

Annexes

Annex 1: Detailed tables on quality criteria

1.1 Accessibility and clarity

Table A.1.1.1

Accessibility of financial accounts data

Country	Website	Downloads	Charts and tables	Press release	Hotline
Euro area					
BE	Y	Y	Y	Y	Y
DE	Y	Y	Y	Y	Y
EE	Y	Y	Y	Y	Y
IE	Y	Y	Y	Y	Y
GR	Y	Y	N	N	Y
ES	Y	Y	Y	Y	Y
FR	Y	Y	Y	Y	Y
IT	Y	Y	Y	N	Y
CY	Y	Y	Y	Y	Y
LV	Y	Y	Y	N	Y
LT	Y	Y	Y	Y	Y
LU	Y	Y	N	N	Y
MT	Y	Y	Y	N	Y
NL	Y	Y	Y	Y	Y
AT	Y	Y	Y	N	Y
PT	Y	Y	Y	Y	Y
SI	Y	Y	Y	N	Y
SK	Y	Y	Y	N	Y
FI	Y	Y	Y	Y	Y
Euro area	Y	Y	Y	Y	Y
Non-euro area					
BG	Y	Y	Y	N	Y
CZ	Y	Y	Y	Y	Y
DK	Y	Y	Y	Y	Y
HR	Y	Y	N	N	N
HU	Y	N	Y	Y	Y
PL	Y	Y	Y	N	Y
RO	Y	Y	Y	N	Y
SE	Y	Y	Y	Y	Y

Source: ECB.

1.2 Internal consistency

Table A.1.2.1

Percentage of validation rules satisfied

(period: Q4 2012 to Q2 2019)

Country	Consistency rate
Euro area	
BE	100
DE	100
EE	100
IE	97
GR	100
ES	100
FR	100
IT	100
CY	100
LV	100
LT	100
LU	100
MT	100
NL	100
AT	100
PT	100
SI	100
SK	100
FI	100
Non-euro area	
BG	100
CZ	100
DK	95
HR	95
HU	99
PL	100
RO	99
SE	99

Source: ECB.

Table A.1.2.2

Consistency across frequencies, 2019

(percentages)

Country	Private sector debt, consolidated	Private sector credit flow, consolidated	Total financial sector liabilities, non-consolidated	Household debt, consolidated
	% difference (QFA-AFA)/QFA			
Euro area				
BE	-0.00	-0.00	0.00	-0.00
DE	0.00	-0.01	0.00	0.00
EE	-0.00	0.00	0.00	-0.00
IE	0.11	0.58	1.19	0.98
GR	0.00	0.00	0.00	0.00
ES	0.00	0.00	0.00	0.00
FR	0.00	-0.00	-0.00	0.00
IT	-0.00	0.00	0.00	0.00
CY	0.00	0.26	-0.11	0.00
LV	-0.00	-0.00	-0.00	0.00
LT	0.00	0.00	-0.00	-0.00
LU	0.00	0.00	0.02	-0.00
MT	-0.00	-0.00	-0.00	-0.00
NL	0.00	0.00	0.00	0.00
AT	-0.00	0.00	0.00	-0.00
PT	-0.00	0.00	0.00	0.00
SI	-0.00	0.00	-0.00	0.00
SK	0.92	0.31	-1.14	0.02
FI	0.00	0.00	0.00	0.00
Non-euro area				
BG	0.00	-0.00	-0.08	-0.00
CZ	-0.07	-0.02	-0.05	-0.72
DK	0.00	-0.00	-0.00	-0.00
HR	-0.00	0.00	-0.00	-0.00
HU	-0.00	0.00	0.85	0.00
PL	0.00	0.00	-0.00	0.00
RO	0.00	-0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00

Source: ECB.

1.3 Revision indicators

Table A.1.3.1

Symmetric mean absolute percentage errors* for the period Q2 2018 to Q1 2020

(percentages)

	Households (including NPISHs)				Non-financial corporations						Financial corporations						
	Loans		Total assets		Debt securities		Loans		Intra-NFC loans		Total	Total	MFIs	IVFs	OFIs	ICs	PFs
	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Transactions	Stocks					
Euro area																	
BE	0.13	0.14	0.28	0.05	0.77	0.57	1.10	0.55	5.51	3.76	0.08	0.19	0.30	0.17	0.60	0.18	3.05
DE	0.03	0.02	0.25	0.02	0.00	0.00	0.65	0.11	9.78	0.67	0.20	0.49	0.26	1.23	0.93	0.40	1.44
EE	0.25	0.03	1.17	0.10	0.02	0.03	0.67	0.29	13.73	1.17	0.08	0.32	0.08	0.01	1.24	3.45	0.00
IE	0.36	0.02	0.36	0.16	12.06	0.53	5.87	0.74	29.77	2.09	0.19	0.39	0.06	0.01	1.50	0.64	1.09
GR	1.69	0.10	0.32	0.08	0.76	2.18	0.51	0.17	NA	NA	0.08	0.51	0.60	0.07	0.82	0.13	2.05
ES	0.08	0.01	1.30	0.08	15.00	0.33	0.67	0.23	3.08	0.35	0.06	0.28	0.44	0.37	0.69	1.09	1.00
FR	0.02	0.00	0.25	0.08	1.81	0.03	1.85	0.27	4.18	0.53	0.10	0.23	0.22	0.12	1.01	0.09	NA
IT	0.04	0.03	0.40	0.11	0.91	0.12	0.43	0.09	1.54	0.57	0.08	0.49	1.64	0.00	5.92	0.12	0.92
CY	1.02	0.23	1.60	0.49	39.46	0.75	1.24	0.29	27.70	2.44	0.27	11.88	0.09	3.26	14.61	0.38	4.90
LV	0.16	0.07	5.31	0.31	0.26	1.08	2.40	0.43	12.58	2.30	0.08	0.41	0.12	0.23	1.55	0.54	0.28
LT	0.15	0.01	1.12	0.39	0.25	0.04	2.40	0.40	8.64	2.32	0.05	0.04	0.05	0.80	0.06	0.55	0.00
LU	1.19	0.35	0.61	0.50	4.50	1.14	2.74	1.22	5.20	0.16	0.25	0.74	0.12	0.52	1.19	0.71	0.23
MT	0.47	0.07	1.33	0.46	1.47	1.24	1.25	0.20	6.80	0.95	0.08	0.68	0.35	9.34	0.74	1.55	0.79
NL	0.87	0.04	0.37	0.02	5.90	0.45	1.07	0.25	9.69	1.84	0.25	1.79	1.60	0.85	2.58	0.42	0.76
AT	0.08	0.10	1.10	0.02	1.02	0.55	0.68	0.41	1.19	0.88	0.26	0.61	0.59	0.02	2.85	0.40	1.13
PT	0.19	0.05	1.19	0.08	7.27	0.09	1.89	0.25	3.79	1.21	0.04	0.11	0.03	0.34	0.70	0.50	0.27
SI	0.04	0.03	3.39	0.21	0.00	0.00	0.21	0.05	2.14	1.76	0.01	0.27	0.37	0.00	0.21	0.00	0.00
SK	0.01	0.02	0.18	0.07	4.39	0.04	1.14	0.32	2.66	2.60	0.08	0.41	0.25	0.01	2.76	3.98	0.00
FI	0.57	0.09	0.23	0.09	0.98	0.16	2.90	0.49	4.86	1.68	0.16	0.17	0.17	0.12	1.23	0.27	1.44
Euro area	0.06	0.02	0.20	0.02	0.94	0.16	0.71	0.13	2.44	0.22	0.05	0.47	0.27	0.21	1.99	0.20	0.85
Median	0.16	0.04	0.61	0.09	1.02	0.33	1.14	0.29	5.36	1.45	0.08	0.41	0.25	0.17	1.19	0.42	0.85
Non-euro area																	
BG	0.15	0.07	5.92	0.36	0.19	0.19	1.15	0.13	6.75	1.16	0.11	0.21	3.20	0.02	1.86	1.15	0.01
CZ	0.03	0.03	3.78	0.16	0.00	0.16	2.59	0.79	24.70	9.14	0.25	0.89	2.21	0.41	3.91	0.24	0.10
DK	0.76	0.08	5.37	0.16	2.89	0.61	11.81	1.89	5.72	5.55	0.13	1.34	3.54	0.11	5.42	0.92	0.35
HR	0.05	0.00	0.68	0.25	0.38	0.04	0.75	0.24	1.65	0.63	0.06	0.06	2.29	0.00	0.26	0.07	0.01
HU	0.66	0.05	0.39	0.02	7.84	0.74	0.62	0.18	2.06	0.74	1.15	2.28	3.92	1.27	5.78	0.32	0.23
PL	0.01	0.00	1.12	0.14	0.38	0.08	1.57	0.31	0.43	0.10	0.04	0.41	2.68	0.00	0.64	0.01	0.01
RO	0.35	0.08	4.30	1.97	22.96	6.85	0.67	0.20	8.16	4.57	0.09	0.21	1.94	0.00	2.67	0.64	0.00
SE	0.04	0.00	1.20	0.06	0.31	0.20	1.11	0.17	1.16	0.43	0.06	0.24	2.34	0.10	1.64	0.62	1.29

Source: ECB.

Notes: NA = no revisions. For non-euro area countries, data relate to the period Q4 2018 to Q4 2019.

* In the case of transactions, underlying stocks are used in the denominator, resulting in the calculation of mean absolute comparative errors (MACEs).

Table A.1.3.2
Mean absolute revisions for the period Q2 2018 to Q1 2020

(percentages of GDP)

	Households (including NPISHs)				Non-financial corporations						Financial corporations						
	Loans		Total assets		Debt securities		Loans		Intra-NFC loans		Total	Total	MFIs	IVFs	OFIs	ICs	PFs
	Stocks	Transactions	Stocks	Transactions	Stocks	Transactions	Stocks	Transactions	Stocks	Transactions	Transactions	Stocks					
Euro area																	
BE	0.16	0.17	1.57	0.29	0.22	0.16	2.97	1.47	2.92	1.99	0.78	1.95	1.51	0.12	1.68	0.26	0.47
DE	0.03	0.02	0.94	0.06	0.00	0.00	0.67	0.12	1.48	0.10	1.87	4.52	1.47	1.66	0.56	0.51	0.48
EE	0.18	0.02	2.75	0.23	0.00	0.00	0.87	0.37	2.47	0.21	0.34	1.30	0.21	0.00	1.20	0.36	0.00
IE	0.27	0.02	0.80	0.35	1.36	0.06	21.94	2.76	15.80	1.11	6.18	12.34	0.41	0.19	11.93	1.11	0.79
GR	1.86	0.11	0.89	0.22	0.01	0.02	0.57	0.19	0.00	0.00	0.33	2.17	2.27	0.01	0.13	0.03	0.03
ES	0.09	0.01	4.79	0.29	2.30	0.05	1.13	0.40	1.22	0.14	0.43	2.11	2.37	0.18	0.58	0.58	0.23
FR	0.03	0.00	1.14	0.38	0.97	0.01	4.40	0.63	4.57	0.58	1.28	2.94	1.95	0.14	0.86	0.20	0.00
IT	0.03	0.03	1.91	0.53	0.15	0.02	0.52	0.11	0.08	0.03	0.57	3.47	7.99	0.00	4.44	0.12	0.11
CY	1.86	0.42	6.83	2.10	0.06	0.00	4.34	1.01	0.71	0.06	11.55	506.70	0.62	1.60	507.59	0.15	1.42
LV	0.06	0.03	9.82	0.58	0.00	0.02	2.75	0.49	2.28	0.42	0.30	1.52	0.31	0.01	1.09	0.04	0.08
LT	0.07	0.00	2.07	0.72	0.01	0.00	1.80	0.30	1.30	0.35	0.13	0.10	0.10	0.04	0.02	0.05	0.00
LU	1.53	0.44	1.97	1.60	3.84	0.97	15.26	6.78	9.50	0.30	123.19	366.14	5.23	75.91	352.54	4.82	0.02
MT	0.44	0.06	5.61	1.94	0.17	0.15	3.09	0.50	7.57	1.05	3.74	30.19	2.72	23.11	23.81	2.94	0.00
NL	1.73	0.09	2.47	0.11	1.71	0.13	3.07	0.72	4.10	0.78	6.70	48.72	10.77	1.90	33.39	0.55	2.98
AT	0.07	0.10	3.93	0.08	0.21	0.11	1.07	0.65	0.46	0.34	2.02	4.64	2.89	0.02	3.42	0.22	0.12
PT	0.24	0.06	4.76	0.32	2.00	0.02	3.13	0.42	0.84	0.27	0.33	0.85	0.14	0.09	1.01	0.28	0.05
SI	0.02	0.01	7.45	0.46	0.00	0.00	0.20	0.05	0.26	0.21	0.04	0.83	0.86	0.00	0.04	0.00	0.00
SK	0.01	0.01	0.29	0.12	0.53	0.01	1.08	0.30	0.26	0.25	0.27	1.43	0.70	0.00	0.55	0.63	0.00
FI	0.73	0.12	0.67	0.25	0.27	0.04	5.90	1.00	3.46	1.20	1.36	1.48	1.06	0.14	0.92	0.17	0.04
Euro area	0.06	0.02	0.82	0.07	0.23	0.04	1.31	0.23	1.38	0.12	0.63	6.37	1.66	0.45	6.97	0.27	0.37
Median	0.16	0.03	2.07	0.32	0.21	0.02	2.75	0.49	1.48	0.30	0.78	2.17	1.47	0.12	1.09	0.26	0.05
Non-euro area																	
BG	0.07	0.03	15.35	0.93	0.01	0.01	1.72	0.20	1.32	0.23	0.39	0.73	8.14	0.00	0.77	0.18	0.00
CZ	0.02	0.02	9.32	0.39	0.00	0.02	2.53	0.77	2.87	1.06	1.29	4.58	8.34	0.08	2.83	0.05	0.02
DK	1.67	0.17	34.60	1.06	0.42	0.09	26.34	4.22	2.74	2.66	2.25	23.43	26.28	0.22	20.78	2.10	0.55
HR	0.04	0.00	1.66	0.60	0.03	0.00	1.26	0.39	1.01	0.39	0.25	0.22	6.28	0.00	0.05	0.02	0.01
HU	0.22	0.02	0.95	0.04	0.19	0.02	0.75	0.21	0.56	0.20	5.07	10.03	8.46	0.39	9.51	0.04	0.02
PL	0.00	0.00	2.15	0.28	0.03	0.01	1.21	0.24	0.03	0.01	0.11	1.22	5.44	0.00	0.17	0.00	0.00
RO	0.10	0.03	5.01	2.30	0.03	0.01	0.41	0.12	0.14	0.08	0.14	0.33	2.29	0.00	0.32	0.03	0.00
SE	0.07	0.00	7.30	0.34	0.16	0.11	2.99	0.46	1.08	0.40	0.62	2.68	14.05	0.17	1.93	0.31	2.34

Source: ECB.

Notes: NA = no revisions. For non-euro area countries, data relate to the period Q4 2018 to Q4 2019.

Table A.1.3.3

Upward revision ratios for the period Q2 2018 to Q1 2020

(percentages)

	Households (including NPISHs)				Non-financial corporations						Financial corporations						
	Loans		Total assets		Debt securities		Loans		Intra-NFC loans		Total	Total	MFIs	IVFs	OFIs	ICs	PFs
	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Transactions	Stocks					
Euro area																	
BE	75	88	63	50	0	25	25	50	25	50	25	75	88	50	25	38	
DE	100	63	100	75	NA	0	75	63	75	50	13	100	88	100	88	100	
EE	25	25	75	63	80	43	75	75	88	50	38	63	25	86	63	13	57
IE	0	71	38	50	100	50	100	63	100	100	63	100	63	0	100	88	13
GR	100	43	50	38	17	0	63	38	NA	NA	25	38	25	100	75	100	40
ES	50	75	75	13	63	60	25	63	100	75	63	38	25	100	75	63	63
FR	13	38	38	50	25	14	50	100	75	100	100	100	100	75	88	50	NA
IT	100	57	63	63	25	50	63	63	0	50	38	0	0	NA	75	50	63
CY	75	75	100	75	67	100	88	75	75	75	50	75	38	20	75	88	75
LV	100	50	50	25	86	50	0	38	88	25	75	38	20	60	38	29	63
LT	25	50	38	25	57	63	0	50	0	50	75	88	88	75	75	50	NA
LU	75	50	63	50	50	38	100	75	0	50	63	88	50	75	100	75	63
MT	75	63	75	63	50	63	80	83	100	100	50	88	38	100	25	63	100
NL	88	63	88	63	50	43	13	38	38	25	63	88	88	88	88	88	38
AT	63	50	100	63	50	29	100	75	50	63	38	25	0	75	38	63	57
PT	50	25	75	88	0	17	75	75	50	50	75	75	25	88	75	13	38
SI	0	29	100	75	NA	NA	88	88	25	50	75	100	100	NA	29	50	NA
SK	33	50	100	63	50	40	14	57	38	50	50	38	75	67	29	14	50
FI	13	50	88	50	86	38	100	57	88	25	50	63	63	25	50	50	0
Euro area	50	75	63	50	75	38	50	88	50	75	75	100	0	100	100	75	100
Non-euro area																	
BG	20	0	100	100	40	40	100	60	100	100	20	40	100	33	40	80	100
CZ	80	20	100	80	NA	50	100	20	100	80	20	100	100	100	100	33	100
DK	0	20	100	40	0	60	100	100	60	100	60	0	80	40	0	0	40
HR	100	25	100	100	100	75	100	100	80	100	80	100	100	NA	80	0	75
HU	100	100	40	40	0	20	80	40	80	80	100	100	100	100	100	40	0
PL	20	40	100	40	20	0	100	100	80	40	40	100	100	NA	20	20	100
RO	100	80	20	40	60	60	60	20	40	100	60	80	80	NA	60	80	NA
SE	0	60	100	100	75	75	60	100	80	80	80	60	40	80	40	40	100

Source: ECB.

Notes: NA = no revisions. For non-euro area countries, data relate to the period Q4 2018 to Q4 2019.

Table A.1.3.4

Directional reliability indicator for the period Q2 2018 to Q1 2020

(percentages)

	Households (including NPISHs)				Non-financial corporations						Financial corporations						
	Loans		Total assets		Debt securities		Loans		Intra-NFC loans		Total	Total	MFIs	IVFs	OFIs	ICs	PFs
	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Stocks	Trans- actions	Transactions	Stocks					
Euro area																	
BE	100	63	88	100	100	100	38	63	75	50	100	88	75	88	88	88	38
DE	100	88	100	100	100	100	100	88	50	63	88	100	88	88	75	88	88
EE	100	100	88	63	100	100	75	88	38	63	100	100	88	88	50	75	88
IE	100	88	88	63	63	88	75	100	75	38	88	100	88	88	75	63	75
GR	50	63	100	63	75	88	63	100	100	100	100	100	88	88	88	88	75
ES	88	100	100	100	75	100	75	88	75	75	88	75	38	88	38	75	75
FR	100	100	100	100	100	100	100	88	75	75	100	100	75	88	75	75	88
IT	100	100	100	100	75	100	63	100	75	50	88	88	88	88	63	88	63
CY	50	75	75	50	63	88	88	75	25	63	63	75	75	75	63	75	63
LV	88	75	75	75	88	88	38	38	63	63	100	88	88	88	63	75	88
LT	100	100	88	63	100	100	100	100	63	50	100	100	88	88	88	75	88
LU	88	63	63	75	75	75	75	50	75	100	100	88	75	88	50	63	75
MT	88	88	75	88	75	75	100	100	63	75	88	100	75	50	75	88	63
NL	88	88	100	100	88	75	38	88	38	75	88	75	88	88	63	88	88
AT	100	75	88	100	100	75	88	50	50	38	88	88	88	88	50	88	63
PT	63	63	100	100	75	88	75	75	75	63	75	88	63	88	88	63	88
SI	100	88	100	63	100	100	100	88	63	100	100	100	88	88	88	88	88
SK	100	100	100	75	75	100	100	88	63	63	100	100	75	88	75	75	88
FI	88	75	100	75	100	100	38	50	63	75	100	88	88	88	75	75	63
Euro area	100	100	100	88	100	88	88	100	88	75	100	100	100	100	75	100	88
Non-euro area																	
BG	100	80	100	80	100	100	100	100	20	100	80	100	80	100	80	40	100
CZ	100	100	100	60	100	80	80	60	80	80	100	80	80	100	80	80	100
DK	80	100	100	100	100	100	60	40	20	60	100	100	80	100	100	100	100
HR	100	100	80	80	100	100	80	100	40	100	100	100	60	100	100	100	100
HU	100	80	100	100	80	80	80	100	100	40	80	100	60	80	80	80	100
PL	100	100	80	20	100	100	80	80	100	100	100	80	40	100	100	100	100
RO	100	100	60	60	40	60	80	80	60	60	100	100	80	100	100	80	100
SE	100	100	100	100	100	100	80	80	60	100	100	100	80	100	60	80	100

Source: ECB.

Note: For non-euro area countries, data relate to the period Q4 2018 to Q4 2019.

1.4 Vertical discrepancies

Table A.1.4.1

Four-quarter cumulative vertical discrepancies

	EUR millions*				As a percentage of GDP			
	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Households – euro area								
BE	510	1,422	6,243	990	0%	0%	1%	0%
DE	0	0	0	0	0%	0%	0%	0%
IE	-2,758	-2,836	539	2,104	-1%	-1%	0%	1%
GR	-7,195	-8,009	-5,505	-7,971	-4%	-4%	-3%	-4%
ES	-14,269	-12,948	-8,959	-15,713	-1%	-1%	-1%	-1%
FR	40,670	4,283	23,115	40,883	2%	0%	1%	2%
IT	1,948	81	-169	-309	0%	0%	0%	0%
NL	-7,443	-2,171	-3,158	-916	-1%	0%	0%	0%
AT	3,786	-1	489	-1,317	1%	0%	0%	0%
PT	0	0	0	0	0%	0%	0%	0%
SI	130	-40	448	820	0%	0%	1%	2%
FI	-3,672	-6,357	-8,838	-2,182	-2%	-3%	-4%	-1%
Euro area	-28,385	-36,600	-17,544	17,366	0%	0%	0%	0%
Households – non-euro area								
CZ	-140,505	-152,963	-132,036	-259,658	-2%	-3%	-2%	-5%
DK	-17,049	-20,389	-13,912	-44,367	-1%	-1%	-1%	-2%
HR	NC	NC	NC	NC	NC	NC	NC	NC
PL	-85,038	-45,098	-30,496	-134,735	-4%	-2%	-1%	-6%
RO	NC	NC	NC	NC	NC	NC	NC	NC
SE	52,874	45,799	52,215	3,871	1%	1%	1%	0%
Non-financial corporations – euro area								
BE	-10,921	-1,294	-2,946	-8,882	-2%	0%	-1%	-2%
DE	74,224	85,285	24,084	-14,208	2%	2%	1%	0%
IE	1,471	-764	-913	1,365	0%	0%	0%	0%
GR	6,558	8,331	5,863	8,802	4%	5%	3%	5%
ES	13,454	13,068	10,030	16,428	1%	1%	1%	1%
FR	6,236	4,586	-3,824	8,324	0%	0%	0%	0%
IT	260	465	-611	-216	0%	0%	0%	0%
NL	-2,504	-620	-4,331	-1,249	0%	0%	-1%	0%
AT	-7,513	-6,781	-4,026	3,752	-2%	-2%	-1%	1%
PT	120	83	157	399	0%	0%	0%	0%
SI	453	750	594	1,055	1%	2%	1%	2%
FI	9,760	8,762	13,125	7,192	4%	4%	5%	3%
Euro area	37,248	44,417	56,694	39,617	0%	0%	0%	0%

	EUR millions*				As a percentage of GDP			
	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Non-financial corporations – non-euro area								
CZ	-117,102	-181,374	-164,937	-206,381	-2%	-3%	-3%	-4%
DK	-10,566	-3,033	25,282	10,974	0%	0%	1%	0%
HR	NC	NC	NC	NC	NC	NC	NC	NC
PL	125,843	40,314	63,471	25,604	6%	2%	3%	1%
RO	3,375	99,541	79,519	68,381	0%	9%	8%	6%
SE	-141,427	15,279	-141,540	-129,251	-3%	0%	-3%	-3%
Financial corporations – euro area								
BE	11,731	820	-3,612	6,055	2%	0%	-1%	1%
DE	-3	-4	-4	-5	0%	0%	0%	0%
IE	-4,756	-8,216	3,356	1,850	-1%	-2%	1%	1%
GR	10,033	9,245	12,788	7,459	5%	5%	7%	4%
ES	0	0	0	0	0%	0%	0%	0%
FR	-74,016	-4,885	-6,067	-79,705	-3%	0%	0%	-3%
IT	7,751	608	1,573	8,801	0%	0%	0%	0%
NL	0	0	0	0	0%	0%	0%	0%
AT	-3,792	1,559	-1,009	345	-1%	0%	0%	0%
PT	109	95	290	38	0%	0%	0%	0%
SI	-522	-722	-820	-881	-1%	-1%	-2%	-2%
FI	7,371	4,475	7,332	12,276	3%	2%	3%	5%
Euro area	29,719	24,834	22,997	6,997	0%	0%	0%	0%
Financial corporations – non-euro area								
CZ	-7,088	-9,958	-60,943	-62,118	0%	0%	-1%	-1%
DK	-3,601	-24,355	-42,938	-52,728	0%	-1%	-2%	-2%
HR	NC	NC	NC	NC	NC	NC	NC	NC
PL	-19,867	39,237	-19,733	282	-1%	2%	-1%	0%
RO	10,021	5,464	3,564	1,187	1%	1%	0%	0%
SE	-77,589	-47,351	31,620	39,620	-2%	-1%	1%	1%

Source: ECB.

Note: NC = No data

* For non-euro area countries, these figures are shown in the national currency.

1.5 Comparison with financial statistics

Table A.1.5.1

Comparison with MFI balance sheet items (BSI) data and securities issues statistics (SEC)

(percentages)

	External comparison						
	MFI loans to NFCs and households: FA vs BSI, 2019		NFC debt securities: FA vs SEC, 2019				
	Stocks	Transactions*	Stocks		Transactions*		
			% difference (QFA-SEC)/QFA	Difference as % of GDP	% difference (QFA-SEC)/QFA	Difference as % of GDP	
Euro area							
BE	1.15	0.12	11.37	1.60	0.09	0.01	
DE	-3.84	0.11	13.37	0.83	-0.02	0.00	
EE	0.40	-0.12	7.84	0.32	-0.91	-0.04	
IE	-0.09	0.74	28.04	1.81	1.77	0.11	
GR	0.67	-0.11	1.24	0.01	7.22	0.04	
ES	0.01	0.00	0.69	0.07	-0.02	0.00	
FR	0.28	-0.06	7.45	2.06	-0.03	-0.01	
IT	0.01	0.02	6.86	0.57	-1.04	-0.09	
CY	0.89	0.23	31.37	0.04	88.24	0.12	
LV	-1.35	-0.06	9.02	0.12	-6.96	-0.09	
LT	-0.07	0.05	23.52	0.61	4.95	0.13	
LU	-0.22	-0.32	10.55	4.74	0.28	0.13	
MT	0.49	-0.64	12.78	0.84	8.28	0.54	
NL	0.96	0.24	-25.04	-3.41	-2.49	-0.34	
AT	3.20	-0.06	7.60	0.74	0.24	0.02	
PT	0.20	-0.09	-0.78	-0.10	-0.54	-0.07	
SI	-0.03	-0.10	0.98	0.01	-29.02	-0.44	
SK	0.60	-0.02	35.68	2.22	0.00	0.00	
FI	-0.85	0.38	4.59	0.62	3.01	0.41	
Non-euro area							
BG	1.28		1.05	0.03			
CZ	-0.38		1.14	0.07			
DK	1.96		2.34	0.17			
HR	0.28		22.17	1.18			
HU	0.63		2.59	0.04			
PL	0.83		16.28	0.64			
RO	0.69		-19.52	0.00			
SE	-0.89		-0.48	-0.13			

Source: ECB.

* In the case of transactions, underlying stocks are used in the denominator, and comparable transaction data are not available for non-euro area countries. Percentage differences can be inflated when values are very small.

Annex 2: Methodological documentation of quality indicators

2.1 Descriptive indicators

Upward revision ratio

The upward revision ratio is the number of upward revisions as a percentage of the total number of observations considered (N) – i.e. the total number of revisions over time and across vintages, excluding zero values:

$$\text{Upward revision ratio} = \frac{\# \text{ upward revisions}}{N} (\%)$$

The prescriptive target for this indicator is between 30% and 70%. Since positive and negative revisions should occur with roughly the same frequency, revisions should be positive around half of the time.

Directional reliability indicator

In order to assess whether revisions systematically alter the sign of changes over time, as contained in earlier assessments, a 2 x 2 contingency table can be drawn up. In that table, the columns consist of positive and negative differences in initial estimates:

$$\Delta x_t^I = x_t^I - x_{t-1}^I$$

The rows consist of positive and negative changes in the latest assessment:

$$\Delta x_t^L = x_t^L - x_{t-1}^L$$

Table A.2.1

Contingency table for directional reliability

	$\Delta x_t^I > 0$	$\Delta x_t^I \leq 0$	Subtotal
$\Delta x_t^L > 0$	n11	n12	n11 + n12
$\Delta x_t^L \leq 0$	n21	n22	n21 + n22
Subtotal	n11+ n21	n12 + n22	N

The directional reliability indicator (Q) is defined as:

$$Q = \frac{n_{11} + n_{22}}{N} (\%)$$

This indicator (Q) shows the percentage of cases in which earlier and later assessments have the same sign. It is equal to 1 (100%) if the final assessment always has the same sign as the first assessment, and it is equal to 0 if that is never the case. High values for this indicator are optimal in terms of confirming the reliability of data.

2.2 Indicators of size

Mean absolute percentage errors

For strictly positive data, the relative size of revisions is measured as the percentage change versus the initial assessment:

$$\% \text{ change} = \left(\frac{x_t^L - x_t^I}{x_t^I} \right)$$

If the average over time is then computed, this is called the mean percentage error (MPE):

$$\text{MPE} = \overline{\left(\frac{x_t^L - x_t^I}{x_t^I} \right)}$$

As revisions can be either positive or negative, it is usually more appropriate to use the absolute value, in order to avoid revisions with opposite signs cancelling each other out in the resulting indicator. If the average is calculated using absolute values, the result is the mean absolute percentage error (MAPE):

$$\text{MAPE}_{\text{average of ratios}} = \frac{1}{T} \sum_{t=1}^T \left| \frac{x_t^L - x_t^I}{x_t^I} \right| (\%)$$

There are two alternative definitions of this indicator: the average of ratios and the ratio of averages.

$$\text{MAPE}_{\text{ratio of averages}} = \frac{\sum_{t=1}^T |x_t^L - x_t^I| / T}{\sum_{t=1}^T |x_t^I| / T} (\%)$$

The second method has an advantage over the first. If a single data point for the denominator is close to zero, the MAPE will be artificially magnified if it is calculated as an average of ratios, which will not necessarily be the case with the second method. Consequently, the second method is preferred to the first.

To overcome the fact that transactions can be either positive or negative, so cannot be used in the denominator, the MAPE for transactions is calculated as a percentage of underlying stocks. When it is calculated in that way, the resulting indicator is usually referred to as a mean absolute comparative error (MACE), as revisions in series containing observations that have different signs or are close to zero cannot be properly related to the series value itself and must instead be related to an alternative measure (such as outstanding amounts or GDP).

Symmetric mean absolute percentage errors

A MAPE is an asymmetric indicator: if revisions are, on average, positive, the MAPE will be lower than if those revisions are, on average, negative. Where the denominator is identified in terms of the latest assessments, the results will be the opposite. A symmetric mean absolute percentage error (SMAPE) fixes those issues of asymmetry and is bounded between 0 and 1 (100%), whereas a MAPE is not bounded on the upper side. In other words, a SMAPE gives relevance to the initial observation, whereas a MAPE does not.

$$\text{SMAPE} = \frac{\sum_{t=1}^T |x_t^L - x_t^I| / T}{\sum_{t=1}^T (|x_t^L| + |x_t^I|) / T} (\%)$$

As with MAPEs, this indicator is calculated as a percentage of underlying stocks (and usually referred to as a MACE) in the case of transactions.

Additional notes:

Whenever GDP is used, it is the latest value available (in this case, 2019).

For revisions, all figures are calculated as the difference between the data in the October 2020 transmission and the data in the October 2019 transmission.

For all other tables and charts, unless otherwise indicated, figures are calculated using the data in the October 2020 transmission.