaction prices. This rather odd requirement in accounting standards is of concern primarily to other market conditions in which there are few market participants with placing the focus on Over-the-Counter (OTC) markets.[18] OTC derivatives are bilateral contracts traded privately in the dark behind closed doors and are, therefore, highly illiquid

[17] For the US GAAP

Adoption	Effective	Old Number	Old	New ASC Number
Jun-98	Jun-99	FAS 133	Accounting for Derivative Instruments and Hedging….	ASC 815
Sep-06	Nov-07	FAS 157	Fair Value Measurements	ASC 820
Feb-07	Nov-07	FAS 159	The Fair Value Option	ASC 825-10-05
Dec-11	Jan-13	ASU No. 2011-11	Disclosures about Offsetting Assets and Liabilities	ASC No. 210-20
Jan-16	Dec-17	ASU No. 2016-01	Measurement of Financial Assets and Liabilities	ASC 825-10-45-5

- IFRS 13 for International Financial Reporting Standards

[18] OTC derivatives have become the monster hidden off sight; the notional amounts of OTC derivatives exceeds $595 trillion ($595,000,000,000,000) worldwide, or seven times the size of global Gross Domestic Product. Of that amount, $481 trillion are interest rate contracts. See Bank for International Settlements. *Global OTC Derivatives Market*. https://www.bis.org/statistics/d5_1.pdf

and their values are not observable. Additionally, the models used in estimating the values of these derivatives employ the risk free rate to discount expected flows. Thus, the credit risk of counterparties are not priced. In contrast, hedged items, which are non-derivatives, incorporate adjustment for credit risk. Thus, there is typically a mismatch between the valuation of derivatives used for hedging and the valuation of the related hedged items. To correct for this "mismatch," accounting standards introduced the concept of "credit standing" and *require* establishing valuation adjustments for OTC derivative assets (credit valuation adjustment or CVA) and debt valuation adjustments (DVA) for derivative liabilities. As measures of pricing credit risk, CVA and DVA are not derived from the same family. As noted in Kamakura Solutions, CVA is "the difference between the risk-free portfolio value and the true portfolio value that takes into account the possibility of a counterparty's default. In other words, CVA is the market value of counterparty credit risk."[19] CVA is, therefore, a reserve allowance for the probable default of counterparties that owe the reporting entity money (assets). In contrast, DVA is an allowance for own credit risk. While CVA is conveying a message that "others may not pay what they owe the reporting entity," DVA conveys an unusual signal: "the reporting entity may not pay other derivatives counterparties to whom it owes money." This is, of course, quite odd for several reasons.

Estimating numbers for DVA is a recognition of decreasing debt without transferring resources outside the entity, which would be an increase in equity. When the practice of estimating DVA started, changes in values were posted to the income statement. "This valuation technique was used by financial firms in 2008 as a way to minimize accounting losses: as the market value of issued debt declined, companies would recognize the decline as income."[20]

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[19] Kamakura Solutions. Credit Risk, CVA and DVA." Kamakura Corporation at http://www.kamakuraco.com/Solutions/CreditRiskCVAandDVA.aspx

[20] Kamakura Solutions, *Ibid*.

Estimating DVA simply means that an enterprise was able to manufacture its own profits at will. In recent years, in ASU 2016-01, the FASB joined the IASB in requiring that specific segment of DVA "attributable to instrument-specific credit risk of liabilities for which the fair value option is elected." (See paragraph 825-10- 45-5) should be posted to OCI not to earnings.[21]

For all other liabilities that are valued at fair value, DVA and the changes thereof continue to flow through the income statement. As a result, a decrease in the fair value of liabilities continue to increase owners' equity through either earnings or OCI. That decrease, however, is self-selected and self-estimated. There is no specific guidance on the methods or limits of calculating either CVA or DVA, which creates challenges in estimation.[22] However, in general, the inputs to the calculation include (a) expected exposure to default loss, (b) expected loss severity (1 – recovery rate), (c) the probability of default and (d) the present value discount factor.[23] The methods of combining these inputs to form measures of CVA or DVA are left completely to management choice. However, estimating DVA has a special restriction: "An interesting aspect of the rule is that once reporting companies adopt this rule for certain securities, switching to a different valuation technique is prohibited."[24]

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[21] ASU 2016-01, "Financial Instruments—Overall (Subtopic 825-10). Recognition and Measurement of Financial Liabilities." **Financial Accounting Series**. Financial Accounting Standards Board. January 2016.

[22] Applying IFRS IFRS 13 Fair Value Measurement Credit valuation adjustments for derivative contracts April 2014 https://www.ey.com/Publication/vwLUAssets/EY-credit-valuation-adjustments-for-derivative-contracts/$FILE/EY-Applying-FV-April-2014.pdf

[23] Donald J. Smith. **Valuation in a World of CVA, DVA and FVA: A Tutorial on Debt Securities and Interest Rate Derivatives.** World Scientific Publishing Co. 2018.

[24] Kamakura Solutions, *Ibid*.

Because of the absence of any rules, models or guidance for the measurement of CVA or DVA, some financial economists suggest that CVA for a creditor concerning certain derivatives (assets) should be the negative of the DVA of the debtors of the same derivatives. Exhibit 2 presents the impact of symmetrical measures of CVA and DVA to which Smith refers to as "zero net supply." It is the notion that "the fair value of a bond (i.e., a financial instrument) is the same amount (in absolute value) whether viewed by investor (asset holder) or the issuer (debtor)."[25]

Insert Exhibit 2 about here

Thus, the finance literature appears to have converted measures of CVA and DVA as "market-wide" measures in which DVA is not a measure of own credit risk based on the debtors' own probabilities of default. Rather, DVA would be the estimate of the counterparty creditors as their CVA regarding their derivatives assets for which the reporting firm is the debtor. Nevertheless, under all circumstances the measurement of CVA and DVA is driven by management objectives and assumptions for which there are no means of validating or verifying.

Exhibit 2

The Zero-Net-Supply Concept

$$(\text{Value}^{\text{ASSET}} + \text{Value}^{\text{LIABILITY}}) = \text{VND} - \text{CVA} + \text{DVA} = 0,$$

where VND is the value of a fixed-rate bond discounted at the benchmark interest rate.

CVA is the credit valuation adjustment for a derivative held as an asset
DVA is the valuation adjustment for own credit risk for a derivative debt

Source: Donald J. Smith. **Valuation in a World of CVA, DVA and FVA: A Tutorial on Debt Securities and Interest Rate Derivatives.** World Scientific Publishing Co. 2018.

[25] Smith. Ibid. P. 17.

3.2 Muddying the Water Even More—Hedging CVAs and DVAs

There are at least two more complicating factors in estimating the fair values of OTC derivative assets and liabilities.

1. Firms may enter into other derivative contracts to hedge the estimated Credit Valuation Allowance (CVA) and Debt Valuation Allowances (DVA). The gain or loss on these hedging relationships would be treated as the gain or loss of the original derivative for which the valuation allowances were set up. However, hedging CVA is as absurd as hedging the Accounts Receivable Allowance. Moreover, hedging DVA is as absurd as hedging the entity own guarantee of its own debt.

2. Establishing DVA is like the reporting entity "insuring" its own debt. Moreover, DVA leads to a perverse effects. As the credit worthiness of the reporting entity deteriorates, estimates of DVA increases and the earnings of the reporting entity increase. Establishing a DVA (a valuation allowance) to reflect the alleged deterioration of own credit risk is an unconstrained choice act by the management.[26] Nevertheless, when it comes to OTC derivatives, accounting standards have given the management the implicit license to claim that it may not be able to pay its derivative debt obligations irrespective of whether or not the entity is facing financial distress. It is a choice that increases income and distorts the valuation of derivatives on the balance sheet. This aberrant outcome is a unilateral manufacturing of own profits and rearranging the geography of the income statement and balance sheet. to equity (profit) at will.

[26] During my presentation of this paper at a workshop, Tim Brown, an assistant professor at the University of Illinois, asked rhetorically: What if Wal-Mart, for example, buys produce from farmers and tell them 'the company may not be able to pay you'?

Insert Exhibit 3 about here

As an illustration, let us consider JPMorgan Chase (Exhibit 3). The bank is highly liquid and have no threat of defaulting. Yet, it is benefiting by the accounting standards gift of estimating DVA at levels that impact reported income significantly. For example, it is actually surprising that, in fiscal year 2011, about 23% of net income came from DVA—earnings manufactured by the management (p. 81).[27]

> Net revenue included a $1.4 billion gain from DVA on certain structured and derivative liabilities resulting from the widening of the Firm's credit spreads. Excluding the impact of DVA, net revenue was $24.8 billion and net income was $5.9 billion.

In 2012, adjustments to DVA reduced earnings by $930 million (Exhibit 4). The implication of reversing the amounts of DVA is that JPMorgan Chase had an elevated risk of default in 2011 more than it did in 2012. In reality, however, fiscal year 2012 was the year of disclosing more than $6.0 billion loss in the case of "The London Whale."[28] Thus, JPMorgan Chase has a unique history fiscal year of 2012. In that year the "marketplace" by getting deep into credit default swaps but gained in "accounting" by managing the estimates of DVA. It is not clear how anyone could claim that the resulting reports after adjusting for CVA and DVA adhere to the "faithful representation principle" while permitting the management to manufacture profits.

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[27] JPMorgan Chase & Co. Form 10-K of 2013, Page 81.
http://files.shareholder.com/downloads/ONE/6330626209x0xS19617-12-163/19617/filing.pdf
The $5.9 billion income is, of course, after tax. But DVA is not recognized as a taxable item and all the $1.4 billion went straight to earning.

[28] Homeland Security & Governmental Affairs. *JPMorgan Chase Whale Trade: A Case History of Derivatives Risks and Abuse*. March 15, 2013.
https://www.hsgac.senate.gov/subcommittees/investigations/hearings/chase-whale-trades-a-case-history-of-derivatives-risks-and-abuses

Exhibit 3

CVA & DVA of JPMorgan Chase in 2011 and 2012

Notes to consolidated financial statements

Credit adjustments

When determining the fair value of an instrument, it may be necessary to record adjustments to the Firm's estimates of fair value in order to reflect the counterparty credit quality and Firm's own creditworthiness:

Credit valuation adjustments ("CVA") are taken to reflect the credit quality of a counterparty in the valuation of derivatives. CVA adjustments are necessary when the market price (or parameter) is not indicative of the credit quality of the counterparty. As few classes of derivative contracts are listed on an exchange, derivative positions are predominantly valued using models that use as their basis observable market parameters. An adjustment is necessary to reflect the credit quality of each derivative counterparty to arrive at fair value. The adjustment also takes into account contractual factors designed to reduce the Firm's credit exposure to each counterparty, such as collateral and legal rights of offset.

Debit valuation adjustments ("DVA") are taken to reflect the credit quality of the Firm in the valuation of liabilities measured at fair value. The methodology to determine the adjustment is generally consistent with CVA and incorporates JPMorgan Chase's credit spread as observed through the credit default swap ("CDS") market.

The following table provides the credit adjustments, excluding the effect of any hedging activity, reflected within the Consolidated Balance Sheets as of the dates indicated.

December 31, (in millions)	**2012**	2011
Derivative receivables balance (net of derivatives CVA)	**$ 74,983**	$ 92,477
Derivatives CVA [a]	**(4,238)**	(6,936)
Derivative payables balance (net of derivatives DVA)	**70,656**	74,977
Derivatives DVA	**(830)**	(1,420)
Structured notes balance (net of structured notes DVA) [b] [c]	**48,112**	49,229
Structured notes DVA	**(1,712)**	(2,052)

Source: Form 10-K, December 31, 2012. Page 211

https://jpmorganchaseco.gcs-web.com/node/107676/html

This is what Lisa Pollack of the *Financial Times* called "utterly mad," given that the U. S. has enacted a safe harbor rule protecting swap counterparties.[29]

> **The risk that the bank that is reporting results will default and therefore not pay out.** FT Alphaville would expect these to be labelled as "DVA". That is, if the reporting bank owed other banks a lot of money on various derivative positions, but the bank's creditworthiness deteriorated, then the claims could be marked down by the logic of DVA because the bank may default before paying out to its counterparties.
>
> That, conceptually, strikes us as utterly mad. US bankruptcy has a safe harbour specifically for swap counterparties to be able to close out at fair value. In other words, filing for bankruptcy is unlikely to alleviate a bank of the requirement to pay out. Even the extreme, where this bit of accounting should surely make sense, is in fact ludicrous.
>
> Bank of America – "DVA trading adjustment" – $1.7bn
>
> **2. The risk that the counterparties of the reporting bank will default.** There are many ways to hedge against one's counterparty exposures. One may use credit default swaps, credit indices, bonds, equities, and all other manner of derivatives. One can also adjust inventory levels to move the net short position to counter the net long when the bank is in-the-money to a counterparty.
>
> CVA can therefore be net of hedges or can just consider the mark on the hedges.
>
> Citi – "derivatives CVA net of hedges" – $333m
> JP Morgan – "credit valuation adjustments ("CVA") on derivative assets, net of hedges" – $(691)m (<-**loss**)

3.3 CVA & DVA are Beyond Banks

Estimating CVA and DVA as adjustments to valuation of OTC derivatives is not limited to banks. For example, Strategic Hotel & Resorts, Inc. reported the following in its 10-K of 2014,

> The Company incorporates credit valuation adjustments (CVA) to appropriately reflect its own nonperformance risk and the respective counterparty's nonperformance risk.[30]

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[29] Lisa Pollack, "Bank of America results: DOA or DVA? [updated]" Alphaville. ***Financial Times***. October 18, 2011. http://ftalphaville.ft.com/2012/10/29/1235261/overly-processed-accounting-who-eats-this-stuff/

[30] Strategic Hotels & Resorts, Inc. Form 10-K. December 31, 2014, page 90. https://www.last10k.com/sec-filings/bee#fullReport

The report further identified the valuation of derivatives as Level 2, while CVA was Level 3. Here, the company referred to DVA as CVA. Similarly, Ennis Communications Corporation combined CVA and DVA under the banner of "CVA."

> In accordance with ASC Topic 820, the Company made Credit Value Adjustments (CVAs) to adjust the valuation of derivatives to account for our own credit risk with respect to all derivative liability positions. The CVA was accounted for as a decrease to the derivative position with the corresponding increase or decrease reflected in accumulated other comprehensive income (loss) for derivatives designated as cash flow hedges. The CVA also accounted for nonperformance risk of our counterparty in the fair value measurement of all derivative asset positions, when appropriate. [31]

Finally in these illustrations, Indiana University Medical Center, Inc. reported adjustment of derivative liabilities, but referred to DVA as CVA.[32]

> Guidance on fair value accounting stipulates that a credit valuation adjustment (CVA) should be applied to the mark-to-market valuation position of interest rate swaps to more closely capture the fair value of such instruments. As of June 30, the fair value of interest rate swaps was a liability of $110,650, which is net of CVA of $15,974. As of December 31, 2014, the fair value of interest rate swaps was a liability of $145,339, which is net of CVA of $9,837. The fair values of the swaps have been included with noncurrent liabilities in the accompanying consolidated balance sheets.

3.4 Concluding Issue Two

a. Companies value financial derivatives traded off organized exchanges using "other" inputs, which typically disqualify then for valuation at Level 1 of the Fair Value Hierarchy. Since both Level 2 and Level 3 involve judgment and estimation at different

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[31] Emmis Communications Corporation. Form 10-K for 2012, page 77.

https://www.sec.gov/Archives/edgar/data/783005/000119312512223521/d335769d10k.htm

[32] Consolidated Financial Statements Indiana University Health, Inc. and subsidiaries Years Ended December 31, 2015 and 2014. With Report of Independent Auditors
https://www.in.gov/isdh/files/2015_Indiana_University_Health_AFS.pdf

degrees, the valuation of derivative assets and liabilities will be guided by other management goals.

b. While the obtained values of derivatives assets and liabilities are “soft” numbers, managers estimate valuation allowances: Credit Valuation Allowance (CVA) to adjust values of assets to include counterparty credit risk, and Debt Valuation Allowance (DVA) to adjust values of own debt to reflect own credit risk. By construction and necessity, all estimates of CVA and DVA are made at Level 3 of the fair value hierarchy.

c. The combination of the two estimates of fair values and the valuation adjustments lack any objective measures and are completely dependent on the management’s assumptions and goals.

d. The aggregation of the valuation of OTC derivatives, establishing arbitrary valuation allowances for assets (CVA) and for liabilities (DVA) and including the results of hedging CVA and DVA magnifies the plasticity of the numbers reported derivatives for assets and liabilities. Thus, these numbers are representations of management wishes, not representation of true transactions.

4. ISSUE THREE

The Futility and Distortion of Separating Embedded Derivatives

A Prologue: An embedded derivative is a derivative within a non-derivative contract that cannot be physically detached or transferred. Unlike hedge accounting, separation of embedded derivatives is a requirement, not a choice. When metaphysically separated, an embedded derivative would be valued as a similar freestanding derivative and the value of the host contract, debt or equity, would be the residual amount of the book valued of the hybrid instrument net of the estimated value of the embedded derivative. A combination of embedded derivatives must be valued as one. The changes in the values of embedded derivative flow through the income statement. This is another means handed to management to create profits at will and, in the process, distort the reported values of the debt or equity host contracts. To this day, neither the FASB nor the IASB has provided any evidence on the cost/benefit analysis of separating embedded derivatives.

4.1 Embedded Derivatives

A hybrid instrument consists of at least two components (1) a debt or equity component, and (b) a feature that modifies the cash flow of the first component. Accounting standards have taken the steps of providing a process by which these two components be valued and recognized separately when the value and risk generators of both components are different and when the hybrid is not valued at fair value through earnings.

After separation, the first component is known as the host contract and the second component is the financial derivative. If the second component is physically separable as in the case of detachable warrants, it would be treated as a freestanding derivative. But if it is not separable as in the case of attached warrants, it is considered embedded.

Other common examples of hybrid securities are callable bonds, puttable bonds and convertible bonds. A callable bond consists of a debt contract modified by an option giving the issuer the right to call the bonds for redemption under some specified conditions. A puttable bond

consists of a debt contract and an embedded option giving the investor the right to put the bond back to issuer under some specified conditions. A convertible bond is a debt contract and an embedded option giving the holder the right to convert the bond into common shares of the same entity (a call option). It is also possible that the issuer keeps the right to call for the conversion (put options). In each of these cases, the related options are not physically separable or transferable independent of the entire hybrid contract and is therefore embedded but may have similar cash flow effects as the effects of freestanding derivatives.

To account for embedded derivatives, accounting standards aimed at maintaining symmetry with accounting for the similar but freestanding derivatives. Standards setters adopted this symmetry as the preferable goal without consideration of the cost/benefit relationships of implementing that standard. This means that embedded derivatives should be valued at fair values and changes in fair values flow through the income statement as in the case of securities held for trading. To implement this accounting, the hybrid instrument must undergo metaphysical separation (which the US GAAP refers to as 'bifurcation') into a host and an embedded derivative components. Both of IFRS and US GAAP set very much similar criteria for performing that separation.[33] Three of these criteria are of significance.

1. The value and risk generators of the embedded derivative and of the host contract are different.
2. The hybrid instrument is not measured at fair value through the income statement.
3. The embedded feature would be a derivative if it were freestanding.

[33] In the 2018 revision, IASB allowed the separation possibility for financial liabilities and other types of contracts such as a forward contract with options, but not for financial assets. According to this revision, hybrid instruments in financial assets having embedded derivatives should be valued in its entirety at fair value through profit or loss statement—FVTPL.

When separated, the accounting treatment of the host contract will not change but the embedded derivative will be valued at fair value through the income statement. Surprisingly though, the value of the host contract would be measured as a *residual*; it is the value of the hybrid net of the estimated fair value of the embedded derivative (s). Stated differently, valuation of the embedded derivative(s), which is subject to making many assumptions, controls the allocation of the fair value of the hybrid to the host contract and the embedded derivative.

All of that might sound simple and straightforward but the fascination of the business world with financial derivatives has emboldened financial engineers to develop much more complex hybrid instruments that are challenging to bifurcate. The valuation of the embedded derivatives in these types of hybrid contracts reverts to Level 3 fair value measurement, allowing the management of the reporting entity to apply parameters and implement strategies that fit its own objectives. With the attendant difficulties in the valuation of embedded derivatives and the related host contracts, one would have expected either the FASB or the IASB to offer some convincing evidence or arguments showing that the benefits of separating and recognizing embedded derivatives exceeds, or even get close to, the cost of doing so. In fact, the metaphysical separation of embedded derivatives could misinform investors of the true performance and financial conditions of the reporting entity as well as the extent of the firm's indebtedness. To support these arguments, let us look at three cases—two complex contracts and a case of using embedded derivatives to seriously distort reported earnings.

4.2 Cases in Accounting for Multiple Embedded Derivatives

On February 24, 2003, *Deutsche Telekom Finance* issued €2,288,500,000 of 6.5% *Guaranteed Mandatory Convertible Bonds* to ordinary (common) shares Due 2006. This is one type of hybrid contracts in a family of convertibles known as *Debt Exchangeable for Common*

Stocks (*DECS*), which typically has more than one embedded derivative. This bond offering was mandatorily convertible at one of three different mandatory conversion ratios (and prices) all of which are contingent on levels of ordinary share prices. To decide on the relevant conversion ratio, the offering prospectus defines (a) the "*Maturity Share Price*" as "the arithmetic average of the daily Closing Prices of the Shares on the twenty consecutive Trading Days ending on the third Trading Day immediately preceding the Final Conversion Date" and (b) the *"Initial Share Price"* means €11.80.

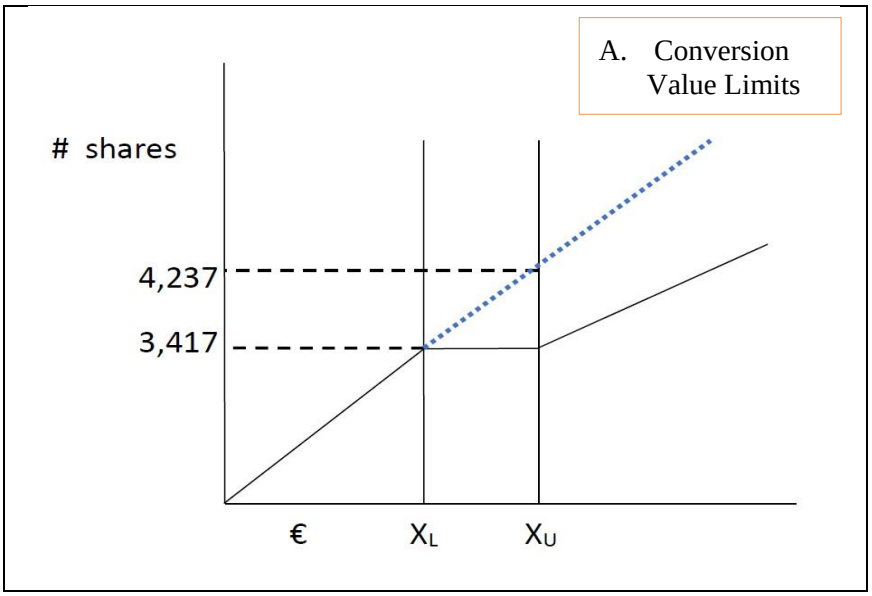
By reference to these prices, *Deutsche Telekom* offers three possible conversion ratios:

a. ***Maximum Conversion Ratio.*** If the Maturity Share Price is less than or equal to the Initial Share Price, the conversion ratio shall be equal to 4,237.
b. ***Minimum Conversion Ratio.*** If the Maturity Share Price is equal to or greater than the Conversion Price, the conversion ratio shall be equal to 3,417.
c. ***Medium Conversion Ratio"*** If the Maturity Share Price is neither less than or equal to the Initial Share Price nor equal to or greater than the Conversion Price the conversion ratio shall be equal to the Principal Amount divided by the Maturity Share Price. Exhibit 5 show the three stages values and conversion ratios.

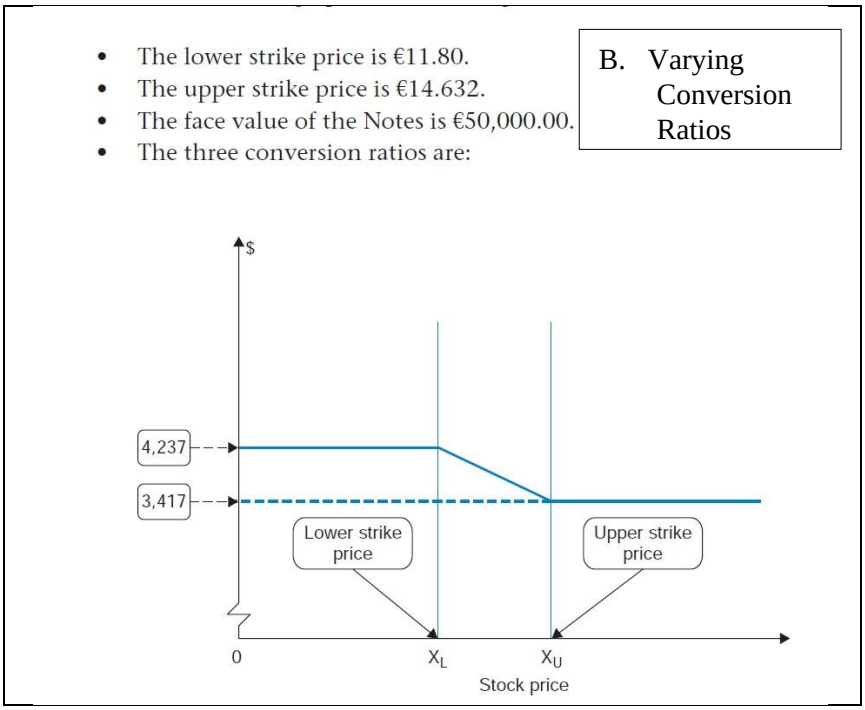
Exhibit 4

Values and Conversion Ratios of Deutsche Telecom

Mandatory Convertible Bonds



X_L = Lower strike price. X_U = Upper strike price.



Few authors have tackled the valuation of *DECS* (Enrico Arzac, 1997 and Ammann and Seiz, 2006). Arzac noted that *DECS* is a compound hybrid having at least two embedded derivatives. He suggested the following model for estimating the fair value of this hybrid.

Fair Value =

The value of a call option with upper strike price times the lower conversion ratio – Value of a put option with lower strike price times the upper conversion ratio + Present value of the risk-free par value + Present value of the risk coupon payments.

(Source: Arzac, 1997; Ammann and Seiz, 2006)

However, for convertible debt of *Deutsche Telekom AG*, the mandatory conversion scheduled for June 2006 could be considered a "forward contract." In this case, the convertible debt of *Deutsche Telekom* would have embedded derivatives consisting of a put option, a call option and a forward contract priced at Maturity price, which is the arithmetic average price over specified twenty days. For accounting purposes, the related standards call for treating these three derivatives as a single derivative if the conditions of separating embedded derivatives are met. In this case, the combined forward, call and put options would be valued at fair value and the book value of the host contract will be equal to the value of the hybrid less the estimated fair value of the combined derivative.

While this process is complex, it turned out that *Deutsche Telecom AG* had actually bifurcated embedded derivatives and reported separate values for the "combined" derivatives and the host contract, which was recorded as "Contingent Capital." Nonetheless, once we look at the accounting treatments under IFRS and US GAAP, questions arise as to the benefits of such bifurcation. In this case, the accounting treatments under IFRS and US GAAP produced completely different (complex and confusing) results. In its 6-K filings with the US Securities and Exchange Commission, *Deutsche*

Telekom AG disclosed the following information about this particular issue of *DECS* (I annotated the published text below to highlight the differences):[31]

Mandatory Convertible Bond

In 2003, the Company issued a mandatory convertible bond.

- **Under IFRS** the components of *the mandatory convertible bond were bifurcated into a debt component and an equity component*, resulting in a negative value being ascribed to the equity component and a higher value (premium) to the debt component. This premium was amortized as an adjustment (decrease) to interest expense over the term of the bond.

- Under U.S. GAAP, *no value was ascribed to the equity component, with the entire proceeds received recorded as a liability.*

- The conversion date was June 1, 2006. Therefore, no U.S. GAAP difference in shareholders' equity exists as of December 31, 2006 and as of June 30, 2007, although the net profit for the six-month period ended June 30, 2006, reflects differences for the period from the beginning of the year until conversion. In 2005, the dividend paid on the Company's common shares resulted in a conditional obligation to pay a special dilution payment to the holders of the mandatory convertible bonds at conversion. Under U.S. GAAP the conditional payment represented an embedded derivative and the Company recorded the estimated fair value of the liability of EUR 45 million at December 31, 2005.

[31] US Securities and Exchange Commission. Form 6-K REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934, August 2007, page 57. http://www.wikinvest.com/stock/Deutsche_Telekom_AG_(DT)/Filing/6-K/2007/F4951044

Case 2: Another Complex *DECS* Hybrid:

Telecom Italia Finance—Mandatory Convertible Bonds

Valuation of a call plus a put option in one complex hybrid as in the case of *Deutsche Telekom Finance* could be difficult but not as difficult as the valuation of numerous derivatives embedded in other complex contracts such as the one issued by *Telecom Italia Finance* on November 8, 2013. The placement prospectus was for the sale of €1,300 million of *Guaranteed Subordinated Mandatory Convertible Bonds* due 2016. The prospectus was a lengthy (7,434 words condensed in 15 pages) and a complex prospectus.[34] The face value of each bond was €100,000. The bonds must be converted into ordinary (common) shares with the reference price on the date of issuance being set at €0.6801.

- This reference price was set as the **minimum conversion price**, giving a maximum conversion ratio of 147,037 per bond.
- The **maximum conversion price** was set at €0.8331, giving a conversion ratio of 120,033 per bond.
- But the **relevant conversion price** was either the minimum or an average price falling below the maximum and above the minimum.

Close to maturity date three years from issuance, *Telecom Italia Finance* will provide the holders with a Physical Delivery Notice. Shortly thereafter, bondholders will be obligated to convert the bonds they hold into Ordinary Shares. A quick examination of this contract suggests that this hybrid instrument includes several embedded derivatives some of which are the following:

[34] –http://www.tifinance.lu/_NEWS/Telecom_Italia_Finance_Mandatory_Convertible_Notes-Ordinary_Share_Pricing_Termsheet_vF.PDF

- *Mandatory Conversion*: After *Telecom Italia Finance* provides bondholders with the Physical Delivery Notice, all bondholders will be obligated to convert the bonds they hold into ordinary shares at the 'relevant conversion price.'

- *Early Conversion at the Option of the Issuer:*

  Telecom Italia Finance, the issuer, may elect to trigger the conversion of the *Guaranteed Subordinated Mandatory Convertible Bonds* into Ordinary Shares at any time after the 40th day after the Settlement Date (which is November 13, 2003). In this time after the 40 case, the *maximum* conversion ratio will be applied.

- *Early Conversion at the Option of the Bondholder*.

  - If the bondholder wants to settle in cash prior to the Final Delivery Notice, the issuer will calculate and pay the relevant cash settlement.

  - The bondholder has the option to trigger the conversion of the bonds into Ordinary Shares at any time after the 40th day after the Settlement Date (November 13, 2003). In this case, the minimum conversion ratio will be applied.

- *Voluntary Conversion at the Option of the Bondholder Following either one of two Special Events* such as if a third entity took control of the Guarantor, which is also *Telecom Italia Finance*

According to one interpretation, the embedded derivatives noted above might be treated as one forward contract, one put option and three call options. Other scholars might be able to identify more embedded derivatives in this convertible debt contract issued by *Telecom Italia Finance* on November 8, 2013. As in the previous case of *Deutsche Telekom Finance*, if the hybrid instrument was not valued at fair value through the income statement, we will need to evaluate whether the derivatives embedded in the hybrid instrument of *Telecom Italia Finance* should or should not be separated from the host contract (the debt, which was actually "contingent capital"). But accounting standards also require treating all these embedded derivatives either as a "unit" for the purpose of bifurcation if the conditions of separation are met or, alternatively, value the entire hybrid at fair value through earnings. Given the best known and most sophisticated

financial engineering tools, it is not possible that any single value obtainable for this collection of embedded derivatives will be any more reliable than values determined by an arbitrary judgment.

In either case, neither the reported values of convertible debt and recognized income reflect the true picture of debt or profitability. The next case is a vivid case of misusing embedded derivatives.

Case 3: Pliable (and Expandable) Valuation of Embedded Derivatives:

The Case of Landsvirkjun

Landsvirkjun is an Icelandic company that employs geothermal resources to produce electricity. The main buyers of the electricity are U. S. Aluminum companies operating their mining activities in Iceland. In 2006, the company switched its accounting system from Icelandic GAAP to IFRS and designated the U. S. Dollar as its functional currency. With that change, the company began to look into implementing the accounting rules for financial instruments, including embedded derivatives. The management determined that the price of aluminum affects the contracts to sell electricity to aluminum companies, which creates an embedded derivative. As a new adopter of IFRS, the management was required to examine all active contracts to identify and value embedded derivatives as of the start of each contract. The management acknowledged that the valuation of the separated embedded derivatives is based on models the company has developed. While the resulting values are a 'level three' type of fair value estimation, *Landsvirkjun* provided no information that would permit any external user of financial statements to know the models the company used. Following the switch to IFRS, the management of *Landsvirkjun* used the newly found magical

accounting standard to manage earnings. In 2009, the company had a loss from operations of $660, but revaluation of embedded derivatives add $755.7 million in gains to net income.[35]

> Financial income in excess of financial expenses totaled USD 95.1 million in 2009, while financial expenses in excess of financial income amounted to approximately USD 660.6 million the year before. *The difference* of USD 755.7 million can largely be attributed to fair-value changes in embedded derivatives relating to the company's electric power sales contracts with aluminium smelters, which move in line with world market prices for aluminium. (p. 18).

For this relatively small company, using the valuation of embedded derivatives has indeed distorted the balance sheet and performance information reported to investors and was in fact misleading.

4.3 Issue Three Conclusion

The main points of discussing embedded derivative in this note may be viewed in terms of queries.

Query 1.

How reliable would be the management valuation of a combination of embedded derivatives?

Query 2.

How reliable, or pliable, are the reported values of host contracts, whether assets or liabilities, as the "residual" after estimating the value of embedded derivatives?

Query 3.

[35] http://www.landsvirkjun.com/media/enska/finances/Annual_report_2009.pdf

Other than the management, how and in what ways would any information provided to investors about the separation or bifurcation of a collection of complex embedded derivatives in one hybrid instrument be useful to any user of financial statements?

Query 4.

The benefits of separating and accounting for embedded derivatives are at best enigmatic. Does either the IASB or the FASB have any evidence to substantiate that separating embedded derivatives passes the cost/benefit test?

Query 5.

Since the separation and valuation of embedded derivatives are idiosyncratic to each firm, how much would the abstract separation of embedded derivatives imped comparability of the financial reports?

5. ISSUE FOUR

Failure to Disclose Hedging as a Substitution of Risk

A Prologue: A plain vanilla swap is a contract to exchange interest dollars calculated at a fixed rate for interest for dollars calculated at a variable, adjustable rate. For an asset holder, the fixed rate payer would be hedging fair value risk. This hedger exchanges the volatility of fair values for the volatility of cash flow. For a debtor, paying a fixed rate for the swap would be hedging cash flow risk. This hedger would be hedging the volatility in cash flow for the volatility in fair value. The reverse is true for the counterparties in both cases. It is therefore obvious that hedging using interest rate swaps is a substitution of risk. Accounting standards make use of the success (effectiveness) of the hedged risk but fully ignore the success or failure of the assumed risk. As a result, accounting standards fail to provide a comprehensive measure of the success of aggregate risk exposure of the hedger.

5.1 The Concept of Risk Substitution

In general, hedge accounting requires documentation of the specific risk being hedged. The hedged risk could fall into one of the three buckets: cash flow risk, fair value risk, or the risk of

changing value of foreign net investments. We want to focus on the first two types. Financial reporting gives the implicit and false view that hedging either cash flow risk or fair value risk does not result in risk substitution. This phenomenon is best explained by looking at hedging using interest rate swaps.

For an entity to hedge the cash flow risk of a variable rate debt instrument, for example, the entity may enter into an interest rate swap to receive variable rate and pay fixed rate. By converting a variable rate debt into a fixed rate debt, the entity has in effect taken on fair value risk. Similarly, by hedging the cash flow risk of a variable rate asset, the entity might enter into a plain vanilla swap contract to receive fixed and pay variable. Thus, hedging in this case would have changed the exposure from cash flow risk to a fair value risk.

Exhibit 5 shows the combination of using plain vanilla interest rate swaps to hedge financial risk exposure of a financial item (asset, liability or firm commitment). The four combinations of paying or receiving variable rates shows that using interest rate swaps to hedge cash flow risk is also a mechanism to take on fair value risk. Similarly, using interest rate swaps to hedge fair value risk is a mechanism to take on cash flow risk. This notion of risk substitution is totally ignored in the literature.

Insert Exhibit 5 about here

Exhibit 5

Interest Rate Swaps as Instruments of Risk Substitution

Case A:	
• If the hedged item generates income at a fixed rate, • The swap would be structured to receive variable & pay fixed	• Convert a fixed rate to a variable rate • Hedge fair value risk • Take on cash flow risk **The Outcome:** Substituting Cash Flow Risk for Fair Value Risk ➔ Increased exposure to liquidity risk
A Comprehensive Index of Hedge Effectiveness	The ratio of the fair value risk given up in relation to the substitute cash flow risk.
Case B	
• If the hedged item generates income at a variable rate, • The swap would be structured to receive fixed & pay variable	• Convert a variable rate to a fixed rate • Hedge cash flow risk • Take on fair value risk Substituting Fair Value Risk for Cash Flow Risk ➔ Reduced exposure to liquidity risk
A Comprehensive Index of Hedge Effectiveness	The ratio of the cash flow risk given up in relation to the substitute fair value risk.

5.2 The Problem

The accounting treatment of any hedging relationship is critically dependent on the success or effectiveness of a hedging relationship. The most descriptive way of measuring success is to see how much of the cumulative change in the value of the hedged item was compensated for by a reverse change in the value of the hedge item (the derivative)—i.e., this is the Dollar Offset Raito Method. Succeeding in meeting the required target and applying hedge accounting signals to the world that the entity has managed its risk exposure well. However, that inference is false because when an entity hedges a fixed rate item, it manages exposure to the volatility of fair value (in part or in full) but takes on full exposure to cash flow risk. Similarly, when an entity hedges a variable rate item, it manages exposure to the volatility of cash flow (in part or in full) but takes on the full volatility in fair value. Accordingly, the success of a hedging relationship should not be measured by the extent of hedging an existing risk without any consideration of the assumed risk. Instead, the relevant yardstick should be comprehensive by evaluating the success of the entire package—i.e. evaluating the success of the managed risk in relationship to the burden of the newly assumed risk. For example, a hedging relationship could hardly be called successful or effective for an entity that achieves 80% of hedging exposure to fair value risk but takes on 100% exposure to the substituted cash flow risk. Similarly, success in managing cash flow risk should be measured as the entity's net exposure—the percentage of the hedged cash flow risk relative to the burden of the assumed substitution of fair value risk.

Unfortunately, there is no recognition or discussion of this notion of risk substitution and the impact on the risk profile of entities engaged in hedging. The literature as well as accounting standards are completely silent in this regard. Clearly, it would not be serving investors and absentee stakeholders well to convey the belief of success in managing parts of one type of risk while hiding the full scale of the acquired substitute risk.

6. Concluding Remarks

Following the establishment of Over-the-Counter market in the mid-1980s, Accounting standards' boards have provided creative methods to account for OTC derivatives which are financial instruments whose market values are not observable. These creative methods have helped the management of reporting entities to manage both reported earnings and the financial position of the firms they manage. In the process, the standards have also succeeded in significantly overloading users of financial statements with highly complex structures and lingo that have seriously damaged the usefulness of public financial reporting. In this paper, I address only four of the problems of accounting for OTC derivatives that distort the financial statements and make them far less representative of the true financial pictures of the reporting entities. These problems are (a) Developing accounting processes that impact earnings, assets and liabilities based on a fiction called "The Hypothetical Derivative." (b) Reporting highly malleable and plastic-like values of derivatives assets and liabilities. (c) Distorting the income statement and the balance sheet by requiring a metaphysical separation of embedded derivatives. (d) Failing to provide an index or a measure of success in hedging by recognition the reality of risk substitution. Finally, I am not aware of any evidence provided by either the FASB or the IASB to substantiate the benefits of any of these accounting treatments or whether any of them could pass the cost/benefit test.

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Appendix to Issue One

The Official Positions on "*The Hypothetical Derivatives Method*"

From the FASB Derivatives Implementation Group.[36]

Here is the statement of the Derivatives Implantation Group about the Hypothetical Derivative method:

For the types of cash flow hedges described in the question section, the measurement of hedge ineffectiveness may be based on a comparison of the change in fair value of the actual swap designated as the hedging instrument and the change in fair value of a hypothetical swap (herein referred to as the "hypothetical derivative" method). That hypothetical swap would have terms that identically match the critical terms of the floating-rate asset or liability (that is, the same notional amount, same repricing dates, the index on which the hypothetical swap's variable rate is based matching the index on which the asset or liability's variable rate is based, mirror image caps and floors, and a zero fair value at the inception of the hedging relationship). Essentially, the hypothetical derivative would need to satisfy all of the applicable conditions in paragraph 68 (as amended) necessary to qualify for use of the shortcut method except criterion 68(dd). Thus, the hypothetical swap would be expected to perfectly offset the hedged cash flows. *The change in the fair value of the "perfect" hypothetical swap can be regarded as a proxy for the present value of the cumulative change in expected future cash flows on the hedged transaction* as described in paragraph 30(b)(2). [Emphasis Added]

Under the hypothetical derivative method, the actual swap would be recorded at fair value on the balance sheet, and accumulated OCI would be adjusted to a balance that reflects the lesser of either the cumulative change in the fair value of the actual swap or the cumulative change in the fair value of a "perfect" hypothetical swap.

From the IASB, IFRS 9, 2014, page 143.[37]
B6.5.5 To calculate the change in the value of the hedged item for the purpose of measuring hedge ineffectiveness, an entity may use a derivative that would have terms that match the critical terms of the hedged item (this is commonly referred to as a 'hypothetical derivative'), and, for example for a hedge of a forecast transaction, would be calibrated using the hedged price (or rate) level. For example, if the hedge was for a two-sided risk at the current market level, the hypothetical derivative would represent a hypothetical forward contract that is calibrated to a value of nil at the time of designation of the hedging relationship. If the hedge was for example for a one-sided risk, the hypothetical derivative would represent the intrinsic value of a hypothetical option that at the time of designation of the hedging relationship is at the money if the hedged price level is the current market level, or out of the money if the hedged price level is above (or, for a hedge of a long position, below) the current market level. Using a hypothetical derivative is one possible way of calculating the change in the value of the hedged item. The hypothetical derivative replicates the hedged item and hence results in the same

[36] DERIVATIVES IMPLEMENTATION GROUP. STATEMENT 133 IMPLEMENTATION ISSUE NO. G7. " Cash Flow Hedges: Measuring the Ineffectiveness of a Cash Flow Hedge under Paragraph 30(b) When the Shortcut Method Is Not Applied." (July 11, 2000).
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[37] International Accounting Standards Board. IFRS 9, Financial Instruments, 2014. IFRS Foundation Publications Department 30 Cannon Street, London EC4M 6XH, United Kingdom

outcome as if that change in value was determined by a different approach. *Hence, using a 'hypothetical derivative' is not a method in its own right but a mathematical expedient that can only be used to calculate the value of the hedged item.* Consequently, a 'hypothetical derivative' cannot be used to include features in the value of the hedged item that only exist in the hedging instrument (but not in the hedged item). An example is debt denominated in a foreign currency (irrespective of whether it is fixed-rate or variable-rate debt). When using a hypothetical derivative to calculate the change in the value of such debt or the present value of the cumulative change in its cash flows, the hypothetical derivative cannot simply impute a charge for exchanging different currencies even though actual derivatives under which different currencies are exchanged might include such a charge (for example, cross-currency interest rate swaps). [Emphasis Added]

B6.5.6 The change in the value of the hedged item determined using a hypothetical derivative may also be used for the purpose of assessing whether a hedging relationship meets the hedge effectiveness requirements.