

FOR PUBLICATION

Report on the calculation of the UFR for 2024

RFR Methodology

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CONTENTS

EXECUTIVE SUMMARY	3
1. Methodology to derive the UFR	4
1.1. Expected real rate	4
1.2. Expected inflation rate	4
1.3. Ultimate Forward Rate	6
Annex 1 Calculating the expected real rate	7
Annex 2 Inflation targets	9
Annex 3 Expected real rates for currencies without inflation target	11

EXECUTIVE SUMMARY

EIOPA has calculated the ultimate forward rate (UFR) for 2024 in accordance with the methodology to derive the UFR.

For the euro, the applicable UFR for 2024 will decrease to 3.30% from its current level of 3.45%.

In general, most UFRs decrease as well for other currencies due to the drop in the expected real rate given the substantial increase observed in inflation over 2022, while the expected inflation (targeted inflation) remains generally unchanged.

The new ultimate forward rates will be applicable for the calculation of the risk-free interest rates from 1 January 2024 onwards.¹

¹ Please note that the EC Delegated act published by the Commission on the 8th of March 2019 introduced additional provisions concerning EIOPA's work on the risk-free technical information, including that the technical information shall be modified by EIOPA at the request of the European Commission (http://ec.europa.eu/finance/docs/level-2-measures/solvency2-delegated-regulation-2019-1900_en.pdf).

1. METHODOLOGY TO DERIVE THE UFR

1.1. EXPECTED REAL RATE

The UFR is the sum of an expected real rate and an expected inflation rate. The expected real rate is the same for all currencies. It is calculated as a simple average of the past real rates of a basket of representative countries since 1961. For the calculation of the expected real rate, a new observed real rate for 2022 enters the calculation. This new observed real rate equals -6.67% (2021: -2.98%). The resulting expected real rate for 2022 equals 1.25% (2021: 1.40%). Annex 1 sets out intermediate results of the calculation.

1.2. EXPECTED INFLATION RATE

The expected inflation rate is currency specific. It is based on the inflation target of central banks and can take the values 1%, 2%, 3% or 4%.

The expected inflation rate remains unchanged for all currencies, except for the Malaysian Ringgit due to an updated inflation target for this currency (2022: 3% vs 2021: 2%). The following table sets out the expected inflation rate per currency². Annex 2 and Annex 3 set out the underlying inflation targets and the determination of the expected inflation rate for currencies without inflation target.

² Compared to last year's update the Croatian Kuna has been removed from the table, as there is no longer an expected inflation rate for the Kuna due to Croatia adopting the Euro as of 01-01-2023. Furthermore, the currencies DKK (Danish krone) and BGN (Bulgarian lev) are not present in the table as those currencies are pegged to the Euro according to TD Art. 8.1.1.

REPORT ON THE CALCULATION OF THE UFR FOR 2024 – RFR METHODOLOGY

EIOPA(2023)0072750
 EIOPA RESTRICTED USE
 EIOPA-BoS-23/127

	Currency	Expected inflation rate
EUR	Euro	2%
CZK	Czech koruna	2%
GBP	Pound sterling	2%
HUF	Forint	3%
PLN	Zloty	2%
RON	Leu	2%
SEK	Krona	2%
CHF	Swiss franc	1%
ISK	Króna	2%
NOK	Norwegian krone	2%
AUD	Australian dollar	2%
BRL	Real	3%
CAD	Canadian dollar	2%
CLP	Chilean peso	3%
CNY	Renminbi-yuan	3%
COP	Colombian peso	3%
HKD	Hong Kong dollar	2%
INR	Indian rupee	4%
JPY	Yen	2%
KRW	South Korean won	2%
MYR	Ringgit	3%
MXN	Mexican peso	3%
NZD	New Zealand dollar	2%
RUB	Russian ruble	4%
SGD	Singapore dollar	2%
THB	Baht	2%
TRY	Turkish lira	4%
TWD	New Taiwan dollar	2%
USD	US dollar	2%
ZAR	Rand	4%

1.3. ULTIMATE FORWARD RATE

The following table sets out the calculated UFRs and the UFRs applicable in 2024.

Currency Code	Currency	Calculated UFR	UFR applicable in 2024
EUR	Euro	3.25%	3.30%
CZK	Czech koruna	3.25%	3.30%
GBP	Pound Sterling	3.25%	3.30%
HUF	Forint	4.25%	4.35%
PLN	Zloty	3.25%	3.30%
RON	Leu	3.25%	3.30%
SEK	Krona	3.25%	3.30%
CHF	Swiss franc	2.25%	2.30%
ISK	Króna	3.25%	3.30%
NOK	Norwegian krone	3.25%	3.30%
AUD	Australian dollar	3.25%	3.30%
BRL	Real	4.25%	5.05%
CAD	Canadian dollar	3.25%	3.30%
CLP	Chilean peso	4.25%	4.35%
CNY	Renminbi-yuan	4.25%	4.35%
COP	Colombian peso	4.25%	4.35%
HKD	Hong Kong dollar	3.25%	3.30%
INR	Indian rupee	5.25%	5.35%
JPY	Yen	3.25%	3.35%
KRW	South Korean won	3.25%	3.30%
MYR	Ringgit	4.25%	3.60%
MXN	Mexican peso	4.25%	4.30%
NZD	New Zealand dollar	3.25%	3.30%
RUB	Russian ruble	5.25%	5.25%
SGD	Singapore dollar	3.25%	3.30%
THB	Baht	3.25%	3.30%
TRY	Turkish lira	5.25%	5.35%
TWD	New Taiwan dollar	3.25%	3.30%
USD	US dollar	3.25%	3.30%
ZAR	Rand	5.25%	5.35%

ANNEX 1 CALCULATING THE EXPECTED REAL RATE

The following table sets out the time series of real rates used for the calculation of the expected real rate. Real rates in the table are rounded to two decimal digits for presentational reasons.

Year	Real rates	Year	Real rates	Year	Real rates
1961	1.58%	1989	5.66%	2018	-1.65%
1962	0.09%	1990	5.61%	2019	-1.32%
1963	0.01%	1991	4.87%	2020	-0.89%
1964	0.46%	1992	5.53%	2021	-2.98%
1965	1.09%	1993	3.90%	2022	-6.67%
1966	1.64%	1994	3.11%		
1967	1.89%	1995	3.56%		
1968	1.82%	1996	2.25%		
1969	2.08%	1997	2.73%		
1970	2.50%	1998	3.12%		
1971	-0.23%	1999	2.23%		
1972	-0.91%	2000	2.74%		
1973	0.81%	2001	1.77%		
1974	-1.11%	2002	1.21%		
1975	-4.82%	2003	0.49%		
1976	-0.94%	2004	0.47%		
1977	-1.66%	2005	0.57%		
1978	0.78%	2006	1.61%		
1979	1.45%	2007	2.58%		
1980	1.05%	2008	1.18%		
1981	3.71%	2009	0.58%		
1982	3.34%	2010	-0.94%		
1983	3.48%	2011	-1.61%		
1984	4.35%	2012	-1.79%		
1985	4.48%	2013	-1.28%		
1986	5.83%	2014	-0.60%		
1987	5.01%	2015	-0.21%		
1988	4.74%	2016	-0.74%		

EIOPA(2023)0072750
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EIOPA-BoS-23/127

Expected real rate before rounding

= Average of real rates over period [1961, 2022]

= 1.22436% (2021: 1.35383%).

Expected real rate after rounding

= **1.25%** (2021: 1.40%)

ANNEX 2 INFLATION TARGETS

The following table sets out the inflation targets. The information was derived from the specified sources on 2nd of March 2023. If no specific source was available, Refinitiv has been used as alternative source. For currencies for which no information was available at all, and for currencies where exchange rate targeting is used in stead of inflation targeting, see Annex 3.

	Currency	Inflation target	Source
EUR	Euro	2%	https://www.ecb.europa.eu/ecb/tasks/monpol/html/index.en.html
CZK	Czech koruna	2% ± 100bps	https://www.cnb.cz/en/monetary-policy/strategic-documents/monetary-strategy-and-inflation-targets/index.html
GBP	Pound sterling	2%	https://www.bankofengland.co.uk/monetary-policy/inflation
HUF	Forint	3% ± 100bps	http://www.mnb.hu/en/monetary-policy/monetary-policy-framework/inflation-targeting
PLN	Zloty	2.5% ± 100bps	https://nbp.pl/en/monetary-policy/
RON	Leu	2.5% ± 100bps	http://bnr.ro/Inflation-Targets-3241.aspx
SEK	Krona	Around 2%	https://www.riksbank.se/en-gb/monetary-policy/the-inflation-target/
CHF	Swiss franc	Less than 2 %	https://www.snb.ch/en/ifor/public/qas/id/qas_gp_strat#t6
ISK	Króna	2.50% ± 150bps	http://www.cb.is/monetary-policy/inflation-target
NOK	Norwegian krone	Close to 2%	https://www.norges-bank.no/en/topics/Statistics/Inflation/
AUD	Australian dollar	2 - 3%	http://www.rba.gov.au/inflation/inflation-target.html
BRL	Real	3.5% ± 150bps	https://www.bcb.gov.br/en/monetarypolicy/historicalpath
CAD	Canadian dollar	2% ± 100bps	https://www.bankofcanada.ca/core-functions/monetary-policy/monetary-policy-framework-renewal/
CLP	Chilean peso	3%	https://www.bcentral.cl/en/content/-/details/monetary-policy-meeting-january-2023
CNY	Renminbi-yuan	3%	http://english.www.gov.cn/statecouncil/ministries/202208/26/content_WS6308cbec6d0a757729df44a.html
COP	Colombian peso	3% ± 100bps	http://banrep.gov.co/en/monetary-policy/monetary-policy-inflation-targeting-strategy-colombia
HKD	Hong Kong dollar	No IT	https://www.hkma.gov.hk/eng ; Exchange rate HKD/USD target.
INR	Indian rupee	4% ± 200bps	https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=55267
JPY	Yen	2%	https://www.boj.or.jp/en/mopo/outline/qqe.htm/#p01
KRW	South Korean won	2%	https://www.bok.or.kr/eng/main/contents.do?menuNo=400015
MYR	Ringgit	3%-4%	Refinitiv

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	Currency	Inflation target	Source
MXN	Mexican peso	3% ± 100bps	http://educa.banxico.org.mx/banco_mexico_banca_central/politica-monetaria-banco-mexi.html
NZD	New Zealand dollar	2% ± 100bps	https://www.rbnz.govt.nz/monetary-policy/about-monetary-policy/inflation-and-maximum-sustainable-employment
RUB	Russian rouble	4%	http://www.cbr.ru/eng/dkp/objective_and_principles/
SGD	Singapore dollar	No IT	https://www.mas.gov.sg/monetary-policy/singapores-monetary-policy-framework/faqs/section-1 ; Exchange rate SGD/USD target
THB	Baht	1%-3%	https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyKnowledge/Pages/Target.aspx
TRY	Turkish lira	5% ± 200bps	http://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Core+Functions/Monetary+Policy/PRICE+STABILITY+AND+INFLATION/Inflation+Targets
TWD	New Taiwan dollar	No IT	No info from Refinitiv available
USD	US dollar	2%	https://www.federalreserve.gov/monetarypolicy/review-of-monetary-policy-strategy-tools-and-communications-statement-on-longer-run-goals-monetary-policy-strategy.htm
ZAR	Rand	3%-6%	https://www.resbank.co.za/en/home/what-we-do/monetary-policy/inflation-targeting-framework

ANNEX 3 EXPECTED REAL RATES FOR CURRENCIES WITHOUT INFLATION TARGET

For currencies without an inflation target the expected inflation rate is derived from a projection based on historic inflation rates. The following table sets out for the affected currencies the average inflation over the last 10 years and the projected inflation rate in 2057 (in 35 years) according to an ARMA³ model.

Currency	Average inflation rate over the last 10 years	Projection
Hong Kong dollar	2.32%	2.30%
New Taiwan dollar	1.05%	1.60%
Singapore dollar	1.30%	2.50%

According to the UFR methodology, the expected inflation rate for currencies without inflation target is 2%, unless both the 10-year average and the projection clearly indicate that the inflation is expected to be at least one percentage point different from 2%. All currencies therefore fall in the 2% bucket.

³ Auto Regressive Moving Average model

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