MoC & Downturn LGD

Day 3

November 29, 2022

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Downturn LGD and CCF

Introduction

Day 3

13:00 – 14.00	Recap previous session and case discussion
14:00 – 14.15	Break

14:15 – 14:45	General Downturn requirements
	     common pitfalls
	     Q&A on participants' experience with Downturn

14:45 – 15.45	Dowturn period identification (Part 1)
	     Examples
	     Q&A and discussion

15.45 – 16.00	Break

16.00 – 17.00	Downturn period identification (part 2)
	     Examples
	     Q&A
	     Explanation case

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Introduction

Regulatory downturn requirements were less concrete before 2018/2019

Capital Requirements Regulation	**Regulatory Technical Standards on Assessment Methodology for IRB**
CRR art. 181(1)(b) states: *"institutions shall use **LGD estimates that are appropriate for an economic downturn** if those are more conservative than the long-run average..."* **CRR art. 182(1)(b) states:** *"...institutions shall use **conversion factor estimates that are appropriate for an economic downturn** if those are more conservative than the long-run average."*	**EBA/RTS/2016/03 art. 53(c) states:** *"the institutions apply a rigorous and well documented process for assessing the effects of an economic downturn on recovery rates and for producing LGD estimates consistent with downturn conditions, and that the institution appropriately specifies the **nature, severity and duration of an economic downturn.**"*

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Introduction

Regulatory downturn requirements were less concrete before 2018/2019

Capital Requirements Regulation

CRR art. 181(1)(b) states:

*"institutions shall use **LGD estimates that are appropriate for an economic downturn** if those are more conservative than the long-run average…"*

CRR art. 182(1)(b) states:

*"…institutions shall use **conversion factor estimates that are appropriate for an economic downturn** if those are more conservative than the long-run average."*

CRR art. 4(1)(55)

*"'**loss given default' or 'LGD'** means the ratio of the loss on an exposure due to the default of a counterparty to the amount outstanding at default;"*

CRR art. 4(1)(56)

*"'**conversion factor'** means the ratio of the currently undrawn amount of a commitment that could be drawn and that would therefore be outstanding at default to the currently undrawn amount of the commitment, the extent of the commitment being determined by the advised limit, unless the unadvised limit is higher;"*

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Introduction

Regulatory downturn requirements were less concrete before 2018/2019

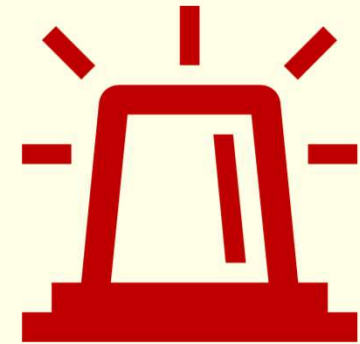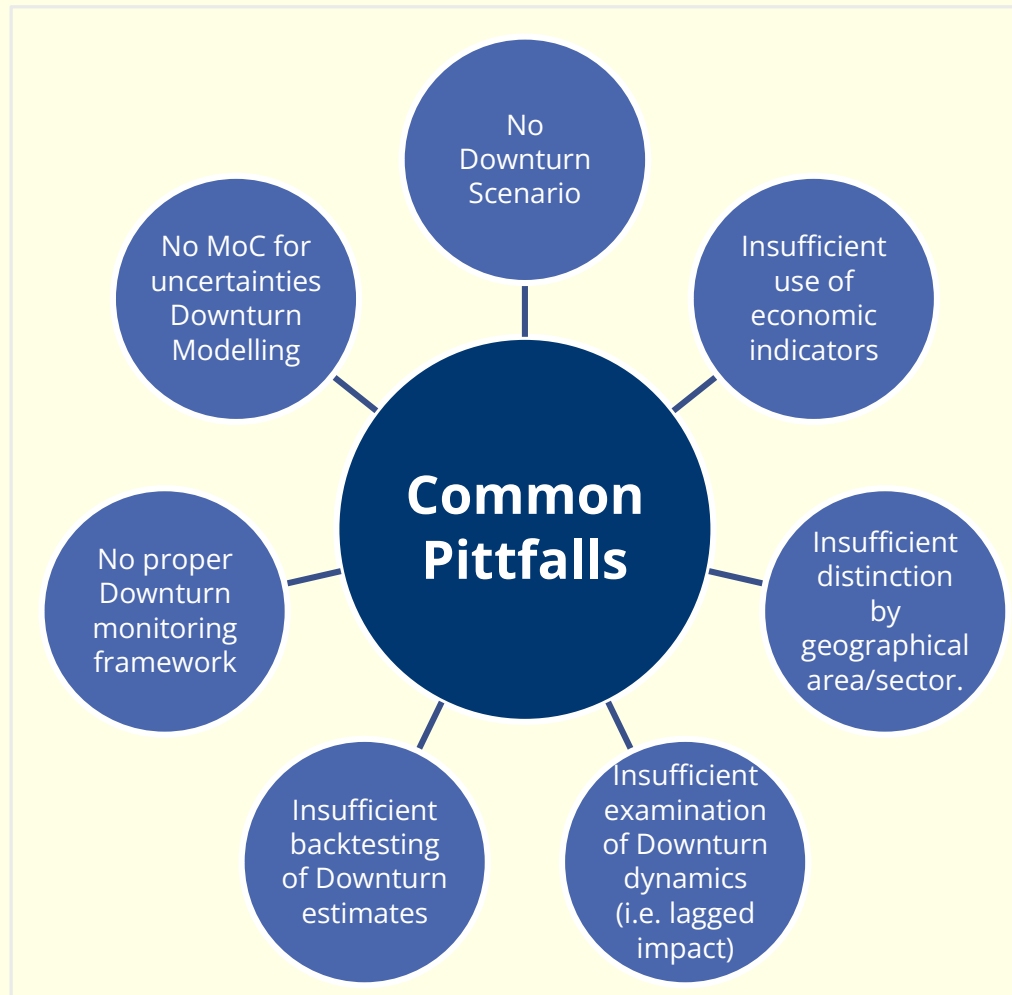| The Capital Requirements Regulation	Regulatory Technical Standards on Assessment Methodology for IRB
CRR art. 181(1)(b) states: "institutions shall use *LGD estimates that are appropriate for an economic downturn* if those are more conservative than the long-run average…" CRR art. 182(1)(b) states: "…institutions shall use *conversion factor estimates that are appropriate for an economic downturn* if those are more conservative than the long-run average."	EBA/RTS/2016/03 art. 53(c) states: "the institutions apply a rigorous and well documented process for assessing the effects of an economic downturn on recovery rates and for producing LGD estimates consistent with downturn conditions, and that the institution appropriately specifies the nature, severity and duration of an economic downturn."

TRIM Guide 2017

- Downturn framework requirements
- Use of economic and credit indicators
- Impact analyses on loss data
- Reference value analyses

- Same requirements in the **2018 ECB Guide to Internal Models** but with an additional note that requirements could be revised when finalizing the RTS on economic downturn and the GL on downturn adjustment.

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Introduction

Common Pittfalls

- No Downturn Scenario
- Insufficient use of economic indicators
- Insufficient distinction by geographical area/sector.
- Insufficient examination of Downturn dynamics (i.e. lagged impact)
- Insufficient backtesting of Downturn estimates
- No proper Downturn monitoring framework
- No MoC for uncertainties Downturn Modelling

High severity findings

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Question on the scope of downturn regulation

- New regulatory downturn requirements also directly apply on the Probability of Default (PD) Risk parameter.

Statement true?

☐ Yes   ☐ No

Question on the scope of downturn regulation

- New regulatory downturn requirements also directly apply on the Probability of Default (PD) Risk parameter.

Statement true?

☐ Yes   ❌ No

❓

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Question on the scope of downturn regulation

- The new downturn regulation is relevant for / linked to model development and risk quantification steps regarding the PD risk parameter.

Statement true?

☐ Yes ☐ No

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Question on the scope of downturn regulation

- The new downturn regulation is relevant for / linked to model development and risk quantification steps regarding the PD risk parameter.

Statement true?

❎ Yes ☐ No

- Risk driver selection
- Likely range of variability of default rates (i.e. mix of good/bad years)
- Model performance testing

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Question on the scope of downturn regulation

- There are separate downturn regulatory requirements for LGD and CCF for the downturn period identification.

Statement true?

☐ Yes   ☐ No

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Question on the scope of downturn regulation

- There are separate downturn regulatory requirements for LGD and CCF for the downturn period identification.

Statement true?

☐ Yes   ❌ No

- This is clarified in the ECB Guide to Internal Models and Q&A of EBA /RTS/2018/04

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Introduction

New regulatory requirements and guidelines regarding downturn and risk parameters

EBA /RTS/2018/ 04	COMMISSION DELEGATED REGULATION (EU) 2021/930	EBA/GL/2019/03	ECB Guide to Internal Models
Final Draft Regulatory Technical Standards on the specification of the nature, severity and duration of an economic downturn in accordance with Articles 181(3)(a) and 182(4)(a) of Regulation (EU) No 575/2013	*supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards specifying the nature, severity and duration of an economic downturn referred to in Article 181(1), point (b), and Article 182(1), point (b), of that Regulation*	*Final Report - Guidelines for the estimation of LGD appropriate for an economic downturn ('Downturn LGD estimation')*	*Additional requirements for the estimation of Conversion Factors appropriate for an economic downturn*

Regulatory requirements that apply in order to identify the economic downturn periods

Regulatory requirements that apply in order to quantify downturn LGD estimates

Regulatory requirements that apply in order to quantify downturn Conversion Factor estimates

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Introduction

New regulatory requirements and guidelines regarding downturn and risk parameters

Scope of this session

EBA /RTS/2018/ 04	COMMISSION DELEGATED REGULATION (EU) 2021/930	EBA/GL/2019/03	ECB Guide to Internal Models
Final Draft Regulatory Technical Standards on the specification of the nature, severity and duration of an economic downturn in accordance with Articles 181(3)(a) and 182(4)(a) of Regulation (EU) No 575/2013	*supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards specifying the nature, severity and duration of an economic downturn referred to in Article 181(1), point (b), and Article 182(1), point (b), of that Regulation*	*Final Report - Guidelines for the estimation of LGD appropriate for an economic downturn ('Downturn LGD estimation')*	*Additional requirements for the estimation of Conversion Factors appropriate for an economic downturn*
Regulatory requirements that apply in order to identify the economic downturn periods		**Regulatory requirements that apply in order to quantify downturn LGD estimates**	**Regulatory requirements that apply in order to quantify downturn Conversion Factor estimates**

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Q&A round

- What are your current experiences with the concept of economic downturn and regulation? What were your main challenges?

Downturn period identification

Identification of Economic Downturn periods

ARTICLE 1: GENERAL REQUIREMENTS

Definitions of Downturn, scope of identification.

ARTICLE 2: NATURE

Required indicators per exposure class, geographical, sectoral split, consideration of additional relevant indicators.

ARTICLE 3: SEVERITY

Minimum of 20 years per economic indicator, or longer if certain conditions are not satisfied. Frequency of the data. Representativeness of the likely range of variability.

ARTICLE 4: DURATION

Minimum duration of 12 months, or longer if certain conditions apply.
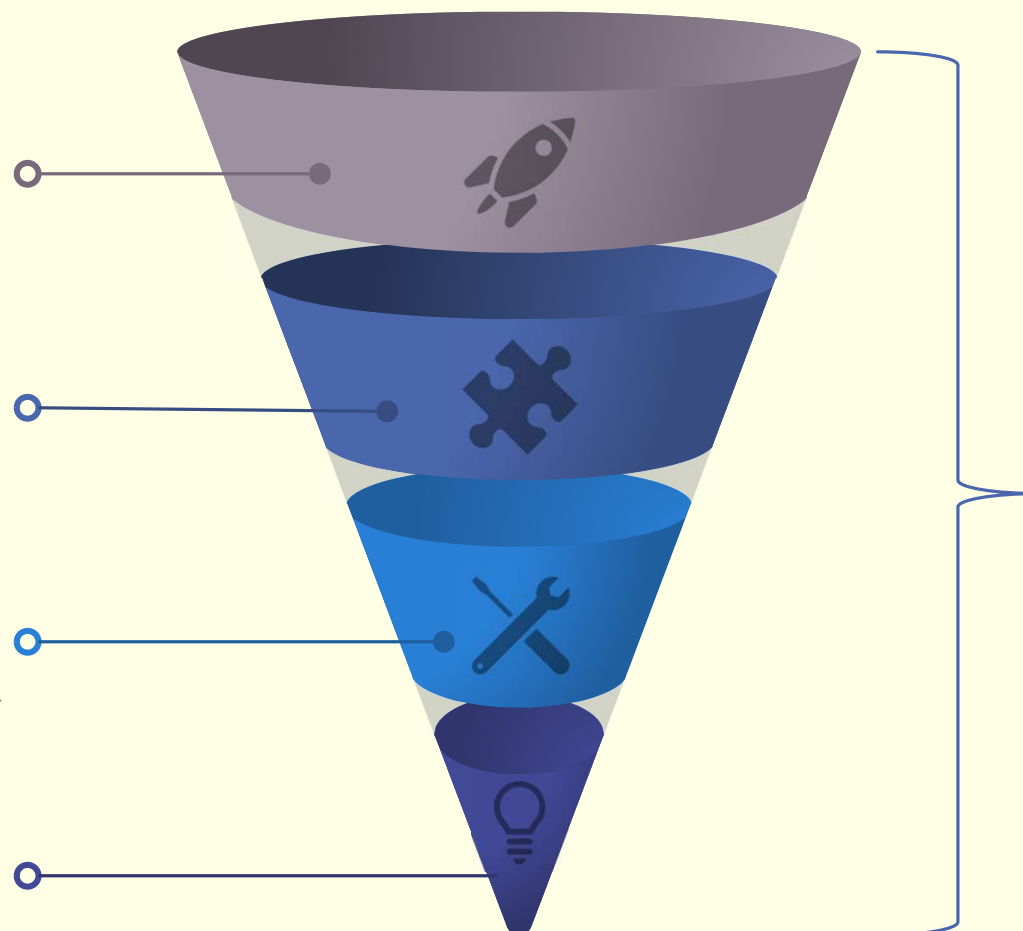
It is highly recommended to embed these downturn requirements into:

a) **Modelling Standards** to ensure a consistent modelling approach.

b) **Validation Framework** to effectively challenge Downturn modelling approaches (in a consistent manner).

c) **Monitoring and full review** (e.g. EBA /RTS/2018/04 art. 5 refers explicitly to review the specification of an economic downturn annually and update if a new period is identified.

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Article 1

Specification of the nature, severity and duration of an economic downturn

*1. For the purposes of Article 181(1), point (b), or 182(1), point (b) of Regulation (EU) No 575/2013, **an economic downturn shall be identified for each type of exposure**, as defined in Article 142(1), point (2), of that Regulation.*

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Article 1

CRR art. 142(1)(2)

'type of exposures' *means a* **group of homogeneously managed exposures** *which are formed by a certain type of facilities and which may be limited to a single entity or a single sub-set of entities within a group provided that the same type of exposures is managed differently in other entities of the group;*

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Article 1

Specification of the nature, severity and duration of an economic downturn

Par. 13 of EBA/GL/2017/16

Exposures covered by the same rating system should be treated similarly by the institution in terms of **risk management, decision making and credit approval process** *...;*

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Article 1

2. In identifying an economic downturn for a given type of exposures, the following specification rules shall apply:
*(a) the **nature of an economic downturn is characterised by** a set of economic indicators that are classified as relevant for exposures within that type of exposures in accordance with the rules laid down in Article 2 (**'the relevant indicator set'**);*

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Question on the definition of an economic downturn

- The definition of an economic downturn in regulation is the same as a recession.

- "Stage of the economic cycle characterised by decreasing growth in economic activities. This is measured as a decreasing growth of the volume of the gross domestic product or a growth that is below the long-term average" - Statistics Netherlands

Statement true?

☐ Yes   ☐ No

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Question on the definition of an economic downturn

- The definition of an economic downturn in regulation is the same as a recession.

- "Stage of the economic cycle characterised by decreasing growth in economic activities. This is measured as a decreasing growth of the volume of the gross domestic product or a growth that is below the long-term average" - Statistics Netherlands

Statement true?

☐ Yes ❌ No

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Article 1

**Specification of the nature, severity and duration of
an economic downturn**

*2. In identifying an economic downturn for a given type of
exposures, the following specification rules shall apply:
(b) in terms of severity, **an economic downturn is indicated
by the most severe value relating to a 12-month period**
('the most severe 12-month value') that is observed, for each
economic indicator in the relevant indicator set, over a
historical time-span determined for that economic indicator
in accordance with Article 3 (**'the applicable time-span'**);*

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Article 1

**Specification of the nature, severity and duration of
an economic downturn**

*2. In identifying an economic downturn for a given type of
exposures, the following specification rules shall apply:*
*(c) an economic downturn is comprised of **one or more distinct
downturn periods covering the peaks and troughs** related
to the most-severe 12-month values for the economic indicators
in the relevant indicator set, each such period being of
a duration determined in accordance with Article 4 ('**the
duration of a downturn period**').*

Question on the frequency of economic series

- Any frequency of data for economic indicators can be used within a 1-year horizon.

Statement true?

☐ Yes   ☐ No

Question on the frequency of economic series

- Any frequency of data for economic indicators can be used within a 1-year horizon.

Statement true?

❌ Yes　　☐ No

❓

- E.g. Monthly, quarterly data, etc.

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Article 1

Specification of the nature, severity and duration of an economic downturn

3. For the purposes of paragraph 2, point (b), ***the 12-month periods*** *to which values for an economic indicator relate* ***may start at any point in time*** *within the applicable time-span**.*

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Article 1

Specification of the nature, severity and duration of an economic downturn

4. For the purposes of paragraph 2, point (c):
(a) a downturn period is a period in which an economic indicator reaches its **most severe 12-month value***;*
(b) where, for different, **significantly correlated economic indicators***, the peaks or troughs related to* **the most severe 12-month values are reached simultaneously or shortly after each other***, the downturn periods in which those indicators reach their most severe 12-month value are to be* **treated as one single downturn period** *covering the most severe 12-month values for all those indicators*

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Article 2

The relevant indicator set

1. The following economic indicators shall be classified as relevant for exposures within a given type of exposures: ...

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Article 2

The relevant indicator set

Economic factor	(i) Corporates or retail SME	(ii) residential property exposures to corporates or to retail obligors	(iii) commercial immovable property exposures to corporates or to SME retail obligors	(iv) for retail exposures other than those falling within point (i), (ii) or (iii)	(v) Specialised Lending	(vi) Financial Institutions
GDP	●	●	●	●	●	●
Unemployment rate	●	●	●	●	●	●
External aggregate default rates	where available	where available	where available	where available	where available	where available
External aggregate credit losses	where available	where available	where available	where available	where available	where available
Sector or industry specific indices	●					
house prices or house price indices		●				
commercial immovable property prices or commercial immovable property price indices			●			
commercial immovable property rental prices or commercial immovable property rental price indices			●			
Total household debt		where available				
Disposable personal income		where available				
immovable property prices or immovable property price indices, immovable property rental prices, or immovable property rental price indices for residential, commercial or industrial property, as applicable					If immovable property	
project finance: prices for the underlying products supplied					if project finance	
object finance: indices for the relevant type or types of collateral					if object finance	
commodity finance: prices or price indices for the relevant type of commodity;					if commodity finance	
exposures to institutions: financial credit indices						●
any other economic indicators that are considered relevant	if applicable	if applicable	if applicable	if applicable	if applicable	if applicable

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Article 2

Example of downturn periods

	Year1	...	Year11	Year12	Year13	Year14	Year15	Year16	Year17	Year18	Year19	Year20
					Downturn period 1						**Downturn period 2**	
GDP											■	■
Unemployment rate					■	■						
External aggregate default rates						■						
External aggregate credit losses	Not readily available											
Type of exposure specific indicator 1						■						
Type of exposure specific indicator 2						■						
Additional economic indicator 1						■						
Additional economic indicator 2											■	■

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Question on economic series

- Interest rates, inflation and stock prices are mandatory to take into account for the period identification

Statement true?

☐ Yes   ☐ No

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Question on economic series

- Interest rates, inflation and stock prices are mandatory to take into account for the period identification.

Statement true?

☐ Yes   ✖ No

- P.9 of EBA /RTS/2018/04: *"As a general example, interest rates or stock indices **could** be considered as additional relevant economic factors."*
- Stock indices were proposed as mandatory in earlier versions, but deleted later.

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Question on economic series

- Severest values of interest rates and inflation should always be the lowest values.

Statement true?

☐ Yes   ☐ No

Question on economic series

- Severest values of interest rates and inflation should always be the lowest values.

Statement true?

☐ Yes ❌ No

Identifying is periods is not a mechanic approach! Interest rates and inflation can be high or low during a crisis

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Question on economic series

- P. 8 of EBA /RTS/2018/04: "…Moreover, the economic factors referred to in Article 2(1) shall be considered in levels or changes in level…" Does it matter whether economic indicators are measured in levels or their values or changes?

Statement true?

☐ Yes   ☐ No

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Question on economic series

- P. 8 of EBA /RTS/2018/04: "...Moreover, the economic factors referred to in Article 2(1) shall be considered in levels or changes in level, as most appropriate" Does it matter whether economic indicators are measured in levels or their values or changes?
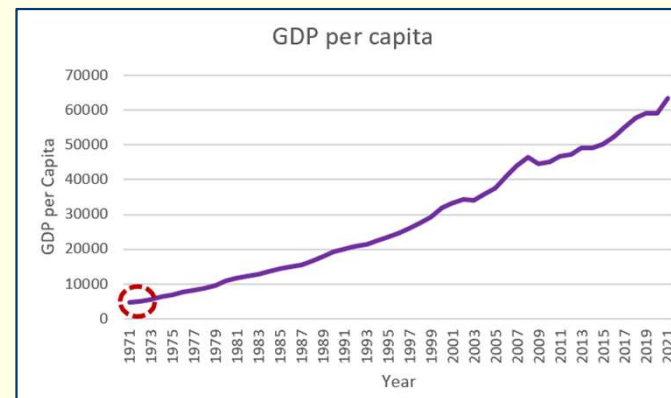
Statement true?

✖ Yes   ☐ No

Be careful with trending time series

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Article 2

The relevant indicator set

*2. **The economic indicators** identified for exposures within a type of exposures in accordance with paragraph 1 **shall reflect the geographical distribution** and, where applicable, **the sectoral distribution** of the exposures within that type of exposures.*

For that purpose, an economic indicator shall be included in the relevant indicator set as follows:

*(a) once for each jurisdiction or, where appropriate, once for each geographical area within a jurisdiction, **covered by a material share of that type of exposures**; and...*

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Article 2

The relevant indicator set

(b) ***once for each sector***, *where applicable,* ***covered by a material share of that type of exposures****.*

However, ***where economic indicators*** *to be included in accordance with the second subparagraph* ***show strong co-movement*** *across the different jurisdictions, or where appropriate, different geographical areas within a jurisdiction, or, where applicable, different sectors,* ***a common economic indicator may instead be selected*** *to reflect those jurisdictions, geographical areas or sectors overall.*

Article 2

- Example of a portfolio based on 5 sectors and 3 countries. Which shares are "material" regarding the sector indices given the country distributions?

	Country A	Country B	Country C	All
Sector 1	68%	13%	1%	82%
Sector 2	5%	2%	0%	7%
Sector 3	5%	0%	0%	5%
Sector 4	1%	0%	1%	2%
Sector 5	1%	3%	0%	4%
All	80%	18%	2%	100%

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Article 2

- 10% threshold?

	Country A	Country B	Country C	All
Sector 1	68%	13%	1%	82%
Sector 2	5%	2%	0%	7%
Sector 3	5%	0%	0%	5%
Sector 4	1%	0%	1%	2%
Sector 5	1%	3%	0%	4%
All	80%	18%	2%	100%

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Article 2

- 5% threshold?

	Country A	Country B	Country C	All
Sector 1	68%	13%	1%	82%
Sector 2	5%	2%	0%	7%
Sector 3	5%	0%	0%	5%
Sector 4	1%	0%	1%	2%
Sector 5	1%	3%	0%	4%
All	80%	18%	2%	100%

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Article 3

Applicable time span

*For the purposes of Article 1(2), point (b), **the historical time-span applicable** to an economic indicator **shall be the period of 20 years** ending at the point in time at which the institution identifies the economic downturn in accordance with this Regulation. However, **where the variability of an economic indicator over that 20-year period is not representative** of the likely range of variability of that indicator in the future, the historical time-span applicable to that indicator **shall be of such longer length as is sufficient to provide values that are representative of that likely range of variability.***

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Article 3

- Recommended aspects to examine (at least):
  - Magnitude of shocks of economic indicators over a 20 years period compared to a longer historical period.
  - Range of values and variability of economic indicators over a 20 years period compared to a longer historical period.

- Analyzing the magnitude of the shocks and variability of the economic indicator is not sufficient without clear criteria to draw conclusions from such assessments.

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Question on economic series

- Is it allowed to use economic time series with less than <20 years of data?

Statement true?

☐ Yes ☐ No

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Question on economic series

- Is it allowed to use economic time series with less than <20 years of data?

Statement true?

☒ Yes   ☐ No

❓

- See art. 3(1)(b) of EBA /RTS/2018/04: *"a period shorter than the one referred to in point (a), where the considered relevant economic factor has changed significantly due to the accession of the concerned country to the European Union;"*

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Article 4

Duration of a downturn period

For the purposes of Article 1(2), point (c), the duration of a downturn period shall be determined as follows:

*(a) in a case falling within Article 1(4), point (b), **the single downturn period shall be** such period that is **long enough to cover all the peaks or troughs related to the most severe 12-month values** observed for the different economic indicators associated with that single downturn period;*

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Article 4

Duration of a downturn period

(b) in all cases, whether or not falling within Article 1(4), point (b), **where the various 12-month values** *observed for the economic indicator or indicators in question over the applicable time-span* **do not significantly deviate from their most severe 12-month value** *over a specific, continuous period of time within the applicable time-span,* **the downturn period shall be long enough to reflect the prolonged severity** *observed for the economic indicator or indicators in question;*

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Article 4

Duration of a downturn period

*(c) in all cases, whether or not falling within Article 1(4), point (b), where the economic indicator or indicators **show adjacent peaks or troughs** to those peaks or troughs related to the most severe 12-month values observed for the economic indicator or indicators in question over the applicable time-span and **those adjacent peaks and troughs do not significantly deviate from the most severe 12-month value observed** for that indicator or those indicators over that time-span and those adjacent peaks and troughs **are related to the same overall economic condition**, **the downturn period shall be long enough to reflect the whole prolonged period** over which those adjacent peaks or troughs are observed;*

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Article 4

Duration of a downturn period

(d) in a case falling within Article 1(4), point (a), where neither point (b), nor point (c) of this Article applies, the downturn period shall be the 12-month period to which the most severe 12-month value relates.

Stylised example: Mortgage portfolio

- All exposures and collateral are in NL
- Assume no availability of externally provided aggregate default rates and credit losses.
- Required indicators:
  - GDP Growth – 1 YR change (%)
  - Unemployment rate – 1 YR average (%)
  - HPI growth – 1 YR change (%)
- Minimum period length used per indicator
  - At least 20 years

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Economic indicators - overview
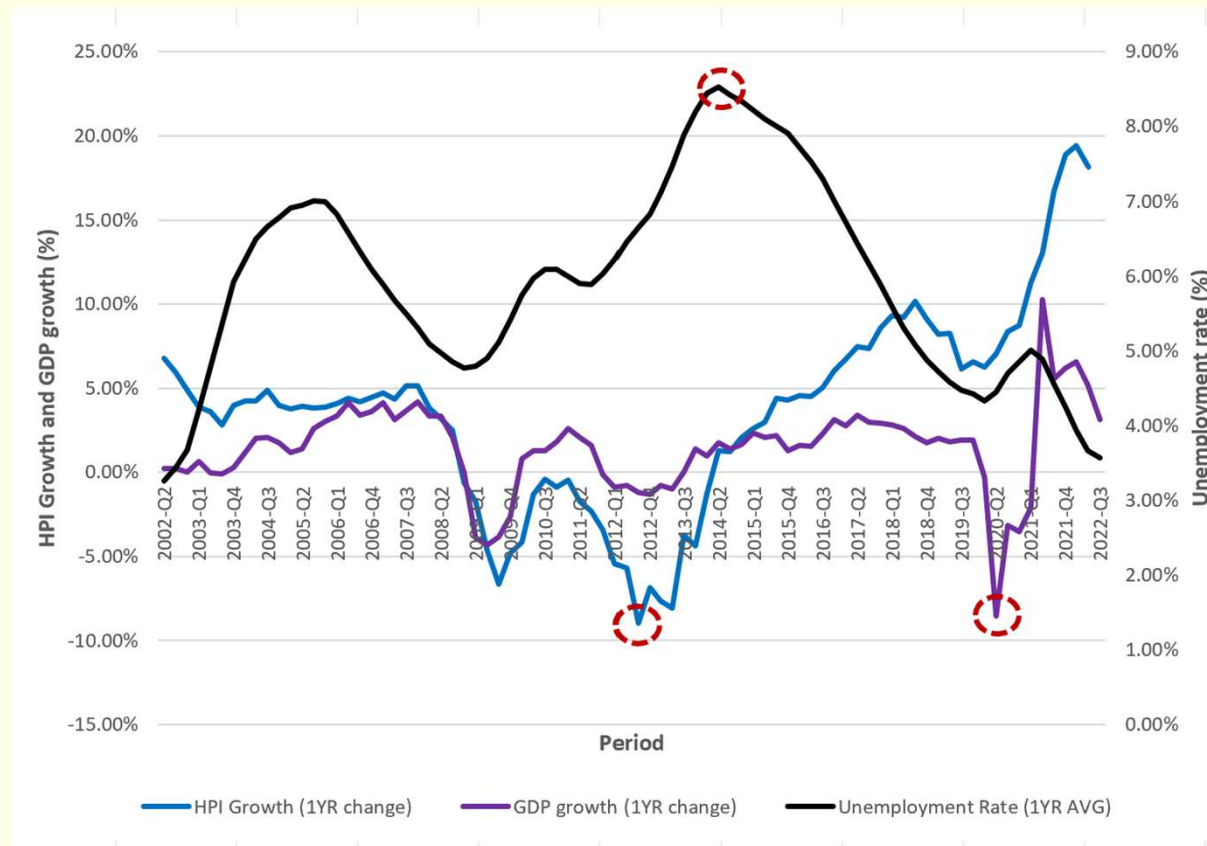
Economic indicators – 20 years

Indicator	Downturn period(s)
GDP	2019/2020
HUR	2013/2014
HPI	2011/2012

✓ Required indicators are used
✓ Minimum of 20 years

Question: Compliant?

☐ Yes   ☐ No

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Economic indicators – 20 years

- Prolonged severities, Adjacent peaks/troughs, same overall economic condition? (see art. 4)
- 20 years representative for the likely range of variability and "sufficiently severe" (see art. 3)?



Article 3
Severity of an economic downturn

1. In order to identify the most severe value relating to a 12-months period of an economic factor institutions shall consider the historical values of this economic factor for a minimum period that shall be either of the following:

(a) the preceding twenty years to the point in time at which the institution identifies an economic downturn in accordance with this Regulation;
(b) a period shorter than the one referred to in point (a), where the considered relevant economic factor has changed significantly due to the accession of the concerned country to the European Union; or
(c) a period longer than the one referred to in point (a), where the values observed for a considered economic factor in the minimum period referred to in point (a) are not sufficiently severe.

3. For the purposes of point (c) of paragraph 1, the most severe values of economic factors observed in historical data shall be considered not sufficiently severe where the historical variability of the economic factors over the time period analysed is not representative of the likely range of variability of those factors in the future.

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Economic indicators: prolonged severe values and adjacent peak/troughs
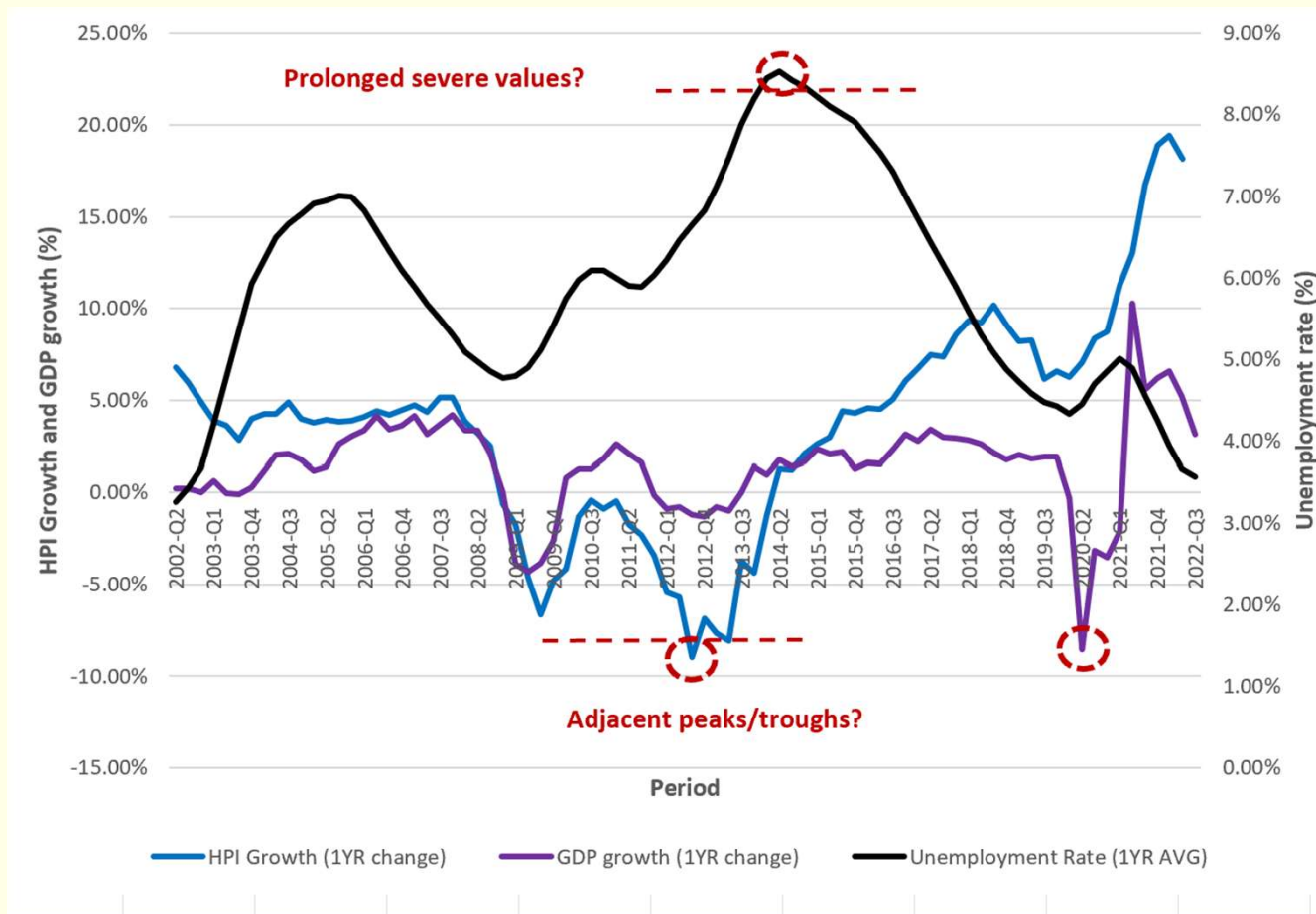
Define clear criteria to identify prolonged severe values and adjacent peaks and troughs

These choices may lead to a longer downturn duration
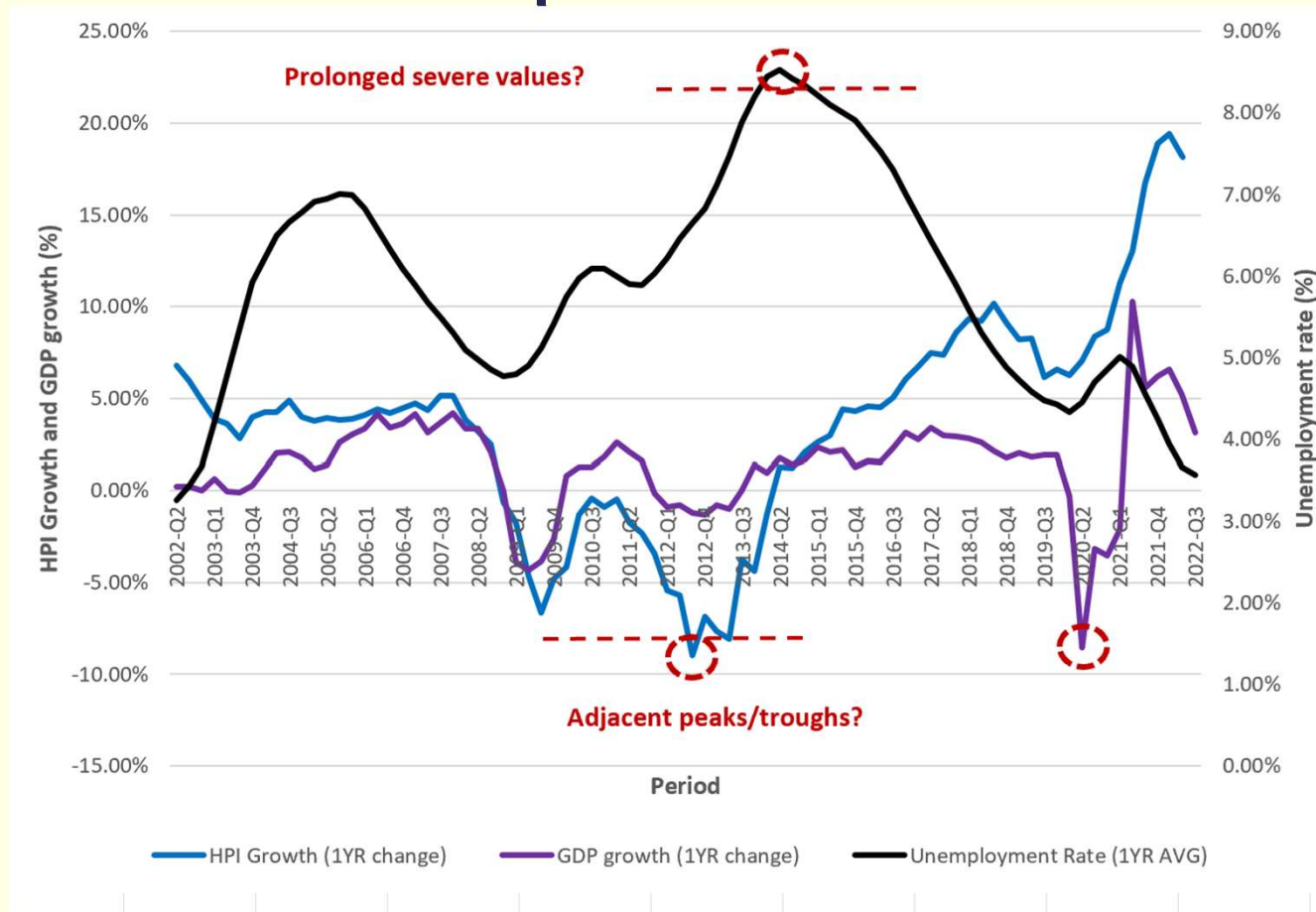
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Economic indicators – 20 years

Indicator	Downturn period(s)
GDP	2019/2020
HUR	2013/2014
HPI	2011/2012

Downturn period 1: Covid-19 crisis

Downturn period 2: same overall economic conditions or two separate downturn periods?

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# Economic indicators: distinct or one downturn period?

Correlation analyses

	GDP growth	Unemployment rate	HPI growth
GDP growth	1.00	0.03	0.53
Unemployment rate	0.03	1.00	-0.43
HPI growth	0.53	-0.43	1.00

	l.GDP growth	l.Unemployment rate	l.HPI growth
GDP growth	-0.14	0.26	0.21
Unemployment rate	-0.16	0.77	-0.72
HPI growth	0.08	-0.10	0.77

Discuss the economic intuition behind the correlations and what period is considered to "short" period where indicators subsequently show their severe values (art. 1(4)(b))

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Economic indicators: 1970s and 1980s
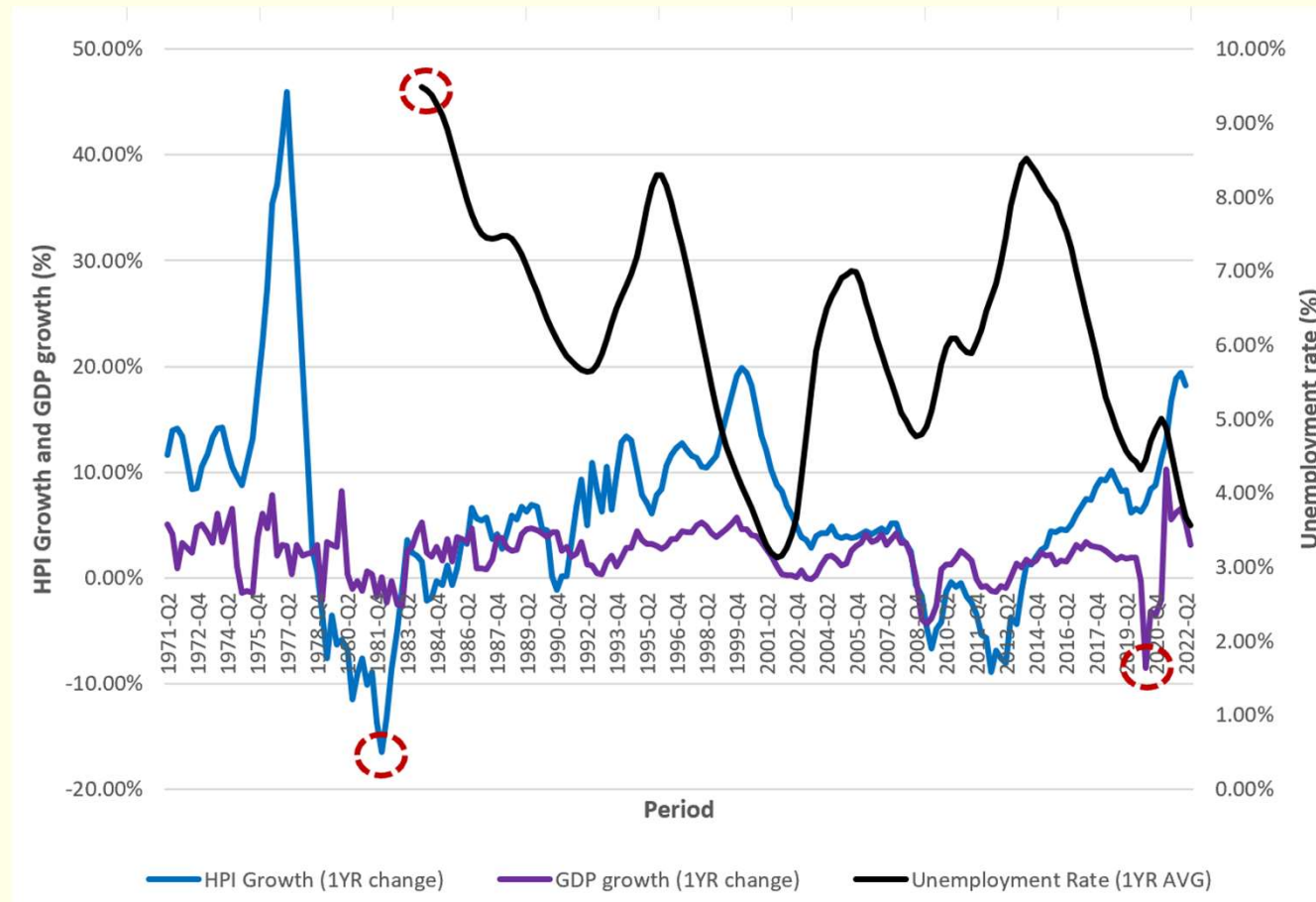
Economic indicators – 1970s and 1980s

Indicator	Downturn period(s)
GDP	2019/2020
HUR	1983/1984
HPI	1981/1982

> ➤ **No implications for GDP, but conclusions change based on HUR and HPI.**

In general 20 years could be sufficient, but improper consideration of all articles and therefore the length of the series may lead to severe compliancy issues.

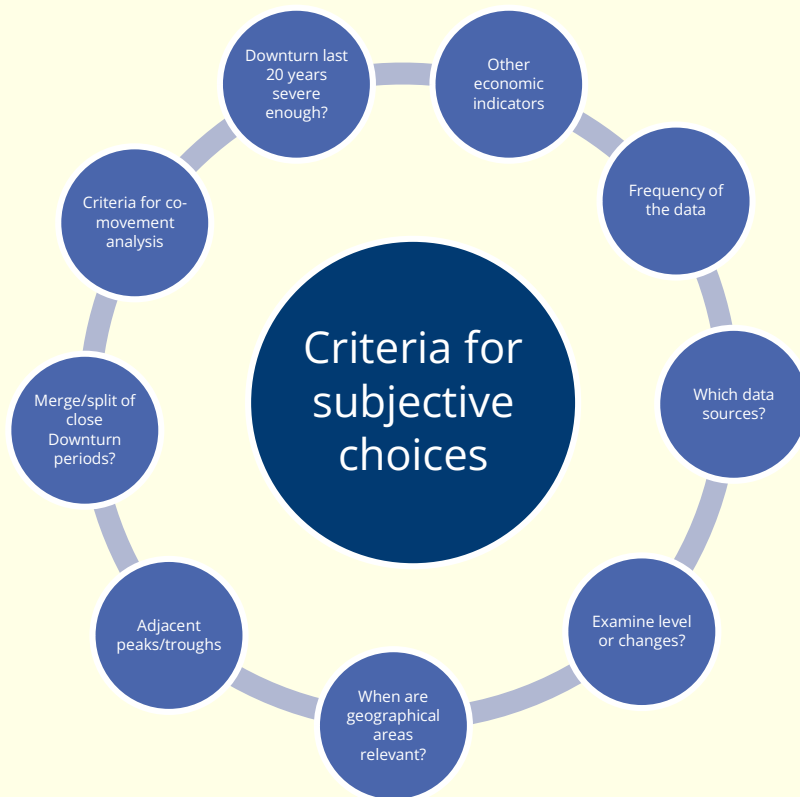eduquant

Economic indicators – 20 years

Indicator	Downturn period(s)
GDP	2019/2020
HUR	1983/1984
HPI	1981/1982

Downturn period 1: Covid-19 crisis

Downturn period 2: same overall economic conditions?

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Human judgement

- Which other indicators than required are relevant?
- Which data frequency should be used?
- Which data sources should be used?
- Examine economic indicators in level or changes?
- Which geographical areas are material?
- Which sectors are material?
- When are peaks/troughs considered adjacent?
- Which measures and criteria need to be used for co-movement analyses?
- 20 years sufficient?
- What are the criteria to merge/split Downturn periods?

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Human judgement and regulation

- Subjective considerations should adhere the requirements for human judgement.

> EBA/GL/2017/16 par. 35
> In order for institutions to complement their statistical models with human judgement, as referred to in Articles 174(b), 174(e), 175(4), 179(1)(a) and 180(1)(d) of Regulation (EU) No 575/2013, they should do all of the following:
> ...
> (c) **document** the application of human judgement in the model, including at least **the criteria for the assessment, rationale, assumptions, experts involved and description of the process**.

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Overview of the downturn identification process

- **STEP 1:** Determine exposure segments with material shares of geographical areas and/or industry sectors
- **STEP 2:** For each segment, determine an initial selection of potentially relevant economic indicators
- **STEP 3:** Gather/request the data and conduct preliminary analyses
  - Check also co-movement with other factors. Where there is strong co-movement a common factor may be used instead of several more granular indices.
- **STEP 4:** For each factor
  - Determine whether to use 20 years or longer period
  - Determine severest values
  - Decide per factor to extend the period based on "prolonged severities and/or adjacent peak/trough" analyses
- **STEP 5:** Check whether to combine downturn periods of the set of economic indicators
- **STEP 6:** Determine the final duration of each downturn period by merging the downturn periods where these are considered to be adjacent and related to the same overall economic situation

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Dynamics of an Economic Downturn

- There is a story behind the economic indicators!
- Understand the cause and dynamics of an Economic Downturn!

Downturn period identification: Case 1

- **Background**
- Bank ABC has an approved A-IRB model for its residential mortgage portfolio since 2013. Almost 90.0% of the current application portfolio consists of mortgages in The Netherlands. The remaining 10.0% in Germany and Belgium (5% and 5% respectively). Faced with new Downturn regulation in 2018, 2019 and 2021 Bank ABC approached their internal Risk Modelling Experts to cope with the challenging new Downturn regulation. The new regulation encompasses:
- Final Draft Regulatory Technical Standards on the specification of the nature, severity and duration of an economic downturn in accordance with Articles 181(3)(a) and 182(4)(a) of Regulation (EU) No 575/2013 (EBA/RTS/2018/04)
- COMMISSION DELEGATED REGULATION (EU) 2021/930 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards specifying the nature, severity and duration of an economic downturn referred to in Article 181(1), point (b), and Article 182(1), point (b), of that Regulation
- Final Report Guidelines for the estimation of LGD appropriate for an economic downturn ('Downturn LGD estimation') (EBA/GL/2019/03)
- The experts from the Economic Department of this Bank indicate that you can use the data from the source https://data.oecd.org/ and https://opendata.cbs.nl/#/CBS/nl/.

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Downturn period identification: Case 1

- **Assignment**
- Identify the downturn periods for this portfolio based on the regulatory requirements in EBA/RTS/2018/04. Provide a written advice to the model owners and management (1-2 pages).
- Also prepare a summary presentation for a stakeholder meeting (10 min)

- **Expected tasks**
- Select the required economic indicators for this portfolio (and other indicators if deemed relevant for this portfolio). Senior management of Bank ABC is concerned that their portfolio is concentrated in certain regions within the Netherlands, and that a national House Price index may not be representative. They are concerned at which HPI level is required: COROP, Province or national level. Compared to the national index there is an overrepresentation in the provinces Noord-Holland, Zuid-Holland and Utrecht.
- Stakeholders are concerned which indicators are relevant. Nominal HPI, Real HPI, Price income ratios, other house market indicators?
- Explain briefly their expected behavior during economic conditions and produce a table with their identified downturn values.
- Propose the historical period and frequency of the data to be used for the economic indicators.
- Determine the duration of the economic downturn period taking into account 1) the identified downturn behavior and downturn period per economic indicator 2) the relationship between economic indicators. (hint: also explain criteria used for concepts such as adjacent peaks/troughs. Set-up a statistical approach to examine the relationship between economic indicators).
- Visualize the identified downturn periods.
- Provide a narrative for the root cause of the identified economic downturn periods.
- Submit assignment with proposed solutions 1 day in advance of the next meeting before 12.00h.

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