

# **Assessing the impact of the IESS Regulation on the Maltese Labour Force Survey**

**Joslyn Magro Cuschieri**  
**Manager: Labour Market Statistics**

**Tania Borg**  
**Principal Statistician: Labour Market Statistics**

**Charlene Abela**  
**Senior Statistician: Labour Market Statistics**

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## 1. Introduction

The introduction of the [Integrated European Social Statistics \(IESS\) Framework Regulation \(EU\) 2019/1700](#), in the Labour Force Survey (LFS) aimed to improve data collection by increasing efficiency and harmonising social statistics data. For this reason, considerable changes in the LFS were expected. Its [Implementing Regulation \(EU\) 2019/2240](#) required several amendments throughout the whole process of the data collection. This includes changes in the sampling frame and in the mode of data collection; the harmonisation of variables across the EU; different weighting parameters and the allocation of shorter dissemination time frames. These adjustments were foreseen to impact LFS results and its indicators, specifically those related to the ILO labour status.

This documentation focuses on the methods implemented by Malta to measure the effect of the survey redesign on its results. A parallel run was conducted between Q4 2019 and Q4 2020 to measure the divergence of LFS results from pre-IESS to post-IESS. This report includes all documentation, research and analysis done on the calculation of a probable break- in-time-series for the main LFS indicators. A back-calculated break-free time series was required for employment and unemployment levels subdivided by the demographic variables sex and age (15-24, 25-64 and 65+ years).

## 2. Changes introduced in the LFS with the IESS regulation

The IESS regulation introduced several changes to social statistics surveys including the Labour Force Survey (LFS). The key changes discussed by EUROSTAT to modernise the LFS are structured in six components:

- a. Content of the future LFS
- b. Sampling and weighting strategy
- c. Fieldwork
- d. Definitions and their implementation
- e. Improved timeliness and new LFS IT chain
- f. Quality reporting
- g. Break in time series exercise

The break in series exercise was also discussed by EUROSTAT to ease the impact of change for main users and their policies. The regulation stipulates that by 31<sup>st</sup> December 2021, Member States (MS) are required to disseminate either correction factors or full time series covering 2009 Q1 to 2020 Q4 for ILO indicators. The ILO indicators were the employment and unemployment levels in thousands broken down by sex and age groups 15-24, 25-64, 65+ and, in addition for employment only, age group 20-64.

### 3. Parallel run

In 2021 the Maltese LFS followed the IESS regulation, where quarterly and annual variables were collected every quarter, with a rotational pattern of 2-(2)-2. Quarterly variables were set to be transmitted every quarter, while annual dataset is include data from wave 1 and 4. The eight yearly variables were to be collected in the first and last wave of data collection and transmitted along with the yearly dataset.

Upon implementation of the IESS regulation, no changes were foreseen in the LFS sampling strategy and the weighting methodology. For this reason, the same sampling frame was used and the LFS sample was uniformly distributed at NUTS-5 level, with a rotational pattern of 2-(2)-2. This sampling strategy satisfies both the quality requirements criteria and the weighting restrictions set by the new regulation.

No changes were foreseen in the household sub-sampling criteria since the minimum set of variables required for household sub-sampling were not introduced. The IESS stipulates in case data are collected from a sample of individuals, a minimum set of variables is to be collected for all household members to allow analyses at household level. However, for Malta, the sampling unit pre- and post-IESS is the household unit, where all persons in the household participate in the LFS.

From a data collection standpoint, the introduction of the IESS led to significant modifications which might have resulted in a break in the time series. The change in the mode of data collection for the first panel was foreseen to impact significantly LFS results. Prior to 2021, data collection for the first wave was conducted via PAPI, while for the following waves (i.e., waves 2 to 4) CATI was used. In compliance with IESS regulation, data collection for the 1<sup>st</sup> wave in 2021 will be conducted out via **CAPI**, while the following waves will be done via CATI.

At present, administrative data is used for verification and analysis of the following variables: REGISTER, HATLEVEL and INCGROSS. From 2021 onwards, the same approach will be adopted. Due to higher item non-response in the INCGROSS and to enhance the quality of this variable, Malta intends to obtain this data from an administrative data.

Furthermore, the same definition for 'the usual resident population' was adopted in 2021 however several amendments were carried out in the **LFS questionnaire** to comply with the IESS regulation. The main changes concerned:

- A more restricted scope for employment;
- Different criteria in defining absence from work;
- Position of the labour status module in the questionnaire;
- Position of the main status in the questionnaire and changes in its characteristics of the question;
- A more simplified flowchart for the labour status module, broken down in several sub modules;
- An additional sub module on the recovery of small or occasional jobs;
- The introduction of the simplified rules for the labour status module;
- A detailed flowchart and a model questionnaire for the labour status module;

In view of the changes outlined in this section, it was expected that the pre-IESS and post-IESS LFS estimates will not be consistent. Van den Brakel et al. (2020) suggested that the safest approach to quantify discontinuities was to collect data simultaneously using both survey designs for a significant period.

Consequently, a parallel run was carried out from Q4 2019 to Q4 2020 to test all parameters. An independent sample was selected using the same sampling strategy as that adopted in the pre-IESS LFS from the intended target finite population. The parallel run sample for the 1<sup>st</sup> panel was extracted in 2019 and was divided into 5 quarters to cover the time span ranging from Q4 2019 to Q4 2020. Similar to the approach used in pre-IESS, the sample of the 1<sup>st</sup> quarter consisted of 800 households (1<sup>st</sup> wave). These households were then carried forward to the second wave and were interviewed after 1 quarter to simulate the usual LFS rotation pattern. In Q4 2020, the third wave was introduced for the 1<sup>st</sup> time and was made up of persons who were already interviewed in Q4 2019 as wave 1, and in Q1 2020 as wave 2. By Q1 2021 the sample will consist of a full set sample with the rotational pattern 2-(2)-2 obtained from the parallel run sample, as illustrated Diagram 1 below.

Diagram 1: Adoption of the parallel run sample in 2021

Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	NEW LFS - Q1 2021
W1 NEW	W2			W3	W4
	W1 NEW	W2			W3
		W1 NEW	W2		
			W1 NEW	W2	
				W1 NEW	W2
					W1 NEW

The parallel run tested all the changes planned to be introduced in 2021, mainly:

- a. Computer assisted mode of data collection (CAPI in wave 1)
- b. Common concepts and the harmonisation of variables
- c. Implementation of the labour market flowcharts to address the ILO common criteria for data collection

It was also envisaged that the new timeframes set for deliverables and for the transmission of the LFS in a new standard format, will be met. To ease the process, the new LFS validation system in 2020 was tested using the parallel run micro data. Table 1 summarises all the key changes, relating to the LFS modernised design when compared to the national LFS.

Table 1: Key changes in LFS 2021

KEY CHANGES IN VIEW OF THE MODERNISED LFS	LFS	New LFS
	Up till 2020	From 2021 onwards
Content of the future LFS	A core (with quarterly and annual information) and a system of ad-hoc modules including a maximum of 11 variables	Information collected quarterly, annually, biennially and every 8 years modules. Data on variables collected irregularly on an ad-hoc basis will be collected every four years.
Sampling/Weighting strategy	Target population - all persons usually residing in private households	Target population - all persons usually residing in private households
	Sampling frame - Private household register maintained by NSO	Sampling frame - Private household register maintained by NSO
	Uniform sample distribution of the quarterly sample	Uniform sample distribution of the quarterly sample
	Sample proportional by NUTS 2	Sample proportional by NUTS 2
	Rotational pattern 2 - (2) - 2	Rotational pattern 2 - (2) - 2
	Sample size - 3200 household per quarter	Sample size - 3200 household per quarter
	Sample satisfies precision criteria	Sample satisfies new precision criteria
	The reference population for weighting = target population	The reference population for weighting = target population
	Weight factor based on probability of selection and demographics (of target population) by sex, age groups and region (NUTS 2 level). Standard shall be five-year age groups.	Weight factor based on probability of selection and demographics (of target population) by sex, age groups and region (NUTS 2 level). Standard shall be five-year age groups.
Consistency not applied, as annual dataset = summation of 4 quarters	Consistency between annual totals of sub-samples for annual and biennial structural variables	
Fieldwork	Sample selection - household; where all persons in the household are interviewed	Sample selection - household; where all persons in the household are interviewed
	Mode of data collection - Wave 1 - PAPI, Waves 2 to 4 - CATI	Mode of data collection - Wave 1 - CAPI, Waves 2 to 4 - CATI
	Fixed reference weeks are to be used	Fixed reference weeks are to be used
	Administrative data used for verification on REGISTER, HATLEVEL and on INCGROSS	Administrative data used for verification on REGISTER, HATLEVEL and on INCGROSS
	Imputation done on item non-response for INCGROSS	Imputation done on item non-response for INCGROSS

IESS regulation contents	LFS	New LFS
	Up till 2020	From 2021 onwards
Definitions and their implementation	Target population - all persons usually residing in private households	Target population - all persons usually residing in private households
	ILO definitions for measure of employment	Restricted scope for employment
		Criteria for absence from work
		Place of the labour status module
		Place and characteristics of the question on the main status
		Simplified flowchart for the labour status module, broken down by sub module
		New recovery sub module on small or occasional jobs
		Simplified rules for the labour status module
		Detailed flowchart for the labour status module and its associated model questionnaire
Implementation of the 12 principles of unemployment regulation		
Improved timeliness and new LFS IT chain	Quarterly data transmission - T + 90 days	Quarterly data transmission - T + 10 weeks for the first 3 years
		Quarterly data transmission - T + 8 weeks at the 4th year
	Ad hoc module data transmission - 31st March of the following year	Annual data transmission (including 8 yearly module) - 31st March of the following year
	Pre-checking microdata prior transmission not done	Pre-checked microdata fulfil the essential validation rules
	Use of a corporate validation system	
Quality reporting	Quarterly accuracy reports	Quarterly accuracy reports
	Annual quality report	Annual quality reports including quality reports for the future regular modules/ad-hoc subjects
	Quality reports for ad-hoc modules	

In the next section, an analysis of data will be presented to compare estimates from the parallel run with those from the national LFS. The objective of such analysis is to shed light on whether these changes resulted in a break in time series. In case, a structural break is detected, results from the

parallel run will be used to adjust the current time series based on relative differences between the LFS and the parallel run. This synthetic approach will produce a break-free series from Q1 2009 onwards for the LFS main indicators. This synthetic approach was set to give simple and affective results keeping in mind the economic situation in Malta in 2020 because of the pandemic.

#### 4. Analysis

The main labour status indicators, that is, the employment and unemployment levels broken down by sex and age groups 15-24, 25-64, 65+ as required in the IESS regulation were analysed. Estimates from the usual and from the parallel run (pLFS) were computed and presented in the tables below. The annual results for 2020 indicated that there are no particular visible changes due to the new LFS standards.

**Table 2: LFS and pLFS estimates from annual 2020 data**

2020		Annual estimates		Margin of error	
		LFS	pLFS	LFS	pLFS
Employment	M_15-24	13308	12639	952	1080
	F_15-24	11905	12793	768	1020
	M_25-64	137300	137258	1630	2007
	F_25-64	92991	92478	2156	2511
	M_65+	3933	4650	702	834
F_65+	1611	919	704	320	
Unemployment	M_15-24	2039	1983	605	643
	F_15-24	1050	976	354	470
	M_25-64	4782	4584	1040	1308
	F_25-64	3965	4279	957	1388
	M_25-74	4811	4601	1041	1308
F_25-74	3965	4279	957	1388	
Employment	Total	261048	260736	2459	2959
Unemployment	Total	11865	11839	1507	1949
Inactive	Total	165351	165863	2553	3038

In fact, if the total estimates for employment and unemployment are plotted one notes that there were no considerable differences between the two estimates emanating from the two sources, and the estimates are within the margin of error.

Chart 1. Total employment with margin of error: annual 2020

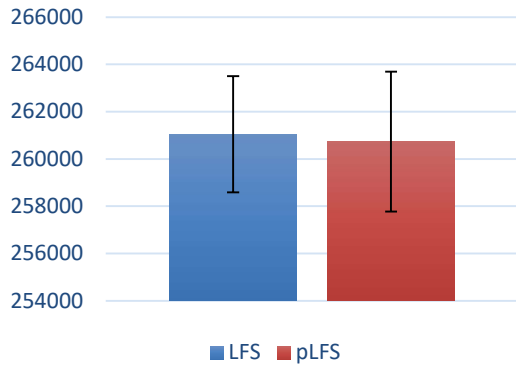
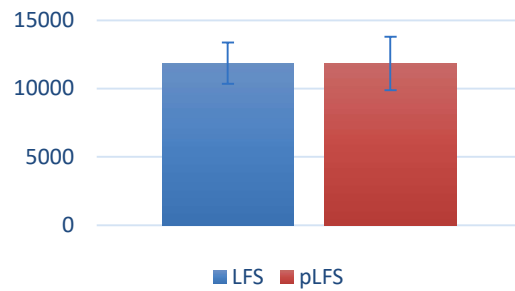


Chart 2. Total unemployment with margin of error: annual 2020



For better understanding of data, quarterly information was further analysed, and data is presented in the two table below.

**Table 3. LFS estimates from Q4 2019 to Q4 2020**

Estimates		LFS				
		Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Employment	M_15-24	14694	13352	13536	14014	12304
	F_15-24	14729	11773	11488	12407	12016
	M_25-64	134514	139748	135570	134368	139664
	F_25-64	88307	95329	91468	93423	91738
	M_65+	3869	4000	3787	4144	3801
F_65+	1948	1253	2387	1310	1498	
Unemployment	M_15-24	1755	1945	2211	1926	2070
	F_15-24	968	878	924	1499	909
	M_25-64	3081	3927	4664	5616	4897
	F_25-64	2738	2794	4622	4363	4107
	M_25-74	3081	3971	4664	5616	4967
F_25-74	2738	2794	4622	4363	4107	
Employment	Total	258060	265455	258236	259666	261021
Unemployment	Total	8541	9588	12421	13404	12053
Inactive	Total	163550	162560	167415	165804	165759

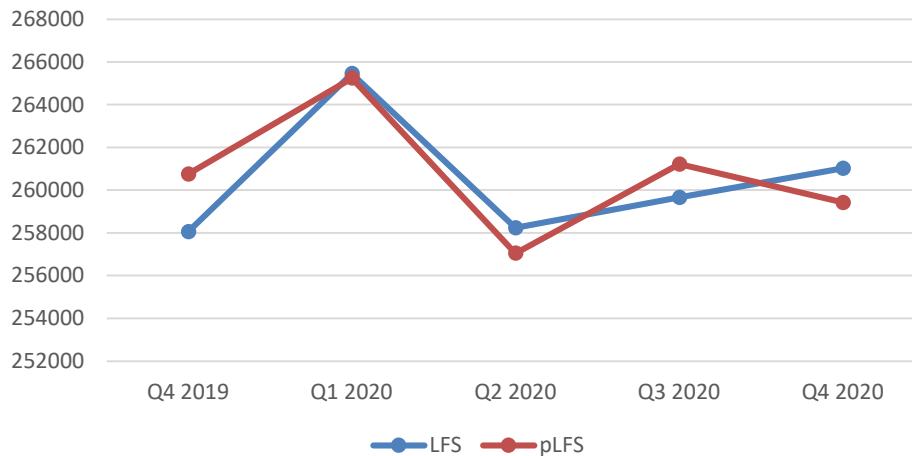


**Table 4. Parallel run LFS estimates from Q4 2019 to Q4 2020**

Estimates		pLFS				
		Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Employment	M_15-24	12439	12814	12570	13261	11911
	F_15-24	17170	15080	10744	13701	11646
	M_25-64	135205	138272	138028	136673	136060
	F_25-64	90158	94145	89848	91378	94539
	M_65+	5222	4051	4830	5235	4483
F_65+	563	886	1032	972	786	
Unemployment	M_15-24	1257	1542	2651	2368	1370
	F_15-24	692	356	2254	363	931
	M_25-64	4109	4750	2845	5432	5309
	F_25-64	3609	3554	4584	5414	3564
	M_25-74	4109	4750	2845	5432	5376
F_25-74	3609	3554	4584	5414	3564	
Employment	Total	260759	265249	257051	261221	259425
Unemployment	Total	9667	10202	12335	13578	11241
Inactive	Total	165834	162189	168596	164028	168639

Evidently, there were no considerable differences between the two estimates emanating from the two sources despite the various changes that were introduced in the questionnaire. Chart 3 shows total employment from Q4 2019 to Q4 2020 from the two sources.

Chart 3. Total employment: Q4 2019 - Q4 2020

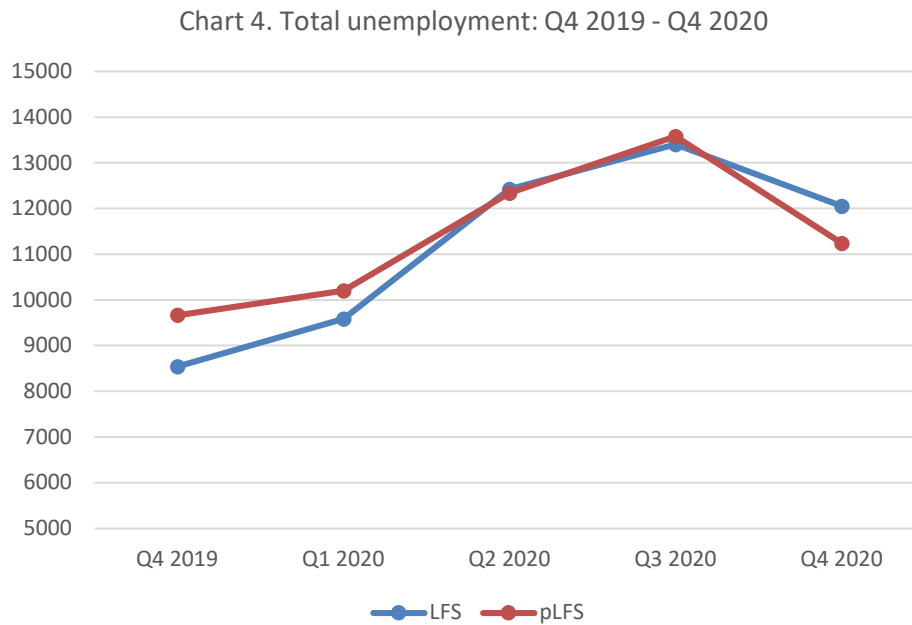


In the preliminary analysis, it was expected that the estimates of the parallel run vis-a-vis employment would not be consistent, however results showed a different pattern for a variety of reasons:

- a. Parental leave - Persons on parental leave were recoded as employed in the pre-IESS LFS but in the parallel run these were identified as inactive. This change was expected to mainly impact females in the labour market. However, with the introduction of flexible working arrangements such as telework, the share of persons on parental leave has reduced substantially over the years. For this reason, this change exhibited minimal impact on the ILO labour status.
- b. Duration of absence from work - The introduction of the 'Don't know' criteria was not anticipated to impact LFS results in normal circumstances, and marginal changes were envisaged. However, with the COVID-19 pandemic, a share of employees were not expected to report to work while the self-employed were forced to shut their business for an indefinite period of time. Such uncertainties in the labour market might have impacted the parallel run results as more respondents were choosing the 'Don't know' answer category. For this reason, estimates from the parallel run indicated a higher number of inactive persons. In fact, in Q2 and Q4 2020, the total employment recorded in the parallel run was lower than the normal LFS, when uncertainty on one's employment was higher.
- c. Recovery of small jobs - Employment estimates from the parallel run were expected to be higher because of the small jobs criteria. However, this was only evident in Q4 2019 and Q3 2020. The number of persons with small jobs or seasonal jobs were minimal in the other quarters of the parallel run.

Analysis of results did not indicate an obvious break especially when total employment was split by sex or age group. No direct pattern could be obtained.

Similar inferences between the two samples were found for the total unemployed estimate. It was evident that, given all the modifications carried out in the LFS design, the effect of changes cancelled each other out. Chart 4 depicts total unemployment from Q4 2019 to Q4 2020 from the two sources.



Similarities between the two sources' estimates led to the calculation of the variance, coefficient of variation and margin of errors for the main indicators. The calculations were generated in R using the vardpoor package. The function in the package calculates variances for linear population statistics, generates domain variables and produces linearisation of several non-linear population statistics. It also calculates the variance estimation of sample surveys using the ultimate cluster method (Hansen, Hurwitz, & Madow, 1953). Tables 5 and 6 illustrate the margin of error of each indicator under study for both sources.

**Table 5. Margin of error for LFS estimates: Q4 2019 – Q4 2020**

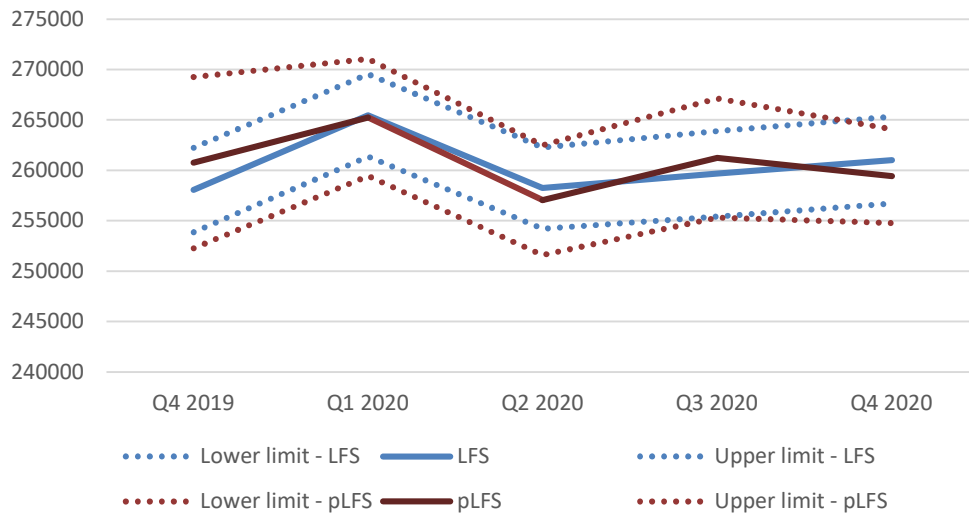
Margin of errors		LFS				
		Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Employment	M_15-24	1526	1690	1524	1551	1616
	F_15-24	1421	1442	1318	1578	1147
	M_25-64	2234	2661	2935	3040	2764
	F_25-64	3513	3558	3475	3585	3735
	M_65+	1161	988	1100	1419	954
	F_65+	1140	883	1198	994	1160
Unemployment	M_15-24	893	1186	943	956	1073
	F_15-24	652	526	561	807	511
	M_25-64	1379	1821	1788	1918	1960
	F_25-64	1255	1566	1804	1891	1921
	M_25-74	1379	1823	1788	1918	1965
	F_25-74	1255	1566	1804	1891	1921
Employment	Total	4186	4085	4026	4243	4312
Unemployment	Total	2111	2585	2647	2837	2850
Inactive	Total	4267	4300	4207	4502	4462

**Table 6. Margin of error for parallel run LFS estimates: Q4 2019 – Q4 2020**

Margin of errors		pLFS				
		Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Employment	M_15-24	2699	2398	1810	2045	1740
	F_15-24	2754	1759	2106	2017	1676
	M_25-64	5781	3872	3374	4489	3250
	F_25-64	6267	4820	4700	4972	3768
	M_65+	2533	1315	1549	2017	1199
F_65+	853	690	597	639	546	
Unemployment	M_15-24	1219	1047	1595	1493	735
	F_15-24	695	476	1533	413	666
	M_25-64	3513	2724	1583	3106	2217
	F_25-64	2798	2234	2322	3340	1683
	M_25-74	3513	2724	1583	3106	2221
F_25-74	2798	2234	2322	3340	1683	
Employment	Total	8491	5804	5449	5900	4648
Unemployment	Total	4694	3614	3344	4450	2928
Inactive	Total	7859	5881	5804	5929	4720

Estimates indicated that employment figures lie within the margin of error and no significant difference was found between the two sources (chart 5).

Chart 5. Total employment with margin of error: Q4 2019 to Q4 2020



The employment estimates and their margin of error by sex and age groups 15-24 and 25-64 are depicted in Charts 6 to 9.

Chart 6. Employment Males (15-24 years) and the margin of error: Q4 2019 - Q4 2020

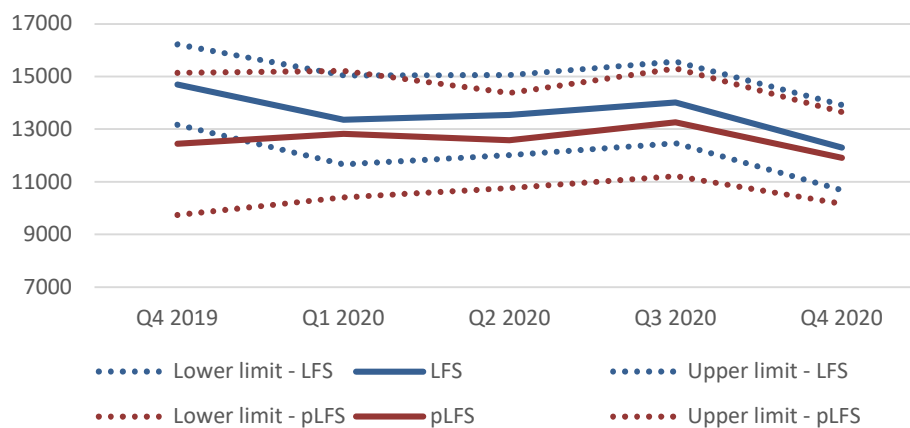


Chart 7. Employment Females (15-24 years) and the margin of error: Q4 2019 - Q4 2020

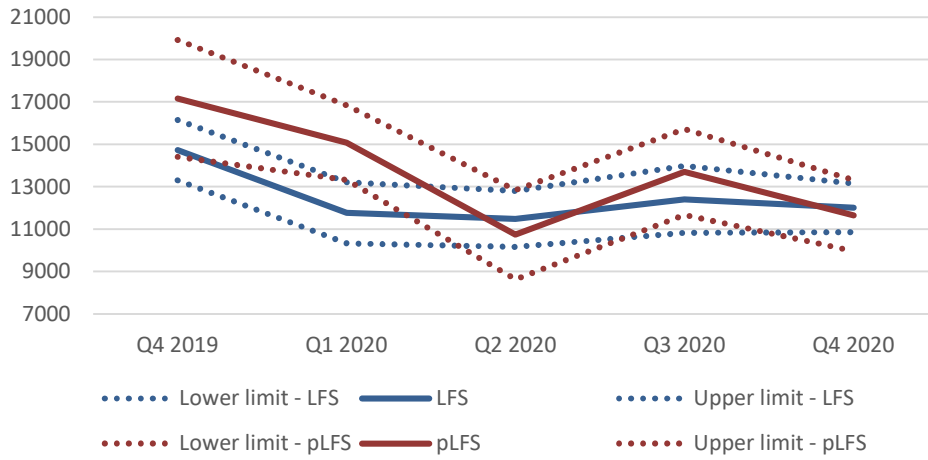


Chart 8. Employment Males (25-64 years) and the margin of error: Q4 2019 - Q4 2020

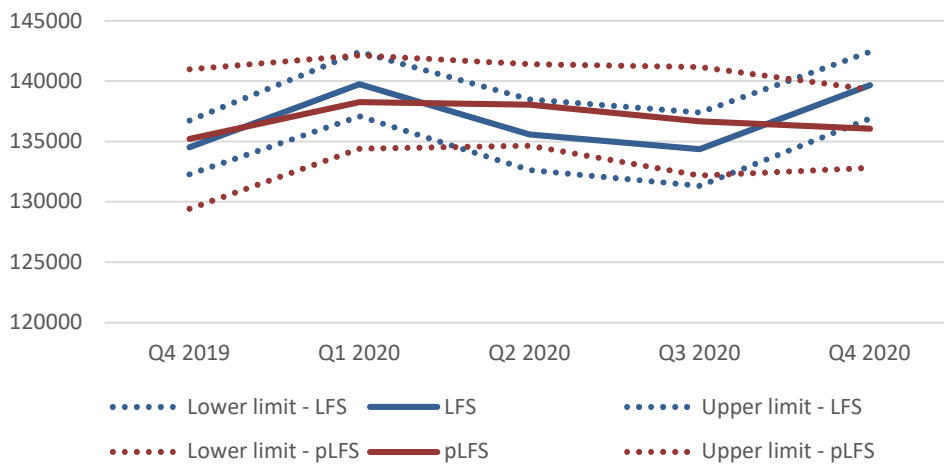
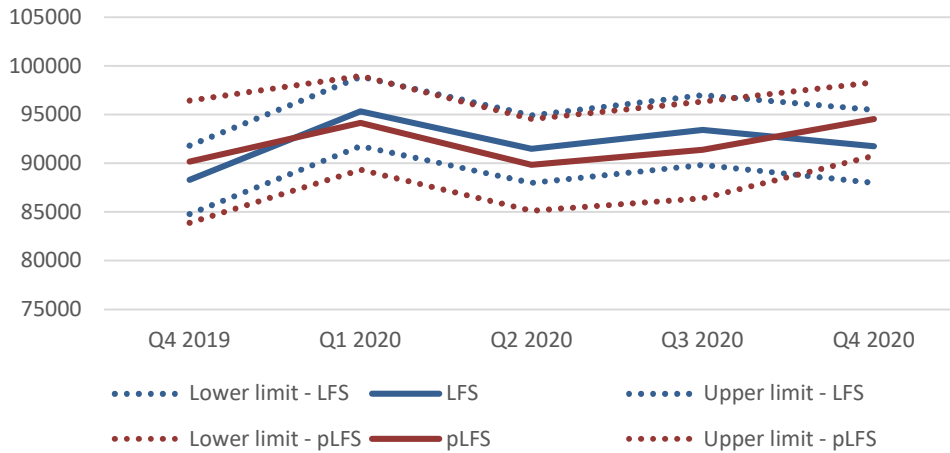


Chart 9. Employment Females (25-64 years) and the margin of error: Q4 2019 - Q4 2020



Charts 5, 8 and 9 show table estimates for total employment, employment by sex and employment for the 25 to 64 age group. Estimates were also within the margin of error. Similarly, no significant differences were detected between the two sources for the 20 to 64 years employment estimate.

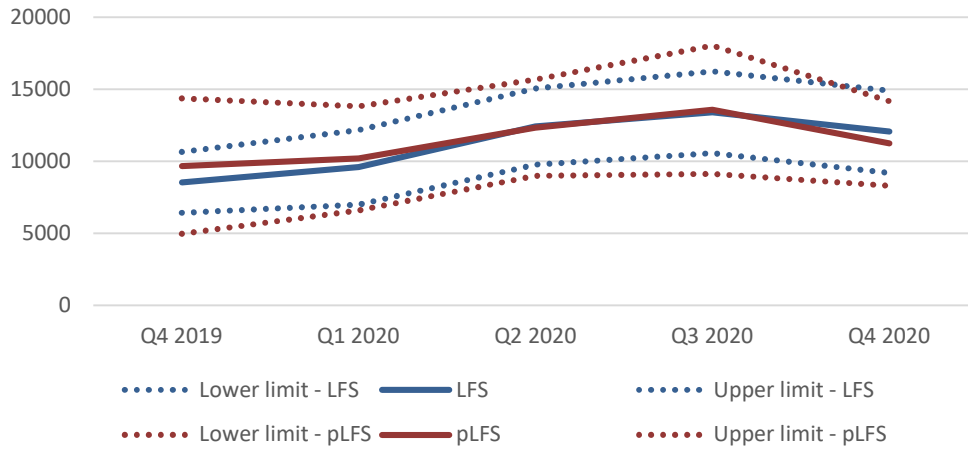
Due to the small sample size, estimates for the 15 to 24 age groups had a higher sampling variability which resulted in a larger margin of error. Nevertheless, charts 6 and 7 show that estimates for the employed in the 15 to 24 age group were still within the margin of error and no significant differences were found between the two sources.

These findings confirm that, in spite of our earlier prediction and the number of changes introduced to the LFS survey design, there was no obvious break in total employment even when employment was split by sex or by age group, as no direct pattern was obtained.

Similar inferences were done on the unemployment estimates, where same conclusions were drawn. Chart 10 shows the unemployment time series for both sources and their respective margin of error. The chart illustrates that the unemployment figures lie within the margin of error and no significant difference was found between the two sources.



Chart 10. Total unemployment and the margin of error: Q4 2019 - Q4 2020



The number of unemployed persons between 15 and 24 years was characterised by a large margin of error and variance. As a result, no conclusion was derived since the estimates may not provide an accurate value.

Charts 11 and 12 show the unemployed estimates for the 25 to 74 age group by sex and for this subgroup obvious break was detected.

Chart 11. Males unemployment (25-74 years) and the margin of error: Q4 2019 - Q4 2020

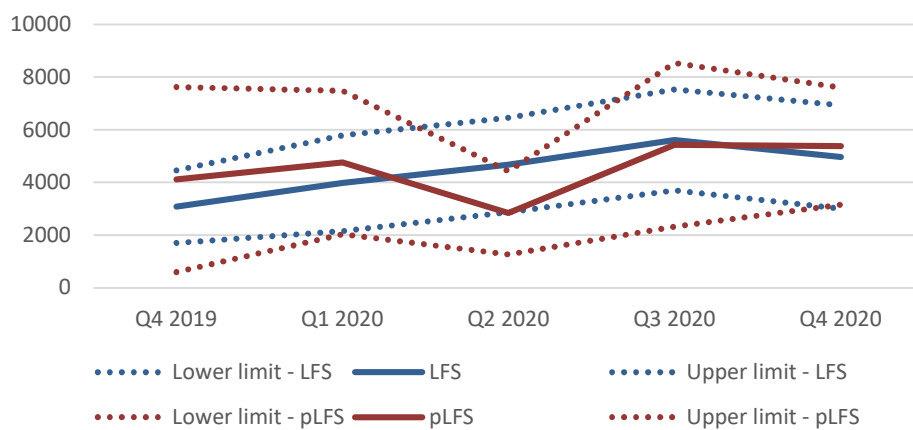
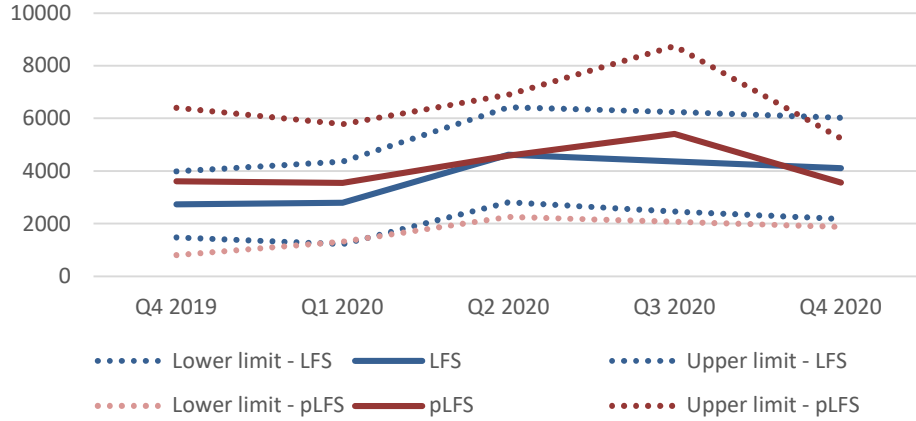


Chart 12. Females unemployment (25-74 years) and the margin of error: Q4 2019 - Q4 2020



From the findings of this study, it was imperative to formulate a hypothesis based on this finite population and to construct an efficient test statistic.

Considering the estimate of the total population using the normal LFS denoted by  $\hat{X}$ , and the estimate of the total population of the same indicator measured by the parallel run denoted by  $\hat{Y}$ . The objective of this analysis was to test whether there is any significant difference between the parameters  $\hat{X}$  and  $\hat{Y}$ .

The hypotheses are given by:

$$\text{Null hypothesis} \quad H_0: \hat{X} = \hat{Y}$$

$$\text{Alternative hypothesis} \quad H_1: \hat{X} \neq \hat{Y} \quad (1)$$

A design-based inference procedure for this type of experiment was proposed by Van den Brakel and Renssen (1998), where the following test statistic for testing the null hypothesis (1) was proposed:

$$\tilde{t} = \frac{\hat{X} - \hat{Y}}{\sqrt{\widehat{\text{var}}(\hat{X} - \hat{Y})}} \quad (2)$$

Where,

$\hat{X}$ , is the estimated total based on LFS sample of size  $n_1$ ,  $\hat{Y}$  is the estimated total based on the parallel run of LFS of size  $n_2$ , and  $\sqrt{\widehat{\text{var}}(\hat{X} - \hat{Y})}$  is the estimated variance of  $(\hat{X} - \hat{Y})$ .

Now,  $\hat{X}$  and  $\hat{Y}$  are not independent, as these indicators are based on two subsamples drawn from a finite population. According to Kish and Frankel (1974) for sufficiently large samples and given that the two sample represent the same population, it is reasonable to assume that these weighted population variances are equal. Consequently, then an efficient t statistics estimate is obtained by using the pooled variance estimator:

The formula for the pooled estimator of  $\sigma^2$  is

$$S_p^2 = \frac{(n_1-1)\hat{S}_X^2 + (n_2-1)\hat{S}_Y^2}{n_1+n_2-2} \quad (3)$$

where

$\hat{S}_X^2$  and  $\hat{S}_Y^2$  are ordinary variance estimators of the two samples, LFS and pLFS respectively. Hence, the formula for the t statistics is

$$\tilde{t} = \frac{\hat{X} - \hat{Y}}{\sqrt{S_p^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}} \quad (4)$$

Based on these equations, the t-test was calculated using variance estimates calculated for both LFS and parallel run indicators. Table 7 shows the t-test statistics for all main indicators under study based on equations (3) and (4).

**Table 7. t-test calculations: Q4 2019 – Q4 2020**

t- statistics		Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
		Employment	M_15-24	1.28	0.37	0.74
F_15-24	-1.49		-2.66	0.66	-0.95	0.41
M_25-64	-0.27		0.64	-0.98	-0.87	1.66
F_25-64	-0.46		0.38	0.55	0.66	-0.96
M_65+	-1.01		-0.06	-1.06	-0.88	-0.92
F_65+	1.05	0.44	1.16	0.38	0.76	
Unemployment	M_15-24	0.48	0.41	-0.53	-0.51	0.80
	F_15-24	0.37	1.13	-2.69	1.60	-0.06
	M_25-64	-0.65	-0.54	1.14	0.11	-0.28
	F_25-64	-0.60	-0.58	0.02	-0.65	0.38
	M_25-74	-0.65	-0.51	1.14	0.11	-0.27
F_25-74	-0.60	-0.58	0.02	-0.65	0.38	
Employment	Total	-0.56	0.06	0.34	-0.42	0.47
Unemployment	Total	-0.46	-0.28	0.04	-0.07	0.37
Inactive	Total	-0.46	0.10	-0.33	0.45	-0.82

Van den Brakel and Renseen (1996) stated that in the case of random sampling, the central limit theorems can be applied to derive that the limit distribution of the test statistics (2) tends to the standard normal distribution. Consequently, our null hypothesis was accepted for most of main indicators under study as the t-statistics was less than 1.96 in all cases. The t-statistics was proved to be significant in the employed females aged between 15 to 24 years for Q1 2020, and unemployed females in the same age bracket for Q2 2020. Since, indicators for persons between 15 and 24 years was characterised by a large margin of error and variance, this significance might be caused because of the large sampling error. Hence, it was concluded that for all the variables under study, there was no significant difference between the estimates emanating from the two sources.

## 5. Conclusion

Break in time series is considered essential for ensuring sound policymaking. Detection of structural breaks ensures that policy recommendations are on target and result in more accurate forecasts. Nevertheless, the research carried out in Malta, following the introduction of the IESS regulation in the LFS, concluded that the changes implemented nullify their effect. For this reason, a structural break in time series was not detected for the main policy indicators hence Malta would not be back-casting and adjusting the ILO labour status.

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