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Tackling increased non-response, change of mode andwave effects in the LFS during the COVID-19 crisis

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Abstract

As a consequence of the COVID-19 outbreak, the LFS data collections have been severely hampered in most countries and face-to-face data collection methods have been stopped and replaced by remote collection methods(CATI or CAWI). Non-response increased because phone numbers/mail addresses are not always immediately available. It would most likely result in:☐Bias due to change in mode from PAPI or CAPI to CATI or CAWI: mode effect and possible self-selection bias in the provision of phone numbers or contacts; ☐Loss of precision due to lower samples and potential bias due to different response rates among the groups of population differently affected by the confinement. This contribution first gives an overview of the effect of the changes of mode, wave and non-response, based on an analysis carried out by Eurostat earlier this year. As it has been demonstrated that different modes and wave produce a methodological impact on the unemployment estimates, the first assessment shows that the confinement will have a limited impact, and negligible if compared to the expected real effect of the COVID-19 on the unemployment. Regarding the increasing non-response, recommendations on what should be avoided and what should be favoured to tackle these issues are provided. In particular, several guidelines concerning data collection, imputation and weighting have been proposed. Countries are asked to avoid introducing as far as possible changes in their weighting procedures as it may introduce an additional source of incomparability over time and it would affect comparability with previous estimates. Nevertheless, if a change in the weighting or calibration approach is considered, a recalculation of previous series using the updated weighting approach should take place to assess the impact of the change. Some examples on how countries managed LFS under COVID-19 crisis will be presented. However, there is no perfect solution that fits for all situations; options can nonetheless be considered to reduce the impact on the estimates. As any change can increase the burden on the National Statistical Institutes (NSIs)and introduce additional bias in series, care is needed when introducing changes.

Tackling increased non-response, change of mode and wave effects in the LFS during the COVID-19 crisis

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1. INTRODUCTION

As a consequence of the COVID-19 outbreak, the LFS data collections have been severely hampered in most countries. During the confinement, face-to-face (CAPI and PAPI) data collection methods have been stopped and replaced as much as possible by remote collection methods (CATI or CAWI). Non-response is increasing because phone numbers/mail addresses are not always immediately available. Wave 1, for which a face-to-face interview was mainly used before the COVID crisis, is being particularly affected.

It would most likely result in:

- Bias due to change in mode from PAPI or CAPI to CATI or CAWI: mode effect and possible self-selection bias in the provision of phone numbers or contacts; unequal impact over the waves

- Loss of precision due to lower samples and potential bias due to different response rates among the groups of population differently affected by the confinement.

This paper first gives an overview of the effect of the changes of mode, wave and non-response, based on an analysis carried out by Eurostat earlier this year. In a second step, recommendations on what should be avoided and what should be favoured to tackle these issues are provided. There is no perfect solution that fits for all situations; options can nonetheless be considered to reduce the impact on the estimates. As any change can increase the burden on the National Statistical Institutes (NSIs) and introduce additional bias in series, care is needed when introducing changes. In Annex 3 are reported examples on how countries are managing LFS under COVID-19 crisis.

The present document also takes into account the way forward described by the International Labour Organisation (ILO) on the Guidance for labour statistics data collection.

2. EFFECT OF CHANGES

2.1 Data collection and wave effect

The data collection methods adopted in the different countries implementing the EU-LFS before the COVID-19 crisis are reported in Annex 1. This information refers mainly to the 2019 LFS data collection. It highlights that CAPI/PAPI are the most widely used modes in wave 1 with 19 countries (BE, DE, EE, IE, ES, FR, HR, IT, CY, LV, HU, AT, PL, PT, RO, SI, UK, RS and TR) mostly/mainly relying on CAPI and 6 (BG, CZ, EL, MT, SK and ME) on PAPI. CATI solely or in combination with CAWI was mainly used in 8 countries (DK, LU, NL, FI, SE, IS, NO and CH).

Recently Eurostat estimated the impact of the data collection mode on the unemployment rate (see Annex II). It showed that face-to-face data collection increases the unemployment rate by 0.54 point of percentage (p.p.) and that the remote interviewing (phone or web interviews) consequently decreases it by 0.54 p.p. (as this comes from the same dependent variable in the model; the variable "collect" is the percentage of the subsample collected face-to-face minus the percentage of the subsample remotely collected). We can consequently roughly estimate that, if the first wave is more or less 20% of the sample, and half of the data collection changes from a face-to-face to a remote interview, the impact will remain relatively small, i.e. it will be -0.11 p.p. of the unemployment rate.

Moreover, the unemployment rate decreases with the wave. The maximal effect that Eurostat measured on average, is -0.74 p.p[1]. This model explains the unemployment rate of the subsamples by the year, the quarter, the country, the wave, the percentage of non-contacts, the percentage of refusals and a variable "collect" which is the percentage of the subsample collected face-to-face minus the percentage of the subsample remotely collected.

As a consequence of this maximal effect of -0.74 p.p. for the latest wave, in case it is impossible to replace half of the face-to-face data collection of the first wave by a remote interview (no phone number, no email address in the sampling frame), the impact on the unemployment rate will be -0.046 p.p. This is a rough estimation, using as hypothesis an average of five waves and a regular decrease of the unemployment rate with the wave. As the first wave is not biased by the wave effect, if half of the first wave disappears, then the average of the remaining quarterly sample waves will be more biased.

The interest of this rough estimation is to give the order of magnitude that shows a real but very limited wave effect if half of the first wave cannot be interviewed because of the confinement.

This first rough assessment shows that the confinement will have a methodological impact on the estimate but also that this impact will be limited, between one tenth and one hundredth of the expected real effect of the COVID-19 on the unemployment. This assessment could of course be refined at a later stage.

2.2   Non-response

Bias relating to non-response is a known issue, but in the context of widespread lockdowns, the problem becomes more relevant. Nonetheless, predicting bias in advance is not always easy as it is supposed to be linked to features of the population that are not known from the sampling frame and not reported in any other available source.

2.2.1   Traditional unit non-response

Making the link between unit non-response and the labour force status is complicated. Some unemployed people are unhappy when declaring to be unemployed and refuse to answer to the following waves. Some other unemployed people find a job in another region and depending of the sampling method, they can be lost for the further waves of

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[1] -0.74 p.p. is the average on 16 countries obtained by Eurostat using the model as reported in Annex II.

the survey. On the opposite, the interviewer had sometimes trouble finding a worker at home and the confinement may facilitate the interview.

The model used in the study whose results are provided in Annex 2 tried to find the effect of non-response before the confinement. Nevertheless, it shows no effect of the non-response (refusals and non-contacts) on the unemployment rate. This can be explained by the lack of accuracy of the measure of the non-response in the model because some replacement methods have not been taken into account and by the shortness of the observed period. In the next study, four quarters more will be available and the information on the replacement method used by NSIs will be added and could influence the measure of the non-response effect.

2.2.2 Additional unit non-response due to COVID

There is an additional non-response due to the confinement when the linking failed to find a phone number for the first wave. Thus, a part of the face-to-face interviews of the first wave may not be replaced by the CATI method. Unit non-response reduces the size of the sample and increases the variance. Moreover, depending on the register used to link with the sample, this non-response may be correlated with the labour force status. We can imagine that the wealthiest or the best paid do not want that their phone number appears in external register. Also the young people have less fixed phone numbers and are more often unemployed or outside the labour force. This additional non-response is thus correlated with the main variables of LFS. And non-response introduces a bias if it is correlated with the variable of interest.

2.2.3 Item non-response

In addition, it is important to differentiate between missing data coming from unit non-response and item non-response. Unit non-response is commonly treated by weighting methods while item non-response may be reduced by the use of imputation. However, this emergency situation linked to the COVID crisis may lead countries to adopt alternative solutions to mitigate the impact of non-response.

3. RECOMMENDATIONS

This section describes what should be avoided and what should be favoured for tackling non-response issues with corresponding reasons and explanations.

3.1 What should be avoided

Administrative or register data shall not be used to derive or impute information on the variables used to determine the labour force status. The main consistency issues between information on employment and unemployment estimated by the EU-LFS and derived from registers are the different definitions and modes of measurement. Furthermore, in the current circumstances, the availability of timely administrative data might also be affected by delays due to the COVID crisis.

It is also recommended to avoid using **non-traditional sources** of information for replacing non-responding units or imputing missing information on labour force status due to different definitions, accuracy, reference time periods, and not proven stability and/or reliability of data from these sources.

Since the EU-LFS requires sampling units to be re-interviewed along several quarters, **longitudinal imputation** of missing units using information resulting from previous interviews must be avoided in any case. The COVID crisis strongly affects people's labour conditions and previous values can differ largely compared to the values of the current period.

Replacement of non-responding units by imputation using donors with similar characteristics should also be avoided because it introduces an artificial filling of the sample and assigns individual characteristics that could differ from the real condition of the concerned individuals. Moreover, it produces an effect which is similar to adjustment via weighting which is by far preferable.

3.2   What should be favoured

3.2.1   Data collection

As the outbreak of COVID impacted most face-to-face interviews (CAPI and PAPI), it is advisable to make use as far as possible of remote interviewing technique (CAWI, CATI). The main issue could be gathering contact details (phone numbers or e-mail addresses) needed to carry out the survey according alternative modes. An additional option, already implemented by some countries, is to use introductory letters, either sent by mail or delivered to sampling units requesting them to provide contact details for a remote interview.

In order to increase response rate, the period to contact the sampled persons can be prolonged to some extent. Several countries have already planned to do so.

It is also advisable to simplify or shorten the national questionnaires, where possible, in order to reduce the survey burden, provided that this does not have any impact on the EU-LFS variables. However, several countries mentioned in the survey on COVID-19 measures that they have introduced or are planning to introduce additional questions, or further answer options to questions, to better capture the effect of the crisis on the labour market.

Another option to be recommended to tackle non-response issues is the possibility to over-sample or increase the size of the sample as well as to replace non-responding units with other units selected from an additional list. This could improve precision but would not necessarily address biases. In case of replacement, to limit the bias, the replacing units shall respect, as far as possible, the same demographic background or characteristics of non-respondents. The use of additional frames (registers of mobile phone or landlines numbers, tax databases, etc.) could be useful in the countries where a (relatively) comprehensive source of contact details exist. However, as it is impossible to link it to the existing sampling frame or selected sample, caution is certainly needed in such a change of approach and an assessment of coverage will be required.

An option seriously considered or already being implemented by some countries (IT, PL, SK) is the re-use of old sub-samples or prolonging the presence of the subsamples in the survey for further waves. This approach is motivated by the availability of contact details and the familiarity of sampling units with the survey which potentially enhances participation in the survey against those who would be interviewed for the first time. Although some modification to weighting/calibration may be needed to adjust for any biases, this would be preferable to attempting to introduce a new sub-sample for which contact information may be limited or unavailable and initial co-operation could be more difficult to gather using interviewing modes as CATI or CAWI.

It is also advisable to promote communication with the aim to foster participation in the survey. For example, Ireland and Latvia have launched a promotional campaign on most popular social networks to try and promote the survey mode change.

Finally, it is also advisable to re-establish the normal face-to-face survey mode (for the countries that provide for it) if this were allowed by the de-confinement measures.

3.2.2 Collect and save the information for further analyses

The panel dimension will also give the opportunity to study the potential bias of selection due to the linking with an external register to find the phone number for the first wave, using information collected in the previous waves. Indeed, Annex 1 shows that CAPI or PAPI was a common data collection method for the first wave. Due to the confinement, many NSIs linked the sample of the first wave with a phone register to start the CATI data collection from the first wave. That linking procedure is not perfect and did not allow a phone number to be found for part of the statistical units of the first wave. Unfortunately, there is no chance that this new reason of non-response is randomly distributed, and it has to be checked if it introduced any bias in the estimation of the LFS mains variables. Fortunately, the LFS variables are known from the past quarters for most waves (all except the first one) and this information can be used to estimate the bias. In fact, it is possible to use the same linking procedure on the already collected waves (wave 2 and following) and to analyse for the main LFS variables if the individuals, for whom a phone number has been founded, have the same profile as the ones for whom no phone number has been linked. This will give an estimation of the bias given by the linking procedure that we can use for the first wave.

3.2.3 Item non-response imputation

Imputation of item non-response shall be introduced or extended where partial information about the units exists, in order to improve the quality of the statistics. The Memobust handbook lists several cases and methods for imputation.

Editing and imputation for item non-response using administrative data, if available, can also be foreseen in case this administrative data meets quality requirements with regards to accuracy, coherence and timeliness. In addition, the imputation shall not be used for variables related to the labour force status. The Guidelines on the use of estimation methods for the integration of administrative sources provides recommendations in this regard.

However, some precautions should be taken; the usual procedures for non-response correction or imputation might not be valid under the current conditions. These procedures usually assume continuity and will generate results that will be biased toward the "normal" situation, which might not describe the current situation provided that the composition of non-response might be very different in this period.

3.2.4 Adjustment of the weights

Adjustment and correction of non-response effects via weights is encouraged provided that all countries already carry out some correction for non-response in their weighting procedure on a regular basis.

Adjustment of non-response varies a lot among countries but two approaches are mainly used:

- Some countries correct non-response effect in one of the post-stratification or calibration steps within the weighting procedure: either at the beginning when the design weight is computed as the inverse of the sample selection probability (by the stratification variables if any) or at the end when the final weight is computed by calibrating to the marginal of the variable used in the weighting procedure (sex, age, region but also auxiliary information as education, income, etc. if available).

- Other countries use an additional step, in their weighting procedure, specifically addressed to non-response adjustment by regression models or using additional information of non-responding units, if available. It introduces a correction to impose to the characteristics of the originally selected sample and this is usually performed before any post-stratification or calibration step. Nevertheless, any adjustment requires some information about both responding and non-responding units.

Because of the COVID crisis, countries could be tempted to change their weighting procedure in several ways, for example:

- use additional administrative sources, if available, in the calibration steps within their weighting procedure, in order to correct bias resulting from increased non-response, in particular if segments of the population are not adequately represented in the net sample;

- introduce auxiliary information from the frame already used in the sampling design in order to provide some other basis for adjustment;

- make use of longitudinal data, i.e. comparing the structure of the sub-samples over time and correcting for panel attrition and non-response. The same applies for countries that decide to re-use old samples (see Annex 3);

- separate non-response adjustment in a dedicated step from the other calibration steps (in the case calibration integrated non-response adjustment).

As a rule of thumbs, it is not recommended that countries introduce changes or revisions to their weighting and non-response adjustment processes as it may introduce an additional source of incomparability over time and it would affect comparability with previous estimates, although it could be a valid strategy.

Nevertheless, if a change in the weighting or calibration approach is considered, a recalculation of previous series using the updated weighting approach should take place to assess the impact of the change. In addition, if alternative approaches are being considered, it is recommended to test them using available data from previous periods to assess the results produced and their volatility over time. This practice should be considered for all changes in the survey methodology and not only limited to weighting procedure.

It should also be recalled that non-response adjustment and weighting cannot correct all biases, particularly if the variable of interest is correlated with the self-selection of the sample.

Finally, current information from the auxiliary sources referring to the variables relating to the definition of the labour force status shall not be used in the weighting process.

Annex 1: Data collection method before the COVID-19

Country	Wave	Data collection in %				
		Papi	Capi	Cati	Cawi	Post
BE	1	0	100	0	0	0
	2 and following	0	0	45.7	54.3	0
BG	All	100	0	0	0	0
CZ	1	100	0	0	0	0
	2 and following	35	22.5	28.8	0	13.8
DK	All	0	0	54	46	0
DE[1]	All	0	68	3	0	29
EE	1	0	100	0	0	0
	2 and following	0	0	100	0	0
IE	1	0	100	0	0	0
	2 and following	0	50	50	0	0
EL	All	96.5	3.5	0	0	0
ES	1	0	100	0	0	0
	2 and following	0	14	86	0	0
FR	1	0	98	2	0	0
	2 to 5	0	14	86	0	0
	6	0	18	82	0	0
HR	1	0	100	0	0	0
	2 and following	0	46.5	53.5	0	0
IT	1	0	100	0	0	0
	2 and following	0	29.7	70.3	0	0
CY	1	0	100	0	0	0
	2 and following	0	0	100	0	0
LV	1	0	100	0	0	0
	2 and following	0	77.9	20.3	1.8	0
LT[2]	All	0	0	0	0	0
LU	All	0	0	40.2	59.8	0
HU	1	0	100	0	0	0
	2 and following	0	57.3	42.7	0	0
MT	All	25	0	75	0	0
NL	1	0	10	15	75	0
	2 and following	0	0	100	0	0
AT	1	0	100	0	0	0
	2 and following	0	0	100	0	0
PL	All	11.8	86.9	1.3	0	0

PT	1	0	100	0	0	0
	2 and following	0	17.2	82.8	0	0
RO	All	46.7	53.3	0	0	0
SI	1	0	100	0	0	0
	2 and following	0	18.7	81.3	0	0
SK	All	36.2	22.8	41	0	0
FI	All	0	1	99	0	0
SE	All	0	0	100	0	0
UK	1	0	100	0	0	0
	2 and following	0	31.5	68.5	0	0
IS	All	0	0	100	0	0
NO	All	0	0	100	0	0
CH	All	0	0	100	0	0
ME	All	100	0	0	0	0
MK[2]	All	0	0	0	0	0
RS	All	0	36.6	63.4	0	0
TR	1	0	100	0	0	0
	2 and following	0	77	23	0	0

([1]): data from 2017.

([2]): no answer in the annual quality report.

Annex 2: Estimate of the data collection method on the unemployment rate

(Results presented during the Labour Market Statistics working group meeting, 3-4 December 2019.)

Case 1: wave effect <0 and noncontact >0

BG CZ DK EE FR IT CY LU HU NL PL SI SE CH RS TR

INDIVIDUAL and TIME SERIE, FIXED EFFECTS
wave_bis: 0 ; 0.5 ; 0.65 ; 0.8 ; 0.8 ; 0.8 ; 1 ; 1
The PANEL Procedure
Fixed Two-Way Estimates
Dependent Variable: cho (unemployment rate)

Model Description	
Estimation Method	FixTwo
Number of Cross Sections	143
Time Series Length	11

Fit Statistics			
SSE	258.3284	DFE	350
MSE	0.7381	Root MSE	0.8591
R-Square	0.9481		

F Test for No Fixed Effects and No Intercept			
Num DF	Den DF	F Value	Pr > F
153	350	77.37	<.0001

Parameter Estimates						
Variable	DF	Estimate	Standard Error	t Value	Pr > |t|	Label
wave bis	1	-0.73949	0.3723	-1.99	0.0478	wave effect
noncontact	1	-0.00314	0.0111	-0.28	0.7783	non-contacts
refuse	1	0.009354	0.0123	0.76	0.4483	refusals
collect	1	0.536616	0.1102	4.87	<.0001	face_to_face -

Collect is a synthetic variable, built to assess the effect of the data collection, face-to-face, compared to remote interviews.

Collect = PAPI + CAPI – CATI – CAWI –POST. Collect vary from -1 to +1.

Cho, Noncontact, and refuse are the percentage (multiplicated by 100) of unemployment, noncontacts, and refusals.

The period of the data observation is 2017-2018.

Annex3: Country cases

Belgium

Normally the first LFS wave is a CAPI interview but from March 18 on, Belgium is in lockdown 'light' and face-to-face interviews are forbidden until April 19 (but this can be extended). Interviewers are allowed to do their 1st wave interviews by phone, provided that they find a phone number (either online or by putting a letter in the mailbox asking the respondent to get in touch or give their phone number). Wave 2-4 are CATI/CAWI and not affected.

Although our colleagues of data collection tell us that CATI interviewing works well for the first wave, we expect a lower response rate for the first wave (not all households will be reached) and probably a bias caused by the change of CAPI to CATI. For certain groups a higher response rate may also be possible, for instance persons with a job but who are temporarily unemployed are at home and have more time to participate. The same can be the case for students.

It will be a challenge to achieve a sufficiently high response rate and to publish on time data of sufficient quality. Users want data as soon as possible (even sooner than in a normal period) to measure the impact of COVID-19.

Bulgaria

Since 16 March 2020, due to the declared by the government state of emergency, the, Bulgarian NSI stopped the data collection by face-to-face interviews. As the PAPI is the only mode of data collection for LFS this will lead to very high non-response. Although the interviewers were instructed to contact respondents by phone, by using available phone number from previous round, and collect as much information as possible for the LFS we are skeptical as the number of respondents, which provided contact phone number is extremely small (less than 5%). We have contacted the national mobile operators and the Commission for Personal Data Protection in order to ensure access to the phone numbers of people included in the sample. Administrative statistic on registered unemployment is running.

Czechia

Physical contacts with respondents (face-to-face interviews) were temporarily suspended because of emergency measures and nationwide quarantine. The interviewing continues via telephones. We are delivering modified advance letters to the first wave respondents with a plea for providing their telephone number (and/or e-mail adress) to our interviewer and for indication of suitable times for a phone call.

Despite these efforts, we expect negative effect on the wave1 response rates. The situation in the case of the households in other waves is, of course, better as parts of the second to fifth interviews are already being done by CATI and most of the households (but not all) do provide their phone or e-mail contacts to their respective interviewers at the end of the wave1 interview.

Denmark

One difference might be that so far we have had no problem with data collection. Actually we get a lot more CAWI interviews faster than normal. Grounding people in their homes seems to be good for web interviewing. Indeed non-response rate in Q1 2020 is quite stable around 45% as well as in the whole 2019.

Germany

Because of COVID-19 the face-to-face interviewers are no longer in the field and do not collect data for the LFS. In addition, some offices of the Länder had stopped working and can therefore no longer collected data.

Estonia

Face-to-face interviews have been forbidden, it is hard to tell for how long. The CAPI interviewers are doing telephone interviews. Since some respondents do not have their phone number listed or if it is wrong, it is not possible to contact them. Non-response rate in Q1 2020 seems not being impacted by COVID issues as it decreased by three percentage points (from 27.27% to 23.8%).

Ireland

CSO's LFS is usually conducted by a mixture of CAPI and CATI interviewing. The CAPI element has been suspended due to the COVID-19 crisis and CSO are now working to collect all interviews (including Wave 1) via CATI. The achieved sample size has been reduced in Q1 and it is likely to be significantly reduced in Q2 and for the duration of the COVID-19 crisis. For Quarter 2, LFS 1st Wave who would usually be interviewed by CAPI, a letter of invitation to request the householder to take part in a CATI survey is being sending. The letter appeals to the civic duty of householders to assist in producing data on the impact of the COVID-19 crisis. There is also an offer of an incentive of €15 for the Wave 1 interview which is conditional on the completion of the interview to receive the gift. We have also changed the Q2 LFS questionnaire to strip out national questions which are not required under regulation to try and make the interviews in Q2 easier to complete over the phone for the usual CAPI respondents. CSO has also launched a promotional Facebook campaign to try and promote the mode change, explaining to the respondent, that they are unable to call to their door but they will phone them once contact details are collected.

We have already applied a non-response adjustment to the data and we do not plan to make any other adjustment to account for the impact of COVID-19 measures on data collection.

Grece

Due to the pandemic of COVID-19 ELSTAT has suspended the collection of data by physical presence of interviewers in households since the beginning of March. At the same time, citizens are reluctant to participate in the survey and this situation has already had an impact on the data collection. In the meantime ELSTAT tries to continue the survey by phone and update population registers using administrative sources while attempting to switch over to CATI methods.

The afore-mentioned obstacles in face-to-face interviews affect particularly the 1st wave interviews (where telephone numbers of households are not available prior to the survey). As face-to-face interviews have been suspended, citizens are encouraged to provide their data by telephone interview. Specifically, a notification is sent to the households along with the LFS cover letter, asking them to call the interviewer in order to provide the information over the phone. This process is not easy because there are no adequately updated population registers. In this context, efforts are being made to update the registers in terms of contact details using administrative sources, but this task may take considerable time and effort to be completed.

As for February, an impact to a significant extent is expected in March and thereafter. To cope with this, a model using unemployed persons registered in the Public Employment Services (PES) and data for employees from the Ministry of Labour database has been planned. ELSTAT is also considering alternative ways to produce estimates such as use of additional administrative data as well as a small telephone survey focused on the impact of Covid-19 on employment. The results could be utilized to produce flash estimates on the impact of Covid-19 as well as estimates for employment and unemployment, as an additional input on the monthly unemployment model mentioned above.

Spain

All CAPI interviews are now conducted through CATI (or CAWI, which has been introduced experimentally in the last weeks) mode and interviewers (and almost all INE staff) are teleworking from home. At first, there were technical difficulties in administering this system, and they did not have all the telephone numbers of households (especially in the case of first interviews). That mainly affects interviews of weeks 11-13; the number of households surveyed in the first interview reduced in relation to other quarters.

Non-response rate in Q1 2020 raised by two percentage points (from 15.7% to 17.8%).

In order to mitigate the bias caused by all these exceptional circumstances, an additional calibration at NUT2 level for the weeks 11 to 13 has been included, based on the information of the same weeks for the previous year.

On the other hand, the decrease in the sample size of the first interviews may have influenced some of the coefficients of variation of the most disaggregated estimates, such as the provincial ones, so it is recommended to check their amount in INE base.

France

For the LFS, since Monday 16 march, we have switched from face-to-face to phone for first and last interviews and we have suspended all the fieldwork of identification of the surveyed units (to assess if the housing is or not a main residence and to assess the name of the current occupant of the dwelling). Reference weeks from Week 10 of Q1 are affected by these changes in protocol. For the last interviews, we have collected the phone number in previous waves, but for the first interviews we had the phone numbers for only 64% of the main residencies in the Metropolitan France in the sample frame and 13% for the Overseas Departments. A tutorial on finding contact information on Internet has been made available to help the interviewers who must use this information to notify the households (mail-notice, sms-notice), make contact and carry out the survey by telephone. Nonetheless, the household living in the dwelling may have changed and the contact by post may failed.

From reference week 10 onwards, the response rate in the 1st wave fell from 66% to 31% (the denominator includes vacant homes and secondary residences), it remained stable for other waves around 90% for waves 2-5 and 80% for wave 6 (for households who have already answered). Overall non-response rate in Q1 2020 raised by almost three percentage points (from 21.1% to 23.8%).

Some changes have been made in Q2 :

- From the reference week 6 of Q2, we have set up a centralized sending of introductory letters for 1rst wave.

- From 18th of May, the fieldwork of identification of the surveyed units re-start progressively

We are not able yet to assess if these changes had an impact on the response rate.

We are currently relying on the fact that the bulk of their sample has not undergone any protocol modification (2/3 of the wave 1 is not affected as well as the rest of the sample). Of course, we expect quality issues, due to lower response rates or changes in the mode of collection, for example.

Concerning the possible bias due to the higher non-response and the change in mode, we have made some exploratory analysis for the production of the Q1 2020.

- Mode effect: we compared the evolution of the main indicators for 3 groups of dwellings:

  o dwellings in 1st wave (the most affected by the change in mode and the stop of the fieldwork identification of the housings);

  o dwellings in 2-5 waves (no change in the mode);

  o dwellings in 6the wave (change in mode but small effect as we have their phone number and as a part of them was already interviewed by phone).

- Response rate: we compared the structure of the respondents on variables not affected by the situation and not taken into account for the calibration.

The results were not clearly comparable with all the past of the series. For that reason, and due to the large impact of the crisis on the indicators, we have decided not to change the weighting procedure for Q1 2020.

Croatia

The Labour Force Survey (LFS) in Croatia is conducted by CAPI and CATI data collection methods. CAPI survey was conducted without significant difficulties during the first 9 weeks of the Q1 2020 but after that we were faced with difficulties in CAPI data collection.

Measures prohibiting social contacts were adopted and then it was decided that CAPI interviewers, for all households for which a telephone number is available, should conduct interview by phone. The problem stems from the fact that many phone or mobile numbers are not available. In order to collect missing telephone numbers, we kindly asked households in announcement letter for Q2 2020 to provide us with their telephone numbers so that interviewers can contact them.

CATI data collection for Q1 2020 was not significantly affected but from the beginning of the Q2 2020, CATI Call Center have been closed and all interviews have been allocated to CAPI interviewers.

Apart from changes in interview mode, from Q2 2020 onwards, the interview week was extended (from 1 to 2 weeks) in order to increase the response rate. No additional questions or further answer options to questions in the LFS questionnaire have been introduced.

However, we do not yet know how comparable the data will be with earlier outcomes and to what extent this situation will affect the quality of the data. We will follow and implement the current guidelines as well as those we expect in the coming period.

Italy

In Italy, the face-to-face interviews are forbidden, call centers have closed their outbound activity (the society in charge for CATI interviews for LFS interrupted the working activity).

The solution we implemented to continue the LFS fieldwork was of authorizing CAPI interviewers to conduct the interviews by phone, when a phone number is available, still using the CAPI software to input and transmit data. The interview modality change will involve (at least) the weeks from 11 to 16 in the Q1 2020 and data collection has extended up to 5 weeks after reference week. This has resulted in higher non-response in 1st wave in March because lack of phone numbers.

Regarding Q2 2020, a new sample in the 1st wave has been extracted among households interviewed in the last wave between 2016 and 2019 and new households never surveyed before for which phone numbers were available. This approach should limit non–response in the 1st wave although we are aware that the sample is biased.

Specific methods of treatment may be necessary, also considering the possible impact on the rotation groups of future quarters.

A deepen analysis of non-response bias using administrative data will be undertaken before the dissemination. Perhaps the information disseminated will be less detailed than usual. The bias has been confirmed by the comparison with both administrative data and the previous monthly and quarterly samples of the same survey. In particular, working people, normally representing the subpopulation with the highest rate of non-response, in March and April show a response rate very similar to those obtained for unemployed and inactive people. The availability of a telephone contact seems to be associated with some demographic characteristics (already considered in the data weighting system), but also with the educational level, a variable that in its turn is related to the employment condition.

In order to correct the bias mentioned above, a new calibration constraint based on education qualification has been included in the quarterly and monthly processing. The biased sample, probably only partially adjusted, will also stay in the longitudinal samples for 2020 and 2021 surveys and, considering the uncertainty of the emergency situation, we are unable to know for how long the bias will persist.

Cyprus

Face-to-face interviews are forbiddenand call centers at the office are closed. CAPI interviews (wave 1) were replaced by telephone interviews conducted, from their homes, by the same

interviewers who were responsible for CAPI interviews. The interviewers were given telephone numbers in the cases where the telephone numbers were available. However, various telephone numbers are outdated. Call centers at the office are closed but the same telephone interviewers who now work from home conduct telephone interviews (waves 2-6).

Overall non-response rate raised from 5.0% in Q4 2019 to 5.9% in Q1 2020.

Latvia

Taking into account emergency situation declared throughout the national territory of Latvia with a view to restrict the spread of Covid-19, as of March 13 the CSB suspended interviewer's home visits. LFS respondents have been surveyed by phone, and respondents also had opportunity to provide answers in web based questionnaire. Notification is placed in CSB home page, facebook, twitter.

Problems expected with response rates in CATI because list of phone numbers is not complete and updated for all the households/respondents before answered CAPI. Indeed non-response rate raised from 36.3% in Q4 2019 to 39.7% in Q1 2020. As far CAPI has been stopped we can expect lower quality of estimations due to coverage problems – only 61% of private households in dwelling register have phone numbers. For the Q2 new sample for 1st interviews were made only from households with telephone numbers. Normally only one week was given to respondents of weekly sample to answer web based LFS questionnaire, but due to suspending of CAPI, it was decided to give more time for CAWI, informing respondents with sms.

CSB tries to acquire additional information on telephone numbers and email addresses available in other administrative data sources. The letter has been sent to Office of Citizenship and Migration Affairs and Road Traffic Safety Directorate. In addition letter has been sent to Data State Inspectorate on general opinion on possibilities for CSB to receive contact information from administrative data sources and mobile operators.

Lithuania

Interviewers did not visit households since 16 March due to the quarantine announced by the government. Only CAWI and CATI is used for data collection. The level of non-response in Q1 will be higher, but not critical. The difficulties will be seen in Q2 and later. We invite respondents to fill-in questionnaires by CAWI. Interviewers are collecting data by phone from home.

Luxembourg

Luxembourg did not show particular issues in LFS data collection related to COVID-19 outbreak as the survey is normally carries out by CAWI-CATI survey modes. Indeed, non-response rate slightly decreased from 34.7% in Q4 2019 to 33.7% in Q1 2020.

Hungary

Emergency status restricted every physical contacts in place. Interviewers can use only telephone numbers or e-mail addresses when provided on previous visits, for performing a

telephone interview. Usual form of data collection in HU-LFS is CAPI, CATI is allowed, but no so popular because of the length of the questionnaire. There is no web-questionnaire for the HU-LFS yet. All first visits were temporarily cancelled from 20 March onwards, and we try to use letters to households in order to gather the information on contacts, and to keep the LFS performing by phone. Non-response rate raised from 27.6% in Q4 2019 to 33.3% in Q1 2020.

Malta

All LFS interviews are currently being carried out by telephone. LFS information for wave 1 is done through paper questionnaires. These are being delivered to and picked up from the interviewers' homes and subsequently entered into the NSI systems by NSO staff. CATI surveys (waves 2 to 4) are being carried out from the homes of NSO employees since the CATI operations can no longer be carried out from the NSO premises. Training has been provided to NSO's employees carrying out CATI from home and clear guidelines have been provided to interviewers on issues which have been highly affected by COVID. One drawback of this approach is that the NSO can only contact respondents for whom a telephone number is available (either from register or if provided by respondent himself). This change in operations implies that there is a break in series related to mode of data collection and we still need to assess the impact on the quality of data that will be collected. All interviews are being carried out by telephone. The NSO has recently obtained access to fixed and mobile numbers from all local providers and as a result, coverage of units with a contact number has greatly improved.

The Labour Market unit has also developed a short questionnaire in order to collect information on the changes that employed persons or recently employed persons have experienced following the COVID outbreak. This questionnaire is being addressed to waves 2 to 4.

Non-response rate seems not affected by COVID crisis as it decreasd from 44.1% in Q4 2019 to 39.6% in Q1 2020.

The Netherlands

Because of the current crisis CAPI is no longer an option and we have faced some difficulties with CATI. However, we rely to a large extend on register data as we still receive these data. However, we do not yet know how comparable the data will be with earlier outcomes and how the quality will turn out. If the quality is more limited, this could lead to less detail in the output.

Finally, we believe we cannot draw conclusions based on a single indicator. We have to look at the broader picture. We surely have to publish the monthly unemployment figure with caution. Up until March it could maybe be viewed as a 'pre-corona' figure and onwards it will be more difficult to interpret the monthly figure. After the second quarter we have more info and context using the additional indicators. We derive partly from the LFS (e.g. wanting to work, searching for work, unused labor potential) and partly from registers (like the unemployment benefits, etc.).

Austria

AT uses a mixed mode CAPI/CATI survey for LFS. CAPI is impossible under current circumstances. First-wave interviewing has been switched completely to CATI as a consequence. CATI is done by a contractor but suffers from a shortage of appropriate interviewers staff starting from Mid-March 2020. Given the sudden and dramatic impact on economy of several governmental measures addressing Covid-19 pandemic, results will be strongly affected by the distribution of completed interviews within the quarter. The first quarter seems not affected by COVID-19 consequences as the non-response rate scores the same amount with respect to the previous quarter (6.2% in Q4 2019 and 6% in Q1 2020).

Poland

As from March 13, 2020, interviewers contact respondents from households by phone with the use of available phone numbers. Appropriate notifications for respondents (informing about reasons for the change of data collection method and about possible phone contact with the statistical office for additional information) are added to the letters for respondents inviting to participation in the survey. Currently, it is still too early to assess the effects of undertaken actions, but it has been observed a lower response rate since the 10th week in the first quarter (the indicators for the first 9 weeks are at their current level). In the second quarter, the telephone interviews will be still carried out, which will definitely have a more significant impact on the results for this period. Such organisation will be probably maintained until cancellation of the state of epidemic threat in Poland.

Similarly to most countries, we expect a significant drop in the response rate. In case of the second quarter of 2020, we have prepared a change in the structure of the quarterly sample. We have made a decision concerning excluding from the survey of a new sample whose chances for obtaining interviews are slight. The sample for the second quarter will consist only of the sample concluded in the first quarter of 2020 and one sample which was surveyed in the fourth quarter of 2019. It gives them slightly higher chances for obtaining a larger number of interviews. This approach also reduced the sample size. Such solution in case of too low interviews response rate, hence the inability to carry out direct estimation, enables performing weights correction on the basis of historical information which we already have from the previous observations for all households surveyed in the second quarter. We also take into account that it may be necessary to estimate data by means of the advanced statistical methods.

Portugal

Trying to safeguard of interviewers' and respondents' health, we suspended all CAPI interviews since 13 March 2020 and replaced them by CATI. This means that all interviews initially planned to be face-to-face have to be performed by telephone. This is the case for the LFS (for which around 45% of the sample was still in CAPI in Q4 2019; for the achieved sample, it was 31%).

These circumstances raised several operational problems, as

- CATI teams are undersized to conduct all the interviews whose collection mode moved into CATI and have to be trained and given the IT tools they need to do so.

- Telephone numbers are not available for all the households/individuals in the samples.

Regarding the lack of telephone numbers for all households in the samples, we decided for the Q2 2020 onwards to select a new sample for the incoming rotation (1/6 of the sample, usually interviewed in CAPI, but to be interviewed in CATI). That new subsample was selected from the usual sampling frame (dwellings), but limited to the occupied households for which there are telephone numbers available (fixed or mobile). To be confident about the occupied nature of the households, matchings were made with the Population Base Registry (a dataset built for the Administrative Census purposes). For the Q1 2020 and the old rotations in the next quarters, whose sample is ongoing, we had also to move abruptly from CAPI into CATI. For these, we may not have telephone numbers for all respondents and a decrease in the response rate is expected. Indeed, in Q1 2020, non-response rate increased by more than four percentage points (from 19.6% to 24%).

INE is comparing the characteristics of the old subsample with the new one; the exercise is not complete yet. INE is also handling the mode effect (difference of 1 p.p. in the unemployment rate estimate between CAPI and CATI subsamples). The calibration procedure with more variables reduces the mode effect, although it does not yet eliminate all the differences.

These operational problems may impact on results' quality, namely:

·   We may end up with a strong reduction in the response rates (in the LFS, in the monthly estimates from March 2020 and quarterly estimates from Q2 2020).

·   We might face series breaks due to the change in the collection mode and to a strong decrease in the response rates (possibly selective), posing a problem of comparability with previous periods.

·   There might be a reduction in the results' quality. We will evaluate the degree of detail of certain estimates currently published and consider the publication of new and complementary indicators (to the official unemployment rate).

Romania

As a consequence of confinement due to COVI-19 outbreak, PAPI and CAPI are no longer an option and we have faced some difficulties with CATI. For most of the situations, we do not have the telephone number of the households so, in order to be able to collect data via CATI method, for the crisis period, we will discuss the option of sending letters to the selected households asking for the telephone number.

It is expected to have an impact on both timeliness and response rate for March data and the following moths. Depending on the evolution of the situation solutions will beadopted to overcome this situation.

Slovenia

As of 13 March, we have suspended all data collection from persons and households that included an interviewer (CATI, CAPI). In the following two weeks we set up the conditions for running telephone interviews (CATI) outside the call centers (interviewers call from their homes). LFS data were collected only for waves already predicted for CATI collection (repeated surveys). The latter is also reflected in a higher non-response rate in Q1 2020 (25.9% compared to 21.7% in Q4 2019), which will affect the quality of the data. For this reason it is likely that we will have to adjust the weights for the Q1 2020. However, we still expect that at the

quarterly level, the statistics will not be significantly worsened, since data have only been affected for the last half month of the quarter.

For Q2 2020 data, we will first try to link the selected person/household with the phone number in the telephone directory. As the availability of a phone numbers in the telephone directory is very modest, we will also try to get them by sending the selected person/household a request to provide it to us in a notification letter. Additional methodological work will be needed. The AHM that was supposed to run in the Q2 2020 was postponed.

Slovakia

In LFS, as face-to-face interviews are forbidden due to confinement at the moment, all interviews have been doing via phone calls. However, for majority of new households in the sample we do not have phone contact. We are trying to use letters to households in order to gather the information on contacts but it seems to be useless at the moment as we have minimal feedback from households. Indeed non-response rate increased in Q1 2020 to 20.6% from 18.2% in Q4 2019. In order to keep the sample size in Q2 2020 to the maximum extent possible, we are going to change the standard rotation scheme. We would like to change rotation scheme and substitute temporarily new dwellings scheduled for the 1st interview by dwellings from old panel with last 5th visit in Q1 2020. Once the situation allows, this procedure will be stopped and exhausted panels (surveyed for the 6th consecutive time) will be replaced by the new households according to the plan at that time.

Finland

In principle, the statistical operations are still going on as usual in spite of e.g. stopping CAPI and increased number of people working remotely at home. Interviewers' work is uninterrupted as the organisation was already based on remote work. So far the number of interviewers at work has been sufficient. Only major change is that respondents without phone number or email cannot currently be contacted via visits at home. There is no indication, that the change has so far had a major impact in the data collection. For instance, in Q1 2020 non-response rate slightly increased to 39.2% from 38.5% in Q4 2019.

Sweden

Statistics Sweden allows interviewers to work from home; this is an attempt to reduce the risk of being sick and enables to work with mild symptoms when possible.
The situation and conditions of an NSI can change very quickly and some of the production may need to change and more flexible deadlines may be necessary to secure the quality for some time now. Also communicating the effects of this crisis will be crucial, it will be difficult to compare this period with other periods. For instance, non-response rate remains quite stable compared to previous quarter (49.2% in Q4 2019 and 49.6% in Q1 2020).

The United Kingdom

Call centres and field interviewers temporarily stopped to update IT infrastructure. Telephone interviews now being picked back up. Face-to-dace data collection suspended from 16th March onwards.

Iceland

No impact on timeliness and quality of data is expected.

Norway

All interviews are done in-house and in CATI. LFS has priority with respect to other household surveys. No impact on timeliness and quality of data is expected. For instance, in Q1 2020 non-response rate slightly increased to 16% from 15.2% in Q4 2019.

Switzerland

No impact on timeliness and quality of data is expected. In Q1 2020 non-response rate slightly decreased to 21.2% from 22.3% in Q4 2019.

Montenegro

No information available.

North Macedonia

Due to the measures taken by the Government of the Republic of North Macedonia, the data collection CAPI activities have been discontinued, and currently only the CATI method is being used. Impact on data quality is expected.

Serbia

Both field (CATI) and telephone (CAPI) interviewers contact respondents from their homes, by phone. Due to lack of updated phonebook in Serbia, lower response rate is expected.

Turkey

Face-to-face interviews were stopped from the middle of March. The capacity of CATI interviews has been increased and surveys have started to be conducted by telephone from the regional offices. Survey is conducted with households that have phone information from the previous interview. Phone information was also obtained from the administrative records for the first waves (approximately 50%). This will undoubtedly lead to a drop in response rate.