Methodological summary of LFS break correction

The estimation of historical data of employed and unemployed in line with the LFS methodological changes is based on forecasts of "old" employed and unemployed and reasonable assumptions about ratio between "old" and "new" employed over time.

1. Forecasts of old "employed" and "unemployed"

The "old" employed and unemployed until fourth quarter of 2020 correlates closely with the administrative data of Employment Agency and National Insurance Institute. Employment Agency provides data about registered unemployed. The National Insurance Institute provides data about different form of employment: number of self-employed, entrepreneurs, employees. Coefficient of correlation between LFS employed/unemployed with the administrative data of employed and unemployed are close to 0,9. We employed regression between LFS unemployed and employed data with the Employment Agency and National social security institute administrative data to forecast the number of "old" employed/unemployed since the beginning of 2021.

2. Ratio between "old" employed and "new" employed

We assume that the ratio between "old" and "new" employed across females and males by age groups are constant over time. For example, the ratio between "old" and "new" employed female 25 to 64 years old is constant over q1 2009 to q2 2021. The rationale behind the assumption is that changes in definitions did not change the behavior of respondents but just move the respondents across employed, unemployed and out of labor force in fixed proportion.

No change in behavior is crucial for backward estimation of "new" employment/unemployment. It could be hard to estimate historical "new" employment if change in behavior underlies change in responds. People do not change behavior en masse to economic stimulus. Rather change in behavior occurs over time and would change between quarters variation of employment/unemployment in an uneven way. In some quarter the behavior change would increase variations and in other quarters the behavior change would mute variations. Changes between quarters variations because of changes in definitions about employment/unemployment would move respondents across employed, unemployed and out of labor force in a much more predictable way.

The table below give an idea about the simultaneous effects of Covid 19 restrictions and new LFS methodology on unemployed numbers:

Changes in the numbers of unemployed

	Employment Agency	LFS
	covid effect and new LFS methodology	
1q2021/1q2020	6,6%	37%
2q2021/2q2020	-35,3%	-4,8%

The table presents the ratio of unemployed in the first and second quarter of 2021 to the same quarters in 2020 to eliminate the seasonal factor.

The Covid restrictions started in the second half in March 2020 and lasted until the end of second quarter 2020. First half of 2021 was free of constraints. Hence, the ratio first quarters 2021 to first quarter 2020 is affected much more by the changes in LFS methodology than by Covid 19 related restrictions. The ratio between second quarters of 2021 and 2020 is heavily affected by both Covid 19 restrictions and new LFS methodology and it is it hard to say which one of two effects dominate..

The numbers in the above table suggest changes in methodology strongly increase number of unemployed. The LFS shows a very modest decrease of unemployed in the second quarter of 2021 compared with second quarter of 2020. As we compare a constraint free quarter (2q 2021) with fully constrained quarter (2q 2020) it is reasonable to expect a huge decrease in the number of unemployed in 2q 2021 compared to 2q 2020 as EA data implies. The modest decrease of unemployed number could be attributed to the methodological changes in LFS which undermine huge drop of unemployment.

We may represent our assumption as follows:

(1) $E_{new} = E_{old}(1-k)$
(2) $U_{new} = U_{old} + kE_{old,}$

Where: E_{new} - new LFS employment

E_{old} – old LFS employment

E_{new} - “new” LFS employment

U_{new} - “new” LFS unemployed

U_{old} - “old” LFS unemployed

k - share of old LFS employed that moved to unemployed

We assume k is constant over time.

The equations (1) and (2) are a simplistic presentations of the changes in employed and unemployed related to the LFS methodological change. The equations dismissed the moves to and from the “out of labor force” group. However, forecasts imply a better part of moves caused by methodological changes are from employed to unemployed. Also, the forecasts of “old” are of very low quality. That is why we applied a more simplistic approach to changes in employment and unemployment brought about by LFS methodological changes.

Last, the data about employed/unemployed aged 65 to 74 are not reliable. Neither old data until q4 2020 nor new data since the beginning of 2021 are good because this age group is underrepresented in the LFS sample.