Lisbon School of Economics & Management
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# MASTER
ACTUARIAL SCIENCE

## MASTER´S FINAL WORK
PROJECT REPORT

# ALLOCATION OF OPERATING COSTS UNDER THE INTERNATIONAL FINANCIAL REPORTING STANDARD (IFRS) 17

## A PRACTICAL APPROACH

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## Abstract and Keywords

This project examines the allocation of operating costs in life insurance companies under the International Financial Reporting Standard (IFRS) 17, a significant change from the previous IFRS 4 standard. It focuses on the practical adaptation of the General Model used by XYZ Life Insurance Company to the Modified IFRS 17 General Model, ensuring compliance with the new guidelines while providing a practical guide. The study explores the methodologies of cost allocation, illustrating the impact of IFRS 17 on financial reporting. By analyzing the transition, this project offers insights into the complexities and challenges posed by the new standard and presents a comprehensive framework for efficient cost allocation in the insurance sector.

Keywords: IFRS 17, Cost Allocation, Insurance Accounting, Insurance Financial Management, Transition Accounting.

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# 1. Introduction

Cost allocation in insurance companies is essential for determining product profitability, meeting regulatory requirements, and maintaining financial stability. With the introduction of the International Financial Reporting Standard 17[1] (IFRS 17), there have been significant changes in how these costs are categorized and allocated. The transition from IFRS 4 to IFRS 17 has brought challenges in how costs are determined and allocated.

In fact, with the advent of IFRS 17, a paradigm shift has occurred in the insurance industry's accounting and financial statement structuring, replacing the previous IFRS 4 framework. This new standard introduces enhanced comparability and transparency, enabling a more effective assessment of risks and financial performance for various insurance contracts more effectively. The heart of these advancements lies in the new measurement models tailored to specific insurance contract types and the recognition method for each contract's profit.

IFRS 17 goes further by clarifying previously vague areas, including defining insurance contracts, determining insurance risk, and specifying what constitutes a cost for an insurance contract. These nuanced definitions, although bringing more depth, also add complexity to what were once straightforward activities, necessitating organizational restructuring to align with the new standard.

Notably, while IFRS 17 provides a robust framework, it does not suppress individual company characteristics, allowing some room for interpretation. For instance, to classify an insurance contract under IFRS 17, it should bear a "Significant Insurance Risk". However, the definition for this risk relies on a test with guidelines rather than rigid rules, granting insurance companies some flexibility in interpretation. The standard diligently outlines what falls within its scope, emphasizing its relevance solely to the insurance industry. It spells out the kinds of contracts under its purview and elucidates cost allocation pertinent to those contracts based on their nature or origin.

Another challenge accompanying IFRS 17's implementation involves the transition of the Plano de Contas de Empresas de Seguro (PCES) – The accounting chart structured according to Portuguese accounting guidelines. Previously, with IFRS 4, PCES 4 provided guidance on chart account mapping. Under IFRS 17, with PCES 17, the way insurance costs are measured has changed, along with the associated chart account numbers. The advent of this new framework requires the development of tools to accurately allocate operating costs.

One of IFRS 17's strengths is its adaptability, tailoring itself to individual company needs. However, this can also introduce challenges. Cost allocation plays a pivotal role in insurance companies for product profitability, regulatory compliance, and ensuring financial health. The transition from IFRS 4 to IFRS 17 has reshaped cost categorization and allocation.

This project seeks to elucidate how a life insurer can navigate the challenges of operating cost allocation under IFRS 17. For a better understanding of the process, we have the aid of the XYZ Life Insurance Company, which will help us to illustrate the practical solutions to the issues raised by the standard. Historically, the company employed an internally developed model named "General Model" for cost allocation. However, with the advent of IFRS 17, it has become mandatory to adjust this model to comply with the new guidelines. The evolved version, named the “Modified IFRS 17 General Model”, prioritizes maintaining the original methodology. This ensures a consistent basis for comparison between costs under both IFRS 4 and IFRS 17. While the new standard offers deeper insights into how we evaluate and allocate costs for insurance

[1] https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2023/issued/part-a/ifrs-17-insurance-contracts.pdf?bypass=on.

contracts, preserving the initial methodology is crucial for a streamlined transition and accurate assessment of the impact between the two frameworks. Shifting the foundational methodology, although appealing, might complicate the transition assessment.

The structure of the paper unfolds as follows: Chapter 2 will delve into the key changes between IFRS 4 and IFRS 17, highlighting the transitional elements and the need for them. In Chapter 3, we will present the methodology behind the "General Model" for cost allocation used by the XYZ Life Insurance Company. We will adjust this model to align with the new IFRS 17 standard, resulting in the "Modified IFRS 17 General Model". Moving forward, Chapter 4 will present our findings and the outputs of the modified model to enhance understanding of the new standard. We will demonstrate how the "General Model" and the "Modified IFRS 17 General Model" are closely related and analyze the Key Performance Indicators of the new model. This project presents a holistic view of how an insurance company can allocate costs under IFRS 17. Even though we focus on the specific case of XYZ Life Insurance Company, the cost allocation methodology under IFRS 17 is designed to be independent of the methodologies of individual insurance companies. It primarily relies on the IFRS 17 standard and how a company can interpret and adapt to its guidelines, aiming to make the transition process as smooth and comparable as possible.

# 2. Transitioning from IFRS 4 to IFRS 17 - Key Changes and Implications for Cost Allocation

## 2.1 IFRS 17 vs. IFRS 4

In this section, we will provide a brief overview of the main differences between IFRS 4 and IFRS 17, including how an insurance contract is defined under IFRS 17 and the associated guidelines. We will also discuss briefly the different measurement approaches available under IFRS 17 - Building Block Approach (BBA), Variable Fee Approach (VFA) and Premium Allocation Approach (PAA) Variable Fee Approach - and highlight the primary challenges associated with each approach. Finally, we will focus on the specific challenge we are addressing—allocating costs under IFRS 4 and transitioning to IFRS 17. We will include a straightforward glossary and definitions of the IFRS 4 cost allocation model, which is currently being used, and describe the process for transitioning to IFRS 17.

### *2.1.1 International Financial Reporting Standards*

The International Financial Reporting Standards (IFRS) are accounting rules issued by the International Accounting Standards Board (IASB) to standardize financial statements globally, ensuring consistency, transparency, and comparability. According to the accounting news site IAS Plus,[2] IFRS 17 was adopted by 167 jurisdictions, including the European Union and countries as diverse as India and Canada. IFRS covers various accounting activities and mandates rules for business practices as the Statement of Financial Position, Statement of Comprehensive Income, Statement of Changes in Equity, Statement of Financial Performance and Statement of Cash Flows. Companies must also summarize their accounting policies, and parent companies must create separate reports for each subsidiary. IFRS are crucial for fostering global financial market

[2] https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs.

transparency and trust, facilitating investor analyses and comparisons between companies, and aiding auditing, tax assessment, and investment decisions.

### *2.1.2 The need for IFRS 17*

The introduction of IFRS 17 Insurance Contracts was a pivotal moment as it became the first global standard specifically designed for insurance contracts, replacing IFRS 4, which had been in force since 1 January 2005. IFRS 4 was initially implemented to minimize changes to the accounting practices of insurance companies, allowing them to adopt various accounting policies for similar contracts across different countries. However, this flexibility led to inconsistencies in the accounting models used across the insurance industry, hindering the ability to compare companies and industries. Prior to IFRS 17, different companies used various accounting methods to measure their insurance contracts, making it difficult for investors and other stakeholders to compare the financial performance and position of different entities.

IFRS 17 aims to resolve these issues by establishing a uniform set of principles for all accounting aspects of insurance contracts, thereby eliminating current inconsistencies, and enabling meaningful comparisons across companies, contracts, and industries. To address these challenges, IFRS 17 introduced the concepts of Contractual Service Margin (CSM), Risk Adjustment (RA), and Discounting. These elements were created to ensure that profits from insurance contracts are recognized over the period in which the service is provided, that the financial statements accurately reflect the entity's risk exposure, and that the present value of future cash flows is considered in the measurement of insurance contracts. It mandates consistent accounting for all insurance contracts, meaning a multinational company that previously consolidated its subsidiaries using different accounting policies, for identical types of insurance contracts written in different countries, will now consistently measure insurance contracts within the group under IFRS 17. This change simplifies the comparison of results by product and geographical area. Moreover, IFRS 17 offers detailed guidelines on defining an insurance contract, characterizing insurance risk, recognizing profit, and measuring it using the Building Block Approach, Variable Fee Approach, and Premium Allocation Approach, which enhances comparability. Ultimately, the varying accounting practices for insurance contracts under IFRS 4 will be superseded by IFRS 17, promoting consistency, and simplifying comparisons across the board.

| Today—a lack of comparability | Tomorrow—a consistent framework |
|---|---|
| ***Comparability among companies*** | |
| **Accounting for insurance contracts varies significantly** between companies operating in different jurisdictions. For example:<br>• Some companies recognise as revenue all premiums received; others exclude from their reported revenue any saving components received through premiums.<br>• Some companies capitalise and amortise over years the costs incurred in issuing new insurance contracts; others expense these costs when incurred.<br>• Some companies use updated discount rates to measure their insurance contracts; others use historical discount rates.<br>These differences prevent meaningful comparisons between companies. | **Companies will apply a consistent accounting framework for all insurance contracts.** Many insurance accounting differences will be removed, enabling investors and analysts to properly identify economic and risk similarities and differences between companies issuing insurance contracts. |
| ***Comparability among insurance contracts*** | |
| **A multi-national group is allowed to consolidate subsidiaries using non-uniform accounting policies** as insurance contracts can be measured applying the relevant local accounting requirements of each jurisdiction. This results in a lack of comparability between insurance contracts issued by the same group in different jurisdictions. | **A multi-national group will measure insurance contracts in a consistent way within the group**, increasing the comparability of its results by product and geographical area. |
| ***Comparability among industries*** | |
| **Some companies present cash or deposits received as revenue.** This is contrary to the accounting applied in other industries, and in particular the banking and investment-management industries. | **Revenue will reflect the insurance coverage provided, excluding saving components**, like any other industry, increasing comparability and understanding of the income statement of companies issuing insurance contracts. |

*Table 1- IFRS 4 Vs IFRS 27*

**Source:** The forthcoming IFRS® insurance contracts Standard, ifrs.org

## 2.2 Some IFRS 17 Concepts

The concepts of Contractual Service Margin, Risk Adjustment, and Discounting are crucial in understanding the financial dynamics of insurance contracts under IFRS 17. These concepts have implications on how insurance companies recognize profits, and value future cash flows. While this chapter provides an overview of these concepts, the focus of this work is primarily on the implications of IFRS 17 for cost allocation. As such, we will not delve into the detailed computations of CSM, RA, and Discounting, as those computations, although essential, fall outside the scope of our primary focus. Still, we must refer that the intricate computations involved in CSM, RA, and Discounting involve specialized knowledge and technical expertise in financial accounting and actuarial science. For a comprehensive understanding of these complexities, readers can refer to Institute and Faculty of Actuaries (2020) and Society of Actuaries (2021).

### 2.2.1 Contractual Service Margin

The Contractual Service Margin is a component introduced by IFRS 17 that fundamentally changes how insurance companies recognize profits from their contracts. Essentially, the CSM encapsulates the unearned profit that an insurance company expects to earn over the duration of providing insurance coverage. This concept is crucial as it aligns the recognition of profits with the provision of services, ensuring that profits are not recognized upfront but rather spread over the period in which the insurance coverage is provided. This shift is instrumental in providing a more accurate and realistic depiction of an insurance company's financial performance over time.

### 2.2.2 Risk Adjustment

The Risk Adjustment is another vital element introduced by IFRS 17, designed to quantify the compensation an entity requires for bearing the non-financial risk associated with an insurance contract. This is essential as it mandates the explicit recognition and measurement of the risks inherent in insurance contracts. By doing so, IFRS 17 ensures that the financial statements provide a more accurate depiction of an entity's risk exposure, ultimately facilitating better decision-making by users of the financial statements.

### 2.2.3 Discounting

Discounting is a key requirement under IFRS 17, which necessitates entities to discount the cash flows associated with insurance contracts. This is to account for the time value of money and the financial risks linked to those cash flows. By mandating that financial statements reflect the present value of future cash flows, IFRS 17 ensures a more accurate portrayal of an entity's financial position, which is fundamental for the stakeholders' decision-making processes.

## 2.3 Three different measures for IFRS 17

IFRS 17 is recognized as a significant improvement over IFRS 4, particularly in its approach to measuring individual insurance contracts. Under IFRS 17, all contracts that fall within its scope are to be categorized into one of three measurement models - Building Block Approach (BBA), Variable Fee Approach (VFA) or Premium Allocation Approach (PAA), based on their specific features. These models each dictate distinct procedures for recognizing profits and losses, catering to the varied ways contracts account for these financial shifts. The specifics of how each model is applicable will be elaborated next, as we discuss the three methods in detail.

### 2.3.1 Building Block Approach

The Building Block Approach, sometimes referred to as the General Measurement Model (GMM), is a cornerstone of IFRS 17. It is the model used to measure the liability for remaining coverage and the liability for incurred claims for most insurance contracts.

The Building Block Approach consists of the following four components:

1. Estimate of Future Cash Flows: This represents the expected cash inflows and outflows that will arise as the insurance company provides coverage and settles with policyholders. The estimation involves making assumptions about various uncertain future events, like the frequency of claims, the size of claims, administrative expenses,

etc. These cash flows must be projected in a neutral manner, without bias, and should reflect the range of possible outcomes and the respective probabilities.

2. Adjustment for Time Value of Money (Discounting): Given that insurance contracts can span many years, it is crucial to account for the time value of money. The future cash flows are therefore discounted to present value terms using a current discount rate that reflects the characteristics of the cash flows.

3. Risk Adjustment for Non-financial Risk: This is an addition to the present value of the future cash flows to account for the uncertainty and risk inherent in the estimated cash flows. It represents the compensation an insurer requires for bearing the uncertainty of the amount and timing of the cash flows.

4. Contractual Service Margin: The CSM is a component of the liability that reflects the unearned profit the insurer expects to earn from a non-onerous insurance contract, i.e.,

$$CSM = PV\ of\ future\ cash\ inflows - PV\ of\ future\ cash\ outflows - Risk\ Adjustment \quad (1)$$

The total net liability for the insurance contract is the sum of the above four building blocks. The BBA provides a comprehensive framework to reflect the current value of future cash flows, adjusted for risk and time value, and to recognize profit over the coverage period, ensuring more transparent and relevant information for users of financial statements. Refer to Figure 1 below for a visual representation of this concept.

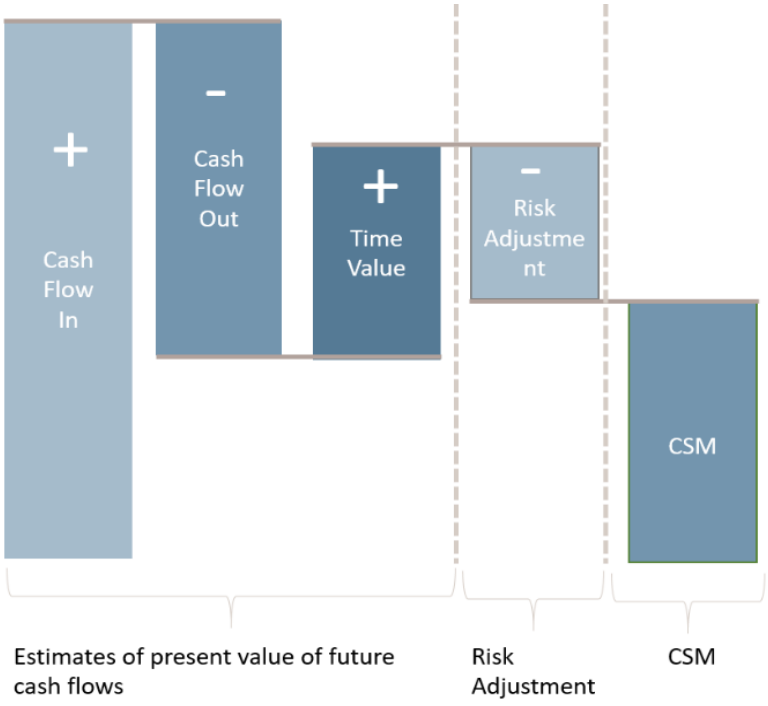


*Figure 1 - IFRS 17 General Measurement Model (GMM) explained.*
Source: [The new IFRS 17 disclosure in short - What needs to be in the financial statement (ifrs17explained.com)]

### *2.3.2 Variable Fee Approach – A variant of BBA*

The Variable Fee Approach under IFRS 17 is a specialized adaptation of the Building Block Approach but tailored for certain types of insurance contracts, specifically those that share in the returns of underlying items, such as investment assets. These are often termed participating or with-profit contracts.

Direct Link to Underlying Items: At its core, the VFA adjusts the insurance contract liability based on changes in the fair value of the underlying items. This link is essential for contracts where the policyholder's benefits are directly affected by the performance of these items.

Contractual Service Margin (CSM): The CSM under the VFA works similarly to the BBA, representing the unearned profit from the contract. However, its measurement and subsequent changes are adapted to consider the variability of fees from the underlying items:

1. Adjustment for Financial Market Movements: Instead of just being adjusted for changes in cash flow estimates (as in BBA), the CSM under VFA is also adjusted for changes in financial assumptions related to the underlying items. This captures the variable nature of the fees.
2. Release Mechanism: The release of the CSM to profit or loss still follows the pattern of services provided, but it is also adjusted based on the quantity of benefits provided and any changes in those benefits resulting from the contract's variable nature.
3. Changes in Financial Assumptions: Unlike the BBA, where changes in financial assumptions (like discount rates) are typically recognized in other comprehensive income (OCI), the VFA recognizes these changes in the profit and loss statement to the extent that they relate to the underlying items. This ensures consistent treatment between the liability and the associated assets.
4. Risk Adjustment: The risk adjustment is still there, reflecting the compensation the insurer requires for bearing the uncertainty about the amount and timing of cash flows. But, given the direct link to underlying items in VFA contracts, it might also consider the variability from those items.

In essence, the Variable Fee Approach provides a measurement model for insurance contracts where the benefits to the policyholder are directly linked to the returns of underlying items. The VFA ensures that the financial statements reflect this linkage and the variability it brings to the insurer's obligations and profits. Refer to Figure 2 below for a visual representation of this concept.

(KPMG - Insurance Contracts under IFRS 17, 2020)

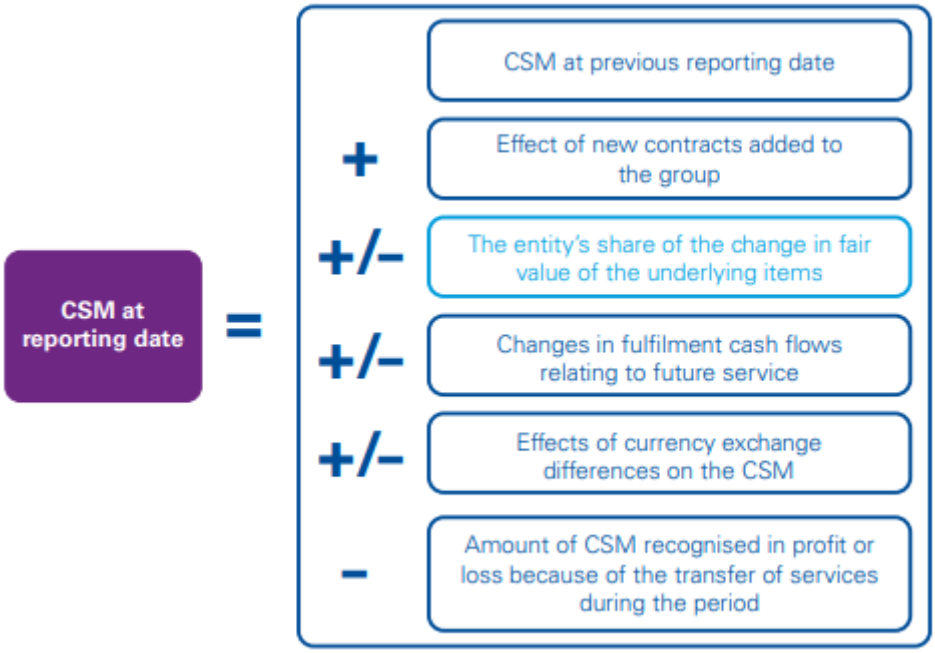


*Figure 2- Measuring CSM under Variable Fee Approach*
Source: KPMG - Insurance Contracts, First Impressions: 2020 edition, IFRS 17

### *2.3.3 Premium Allocation Approach*

The Premium Allocation Approach (PAA) is an alternative to the Building Block Approach (BBA) and the Variable Fee Approach (VFA). In essence, the PAA provides simplified accounting treatment for these types of contracts. It is designed for insurance contracts that provide coverage for a short duration or where using the BBA or VFA would not provide a materially different result from the PAA.

Next, follows a brief description of the Premium Allocation Approach:

1. Liability for Remaining Coverage (LRC):
   - Initial Recognition: At the inception of the contract, an entity recognizes a liability for the remaining coverage, typically equal to the premium received or due from the policyholder, less any acquisition costs.
   - Subsequent Measurement: Over the coverage period, this liability is reduced based on the coverage provided, and this reduction is typically done on a straight-line basis unless another systematic basis is more representative.
   - Adjustment: If there are changes in expectations of future cash flows (e.g., because of a premium refund or rebating), or if there is a change in the risk associated with the remaining coverage, the liability for remaining coverage is adjusted.
2. Liability for Incurred Claims (LIC):

Once a claim is incurred under the contract, liability for that claim is recognized. This liability is measured as the estimated amount of the claim, including estimates for claims incurred but not yet reported, discounted (if material).

3. Simplification & Practical Expedients:

- Simplifications: If at the inception of the contract, the coverage period is 12 months or less, an entity can opt not to adjust the LRC for changes in expected cash flows or discount the liability, providing a more straightforward approach.
- Assumption Updates: If the coverage period extends beyond a year, and there is a significant financing component, then the entity may need to adjust for the time value of money. However, if the entity expects that such adjustments would not be material, they can also opt not to make them.
- Eligibility: Not all insurance contracts can be measured under PAA. It is appropriate when the coverage period is short or when performing a detailed BBA or VFA assessment would not produce materially different results compared to PAA.

This approach offers a simplified method for particular insurance contracts under IFRS 17. It reduces complexity in situations where the detailed BBA or VFA methodologies might not provide substantial additional value.

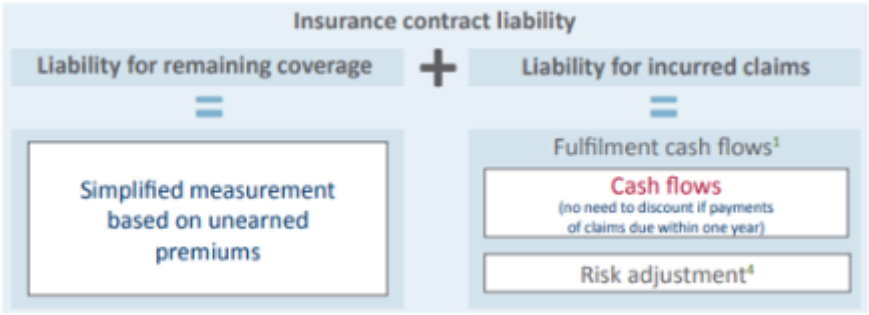


*Figure 3- IFRS 17 PAA (premium allocation approach) presentation explained.*
Source: https://ifrs17explained.com/2018/10/24/ifrs-17-model-summarized/

# 3. Cost Allocation Models and Methodologies

## 3.1 General Model of the Costs Allocation

We start this chapter with the discussion of the costs allocation model that was developed by XYZ Life Insurance Company under IFRS 4, named the 'General Model'. This decision serves two purposes:

(i) to illustrate a solution to the cost allocation problem before IFRS 17, perhaps not too different from the solutions adopted by other companies.

(ii) to make it easier to identify what is going to change in practice.

Firstly, we will detail the "General Model" methodology and explain our cost allocation approach by categorizing them into two main types: non-modelled and modelled costs. Non-modelled costs, such as commissions or fees, are directly associated with specific products. In contrast, modelled costs, like personnel expenses, are first channeled through specific activities before being allocated. The Activity Based Cost (ABC) method is used for "modelled" costs, emphasizing activities, whereas "non-modelled" costs are straightforwardly linked to products. Our approach provides a defined framework for cost distribution, with non-modelled costs allocated directly to products, and modelled costs distributed based on activity hours across functions, that will later be allocated to products based on a given driver.

XYZ Company developed the General Model for cost allocation based on the IFRS 4 Standard, relying on the "Plano de Contas das Empresas de Seguro 4" (PCES 4) for the mapping of the chart accounts. The Plano de Contas de Empresas de Seguros (PCES) is an accounting framework for insurance companies where are presented the guidelines of chart accounts for a given Standard. A detailed explanation of PCES will be covered later in this chapter. With the new IFRS 17 and upcoming "Plano de Contas das Empresas de Seguro 17" (PCES 17), the Company is updating this model to comply with the associated changes. Section 3.1. details the model's principles and its approach to cost allocation under IFRS 4, relying on the mapping of PCES 4.

To help understand the General Model, several definitions must be introduced. The model relies heavily on the Activity-Based Cost (ABC) method, which will be further explained.

### *3.1.1 Activities*

Within the framework of activity-based costing, an activity refers to a specific action or task that consumes resources within an organization. Unlike direct costs tied to individual products, an activity represents a more complex and indirect allocation. It encompasses various underlying expenses and efforts that contribute to the overall production or delivery process but cannot be attributed directly to a single product.

### *3.1.2 Functions*

Cost allocation by function predates the introduction of IFRS 17. The practice was in place during the IFRS 4 era and has continued under the new standard. In Portugal, as highlighted by the "Plano de Contas para as Empresas de Seguros (PCES)", a systematized cost allocation approach is emphasized. The directive outlined in PCES mandates the classification of costs by specific functions. These functions encompass Claims Costs,

Operational Costs (sub-divided into Acquisition and Administrative Costs), Investment Costs, and a specific function related to the management of pension funds. Insurance companies are directed to allocate costs, originally recorded by their nature, to these functions as applicable. This organized structure, retained in IFRS 17, emphasizes the importance of structured cost attribution in ensuring clarity and aiding stakeholder decision-making.

### *3.1.3 Products*

Company XYZ assigns numerical codes to its products, with each code reflecting both a modality and a version. For instance, in Table 2, we can see the product code 4203 which can be broken down as follows: the "42" modality might denote an annuity, while the "03" version indicates periodic payments.

| Code of the product | Modality | Version |
|---|---|---|
| 4200 | 42 | 00 |
| 4602 | 46 | 02 |
| 4203 | 42 | 03 |
| 5830 | 58 | 30 |

Table 2 - Products

### *3.1.4 Drivers*

The allocation driver is defined as a variable that measures the (%) proportionate cost that should be allocated to a given product or activity. This measure has the mission of providing insight into the causes of fluctuations in the costs, allowing the identification of the factors that push them. Examples of the drivers associated with products are the number of policies outstanding, the number of claims, provisions, volume of claims, the number of policies with a unique payment, the number of policies with a periodic number of payments, volume of premiums, etc. Since we also must allocate costs to the activities in the case of modelled costs, we use the number of hours as an allocation driver.

### *3.1.5 Activity-Based Costing Methodology*

Activity-Based Costing is a method that assigns costs based on the activities responsible for those costs, providing a detailed view of resource use and expenses. Instead of broad allocations often used in traditional costing, ABC pinpoints specific activities, making cost estimations more accurate. The process involves:

1. Identification of Activities - While traditional costing methods often look primarily at production volumes, ABC begins by identifying all the activities that are performed within a given process or organization. This could range from procurement activities to quality checks.
2. Assign Costs to Activities - Direct costs are allocated straight to the activities. Overhead or indirect costs, which traditional models might allocate based on a single driver (like machine hours), are allocated based on multiple drivers in ABC. Costs are assigned to activities based on the resources they consume. This allows for a more granular understanding of how resources are used within the organization.

3. Determine Activity Drivers - For each activity identified, a cost driver is chosen. This driver should be the primary factor that causes the cost of the activity to increase or decrease. By choosing the right driver, ABC ensures that costs are allocated in a manner that closely mirrors actual resource usage.
4. Assign Activity Costs to Products - After costs have been assigned to activities, they are then allocated to products based on how much of each activity they use. This is done by quantifying each product's consumption of the activity drivers. This step ensures that products are costed based on the actual activities required for their production or delivery, leading to a more accurate understanding of profitability.
5. Continuous Review and Analysis - ABC is not a one-time process. As activities evolve, their costs and the drivers that influence them might change. Regular reviews ensure the model stays relevant. This method often uncovers non-value-adding activities, leading to process improvements and cost reductions.

### *3.1.6 Modelled costs*

Within the domain of cost allocation, particularly as it relates to insurance products, modelled costs represent a distinct category of expenses. Unlike costs that can be directly linked to individual products, modelled costs require a more nuanced approach to allocation. Utilizing the Activity-Based Costing method[3], these costs are first attributed to specific activities, based on the number of hours dedicated to the different functions. Subsequently, they are distributed across various functions and ultimately to the products themselves. The charter accounts linked with modelled costs facilitate this layered allocation, ensuring a systematic distribution in alignment with organizational practices. After the activities are assigned, allocation drivers are employed to channel the total value accurately to the products.

Unlike non-modelled costs, which are directly allocated, modelled costs are distributed using a hierarchical structure that begins with activities and progresses through functions to products, in a procedure with six steps.

1. First, it is necessary to create a matrix that includes the weight of each activity to be allocated to a specific chart account. For clarity and simplicity, we will consider five representative activities:

| Task name | Type of activity | Nº of hours | % Costs to be allocated |
|---|---|---|---|
| Investments and control | Suport | 41 | 17% |
| Solvency II Regulation | Risk | 28 | 11% |
| Suporting IFRS17 activities | Management | 150 | 61% |
| Reporting and supervision | Suport | 28 | 11% |

*Table 3 - General Model - Modelled Costs – % Costs to be allocated to activities*

To determine the percentage of the cost for allocation to a task, we use the formula:

$$\%\ of\ the\ cost\ to\ be\ allocated\ to\ the\ task = \frac{n^{o}\ of\ hours\ of\ the\ given\ activity}{total\ n^{o}\ of\ hours\ of\ the\ tasks\ represented} \quad (2)$$

[3] *BCAS 14: Activity Based Costing (ABC).*

Table 3 indicates that, for instance, 17% of the modelled costs are allocated to the "Investment and control" activity, calculated as (41 / 247 = 0.17). This logic is consistently applied to the other activities as well.

2. In step 2 a matrix is created where we have the number of hours of activity and the allocation % to each function as an input, see Table 4 for an illustration.

| Task name | Type of activity | Nº of hours | Claims | Aquisition | Administration | Investments | Pension Funds |
|---|---|---|---|---|---|---|---|
| Investments and control | Suport | 41 | 0% | 0% | 0% | 100% | 0% |
| Solvency II Regulation | Risk | 28 | 0% | 25% | 50% | 0% | 25% |
| Suporting IFRS17 activities | Management | 150 | 0% | 0% | 100% | 0% | 0% |
| Reporting and supervision | Suport | 28 | 0% | 0% | 50% | 50% | 0% |

Table 4 - General Model - Modelled Costs – Allocation of the number of hours by % to each function

3. The next step, with the data and methodology in place, is to calculate the percentage of the total cost that will be allocated to an activity's respective function by:

$$\%\ Cost\ to\ be\ allocated\ to\ the\ function = \%\ Cost\ to\ be\ allocated \times Weight\ of\ the\ activity \quad (3)$$

In Table 5 below we can see how the display would be.

| Task name | Type of activity | Nº of hours | % Costs to be allocated | Claims | Aquisition | Administration | Investments | Pension Funds |
|---|---|---|---|---|---|---|---|---|
| Investments and control | Suport | 41 | 17% | 0% | 0% | 0% | 17% | 0% |
| Solvency II Regulation | Risk | 28 | 11% | 0% | 3% | 6% | 0% | 3% |
| Suporting IFRS17 activities | Management | 150 | 61% | 0% | 0% | 61% | 0% | 0% |
| Reporting and supervision | Suport | 28 | 11% | 0% | 0% | 6% | 6% | 0% |

*Table 5 - General Model - Modelled Costs – % Cost to be allocated to the function.*

From Table 5, it is evident that the Solvency II Regulation accounts for 11% of XYZ Company's total modelled costs. Of this 11%, 3% is allocated to acquisition functions, 6% to administration functions, and 2% to pension funds function.

4. Step 4 is the cost allocation to products by function. Following the modelled costs methodology previously discussed, there is an essential two-phase allocation in step 4: initially, costs are allocated to functions, and then, they transition to products. This allocation from functions to products is guided by specific drivers. Table 6 below showcases the input driver matrix for these modelled costs.

| | Drivers of allocation cost | | | | | |
|---|---|---|---|---|---|---|
| Type of functions | Pension Funds | Number of polices | Number of new polices | Number of claims | Volume of provisions | Volume of claims |
| Claims | 0% | 0% | 0% | 50% | 0% | 50% |
| Acquisition | 0% | 0% | 100% | 0% | 0% | 0% |
| Administration | 0% | 100% | 0% | 0% | 0% | 0% |
| Investments | 0% | 0% | 0% | 0% | 100% | 0% |
| Pension Funds | 100% | 0% | 0% | 0% | 0% | 0% |

*Table 6 - General Model - Modelled Costs – Driver matrix by function.*

From the above matrix, we discern the influence of each driver on the distribution of costs previously allocated to functions. For instance, costs related to 'Claims' will be distributed based on both the number and volume of the claims.

5. In step 5, we allocate costs to products using defined drivers, as mentioned earlier. This constitutes step 5. To ascertain the specific allocation for each product, we first

determine the product's weight within its respective function, directed by the associate drivers. The allocation for each function can be calculated using the following formulas:

$$\%\ product\ on\ Claims\ function = \frac{Vol.\ of\ claims\ of\ product_i}{Total\ vol.of\ claims} \times 50\% + \frac{Nº\ of\ claims\ of\ product_i}{Total\ Nº\ of\ claims} \times 50\% \quad (4)$$

$$\%\ product\ on\ Acquisition\ function = \frac{Nº\ of\ new\ policies\ of\ product_i}{Total\ Nº\ of\ new\ policies} \quad (5)$$

$$\%\ product\ on\ Administration\ function = \frac{Nº\ of\ policies\ of\ product_i}{Total\ Nº\ of\ policies} \quad (6)$$

$$\%\ product\ on\ Investment\ function = \frac{Volume\ of\ provisions\ of\ product_i}{Total\ Volume\ of\ provisions} \quad (7)$$

$$\%\ product\ on\ Pension\ Funds\ function = \frac{1}{Number\ of\ pension\ funds} \quad (8)$$

Table 7 below showcases this methodology applied to an example where we have five products.

| | Drivers of allocation cost | | | | |
|---|---|---|---|---|---|
| Products | Claims | Aquisition | Administration | Investments | Pension Funds |
| 0579 | 8% | 37% | 8% | 23% | 17% |
| 2812 | 35% | 28% | 25% | 15% | 11% |
| 4225 | 17% | 4% | 1% | 14% | 17% |
| 6410 | 3% | 22% | 54% | 36% | 5% |
| 6787 | 36% | 8% | 11% | 11% | 50% |

*Table 7 - General Model - Modelled Costs – % Cost to be allocated to the function by product.*

6. The final step is the allocation of costs to products. The cost to be allocated to each product can be given by the following formula:

$$Cost\ allocated\ to\ product_i = \sum_j Total\ Cost\ Allocated\ to\ Function_j * Driver\ of\ product_{ij} \quad (9)$$

where *i* is a given product, and *j* is the index associated to the functions.

In Figure 4, we clearly illustrate the process of cost allocation to products using the designed methodology for modelled costs. Initially, costs are assigned based on activities. Subsequently, each activity is allocated to a function corresponding to its nature (note that an activity can encompass multiple natures; for instance, the "Claim Management" activity's costs are distributed between the Claims and Administration

functions). Finally, each function, with its inherent drivers, allocates the costs to the respective products.

| Type of Cost | Activity | Function of allocation | Drivers |
|---|---|---|---|
| Modelled costs | Activity | Claims | Drivers Product A x Cost of the activity<br>Drivers Product B x Cost of the activity |
| | | Aquisition | Drivers Product A x Cost of the activity<br>Drivers Product B x Cost of the activity |
| | | Administration | Drivers Product A x Cost of the activity<br>Drivers Product B x Cost of the activity |
| | | Investment | Drivers Product A x Cost of the activity<br>Drivers Product B x Cost of the activity |
| | | Pension funds | Drivers Product A x Cost of the activity<br>Drivers Product B x Cost of the activity |

*Figure 4 - Allocation - Modelled Costs*

### *3.1.7 Non-modelled costs*

In contrast to modelled costs, which necessitate a layered allocation approach, non-modelled costs have a direct connection to specific products. They rely on charter accounts that can be straightforwardly allocated, eliminating the need for an overarching activity-based structure. Non-modelled costs might encompass elements like a distinct commission or fee exclusively associated with a product. Essentially, such costs are intrinsically linked to a single allocation driver. This direct correlation streamlines the allocation process, offering a more transparent and direct methodology.

Next, we will explain the methodology (with three steps) and provide examples of how the non-modelled costs are being allocated to the products. Most of these costs come from commissions and fees from the funds that the products are associated with. One of the main problems with this part is the fact that most of the products have one or more funds associated with them, and most funds have one or more products associated.

First, a matrix is created where each product is associated with every fund.

| Code of the product | Modality | Version | Fund 1 | Fund 2 | Fund 3 | Fund 4 | Fund 5 | Fund 6 |
|---|---|---|---|---|---|---|---|---|
| 4200 | 42 | 00 | 184 | 185 | 186 | 183 | | |
| 4202 | 42 | 02 | 190 | 191 | 192 | | | |
| 4203 | 42 | 03 | 190 | 191 | 192 | | | |
| 4800 | 48 | 00 | 559 | 560 | 561 | 573 | 579 | 586 |
| 9200 | 92 | 00 | 853 | 858 | 863 | 883 | | |
| 9201 | 92 | 01 | 853 | 858 | 863 | 866 | | |
| 9202 | 92 | 02 | 853 | 858 | 863 | | | |
| 9203 | 92 | 03 | 858 | 863 | 893 | | | |

*Table 8 - General Model - Non-Modelled Costs – Association between products and funds*

In the matrix above, Table 8, we can observe, for instance, that product 4200 has the funds 184 185, 186 and 183 associated with it. The corresponding description “Fund 1”, “Fund 2”, etc. are merely representative of the cardinality of the associated fund. For

example, in this case, the product 9202 has four funds with it (853, 858, 863 and 893 respectively).

1. As was said before, a product can be associated with more than one fund, and a fund can be associated with more than one product, therefore a proxy of the allocation cost from the fund to each product is the proportion of the provisions of the product on the fund with the total provision of the fund. This is step 2.

$$\%\ of\ the\ Fund\ cost\ to\ allocat\ to\ the\ product = \frac{Provision\ of\ the\ product\ on\ the\ fund}{Total\ provision\ on\ the\ fund} \quad (10)$$

| Code of the product | Modality | Version | Fund 1 | Fund 2 | Fund 3 | Fund 1 | Fund 2 | Fund 3 |
|---|---|---|---|---|---|---|---|---|
| 4200 | 42 | 00 | 184 | 185 | 186 | 100% | 0% | 0% |
| 4202 | 42 | 02 | 190 | 191 | 192 | 52% | 54% | 73% |
| 4203 | 42 | 03 | 190 | 191 | 192 | 48% | 46% | 27% |
| 4800 | 48 | 00 | 559 | 560 | 561 | 100% | 100% | 100% |
| 9200 | 92 | 00 | 853 | 858 | 863 | 7% | 0% | 1% |
| 9201 | 92 | 01 | 853 | 858 | 863 | 42% | 38% | 39% |
| 9202 | 92 | 02 | 853 | 858 | 863 | 1% | 0% | 0% |
| 9203 | 92 | 03 | 858 | 863 | 893 | 0% | 2% | 1% |

*Figure 5 - General Model - Non-Modelled Costs – Association between products and % of the fund cost to allocate to a product.*

In the matrix above, we can observe the expression of each product in the respective fund. For example, the provision of fund 184 comes exclusively from product 4200, in this way the management commissions that are directly linked to this fund must be allocated to this product (100%). In the line below, we can see that the product 4202 has some funds associated with it (190, 191, 192) that are also associated with other products, and we can also see that the expression of this product on these funds is 52%, 54%, and 73%, correspondingly.

There are some cases where the fund is associated with some products but there are no provisions, like for example funds 185 and 186. This type of case occurs when the funds are about to close but they still have outstanding commissions or fees to be paid, we must use the formula below:

$$\%\ of\ the\ fund\ cost\ to\ allocat\ to\ the\ product = \frac{1}{Nº\ of\ the\ products\ associated\ to\ the\ fund} \quad (11)$$

2. In step 3, the allocation cost to each product is given by the multiplication of the driver with the adjacent cost of the corresponding fund.

$$Cost\ allocated\ to\ product = \sum_{i=1}^{n} \%\ of\ the\ product\ fund_i * Cost\ of\ the\ fund_i \quad (12)$$

where *i* is a fund associated with the product.

Figure 6 clearly illustrates the allocation of non-modelled costs to products using the previously designed methodology. Costs are directly assigned to products based on their inherent allocation drivers. The allocation function for each cost is predetermined by the nature of its chart account. For instance, costs associated with a fund commission would have their function defined as "investment".

| Type of Cost | Drivers | Function of allocation |
|---|---|---|
| Non modelled costs | Drivers Product A x Cost of the function<br>Drivers Product B x Cost of the function | Claims |
| | Drivers Product A x Cost of the function<br>Drivers Product B x Cost of the function | Aquisition |
| | Drivers Product A x Cost of the function<br>Drivers Product B x Cost of the function | Administration |
| | Drivers Product A x Cost of the function<br>Drivers Product B x Cost of the function | Investment |
| | Drivers Product A x Cost of the function<br>Drivers Product B x Cost of the function | Pension funds |

*Figure 6 - Allocation – Non-Modelled Costs*

## 3.2 PCES 4 vs. PCES17

The 'Plano de Contas de Empresas de Seguros' (PCES) is a structured framework providing optional guidelines for mapping in Portuguese insurance accounting. It is important to note that PCES4[4] and PCES17[5] are not directly linked to the International Financial Reporting Standards (IFRS), as they are voluntary reference tools made available by the ASF to assist companies operating in the Portuguese market. While PCES 4 (linked to IFRS 4) and PCES 17 (linked to IFRS 17) share foundational principles, the transition to IFRS 17 introduces nuanced changes, especially concerning 'eligible costs'. This chapter delves into the similarities and differences between the two, highlighting the implications of these shifts.

Under both PCES 4 and PCES 17, costs are initially documented under account #68, titled "Costs by type to allocate." Following this initial recording, these costs are then shifted to another account for allocation to products. For illustration, expenses stemming from

[4] Norma Regulamentar n.º 10/2016-R, de 15 de Setembro PLANO DE CONTAS PARA AS EMPRESAS DE SEGUROS.

[5] Norma Regulamentar N.º 9/2022-R, DE 2 DE NOVEMBRO PLANO DE CONTAS PARA AS EMPRESAS DE SEGUROS.

services get their initial recording in account #681 - Supplies and external services, before being moved to an allocated cost account. This procedure is consistent between PCES 4 and PCES 17.

A striking similarity between PCES 4 and PCES 17 is the classification of costs based on their functional attributes. As we discussed earlier, there are five predominant cost functions:

1. Claims – Costs associated with claim management.
2. Acquisition – Costs related to procuring new contracts, such as those for telemarketers.
3. Administrative – Costs tied to daily business operations.
4. Investment – Costs related to investments, like commissions.
5. Pension Funds – Costs specifically tied to Pension Funds.

### *3.2.1 PCES 4*

Under the guidance of PCES 4, which is linked with IFRS 4, there was a significant emphasis on the inherent nature of costs when it came to allocation. The first step in this process involved recording costs in account #68. Subsequent to this initial documentation, these costs underwent a transition for allocation to specific products.

Detailing the cost allocation journey, as illustrated in Figure 7:

1. Costs were initially earmarked to their appropriate functional chart accounts, effectively categorizing them based on specific functions like claim management or administrative operations.

2. Post this functional categorization, these costs underwent further differentiation based on their type, be it claims, investments, or administrative in nature.

3. Upon categorization by function and type, the costs were then meticulously allocated to the appropriate products.

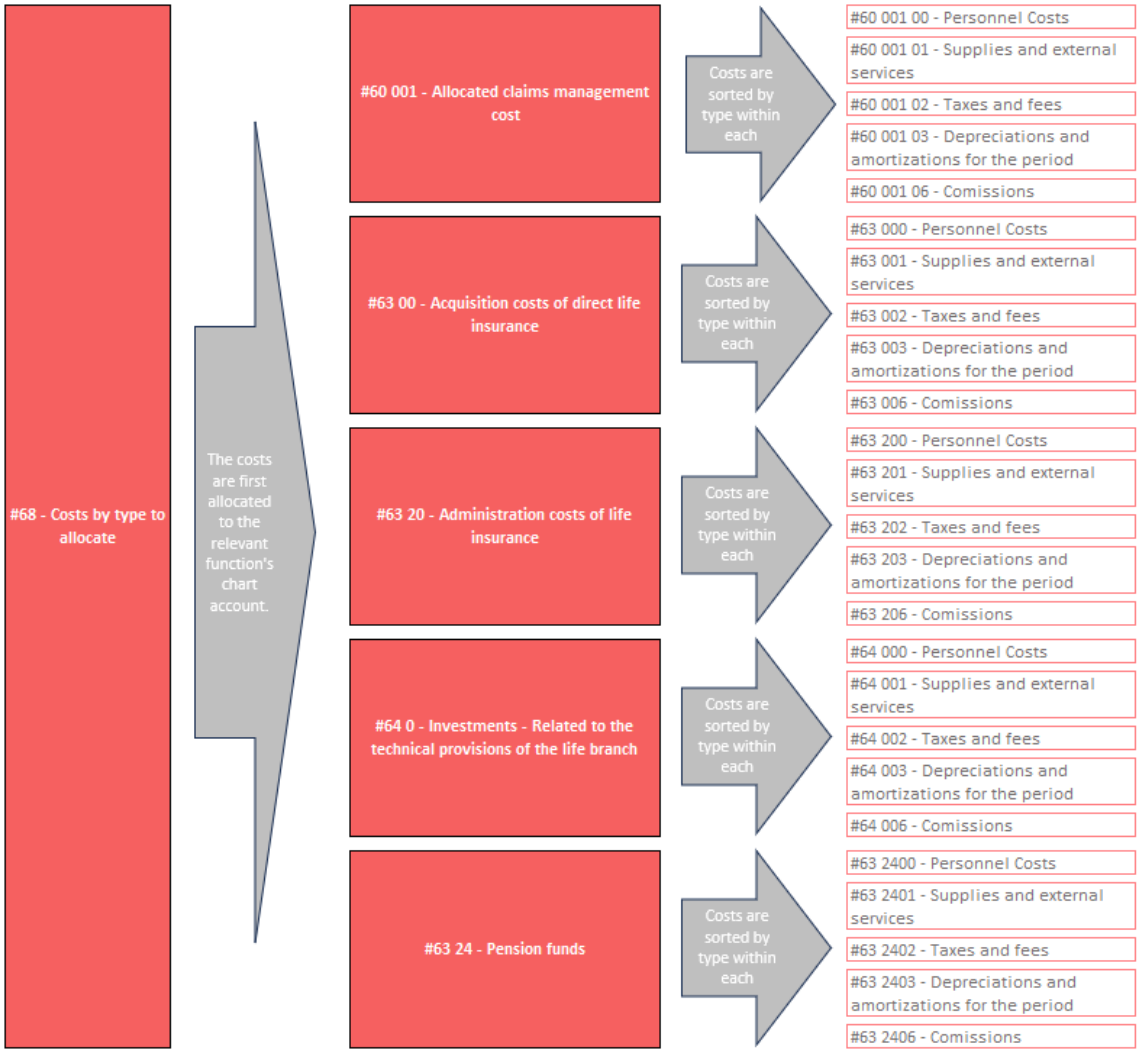


*Figure 7 - PCES 4 - Chart accounts allocation*

### *3.2.2 PCES 17*

In PCES 17, under IFRS 17 directives, the allocation approach differs from PCES 4. This shift centers around 'eligible costs'. While account #68's initial recording stays consistent, IFRS 17 prioritizes cost eligibility by its type, activities, and related product. Under PCES 17, costs are grouped into:

1. Eligible costs for eligible products (#600 – Expenses of life insurance contracts)
2. Non-eligible costs for eligible products (#630 - Costs not attributable to insurance contracts)
3. Costs for non-eligible products (#631 – Expenses of contracts seen as investment contracts for accounting).

To allocate costs in IFRS 17: categorize by eligibility and function, assign to products, map to the appropriate chart account, then split by cost type.

The figure below illustrates this allocation process. With IFRS 17, chart account mapping, especially for eligible costs, is more complex. Remark that non-contractual costs go to #634, and pension fund costs to #633.

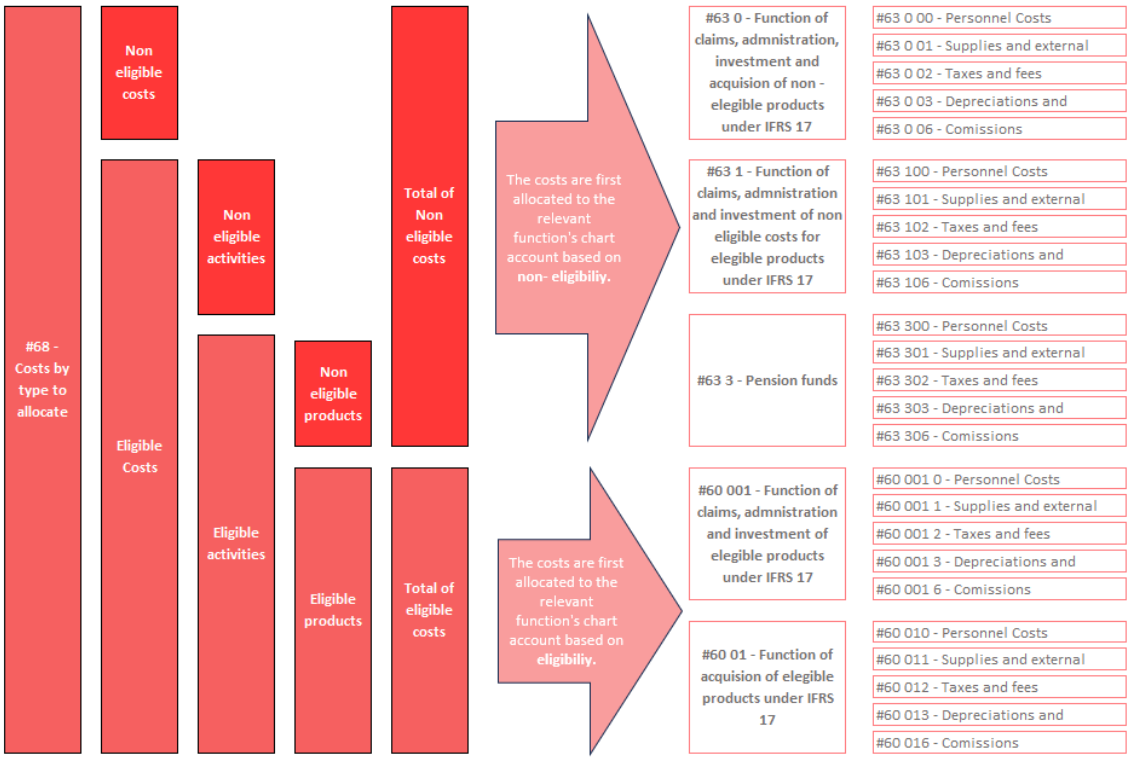


*Figure 8 - PCES 17 - Chart accounts allocation*

## 3.3 Modified General Model of the Costs Allocation

The previously outlined General Model forms the foundation for the IFRS 17 Allocation Cost's Model, from now on named 'New General Model'. Its core logic and allocation methodology through drivers remain unchanged, facilitating a seamless transition from IFRS 4 to IFRS 17. This adapted model will incorporate filters for IFRS 17 eligibility, considering new information such as activity, account, and product eligibility. This chapter will explore the selection process for eligible activities, chart accounts, and products and how they will be incorporated into the new model. Later, we will also define the mapping of chart accounts under PCES 17.

### *3.3.1 Cost allocation of eligible costs under IFRS 17*

To establish if a cost is eligible to be measured under IFRS 17, the standard provides paragraphs B65 and B66 to support the decision making of this, where paragraph B65 explains what is eligible and paragraph B66 what is not eligible.

IFRS 17 Standard's paragraph B65 l) stipulates the allocation of both fixed and variable overheads that are directly tied to fulfilling insurance contracts. These overheads encompass areas like Accounting, Human Resources, IT support, and Building-related costs. Allocation to contract groups should be both systematic and rational, ensuring consistency across costs with similar traits. Within this context, monthly salaries, employee benefits (like lunch subsidies, paid leave, and life insurance), as well as office supplies, are classified under human resources and support functions. Maintenance aligns with Building-related costs, while temporary work could fall under HR or Accounting. All these costs are encapsulated within the directive of this paragraph and must adhere to its systematic allocation methodology.

Paragraph B66 is addressed when we are in the scope of non-eligible costs. The subparagraph B66 d) addresses cash flows associated with costs that cannot be directly linked to a specific portfolio of insurance contracts, including certain product development and training expenses. These costs are recorded in profit or loss (P&L) when incurred, according to the Standard. Within this context, costs like training align directly with the mentioned training costs. Costs such as severance packages and excessive overtime pay fall under paragraph B66 e) of IFRS 17 because they represent abnormal amounts of wasted labor or resources used in fulfilling the contract, as the Standard stipulates.

Figure 9 provides a glimpse of the initial filtering layer in the IFRS 17 scope. We begin by separating each account type based on its eligibility under the IFRS 17 Standard, as outlined in paragraphs B65 and B66.

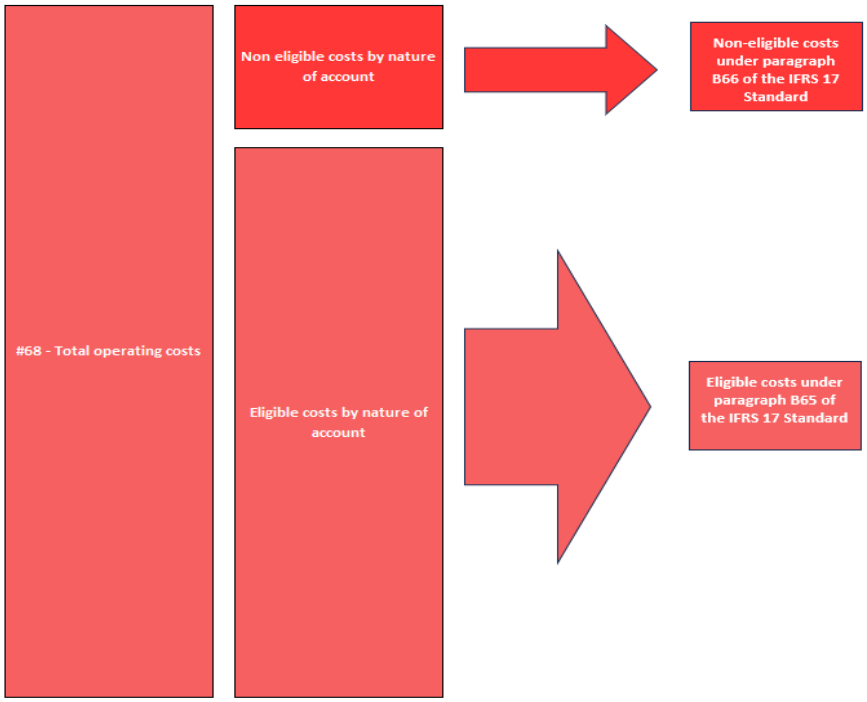


*Figure 9 - Eligible Costs - Nature of account*

### *3.3.2 Cost allocation of Modelled Costs under IFRS 17*

Modelled costs require passage through an activity before allocation. Take a monthly salary as an example: while it is deemed eligible under IFRS 17, not all tasks performed by an employee pertain to IFRS 17-eligible activities. Thus, it is essential to identify which activities fall within the IFRS 17 scope by referencing paragraphs B65 (for eligible activities) and B66 (for non-eligible activities).

First, we will briefly discuss the paragraphs pertaining to eligible activities, followed by activity assignment based on interpretation.

The interpretation of section B65 (a) of IFRS 17 indicates that premiums, including premium adjustments and installment premiums from a policyholder, should be encompassed within the contract's boundary. The text explicitly mentions not only regular premiums but also adjustments and installments.

Regarding B65 (e), the allocation of insurance acquisition cash flows attributable to the portfolio implies that the costs associated with acquiring new insurance contracts should be allocated in a manner that aligns with the portfolio to which the contract belongs.
In B65 (f), the text speaks about claim handling costs, which we interpret as the wide array of costs the entity incurs in managing claims. The standard states that this includes legal fees, loss-adjusters' fees, and internal costs of processing claims. Thus, activities like investigating claims, hiring external adjusters, and administrative costs related to claim resolution are all encapsulated here.
B65 (l) mentions an allocation of fixed and variable overheads directly attributable to fulfilling insurance contracts. We interpret this as all the support costs that can be directly linked to the servicing of the insurance contracts, such as the costs of accounting, human resources, information technology support, and building maintenance. Therefore, activities like regular maintenance, rent, and utility costs, directly linked to insurance operations, fall into this category.
In Table 9, we have a list of examples of activities that are under some subparagraphs of the Standard.

| B65 and corresponding activities by sub-paragraph | | | | | |
|---|---|---|---|---|---|
| b) | e) | f) | h) | ka) | l) |
| Annuities | Activities of policies management | Lapses | Payment of comissions to the bank | Profit sharing | IFRS17 Project |
| Instructions for payments regarding annuities and | - | Complainings | Changes in polices (address, IBAN, beneficiary,etc) | Validation of financial proposals | Reinsurance payments |
| Claims payment | - | Analysis of lapses to perform in the next month | Internal transfer | - | Payments to social security |
| Loss Ratio assessement | - | Monotoring of judicial processes | Follow-up of contact with costumers | - | Internal control |

*Table 9 - IFRS 17 Model - Eligible Activities*

B66 (b) specifies that cash flows arising under reinsurance contracts held should not be included. We interpret this as a recognition that reinsurance is a separate financial arrangement, and activities like ceding premiums to a reinsurance company or receiving reinsurance recoveries do not fall under the direct insurance contract with the policyholder.
B66 (d) excludes cash flows relating to costs that cannot be directly attributed to the portfolio of insurance contracts, such as product development and training costs. We interpret this to mean that general business costs, which might be essential for the overall operation but are not linked directly to specific insurance contracts or portfolios, are not considered. Activities like the development of new insurance products or employee training programs would be excluded under this provision.
Lastly, B66 (e) specifies that cash flows arising from abnormal amounts of wasted labor or other resources used to fulfill the contract should not be included. We interpret this as a provision that encourages efficiency, and thus activities that result from mismanagement, excessive waste, or unproductive labor do not fall under the eligible costs of fulfilling an insurance contract.
Below we have Table 10, where we can find activities that are excluded from the IFRS 17 standard. Even though we made an extensive analysis of the standard for having a better

understanding of a view, under Company XYZ, only some sub paragraphs are used in the company activities.

| B66<br>d) |
|---|
| Reporting and administration |
| Risk cometee |
| Budget cometee |
| Tax consultant |
| Business plan roadmap |
| Internal reports |
| Audit support |
| Monthly reports |

*Table 10 - IFRS 17 Model - Non-eligible Activities*

By aligning the explicit provisions of the standard with the underlying principles, this interpretation aims to provide a comprehensive view of what constitutes cash flows within the boundary of an insurance contract, as well as what is excluded, as defined in IFRS 17 sections B65 and B66. It recognizes both the technical requirements and the broader intent of these provisions in capturing the complex dynamics of insurance contract accounting.

Below, Figure 10 depicts a waterfall chart illustrating the eligibility of costs.

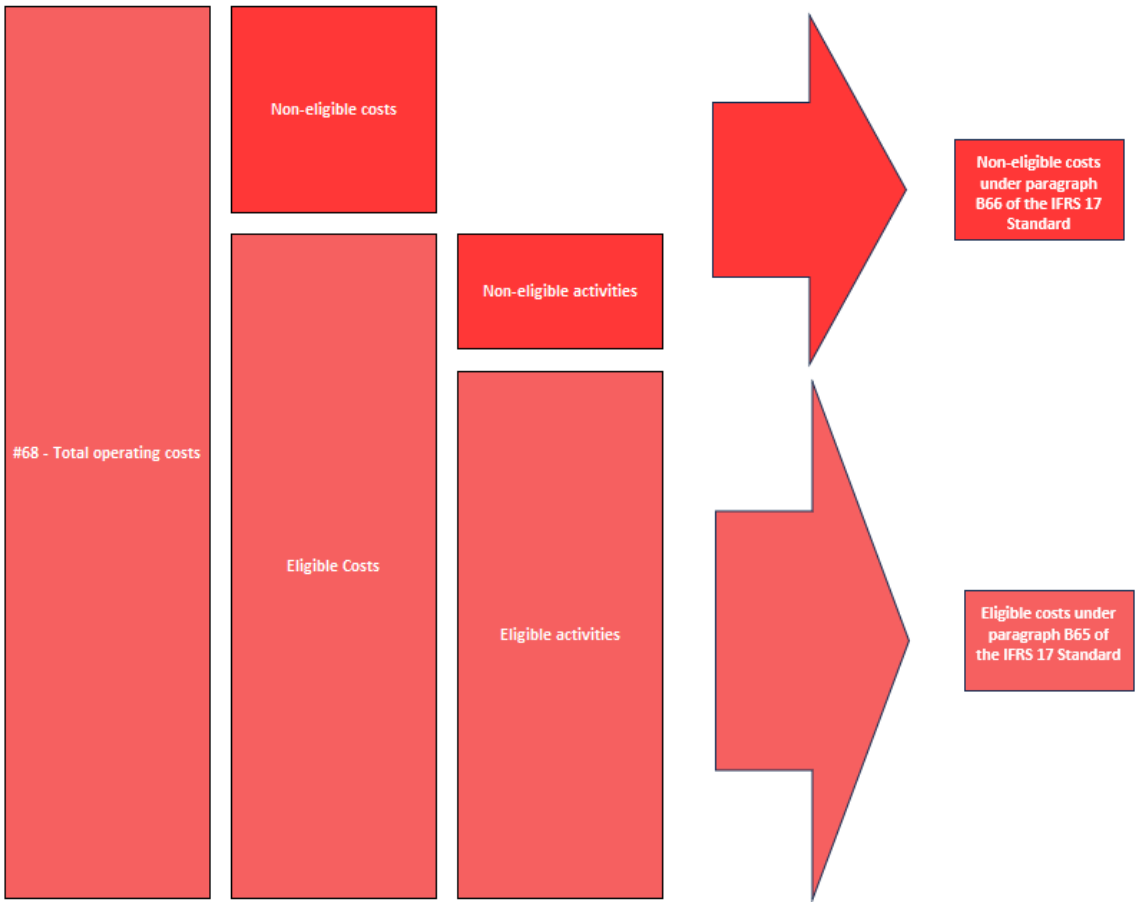


*Figure 10 - Cost allocation - Modelled Costs*

### 3.3.3 Cost allocation of Non-modelled Costs under IFRS 17

Non-modelled costs, such as commissions and product maintenance, are directly linked to products. Thus, these costs are either entirely eligible for IFRS 17 or not eligible at all, and their eligibility depends only on the nature of the account as it was described in 3.3.1.

### 3.3.4 Cost allocation to eligible and non-eligible products under IFRS 17

After pinpointing costs suitable for IFRS 17 measurement, they must be allocated to the right products since, under IFRS 17, costs need an associated insurance product. The upcoming section will detail the eligibility criteria for products under IFRS 17.

Figure 11 depicts the workflow of the IFRS 17 Model for cost allocation. It begins by broadly filtering costs based on their nature. Costs that do not directly correlate to products are allocated to an activity. Directly assignable costs are deemed eligible or non-eligible based on their nature, as previously discussed. Finally, eligible costs are allocated to the corresponding eligible products.

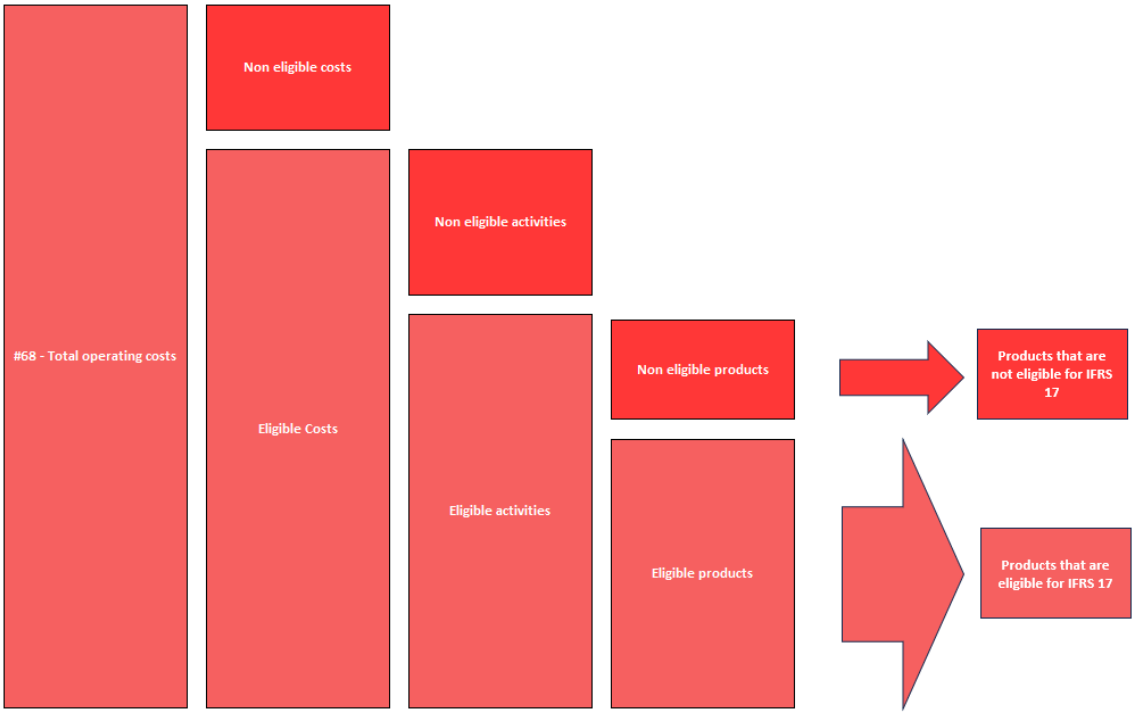


*Figure 11 - Cost allocation – Products*

### 3.3.5 Definition of an insurance contract and the eligibility for IFRS 17

Not all contracts with uncertain events are categorized under IFRS 17. Their inclusion depends on the presence of significant adverse effects on the policyholder. The specific guidelines of the standard demarcate the boundaries for contract classification. This exploration aims to clarify the nature of significant insurance risk and its role in contract categorization. Grasping these principles helps entities comply with IFRS 17, promoting consistent financial reporting in the insurance industry.

IFRS 17 offers guidance on how to account for insurance contracts by setting criteria on which contracts qualify. A fundamental aspect of this standard is the 'significant insurance risk', essential for classifying contracts as insurance related. This section breaks down the key distinction between insurance and financial risks.

Insurance risk pertains to non-financial uncertainties transferred from the holder to the issuer. However, complexities arise when these uncertainties lead to financial outcomes. This overlap is particularly notable in life insurance, where financial and insurance risks often merge.

IFRS 17 provides a delineation between insurance risk and other types of risks, helping entities classify contracts and understand the implications of such classifications.

Insurance risk is characterized by the risk transferred from the holder of a contract to the issuer, which is not of a financial nature (B7). It necessitates that one party takes on significant insurance risk from another party.

Insurance risk also pertains to risks that the entity accepts from the policyholder. This means the entity takes on a risk already posed to the policyholder, and any new risk created by the contract is not deemed as insurance risk (B11).

While insurance risk relates to non-financial uncertainties, financial risk pertains to both financial and non-financial variables. Notably, non-financial variables, which aren't specific to a contract party, could include indexes like earthquake losses in a region or city temperatures (B8).

Contracts that expose the issuer solely to financial risks without the presence of significant insurance risk are not considered insurance contracts (B7). However, there are contracts that expose the issuer to both significant insurance risk and financial risk. An example of this is many life insurance contracts that promise both a minimum return rate and death benefits that might considerably surpass the account balance of the policyholder (B9).

IFRS 17 mandates that for a contract to be classified as an insurance contract, and consequently be eligible for IFRS 17, it must transfer significant insurance risk. This risk emerges when uncertain future events might result in financial consequences for the issuer. A contract adheres to this requirement if, in scenarios with commercial substance, it obliges the issuer to make substantial payouts due to insured events, regardless of their likelihood (B17 & B18).

In life insurance, the unpredictability of the policyholder's death adds complexity. For example, whole-life insurance contracts guarantee a fixed death benefit. If death occurs sooner than expected, without adjusting for time value, it could still introduce significant insurance risk, even if the overall portfolio remains stable (B20). The assessment of significant insurance risk is conducted per contract (B22). However, elements like future service charges loss, or death-related fee waivers, do not factor into this (B21a). Additionally, reinsurance recoveries are accounted for separately (B21d).

In practical terms, if a contract offers a higher death benefit compared to the survival benefit, it is deemed an insurance contract, unless the surplus death benefit is insubstantial when examined independently (B23). Likewise, annuities granting periodic payments for a lifetime are classified as insurance contracts unless their total value is inconsequential. For life insurance products with intertwined financial risks, distinguishing and correctly appraising each contract's insurance risk is vital, ensuring IFRS 17 compliance and accurate financial representation.

For a contract being on IFRS17 scope, not only have to possess Insurance Risk, but the Insurance Risk must be significant. To assess whether a contract has a significant

insurance risk, we need to define a methodology for a test, the 'Significant Insurance Risk Assessment Test (SIRAT)'.
As the Standard predicts, in paragraph B18 we need to create a test based on scenarios. Scenario A: It is the biggest pay-out in case of the insured event has realized. Scenario B: It's the biggest pay-out possible in case of the insured event has not realized.

$$\frac{\sum PV(Outflows\ Scenario\ A) - \sum PV(Outflows\ Scenario\ B)}{\sum PV(Outflows\ Scenario\ B)} \geq \alpha \quad (13)$$

In case this test is larger than a given $\alpha$, pre-defined by XYZ Life Insurance Company, we conclude the insurance contract must be in the scope of IFRS17. The following example enlightens how the test works in practice.

### *Example of SIRAT – Product 2244*

Each insurance product has its unique design, advantages, and limitations. In this section, we will explore Product 2244, a commercial unit-linked offering. Evaluating how the SIRAT test is applied to such a product type can provide valuable insights into its versatility across different insurance products.

1. Conditions of Subscription:
    a. The minimum age for subscription is 16, with a cap at 65 years.
    b. By the conclusion of the contract, the insured's age should not surpass 75 years.
2. Should the insured survive until the end of the contract, a payment equivalent to the Cover Units at that time is assured, marking the end of the contract.
3. Death Clause: If the insured passes away while the contract is in force, the policyholder has two primary options:
    a. Full Contract Redemption: The beneficiaries are guaranteed a sum which combines the value of the respective account unit and the insured capital, in the unfortunate event of the insured's death. The value of this account unit is pegged to the rate on the day of claim processing. Additionally, no redemption commission fees are applicable here.
    b. Partial Redemption: If the policyholder decides against a full contract redemption after the insured's death, the beneficiaries receive the insured capital upfront. This is followed by the account unit's value at the contract's termination. Moreover, the beneficiaries retain the right to exercise any other benefits the contract endows to the policyholder.
4. An initial premium is necessary when the contract commences.
5. To amplify the fund, additional contributions are welcomed.
6. Management Commission: This stands at a rate of 1.5%.
7. Redemption Clause: If the contract is redeemed, a 1% commission fee is levied.

Set of Assumptions:

1. Mortality is guided by the GKF80 model.
2. The discount rate is consistent throughout the contract's duration.

3. For computational purposes and in line with XYZ Life Company's structure, cashflow projections are extended till the insured reaches 85 years, even though the product's upper limit is 75 years.
4. A significant threshold is established at 5%.

Given these product specifics, let's visualize a scenario where the life insured:

- Is 50 years old.
- Has a death benefit pegged at 2500€.
- Currently possesses a fund valued at 5320€.

In Scenario A, we are operating under the assumption that the insured individual, currently 50 years old, is expected to pass away within the next 25 years. To gauge the significance of the sum assured (€2500) within the context of our policy, we aim to establish a timeline:

1. Yearly Projections: For each of the next 25 years, the €2500 sum assured will be adjusted based on the likelihood of the insured person's death at every age, starting from 50.
2. Discounting Mechanism: These adjusted annual amounts will be brought to their present value using a predefined discount rate.

This method provides a clearer understanding of the policy's financial liability by linking the sum assured to the probability of death, while also accounting for the time value of money.

| Capital | | t | Sx(t\|T=25) | | | NPV |
|---|---|---|---|---|---|---|
| 2 500,00 € | | 1 | 0,96549% | 76,30 | | 7 235,21 € |
| Rate | | 2 | 1,07012% | 85,46 | | 36,000% |
| 1,55% | | 3 | 1,18534% | 95,67 | | |
| Fund Value | | 4 | 1,31163% | 107,00 | | |
| 5 320,00 € | | 5 | 1,44935% | 119,50 | | |
| | | 6 | 1,59899% | 133,26 | | |
| | | 7 | 1,76655% | 148,83 | | |
| | | 8 | 1,94391% | 165,56 | | |
| | | 9 | 2,14007% | 184,26 | | |
| | | 10 | 2,35695% | 205,16 | | |
| | | 11 | 2,59675% | 228,53 | | |
| | | 12 | 2,86180% | 254,65 | | |
| | | 13 | 3,15470% | 283,85 | | |
| | | 14 | 3,47820% | 316,46 | | |
| | | 15 | 3,83551% | 352,89 | | |
| | | 16 | 4,22999% | 393,58 | | |
| | | 17 | 4,66523% | 438,99 | | |
| | | 18 | 5,14536% | 489,68 | | |
| | | 19 | 5,67469% | 546,23 | | |
| | | 20 | 6,25801% | 609,29 | | |
| | | 21 | 6,90043% | 679,58 | | |
| | | 22 | 7,60749% | 757,88 | | |
| | | 23 | 8,38520% | 845,05 | | |
| | | 24 | 9,23984% | 942,04 | | |
| | | 25 | 10,17841% | 1 049,87 | | |
| | Total | | 100% | 9 509,56 € | | |

*Figure 12 - Figure 21 - SIRAT - Example*

### *3.3.6 Allocation of cost by products to chart accounts*

A chart account is an account number where an accounting event is recorded. Initially, a cost is documented in an "origin account" starting with #68. It is then allocated to an "arriving account" or allocation chart account. For example, "Supplies and External Services" expenses are first recorded under chart account #681 and later distributed to accounts depending on the cost type. According to PCES 17, not all costs qualify for IFRS 17, necessitating pre-allocation screening. Additionally, specific allocation rules to the chart account must be observed.

Figure 13 offers an insight into this process. For costs qualifying under IFRS 17, there is an initial segmentation of portfolios based on the applied measurement model, followed by product type differentiation. For instance, while Portfolios 08 – Insurance Savings, 02 – Annuities with Life Risk, and 06 – Other Life Insurance are all gauged using GMM, they have distinct features. Within each portfolio, various products exist. This distinction is crucial, as eligible costs are allocated by portfolio and product.

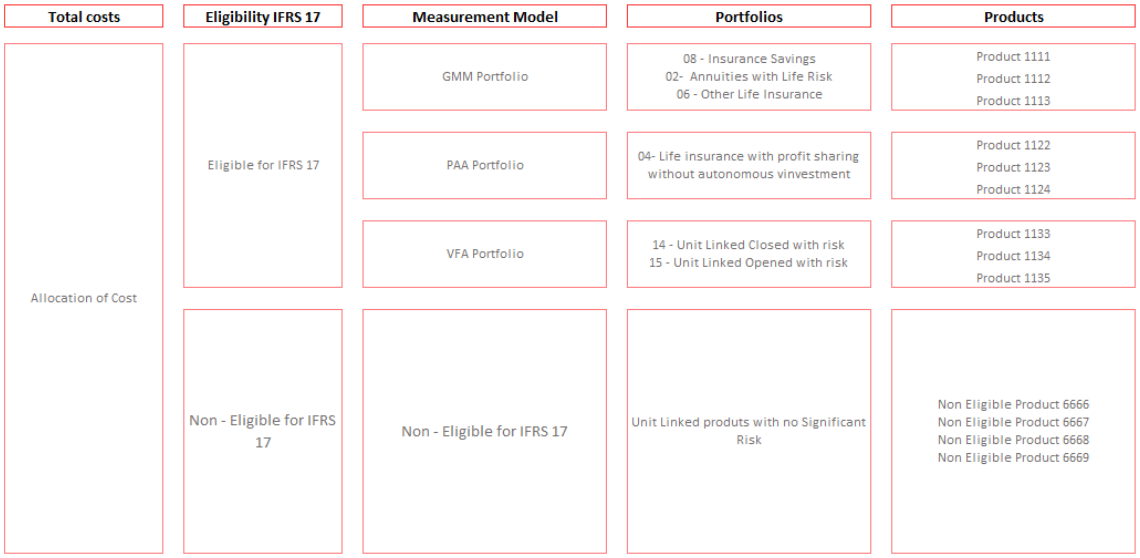


*Figure 13 - Mapping of chart accounts*

To allocate an eligible cost to the appropriate chart account, XYZ Life Insurance Company requires that the chart account is aligned with its corresponding function, followed by the specific cost type within that function, and subsequently by portfolio and product.

Figure 14 provides a mapping example of eligible costs associated with chart account #60 001 - Function of claims, administration, and investment for products under IFRS 17. For clarity, we will focus on #60 001 0 - Personnel Costs, #60 001 1 - Supplies and external services, and #60 001 2 - Taxes and fees. However, the same methodology applies to #60 001 3 - Depreciations and amortizations for the period and #60 001 6 – Commissions. Costs related to chart account #60 001 are first categorized by cost type, then divided by portfolio, and finally designated to a specific product.

For instance, in the figure, a cost linked to product 1101 concerning Personnel Expenses from claims, administration, and investment that qualify for IFRS 17 would be directed to chart account #600010081111.

| Function of allocation | Type of cost | Portfolio | Product | Chart account |
|---|---|---|---|---|
| #60 001 - Function of claims, administration and investment of eligible products under IFRS 17 | #60 001 0 - Personnel Costs | 08 - Insurance Savings | 1111 | 600010081111 |
| | | | 1101 | 600010081101 |
| | | 06 - Other Life Insurance | 1250 | 600010061250 |
| | | | 5613 | 600010065613 |
| | | 02- Annuities with Life Risk | 8453 | 600010028453 |
| | | | 9560 | 600010029560 |
| | | 04- Life insurance with profit sharing without autonomous investment | 4455 | 600010044455 |
| | | | 2563 | 600010042563 |
| | | 14 - Unit Linked Closed with risk | 3320 | 600010143320 |
| | | | 8741 | 600010148741 |
| | | 15 - Unit Linked Opened with risk | 8732 | 600010158732 |
| | | | 3355 | 600010153355 |
| | #60 001 1 - Supplies and external services | 08 - Insurance Savings | 1111 | 600011081111 |
| | | | 1101 | 600011081101 |
| | | 06 - Other Life Insurance | 1250 | 600011061250 |
| | | | 5613 | 600011065613 |
| | | 02- Annuities with Life Risk | 8453 | 600011028453 |
| | | | 9560 | 600011029560 |
| | | 04- Life insurance with profit sharing without autonomous investment | 4455 | 600011044455 |
| | | | 2563 | 600011042563 |
| | | 14 - Unit Linked Closed with risk | 3320 | 600011143320 |
| | | | 8741 | 600011148741 |
| | | 15 - Unit Linked Opened with risk | 8732 | 600011158732 |
| | | | 3355 | 600011153355 |
| | #60 001 2 - Taxes and fees | 08 - Insurance Savings | 1111 | 600012081111 |
| | | | 1101 | 600012081101 |
| | | 06 - Other Life Insurance | 1250 | 600012061250 |
| | | | 5613 | 600012065613 |
| | | 02- Annuities with Life Risk | 8453 | 600012028453 |
| | | | 9560 | 600012029560 |
| | | 04- Life insurance with profit sharing without autonomous investment | 4455 | 600012044455 |
| | | | 2563 | 600012042563 |
| | | 14 - Unit Linked Closed with risk | 3320 | 600012143320 |
| | | | 8741 | 600012148741 |
| | | 15 - Unit Linked Opened with risk | 8732 | 600012158732 |
| | | | 3355 | 600012153355 |

*Figure 14 - Mapping of eligible costs*

# 4. Illustration

In this study, we examined how IFRS 17 influences cost allocation. Below, Table 11 offers a comprehensive illustration of cost allocation under this standard.

Starting with the first row, labeled 'balance of the account', we see the aggregated values of main cost streams, which encompass personnel expenses, external services, taxes, fees, and other provisions. These costs are then categorized by their nature, as detailed in section 3.3.1. For example, within the '#680 – Personnel Expenses' category (1), from 100,000€ (2), 4,010.32€ (3) are not deemed eligible for IFRS 17. This indicates that 95.99% (4) of the total personnel expenses are qualified for IFRS 17 after initial breakdown by account, as displayed in the table.

After showcasing the percentage of chart accounts eligible for IFRS 17, we have the values of the costs that are non-modelled, followed by the modelled costs. Given that personnel expenses are not distributed through non-modelled costs — meaning each expense is subject to an activity evaluation — it is evident all are attributed to modelled costs. Yet, as specified in 3.3.2, not every activity qualifies for IFRS 17. In this case, only 68.08% (6) of XYZ Life Insurance Company's activities are considered eligible when distributing personnel expenses. Thus, only 95,989.69€ (5) multiplied by 0.6808, resulting in 65,350.61€, is eligible under IFRS 17. However, for a cost to be entirely eligible for IFRS 17, it must be assigned to an eligible product. For this expense stream, only 62.09% (7) of the assigned costs are allocated to qualified products, amounting to 40,576.28€ (8) of total eligible costs under personnel expenses. This means that, in terms of IFRS 17, from 100,000€ in personnel expenses, only 40,576.28€ pertain directly to the insurance business.

The logic applied to the "#680 – Personnel Expenses" can also be extended to other chart account types. This breakdown assists insurance companies in discerning which expenses are directly tied to insurance. Yet, potential concerns emerge. For instance, in the “#686 – Other provision” category, where most commissions and fund management expenses are recorded, we observe that while 99.41% of the costs are IFRS 17 compliant, only 57.42% are allocated to eligible products. A significant factor affecting the percentage of eligible costs is the number and scale of products outside the new standard's purview. This is anticipated, given XYZ Life Insurance Company's vast array of investment products, many of which lack sufficient insurance risk as per SIRAT, and thus fall outside the standard's scope. Consequently, of the 1.000.000€ in operational costs, just 513.667,67€ qualify for IFRS 17.

| Balance of the account | #680 - Personnel Expenses | #681 - Other supplies and External Services | #681 - Taxes and fees | #683 - Depreciation and Amortisation | #686 - Other provisions |
|---|---|---|---|---|---|
| Value | 100 000,00 € (1) | 200 000,00 € | 50 000,00 € | 50 000,00 € | 600 000,00 € |
| Non-eligble accounts by nature under IFRS | 4 010,32 € (2) | 55 702,30 € | 0,00 € | 2 940,46 € | 3 556,49 € |
| Eligble accounts by nature under IFRS 17 | 95 989,68 € (3) | 144 297,70 € | 50 000,00 € | 47 057,45 € | 596 443,51 € |
| (%) of eligible IFRS 17 / Total | 95,99% (4) | 72,15% | 100,00% | 94,11% | 99,41% |
| Non-modelled costs | 0,00 € | 5 395,11 € | 50 000,00 € | 0,00 € | 596 443,51 € |
| Modelled costs | 95 989,68 € (5) | 138 902,59 € | 0,00 € | 47 057,45 € | 0,00 € |
| (%) of the eligible accounts allocated to eligible activities | 68,08% (6) | 67,61% | 67,61% | 67,61% | 67,61% |
| (%) Non-modelled costs allocated to | 0,00% | 100,00% | 89,56% | 0,00% | 57,47% |
| (%) of Modelled costs allocated to eligible products | 62,09% (7) | 64,00% | 0,00% | 64,00% | 0,00% |
| Total of eligible costs | 40 575,67 € (8) | 65 498,81 € | 44 780,00 € | 20 361,95 € | 342 776,09 € |
| (%) of the total eligible IFRS 17 / Total cost | 40,58% (9) | 32,75% | 89,56% | 40,72% | 57,13% |

*Table 11 - Reports and findings - Total eligible costs*

Our method sequentially illustrates the cost allocation process. Upon examining both the General Model and the Modified General Model, we observe consistency: the costs for non-eligible products remain the same in the new model, paralleling the behavior of eligible products. This suggests that the combined eligible and non-eligible costs of a compliant product match the total costs under the previous IFRS 4. This direct correlation assists in understanding the proportion of costs directly associated with the insurance sector.

Below is Table 12, which clearly demonstrates this. Using product 4602 as an example, we see that under IFRS 17 eligibility, the functions of claims, investment, and administration account for only 425€ of eligible costs. This means that 159€ of these function costs are not within the purview of IFRS 17, totaling 584€. Under IFRS 4, the sum of these three functions amounts to 576.05€. However, the discrepancy is in the acquisition costs: under IFRS 17, it's 618€, whereas under IFRS 4, it is 625.95€. Subtracting the two gives a precise difference of -7.95€. The approach we adopted, and the adjustments made to the General Model enable a clear comparison between past costs and their current allocation, highlighting the difference in costs that fall under the

insurance industry's scope (i.e., eligible under IFRS 17) and the preceding ones.

| | | Costs under IFRS 17 | | | Costs under IFRS 4 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code of the product | Eligible under IFRS 17 | #60 001 - Claims, admnistration and investment - Eligible IFRS 17 | #60 01 - Acquision - Eligible IFRS 17 | #63 1 - Claims, admnistration, aquisition and investment - Eligible IFRS 17 | #60 001 - Allocated claims management cost | #63 00 - Acquisition costs of direct life insurance | #63 20 - Administration costs of life insurance | 64 0 - Investments - Related to the technical provisions of the life branch | #63 24 - Pension funds |
| 4200 | Yes | 980,00 € | 290,00 € | 406,00 € | 326,20 € | 310,30 € | 297,50 € | 742,00 € | 0,00 € |
| 4602 | Yes | 425,00 € | 618,00 € | 159,00 € | 138,05 € | 625,95 € | 124,75 € | 313,25 € | 0,00 € |
| 4203 | Yes | 457,00 € | 553,00 € | 239,00 € | 162,05 € | 564,95 € | 151,15 € | 370,85 € | 0,00 € |
| 9262 | Yes | 701,00 € | 234,00 € | 495,00 € | 274,25 € | 258,75 € | 263,95 € | 633,05 € | 0,00 € |
| 4360 | Yes | 1 422,00 € | 519,00 € | 429,00 € | 441,30 € | 540,45 € | 391,65 € | 996,60 € | 0,00 € |
| 7607 | Yes | 830,00 € | 518,00 € | 307,00 € | 268,90 € | 533,35 € | 242,75 € | 610,00 € | 0,00 € |
| 5376 | Yes | 478,00 € | 370,00 € | 201,00 € | 159,70 € | 380,05 € | 145,85 € | 363,40 € | 0,00 € |
| 3857 | Yes | 776,00 € | 720,00 € | 221,00 € | 238,20 € | 731,05 € | 210,45 € | 537,30 € | 0,00 € |
| 2191 | Yes | 608,00 € | 603,00 € | 158,00 € | 183,60 € | 610,90 € | 161,10 € | 413,40 € | 0,00 € |
| 3076 | Yes | 612,00 € | 693,00 € | 270,00 € | 207,00 € | 706,50 € | 189,90 € | 471,60 € | 0,00 € |
| 1196 | Yes | 592,00 € | 261,00 € | 159,00 € | 179,80 € | 268,95 € | 158,15 € | 405,10 € | 0,00 € |
| 0800 | Yes | 1 138,00 € | 531,00 € | 356,00 € | 355,70 € | 548,80 € | 316,60 € | 803,90 € | 0,00 € |
| 895 | Yes | 484,00 € | 497,00 € | 277,00 € | 176,40 € | 510,85 € | 166,05 € | 404,70 € | 0,00 € |
| 1403 | Yes | 1 408,00 € | 227,00 € | 128,00 € | 377,60 € | 233,40 € | 313,60 € | 838,40 € | 0,00 € |
| 2354 | Yes | 459,00 € | 512,00 € | 247,00 € | 164,15 € | 524,35 € | 153,55 € | 375,95 € | 0,00 € |
| 5501 | Yes | 1 164,00 € | 236,00 € | 359,00 € | 362,80 € | 253,95 € | 322,55 € | 819,70 € | 0,00 € |
| 2882 | Yes | 1 141,00 € | 191,00 € | 308,00 € | 346,85 € | 206,40 € | 305,20 € | 781,55 € | 0,00 € |
| 7535 | Yes | 842,00 € | 728,00 € | 431,00 € | 296,70 € | 749,55 € | 276,15 € | 678,60 € | 0,00 € |
| 9372 | Yes | 1 434,00 € | 738,00 € | 330,00 € | 424,50 € | 754,50 € | 369,30 € | 953,70 € | 0,00 € |

*Table 12 - Reports and finding - Total costs of eligible products*

# 5. Final Thoughts

The transition from IFRS 4 to IFRS 17 introduces numerous challenges, demanding a change in both the approach to insurance contracts and their measurement methods. The insurance industry is obliged to conduct a reevaluation of all standard business operations, necessitating the introduction of new processes and the enhancement of existing tools to align with the new Standard. This shift became evident on the 1st of January 2023, when IFRS 17 was initially implemented, leading insurance companies to alter their business measurement methods. This change has created a discrepancy in the balance sheet concerning the results reported under IFRS 4 and IFRS 17, producing what is identified as transition impacts.

This project addresses the challenges related to cost allocation under the new Standard, illustrating how XYZ Life Insurance Company navigated them using the Modified IF17 General Model. It presents the concept of dividing costs into modelled costs, which initially pass through activities, and non-modelled costs, which are directly linked to a specific product. This methodology provides a flexible framework for other insurance companies that are facing the same challenges, allowing them to adjust their tools to develop a cost allocation model that aligns with the new Standard, ensuring that the costs allocated are comparable and consistent with those under IFRS 4.

In the development of this model, the primary focus was to enable the most smoothness transition possible, ensuring straightforward comparability between IFRS 4 and IFRS 17. Following the consolidation of IFRS 17, insurance companies can leverage the new information required by the new Standard to evolve into more accurate and detailed methods for allocating operational costs in the insurance business. This can be achieved, by creating in a future some methodologies for adding weights to the drivers associated with more strategic products or by projecting product profitability, considering the Contractual Service Margin (CSM) or other new indicators associated with them.

In summary, IFRS 17 came to help standardize the financial analysis of the insurance industry, however, given the quantitative and complex nature of this industry, a lot of challenges arise in the implementation of this new Standard. Having the opportunity to tackle one of the challenges and create a positive impact in the insurance industry is highly rewarding. Through the development of this new Model, we have provided a comprehensive analysis of how an insurance company can execute it, presenting the most up to date methodology for cost allocation under this new Standard.

# References


1. International Accounting Standards Board, IFRS 17 Insurance Contracts, 2017.
2. Deloitte - IASPUS, https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs
3. Bangladesh cost accounting Standards, “BCAS 14: Activity Based Costing (ABC)”.
4. Autoridade de Supervisão de Seguros e Fundos de Pensõe, “Norma Regulamentar n.º 10/2016-R, de 15 de Setembro PLANO DE CONTAS PARA AS EMPRESAS DE SEGUROS”
5. Autoridade de Supervisão de Seguros e Fundos de Pensões, “Norma Regulamentar N.º 9/2022-R, DE 2 DE NOVEMBRO PLANO DE CONTAS PARA AS EMPRESAS DE SEGUROS”