

# PRIIPs – Flow diagram for the risk and reward calculations in the PRIIPs KID

## 1. Introduction

The diagrams below set out the calculation steps for the Summary Risk Indicator (market risk and credit risk assessment) and Performance Scenario calculations described in Commission Delegated Regulation (EU) 2017/653.

They are being published as part of the Question and Answer (Q&A) material developed by the European Supervisory Authorities (ESAs) on the application of the requirements for the PRIIPs KID as practical convergence tools used to promote common supervisory approaches and practices in accordance with Article 29(2) of the ESA Regulations.

The diagrams are of a non-binding nature and do not constitute professional or legal advice. The legal requirements that need to be complied with are those in Commission Delegated Regulation (EU) 2017/653 and not the text included in these diagrams. Please also be aware that the ESAs could adopt a formal position, which is different from the one expressed in this document.

All article references are to Commission Delegated Regulation (EU) 2017/653 unless otherwise stated.

The ESAs will review this document periodically or based on questions or comments from external stakeholders and updates are expected over time. **In particular, please note that this document does not reflect the amendments to the requirements for the Summary Risk Indicator and Performance scenarios in Commission Delegated Regulation (EU) 2021/2268 that are applicable from 1 January 2023. The ESAs are currently working on an updated version of this document that will be published in due course.**

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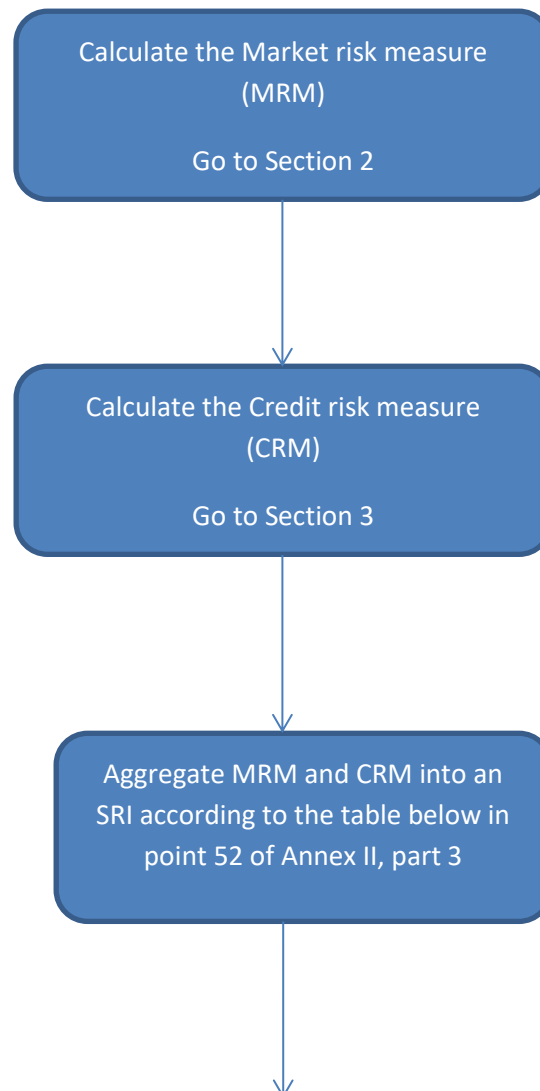
### 3. Acronyms used

CQS	Credit Quality Step
CRM	Credit Risk Measure
ECAI	External Credit Assessment Institution
ESAs	European Supervisory Authorities
EXP	Exponential
KID	Key Information Document
MRM	Market Risk Measure
OTC	Over The Counter
PCA	Principal Component Analysis
PRIIP	Package Retail and Insurance-based Investment Product
Q&A	Question and Answer
RHP	Recommended Holding Period
SRI	Summary Risk Indicator
VaR	Value-at-risk
VEV	VaR-Equivalent Volatility

## 4. Flow Diagrams

### A. Summary Risk Indicator (SRI)

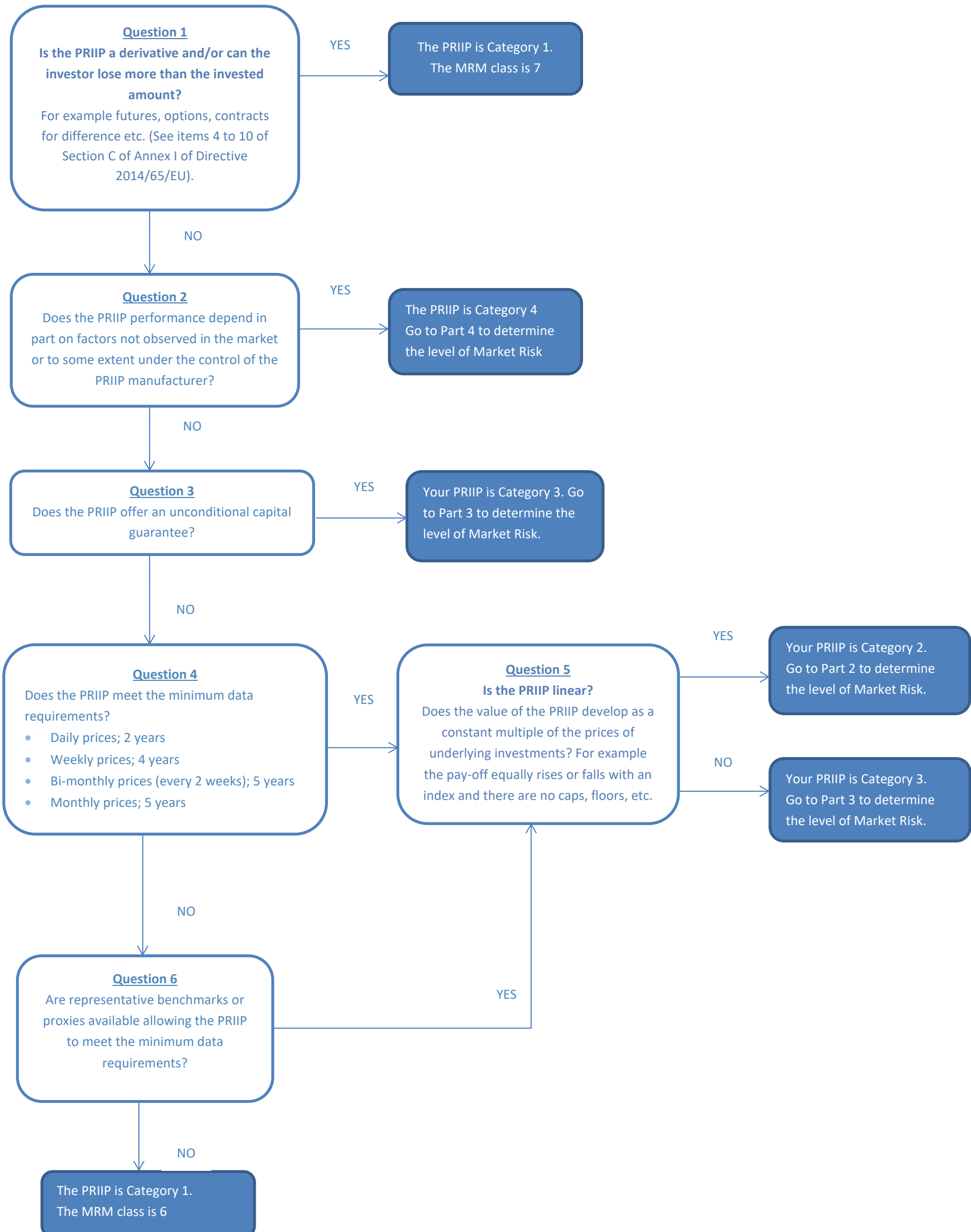
#### Section 1: Calculating the Summary Risk Indicator



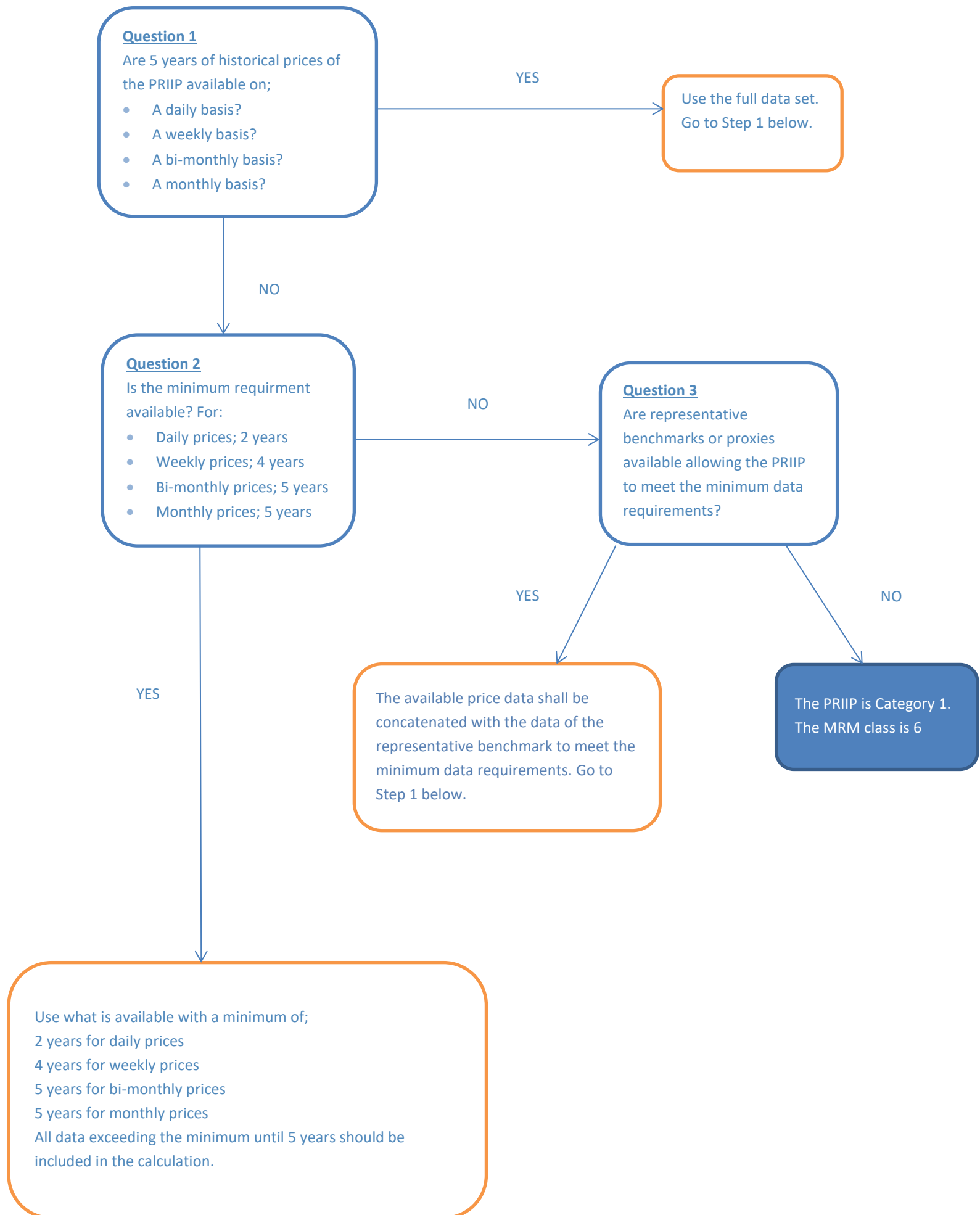
CRM class \ MRM class	MR1	MR2	MR3	MR4	MR5	MR6	MR7
CR1	1	2	3	4	5	6	7
CR2	1	2	3	4	5	6	7
CR3	3	3	3	4	5	6	7
CR4	5	5	5	5	5	6	7
CR5	5	5	5	5	5	6	7
CR6	6	6	6	6	6	6	7

## Section 2: Market Risk Measure

### Part 1: Determine the PRIIP Category to select the applicable methodology



Part 2: Category 2 (linear) PRIIPs



**Step 1**

To calculate the VaR Return Space using the Cornish Fisher expansion, you need the history of observed returns of the PRIIP. The returns are calculated by taking the natural logarithm of the price at the end of the current period divided by the price at the end of the previous period.

**Zeroeth Moment (M<sub>0</sub>):** This is the number of observed returns.

**First Moment (M<sub>1</sub>):** This is the average of the observed returns.

**Second Moment (M<sub>2</sub>):** This is the average of the square of each return less M<sub>1</sub>. It summarises the variance or width of the distribution of the returns.

The standard deviation (σ) is the square root of M<sub>2</sub>.

**Third Moment (M<sub>3</sub>):** This is the average of the cube of each return less M<sub>1</sub>. It summarises the asymmetry or skewness of the distribution of the returns.

**The skew (μ<sub>1</sub>)** is M<sub>3</sub> divided by the cube of the standard deviation.

**Fourth Moment (M<sub>4</sub>):** This is the average of the fourth power of each return less M<sub>1</sub>. It summarises the extent of wider tails or kurtosis of the distribution of the returns.

**The excess kurtosis (μ<sub>2</sub>)** is M<sub>4</sub> divided by the fourth power of the standard deviation less 3

**Step 2**

Now the formula can be applied to the data:

$$VaR_{RETURN SPACE} = \sigma \sqrt{N} * (-1,96 + 0,474 * \mu_1 / \sqrt{N} - 0,0687 * \mu_2 / N + 0,146 * \mu_1^2 / N) - 0,5\sigma^2 N$$

where N represents the number of trading periods in the recommended holding period

**Question 4**

Is the PRIIP managed according to investment policies and/or strategies according to point 14 of Annex I, Part 1?

YES

**Question 5**

Has a revision of the policy taken place within the period over which the price data is used?

YES

NO

To determine VEV take the maximum of the 2 options below;  
 1. VEV of the returns of the pro-forma asset mix that is consistent with the reference asset allocation of the fund at the time of the computation;  
 2. The VEV which is consistent with the risk limit of the fund, if any and appropriate.

To determine VEV take the maximum of the 3 options below;  
 1. The VEV as computed under step 3.  
 2. VEV of the returns of the pro-forma asset mix that is consistent with the reference asset allocation of the fund at the time of the computation;  
 3. The VEV which is consistent with the risk limit of the fund, if any and appropriate.

**Step 3**

After determining the VaR in Return space, now the VEV should be determined. This can be done by the following formula;

$$VEV = \{ \sqrt{(3.842 - 2 * VaR_{RETURN SPACE}) - 1.96} \} / \sqrt{T}$$

where T is the length of the recommended holding period in years.

**Question 6**

Is the calculation based on monthly price data?

NO

YES

The MRM class is assigned based on the table to the right in point 2 of Annex II, Part 1.

The MRM class is assigned based on the table to the right in point 2 of Annex II, Part 1 and increased by one MRM class.

MRM class	Annualised volatility (VEV)
1	< 0,5 %
2	≥0,5 % and <5,0 %
3	≥5,0 % and <12 %
4	≥12 % and <20 %
5	≥20 % and <30 %
6	≥30 % and <80 %
7	≥80 %

5 years of daily observed prices (Euro Stoxx 50 from 01.05.12 to 25.05.17)

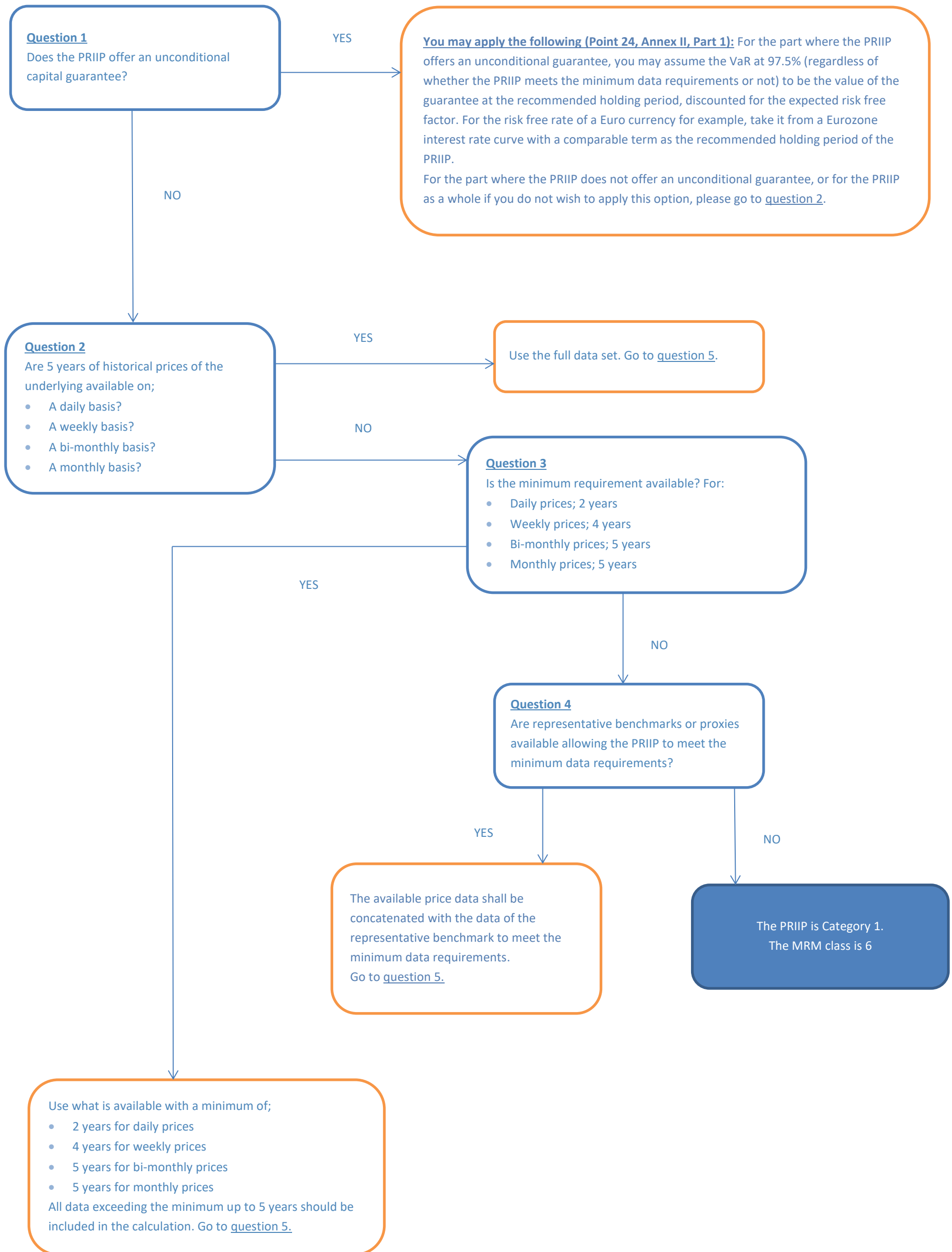
<b>Trading days per year</b>	256	<b>365 (number of days) – 104 (number of weekend days) – 5 (public holidays) = 256 days</b>			
<b>M0 (under paragraph 10 of Annex II)</b>	1280	<b>Number of observations in the period 256*5=1280</b>			
<b>M1</b>	0.0003389	<b>Mean of all the observed returns in the sample (daily)</b>			
<b>M2</b>	0.000149905	Second Moment $M_2 = \sum_i \frac{(r_i - M_1)^2}{M_0} = \sigma^2$	<b>Volatility</b> 0.01224357 $\sigma = \sqrt{M_2}$		
<b>M3</b>	-6.44479E-07	Third Moment $M_3 = \sum_i (r_i - M_1)^3 / M_0$	<b>Skew</b> -0.351143435 $\mu_1 = M_3 / M_2^{1.5}$		
<b>M4</b>	1.46705E-07	Fourth Moment $M_4 = \sum_i (r_i - M_1)^4 / M_0$	<b>Excess Kurtosis</b> 3.528503383 $\mu_2 = (M_4 / M_2^2) - 3$		
Daily $\sigma$	0.01224357				
Confidence level $z_\alpha$	2.50%	<b>Polynomial</b>	<b>Divisor</b>		
	-1.959963985	$z^2 - 1$	6		
Annualized Volatility (1Y) $\sigma\sqrt{N}$	19.59%	$z^3 - 3z$	24		
$(z_\alpha^2 - 1)/6$	0.47357647	$2z^3 - 5z$	36		
$(z_\alpha^3 - 3z_\alpha)/24$	-0.068717874				
$(2z_\alpha^3 - 5z_\alpha)/36$	-0.146067276				
<b>RHP (Recommended Holding Period expressed in years)</b>	<b>Number of Days</b>	<b>VaR (Return Space)</b>	<b>VEV Return Space</b>	<b>MRM class</b>	<b>VaR-equivalent volatility (VEV)</b>
1	256	-0.4053	0.1969	1	<0,5%
3	768	-0.7247	0.1964	2	0,5%-5,0%
5	1280	-0.9566	0.1963	3	5,0%-12%
10	2560	-1.4081	0.1962	4	12%-20%
20	5120	-2.1029	0.1961	5	20%-30%
50	12800	-3.6764	0.1960	6	30%-80%
				7	>80%

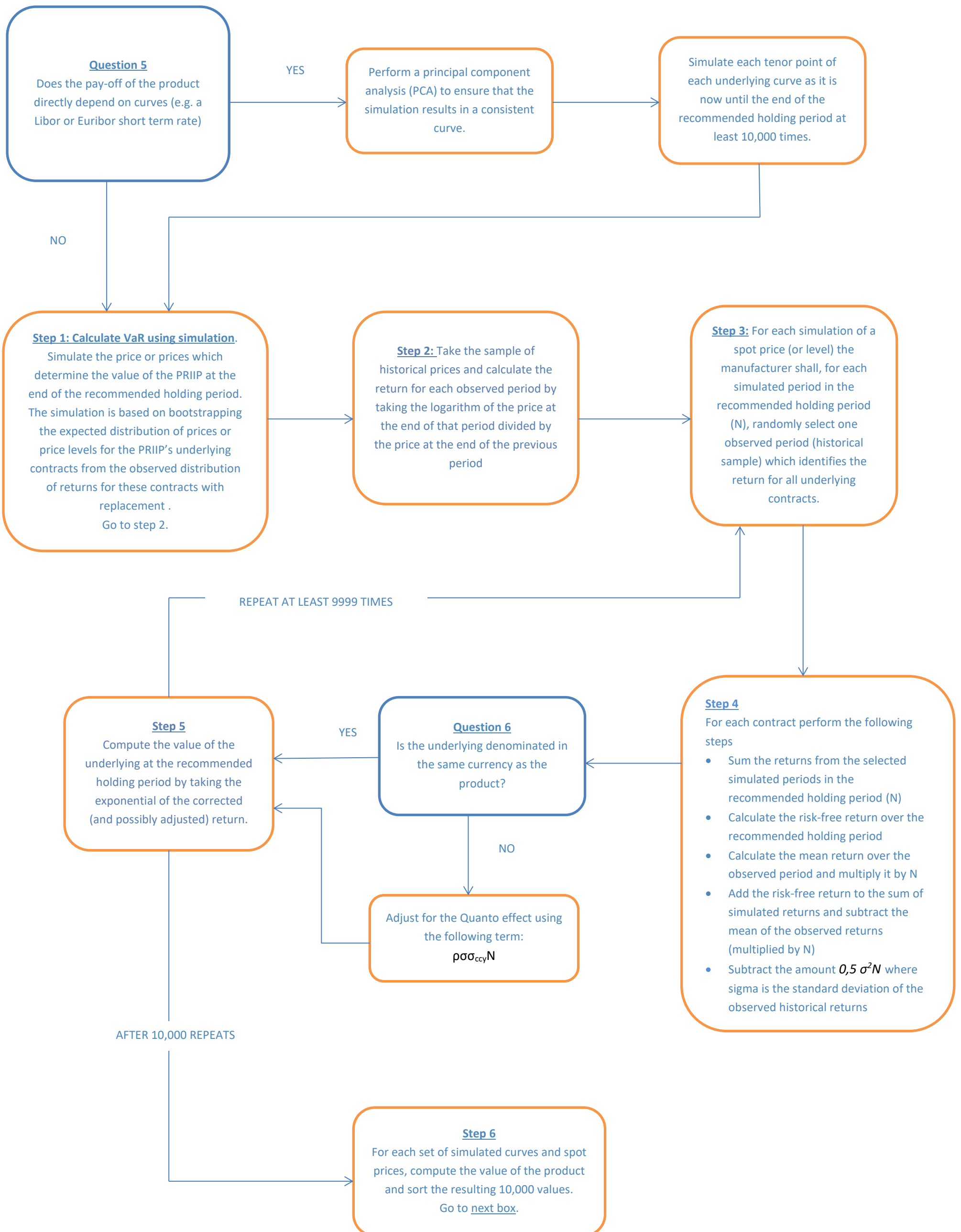
$$VEV_{Return\ Space} = \frac{\sqrt{z_\alpha^2 - 2 * VaR_{Return\ Space} - z_\alpha}}{\sqrt{T}}$$

$$VEV_{Price\ Space} = \frac{\sqrt{z_\alpha^2 - 2 * \ln(VaR_{Price\ Space}) - z_\alpha}}{\sqrt{T}}$$



Part 3: Category 3 PRIIPs (non-linear products)





Take the VaR<sub>PRICE SPACE</sub> from these sorted values at the 97.5% interval or the 2.5% percentile of the distribution of the PRIIP's values and discount it to the present date using the expected risk-free discount factor.

**Step 7 - Calculate VEV and MRM Class**

The VEV is given by:

$$VEV = \{\sqrt{(3.842 - 2 * \ln(\text{VaR}_{\text{PRICE SPACE}})) - 1.96}\} / \sqrt{T}$$

Where T is the length of the recommended holding period in years (Point 17, Annex II, Part 1).

Only in cases where the product is called or cancelled before the end of the recommended holding period according to the simulation, the period in years until the call or cancellation is used.

**Question 8**

Is the calculation based on monthly price data?

NO

YES

The MRM class is assigned based on the table below (Point 2, Annex II, Part 1).

The MRM class is assigned based on the table below and increased with one MRM class (Point 18, Annex II, Part 1).

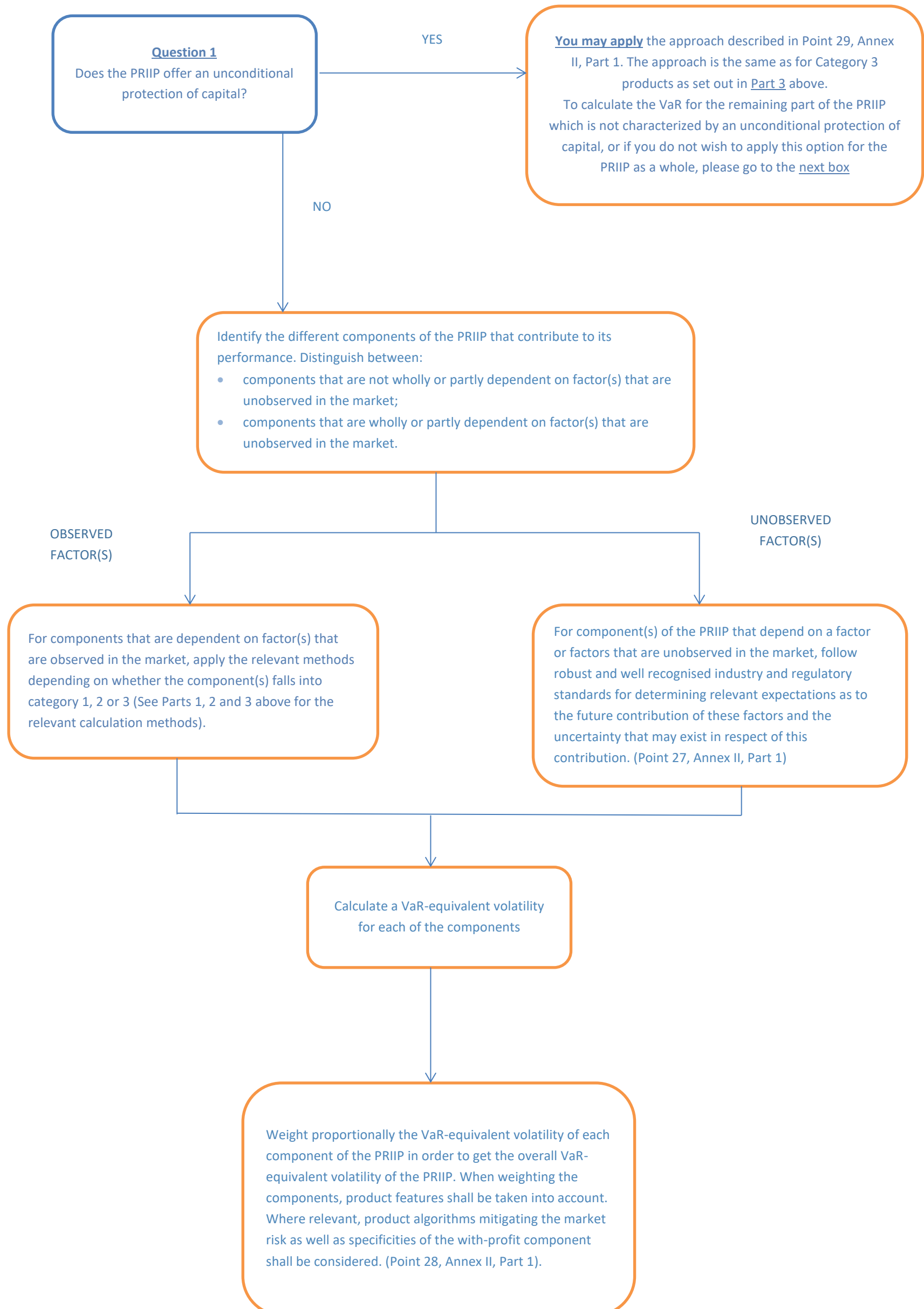
MRM class	Annualised volatility (VEV)
1	< 0,5 %
2	≥0,5 % and <5,0 %
3	≥5,0 % and <12 %
4	≥12 % and <20 %
5	≥20 % and <30 %
6	≥30 % and <80 %
7	≥80 %

**Steps 1-6: 12 days RHP, 20 simulations, 1280 observed daily prices (5 years – Euro Stoxx 50 – from 01.05.12 to 28.04.17)**

EXAMPLE SIMULATION: SIMULATION 1			DISTRIBUTION OF SIMULATIONS		
EACH SIMULATED PERIOD IN THE RHP (RHP=12 DAYS)	RANDOMLY SELECT ONE OBSERVED PERIOD OVER 1280 PERIODS (5*256)	RETURN FOR ALL UNDERLYING CONTRACTS	SIMULATIONS	RANK	VALUE
1	754	0,003144319	1	9	0,9784144
2	247	0,000786848	2	1	1,05729999
3	840	-0,034100705	3	15	0,9277006
4	137	1,21011E-05	4	14	0,93097185
5	117	0,012355476	5	12	0,94650357
6	524	-0,000889222	6	6	0,99116702
7	195	0,002623287	7	17	0,92026668
8	138	0,000278285	8	8	0,97890466
9	457	0,014583841	9	3	1,01099443
10	717	0,001495982	10	2	1,01111948
11	809	-0,01294047	11	5	0,99193409
12	259	-0,00477314	12	19	0,91167231
			13	10	0,95711822
			14	4	0,99512444
			15	18	0,91342991
			16	7	0,98975916
			17	20	0,90900029
			18	11	0,94922686
			19	13	0,93321018
			20	16	0,92273156
$Return = E[Return_{risk-neutral}] - E[Return_{measured}] - 0,5\sigma^2 N - \rho\sigma\sigma_{ccy}N$ $E[Return_{risk-neutral}] = Riskfree\ Return + Sum\ of\ simulated\ returns$					
RISK-FREE RETURN OVER THE RHP	0,000568027				
SUM OF SIMULATED RETURNS	-0,017423398				
E[RETURN risk-neutral]	-0,016855371				
E [RETURN MEASURED]	0,004067173				
0,5 σ <sup>2</sup> N	0,00089943				
ADJUSTED SIMULATED RETURN:	-0,021821974				
EXP of SIMULATED RETURN	0,978414403				
RHP LENGTH:	12 DAYS				

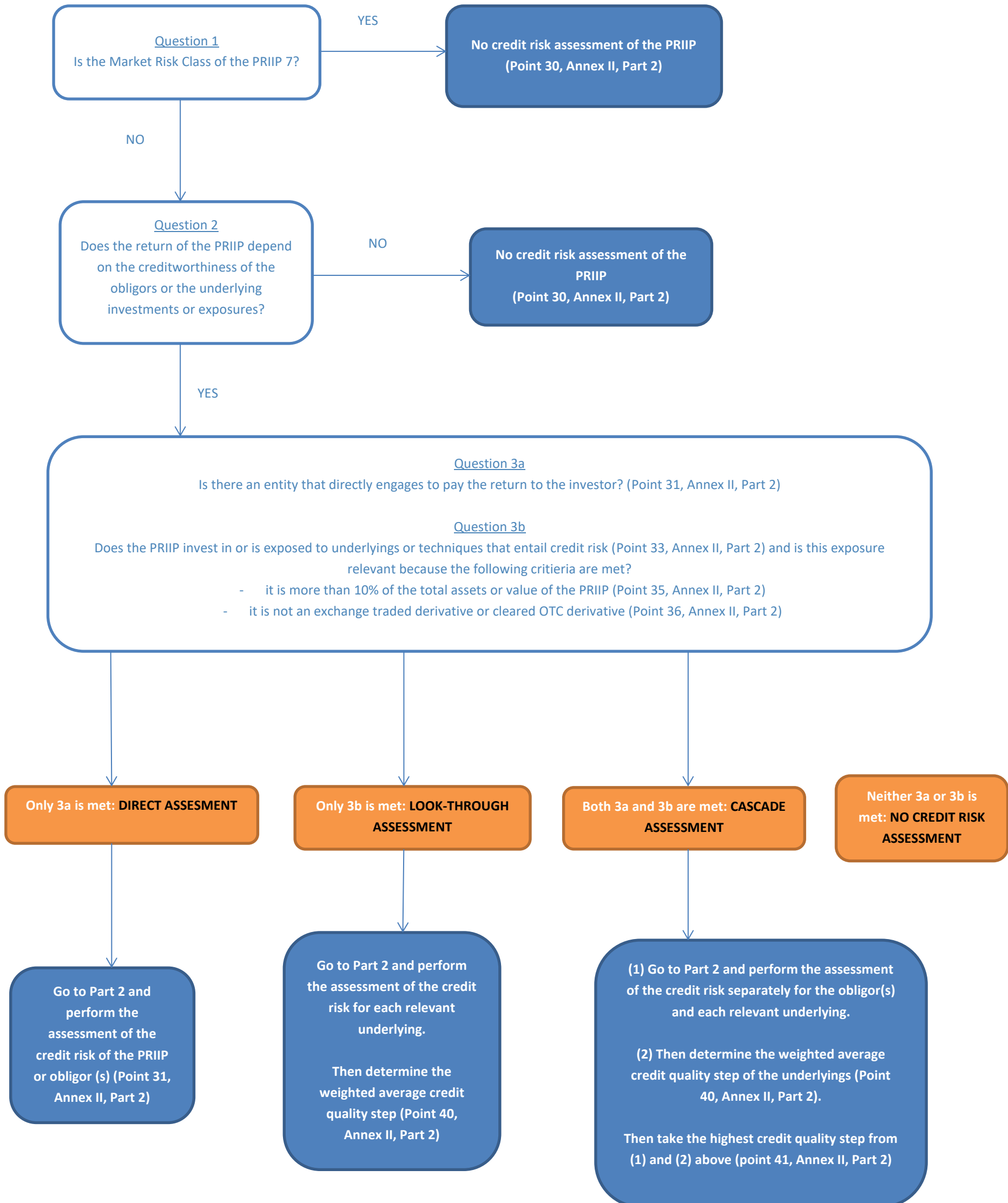
**Step 7: RHP = 1 AND 3 YEARS, 1000 simulations, 1280 observed daily prices (5 years – Euro Stoxx 50 – from 01.05.12 to 28.04.17)**

AVG RETURN (OBSERVED):	0,000338931
DEV. STANDARD OF RETURNS (OBSERVED):	0,01224357
DATA COUNT ( 5 years of daily prices):	1280
RISK FREE RATE (%/yr):	1,2
MRM PERCENTILE:	2,5
TRADING DAYS PER YEAR:	256
INV NORMAL:	-1,95996398
USED RANK MRM:	975
<b>Recommended holding period expressed in years (T)</b>	
<b>YEARS</b>	<b>1</b> <b>3</b>
VaR (price space):	0,6832      0,4957
VEV:	0,1856      0,1907

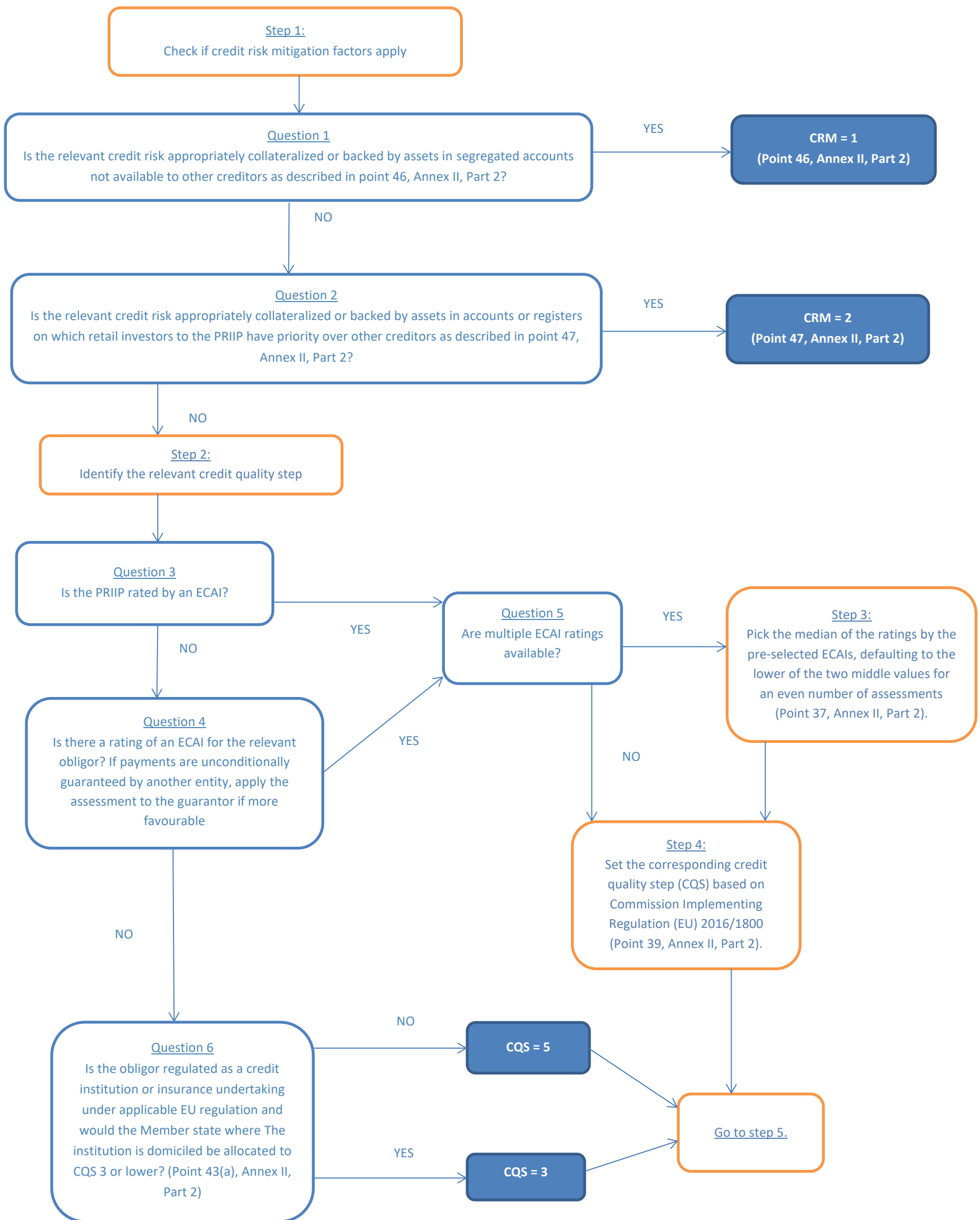


# Section 3: Credit Risk Measure

## Part 1: Should credit risk be assessed and if so how



Part 2 Assessment of credit risk



Step 5: Allocation of credit assessment corresponding to the credit quality steps

Adjust the CQS depending on the term of the PRIIP according to the table below in point 42, Annex II, Part 2 unless the credit assessment assigned reflects the term of the PRIIP.

Credit quality step pursuant to point 38 of this Annex	Adjusted credit quality step, in the case where the maturity of the PRIIP, or its recommended holding period where a PRIIP does not have a maturity, is up to one year	Adjusted credit quality step, in the case where the maturity of the PRIIP, or its recommended holding period where a PRIIP does not have a maturity, ranges from one year up to twelve years	Adjusted credit quality step, in the case where the maturity of the PRIIP, or its recommended holding period where a PRIIP does not have a maturity, exceeds twelve years
0	0	0	0
1	1	1	1
2	1	2	2
3	2	3	3
4	3	4	5
5	4	5	6
6	6	6	6

Step 6

Convert the CQS into a CRM measure according to the table below in point 45, Annex II, Part 2

Adjusted credit quality step	Credit risk measure
0	1
1	1
2	2
3	3
4	4
5	5
6	6

Question 7:

Is there any other relevant credit risk to assess?

YES

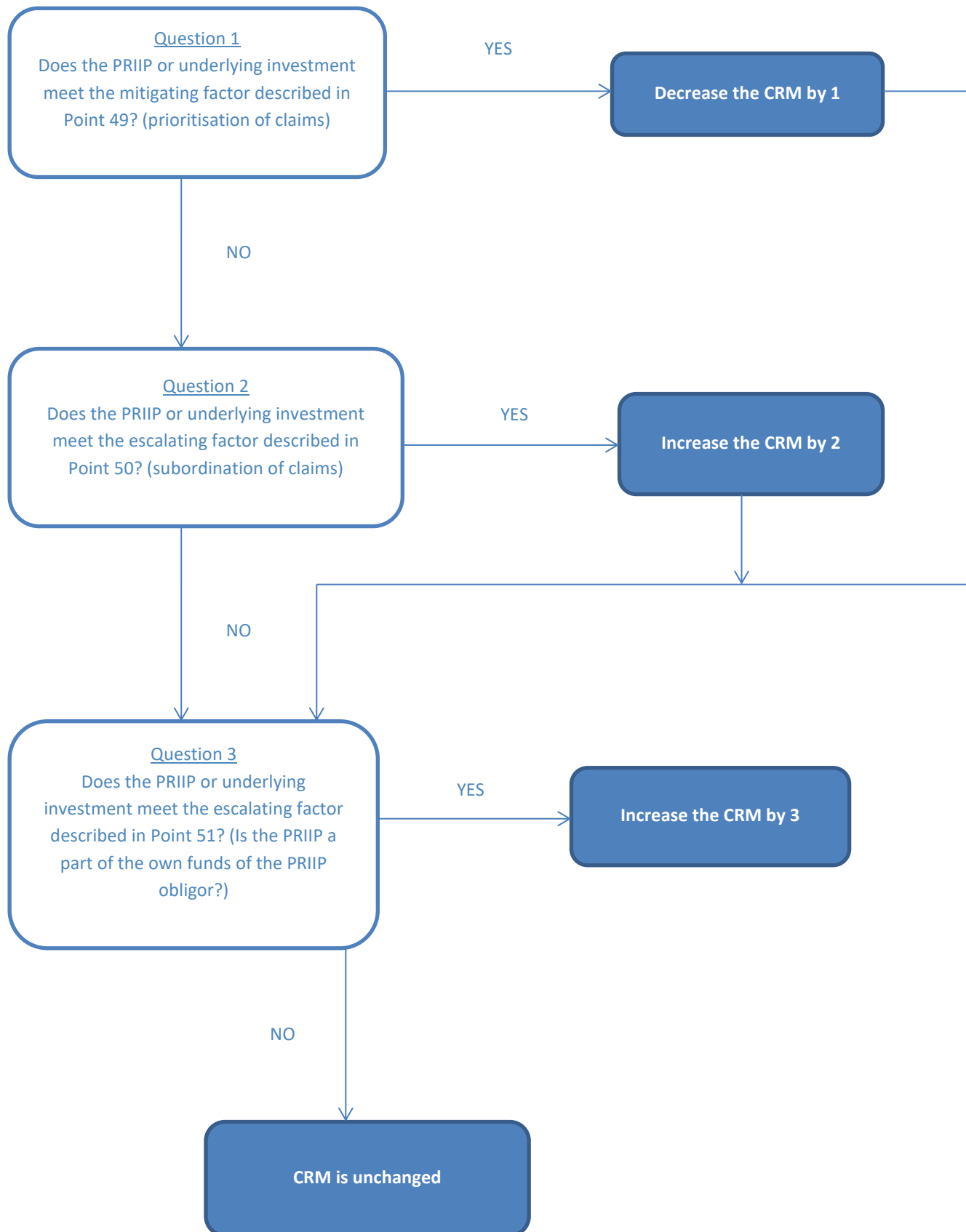
NO

Go to the start of Part 2 and repeat assessment for the other relevant credit risks

Go to Part 3

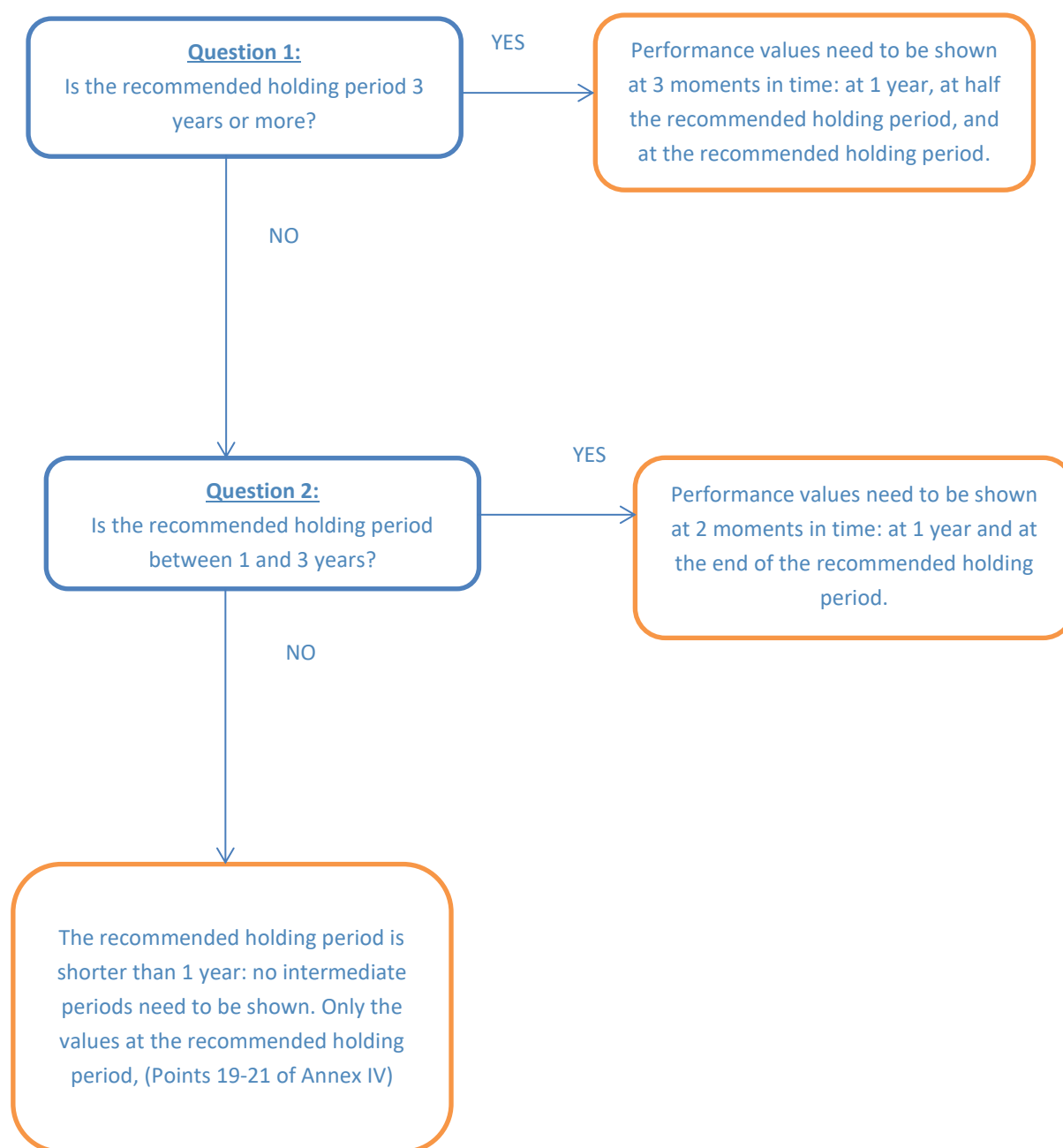


Part 3: Mitigating or escalating factors

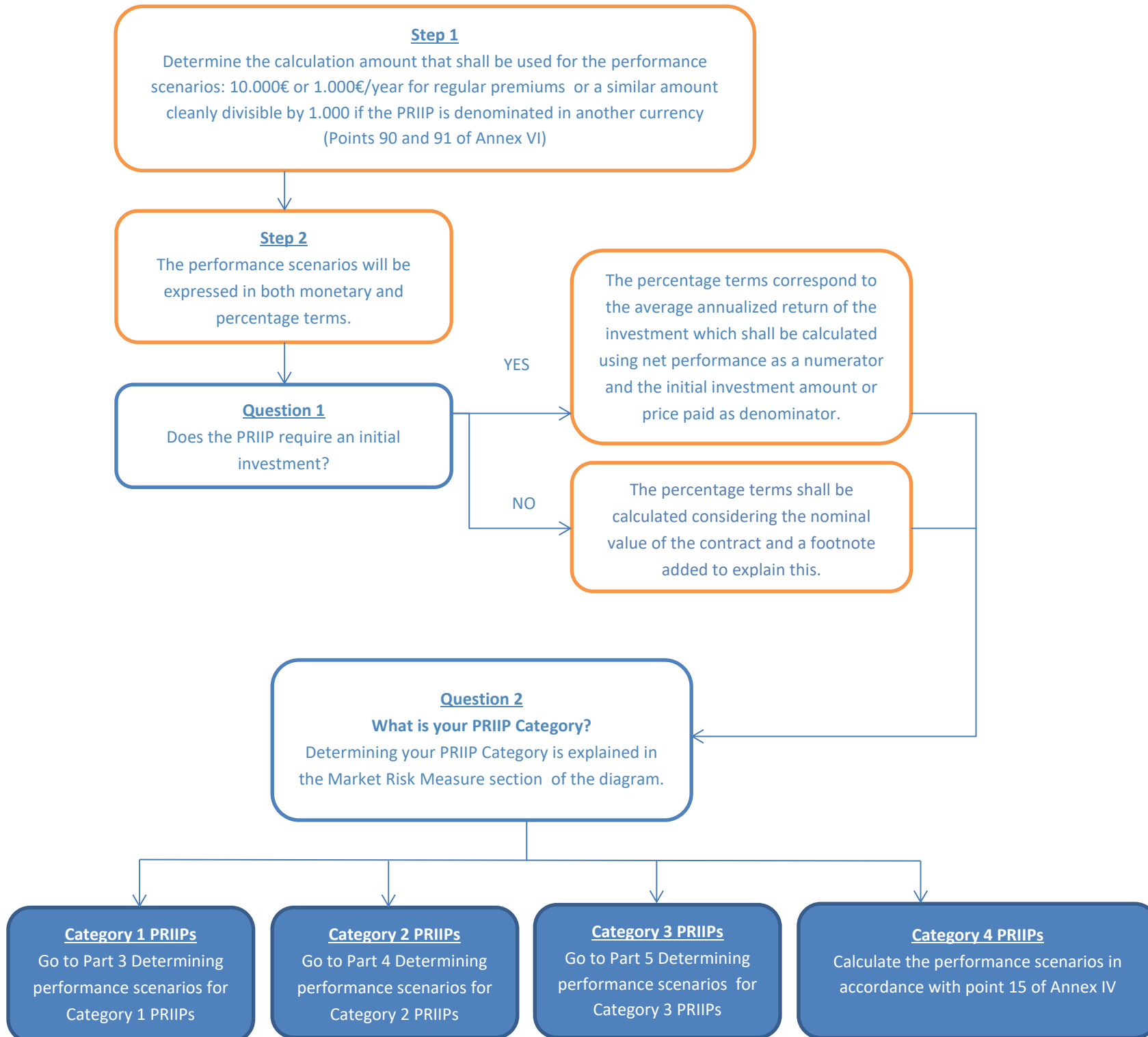


## B. Performance Scenarios

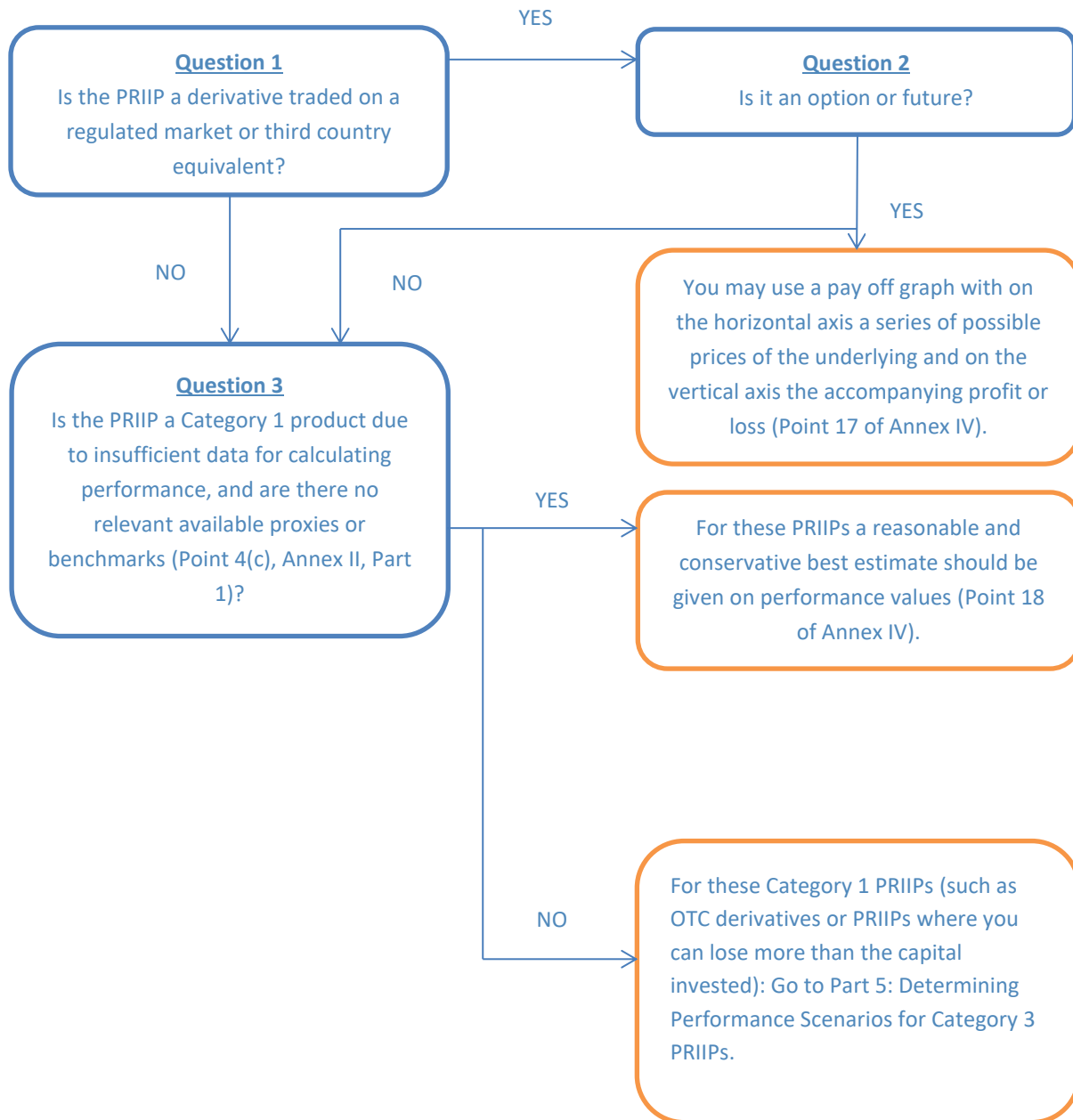
### Part 1: Determining the holding periods that need to be shown



**Part 2: Determining calculation amounts and applicable methodology**



**Part 3: Determining Performance Scenarios for Category 1 PRIIPs**



Part 4: Determining Performance Scenarios for Category 2 PRIIPs

a) Performance calculations for the unfavourable, moderate and favourable scenarios

The items listed below are needed in order to calculate the **performance values for the relevant holding period**. Most values are known already from the calculation for MRM, except for N.

The values for the recommended holding period and the intermediate holding periods are calculated by the same formulas as displayed below, changing only N which is different at the recommended holding period compared to the intermediate holding periods.

- N - is the number of trading days, weeks or months within the holding period. So for a Recommended Holding Period of 5 years and If there is daily price data  $N = 5 * 252 = 1260$ ;
  - Exp - the exponential of;
- $M_1$  - the mean of the distribution of all the observed returns in the historical period;
  - $\sigma$  – standard deviation or volatility of the distribution;
    - $\mu_1$  - skew of the distribution;
    - $\mu_2$  - the excess kurtosis of the distribution.

**Unfavourable scenario;**

$$\text{Exp} [ M_1 * N + \sigma \sqrt{N} * (-1.28 + 0.107 * \mu_1 / \sqrt{N} + 0.0724 * \mu_2 / N - 0.0611 * \mu_1^2 / N) - 0.5\sigma^2 N ]$$

**Moderate scenario;**

$$\text{Exp} [ M_1 * N - \sigma \mu_1 / 6 - 0.5\sigma^2 N ]$$

**Favourable scenario;**

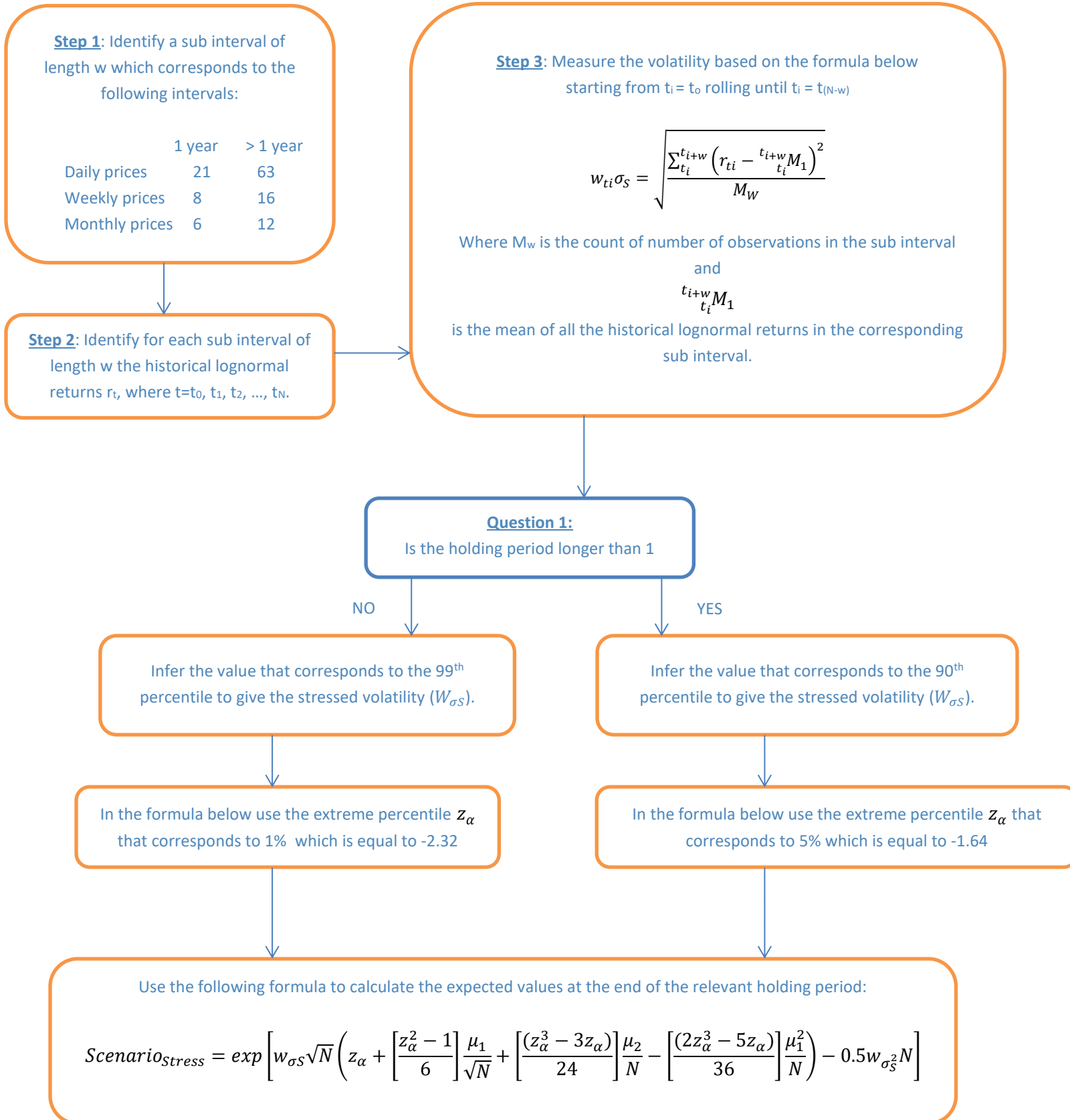
$$\text{Exp} [ M_1 * N + \sigma \sqrt{N} * (1.28 + 0.107 * \mu_1 / \sqrt{N} - 0.0724 * \mu_2 / N + 0.0611 * \mu_1^2 / N) - 0.5\sigma^2 N ]$$

5 years of observed daily prices (Euro Stoxx 50 – from 01.05.12 to 25.05.17), RHP 1, 3 and 5 years , examples considering an investment amount of 1 €

	$\alpha$	$z_\alpha$	$(z_\alpha^2 - 1)/6$	$(z_\alpha^3 - 3z_\alpha)/24$	$(2z_\alpha^3 - 5z_\alpha)/36$
Unfavorable Scenario - Critical values	10%	-1,281551566	0,107062403	0,072494466	0,061060634
Moderate Scenario - Critical values	50%	0	-0,166666667	0	0
Favorable Scenario - Critical values	90%	1,281551566	0,107062403	-0,072494466	-0,061060634

<b>Standard Performance Scenarios</b>			
Point 9 - letters (a), (b), (c) - Annex IV			
	RHP	5 years	RHP
		1280	1 year
			256
			3 years
			768
<b>N is the number of trading periods in the recommended holding period</b>			
$\sigma\sqrt{N}$		0,438039282	0,195897122
Unfavorable scenario		0,799432892	0,832148758
Moderate scenario		1,402994819	1,070681172
Favorable scenario		2,456450066	1,374349473

b) Performance calculations for the stress scenario



RHP 1, 3 and 5 years, 5 years of daily observed prices (Euro Stoxx 50 – from 01.05.12 to 25.02.17 )

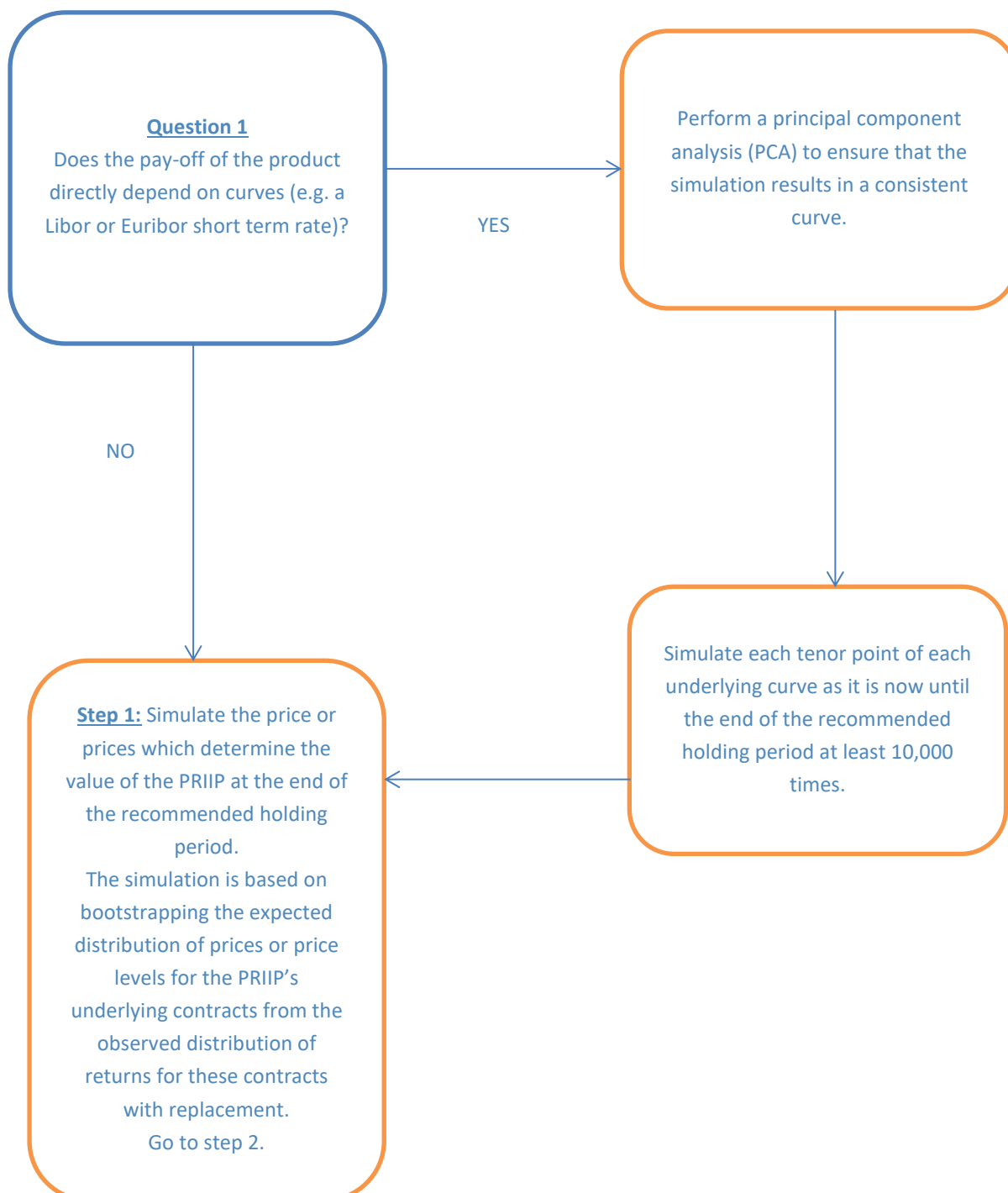
<b>Stressed Performance Scenario</b>					
	$\alpha$	$z_\alpha$	$(z_\alpha^2 - 1)/6$	$(z_\alpha^3 - 3z_\alpha)/24$	$(2z_\alpha^3 - 5z_\alpha)/36$
RHP 1 YEAR - Annex IV, point 11	1%	-2,326347874	0,735315739	-0,233787728	-0,376337746
RHP OTHER HOLDING PERIODS - Annex IV, point 11	5%	-1,644853627	0,284257242	0,020180747	-0,018782716
Stressed volatility 1 year - Annex IV, point 10(d)	<b>0,025767278</b>				
Stressed volatility 3 years - Annex IV, point 10(d)	<b>0,017657123</b>				
Stressed volatility 5 years - Annex IV, point 10(d)	<b>0,017152366</b>				
<b>N is the number of trading periods in the recommended holding period</b>			<b>5 years</b>	<b>RHP</b>	<b>3 years</b>
			1280	256	768
$W_{\sigma_s} \sqrt{N}$			0,613661699	0,412276441	0,489328534
<b>STRESSED SCENARIO</b>			<b>0,301389802</b>	<b>0,349241623</b>	<b>0,396012057</b>

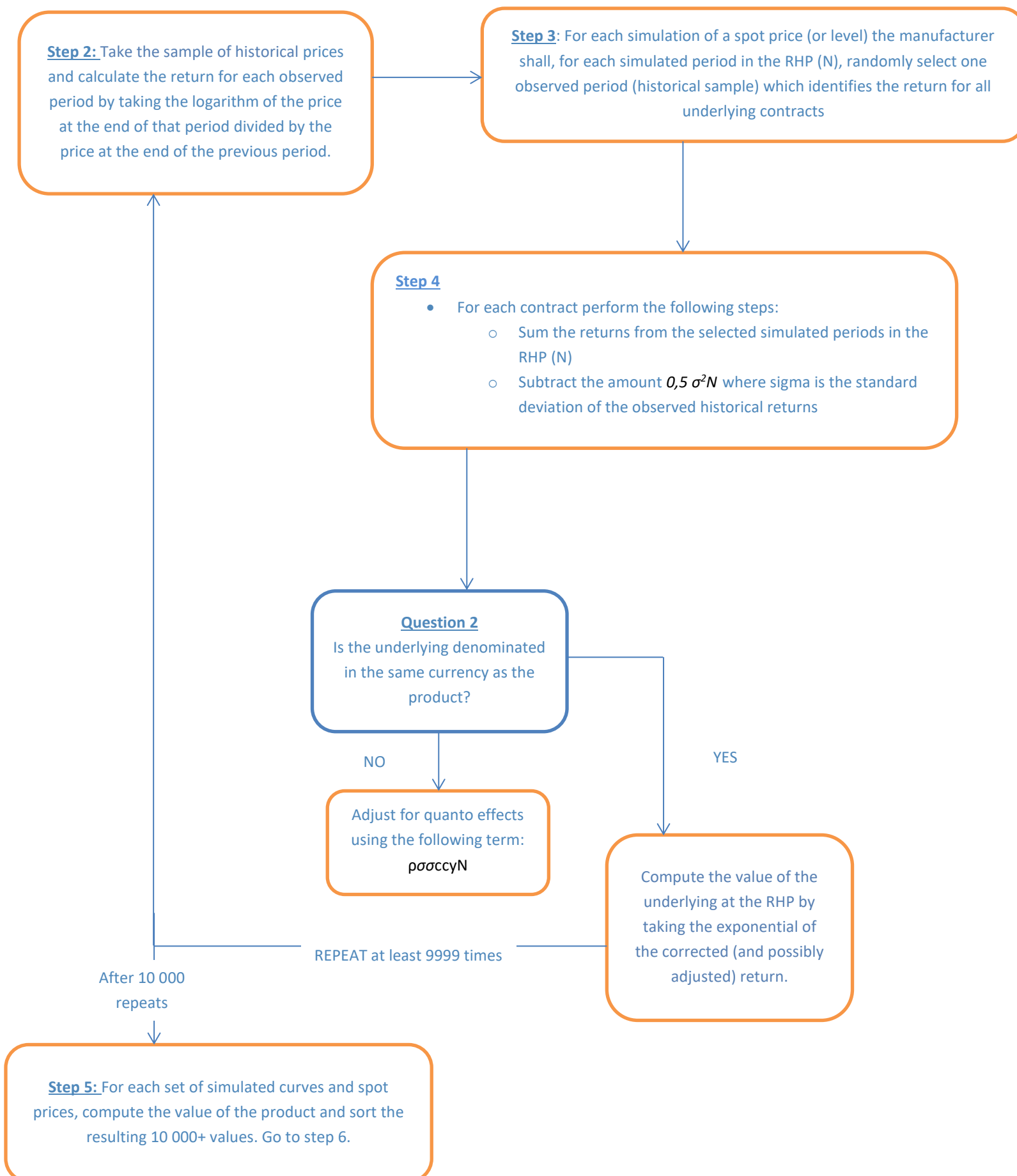


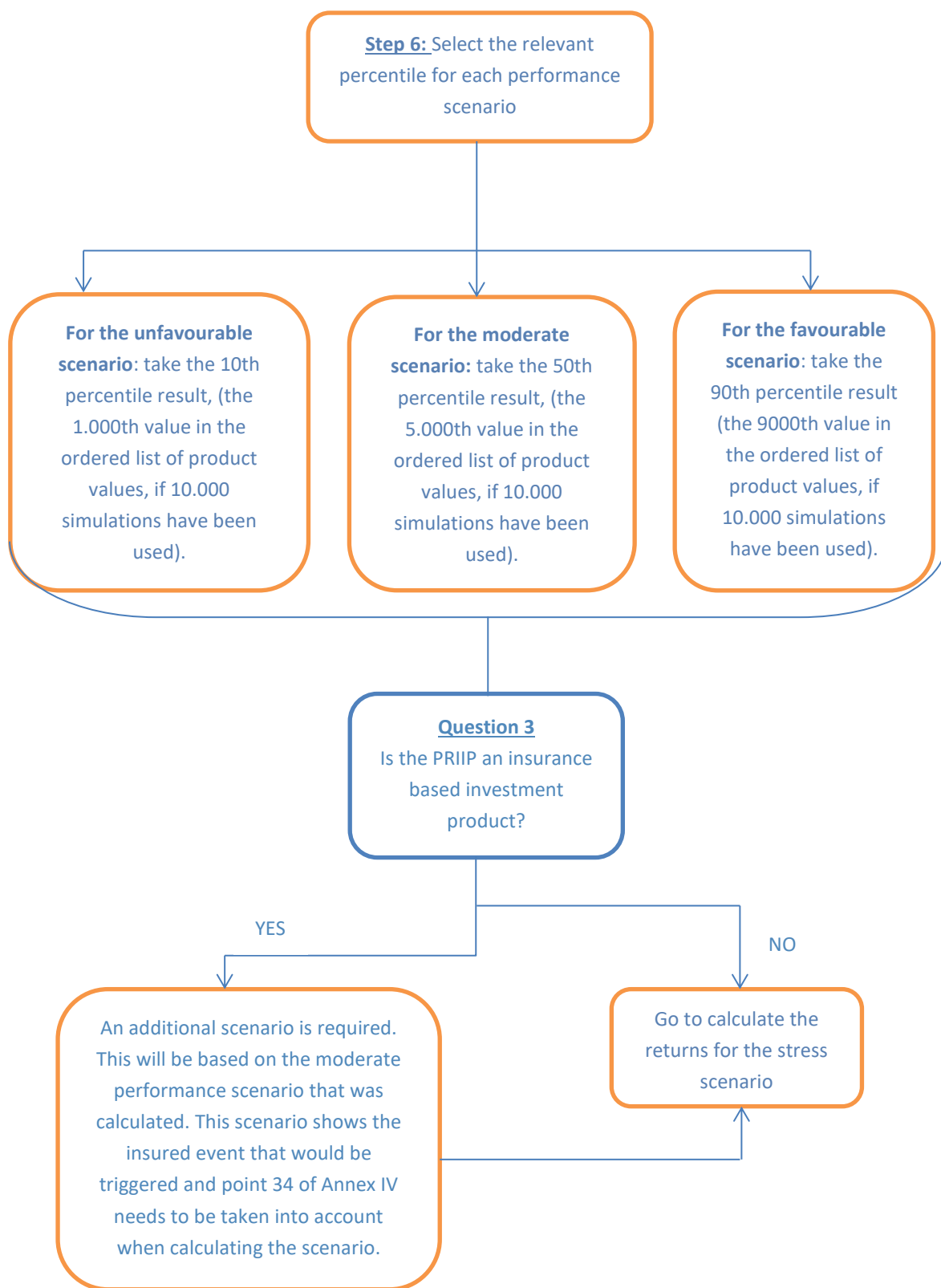
**Part 5: Determining Performance Scenarios for Category 3 PRIIPs**

Please note that the performance scenarios hinge on the same simulated data as the MRM calculations, hence manufacturers are not required to make a new simulation when switching from the MRM to the Performance Scenarios calculations. However, the complete process for the performance scenarios is described in this Part for the sake of clarity.

a) Performance calculations for the unfavourable, moderate and favourable scenarios



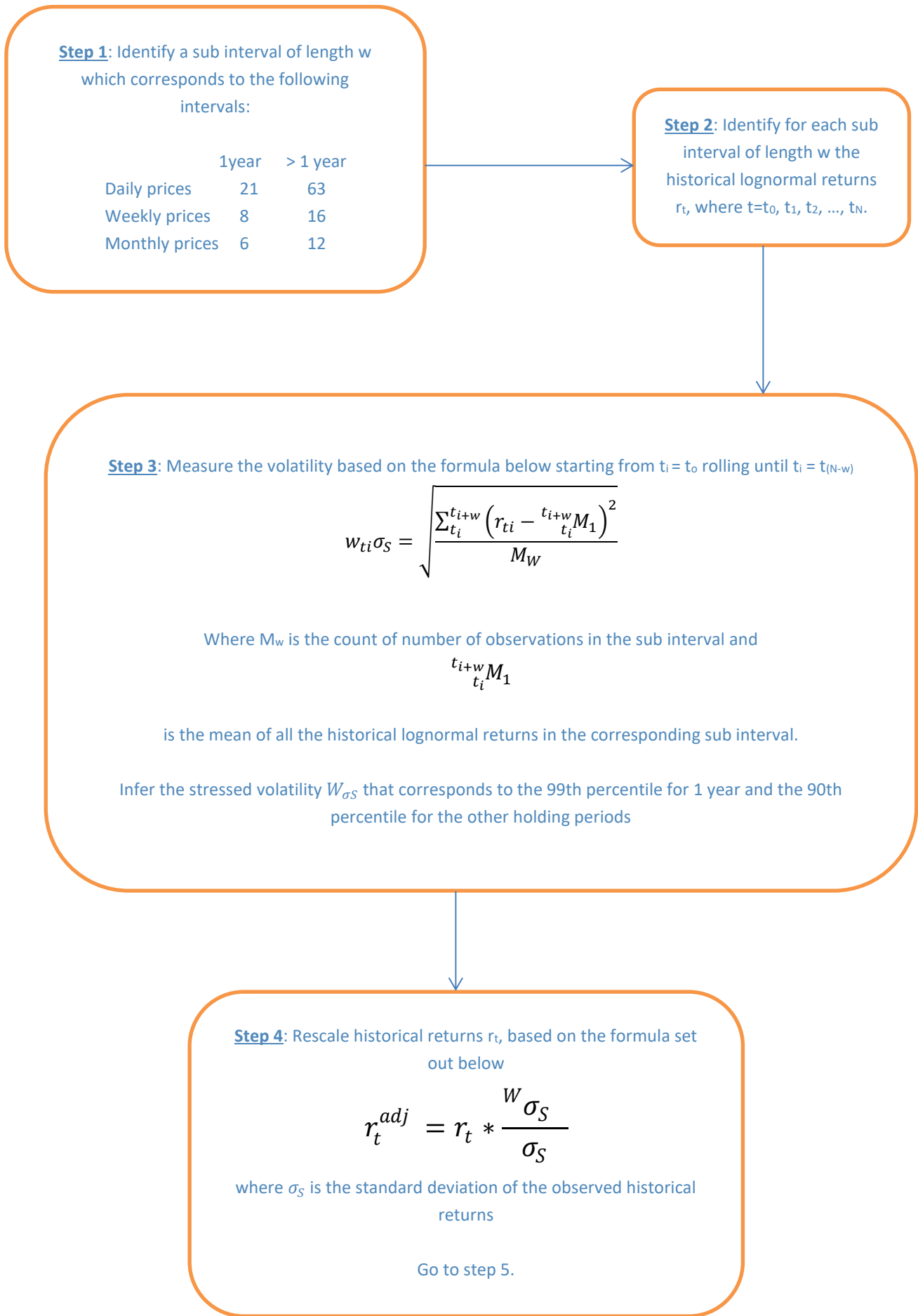


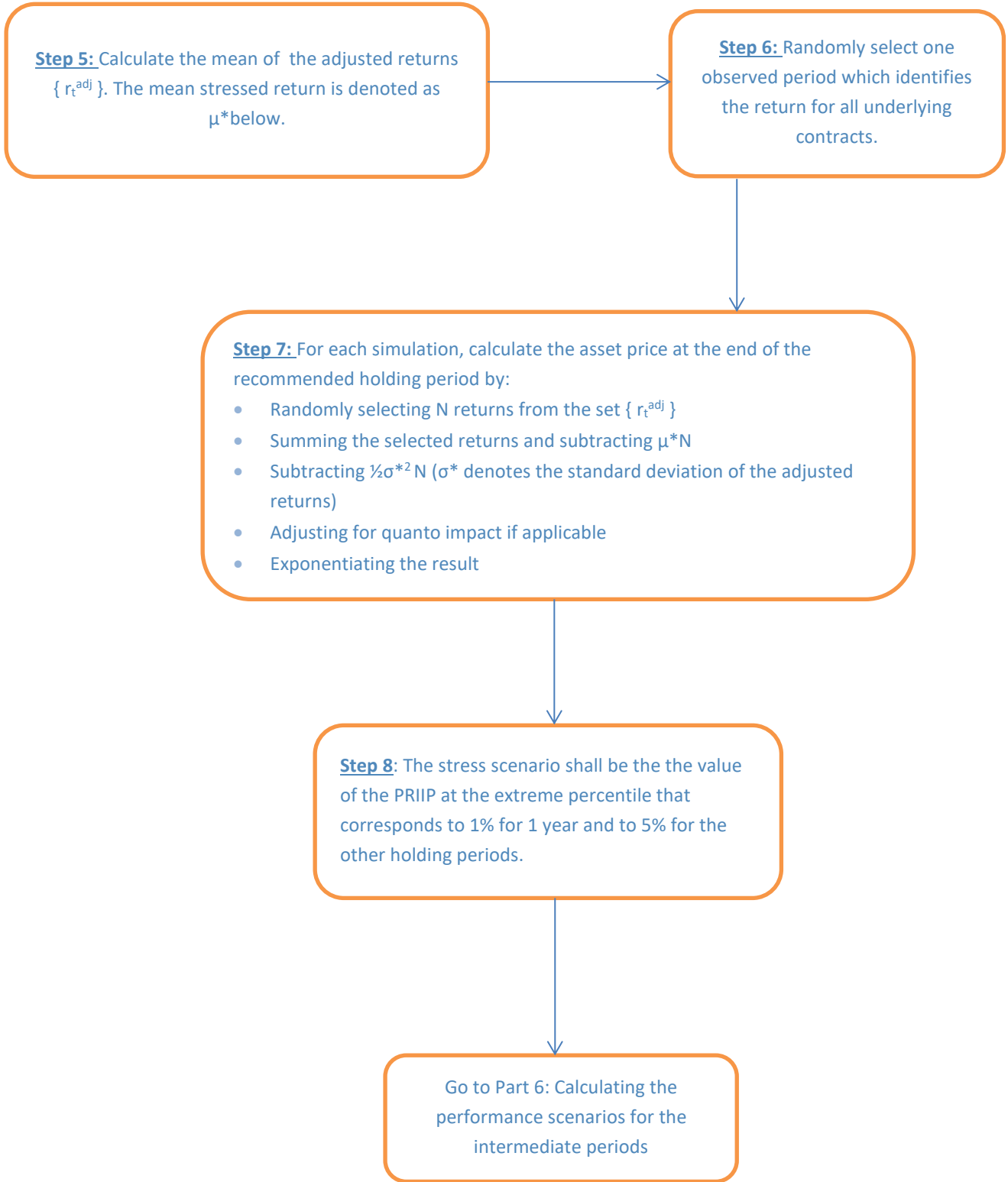


1000 simulations, RHP 1 and 3 years, 5 years of daily observed prices (Euro Stoxx 50 from 01.05.12 to 28.04.17)

<b>Recommended holding period in years (T)</b>			
		<b>Percentile</b>	<b>Rank (over 1000 simulations)</b>
<b>Used Rank Unfavourable scenario</b>		<b>10th</b>	<b>900</b>
<b>Used Rank Moderate scenario</b>		<b>50th</b>	<b>500</b>
<b>Used Rank Favourable scenario</b>		<b>90th</b>	<b>100</b>
<b>YEARS</b>	<b>1</b>	<b>3</b>	
<b>Unfavorable Scenario</b>	<b>0,848537</b>	<b>0,780318</b>	The scenarios values under different performance scenarios shall be calculated in a similar manner as the market risk measure (MRM) - Point 4 Annex IV and Point 12 letter a, b Annex IV)
<b>Moderate Scenario</b>	<b>1,086382</b>	<b>1,23794</b>	
<b>Favourable Scenario</b>	<b>1,39373</b>	<b>1,936616</b>	

b) Performance calculations for the stress scenario






Steps 1-3: 1000 simulations, RHP of 2 years

**RECOMMENDED HOLDING PERIOD = N = 2 YEAR = 512 OBS**  
**W=63 days**

**Starting from  $t_i=t_0$  rolling until  $t_i=t(N-w)=512-63=449$**

DATE	PRICE		OBSERVED RETURNS	N		Rolling volatility
04/05/2015	3632,94				$t_0$	
05/05/2015	3546,56	$r_1$	-0,024064118	1	$t_1$	0,011821003
06/05/2015	3558,03	$r_2$	0,003228901	2	$t_2$	0,010212764
07/05/2015	3556,21	$r_3$	-0,00051165	3	$t_3$	0,010615001
08/05/2015	3649,48	.	0,025889321	4	.	0,011073765
11/05/2015	3624,41	.	-0,006893175	5	.	0,00829045
12/05/2015	3573,1	.	-0,01425795	6	.	0,00849749
13/05/2015	3553,42	.	-0,005523046	7	.	0,00737515
14/05/2015	3602,22	.	0,013639802	8	.	0,007389004
15/05/2015	3573,07	.	-0,008125152	9	.	0,012145054
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
23/01/2017	3273,04	.	-0,002604259	445	.	0,009510134
24/01/2017	3281,53	.	0,009160707	446	.	0,009459426
25/01/2017	3326,15	.	-0,002328776	447	.	0,009354546
26/01/2017	3319,13	.	-0,002037409	448	.	0,009401931
27/01/2017	3303,33	$r_{T-w} = 512 - 63 = 449$	0,008093104	449	$t_{T-w} = 512 - 63 = 449$	0,009386922

Step 4: 1000 simulations, RHP of 2 years

DATE	Rank	Rolling volatility		Stressed returns
04/05/2015	38	0,010556603	<b>Percentile RHP &gt; 1</b> <b>95</b>	$r_t^{adj} = r_t * \frac{W_{\sigma_S}}{\sigma_S}$ -0,04568
05/05/2015	57	0,009673011		-0,02817
06/05/2015	56	0,009676026	<b>Inferred volatility (RHP &gt; 1 year)</b> <b>0,018101868</b>	0,001279
07/05/2015	55	0,00967635		-0,00281
08/05/2015	50	0,009972533	$W_{\sigma_S}$	0,015142
11/05/2015	49	0,01006383		0,018321
12/05/2015	45	0,010207575		-0,01762
13/05/2015	34	0,01152721		-0,01695
14/05/2015	32	0,012145054	<b>Used rank (RHP &gt; 1)</b> <b>45</b>	0,016882
15/05/2015	31	0,012591142		-0,00417
18/05/2015	29	0,01293892	<b>Observed Standard Deviation</b> <b>0,013630478</b>	-0,01061
19/05/2015	30	0,012933856		0,014619
20/05/2015	28	0,013087051		-0,02976
.	.	.		.
.	.	.		.
.	.	.		.
.	.	.		.
25/04/2017	.	3583,16		0,021522
26/04/2017	.	3578,71		-0,00547
27/04/2017	.	3563,29		-0,00479
28/04/2017	$r_{T-w}$	3559,59		0,019014

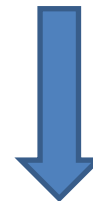


Steps 5-6: 1000 simulations, RHP of 2 years

SIMULATED RETURNS IN THE RHP (RHP=512 DAYS = 2 YEARS)											
DAY	1	2	3	.	.	.	509	510	511	512	Sum of stressed returns
Simulation 1	0,027392	0,014038	-0,2117	.	.	.	0,008783	0,01293	0,026752	0,01903	1,056163
Simulation 2	-0,00293	-0,01822	-0,01513	.	.	.	-0,00293	0,003203	-0,01623	-0,00621	0,371867
Simulation 3	0,015496	-0,001	-0,01035	.	.	.	0,029695	0,006496	-0,00374	0,011948	0,464389
Simulation 4	-0,02976	0,02458	0,011466	.	.	.	0,001153	0,026313	-0,01102	-0,00943	0,542711
.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.
Simulation 997	0,038841	0,008783	-0,01705	.	.	.	-0,00612	0,029132	-0,03364	-0,00746	0,399851
Simulation 998	-0,01503	-0,00293	0,007265	.	.	.	0,024164	-0,03123	-0,02629	-0,00383	0,144918
Simulation 999	-0,01903	0,029695	0,007654	.	.	.	-0,00612	0,02476	0,006858	0,054131	0,65239
Simulation 1000	0,017111	0,001153	-0,00915	.	.	.	-0,00374	0,011466	0,029465	-0,00612	-0,31238

Steps 7-8: 1000 simulations, RHP of 2 years

	Sum of stressed returns		Simulated stressed returns	Rank	Simulated stressed prices	
Simulation 1	0,547871	$E[Return_{MEASURED}] = N\mu^*$	-0,308473702	716	0,734567	
Simulation 2	0,23742		0,036099698	380	1,036759	
Simulation 3	0,11592		<b>0,376425586</b>	0,209019028	236	1,232468
Simulation 4	0,526658			-0,145282546	570	0,864778
Simulation 5	0,388818			0,500883786	68	1,650179
.	.		.	.	.	
.	.		.	.	.	
.	.		.	.	.	
.	.		.	.	.	
Simulation 997	0,423087		-0,057786731	512	0,943851	
Simulation 998	0,26424		-0,046921846	500	0,954162	
Simulation 999	0,030446		0,222387303	251	1,249055	
Simulation 1000	-0,20313		-0,66079576	904	0,51644	



	Percentile stressed scenario	Rank Stressed Scenario	Stressed Scenario
	$Z_\alpha$		
RHP = 2 Y (512 days)	5	950	0,488090936

**Part 6: Calculating the performance scenarios for the intermediate periods**

