

Dynamic Risk Management

July 2019
Model Demonstration
Agenda Paper 4B

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List of abbreviations

- 1) AP: Asset Profile
- 2) DRM: Dynamic Risk Management
- 3) FA: Financial Assets
- 4) FL: Financial Liabilities
- 5) IRS: Interest Rate Swap
- 6) NII: Net Interest Income
- 7) OCI: Other Comprehensive Income
- 8) RMS: Risk Management Strategy
- 9) TP: Target Profile

Introduction

The objective of this material is as follows:

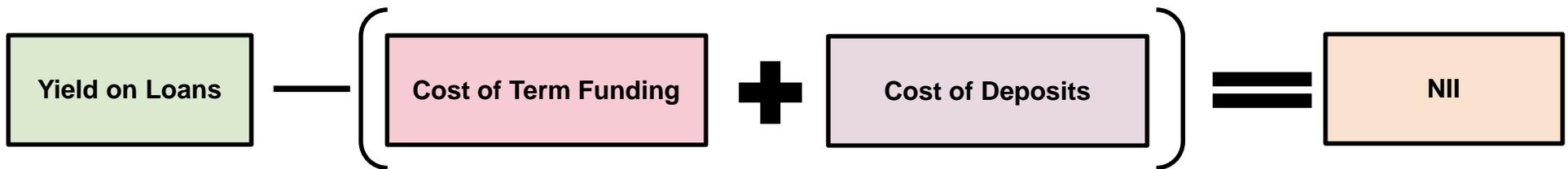
- To summarise the key decisions concerning the DRM model but, **more importantly**;
- To demonstrate the mechanics of the DRM model and show how it achieves the objectives of the project;
- To demonstrate what information the model provides; and
- To demonstrate how the financial statements capture and communicate the impact of risk management through transformation

Background

Business Activity of Financial Institutions

The core economic activity of some financial institutions can be described as raising funds to provide longer-term loans to customers.

The difference between yield on loans (interest revenue) and cost of funding (interest expense) represents the financial institution's net interest income (NII).



DRM is the process that involves understanding and managing how and when a change in interest rates can impact NII. As NII is the net of interest revenue and interest expense, a change that has an equal impact on both inflows and outflows would not impact NII.

Consequently, one of the best ways to prevent NII from changing is to match the dates when interest revenue and expense would be impacted by a change in interest rates (“re-pricing date”).

The DRM accounting model aims to capture this activity in the financial statements.

Why is the project required?

Financial institutions often manage interest rate risk dynamically. For example, few loan portfolios are static and portfolios change over time as new loans are added and existing loans are prepaid or mature. Consistent with this, risk management is dynamic, with frequent (for example, daily) monitoring and a corresponding reassessment of the necessary risk management actions.

Under the current hedge accounting requirements it is often difficult to accommodate these scenarios, because the current requirements usually require a one-to-one designation between the hedged item and the hedging instrument. In effect, open portfolio scenarios are forced into closed portfolio scenarios for hedge accounting purposes.

In addition, there are restrictions imposed by the current hedge accounting requirements regarding what are eligible hedged items, the most important example being **core demand deposits**.

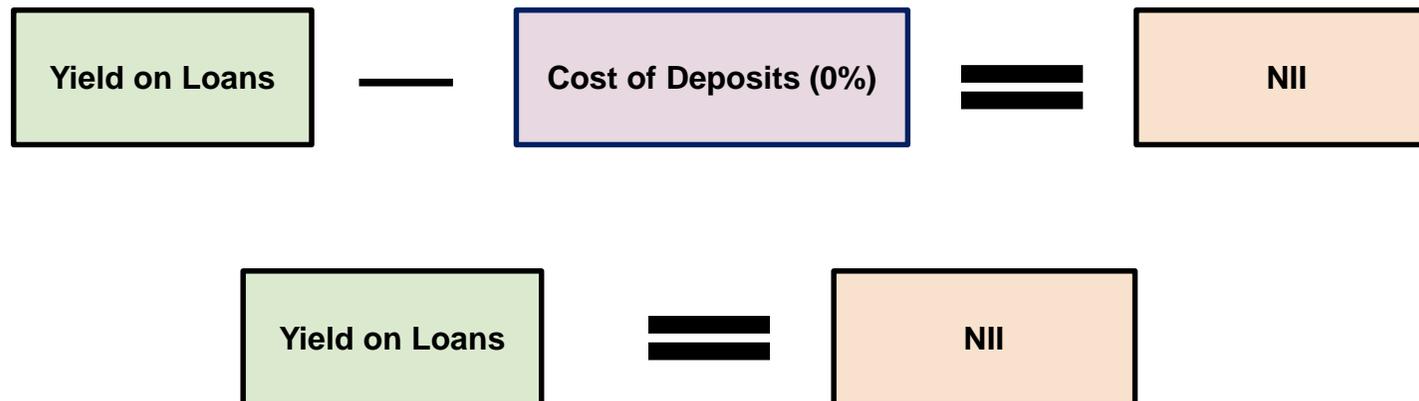
These constraints increase complexity and make it difficult to faithfully reflect dynamic risk management in the financial statements. Entities frequently revert to alternative reporting methods to communicate with users of their financial statements.

Why are demand deposits different?

When an institution has significant amounts of deposit funding, aligning the re-pricing of loans and deposits is difficult because core demand deposits are insensitive to changes in interest rates.

It is very common for deposit accounts to be maintained for an extended period of time. This implies that a significant portion of financial institution deposits funding is non-rate sensitive for an indeterminate period.

Consequently, as interest expense will remain stable regardless of changes in market rates for an extended period of time, these deposits effectively represent perpetual fixed rate funding.



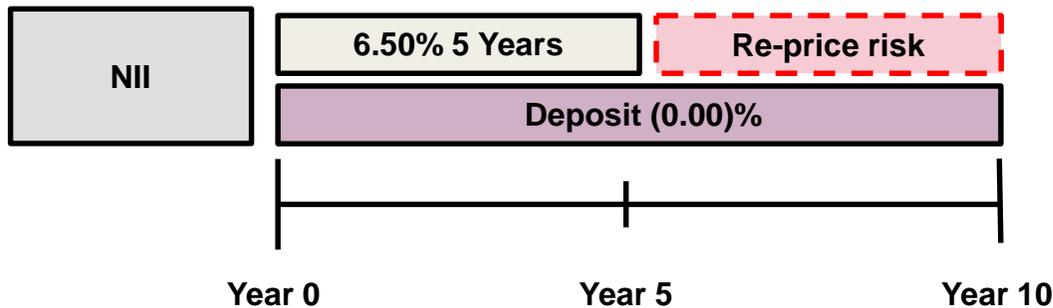
Consequently, NII will change over time and the changes in loan yields (interest revenue) will dominate changes in NII over time.

Illustrative Example

AB Bank manages NII. The balance sheet is comprised of a 5-year fixed rate loan yielding 6.50% funded by deposits. All products are non-amortising. Management has assessed their deposit base and is comfortable that it is effectively zero rate perpetual funding (ie, core).

The charts below show the entity’s balance sheet and a risk position over a ten year time horizon

Risk Report



Re – Pricing Bucket

Item	Float	20X5	2X10	Total
Assets		1,000		1,000
Deposits			(1,000)	(1,000)
Difference		1,000	(1,000)	0

The risk report illustrates that after five years, the loans will mature and assuming new loans are originated, NII will be subject to 100% re-pricing at that time.

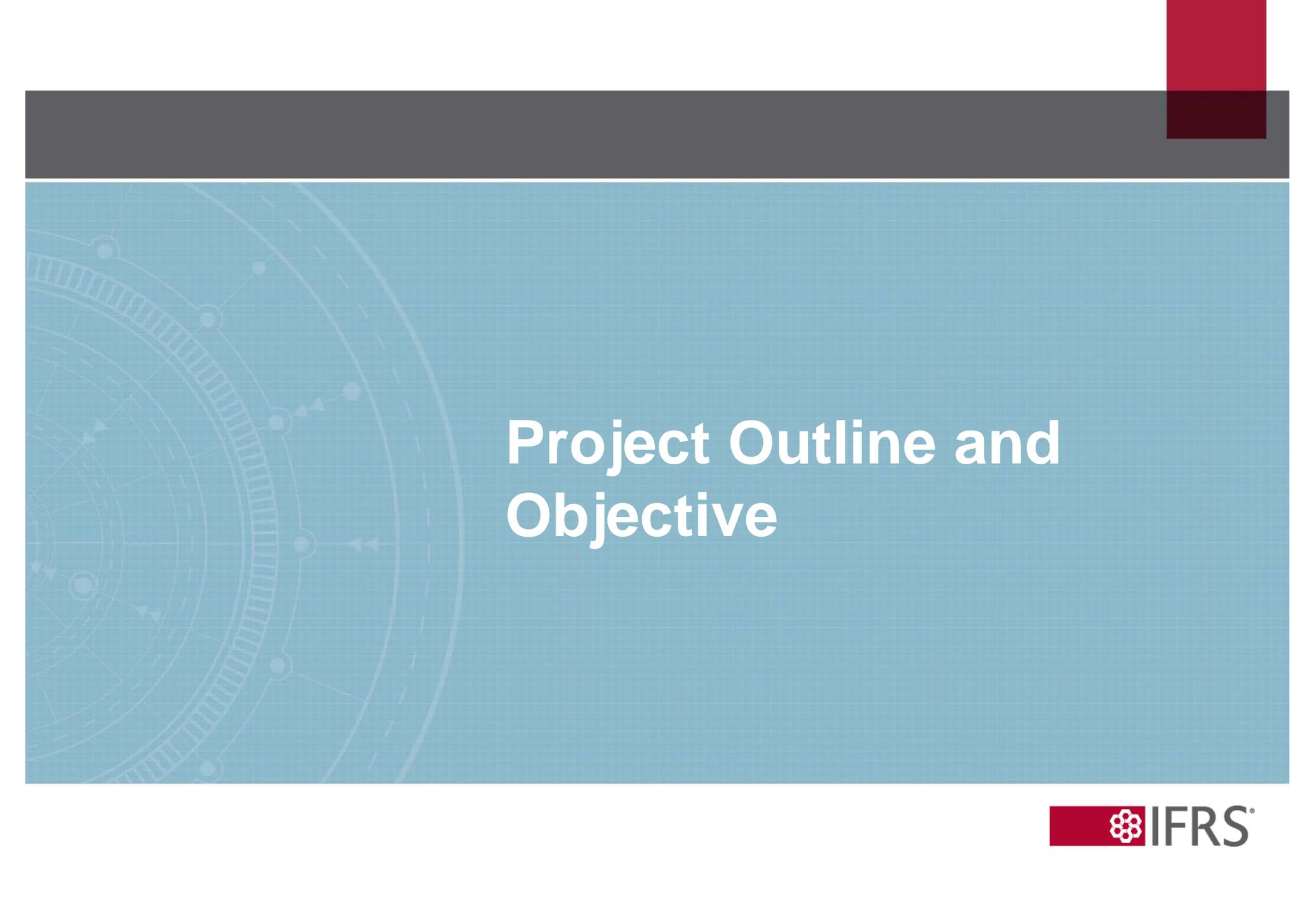
What are the possible alternatives for a risk manager in this situation?

Illustrative Example Continued

	Passive Approach	Proactive Approach
Decision	Accept NII re-pricing based upon originated loans and take no further action.	Alter the re-pricing of NII
Outcome	<p>100% of NII in this example would be subject to re-pricing at the end of year 5.</p> <p>If interest rates have risen at the end of 5 years, profitability will increase.</p> <p>If interest rates have fallen, then profitability will decrease.</p> <p>This situation highlights the potential of the “cliff effect” because the entity has concentrated re-pricing in a single period.</p>	<p>By taking positive action, while the financial institution cannot eliminate the impact of market factors on NII, it can influence the speed at which those changes impact NII.</p> <p>More specifically, while a financial institution cannot prevent cash inflows from re-pricing over time, it has the ability to accelerate or delay the speed at which such inflows re-price.</p>

If the entity decides to take a pro-active approach, or is required by external factors such as prudential regulators, the entity must decide how to manage the speed at which changes in interest rates should impact NII.

This decision, or the quantification of this decision, plays an important role in defining the Target Profile in the DRM accounting model.



Project Outline and Objective

Objective and outline of the model

Objective:

The objective is to improve information provided regarding risk management and how risk management activities affect a financial institution's current and future economic resources.

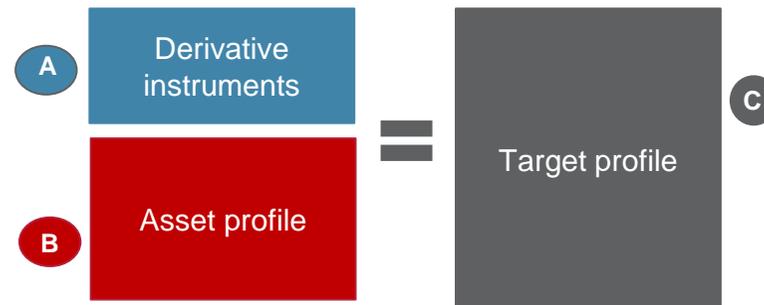
A perfect and complete reflection of all risk management in financial reporting is an aspirational objective as financial reports do not and cannot provide all relevant information about risk management.

Outline:

When derivative instruments (A) are perfectly successful in aligning the asset profile (B) with the target profile (C), changes in fair value of such derivatives are deferred in OCI.

In such circumstances, the results reported in the statement of profit or loss should reflect the entity's target profile. This in conjunction with the designated liabilities will ensure the net of interest income and expense will reflect the risk management strategy. Deferral and reclassification are the mechanisms by which the DRM accounting model achieves the above.

Assuming perfect alignment:



Challenges the model tries to address

Transparency

Adding transparency to the financial statements about the target profile will better enable users to evaluate management's approach and rationale. Clarity on management's risk management strategy and implications for future cash flows is largely absent from financial reporting today.

Eligible Items

Entities are unable to apply hedge accounting when demand deposits are the hedged item as they are not exposed to either variability in cash flows or to changes in fair value arising from interest rate risk.

This creates tensions when financial institutions try and reflect their risk management activities in their financial statements concerning demand deposits.

Dynamic Nature

New events alter the composition of the assets of financial institutions, requiring frequent additional DRM actions. This fact coupled with existing hedge accounting requirements leads to frequent de-designations and rebalancing of one-to-one hedge relationships and amortisation of the associated hedge accounting adjustment. This process can be inherently complex, costly and is prone to operational error.

Performance measurement

A simple, understandable and reliable metric demonstrating if management was successful in achieving the risk management strategy would be relevant information for economic decision-making.

Other Alternatives Considered

Certain constituents object to the use of Other Comprehensive Income for DRM because it creates volatility in the equity section of the statement of financial position.

The Board did consider an alternative whereby the aligned portion would be recognised as an asset or liability on the statement of financial position. However, this alternative was not selected for two primary reasons:

- The deferral represents the change in fair value of the difference between the asset and target profiles. This would create tension with the Conceptual Framework as the amounts would not meet the definition of an asset or a liability within the Framework; and
- The previous DRM discussion paper (The Portfolio Revaluation Approach) was, in substance and content, very similar to the above alternative considered by the Board. This discussion paper was not widely supported.

While there are other reasons why the Board selected this approach, the two listed above were the most significant.

Core Model

In addition, given the history and complexity of the project the Board directed the staff to construct a core model focused on the most important aspects of DRM and then seek feedback from interested constituents before determining next steps.

Therefore, certain topics have not been discussed, by design, because they are not considered relevant at this time.

For example, there is little point in discussing equity as a source of funding, a historically challenging topic, if the model cannot improve the information content regarding core demand deposits. Core demand deposits are significantly more important, quantitatively speaking.

Phase I	Phase II
Core Demand Deposits	Equity
Amortised Cost	Fair Value OCI
Linear Hedging Instruments (swaps)	Non-Linear Hedging Instruments (options)

Details of the Model

Transformation

The existing requirements of IAS 39 and IFRS 9 require hedges to either be a **fair value hedge** or a **cash flow hedge**.

Fair Value Hedge:

A hedge of the exposure to changes in fair value.

Cash Flow Hedge:

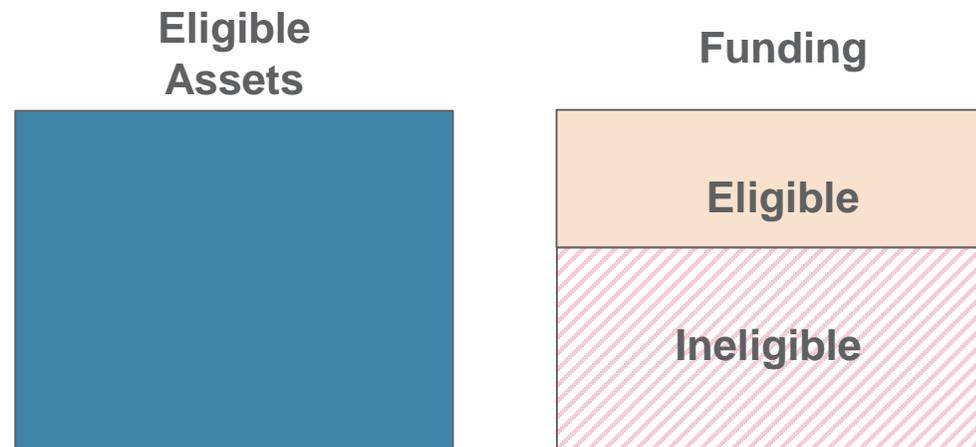
A hedge of the exposure to variability in cash flows.

While the **DRM accounting model** uses Other Comprehensive Income and reclassification, it is **neither** a **cash flow hedge** nor a **fair value hedge** model.

The proposed model creates a new type of relationship focused on “**transformation**” whereby derivatives are used to alter a financial asset such that it meets the entity’s risk management strategy.

Transformation and capacity

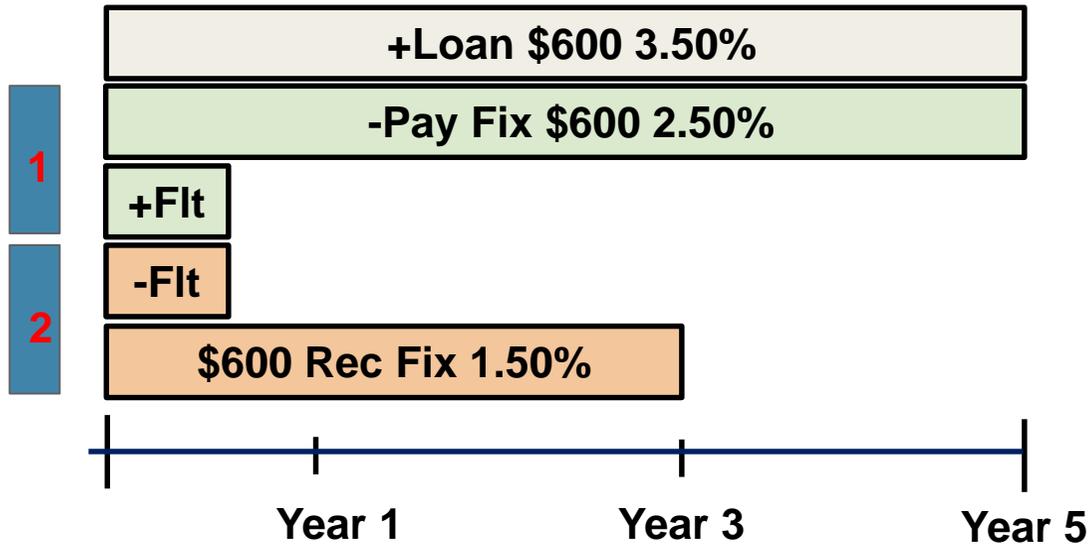
The intersection of risk management and the existing hedge accounting requirements creates the “**capacity issue**” where certain items are ineligible for hedge accounting even though they are considered from a risk management perspective. The best example is **core demand deposits**.



Transformation activities allows entities to alter financial assets such that they meet the risk management objective (ie, **the altered assets match the liabilities**).

Transformation - Example

An entity wants to economically transform a 5-year fixed rate financial asset such that it will re-price at the end of year 3, rather than the end of year 5. It can do so by using two interest rate swaps:



1 – The five year pay fix, receive float interest rate swap “transforms” the loan from a fixed rate loan to a floating rate loan;

2 – The three year receive fix, pay float interest rate swap transforms the combination to a 3-year fixed rate loan.

Transformation is important because **matching assets and liabilities** does not necessarily align with the fair value or cash flow hedge models.

Asset Profile

Asset profile

Before transformation can begin, someone (ie, the entity) must know what it wants to transform.

The model calls the **financial assets subject to transformation** the “**Asset Profile**”

What is the asset profile?

The asset profile allocates designated financial assets into time buckets based on their re-pricing dates (i.e., the date interest revenue would be impacted by a change in interest rates)

What does it look like? How is it different than the balance sheet?

Asset Profile A								
Item	1M	3M	1YR	...	3YR	...	5YR	Total
Cash	46,168.0							46,168.0
Retail Loans	4,400.0	8,800.0	50,280.0		48,684.0		130,300.0	242,464.0
Commercial Loans	2,100.0	15,980.0	5,200.0		64,861.0		23,020.0	111,161.0
Held to Collect Securities	50,410.0	11,200.0	12,014.0		2,052.0		5,203.0	80,879.0
Total	103,078.0	35,980.0	67,494.0		115,597.0		158,523.0	480,672.0

A – The balance sheet lists items and amounts in existence at a point in time. The asset profile lists when those items (if designated) will re-price.

Asset profile

How are items put in the asset profile?

Financial assets are designated in the asset profile by the entity. Designation on a portfolio basis is permitted. At a minimum, portfolios should be comprised of financial assets of the same currency and similar prepayment features.

Are there qualifying criteria? Why qualifying criteria are required?

Allow clear identification of which items are dynamically managed for interest rate risk.

Enable the DRM accounting model to achieve its objective to faithfully represent, in the financial statements, the impact of DRM activities.

Qualifying criteria

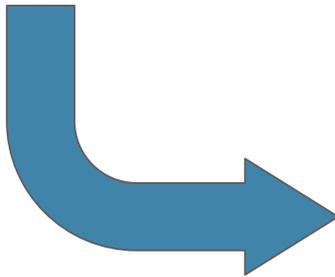
- a. Financial assets (FA) must be measured at amortised cost under IFRS 9;
- b. Future transactions (FT) (which include forecast transactions and firm commitments) must be highly probable;
- c. Items within the asset profile must be managed on a portfolio basis for interest rate risk;
- d. FT must result in FA that are classified as measured at amortised cost under IFRS 9;
- e. Items already designated in a hedge accounting relationship are not eligible under the DRM model; and
- f. The effect of credit risk does not dominate the value change.

Asset profile – Dynamic Nature

Designation on a portfolio basis rather than an individual basis means that the dynamic nature of portfolios will be accommodated by the model.

Asset Profile								
Item	1M	3M	1YR	...	3YR	...	5YR	Total
Cash	46,168.0							46,168.0
Retail Loans	4,400.0	8,800.0	50,280.0		48,684.0		130,300.0	242,464.0
Commercial Loans	2,100.0	15,980.0	5,200.0		64,861.0		23,020.0	111,161.0
Held to Collect Securities	50,410.0	11,200.0	12,014.0		2,052.0		5,203.0	80,879.0
Total	103,078.0	35,980.0	67,494.0		115,597.0		158,523.0	480,672.0

Move forward 1 period



Item	1M	3M	1YR	...	3YR	...	5YR	Total
End T¹	103,078.0	35,980.0	67,494.0		115,597.0		158,523.0	480,672.0
- Maturities	- 1,531.0							- 1,531.0
- Prepayments			- 541.0					- 541.0
+New Originations		151.0	600.0		750.0			1,501.0
Start T₂	101,547.0	36,131.0	67,553.0		116,347.0		158,523.0	480,101.0

New activity within the defined portfolio will be included reducing the need for maintenance of relationships at a granular level. Tracking is required to ensure continuity and consistency with the entity's portfolio definition, however, as this is required for risk management purposes regardless, the staff see this as a reduction in operational burden.

Target Profile

Target profile

Similar to the asset profile, before transformation can begin, the entity must know what it wants to accomplish through transformation.

The model calls the **transformation objective** the “**Target Profile**”

What is the target profile?

The target profile quantifies the re-pricing of the ideal asset profile. It is the asset profile that requires no derivatives for the entity to meet its risk management objective.

Role

The target profile quantifies the ideal end state after transformation and allows for the construction of the benchmark derivative.

How is the target profile determined?

The target profile is based on the **entity’s risk management strategy** which in turn is **influenced by:**

- i. The **tenor of financial liabilities***; and
- ii. The **entity’s approach to core deposits.**

*Note, the tenor of financial liabilities should be based on the expected cash flows considering all contractual terms

Target profile

How are items put in the target profile?

Financial liabilities are designated in the target profile profile by the entity. Designation on a portfolio basis is permitted. At a minimum, portfolios should be comprised of liabilities of the same currency and core deposits separated from other liabilities.

Are there qualifying criteria? Why qualifying criteria are required?

Allow clear identification of which items are dynamically managed for interest rate risk

Helps the DRM accounting model to achieve its objective to faithfully represent, in financial statements, the impact of DRM activities

Qualifying criteria

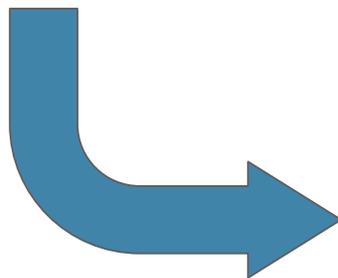
- a. Financial Liabilities must be measured at amortised cost;
- b. Future transactions (FT) (which include forecast transactions and firm commitments) must be highly probable;
- c. FL and FT (which include forecast transactions and firm commitments) must be managed on a portfolio basis for interest rate risk;
- d. FT (which include forecast transactions and firm commitments) must result in FL that are classified as subsequently measured at amortised cost under IFRS 9; and
- e. FL and FT (which include forecast transactions and firm commitments) are not designated in a hedge accounting relationship for interest rate risk.

Target profile – Dynamic Nature

Designation on a portfolio basis rather than an individual basis means that the dynamic nature of portfolios will automatically be captured by the model.

Target Profile								
Item	1M	3M	1YR	...	3YR	...	5YR	Total
Non Core Deposits	50,013.0							50,013.0
Core Deposits	4,400.0	8,800.0	50,280.0		50,280.0		50,280.0	164,040.0
Short Term Borrowings	2,100.0	15,980.0	64,123.0		64,861.0		23,020.0	170,084.0
Senior Debt	1,245.0	11,200.0	12,014.0		2,052.0		25,412.0	51,923.0
Total	57,758.0	35,980.0	126,417.0		117,193.0		98,712.0	436,060.0

Move forward 1 period



Item	1M	3M	1YR	...	3YR	...	5YR	Total
End T¹	57,758.0	35,980.0	126,417.0		117,193.0		98,712.0	436,060.0
- Maturities	- 1,531.0							- 1,531.0
+New Originations		151.0	600.0		750.0			1,501.0
Start T²	56,227.0	36,131.0	127,017.0		117,943.0		98,712.0	436,030.0

New activity within the defined portfolio will be designated reducing the need for maintenance of relationships at a granular level. Tracking is required to ensure continuity and consistency with the entity's portfolio definition, however, as this is required for risk management purposes regardless, the staff see this as a reduction in operational burden.

Construction of a Target Profile

Step 1: Define the Risk Management Strategy

The first step to build a target profile is to understand the entity's risk management strategy. Regardless if that strategy is to stabilise the net of interest income and expense or to concentrate re-pricing in a particular time bucket.

Step 2: Consider the Financial Liabilities

Once the strategy is defined, the entity must then consider its financial liabilities to quantify what financial assets would be required to perfectly accomplish that strategy.

This is because depending on the re-pricing profile of the financial liabilities, the financial assets required to accomplish a strategy could be vastly different, even if the strategy is the same.

Construction of a Target Profile

Example #1

Strategy: Match assets and liabilities

Financial Liabilities: All financial liabilities are floating rate (i.e., re-price with 1M LIBOR)

Then, the profile of financial assets that accomplishes the strategy is 100% floating rate profile.

Therefore, the target profile is a **100% floating rate profile.**

Example #2

Strategy: Match assets and liabilities

Financial Liabilities: Financial Liabilities evenly distributed over 60 months

Then, the profile of financial assets that accomplishes the strategy is an evenly distributed 60 month profile

Therefore, the target profile is **an evenly distributed 60 month profile**

Construction of a Target Profile

Step 3: Core Demand Deposits

For core demand deposits to be designated in the model, the entity must, based on reasonable and supportable information, determine that the demand deposits are insensitive to changes in interest rates (i.e., they will not re-price with a change in interest rates). The entity must, based on reasonable and supportable information, be confident about the life of the core demand deposits.

For the purpose of the DRM accounting model, entities should define the re-pricing of the core demand deposits based on the entity's risk management strategy / its approach to core deposits.

The entity can define re-pricing shorter than the expected life of the core demand deposit portfolio but it cannot define re-pricing longer than the expected life.

Performance

Performance

Prior to discussing the details of the model regarding performance (or the information provided in the statement of profit or loss) the following provides useful context regarding the approach to performance:

- The aim of the DRM model is to faithfully represent the impact of a financial institution's risk management activities;
- Consequently, when an entity perfectly achieves its risk management strategy the model should reflect, in the statement of profit or loss, the entity's target profile because that is the quantification of the entity's risk management strategy;
- This is achieved through the recognition of interest income and expense from the designated financial assets and liabilities in scope of the model and the deferral and reclassification of the changes in fair values of the designated derivatives;
- This provides users with useful information for:
 - assessing the entity's prospects for future cash flows; and
 - predicting how efficiently and effectively management will use the entity's economic resources in future periods.
- Ensuring the results reported in profit or loss reflect the target profile when perfect alignment has been achieved would provide consistent and comparable information for entities with identical target profiles, irrespective of the manner in which perfect alignment is achieved;
 - Focus of the model is on the strategy and the entity's ability to achieve that strategy

Perfect Alignment

What is perfect alignment

Perfect alignment is achieved when the asset profile, in conjunction with the designated derivatives, equal the target profile.

Consequently, derivatives required for perfect alignment are those derivatives that achieve a perfect transformation of the asset profile to the target profile. These derivatives are called the benchmark derivatives in the model.

What is implied by perfect alignment?

If an entity is perfectly aligned, then the change in fair value of the designated derivatives and the benchmark derivatives will be the same.

This implies the expected cash flows and the applicable discount rate are exactly the same which implies the entity will receive (or pay) the exact cash flows required to accomplish the target profile.

Said differently, the cash flows from the asset profile and designated derivatives are exactly those required to accomplish the entity's risk management strategy, represented or quantified by the target profile.

Perfect Alignment Example

An entity has CU 1,000 3-year floating rate FA yielding LIBOR + 1.00% and CU 1,000 of 3-year fixed rate FL bearing 3.00% interest. The entity’s risk management strategy is to stabilise NII over a 3-year period.

The designated derivative is a CU 1,000 3-year receive fix, pay float IRS. This would be the benchmark derivative as it will remove any variability attributable to changes to the floating rate and also fixes interest income for a 3-year period. Given that the target profile is a 3-year fixed rate financial asset, perfect alignment has been achieved, and therefore the derivative is the benchmark derivative.

Designated derivative = Benchmark Derivative			
Year	Change in fair value	Period Cash Flows	Change in fair value excluding accrual (clean fair value)
20X1	31.3	5	26.3
20X2	0	10	(10)
20X3	(1.3)	15	(16.3)
Accumulated changes	30	30	0

The proposed mechanics—the pull to par effect on the derivative combined with the reclassification of interest accruals to the statement of profit or loss—would ensure that no balance was deferred beyond the contractual maturity of the derivative.

Year	Libor	Financial assets (LIBOR+ 1.00%)	Reclassification	Combined	Financial liabilities (3.00%)	Net of interest income and expense
20X1	3.50%	45	5	50	(30)	20
20X2	3.00%	40	10	50	(30)	20
20X3	2.50%	35	15	50	(30)	20

The accruals from the designated derivative are reclassified each period from OCI such that the statement of profit or loss reflects the TP.

Scenario Demonstration

The table below shows the calculation of the period CFs assuming the float rate is as stated for the periods in question.

Benchmark & Designated	Notional	Fixed Rate	Float Rate	Net %	CU
20X1	1,000	4.00%	(3.50)%	0.50%	5
20X2	1,000	4.00%	(3.00)%	1.00%	10
20X3	1,000	4.00%	(2.50)%	1.50%	15
Total					30

Imperfect Alignment

What is imperfect alignment

Imperfect alignment arises when the designated derivatives are different from the benchmark derivative.

Comparing changes in fair value of the designated derivatives with changes in fair value of the benchmark derivatives will capture, in a single metric, the effects of imperfect alignment on the entity's current and future economic resources

What is implied by perfect alignment?

If there is a difference between the change in fair value of the benchmark derivatives and the change in fair value of the designated derivatives, this implies either the expected cash flow stream is different than required, the discount rate is different than required, or both.

This is the case if the entity is over or under hedged.

Irrespective of why, if there is a difference, the cash flows the entity expects to receive are not exactly those required to accomplish the entity's risk management strategy.

Imperfect Alignment (Over Hedge)

In the case of over-hedging, consider the same fact pattern as in slide 34. We assume the entity designates a derivative whose contractual terms are identical to the benchmark derivative, except for notional amount which is CU 1,500 rather than CU 1,000.

Year	Difference in period cash flows	Difference in clean fair value change	Imperfect Alignment
20X1	2.5	13.2	15.7
20X2	5.0	(5.0)	0.0
20X3	7.5	(8.2)	(0.7)
Total	15	0	15

The entity presents the difference between the change in clean fair value of the benchmark and designated derivatives in the statement of profit or loss as imperfect alignment, which is consistent with existing IFRS Standards. Changes in fair value of the cash flows arising from the excess CU 500 derivative would be treated as any other derivative held for trading purposes.

Year	Libor	Financial assets (LIBOR+ 1.00%)	Reclassification	Combined	Financial liabilities (3.00%)	Misalignment	Total reported results	Target profile implied	Difference
20X1	3.50%	45	5	65.7	(30)	15.7	35.7	20	15.7
20X2	3.00%	40	10	50	(30)	0.0	20	20	0
20X3	2.50%	35	15	49.3	(30)	(0.7)	19.3	20	(0.7)

Scenario Demonstration

The table below shows the calculation of the period CFs assuming the float rate is as stated for the periods in question.

Designated	Notional	Fixed Rate	Float Rate	Net %	CU
20X1	1,500	4.00%	(3.50)%	0.50%	7.5
20X2	1,500	4.00%	(3.00)%	1.00%	15
20X3	1,500	4.00%	(2.50)%	1.50%	22.5
Total					45

CU Designated	CU Benchmark	Δ
7.5	5.0	2.5
15	10.0	5.0
22.5	15.0	7.5

Imperfect Alignment (Under Hedge)

To illustrate, consider the same fact pattern as in slide 34. The entity designates a derivative whose contractual terms are identical to the benchmark derivative, except for notional amount which is CU 750 rather than CU 1,000.

Year	Difference in period cash flows	Difference in clean fair value change	Imperfect Alignment
20X1	(1.2)	(6.5)	(7.7) 0
20X2	(2.5)	2.5	0
20X3	(3.7)	4	0.3 0
Total	(7.4)	0	(7.4) 0

- The missing cash flows cannot be reclassified to the statement of profit or loss as they do not exist nor did they occur.
- The 'lower of' test is retained as it maintains consistency with IFRS 9 and equally important, because recognising gains or losses in the statement of profit or loss related to an asset or liability that does not exist (ie the benchmark derivative) is inconsistent with the Conceptual Framework.

Measuring the change in fair value of these cash flows communicates the impact on the entity's future economic resources as if the CU 250 benchmark derivative had been executed. This quantifies the **opportunity cost** for an action not taken.

Year	Financial assets (LIBOR+ 1.00%)	Reclassification	Combined	Financial liabilities (3.00%)	Misalignment	Total reported results	Target Profile Implied
20X1	45	3.8	48.8	(30)	0	18.8	20
20X2	40	7.5	47.5	(30)	0	17.5	20
20X3	35	11.3	46.3	(30)	0	16.3	20

Scenario Demonstration

The table below shows the calculation of the period CFs assuming the float rate is as stated for the periods in question.

Designated	Notional	Fixed Rate	Float Rate	Net %	CU
20X1	750	4.00%	(3.50)%	0.50%	3.75
20X2	750	4.00%	(3.00)%	1.00%	7.5
20X3	750	4.00%	(2.50)%	1.50%	11.25
Total					22.5

CU Designated	CU Benchmark	Δ
3.75	5.0	(1.25)
7.5	10.0	(2.5)
11.25	15.0	(3.75)

Core Demand Deposits

Core demand deposits

Stabilizing NII when the asset profile is entirely funded by core demand deposits raises complications as core demand deposits represent perpetual funding.

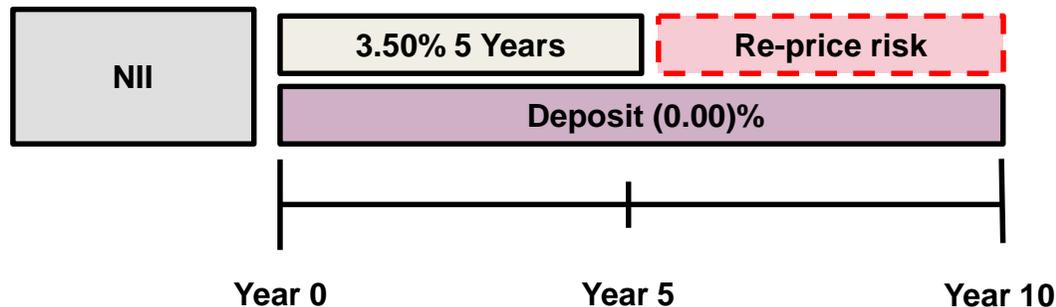
Key features of core demand deposits

- A. Demand feature (ie contractually repayable on the holder's request); and
- B. The notional of demand deposits treated as core and the associated tenor must be based on reasonable and supportable information
- C. The interest rate paid can only change at the discretion of the deposit issuer. The entity cannot be contractually obligated to change the interest rate paid when market interest rates change (e.g., the deposit cannot be contractually linked to LIBOR).

Core demand deposits

The fundamental challenge regarding core demand deposits is that they are insensitive to changes in market interest rates whereas financial assets are.

To illustrate, consider an entity that has CU 1,000 of 5-year fixed rate financial assets yielding 3.50% funded by core demand deposits that do not bear interest. See the diagram below:

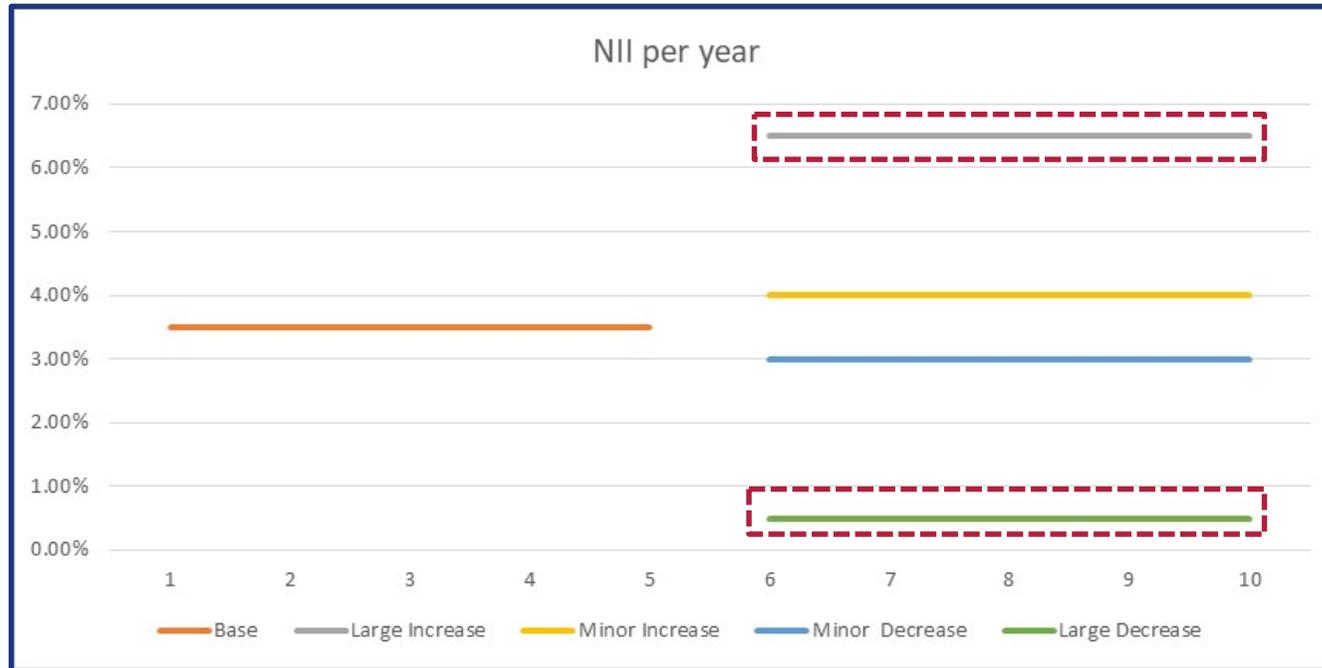


NII will be CU 35 per year until the end of year 5 and in that way, NII is very predictable and stable over the next five years.

However, the problem arises at the end of year 5 because 100% of NII is subject to re-pricing at that time.

Core demand deposits

NII after year 5 is entirely a function of interest rates in place at the end of year 5. The chart below illustrates how NII could change depending on the level of interest rates at the end of year 5.



The red boxes above highlight the potential for the cliff effect whereby NII could decrease significantly if there has been a significant decrease in market interest rates and vice versa.

Laddering

While the impact of market factors on interest income and interest expense cannot be eliminated, entities can influence the speed at which those changes impact interest income and interest expense. Therefore, the entity must decide how changes in market interest rates should influence the net of interest income and expense.

An approach to mitigate this impact in any single period is a form of diversification through laddering.

A ladder is an investment strategy whereby an investor staggers maturities to distribute re-pricing over a defined period of time. For example, a 5-year ladder means that 20% would re-price each year. More specifically, a 5-year ladder would have 20% re-price in 1-years time, another 20% re-price in 2-years time, 20% re-price in 3-years time, and so on.

Represented in a tabular format, the laddering strategy compared with a single maturity strategy is as follows:

Year	Laddering Strategy	Single Maturity
12/31/X1	20%	
12/31/X2	20%	
12/31/X3	20%	
12/31X4	20%	
12/31/X5	20%	100%

Laddering prevents the cliff effect from impacting any single period by instead spreads re-pricing over multiple periods.

Laddering (cont.)

While laddering is very effective at reducing the cliff effect, the passage of time means entities must decide what to do after the first “rung” matures. For going concern entities, it would be very common for the ladder to continue. This continuation is sometimes called a “roll”.

The roll means that the maturity 20% would be re-invested to maintain the distribution of the ladder. As such, in our example, after one years time, the entity would need to re-invest the maturing 20% such that the re-investment would mature on 12/31/X6.

Year	Laddering Strategy	Single Maturity
12/31/X1	20%	
12/31/X2	20%	
12/31/X3	20%	
12/31/X4	20%	
12/31/X5	20%	100%
12/31/X6	20%	

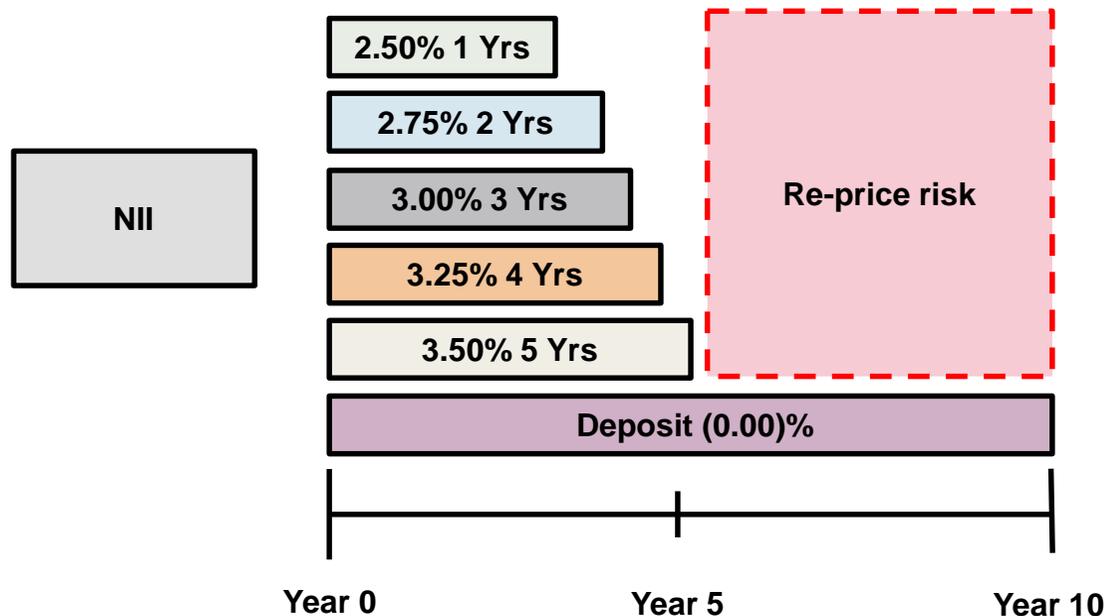
T = 1/1/20X2

The 20% that matured in X1 is rolled and re-invested such that the even distribution is maintained.



Laddering (cont.)

Graphically, a CU 1,000 5-year ladder would look as follows:

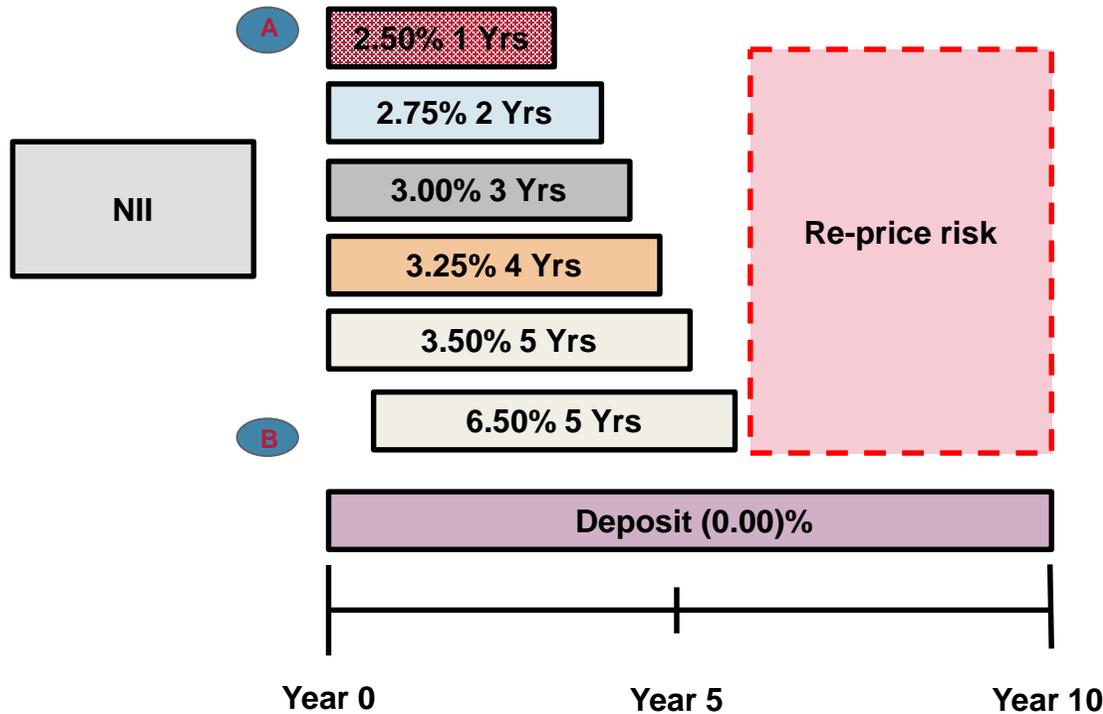


The diagram shows the re-pricing risk remains, however, the speed with which it impacts the entity will differ.

The interest rates have been chosen for illustrative purposes but reflect a typical upward sloping yield curve.

Laddering (cont.)

After one year has gone by, the entity would then continue the ladder by re-investing the proceeds from the maturity first “rung” for another 5-years maintaining the even distribution. Graphically, the roll of the ladder would look as follows:

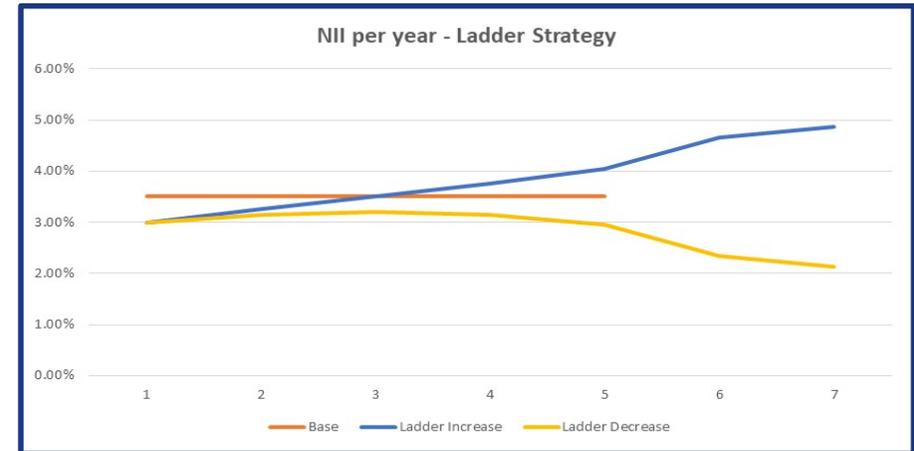
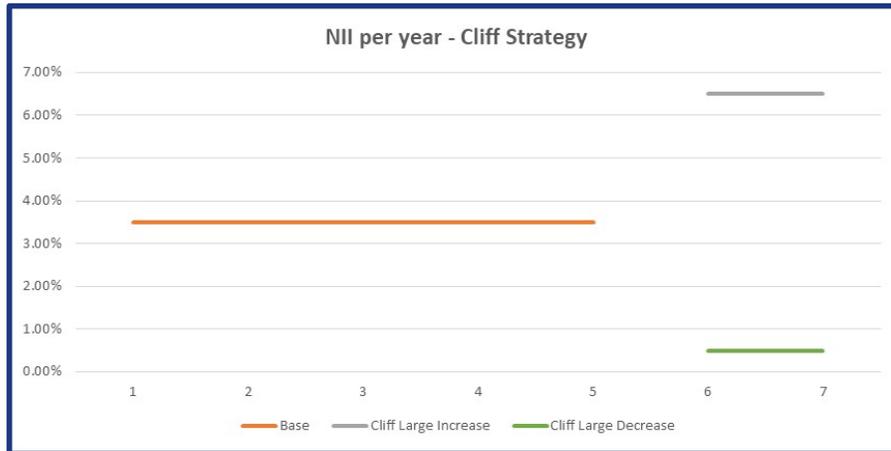


A – The first rung matures at the end of year 1 and is re-invested in **B**

B – The rate on B is the 5-year rate at T¹

Laddering (cont.)

Transformation of the asset profile can have a material impact on the speed at which changes in interest rates can impact interest income and interest expense as demonstrated in the two charts below that illustrate how NII would change over time on the laddering strategy contrasted against the “cliff” strategy.



Laddering (cont.)

Examining NII per year comparing and contrasting the different strategies and scenarios, highlights that impact on a period by period basis.

Period Ending	Increasing Interest Rates		Decreasing Interest Rates	
	Cliff	Ladder	Cliff	Ladder
12/31/20X1	35.0	30.0	35.0	30.0
12/31/20X2	35.0	38.0	35.0	31.5
12/31/20X3	35.0	35.0	35.0	32.0
12/31/20X4	35.0	37.5	35.0	31.5
12/31/20X5	35.0	40.5	35.0	29.5
12/31/20X6	65.0	46.5	5.0	23.5
12/31/20X7	65.0	48.8	5.0	21.3



Dynamic Nature – Scenario Demonstrations

Scenario Demonstration

The objective of these scenario demonstrations are to demonstrate:

- the mechanics of the DRM model;
- how the model achieves the objectives of the project; and
- how the model captures and communicates the impact of risk management through transformation.

These scenarios demonstrate what will happen in the normal course of business, taking each event in turn. Each scenario adds a level of complexity to the previous one. This illustrates the challenges arising from the dynamic nature of the portfolios and how the model address such challenges.

Changes to the portfolios arising from the dynamic nature can be split in two types:

- A change in “inputs”: The “recognition” or “derecognition” of items that are in scope of the DRM accounting model; or
- A change in “strategy”: Where the objective of transformation changes even though there has been no change in inputs.

Scenario Demonstration

Changes in inputs can be further disaggregated by separating the “recognition” and “derecognition” events into “expected” and “unexpected” as seen in the table below.

	Recognition	Derecognition
Expected	Beginning of the model or Future transaction occurs as expected	Maturity of an item based on contractual terms
Unexpected	Origination of new loans where growth wasn't designated	Prepayments, Sale, unplanned liquidation

The staff would highlight that the vast majority events that will change the composition of a portfolio are captured by the above table and the following scenarios cover each event. Therefore, the dynamic nature of portfolios can be captured, in large part, by the above matrix.

A notable exception is a change in the risk management strategy, which is Scenario 6.

Scenario Demonstration

To begin, we will focus on the following events:

- Scenario #1: Initiation of the mode with core demand deposits;
- Scenario #2: Origination of new financial assets and the issuance of new financial liabilities; and
- Scenario #3: Roll of the risk management strategy

These three scenarios comprise a significant portion of the events that the DRM will encounter.

Scenario #1

An entity has CU 1,000 5-year fixed rate FA yielding 3.50% and CU 1,000 of deposit funding and those deposits do not pay interest. The entity's risk management strategy is to stabilise net interest income over time from changes in market interest rates.

More specifically, the entity has evaluated their deposits and determined that the tenor of the core demand deposits based is at least 5 years based on reasonable and supportable information. In addition, as the entity is a going concern, it has decided the best risk management strategy is to establish a 5-year **rolling** ladder for net interest income and the target profile is defined as such.

Graphically, the entity's risk reports would appear as follows (or something similar):

	Re – Pricing Bucket						
Item	Float	20X1	20X2	20X3	20X4	20X5	Total
Loans A						1,000	1,000
Liabilities B		(200)	(200)	(200)	(200)	(200)	(1,000)
Difference	0	(200)	(200)	(200)	(200)	800	0

A – Because the loans are 5-year fixed rate, they are allocated to the 20X5 bucket based on their contractual terms;

B – The liabilities are evenly distributed over time reflecting the entity's approach to core deposits and their risk management strategy.

Scenario #1

Using the terms and concepts in the DRM accounting model the asset and target profiles are as follows:

		Re – Pricing Bucket						
Item		Float	20X1	20X2	20X3	20X4	20X5	Total
Asset Profile	A						1,000	1,000
Target Profile	B		200	200	200	200	200	1,000
Difference			(200)	(200)	(200)	(200)	800	0

A – The asset profile is entire allocated to the 20X5 bucket based on the contractual terms of the designated financial assets;

B – The target profile is evenly distributed until 20X5 because of the laddering strategy. Said differently, as the entity's strategy is to evenly distribute re-pricing until 20X5, the ideal group of financial assets are as illustrated in the above table.

Scenario #1

With the asset and target profiles now defined, the benchmark derivative can be defined. However, given the entity is transforming a single maturity asset profile to a laddered target profile, there are a number of derivatives required. The scenario will construct the benchmark derivative in steps.

To begin, as demonstrated in the table below, the asset profile has CU 1,000 in the 20X5 bucket compared with the target profile that has CU 200. To address this, the entity needs a CU 800 pay fix, receive float interest rate swap to eliminate the 20X5 bucket difference.

Re – Pricing Bucket							
Item	Float	20X1	20X2	20X3	20X4	20X5	Total
Asset Profile						1,000	1,000
Target Profile		200	200	200	200	200	1,000
Difference		(200)	(200)	(200)	(200)	800	0
X5 Pay Leg	800					(800)	
Net Difference	800	(200)	(200)	(200)	(200)		0

Scenario #1

However, a net difference remains and therefore additional derivatives are required in the definition of the benchmark derivative. Examining the net difference, there are CU 200 insufficient assets re-pricing in 20X1 and therefore, the benchmark derivative needs an additional CU 200, Receive Fix, Pay float interest rate swap maturity at the end of 20X1.

Re – Pricing Bucket							
Item	Float	20X1	20X2	20X3	20X4	20X5	Total
Asset Profile						1,000	1,000
Target Profile		200	200	200	200	200	1,000
Difference		(200)	(200)	(200)	(200)	800	0
X5 Pay Leg	800					(800)	
Net Difference	800	(200)	(200)	(200)	(200)		0
X1 Rec Leg	(200)	200					
Net Difference	600	0	(200)	(200)	(200)		

Scenario #1

This exercise can be repeated until the entire difference is eliminated and the benchmark derivative is fully defined. See the table below for the details of the benchmark derivative.

	Re – Pricing Bucket								
Benchmark Derivative	Float	20X1	20X2	20X3	20X4	20X5	Fixed Rate	Float Rate	
20X1 Rec Leg	(200)	200					1.10%	(Float)	
20X2 Rec Leg	(200)		200				1.25%	(Float)	
20X3 Rec Leg	(200)			200			1.50%	(Float)	
20X4 Rec Leg	(200)				200		1.75%	(Float)	
20X5 Pay Leg	800					(800)	(2.00)%	Float	
Total		200	200	200	200	(800)			
AP & TP Δ		(200)	(200)	(200)	(200)	800			
Net Δ	-	-	-	-	-	-			

A process is required for the entity to capture the necessary data to define the benchmark derivative based on the difference between the asset and target profile in addition to the market rates of interest on the date in question. **Since this data is required to manage risk in the first place, the staff do not think this is a significant addition from an operational perspective – see simplification paper regarding tracking and measurement**

Scenario #1

With the target profile defined the entity can then estimate what P&L is implied in each period. For the sake of simplicity, this demonstration will focus on 20X1. The other periods would be calculated in a similar manner.

As the target profile is 5-year evenly distributed ladder, the P&L implied should reflect that ladder profile.

Item	Notional	Yield	CU Amounts	Six Month CU
20X1 Leg	200	2.60%	5.2	2.6
20X2 Leg	200	2.75%	5.5	2.8
20X3 Leg	200	3.00%	6.0	3.0
20X4 Leg	200	3.25%	6.5	3.2
20X5 Leg	200	3.50%	7.0	3.5
		Total	30.2	15.1
		Int Expense	0.0	0.0

The yield is calculated based on the yield curve in existence at the date the target profile is established.

Scenario #1

At the inception of the model, the entity would have to demonstrate the existence of an economic relationship that the combination of the asset profile and designated derivatives would substantially achieve the target profile.

The entity would qualify if, at T⁰, they have executed and designated derivatives that substantially achieved the risk management objective.



After **six months** have passed, the entity has not originated any new financial assets or liabilities but is required to report financial results and therefore, completes the following comparison to prepare the necessary financial reports:

	Δ Clean FV	Period CFs*	Total ΔFV
Benchmark	12.4	(2.4)	10.0
Designated	12.4	(2.4)	10.0
Difference	0 A	0 B	0

A – The entity would compare the change in fair value to determine the amounts (if any) that need to be presented as the misaligned portion; and

B – The entity would compare the period cash flows (ie, the accruals) to determine what amount (if any) to be presented as the misaligned portion.

* See next slide for calculation of Period CFs

Scenario #1

The table below shows the calculation of the period CFs assuming the float rate is 1.00% for the six month period in question.

Benchmark & Designated	Notional	Fixed Rate	Float Rate	Net %	CU	Six Month CU
20X1 Rec Leg	200	1.10%	(1.00)%	0.10%	0.2	0.10
20X2 Rec Leg	200	1.25%	(1.00)%	0.25%	0.5	0.25
20X3 Rec Leg	200	1.50%	(1.00)%	0.50%	1.0	0.50
20X4 Rec Leg	200	1.75%	(1.00)%	0.75%	1.5	0.75
20X5 Pay Leg	800	(2.00)%	1.00%	(1.00)%	(8.0)	(4.0)
Total					(4.8)	(2.4)

Scenario #1: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Dr	Derivative Fair Value	10.0	
	Cr Other Comprehensive Income		10.0

- Reclassify a portion from Other Comprehensive Income to the Statement of Profit or Loss such that it reflects the target profile:

Dr	DRM Derivative Contribution	2.4	
	Cr Other Comprehensive Income		2.4

The income statement for the period is as follows:

Period end	Financial assets (3.50%)	DRM Derivative Contribution	Financial liabilities (0.00%)	Imperfect Alignment	Total reported results	Target Profile Implied
6/30/X1	17.5	(2.4)	(0)	0.0	15.1	15.1

While a process is required for the entity to capture the necessary data to determine the amounts that would be implied by the target profile, such processes already exist in some way shape or form for the entity to be able to judge whether or not it has achieved its risk management strategy.

Scenario #1: How are the challenges addressed?

Transparency

Presenting the DRM derivative contribution on a separate line item on the face of the statement of profit or loss will add transparency to the impact risk management actions have on the entity's economic resources and allow users to evaluate the strategy.

Eligible Items

This basic form of transformation addresses the designation challenges of IAS 39 and IFRS 9 as core demand deposits can be considered for the purposes of transformation.

Dynamic Nature

Not demonstrated

Performance measurement

As the entity has perfectly achieved the strategy, the P&L reflects the economics faithfully.

There is no misalignment presented as none exists.

Since management has achieved the strategy, the results of that strategy are reflected in the statement of profit or loss or NII.

Scenario #1: What if?

By comparison, if the entity did not apply the proposed DRM accounting model but rather presented the designated derivatives through the statement of profit or loss, the information provided would be as follows:

- Record the change in fair value of the designated derivatives in the statement of profit or loss:

Dr	Derivative Fair Value	10.0	
	Cr Statement of Profit or loss		10.0

Period end	Financial assets (3.50%)	DRM Derivative Contribution	Financial liabilities (0.00%)	Imperfect Alignment	Gain / (Loss) on derivatives	Total reported results	Target Profile Implied
6/30/X1	17.5	0.0	(0)	0.0	10.0	27.5	15.1

Comparing the two scenarios should highlight the vastly different information in the statement of profit or loss:

Results w/ the model	Results w/o the model	Difference
15.1	27.5	12.4

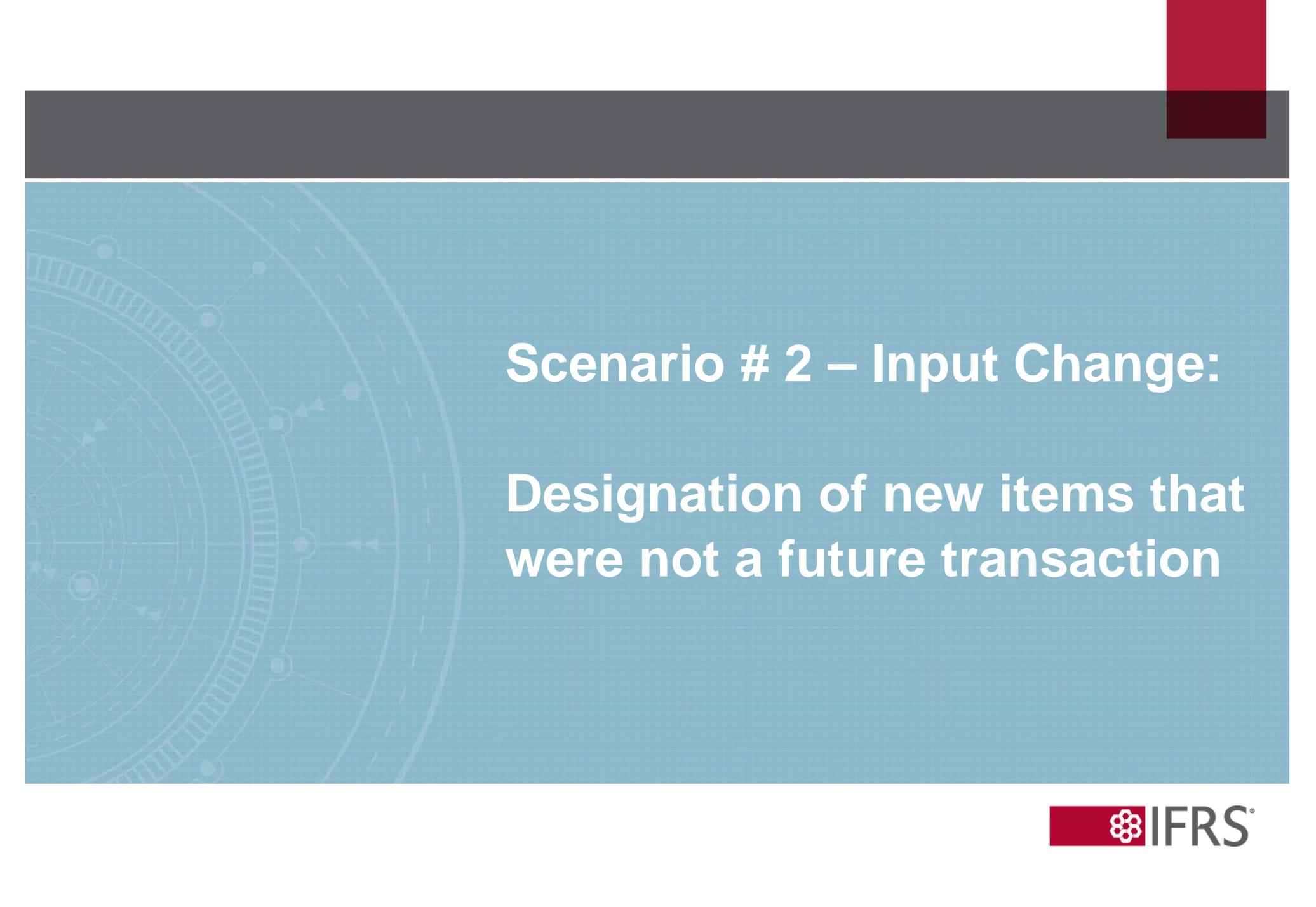
Scenario #1: What if?

As mentioned previously, the intersection of risk management and the hedge accounting requirements of IFRS 9 and IAS 39 create tension, especially when core demand deposits are present, as is the case in this example. As such, entities often resort to alternative reporting methods to communicate the impact of their risk management activities in financial reporting.

If we were to change the fact pattern in the scenario, it may be theoretically possible for an entity to fit their risk management actions into the existing requirements, however, the resulting information can be difficult to understand and costly to produce.

For example, the amounts contributed by the DRM derivatives would be distributed across interest revenue, interest expense, and potentially other line items in the statement of profit or loss, making it more difficult to understand not only the overall strategy but individual components of the same.

While the total reported results may be a similar figure to the 15.1 implied by the target profile, this likely would result from management's designation efforts focused on minimising ineffectiveness rather than focusing on transparent communication of the strategy and the entity's ability to achieve that strategy.



Scenario # 2 – Input Change:

Designation of new items that were not a future transaction

Scenario #2

Moving forward one period in time, the entity issues a CU 300 3-year fixed rate financial liability bearing 2.00% interest and uses those funds to purchase a 3-year floating rate financial asset yield LIBOR + 0.40%. The financial asset and liabilities are measured at amortised cost and are therefore eligible for designation.

As the newly issued financial liability and purchased financial asset are not part of an already defined and designated portfolio in the DRM accounting model, the entity must specifically designate these items in the model (ie they were not designated as a highly probable forecast transactions).

Once designated, the updated asset and target profiles are as follows:

Re – Pricing Bucket								
Item	Float	12/31/X1	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	Total
Asset Profile	300 A						1,000	1,300
Target Profile		200	200	200	300 B	200	200	1,300
Difference	300	(200)	(200)	(200)	(300)	(200)	800	0

A – The new financial asset is allocated to the float bucket based on its contractual terms;

B – The target profile adds CU 300 to the 6/30/20X4 bucket based on the contractual terms of the designated financial liability and the strategy to match assets and liabilities.

Scenario #2

Prior to updating items designated in the DRM model the entity should measure alignment; however, given the entity was perfectly aligned one day prior and it measured alignment at that time, this demonstration will not repeat that aspect of the model.

Once the new items are designated, the entity must update the benchmark derivatives accordingly;

	Re – Pricing Bucket									
	Float	12/31/X1	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	Fixed Rate	Float Rate	
T ⁰ Benchmark		200	200	200		200	(800)			
+T ^{0.5} Input Changes A	(300)				300			1.65%	(Float)	
T ^{0.5} Benchmark	(300)	200	200	200	300	200	(800)			

A – A 3-year receive fix, pay float IRS is added to the definition of the benchmark derivative as that is the derivative required to maintain perfect alignment given the new designations in the model.

Said differently, because the AP added CU 300 to the float bucket and the TP added CU 300 to 6/30/X4 bucket, the benchmark derivative recognises the need for transformation of CU 300 of float to CU 300 of fixed ending on 6/30/X4.

Scenario #2

With the target profile defined the entity could then estimate what P&L is implied in each period. For the sake of simplicity, this demonstration will focus on 20X1. The other periods would be calculated in a similar manner.

The previous P&L implication is updated to reflect the additions to the model

Item	Notional	Yield	CU Amounts	Six Month CU
20X1 Leg	200	2.60%	5.2	2.6
20X2 Leg	200	2.75%	5.5	2.8
20X3 Leg	200	3.00%	6.0	3.0
20X4 Leg	200	3.25%	6.5	3.2
20X5 Leg	200	3.50%	7.0	3.5
June 30, X4 Leg	300	2.05%	6.15	3.1
		Total	36.4	18.2
		Int Expense	(6.0)	(3.0)

Scenario #2

Assuming the entity designated the derivative required to maintain perfect alignment, the entity would have to demonstrate the continued existence of an economic relationship after designating the new items, including any new derivatives.



After six months have passed, the entity has not originated any new financial assets or liabilities but is required to report financial results and therefore, completes the following comparison to prepare the necessary financial reports:

	Δ Clean FV	Period CFs*	Total Δ FV
Benchmark	(2.6)	(1.4)	(4.0)
Designated	(2.6)	(1.4)	(4.0)
Difference	0 A	0 B	0

A – The entity would compare the change in fair value to determine the amounts (if any) that need to be presented as the misaligned portion; and

B – The entity would compare the period cash flows (ie, the accruals) to determine what amount (if any) should be presented as the misaligned portion.

* See next slide for calculation of Period CFs

Scenario #2

The table below shows the calculation of the period CFs assuming the float rate is 1.00% for the six month period in question.

Benchmark & Designated	Notional	Fixed Rate	Float Rate	Net %	CU	Six Month CU
20X1 Rec Leg	200	1.10%	(1.00)%	0.10%	0.2	0.10
20X2 Rec Leg	200	1.25%	(1.00)%	0.25%	0.5	0.25
20X3 Rec Leg	200	1.50%	(1.00)%	0.50%	1.0	0.50
20X4 Rec Leg	200	1.75%	(1.00)%	0.75%	1.5	0.75
20X5 Pay Leg	800	(2.00)%	1.00%	(1.00)%	(8.0)	(4.0)
June 30 20X3 Rec Leg	300	1.65%	(1.00)%	0.65%	1.95	0.98
Total					(2.8)	(1.4)

Scenario #2: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Dr	Other Comprehensive Income	4.00	
	Cr Derivative Fair Value		4.00

- Reclassify a portion from Other Comprehensive Income to the Statement of Profit or Loss such that it reflects the target profile:

Dr	DRM Derivative Contribution	1.40	
	Cr Other Comprehensive Income		1.40

The income statement for the period is as follows:

Period End	Financial assets	DRM Derivative Contribution	Financial liabilities	Misalignment	Total reported results	Target Profile Implied
12/31/X1	19.6	(1.40)	(3.0)	0.0	15.20	15.20

Scenario #2: How are the challenges addressed?

Transparency

Presenting the DRM derivative contribution on a separate line item on the face of the statement of profit or loss will add transparency to the impact risk management actions have on the entity's economic resources and allow users to evaluate the strategy.

Eligible Items

The example illustrates that the model accommodates different types of financial liabilities, not just core demand deposits.

Dynamic Nature

The addition of new inputs to the model does require designation given they are different portfolios and the benchmark derivative must be updated accordingly (ie a layer must be added and also tracked).

Performance measurement

As the entity has perfectly achieved the strategy, the P&L reflects the economics faithfully.

There is no misalignment presented as none exists.

Since management has achieved the strategy, the results of that strategy are reflected in the statement of profit or loss or NII.

Scenario #2: What if?

By comparison, if the entity did not apply the proposed DRM accounting model but rather presented the designated derivatives through the statement of profit or loss, the information provided would be as follows:

- Record the change in fair value of the designated derivatives in the statement of profit or loss:

Dr	Derivative Gain or Loss	4.0	
	Cr	Derivative Fair Value	4.0

Period end	Financial assets (3.50%)	DRM Derivative Contribution	Financial liabilities (0.00%)	Imperfect Alignment	Gain / (Loss) on derivatives	Total reported results	Target Profile Implied
12/31/X1	19.6	0.0	(3.0)	0.0	(4.0)	12.6	15.2

Scenario #2: What if?

Examining the trend period over period should highlight both:

- The different information communicated in the statement of profit or loss; and
- How the DRM model provides a faithful representation of performance and communicates useful information

Period Ending	P&L w/ model	P&L w/o model	Reference
6/30/X1	15.1	27.5	Slide 65
12/31/X1	15.2	12.6	Slide 75
Change	0.1	(14.9)	

Examining the period over period change highlights the confusion that could arise. Given the entity has a strategy to stabilise and the entity has executed the necessary derivatives to “appropriately” manage risk, Users could understandably expect a stable trend period over period.

The change seen period over period is not stable, nor does it provide a faithful representation of the underlying economics of the entity’s risk management strategy and actions.



Scenario # 3 – Input Change:

Roll of the Risk Management Strategy

Scenario #3

Moving forward to the beginning of 20X2, there are two events that occur due to the passage of time. More specifically:

- The CU 200 20X1 receive fix, pay float interest rate swap will mature; and
- The 20X1 time bucket within the target profile will mature.

The updated asset and target profiles are as follows after the maturity of the 12/31/X1 time bucket:

Re – Pricing Bucket								
Item	Float	12/31/X1	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	Total
Asset Profile	300						1,000	1,300
Target Profile			200	200	300	200	200	1,100
Difference	300		(200)	(200)	(300)	(200)	800	200

Scenario #3

However, the previous table is incomplete because the entity, being a going concern, designated the core demand deposits in a rolling laddering strategy and therefore the CU 200 allocation that matured will be re-allocated to the 12/31/X6 bucket that represents the maturity and re-investment of the transformed 12/31/X1 time bucket.

The updated asset and target profiles are as follows incorporating the newly designated items:

		Re – Pricing Bucket							
Item	Float	12/31/X1	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	12/31/X6	Total
Asset Profile	300						1,000		1,300
Target Profile			200	200	300	200	200	200 A	1,300
Difference	300		(200)	(200)	(300)	(200)	800	(200)	0

A – The portion of the target profile that matured in 20X1 is rolled into 20X6 to maintain the evenly distributed five year ladder

Scenario #3

Examining the asset and target profiles should highlight that the entity must also designate the re-investment of the CU 1000 financial asset that matures in 20X5 (or at least a CU 200 portion) because the target profile stipulates re-pricing in 20X6 which is after the contractual maturity of any financial asset currently designated in the DRM accounting model.

Re – Pricing Bucket									
Item	Float	12/31/X1	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	12/31/X6	Total
Asset Profile	300						1,000		1,300
Target Profile			200	200	300	200	200	200	1,300
Difference	300		(200)	(200)	(300)	(200)	800	(200)	0

The entity would designate the expected re-investment as a forecast transaction and would need to demonstrate that such an issuance is highly probable. It would not be necessary for the entity to know the exact contractual terms (most importantly whether it would be fixed or floating in nature), simply that the re-investment will occur.

Scenario #3

The asset profile and target profiles would appear as follows after the designation of the future re-investment:

Item	Re – Pricing Bucket							Total
	Float	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	12/31/X6	
Asset Profile	300					1,000		1,300
Asset Profile – FT	*200							
Target Profile		200	200	300	200	200	200	1,300
Difference	300	(200)	(200)	(300)	(200)	800	(200)	0

Because it is known that the reinvestment will reflect market rates at 12/31/X5 because the future financial assets have not yet been priced, the reinvestment is allocated to the float bucket. Furthermore, because the future financial assets are a re-investment of an existing financial asset, the designation would not increase the notional of the asset profile beyond 1,300. The designation means that the entity has, as at 1/1/20X2, a CU 200 five-year financial asset that is fixed until 12/31/X5 and then floating rate from 1/1/20X6 until 12/31/X6.

Scenario #3

Prior to updating items designated in the DRM model the entity should measure alignment; however, given the entity was perfectly aligned one day prior and it measured alignment at that time, this demonstration will not repeat that aspect of the model.

Re – Pricing Bucket										
	Float	X1	X2	X3	6/30/ X4	12/31 /X4	20X5	20X6	Fixed Rate	Float Rate
T ^{0.5} Benchmark	(300)	200	200	200	300	200	(800)			
-T ¹ Maturities	200	(200)							1.10%	(Float)
+T ¹ Roll A	(200)							200	2.15%	(Float)
T¹ Benchmark	(300)		200	200	300	200	(800)	200		

A – A 5-year receive fix, pay float IRS is added to the definition of the benchmark derivative as that is the derivative required to maintain perfect alignment given the roll of the risk management strategy. 2.15% is the 5-year fixed rate at that time (ie, T=1)

Said differently, because the TP added CU 200 to the 20X6 bucket, the benchmark derivative also reflects those input changes.

Scenario #3

With the target profile defined the entity could then estimate what P&L is implied in each period. For the sake of simplicity, this demonstration will focus on 20X2. The other periods would be calculated in a similar manner.

The previous P&L implication is updated to reflect the additions to the model

Item	Notional	Yield	CU Amounts	Six Month CU
20X2 Leg	200	2.75%	5.5	2.8
20X3 Leg	200	3.00%	6.0	3.0
20X4 Leg	200	3.25%	6.5	3.2
20X5 Leg	200	3.50%	7.0	3.5
June 30, X4 Leg	300	2.05%	6.15	3.1
20X6 Leg	200	3.65%	7.3	3.7
		Total	38.5	19.2
		Int Expense	(6.0)	(3.0)

Scenario #3

The entity would have to demonstrate the continued existence of an economic relationship after designating the new items, including any new derivatives.



After six months have passed, the entity has not originated any new financial assets or liabilities but is required to report financial results and therefore, completes the following comparison to prepare the necessary financial reports:

	Δ Clean FV	Period CFs*	Total Δ FV
Benchmark	(2.63)	(0.38)	(3.00)
Designated	(2.63)	(0.38)	(3.00)
Difference	0 A	0 B	0

A – The entity would compare the change in fair value to determine the amounts (if any) that need to be presented as the misaligned portion; and

B – The entity would compare the period cash flows (ie, the accruals) to determine what amount (if any) should be presented as the misaligned portion.

* See next slide for calculation of Period CFs

Scenario #3

The table below shows the calculation of the period CFs assuming the float rate is 1.00% for the six month period in question.

Benchmark & Designated	Notional	Fixed Rate	Float Rate	Net %	CU	Six Month CU
20X2 Rec Leg	200	1.25%	(1.00)%	0.25%	0.5	0.25
20X3 Rec Leg	200	1.50%	(1.00)%	0.50%	1.0	0.50
20X4 Rec Leg	200	1.75%	(1.00)%	0.75%	1.5	0.75
20X5 Pay Leg	800	(2.00)%	1.00%	(1.00)%	(8.0)	(4.00)
June 30 20X3 Rec Leg	300	1.65%	(1.00)%	0.65%	1.95	0.98
20X6 Rec Leg	200	2.15%	(1.00)%	1.15%	2.30	1.15
Total					(0.75)	(0.38)

Scenario #3: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Dr	Other Comprehensive Income	3.00	
	Cr	Derivative Fair Value	3.00

- Reclassify a portion from Other Comprehensive Income to the Statement of Profit or Loss such that it reflects the target profile:

Dr	DRM Derivative Contribution	0.38	
	Cr	Other Comprehensive Income	0.38

The income statement for the period is as follows:

Period Ending	Financial assets	DRM Derivative Contribution	Financial liabilities	Misalignment	Total reported results	Target Profile Implied
6/30/X2	19.6	(0.38)	(3.0)	0.0	16.2	16.2

Scenario #3: How are the challenges addressed?

Transparency

By presenting the DRM derivative contribution on a separate line item on the face of the statement of profit or loss, this will add transparency to the impact risk management actions have on the entity's economic resources and allow users to evaluate the strategy.

Eligible Items

The scenario demonstrates how a future transaction would be identified and also designated within the DRM accounting model.

Dynamic Nature

The change in inputs to the model does not require any action regarding designation and de-designation and the changes are automatically accommodated in the model.

Performance measurement

As the entity has perfectly achieved the strategy, the P&L reflects the economics faithfully.

There is no misalignment presented as none exists.

Since management has achieved the strategy, the results of that strategy are reflected in the statement of profit or loss and NII.

Scenario Demonstration

Thus far, we have demonstrated how the following events causing an input change and how they are accommodated in the DRM Accounting Model:

- Unplanned additions to the model (**Scenario #2**);
- Maturities occurring as expected (**Scenario #3**); and
- Roll of the risk management strategy (**Scenario #3**).

Continuing with the demonstration, we will discuss some of the more complicated scenarios that cause a change in inputs. We will also discuss the information provided when an entity is over and under-hedged.

To begin, we will focus on demonstrating the following topics:

- Growth; and
- Prepayments.



Scenario # 4 – Input Change:

Designation of Growth as a Future Transaction

Scenario #4

Moving forward a day, the entity commits to issue a new CU 500 5.00% 4-year fixed rate loan in six months time. As this transaction is not an existing financial asset nor has it been previously designated in the model, the entity designates the growth as a forecast transaction. Given the existence of the contractual agreement, the entity would be able to demonstrate the forecast transaction is highly probable.

However, the entity does not have the necessary funding and therefore, it must be highly probable that the entity will issue new financial liabilities in six months time to fund the loan. Similarly, the entity would designate the expected issuance as a forecast transaction and would need to demonstrate that such an issuance is highly probable. This would satisfy the requirement that the notional of the asset and target profile always be equal.

It would not be necessary for the entity to know the exact contractual terms of the issuance (most importantly whether it would be fixed or floating in nature) because the issuance will be exposed to interest rate risk regardless.

Consequently the new financial liabilities will be allocated to the float bucket for the same reason.

Scenario #4

Graphically, the asset and target profile would appear as follows :

		Re – Pricing Bucket						
Item	Float	12/31/20X2	12/31/20X3	12/31/20X4	12/31/20X5	6/30/20X6	Total	
A Asset Profile						500	500	
B Target Profile	500						500	
Difference	(500)					500	0	

A – The loans are allocated to June 30th, 20X6 bucket based on the contractual terms;

B – Because the liabilities have not yet been priced, they are allocated to the float bucket.

Note: The staff have not carried forward the others part of the asset and target profile for sake of simplicity of demonstration even though the scenario is a continuation of the previous fact pattern.

Scenario #4

Prior to updating items designated in the DRM model the entity should measure alignment; however, given the entity was perfectly aligned one day prior and it measured alignment at that time, this demonstration will not repeat that aspect of the model.

Re – Pricing Bucket

	Float	X2	X3	06/30/X 4	12/31/X 4	12/31/ X5	6/30/ X6	12/31/ X6	Fixed Leg	Float Leg
T ^{1.5} Benchmark	(300)	200	200	300	200	(800)		200		
A + T ^{1.5} Growth	500*						(500)*		(2.50%)	Float
T^{1.5} Benchmark	200	200	200	300	200	(800)	(500)	200		

A – The benchmark derivative related to the growth is a 6 month forward starting CU 500 Pay Fix, receive float interest rate swap. This is the case because:

- The strategy remains to stabilise NII by matching assets and liabilities; and
- Since both the funding and the loan will not exist until 6 months have passed, the swap must be forward starting.

Scenario #4

All scenarios to date have assumed perfect alignment, however, this example will assume the entity only executes a CU 450 Pay Fix Interest Rate Swap rather than the benchmark CU 500.

In this example, even though the entity is not perfectly aligned, it is able to demonstrate the existence of an economic relationship and continues to apply the DRM accounting model.



After six months have passed, the entity has not originated any new financial assets or liabilities but is required to report financial results and therefore, completes the following comparison to prepare the necessary financial reports:

	Δ Clean FV	Period CFs*	Total Δ FV
Benchmark	(2.62)	(0.38)	(3.00)
Designated	(2.42)	(0.38)	(2.80)
Difference	0.20 A	0.00 B	0.20

A – The entity would compare the change in fair value and observe the designated is less than the benchmark due to under hedging.

B – The entity would also compare the period cash flows (ie, the accruals). Given there has been no change in the floating rates during the six month period and the forward start does not have period cash flows, the figures remain identical.

Scenario #4

The table below shows the calculation of the period CFs assuming the float rate is 1.00% for the six month period in question.

Designated	Notional	Fixed Rate	Float Rate	Net %	CU	Six Month CU
20X2 Rec Leg	200	1.25%	(1.00)%	0.25%	0.5	0.25
20X3 Rec Leg	200	1.50%	(1.00)%	0.50%	1.0	0.50
20X4 Rec Leg	200	1.75%	(1.00)%	0.75%	1.5	0.75
20X5 Pay Leg	800	(2.00)%	1.00%	(1.00)%	(8.0)	(4.0)
June 30 20X3 Rec Leg	300	1.65%	(1.00)%	0.65%	1.95	0.98
20X6 Rec Leg	200	2.15%	(1.00)%	1.15%	2.30	1.15
June 30 20X6 Fwd Rec Leg	450	(2.50)%	1.00%	1.50%	--	--
Total					(0.75)	(0.38)

Scenario #4: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Dr	Other Comprehensive Income	2.80	
	Cr Derivative Fair Value		2.80

- Reclassify a portion from Other Comprehensive Income to the Statement of Profit or Loss such that it reflects the target profile:

Dr	DRM Derivative Contribution	0.38	
	Cr Other Comprehensive Income		0.38

The income statement for the period is as follows:

Year	Financial assets	DRM Derivative Contribution	Financial liabilities	Misalignment	Total reported results	Target Profile Implied
12/31/X2	19.6	(0.38)	(3.0)	0.0	16.2	16.2

Important to note that even though the entity is under hedged, there are no figures reported as misalignment due to the lower of test. This highlights the importance of disclosure to fully communicate the performance of the risk management function because, in this example, the entity is under hedged and has not achieved their risk management strategy.

Scenario #4: How are the challenges addressed?

Transparency

Disclosures will communicate that the entity is under hedged.

Currently, this fact would not be communicated in the financial statements.

Eligible Items

This example highlights how forecast transactions are eligible within the DRM accounting model.

Dynamic Nature

This scenario again demonstrates how the model would recognise a future transaction and incorporate that information into the definition of the benchmark derivative.

Performance measurement

While the entity has not achieved perfect alignment, since there is no impact on the current period, the entity's is able to show that they achieved the strategy in NII.

There is no impact on current period NII because the misalignment is entirely attributable to forecast transactions not yet recognised on the balance sheet.

Scenario #4

Moving forward another day, the entity both issues the 4-year floating rate liability and also originates the 4-year fixed rate loan as planned. Therefore, both transactions are no longer forecast in nature but are existing. However, there is no need to re-designate the transaction or designate new transactions as they were already designated in the model. The asset and target profiles would be unchanged.

If the entity had issued a fixed rate liability rather than the floating rate liability, the forecast transaction would be allocated to the appropriate fixed time bucket accordingly. There would be a consequential requirement to alter the benchmark derivative, however, this would not be a de-designation / re-designation event.



Scenario # 5 – Input Change:

Unexpected Maturity in the Designated Portfolio

Scenario #5

Moving forward another day and continuing with the same fact pattern, the loan scheduled to mature on 6/30/X6, prepays in its entirety. Therefore, the borrower returns the CU 500 to the entity and the entity places the funds in deposit with another financial institution (i.e., cash). Graphically, the asset and target profile would appear as follows:

		Re – Pricing Bucket						
	Item	Float	12/31/X2	12/31/X3	12/31/X4	12/31/X5	6/30/X6	Total
A	AP	500					500	500
	TP	500						500
B	Difference	0						0

A – The funds on deposit with another institution would be allocated to the float bucket based on contractual terms (likely an overnight rather than a 1-month rate);

B – The TP remains unchanged because the change in the asset profile does not impact the objective the entity’s wants to achieve through transformation.

Scenario #5

One question that can arise is how can an entity detect a prepayment given the dynamic nature of portfolios. While some tracking will be required, any time there is a maturity in a time bucket sometime in the future, this means there was a prepayment or a change in the prepayment assumptions.

Graphically:

12/31/X2				1/1/X3			
Item	Float	6/30/X6	Total	Item	Float	6/30/X6	Total
Asset Profile		500	500	Asset Profile	500	0	500
Target Profile	500		500	Target Profile	500		500
Difference	(500)	500	0	Difference	0	0	0

Comparing the two time buckets highlights that something matured that was not scheduled which means there has been a prepayment.

Scenario #5

As discussed during the September 2018 Board meeting, because there has been a prepayment, the entity must measure imperfect alignment after updating the benchmark derivative but prior to updating any of the designated derivatives in order to faithfully reflect the impact the prepayment has had on the entity’s economic resources.

Therefore, the benchmark derivative must be updated to remove the June 30th, 20X6 leg.



Re – Pricing Bucket

Benchmark Derivative	Float	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	6/30/X5	12/31/X6	Fixed Rate	Float Rate
20X2 Leg	(200)	200							1.25%	(Float)
20X3 Leg	(200)		200						1.50%	(Float)
20X4 Leg	(200)				200				1.75%	(Float)
20X5 Leg	800					(800)			(2.00)%	(Float)
June 30 20X3 Leg	(300)			300					1.65%	(Float)
20X6 Leg	(200)							200	2.15%	(Float)
June 30 20X5 Leg	500						(500)		(2.50)%	Float
Total	(300)	200	200	300	200	(800)		200		

Scenario #5

The entity would then compare the change in fair value of the benchmark with the designated to determine what amounts, if any, should be presented as misalignment.

	Δ Clean FV	Period CFs*	Total Δ FV
Benchmark	380	0.00	380
Designated	400	0.00	400
Difference	20 A	0 B	20

A – After the update, the change in fair value of the benchmark is 380 vs the designated value of 400 and therefore, the entity is over-hedged by a value of 20. This value of 20 represents the change in fair value of the excess derivatives designated in the model that, due to the prepayment, are no longer aligning the asset and target profiles.

B – Given only a day has passed the entity last measured alignment, the period CFs will be immaterial and have been ignored for purposes of simplicity.

Scenario #5: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Cr Other Comprehensive Income		380
Dr Derivative Fair Value	400	
Cr Misalignment		20

The income statement for the period (i.e., day) is as follows:

Year	Financial assets	DRM Derivative Contribution	Financial liabilities	Misalignment	Total reported results	Target Profile Implied
1/1/X3	0.0	0.00	0.0	20.0	20.00	0.00

This CU 20 of misalignment represents the change in economic resources because the entity executed, in retrospect, the wrong derivative. If the entity had accurately predicted the prepayment when the contract was agreed, it would have taken different risk management actions.

In that way, it quantifies the impact on resources from an error in estimation.

Note the amounts implied by the target profile are nil in this example because only a day has passed and therefore, the amounts would be immaterial and have been ignored for purposes of simplicity.

Scenario #5: How are the challenges addressed?

Transparency

The fact that misalignment is presented in the statement of profit or loss will communicate the fact that the entity did not achieve the strategy in the period to users of financial statements. This should improve the conversation regarding risk management.

Eligible Items

Not demonstrated

Dynamic Nature

The example highlights how an unexpected change in inputs would be accommodated in the model.

Performance measurement

The effect on economic resources is presented clearly in the statement of profit or loss and labelled as misalignment.

Disclosure of the reasons would also allow users to understand the reason what that occurred.

Scenario Demonstration

Thus far, we have demonstrated how the following events causing an input change are accommodated in the DRM Accounting Model:

- Unplanned additions to the model (**Scenario #2**);
- Planned additions to the model (designation of future transactions and growth) (**Scenario #4**);
- Maturities occurring as expected (**Scenario #3**);
- Maturities occurring unexpectedly (prepayments) (**Scenario # 5**); and
- A roll of the risk management strategy (**Scenario #3**).

All other events can be allocated into one of the above except for a change in the risk management strategy itself.

We demonstrate this scenario in the following slides.

Scenario # 6 – Change in the Risk Management Strategy



Scenario # 6:

Change in the Risk Management Strategy

Scenario #6

Continuing with the previous example but moving forward another day and assuming the entity re-establishes perfect alignment, the entity decides that it must change their approach to core demand deposits given the significant decrease in term interest rates. Rather than treating core demand deposits as a 5-year fixed financial liability, the entity decides to treat all core demand deposits as floating rate liabilities.

An entity might choose to change their strategy as described for a number of reasons, including:

- Given the significant decrease in term interest rates, the entity may not want to lock in term interest rates at very low levels. The entity could be of the opinion interest rates will rise again in the near term and therefore, are willing to wait;
- The entity could have decided that a rolling 5-year ladder introduces too much present value risk to NII and therefore changes to a floating rate strategy; or
- The entity's regulator has stipulated that all core demand deposits be treated as floating rate for interest rate risk purposes.

The scenario described may be an exceptional case given the magnitude of the change – however, changes can and will occur though they must be infrequent.

Scenario #6

As this is a decision that results in a change in the target profile with no change in inputs, this is a change in the risk management strategy and therefore, the amounts presented in Other Comprehensive Income should be reclassified such that the results reported reflect the target profile prior to the change in the RM strategy.

The entity will need to know the amounts associated with any time bucket that will be impacted by the change. Therefore, it is important to first understand which time buckets have been impacted, by examining the old and new target profiles:

Re – Pricing Bucket								
Item	Float	12/31/X2	12/31/X3	6/30/X4	12/31/X4	12/31/X5	12/31/X6	Total
Old TP		200	200	300	200	200	200	1,300
New TP	1,000			300				1,300
Difference	(1,000)	200	200	A	200	200		0

A – The June 30, 20X3 bucket is unchanged because that part of the TP is supported by contractual financial liabilities.

Scenario #6

Based on the comparison of the asset and target profiles after the change in the risk management strategy, the following adjustments are required to the benchmark derivative. Prior to updating items designated in the DRM model the entity should measure alignment; however, given the entity was perfectly aligned one day prior and it measured alignment at that time, this demonstration will not repeat that aspect of the model.



Re – Pricing Bucket										
Benchmark Derivative	FIt	12/31/ X2	12/31/ X3	6/30/X 4	12/31/ X4	12/31/ X5	12/31/ X6	Fixed Rate	Float Rate	FV
20X2 Leg	(200)	200						1.50%	(Float)	4
20X3 Leg	(200)		200					2.00%	(Float)	25
20X4 Leg	(200)				200			2.50%	(Float)	69
20X5 Leg	(200)					200		3.00%	(Float)	100
June 30 20X3 Leg	(300)			300				1.65%	(Float)	50
20X6 Leg	(200)						200	4.00%	(Float)	130.36
Total	(300)			300						

Assuming the entity terminated the corresponding designated derivatives (those highlighted in red above), the entity would maintain perfect alignment after the change in strategy. No misalignment would arise going forward as long as the entity terminated the corresponding derivatives as a part of their change in strategy.

Scenario #6

After 6 months have passed, the entity has not originated any new financial assets or liabilities but is required to report financial results and therefore, completes the following comparison to prepare the necessary financial reports:

	Δ Clean FV	Period CFs	Total Δ FV
Benchmark	19.02	0.98	20.0
Designated	19.02	0.98	20.0
Difference	0 A	0 B	

A – The entity would compare the change in fair value to determine the amounts (if any) that need to be presented as the misaligned portion; and

B – The entity would compare the period cash flows (ie, the accruals) to determine what amount (if any) should be presented as the misaligned portion.

Designated	Notional	Fixed Rate	Float Rate	Net %	CU	CU / 2
June 30 X3 Rec Leg	300	1.65%	(1.00)%	0.65%	1.95	0.98
Total					1.95	0.98

Scenario #6: Journal Entries

After the comparisons, the entity has the necessary data to complete the required journal entries as follows:

- Record the change in fair value of the designated derivatives in Other Comprehensive Income:

Dr	Derivative Fair Value	20.0	
	Cr Other Comprehensive Income		20.0

- Reclassify a portion from Other Comprehensive Income to the Statement of Profit or Loss such that it reflects the target profile:

Dr	Other Comprehensive Income	0.98	
	Cr DRM Derivative Contribution		0.98

The income statement for the period is as follows:

Year	Financial assets	DRM Derivative Contribution	Financial liabilities	Imperfect Alignment	Total reported results
6/30/X3	19.6	0.98	(3.0)	0.0	20.6

However, the above is not complete as the entity must also reclassify the amounts in OCI associated with the previous strategy.

Scenario #6

The amounts to be re-classified based on the previous strategy are listed in the table below.



		Re – Pricing Bucket						
Benchmark Derivative	Float	12/31/X2	12/31/X3	12/31/X4	12/31/X5	12/31/X6	Fixed Rate	FV at end 20X2
20X2 Leg	(200)	200					1.50%	1
20X3 Leg	(200)		200				2.00%	25
20X4 Leg	(200)			200			2.50%	69
20X5 Leg	(200)				200		3.00%	100
20X6 Leg	(200)					200	4.00%	130.36
Total	(300)							

The amounts in the red box above must be re-classified over the original time horizon that they were transforming. For example, the 20X6 leg must be re-classified from the current period until 20X6. To do otherwise would imply a change in the reclassification pattern which is not permitted under the DRM accounting model.

Thank you

