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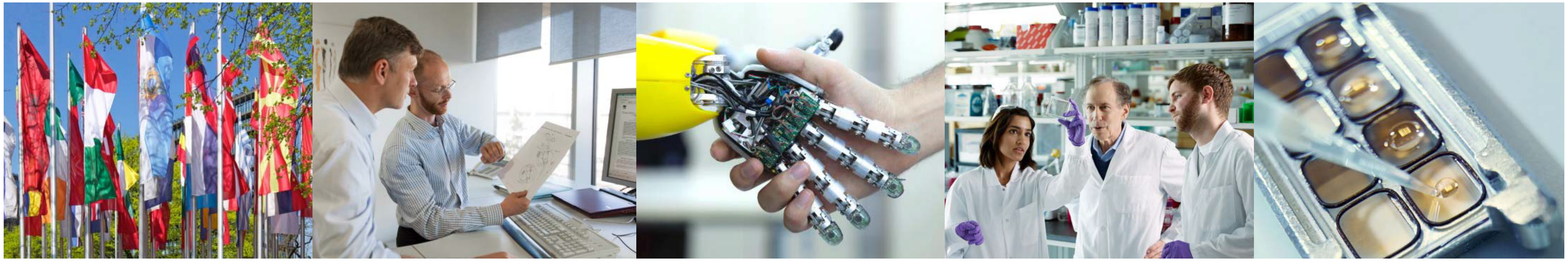
Financial study 2019

Toolkit for Managers



PD Finance

June 2019

Preliminary remarks

- One outcome of the recent Staff Satisfaction Survey is that a number of our colleagues consider that the reasons for some past reforms were not sufficiently explained nor discussed with all stakeholders. This is why the Office has decided to devote all time necessary to discuss the entire methodology and findings of this study with all internal and external stakeholders, in-depth, over three months (May – July 2019). This is an unprecedented effort.

- As many EPO colleagues are neither financial experts, nor familiar with these questions, the Office is investing a lot in producing didactic material. It is a prime duty of all EPO Managers to read all this material* and be capable of providing the first elements of an answer to the staff. A list of more than 40 Q&A covers the most frequently asked questions. PD Finance can provide further support as required (financialstudy@epo.org).

- This process, aimed at ensuring the long term financial sustainability of the EPO, has four key stages: **1/** *Q2 2019*: presentation of the financial study; **2/** *Q3 2019 – Q2 2020*: discussion of a package of potential measures; **3/** *June 2020*: adoption of the package by the Council; **4/** *January 2021*: earliest implementation of the measures.

- In March 2019, the President announced the **four main principles** to be applied in any further actions (see his presentation made during the March AC, accessible from the intranet), namely that:
  - they are transparent, with full explanations as to what measures are being carried out and why;
  - they are proportionate and fair, responding with the right level of action;
  - they are based on the principle of shared effort;
  - wherever possible, any measures will be implemented gradually.

* See list of prepared material included as an Annex

Why was the Financial Study 2019 conducted?

a) A sound management practice is to have such a study undertaken every 3-4 years as the environment keeps evolving.
b) The recent evolution of some important elements has made the Financial Study 2019 essential:

Changes in the EPO's operational and macroeconomic environment[1]	
1 (-)	Persistently **low interest rates** since 2016 which could not be anticipated
2 (-)	**Quicker maturity** of **pension schemes** with annual contributions beginning to be lower than the value of annual benefits (foreseen by end of 2019, early 2020)
3 (+)	Introduction of the treasury investment fund (**EPOTIF**) in 2018 generating **new incomes**
4 (+)	**Operational efficiency gains** achieved in the past few years at a **quicker pace** than expected

These changes, especially 1 and 2, have a huge impact on the EPO's long-term financial sustainability.

1. Not exhaustive

Which macroeconomic scenarios were developed for the study?

Four scenarios have been defined to take various potential developments into consideration

Four **macroeconomic scenarios** have been defined based on the evolution of a set of external factors which determine the **economic and financial environment** in which the EPO operates and **cannot be influenced** by the EPO. Underlying assumptions have been **aligned with the EPO.**

	OPTIMISTIC HIGH GROWTH	**BASE 1** ECONOMIC RECOVERY	**BASE 2** ECONOMIC CYCLE	**STRESS**
Description	• Reflects very favourable economic developments	• Economic growth development in line with average of forecasts by international institutions (OECD /World Bank/IMF) • Interest rates gradually increase due to an improving economic environment	• Global economic recession in 2020 of the magnitude typically assumed by regulatory oversight bodies (European Systemic Risk Board) • Recession is followed by a normalisation from 2025 onwards	• Identical assumptions as Base scenario 2 • Supplements Base 2 scenario by Chinese economic growth leading to a relocation of industry and reduction in demand for the EPO

The scenarios represent **possible evolutions** of the future but should **not be understood as the only ways** in which the Office's situation may evolve

✓ They show a **range of outcomes** and **sensitivities** of the evolution of the EPO

✗ They are **not associated with a probability** and do not attempt to accurately forecast the future

What are the assumptions used as a basis for the financial study?

The scenarios differ with regards to macroeconomic and financial developments over a 20-year horizon

Economic and financial developments over the 20-year horizon under consideration
CAGR 2018–2038 in %, by scenario

	OPTIMISTIC HIGH GROWTH	**BASE 1** ECONOMIC RECOVERY	**BASE 2** ECONOMIC CYCLE	**STRESS**
Applications[1]	3.7% p.a.	1.7% p.a.	0.9% p.a.	- 0.3% p.a.
Inflation[1]	2.0% p.a.	1.7% p.a.	1.2% p.a.	1.2% p.a.
IFRS Discount Rate 2028 vs. 2038	2028: 4.7% 2038: 5.0%	2028: 3.6% 2038: 4.7%	2028: 2.8% 2038: 3.9%	2028: 2.8% 2038: 3.9%
Financial Market Performance	Strong equity market performance and recovery of interest rates	Moderate equity market performance	Global recession and capital market crisis in 2020 followed by weak recovery	Global recession and capital market crisis in 2020 followed by weak recovery

1. Compound Annual Growth Rate (CAGR) between 2018 and 2038 | Note: Assumptions underlying the financial model have been discussed with and validated by key stakeholders across the EPO. Source: EPO Financial Statements 2016-2018; Mercer/Oliver Wyman analysis

Which key operational parameters were used for the projections?

The Financial Study has modelled developments over a 20-year horizon, based on these assumptions concerning key operational parameters:

TIMELINESS

In line with **Early Certainty Criteria**

- 5 months for search as of 2019
- 25 months for examination as of 2024
- "Case view" (the whole time from first creation of an SEO product to the legal effect of the outcome) used to determine targets and reconcile them with early certainty criteria

PRODUCTIVITY

Measured in **Products per Head (PpH)**

- 3% productivity increase until 2022
- PpH assumed to stay constant from 2022 onwards if no activities (e.g. digitisation) are implemented
- Assumption takes into account the already high starting base to which PpH has evolved over the last couple of years

WORKFORCE

Determined by **replacement ratio** for retiring examiners

- Optimistic Scenario: 2.2
- Base 1 Scenario: 1.4
- Base 2 Scenario: 1.1
- Stress Scenario: 0.9
- Ratio >1 means that there will be more recruitment than retirement over the 20-years period
- Result of productivity increase and timeliness criteria determining required headcount to address demand

FEES

In line with the EPO's **current commitments**

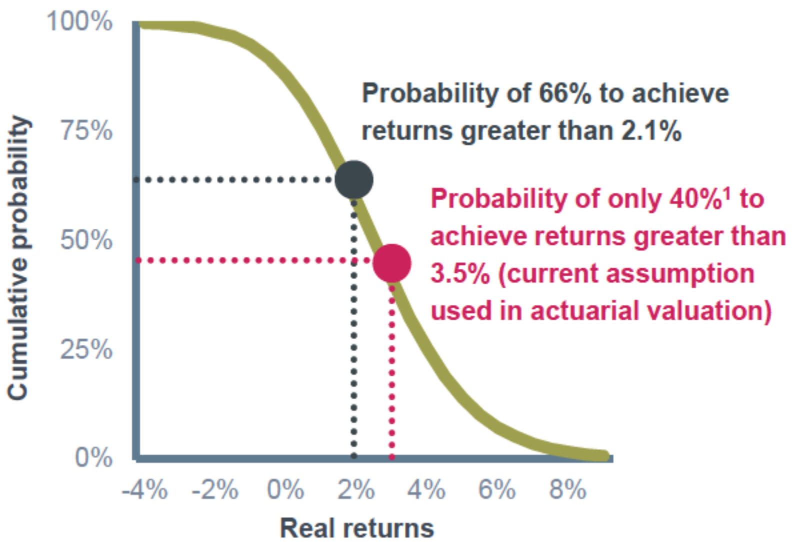
- One-time fee increase of 4% in procedural and internal renewal fees in 2020
- Constant fees assumed from 2020 onwards
- Further fee adjustments are subject to agreement and have not been decided yet

Other internal operational parameters were assumed to be constant over time

Note: Assumptions underlying the financial model have been discussed with and validated by key stakeholders across the EPO

What is the probability that the EPO pension scheme can be fully funded by the RFPSS?

Cumulative probability distribution of real returns of the RFPSS, 2018-2038



Background information

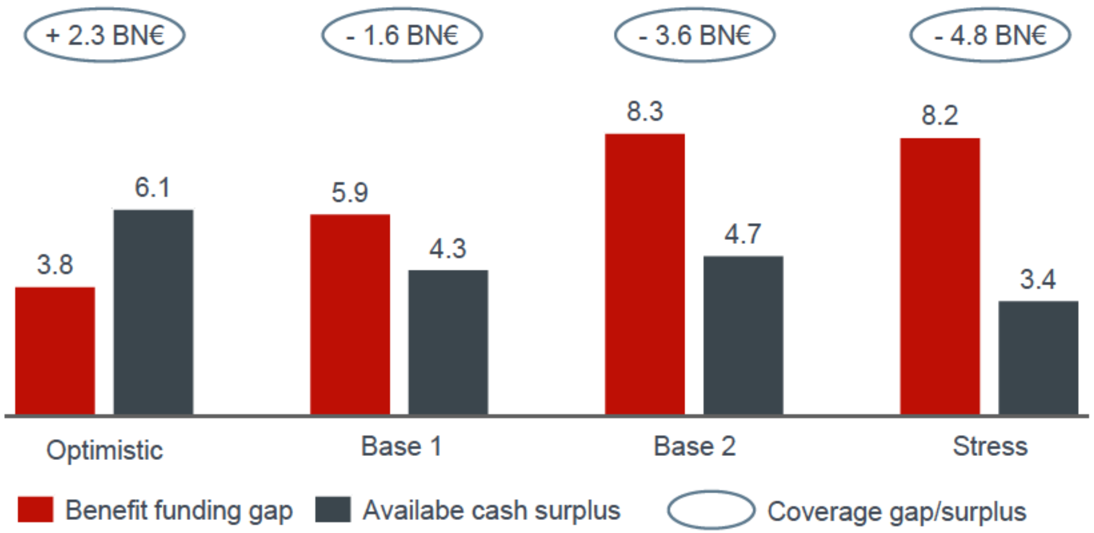
- To evaluate the assets required to fully cover all benefits (funded and unfunded) after 2038, an **assumed RFPSS real return** is applied
- The **Actuarial Valuation** uses **3.5%** as real return target (2017) which can only be achieved with a probability of ca. 40%[1] under current RFPSS asset allocation.
- The **Financial Study** uses scenario-specific assumptions on the RFPSS' and EPOTIF's real return for the study's 20-year horizon
  - RFPSS real return[2]: 2.3%-3.3% p.a. depending on scenario
  - EPOTIF real return[2]: 2.1%-2.7% p.a. depending on scenario
- **There is 60% chance that the target of 3.5% p.a. will not be reached, because the probability of the EPO pensions being fully funded by an asset return of 3.5% p.a. is only 40%.**
- The discount rate used by the EPO (3.5%) is high compared to other organisations (Coordinated Organisations: 2.85%; European Commission: 2.9%)

1. Actuarial Valuation 2017 by AAG: 3.5% return target with a probability of 50%; SAA Review 2018 by PPC metrics: 3.5% return target with a probability of 46.6%; Financial Study 2019: 3.5% return target with a probability of 40%
2. CAGR 2018-2038, Returns calculated as arithmetic average over nominal return subtracted by inflation in each scenario

Key financial results

Comparing the benefit funding gap and available cash surplus, the EPO is likely to experience a coverage gap in all but the Optimistic Scenario

Coverage gap/surplus, benefit funding gap and available cash surplus in 2038
in BN€, deflated to 2018



Key terms and concepts

Benefit Funding Gap
- **Assets required** to cover funded and unfunded benefits by 2038 minus **assets available** in the RFPSS and the EPOTIF by 2038

Available Cash Surplus
- Available cash surplus from the EPO's **operating cash flow**
- Study assumes that all available cash surplus after capital expenditure is reserved for benefit payments

Coverage gap/surplus
- **Benefit funding gap** minus **available cash surplus**

The coverage gap is one of the main indicators used in the Financial Study to assess the EPO's financial sustainability in different scenarios

Summary of key findings (1/2)

The results of the Financial Study 2019, summarised in six key messages:

1

Pension payments will triple by 2038 and benefit liabilities will not be completely covered by cash reserves in 2038

- The EPO's benefit payments are expected to triple over the next 20 years due to the significant number of retiring employees and a structurally maturing workforce
- Additional contributions of between 1.6 BN€ - 4.8 BN€ (in real terms) will be required to have sufficiently high funding levels from 2038 onwards, in addition to the reserves that have already been put aside

2

There is a significant benefit funding gap to be closed

- The benefit funding gap between required and available assets to cover for all future and accrued benefit payments from 2038 onwards is between 3.8 BN€ - 8.3 BN€ (in real terms) depending on the scenario
- The EPO currently does not have sufficient asset reserves to cover these requirements. Moreover, cash surpluses may not be sufficient to proceed to further cash injections as per the past years

3

The EPO cannot rely on its operating cash-flow to close the benefit funding gap

- The EPO faces a structural operational gap, with costs increasing faster than revenues, leading in the future to significantly decreasing cash flows

Summary of key findings (2/2)

The results of the Financial Study 2019, summarised in six key messages:

4

A time-limited window of opportunity to act is open now

- The window of opportunity to build up necessary reserves and buffers is open now while the EPO's cash flow is still sufficiently high
- The probability that asset returns can fully cover future and accrued benefits payments is 40% - this could be increased to a 66% probability by applying a more prudent discount rate to funding valuation

5

The EPO has greater control to manage its long-term cost structure than its revenue

- There is little room for manoeuvre through driving increased revenue which is influenced by stakeholders such as the Member States
- The EPO has greater control of cost levers, which presents an opportunity to better meet its future obligations through careful cost management

6

The EPO has a range of potential measures to address the financial challenge

- Suitable measures are required to reduce the benefit funding gap, increase the available cash surplus or deliver on a combination of both
- As stressed in the draft Strategic Plan 2023, any measures will be transparent, proportionate, fair, based on the principles of shared effort and implemented gradually, where possible

Most Frequently Asked Questions (1/2):

Following the consultations and inputs received from the different stakeholders, the Office has established in coordination with the consultants a list of FAQs available on the dedicated intranet page of the Financial Study. The following ones concern issues often raised:

Why has no inflation adjustment for fees been assumed within the Study while salaries are adjusted on a yearly basis?	Salaries and fees are determined by different regulations and thus are reflected differently in the Financial Study 2019. Since the end of the 80's, salaries at the EPO are adjusted yearly according to a formula which has a certain duration (6 years currently), regularly renewed with few modifications. Once agreed, the formula commits the different stakeholders and its yearly implementation is solely adjusted to updated factors. This is why the Financial Study adjusted the salaries according to the mechanism implemented in 2014, as there is no indication that such a practice should be stopped. No such mechanism has been set for fee increases. In 2005, the Office proposed to consider regular inflation based adjustment of the fees, which was confirmed as a general orientation in 2011. However when this adjustment is proposed by the Office every two years with the budget, the Council can always refuse to apply it. An automatic fee increase was therefore not assumed in the Financial Study. Moreover, for decades the political environment in Europe is rather to optimise the efficiency of public services and to reduce the fees to be paid by the users. Finally, the patent owner can decide at any moment to stop maintaining the patent and paying the fees. He can also decide to file more via the national routes to be protected in the same jurisdiction if EPO fees are too high. There is a clear trend that European patents are protected in less countries than it used to be. However, potential fee adjustments beyond the fee increase in 2020 may be considered as measures in the context of an encompassing package and a shared effort.
Why did the Study not consider a 5% biennial increase as it used to be?	Fee increases when approved by the Council every two years are based on actual EU inflation as reported by the Eurostat for the previous 24 months (Harmonized Index for Consumer Prices for the EU countries). For some years, the trend of this index went down, amounting to +0,8% for the period 2013-2015 and +1,55% for 2017-2018. This is why in 2017, taking into consideration this low inflation rate combined with the overall improvement in the financial situation, the Office proposed to suspend the application of the inflation-based fee adjustment for the period April 2018 - April 2020, representing a loss of incomes of 15 MN€ in 2018 (to be compared with to a 2.1 BN€ budget). So there would have been no strong justification to take a flat 5% inflation rate to be compensated via the biennial fee adjustment as a credible assumption for the Study. The assumed inflation rates in the Study based on past observed trend are ranging from 1,2% in the Stress Scenario to 1,9% p.a. in the Optimistic Scenario. As the study models status quo and already taken decisions at this point this assumption is correct. The fee increases in 2020 (4%) correspond to a proposal of the Office in the Budgetary Orientations for 2020 whilst further fee increases have not yet been legally committed to.

Most Frequently Asked Questions (2/2):

Why does the Study assume asset return rates lower than the already very prudent long-term return of 3.5% in view of the 4.84% return achieved by the RFPSS over the last 33 years, a period with several financial crisis?	When evaluating asset returns, it is crucial to note that the past returns are no predictor for the future. This concept is widely accepted within the financial community. Capital markets today are in a significantly different interest rate environment. For example, 10-year German government bonds (usually considered as very high quality and very low risk) offered an almost risk-free interest rate of up to 9% nominal in the year 1990, while as of today, the yield on these bonds is close or even below 0%. This means, while 30 years ago one could achieve (nominal) returns above 9% with relatively low risk, achieving any positive return in today’s environment is significantly harder for any institutional asset manager. In addition, it should be underlined that a target return of 3,5% is at the top range of targets for international organizations, most of them being at lower levels such as 2,85% for the coordinated organizations or 2,90% for the EU.
We had two financial studies in 2011 and 2016. How reliable are the findings of this study and what is the probability that the 2019 study is correct?	No one has a crystal ball and as future developments are subject to uncertainty, we need to continue to monitor these developments regularly. Financial Studies are produced in a given economic environment and develop scenarios based on past observed trends and a cautious and professional estimation of potential future evolutions. Their main focus lies in the sensitivity analysis and impact assessment on the financial basis of an entity. Therefore in the new Financial Study, four scenarios have been developed to model a broad range of realistic future developments. Please note that no worst case scenario has been considered (e.g. a persistent low interest rate over the next 10 years, comparable to the Japanese economy). The new study should provide the Office with necessary information to address current challenges.
How did the productivity increases of the recent years contribute to the EPO's financial situation?	Thanks to efficiency and costs control measures, the EPO has achieved success in important productivity and production increases in the recent past. The sharply diminishing backlog generated an important increase of incomes from procedural fees. As at end of 2016, incomes from PGP fees amounted to €1,813m (€766m from procedural fees, €558m from internal renewal fees, €489m from national renewal fees). It increased by 6,7% by the end of 2018 to reach €1,936m (€873m from procedural fees, €520m from IRF, €543 from NRF). For Q1 2019 incomes from the PGP showed a further increase of + €10m compared to Q1 2018. Additionally, SEO products per examiner evolved from 76 in 2014 to 99 in 2018 and 400 posts were transferred from the support areas to DG1. Therefore the Office did not need to increase its workforce, keeping EPO overall staffing stable at 6,800. This is important as staff costs account for more than 80% of the total costs of the Office.

Calendar / Next steps

Topic	Date
Presentation to Managers	8 May 2019
Presentation to Staff	9 May 2019
Publication of the Financial study on MICADO	10 May 2019
Presentation of the Financial study to the Budget and Finance Committee	21 May 2019
Focus Groups / Deep dive sessions	May / June 2019
Presentation of the Financial study to the Administrative Council	26/ 27 June 2019
Discussion on potential measures with all stakeholders	Q3 2019 – Q2 2020
Presentation of a potential package to the Administrative Council	June 2020
Earliest implementation of measures	1 January 2021

Available information on the intranet

An intranet page has been established which grants access to the Financial Study 2019 and the available supplementary material and toolkits

Path to access material on the intranet

Information available for **staff** can be found on the intranet:
Home → Organisation → Strategy → Financial Study 2019

Additional information available for **managers** can be found on the intranet:
Home → Work → Management Area

Available resources

1	**Financial Study 2019**	Word Report describing the background, assumptions and results of the Financial Study in detail (click here)
2	**Video of EPO TV presentation**	Video presentation summarising the Financial Study's results incl. Q&A session (click here)
3	**Glossary**	Definition and explanation of key terms and concepts used in the Financial Study (click here)
4	**FAQ**	Frequently asked questions during and after the Financial Study's presentations and respective answers (click here)
5	**Supplementary presentation by PD Finance**	Background information on the changes since the Financial Study in 2016 and comparison of the 2016 vs. 2019 Financial Study (click here)
6	**Manager toolkit** (for managers only)	Summary of key information related to the Financial Study 2019 (Management Area)

If there are additional questions not covered in the FAQ, please encourage your team to send them to financialstudy@epo.org

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