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Accounting for Derivatives

Advanced Hedging under IFRS 9

Second Edition

JUAN RAMIREZ

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To my wife Marta and our children Borja, Martuca and David

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Preface

The main goal of IFRS is to safeguard investors by achieving uniformity and transparency in the accounting principles. One of the main challenging aspects of the IFRS rules is the accounting treatment of derivatives and its link with risk management. Whilst it takes years to master the interaction between IFRS 9 (the main guidance on derivatives accounting) and the risk management of market risks using derivatives, this book accelerates the learning process by covering real-life hedging situations, step-by-step. Because each market risk – foreign exchange, interest rates, inflation, equity and commodities- has its own accounting and risk management peculiarities, I have covered each separately to address their particular issues.

Banks have developed increasingly sophisticated derivatives that have increased the gap between derivatives for which there is a consensus about how to apply IFRS 9 and derivatives for which their accounting is unclear. This gap will remain as long as the resources devoted to financial innovation hugely exceed those devoted to accounting interpretation. The objective of this book is to provide a conceptual framework based on an extensive use of cases so that readers can come up with their own accounting interpretation of any hedging strategy.

This book is aimed at professional accountants, corporate treasurers, bank financial engineers, derivative salespersons at investment banks and credit/equity analysts.

CHANGES TO THE PREVIOUS EDITION

The previous edition of *Accounting for Derivatives* was based on IAS 39. This second edition is based on IFRS 9, the accounting standard replacing IAS 39. IFRS 9 has incorporated a large number of new concepts including new hedge effectiveness assessment requirements, rebalancing and hedge ratio determination, a wider eligibility of hedged items, and a special treatment for options, forwards and cross currency swaps. New cases have been incorporated, especially in the chapters covering commodities and equity risk management. In addition three new chapters have been incorporated to the book: a chapter that provides a summary of IFRS 13 *Fair Value Measurement* with a special emphasis on credit/debit valuation adjustments (CVA/DVA), a chapter addressing hedging of share-based compensation plans and another chapter covering inflation risk.

CHAPTER 1

The Theoretical Framework — Recognition of Financial Instruments

IFRS 9 *Financial Instruments* is a complex standard. IFRS 9 replaced IAS 39 *Financial Instruments: Recognition and Measurement*. It establishes accounting principles for recognising, measuring and disclosing information about financial assets and financial liabilities. The objective of this chapter is to summarise the key aspects of financial instrument recognition under IFRS 9.

IFRS 9 is remarkably wide in scope and interacts with several other standards (see Figure 1.1). When addressing hedging there are, in addition to IFRS 9, primarily three standards that have an impact on the way a hedge is structured: IAS 21 *The Effects of Changes in Foreign Exchange Rates*, IAS 32 *Financial Instruments: Disclosure and Presentation* and IFRS 13 *Fair Value Measurement*.

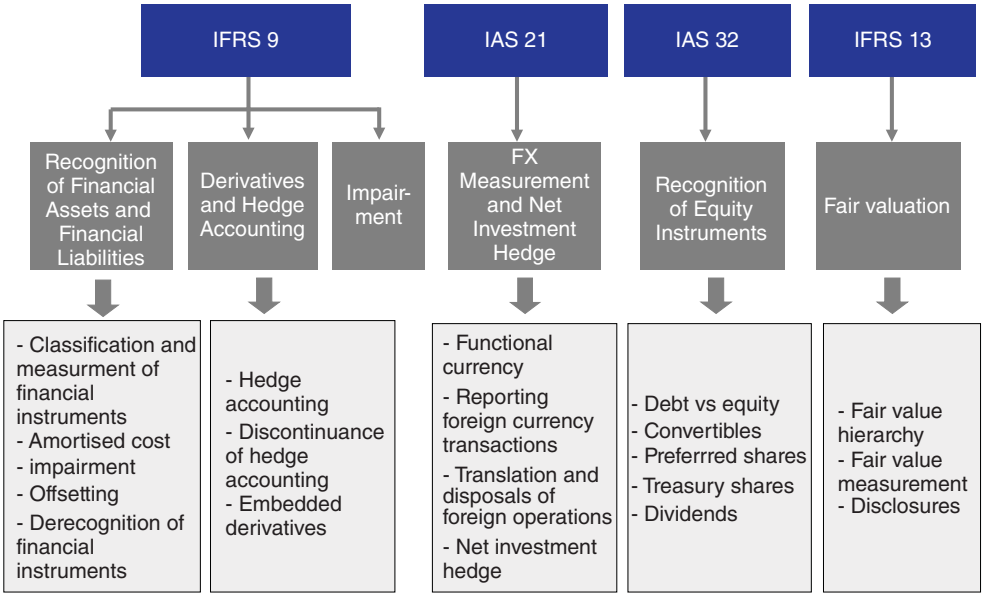

FIGURE 1.1 Relevant accounting standards for hedging.

Accounting for Derivatives: Advanced Hedging under IFRS 9. Juan Ramirez

Whilst the International Accounting Standards Board (IASB) is responsible for setting the IFRS standards, jurisdictions may incorporate their own version. For example, entities in the European Union must apply the version of IFRS 9 endorsed by the EU, which might differ from the IASB's IFRS 9 standard.

1.1 ACCOUNTING CATEGORIES FOR FINANCIAL ASSETS

Under IFRS 9, a financial instrument is any contract that gives rise to both a financial asset in one entity and a financial liability or equity instrument in another entity.

IFRS 9 does not cover the accounting treatment of some financial instruments – for example, own equity instruments, insurance contracts, leasing contracts, some financial guarantee contracts, weather derivatives, loans not settled in cash (or in any other financial instrument), interests in subsidiaries/associates/joint ventures, employee benefit plans, share-based payment transactions, contracts to buy/sell an acquiree in a business combination, contracts for contingent consideration in a business combination, and some commodity contracts are outside the scope of IFRS 9.

1.1.1 Financial Asset Categories

A financial asset is any asset that is cash, a contractual right to receive cash or some other financial asset, a contractual right to exchange financial instruments with another entity under conditions that are potentially favourable, or an equity instrument of another entity. Financial assets include derivatives with a fair value favourable to the entity.

IFRS 9 considers three categories of financial assets (see Figures 1.2 and 1.3):

- At **amortised cost**. This category consists of debt investments that meet both the **business model test** (i.e., the investment is managed to hold it in order to collect contractual cash flows) and the **contractual cash flow test** (the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding), and for which the fair value option (FVO) is not applied.
- At **fair value through other comprehensive income** (FVOCI). This category consists of debt investments that meet both the business model test and the contractual cash flow test, but that are managed to sell them as well. It also consists of equity investments not held for trading for which the entity chooses not to classify them at fair value through profit or loss.
- At **fair value through profit or loss** (FVTPL). This category consists of financial assets that are neither measured at amortised cost nor at FVOCI.

The classification of an instrument is determined on initial recognition. Reclassifications are made only upon a change in an entity's business model, and are expected to be very infrequent. No other reclassifications are permitted.

1.1.2 Financial Assets at Amortised Cost

A financial asset qualifies for amortised cost measurement only if it meets both of the following criteria:

- **Business model test**. The asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows.
- **Contractual cash flows test**. The contractual cash flows of the financial represent solely payments of principal and interest.

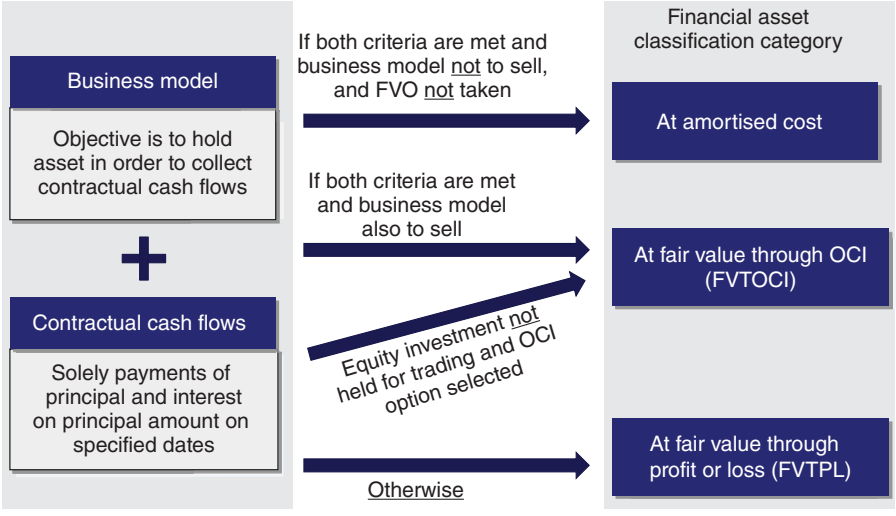

FIGURE 1.2 IFRS 9 financial assets classification categories – summary flowchart.

This is a mandatory classification, unless the fair value option is applied. Financial assets in the amortised cost category include non-callable debt (i.e. loans, bonds and most trade receivables), callable debt (provided that if it is called the holder would recover substantially all of debt's carrying amount) and senior tranches of pass-through asset-backed securities.

If a financial asset does not meet any of the two conditions above it is measured at FVTPL. If both conditions are met but the sale of the financial asset is also integral to the business model, it is recognised at FVOCI.

Even if an asset is eligible for classification at amortised cost or at FVOCI, management also has the option – the FVO – to designate a financial asset at FVTPL if doing so reduces or eliminates a measurement or recognition inconsistency (commonly referred to as "accounting mismatch").

Business Model Test If the entity's objective is to hold the asset to collect the contractual cash flows, then it will meet the first criterion to qualify for amortised cost. The entity's business model does not depend on management's intentions for the individual asset, but rather on the basis of how an entity manages the portfolio of debt instruments. Examples of factors to consider when assessing the business model for a portfolio are:

- the way the assets are managed;
- how performance of the business is reported to the entity's key management personnel;
- how management is compensated (whether the compensation is based on the fair value of the assets managed); and
- the historical frequency, timing and volume of sales in prior periods, the reasons for these sales (such as credit deterioration), and expectations about future sales activity.

IFRS 9 indicates that sales due to deterioration of the credit quality of the financial assets so that they no longer meet the entity's documented investment policy would be consistent with the amortised cost business model. Sales that occur for other reasons may also be consistent with the amortised cost business model if they are infrequent (even if significant) or insignificant (even if frequent), or if the sales take place close to the maturity of the financial asset and the proceeds from the sale approximate the collection of the remaining contractual cash flows. For example, an entity could sell one financial asset that results in a large gain and

this would not necessarily fail the business model test due to its significant effect on profit or loss unless it was the entity's business model to sell financial assets to maximise returns.

If an entity is unsure of the business model for the debt investments, the default category would be at FVTPL.

Example: Liquidity portfolio

A bank holds financial assets in a portfolio to meet liquidity needs in a "stress case" scenario that is deemed to occur only infrequently. Sales are not expected except in a liquidity stress situation. The bank also monitors the fair value of the assets in the portfolio to ensure that the cash amount that would be realised if a sale is required would be sufficient to meet liquidity needs. In this case (i.e., where the "stress case" is deemed to be rare), the bank's business model is to hold the financial assets to collect contractual cash flows.

In contrast, if the bank holds financial assets in a portfolio to meet everyday liquidity needs and that involves recurring and significant sales activity, the objective is not to hold to collect the contractual cash flows. However, if the objective of the regulator is for the bank to demonstrate liquidity, the bank could consider other ways to demonstrate liquidity that would allow the portfolio to still qualify for amortised cost (e.g., entering into a repurchase agreement for the debt investments)

In addition, if the bank is required by the regulator to routinely sell significant volumes of financial assets in a portfolio to demonstrate the assets are liquid, the bank's business model is not to hold to collect contractual cash flows (the fact that this requirement is imposed by a third party is not relevant to the analysis).

Example: Financial assets backing insurance contracts

An insurer holds financial assets in a portfolio to fund insurance contract liabilities. The insurer uses the proceeds from the contractual cash flows to settle the insurance liabilities as they come due. There is also rebalancing of the portfolio on a regular basis as estimates of the cash flows to fund the insurance liabilities are not always predictable.

The objective of the insurer's business model is both to hold the financial assets to collect contractual cash flows to fund liabilities as they come due and to sell to maintain the desired profile in the asset portfolio. In this case, the insurer holds financial assets with a dual objective to fund insurance liabilities and maintain the desired profile of the asset portfolio. This portfolio would fail the business model test of holding to collect contractual cash flows but would likely qualify for FVOCI subject to the contractual cash flow test.

Contractual Cash Flows Test If the financial asset's contractual terms give rise on specified dates to cash flows that are "solely payments of principal and interest on the principal amount outstanding" (SPPI), then it will meet the second criterion to qualify for amortised cost.

Interest is defined as "consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time". The assessment as to whether cash flows meet this test is made in the currency of denomination of the financial asset.

Contractual Cash Flows Test – Modified Economic Relationship IFRS 9 also refers to the case of "modified economic relationships". For example, a financial asset may contain leverage or an interest rate that is resettable, but the frequency of the reset does not match the tenor of the interest rate (an "interest rate mismatch"). In such cases, the entity is required to assess the modification to determine whether the contractual cash flows represent solely payments of principal and interest on the principal amount outstanding. To do this, an entity considers cash flows on a comparable or **benchmark** financial asset that does not contain the modification. The benchmark asset is a contract of the same credit quality and with the same contractual terms (including, when relevant, the same reset periods), except for the contractual term under evaluation (i.e., the underlying rate).

If the modification results in cash flows that are more than insignificantly different from the benchmark cash flows, or if the entity is unable to reach a conclusion, then the financial asset does not satisfy the SPPI test (see Figure 1.3).

In making this assessment the entity only considers reasonable possible scenarios rather than every possible scenario. If it is clear with little or no analysis whether the cash flows on the financial asset could or could not be more than insignificantly different from the benchmark cash flows, then an entity does not need to perform a detailed assessment.

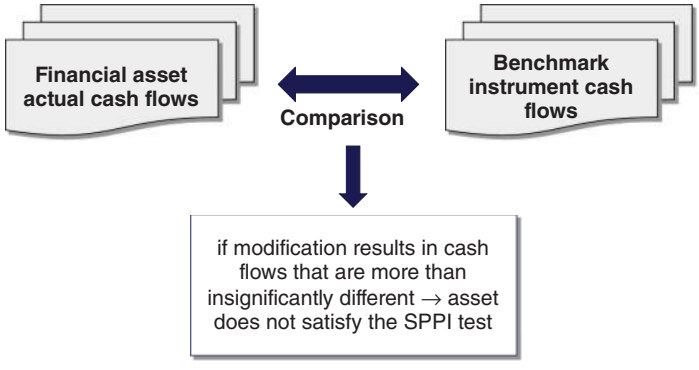

FIGURE 1.3 Contractual cash flows modification test.

Example: Constant maturity swap

A constant maturity bond with a 5-year term pays a variable rate that is reset semiannually linked to the 5-year swap rate. The benchmark cash flows are those of an otherwise identical bond but linked to the 6-month rate. At the time of initial recognition, the difference between the 6-month rate and the 5-year swap rate is insignificant. This bond does not meet the SPPI requirement because the interest payable in each period is disconnected from the term of the instrument (except at origination). In other words, the relationship between the 6-month rate and the 5-year swap rate could change over the life of the instrument so that the asset and the benchmark cash flows could be more than insignificantly different.

1.1.3 Financial Assets at Fair Value through Other Comprehensive Income

This category consists of debt investments that meet the contractual cash flows test, for which their business model is held to collect and for sale. This is a mandatory classification, unless the FVO is applied. This category is intended to acknowledge the practical reality that an entity may invest in debt instruments to capture yield but may also sell if, for example, the price is considered advantageous or it is necessary to periodically adjust or rebalance the entity's net risk, duration or liquidity position.

This category also consists of equity investments which are not held for trading. An entity can choose to classify non-trading equity investments in this category on an instrument-by-instrument basis. This is an irrevocable election.

1.1.4 Financial Assets at Fair Value through Profit or Loss

The FVTPL category is in effect the "residual category" for instruments that do not qualify for the amortised cost or FVOCI categories. The following financial assets would be included in the FVTPL category:

- financial assets held for trading;
- financial assets managed on a fair value basis to maximise cash flows through the sale of financial assets such that collecting cash flows is only incidental;
- financial assets managed, and whose performance is evaluated, on a fair value basis;
- financial assets where the collection of cash flows is not integral to achieving the business model objective (but only incidental to it); and
- financial assets that fail the SPPI test.

Derivatives are recognised at FVTPL unless they are a hedging instrument in cash flow hedge or net investment in foreign operation. Therefore, derivatives undesignated or being hedging instruments in fair value hedging relationships are classified at FVTPL. Recognition of derivatives is covered in detail in Chapter 2.

1.1.5 Financial Assets – Initial and Subsequent Recognition

An entity recognises a financial asset when and only when the entity becomes a party to the contractual provisions of a financial instrument. The initial measurement of the financial asset

is its fair value, which normally is the consideration given, including directly related transaction costs.

Debt Instruments at Amortised Cost Debt instruments classified at amortised cost are subsequently recognised at amortised cost less impairment in the statement of financial position. Interest income and impairment are recognised in profit or loss. Interest income is recognised using the effective interest rate method. Impairment charges can be reversed through profit or loss. Foreign exchange gains and losses are recognised in profit or loss.

Debt Instruments at FVOCI A debt instrument classified at FVOCI is presented in the statement of financial position at fair value. The entity also keeps an amortised cost calculation (i.e., an effective interest rate) to recognise interest income in profit or loss.

Interest income and impairment are recognised in profit or loss, using the same methodology as for amortised cost. Interest income is recognised using the effective interest rate method. Impairment charges can be reversed through profit or loss. Likewise, foreign exchange gains and losses are recognised in profit or loss as if the instrument were carried at amortised cost. The difference between amortised cost (in the currency of denomination) and fair value (in the currency of denomination) is recognised in OCI and recycled when the instrument is sold.

Equity Instruments at FVOCI Gains and losses on equity investments in this category are recognised in OCI with no recycling of gains and losses into profit or loss. If an equity investment is so designated, then dividend income generally is recognised in profit or loss. No impairment is recognised.

Instruments at FVTPL Gains and losses on instruments in this category are recognised in profit or loss. No impairment is recognised.

Summary The table below gives an overview of the accounting treatment of each category of financial assets:

Asset category	Measurement	Fair value changes
At amortised cost	Initial recognition at fair value Subsequent recognition at amortised cost less impairment. Any premium or discount is amortised to profit or loss	Not relevant unless impaired Interest income, impairment and foreign exchange gains/losses recognised in profit or loss. Impairment can be reversed through profit or loss
At FVTPL	Fair value	Changes in fair value recorded in profit or loss No impairment recorded
At FVOCI	Fair value	Changes in fair value recorded in OCI For debt instruments: interest revenue, credit impairment and foreign exchange gains or losses recognised in profit or loss. On derecognition any cumulative gains and losses in OCI reclassified to profit or loss For equity investments: no impairment is recorded. Dividends recorded in profit or loss

Leveraged Financial Assets In order to meet the contractual cash flows criterion, there should be no leverage of the contractual cash flows. Leverage increases the variability of the contractual cash flows, with the result that they do not have the economic characteristics of interest.

Non-recourse Financial Assets IFRS 9 contains specific guidance on classifying non-recourse (or limited recourse) financial assets. These assets represent an investment in which the investor's claims are limited to specified assets, which may be financial or non-financial assets. IFRS 9 states that the fact that a financial asset is non-recourse does not mean in itself that the SPPI criterion is not met.

- If, for instance, the underlying assets meet the SPPI criterion, it may be possible to conclude that the non-recourse asset also meets the criterion.
- If, for example, the non-recourse asset is a vehicle whose only asset is an equity investment, it will not meet the SPPI criterion.

Contractually Linked Instruments – Tranches of Securitisations IFRS 9 contains specific guidance on classifying contractually linked instruments that create concentrations of credit risk (e.g., securitisation tranches). The right to payments on more junior tranches depends on the issuer's generation of sufficient cash flows to pay more senior tranches. The standard requires a look-through approach to determine whether the SPPI criterion is met. Otherwise, the tranche would be recognised at fair value.

A tranche meets the SPPI criterion only if all the following conditions are met:

Principal and interest test. The contractual terms of the tranche itself have only SPPI characteristics.

Look-through test. The underlying pool of financial instruments:

contains one or more instruments that meet the SPPI criterion;

also may contain instruments that:

reduce the cash flow variability of the instruments under (i) and the combined cash flows meet the SPPI criterion (e.g., interest rate caps and floors, credit protection), or

align the cash flows of the tranches with the cash flows of the instruments under (i) arising as a result of differences in whether interest rates are fixed or floating or the currency or timing of cash flows.

Credit risk test. The exposure to credit risk inherent in the tranche is equal to, or lower than, the exposure to credit risk of the underlying pool of financial instruments. The standard states as an example that this condition would be met if, in all circumstances in which the underlying pool of instruments loses 50% as a result of credit losses, the tranche would lose 50% or less.

The look-through approach is carried through to the underlying pool of instruments that create, rather than pass through, the cash flows. For example, if an entity invests in a tranched note issued by SPE 2 whose only asset is an investment in another tranched note issued by SPE 1, the entity looks through to the assets of SPE 1 in performing the assessment.

Example: Tranched issuance

Suppose that a special-purpose entity (SPE) has bought mortgage assets with a notional amount of USD 800 million and issued three tranched notes (A, B and C) that are contractually linked. All assets in the pool meet the SPPI criterion. The underlying mortgage assets pay fixed rates of interest on a monthly basis. The vehicle holds an interest rate swap that swaps the underlying mortgages monthly fixed interest for 3-month Libor. The weighted average credit spread of the assets in the mortgage pool is 400 basis points.

- Tranche A pays a quarterly interest of 3-month Libor plus 50 basis points on a principal of USD 300 million.
- Tranche B pays a quarterly interest of 3-month Libor plus 400 basis points on a principal of USD 200 million.
- Tranche C pays a quarterly interest of 3-month Libor plus 500 basis points on a principal of USD 100 million.

If the underlying pool of instruments were to lose 50% as a result of credit losses, a loss of USD 400 million would arise (= 800 million × 50%), and the effect on the tranches would be as follows:

- The overcollateralisation would absorb the first USD 200 million losses.
- Tranche C would lose USD 100 million, representing 100% of its total principal.
- Tranche B would lose USD 100 million, representing 50% of its total principal.
- Tranche A would not experience any losses.

In addition to the tranches and the asset pool, the vehicle contains another financial instrument, an interest rate swap, but it only aligns the cash flows of the underlying pool with those of the tranches, and consequently it does not affect the tranches' SPPI eligibility. Whilst all the three tranches meet two of the SPPI conditions (i.e., the underlying mortgage pool meets the SPPI criterion and the tranches pay cash flows that only represent principal and interest), only tranches A and B are eligible for amortised cost recognition, subject to meeting the business model criterion, as a 50% loss in the underlying asset pool would not cause these tranches to experience losses exceeding 50% of their principal amounts. As a result, the larger the level of overcollateralisation (i.e., the excess of the underlying pool size relative to the size of the issued tranches), the higher the likelihood of meeting the credit risk test.

Item	**Look-through test**	**Principal and interest test**	**Credit risk test**	**Amortised cost eligibility** *(*)*
Tranche A	Pass	Pass	Pass	Yes
Tranche B	Pass	Pass	Pass	Yes
Tranche C	Pass	Pass	Fail	No

(*) Subject to the business model criterion being met

When the tranche held by the investor is prepayable contingent upon a prepayment occurring in the pool of underlying assets, it may meet SPPI even if the following features exist in the structure (assuming the three primary conditions for the tranche as a whole are met):

- The tranche is prepayable contingent on repayment occurring in the underlying pool. Because SPPI must be met for the underlying pool, it is assumed the underlying prepayment risk on the pool is consistent with SPPI.
- Even if the collateral underlying the pool does not meet the qualifying conditions for amortised cost, the underlying collateral can be disregarded unless the instrument was acquired with the intention of controlling the collateral.

1.1.6 Reclassifications

IFRS 9 requires an entity to reclassify financial assets if and only if the objective of the entity's business model for managing those assets changes. Such changes are expected to be infrequent, and need to be determined by the entity's senior management as a result of internal or external modifications. These modifications have to be significant to the entity's operations and demonstrable to external parties. Reclassification is applied prospectively from the start of the first reporting period following the change in business model.

Both the amortised cost and FVOCI categories require the effective interest rate to be determined at initial recognition. Therefore, when reclassifying a financial asset between the amortised cost and the FVOCI categories, the recognition of interest income would not change and the entity would continue to use the effective interest rate determined at initial recognition. A financial asset reclassified out of the FVOCI category to the amortised cost category would be measured at amortised cost as if it had always been so classified. This will be effected by transferring the cumulative gain or loss previously recognised in OCI out of equity, with an offsetting entry against the fair value carrying amount at the reclassification date.

However, for financial assets at FVTPL, and entity is not required to separately recognise interest income. When reclassifying a financial asset out of the FVTPL category, the effective interest rate would be determined based on the fair value carrying amount at the reclassification date.

		Reclassification to	
Asset category	**Amortised cost**	**FVOCI**	**FVTPL**
From: At amortised cost	N/A	Remeasure at fair value with any difference in OCI	New carrying amount is the fair value on reclassification date
		The effective interest rate determined at initial recognition remains unchanged	Any difference between amortised cost and fair value is recognised in profit or loss
From: At FVOCI	Accumulated OCI recycled out of equity, with offsetting entry against fair value carrying amount	N/A	Accumulated OCI amount recycled to profit or loss