



Intermediate Quality Report

EU-SILC 2010

National Statistics Office  
Malta

December 2011

## Contents

<b>1</b>	<b>COMMON CROSS-SECTIONAL EUROPEAN UNION INDICATORS.....</b>	<b>4</b>
1.1	COMMON CROSS-SECTIONAL EU INDICATORS BASED ON THE CROSS-SECTIONAL COMPONENT OF EU-SILC .....	4
1.2	OTHER INDICATORS .....	7
1.2.1	Equivalised disposable income .....	7
1.2.2	The unadjusted gender pay gap.....	7
<b>2</b>	<b>ACCURACY.....</b>	<b>7</b>
2.1	SAMPLE DESIGN .....	7
2.1.1	Type of sampling design .....	7
2.1.2	Sampling units.....	8
2.1.3	Stratification and sub stratification criteria .....	8
2.1.4	Sample size and allocation criteria .....	8
2.1.5	Sample selection schemes .....	8
2.1.6	Sample distribution over time .....	9
2.1.7	Renewal of sample: rotational groups.....	9
2.1.8	Weightings .....	9
2.1.8.1	Design factor.....	9
2.1.8.2	Non-response adjustments.....	10
2.1.8.3	Adjustments to external data (level, variables used and sources) .....	10
2.1.8.4	Final cross-sectional weight.....	10
2.1.9	Substitutions .....	12
2.2	SAMPLING ERRORS .....	12
2.2.1	Standard error and effective sample size .....	12
2.3	NON-SAMPLING ERRORS.....	15
2.3.1	Sampling frame and coverage errors.....	15
2.3.2	Measurement and processing errors.....	16
2.3.2.1	Measurement errors .....	16
2.3.2.2	Processing errors .....	17
2.3.3	Non-response errors .....	18
2.3.3.1	Achieved sample size .....	18
2.3.3.2	Unit non-response.....	19
2.3.3.3	Distribution of households (original units) by 'record of contact at address' (DB120), by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135), for each rotational group and for the total.....	21
2.3.3.4	Distribution of substituted units by 'record of contact at address' (DB120), by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135), for each rotational group and for the total.....	25
2.3.3.5	Item non-response .....	26
2.3.3.6	Total item non-response and number of observations in the sample at unit level of the common cross-sectional European Union indicators based on the cross-sectional component of EU-SILC, for equivalised disposable income and for the unadjusted gender pay gap .....	29
2.4	MODE OF DATA COLLECTION .....	29
2.5	INTERVIEW DURATION .....	31

<b>3</b>	<b>COMPARABILITY .....</b>	<b>31</b>
3.1	BASIC CONCEPTS AND DEFINITIONS .....	31
3.2	COMPONENTS OF INCOME .....	32
3.2.1	Differences between the national definitions and standard EU-SILC definitions .....	32
3.2.2	The source or procedure used for the collection of income variables .....	35
3.2.3	The form in which income variables at component level have been obtained .....	36
3.2.4	The method used for obtaining income target variables in the required form .....	36
<b>4</b>	<b>COHERENCE .....</b>	<b>37</b>
4.1	COMPARISON OF INCOME TARGET VARIABLES AND NUMBER OF PERSONS WHO RECEIVE INCOME FROM EACH 'INCOME COMPONENT', WITH EXTERNAL SOURCES .....	37

## 1 Common cross-sectional European Union indicators

### 1.1 Common cross-sectional EU indicators based on the cross-sectional component of EU-SILC

In accordance with the Commission Regulation No. 28/2004, this section presents an overview of the main cross-sectional indicators derived from EU-SILC 2010 in Malta.

#### Primary Laeken indicators of social cohesion EU-SILC 2010

##### At-risk-of-poverty rate after social transfers by age and gender

%		Age			
		Total (0+)	0-17	18-64	65+
Sex	Total	15.5	20.4	13.3	18.8
	Male	15.0	-	12.1	20.4
	Female	16.0	-	14.6	17.5

##### At-risk-of-poverty rate after social transfers by frequent activity status and gender

%		Most frequent activity status				
		Employed	Not employed			
Sex		Total employed	Total not employed	Unemployed	Retired	Other inactive
	Total	5.9	21.8	40.1	18.7	21.3
	Male	7.2	24.1	41.8	21.5	20.8
Female	3.4	20.7	35.9	10.0	21.4	

### At-risk-of-poverty rates after social transfers by household type

Household Type			%
<b>Total households</b>			<b>15.5</b>
<b>All households with no dependent children</b>	<b>Total</b>		12.4
	1 person households	Male	23.8
		Female	21.7
		age < 65 yrs	27.6
		age 65+	18.6
	2 adults no dependent children	both age < 65 yrs	14.5
		at least one age 65+	22.3
	Other households with no dependent children		4.4
<b>All households with dependent children</b>	<b>Total</b>		18.0
	Single parent	at least 1 dependent child	57.4
	2 adults	1 dependent child	12.2
		2 dependent children	17.3
		3+ dependent children	31.7
	Other households with dependent children		12.6

### At-risk-of poverty rates after social transfers by accommodation tenure status

Tenure status	%
Owner or rent-free	14.2
Tenant	22.5

### At-risk-of-poverty threshold (illustrative values)

Household type	Currency	At-risk-of-poverty threshold (illustrative values)
1 person household	NAC	6,275
2 adults 2 dependent children	NAC	13,177

### Inequality of income distribution S80/S20 income quintile share ratio

S80/S20 income quintile ratio	4.3
-------------------------------	-----

### Relative median at-risk-of-poverty gap

%		Age			
		Total (0+)	0-17	18-64	65+
<b>Sex</b>	<b>Total</b>	16.6	14.9	17.5	14.2
	<b>Male</b>	17.3	-	17.8	16.4
	<b>Female</b>	15.4	-	17.3	13.5

### Dispersion around the risk-of-poverty threshold

%		Dispersion around the at-risk-of-poverty threshold		
		40% of median	50% of median	70% of median
Sex	Total	3.6	7.7	23.5
	Male	3.7	7.6	22.3
	Female	3.6	7.8	24.7

### At-risk-of-poverty rate before transfers

At-risk-of-poverty rate where income is the 'equivalised disposable income before social transfers except old-age and survivors' benefits'

%		Age			
		Total (0+)	0-17	18-64	65+
Sex	Total	22.9	30.2	20.4	24.4
	Male	22.0	-	19.0	25.2
	Female	23.7	-	21.9	23.8

At-risk-of-poverty rate where income is the 'equivalised disposable income before social transfers including old-age and survivors' benefits'

%		Age			
		Total (0+)	0-17	18-64	65+
Sex	Total	36.3	32.7	28.0	78.4
	Male	33.7	-	25.8	76.4
	Female	38.9	-	30.3	80.0

### Inequality of income distribution: Gini coefficient

Gini coefficient	28.4
------------------	------

## **1.2 Other indicators**

### **1.2.1 Equivalised disposable income**

The mean equivalised disposable income for the year 2010 was €11,842.

### **1.2.2 The unadjusted gender pay gap**

The gender pay gap was not calculated from EU-SILC for Malta.

## **2 Accuracy**

### **2.1 Sample design**

#### **2.1.1 Type of sampling design**

As recommended by Eurostat, Malta adopted a four-year rotational design. As EU-SILC is a four-year panel survey, each group of households was included in the sample for four waves of the survey. Information from the representative group of households was collected over a period of four consecutive years. This mechanism is in line with Eurostat recommendations with respect to both cross-sectional and longitudinal studies. In accordance with the rotational panel, the oldest panel was dropped and eventually replaced by a new panel.

The sampling design for EU-SILC in Malta involves just one stage. Like in previous years, the new introduced panel (amounting to 1,705 households) was selected randomly from the register of persons and households maintained by NSO. This register is based on the Census of Population and Housing held in 2005 which is updated on a regular basis. The remaining total sample of households for EU-SILC 2010 numbered 3,032 households, of which 1,264, 848 and 920 households were interviewed for the first time in 2007, 2008 and 2009 respectively.

### **2.1.2 Sampling units**

The sampling population for EU-SILC in Malta includes all private households consisting of persons who share their income and expenses. The simple random sample of households was selected from a register of persons and households, based on the Census of Population and Housing 2005, which is regularly maintained. Following the sample selection, selected households were contacted and personal interviews were carried out with persons living within these households.

### **2.1.3 Stratification and sub stratification criteria**

This section is not applicable, as stratified sampling was not used for the data collection of EU-SILC Malta.

### **2.1.4 Sample size and allocation criteria**

According to the Council Regulation, Member States are required to achieve a minimum effective sample size of households and eligible persons (persons aged 16+) for the cross-sectional component. For Malta, the minimum effective sample size amounts to 3,000 households, which corresponds to a minimum of 7,000 persons aged 16 and over.

In 2010, the gross sample size (as selected by simple random sampling) for the Maltese EU-SILC was 4,737 households, yielding a sample of 4,686 eligible households. The 51 ineligible households were either cases in which addresses did not exist, or were found to be non-residential addresses, permanently vacant or institutional households (e.g. elderly homes).

### **2.1.5 Sample selection schemes**

A one-stage sampling design was implemented in Malta where simple random sampling was used to select the list of dwellings to be interviewed. The sample was made up of the 3 panels chosen in each of the three years prior to 2010 together with the new panel chosen to be interviewed for the first time in 2010. This new panel replaced the group entered in the sample during 2006. The old households were contacted again to complete the survey.

### **2.1.6 Sample distribution over time**

Data collection was carried out between July and October 2010, with the sample being spread throughout these four months.

### **2.1.7 Renewal of sample: rotational groups**

As in previous years, a four-year rotational design is applied in Malta, a mechanism which is in line with Eurostat's recommendations. Each of the panels is kept in the sample for four consecutive years before being replaced by another panel of households. Therefore, for the cross-sectional EU-SILC 2010, the three panels introduced in 2007, 2008 and 2009 were kept in the sample while the panel chosen in 2006 was dropped and replaced by a new panel with 1,705 households.

### **2.1.8 Weightings**

The computation of weights is based on the distribution of the household population. Thus, total population counts, derived through annual population updates and based on the 2005 Census data, were used. An estimate of the population living in institutional households was then calculated to obtain the household population counts.

#### **2.1.8.1 Design factor**

Household design weights are defined as the inverse of the selection probability of households.

The household design weight for households, interviewed for the first time in EU-SILC 2010, was calculated by dividing the total number of eligible households in 2010 by the number of new households in EU-SILC 2009. Eligible households do not include households with non-residential address, permanent vacant dwellings and institutional households.

The design weight for households interviewed for the second, third or fourth time was equivalent to the cross-sectional weight computed in SILC 2009. Split households were given the same weight as the corresponding 'parent' household.

### 2.1.8.2 Non-response adjustments

Correction for non-response was applied for each panel. For new households, the adjustment for non-response at individual level was incorporated in the calculation of design weights. For old households, i.e. for the remaining three panels, the adjustment for attrition was carried out through post-stratification. The values of the variables used in the post-stratification were as at 2009 (i.e. these may not be necessarily the same as in the current situation). Specifically, the variables used were age-group (0-17, 18-24, 25-49, 50-64, 65+), sex and district (LAU 1) as at 2009. Non-sample persons in SILC 2010 were excluded from non-response adjustments.

### 2.1.8.3 Adjustments to external data (level, variables used and sources)

A temporary cross-sectional weight was created as the product of the design weight and non-response adjustment. This temporary weight was normalised and trimmed so as to lie within the 1st and 9th deciles, thus reducing the range of the weights. The resulting weight was used as the initial weight for calibration. SAS-based CALMAR software was used for the calibration. The logit method (lower limit = 0.7, upper limit = 1.3) was applied and the calibrating variables used were:

- Household size (1,2,3,4,5+)
- District (NUTS 4 level)
- Household type
  - Household without dependent children
  - Single parent household
  - Households with 2 adults, 1 - 2 children
  - Other households with dependent child
- Number of persons in households by
  - Sex
  - 5 year age-groups

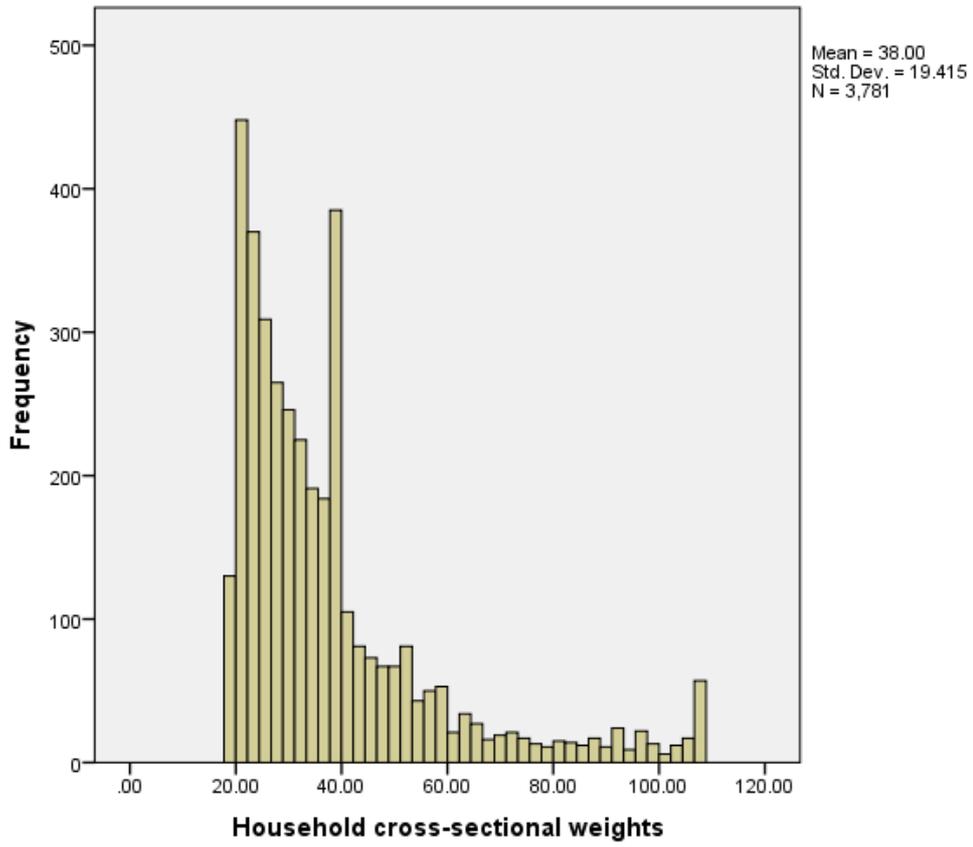
The resulting weights fell in the interval  $[0.3 \times \text{mean weight}, 3 \times \text{mean weight}]$ , and thus no further trimming and re-calibration were required.

### 2.1.8.4 Final cross-sectional weight

The following represents summary statistics for the final household cross-sectional weights.

Minimum	Maximum	Mean	Median	Standard deviation	Coefficient of variation
18.73	108.84	38.00	32.41	19.42	0.51

The following histogram illustrates the distribution of the final household cross-sectional weights:



### 2.1.9 Substitutions

No substitutions were made.

## 2.2 Sampling errors

### 2.2.1 Standard error and effective sample size

The standard errors in the following tables have been computed using linearization techniques, specifically through the use of SAS macros for linearizing EU-SILC complex income indicators.

#### At-risk-of poverty rates after social transfers by age and gender

Age	Sex	Value	Sampling error	Margin of error (95% CI)	Sample size (persons)
Total (0+)	Total	15.5	0.6	1.2	10,384
	Male	15.0	0.7	1.3	5,089
	Female	16.0	0.7	1.4	5,295
0-17	Total	20.4	1.2	2.4	1,967
	Male	21.0	1.5	3.0	1,026
	Female	19.4	1.5	3.0	941
18-24	Total	13.1	1.3	2.5	1,039
	Male	13.0	1.6	3.1	527
	Female	13.2	1.8	3.6	512
25-49	Total	13.2	0.7	1.3	3,087
	Male	11.0	0.7	1.4	1,548
	Female	15.5	0.8	1.6	1,539
50-64	Total	13.7	0.9	1.8	2,478
	Male	13.5	1.0	2.0	1,184
	Female	13.8	1.0	2.0	1,294
65+	Total	18.8	1.4	2.7	1,813
	Male	20.4	1.6	3.1	804
	Female	17.5	1.4	2.8	1,009
18+	Male	13.5	0.6	1.2	4,063
	Female	15.2	0.6	1.3	4,354
18-64	Male	12.1	0.6	1.2	3,259
	Female	14.6	0.7	1.3	3,345
0-64	Male	14.2	0.7	1.4	4,285
	Female	15.7	0.8	1.5	4,286

**At-risk-of poverty rates after social transfers by most frequent activity status and gender**

<b>Most frequent activity status</b>	<b>Sex</b>	<b>Value</b>	<b>Sampling error</b>	<b>Margin of error (95% CI)</b>	<b>Sample size (persons)</b>
<b>Employed</b>	<b>Total</b>	5.9	0.4	0.8	3,582
	<b>Male</b>	7.2	0.5	0.9	2,370
	<b>Female</b>	3.4	0.5	1.0	1,212
<b>Unemployed</b>	<b>Total</b>	40.1	3.2	6.3	266
	<b>Male</b>	41.8	3.8	7.4	182
	<b>Female</b>	35.9	5.4	10.5	84
<b>Retired</b>	<b>Total</b>	18.7	1.2	2.4	1,501
	<b>Male</b>	21.5	1.4	2.8	1,126
	<b>Female</b>	10.0	1.7	3.4	375
<b>Other inactive</b>	<b>Total</b>	21.3	1.0	2.0	3,045
	<b>Male</b>	20.8	2.4	4.6	370
	<b>Female</b>	21.4	1.0	1.9	2,675

**At-risk-of poverty rates after social transfers by tenure status**

<b>Tenure status</b>	<b>Value</b>	<b>Sampling error</b>	<b>Margin of error (95% CI)</b>	<b>Sample size (persons)</b>
<b>Owner or rent-free</b>	14.2	0.7	1.3	8,760
<b>Tenant</b>	22.5	1.8	3.5	1,624

**At-risk-of poverty rates after social transfers by household type**

Household Type			Value	Sampling error	Margin of error (95% CI)	Sample size (persons)
<b>Total</b>			15.5	0.6	1.2	10,384
<b>All households with no dependent children</b>	Total		12.4	0.7	1.4	5,011
	1 person households	Total	23.6	1.8	3.5	734
		M	23.8	2.5	5.0	248
		F	21.7	2.3	4.6	486
		age < 65 yrs	27.6	2.8	5.5	312
		age 65+	18.6	2.1	4.1	422
	2 adults no dependent children	both age < 65 yrs	14.5	1.7	3.4	914
at least one age 65+		22.3	2.0	4.0	1,238	
Other households with no dependent children		4.4	0.8	1.6	2,125	
<b>All households with dependent children</b>	Total		18.0	1.0	1.9	5,373
	Single parent	at least 1 dep. child	57.4	5.5	10.7	271
	2 adults	1 dep. child	12.2	1.6	3.1	972
		2 dep. children	17.3	1.8	3.5	1,844
		3+ dep. children	31.7	4.0	7.8	621
Other households with dependent children		12.6	1.6	3.2	1,665	

### At-risk-of poverty rates after social transfers by household type and work intensity

Household type	Work intensity	Value	Sampling error	Margin of error (95% CI)	Sample size (persons)
All households with no dependent children	WI = 0	35.6	2.6	5.2	977
	0 < WI < 1	5.4	0.8	1.6	1,888
	WI = 1	1.5	0.5	0.9	958
All households with dependent children	WI = 0	71.2	4.2	8.3	500
	0 < WI < 0.5	32.2	4.6	9.1	449
	0.5 <= WI < 1	15.6	1.4	2.7	2,859
	WI = 1	3.1	0.9	1.8	1,559

### Median equivalised disposable income

Median value (€)	Standard error	Sample size (persons)
10,429	229.6	10,384

## 2.3 Non-sampling errors

### 2.3.1 Sampling frame and coverage errors

The sampling frame used for EU-SILC 2010 was the Census of Population & Housing 2005 database. As this database is updated annually, it provides a comprehensive count of all persons living in Malta and Gozo. Therefore, this database was considered to be the most preferred source to be used for the Maltese EU-SILC sample selection.

Nonetheless, 51 households from the sample resulted to be ineligible addresses, corresponding to 1.1 per cent of the total selected sample.

## **2.3.2 Measurement and processing errors**

### **2.3.2.1 Measurement errors**

Measurement errors can occur in different phases and for different reasons. The main sources are mainly related to the questionnaire and the data collection. These errors can be identified as a bias between the recorded value provided by the respondent (which might not be the actual value) and the true but unknown value of the given variable. Measurement errors were identified through:

#### **– Questionnaire**

In preparation for EU-SILC 2010, corrections and adjustments were made for any errors or misinterpretations originating from the previous year's questionnaire and data collection round of EU-SILC. At this stage, any feedback and difficulties encountered by the enumerators or respondents were also taken into consideration. In addition to this, we have also taken on board any updates in Eurostat definitions and recommendations ensuring high quality during data collection, hence contributing towards reducing the average duration of the interviewing stage.

#### **– Interviewers**

The role of the enumerator, during the data collection stage, is fundamental to ensure that data is being collected according to the established definitions. Therefore considerable effort was directed towards specific training on conducting the EU-SILC questionnaire. Separate briefing sessions were implemented for both old and newly entered enumerators participating in EU-SILC 2010. The old interviewers were only presented with the changes and errors identified from the previous year whilst, for the new interviewers, the briefing was split into two sessions. The first session was an intensive question-by-question explanation of the questionnaire. As the EU-data collection was conducted using a Computer-Assisted Personal Interviewing (CAPI) method, the second session was aimed to provide assistance relating to the data entry program. An advantage of the CAPI method is that automatic validations were in built in the system, thus reducing elements of human errors. Furthermore, interviewers were encouraged to contact our office whenever encountering difficulties.

The data collection process was co-ordinated entirely by the NSO, including recruitment, training and monitoring of interviewers. Audits were also carried out regularly on a sub-sample of households throughout the data collection period. In rare instances where audits revealed negligence or inappropriate behaviour from interviewers, immediate disciplinary action was taken.

#### – Respondents

Despite the high burden on respondents and considering Malta being a small country, the cooperation and response rate of EU-SILC was reasonably good. In addition to this, despite our emphasis on the fact that the Malta Statistics Act ensures full confidentiality, some respondents still fear that they may be identified through their responses. Also, due to the sensitivity of the subject, and the fact that households are interviewed for four consecutive years, this may have an effect on respondent's cooperation. Even though all efforts have been made to minimise proxy interviews, interviewers were allowed to use proxy and telephone interviews to reduce non-response. Interviewers were recommended to request household members who could not be present during the interview to leave documentation such as payslips and tax returns with the person who will be responding on their behalf.

In order to reduce attrition, each year the office organizes a lottery for all households having participated for the second, third and fourth time. The winning prize was a holiday for two including flights and accommodation. This was done in an attempt to diminish the affect of non-response due to panel attrition.

In order to further reduce the response burden, the data entry application was set to upload in advance basic personal individual information (such as gender, date of birth and citizenship) for those household members that have already participated before. This reduced slightly the duration time for interviewers to complete the survey as certain questions required verification of such previous data collected.

#### **2.3.2.2 Processing errors**

As mentioned above, face-to-face CAPI method was used for Malta's EU-SILC data collection. The program used is based on Blaise software that has been designed to include automated routing and in-built validations that will help to reduce processing errors related to data entry as well as human errors. These validations involved logic and consistency checks with previous related responses and between questions themselves. Checks were also carried out for any data entry of extreme values.

The data entry program was also designed in such a way that a pop up dialog box is displayed with an error message whenever an error is encountered. However, in most cases, the program had permitted error suppression as to cater for exceptional responses. The automated routing of the program also helped the enumerator during the data collection process by avoiding situations in which certain questions were omitted or avoided unintentionally. Hence, the program left little room for error, while at the same time speeding up the whole process of data collection. Nevertheless, an element of human error still remains and consequently the possibility of data entry errors cannot be excluded.

Enumerators were given training sessions to make them more familiar with the use of laptop and the application itself. In addition to this, all enumerators were given a pen drive in order to take regular backups of encrypted data collected from the respondents. This was done in order to prevent any loss of data from any damage that may occur to the laptop. In addition, during these briefing sessions, all enumerators were provided with fictitious ‘test’ households that were created in each laptop in order to encourage interviewers to experiment the process of inputting data before interviewing the actual households.

### 2.3.3 Non-response errors

#### 2.3.3.1 Achieved sample size

##### Total households

	Total
Number of accepted household interviews	3,781
Number of persons 16 years and older	8,717

##### Rotational Group 1

	Total
Number of accepted household interviews	1,169
Number of persons 16 years and older	2,787

##### Rotational Group 2

	Total
Number of accepted household interviews	1,079
Number of persons 16 years and older	2,453

##### Rotational Group 3

	Total
Number of accepted household interviews	723
Number of persons 16 years and older	1,634

##### Rotational Group 4

	Total
Number of accepted household interviews	810
Number of persons 16 years and older	1,843

### 2.3.3.2 Unit non-response

#### Household non-response rates (NR<sub>h</sub>)

The address contact rate ( $R_a$ ) is given by:

$$R_a = \frac{\sum[DB120=11]}{\sum[DB120=all] - \sum[DB120=23]} = \frac{4,541}{4,737 - 51} = 0.969$$

The proportion ( $R_h$ ) of complete household interviews and accepted for the database is:

$$R_h = \frac{\sum[DB135=1]}{\sum[DB130=all]} = \frac{3,781}{4,541} = 0.833$$

The household non-response rate ( $NR_h$ ) is given by:

$$NR_h = (1 - (R_a * R_h)) * 100 = (1 - (0.969 * 0.833)) * 100 = 19.3\%$$

#### Individual non-response rate (NR<sub>p</sub>)

The proportion ( $R_p$ ) of complete interviews within the households accepted for the database:

$$R_p = \frac{\sum[RB250=11+12+13]}{\sum[RB245=1+2+3]} = \frac{8,717}{8,717} = 1$$

The individual non-response rate ( $NR_p$ ) is given by:

$$NR_p = (1 - (R_p)) * 100 = (1 - (1)) * 100 = 0\%$$

The reason behind a zero individual non-response rate is that whenever a household was interviewed and one (or more) of the household members did not respond, proxy answers for these individuals were requested from responding members.

#### Overall individual non-response rate (NR<sub>p</sub>)

The overall individual non-response rate ( $NR_p$ ) is given by:

$$NR_p = (1 - (R_a * R_h * R_p)) * 100 = (1 - (0.969 * 0.833 * 1)) * 100 = 19.3\%$$

The rates are now computed for the new replications only.

### **Non-response rates for new replications**

#### **Household non-response rate ( $NR_h$ )**

The address contact rate ( $R_a$ ) for households is given by:

$$R_a = \frac{\sum[DB120=11]}{\sum[DB120=all] - \sum[DB120=23]} = \frac{1,594}{1,705 - 24} = 0.948$$

The proportion ( $R_h$ ) of complete household interviews and accepted for the database is:

$$R_h = \frac{\sum[DB135=1]}{\sum[DB130=all]} = \frac{1,169}{1,594} = 0.733$$

The household non-response rate ( $NR_h$ ) is given by:

$$NR_h = (1 - (R_a * R_h)) * 100 = (1 - (0.948 * 0.733)) * 100 = 30.5\%$$

#### **Individual non-response rate ( $NR_p$ )**

The proportion ( $R_p$ ) of complete interviews within the households accepted for the database:

$$R_p = \frac{\sum[RB250=11+12+13]}{\sum[RB245=1+2+3]} = \frac{2,787}{2,787} = 1$$

The individual non-response rate ( $NR_p$ ) is given by:

$$NR_p = (1 - (R_p)) * 100 = (1 - (1)) * 100 = 0\%$$

The reason behind a zero individual non-response rate is that whenever a household was interviewed and one (or more) of the household members did not respond, proxy answers for these individuals were requested from responding members.

### Overall individual non-response rate ( $NR_p$ )

The overall individual non-response rate ( $NR_p$ ) is given by:

$$NR_p = (1 - (R_a * R_h * R_p)) * 100 = (1 - (0.948 * 0.733 * 1)) * 100 = 30.5\%$$

### 2.3.3.3 Distribution of households (original units) by 'record of contact at address' (DB120), by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135), for each rotational group and for the total

#### Distribution of original units by 'record of contact at address' (DB120)

##### Total households

	Number	Percentage
Total (DB120 = 11 to 23)	4,737	100.0
Address contacted (DB120 = 11)	4,541	95.9
Address non-contacted (DB120 = 21 to 23)	196	4.1
Total address non-contacted (DB120 = 21 to 23)	196	100.0
Address cannot be located (DB120 = 21)	73	37.2
Address unable to access (DB120 = 22)	72	36.7
Address does not exist or is non-residential address or is unoccupied or not principal residence (DB120 = 23)	51	26.0

##### Rotational Group 1

	Number	Percentage
Total (DB120 = 11 to 23)	1,705	100.0
Address contacted (DB120 = 11)	1,594	93.5
Address non-contacted (DB120 = 21 to 23)	111	6.5
Total address non-contacted (DB120 = 21 to 23)	111	100.0
Address cannot be located (DB120 = 21)	46	41.4
Address unable to access (DB120 = 22)	41	36.9
Address does not exist or is non-residential address or is unoccupied or not principal residence (DB120 = 23)	24	21.6

**Rotational Group 2**

	<b>Number</b>	<b>Percentage</b>
Total (DB120 = 11 to 23)	1,264	100.0
Address contacted (DB120 = 11)	1,229	97.2
Address non-contacted (DB120 = 21 to 23)	35	2.8
Total address non-contacted (DB120 = 21 to 23)	35	100.0
Address cannot be located (DB120 = 21)	12	34.3
Address unable to access (DB120 = 22)	11	31.4
Address does not exist or is non-residential address or is unoccupied or not principal residence (DB120 = 23)	12	34.3

**Rotational Group 3**

	<b>Number</b>	<b>Percentage</b>
Total (DB120 = 11 to 23)	848	100.0
Address contacted (DB120 = 11)	820	96.7
Address non-contacted (DB120 = 21 to 23)	28	3.3
Total address non-contacted (DB120 = 21 to 23)	28	100.0
Address cannot be located (DB120 = 21)	5	17.9
Address unable to access (DB120 = 22)	12	42.9
Address does not exist or is non-residential address or is unoccupied or not principal residence (DB120 = 23)	11	39.3

**Rotational Group 4**

	<b>Number</b>	<b>Percentage</b>
Total (DB120 = 11 to 23)	920	100.0
Address contacted (DB120 = 11)	898	97.6
Address non-contacted (DB120 = 21 to 23)	22	2.4
Total address non-contacted (DB120 = 21 to 23)	22	100.0
Address cannot be located (DB120 = 21)	10	45.5
Address unable to access (DB120 = 22)	8	36.4
Address does not exist or is non-residential address or is unoccupied or not principal residence (DB120 = 23)	4	18.2

**Distribution of address contacted by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135)**

**Total households**

	<b>Number</b>	<b>Percentage</b>
Total	4,541	100.0
Household questionnaire completed (DB130 = 11)	3,781	83.3
Interview not completed (DB130 = 21 to 24)	760	16.7
Total interview not completed (DB130 = 21 to 24)	760	100.0
Refusal to co-operate (DB130 = 21)	489	64.3
Entire household temporarily away for duration of fieldwork (DB130 = 22)	16	2.1
Household unable to respond (illness, incapacity, etc) (DB130 = 23)	76	10.0
Other reasons (DB130 = 24)	179	23.6
Household questionnaire completed (DB135 = 1 + 2)	3,781	100.0
Interview accepted for database (DB135 = 1)	3,781	100.0
Interview rejected (DB135 = 2)	0	0.0

**Rotational Group 1**

	<b>Number</b>	<b>Percentage</b>
Total	1,594	100.0
Household questionnaire completed (DB130 = 11)	1,169	73.3
Interview not completed (DB130 = 21 to 24)	425	26.7
Total interview not completed (DB130 = 21 to 24)	425	100.0
Refusal to co-operate (DB130 = 21)	273	64.2
Entire household temporarily away for duration of fieldwork (DB130 = 22)	11	2.6
Household unable to respond (illness, incapacity, etc) (DB130 = 23)	36	8.5
Other reasons (DB130 = 24)	105	24.7
Household questionnaire completed (DB135 = 1 + 2)	1,169	100.0
Interview accepted for database (DB135 = 1)	1,169	100.0
Interview rejected (DB135 = 2)	0	0.0

**Rotational Group 2**

	<b>Number</b>	<b>Percentage</b>
Total	1,229	100.0
Household questionnaire completed (DB130 = 11)	1,079	87.8
Interview not completed (DB130 = 21 to 24)	150	12.2
Total interview not completed (DB130 = 21 to 24)	150	100.0
Refusal to co-operate (DB130 = 21)	104	69.3
Entire household temporarily away for duration of fieldwork (DB130 = 22)	3	2.0
Household unable to respond (illness, incapacity, etc) (DB130 = 23)	16	10.7
Other reasons (DB130 = 24)	27	18.0
Household questionnaire completed (DB135 = 1 + 2)	1,079	100.0
Interview accepted for database (DB135 = 1)	1,079	100.0
Interview rejected (DB135 = 2)	0	0.0

**Rotational Group 3**

	<b>Number</b>	<b>Percentage</b>
Total	820	100.0
Household questionnaire completed (DB130 = 11)	723	88.2
Interview not completed (DB130 = 21 to 24)	97	11.8
Total interview not completed (DB130 = 21 to 24)	97	100.0
Refusal to co-operate (DB130 = 21)	59	60.8
Entire household temporarily away for duration of fieldwork (DB130 = 22)	2	2.1
Household unable to respond (illness, incapacity, etc) (DB130 = 23)	13	13.4
Other reasons (DB130 = 24)	23	23.7
Household questionnaire completed (DB135 = 1 + 2)	723	100.0
Interview accepted for database (DB135 = 1)	723	100.0
Interview rejected (DB135 = 2)	0	0.0

**Rotational Group 4**

	<b>Number</b>	<b>Percentage</b>
Total	898	100.0
Household questionnaire completed (DB130 = 11)	810	90.2
Interview not completed (DB130 = 21 to 24)	88	9.8
Total interview not completed (DB130 = 21 to 24)	88	100.0
Refusal to co-operate (DB130 = 21)	53	60.2
Entire household temporarily away for duration of fieldwork (DB130 = 22)	0	0
Household unable to respond (illness, incapacity, etc) (DB130 = 23)	11	12.5
Other reasons (DB130 = 24)	24	27.3
Household questionnaire completed (DB135 = 1 + 2)	810	100.0
Interview accepted for database (DB135 = 1)	810	100.0
Interview rejected (DB135 = 2)	0	0.0

**2.3.3.4 Distribution of substituted units by 'record of contact at address' (DB120), by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135), for each rotational group and for the total**

No substitutions were made for EU-SILC 2010.

### 2.3.3.5 Item non-response

A summary of the item non-response household and personal income components are given in the tables below.

		Households having a positive amount		Households having a negative amount		Of which (before imputation)...					
						Full Information		Partial Information		Missing values	
		No.	%*	No.	%*	No.	%**	No.	%**	No.	%**
Total household income											
Total household gross income	HY010	3775	99.8	6	0.2	1405	37.2	2374	62.8	2	0.1
Total disposable household income	HY020	3774	99.8	7	0.2	1402	37.1	2378	62.9	1	0.0
Total disposable household income before social transfers except old age and survivors' benefits	HY022	3769	99.7	12	0.3	1408	37.2	2363	62.5	10	0.3
Total disposable household income before social transfers including old age and survivors' benefits	HY023	3664	96.9	117	3.1	1408	37.2	2349	62.1	24	0.6

Gross components of household level income at												
Income from rental property or land	HY040G	228	6.0	0	0.0	202	88.6	0	0.0	26	11.4	
Interest, dividends, profit from capital investments in unincorporated business	HY090G	3781	100.0	0	0.0	3664	96.9	0	0.0	117	3.1	
Family/Children related allowances	HY050G	1144	30.3	0	0.0	1144	100.0	0	0.0	0	0.0	
Social exclusion not elsewhere classified	HY060G	1958	51.8	0	0.0	1958	100.0	0	0.0	0	0.0	
Housing allowances	HY070G	543	14.4	0	0.0	543	100.0	0	0.0	0	0.0	
Regular inter-household cash transfer received	HY080G	46	1.2	0	0.0	33	71.7	0	0.0	13	28.3	
Interest repayments on mortgage	HY100G	439	11.6	0	0.0	431	98.2	0	0.0	8	1.8	
Income received by people aged under 16	HY110G	10	0.3	0	0.0	10	100.0	0	0.0	0	0.0	
Regular inter-household cash transfer paid	HY130G	41	1.1	0	0.0	35	85.4	0	0.0	6	14.6	

Note:

\* percentages are out of the total number of households for which the interview was accepted for the database i.e. 3,781

\*\* percentages are out of the total number of households having received an amount (positive or negative) for that household income variable

		Persons 16+ having a positive amount		Persons 16+ having a negative amount		Of which (before imputation)...					
						Full Information		Partial Information		Missing values	
		No.	%*	No.	%*	No.	%**	No.	%**	No.	%**
Gross income components at personal level											
Gross employee cash or near cash income	PY010G	3648	41.8	0	0.0	3516	96.4	0	0.0	132	3.6
Gross non-cash employee income	PY020G	619	7.1	0	0.0	229	37.0	34	5.5	356	57.5
Company car	PY021G	97	1.1	0	0.0	97	100.0	0	0.0	0	0.0
Contributions to individual private pension plans	PY035G	1097	12.6	0	0.0	1056	96.3	0	0.0	41	3.7
Cash benefits or losses from self-employment	PY050G	683	7.8	20	0.2	685	97.4	0	0.0	18	2.6
Value of goods produced for own consumption	PY070G	-	-	-	-	-	-	-	-	-	-
Pension from individual private plans	PY080G	69	0.8	0	0.0	69	100.0	0	0.0	0	0.0
Unemployment benefits	PY090G	190	2.2	0	0.0	190	100.0	0	0.0	0	0.0
Old-age benefits	PY100G	1965	22.5	0	0.0	1965	100.0	0	0.0	0	0.0
Survivors' benefits	PY110G	96	1.1	0	0.0	96	100.0	0	0.0	0	0.0
Sickness benefits	PY120G	627	7.2	0	0.0	627	100.0	0	0.0	0	0.0
Disability benefits	PY130G	244	2.8	0	0.0	244	100.0	0	0.0	0	0.0

Education-related allowances	PY140G	567	6.5	0	0.0	417	73.5	81	14.3	69	12.2
------------------------------	--------	-----	-----	---	-----	-----	------	----	------	----	------

Note:

- \* percentages are out of the total number of respondents (aged 16+) for which the interview was accepted for the database i.e. 8,717
- \*\* percentages are out of the total number of respondents (aged 16+) having received an amount (positive or negative) for that household income variable

### 2.3.3.6 Total item non-response and number of observations in the sample at unit level of the common cross-sectional European Union indicators based on the cross-sectional component of EU-SILC, for equivalised disposable income and for the unadjusted gender pay gap

Not applicable for Malta.

## 2.4 Mode of data collection

The method of data collection in Malta is completely through face-to-face interviews, by means of CAPI method, with an element of proxy interviews when this was unavoidable.

### Distribution of household members aged 16 or over by 'data status' (RB250)

The data status for all persons in the R-file aged 16 and over was set to 11 (information completed only from interview). This is due to the fact that when a household was contacted, all persons residing in that household were interviewed.

### Distribution of household members aged 16 and over by 'type of interview' (RB260)

#### Total households

	Total	PAPI (RB260 = 1)	CAPI (RB260 = 2)	CATI (RB260 = 3)	Self- administered by respondent (RB260 = 4)	Proxy interview (RB260 = 5)	Missing
Total	8,717	0	6,196	0	0	2,521	0
%	100.0	0.0	71.1	0.0	0.0	28.9	0

**Rotational Group 1**

	Total	PAPI (RB260 = 1)	CAPI (RB260 = 2)	CATI (RB260 = 3)	Self- administered by respondent (RB260 = 4)	Proxy interview (RB260 = 5)	Missing
Total	2,787	0	1,959	0	0	828	0
%	100.0	0.0	70.3	0.0	0.0	29.7	0

**Rotational Group 2**

	Total	PAPI (RB260 = 1)	CAPI (RB260 = 2)	CATI (RB260 = 3)	Self- administered by respondent (RB260 = 4)	Proxy interview (RB260 = 5)	Missing
Total	2,453	0	1,760	0	0	693	0
%	100.0	0.0	71.7	0.0	0.0	28.3	0

**Rotational Group 3**

	Total	PAPI (RB260 = 1)	CAPI (RB260 = 2)	CATI (RB260 = 3)	Self- administered by respondent (RB260 = 4)	Proxy interview (RB260 = 5)	Missing
Total	1,634	0	1,171	0	0	463	0
%	100.0	0.0	71.7	0.0	0.0	28.3	0

**Rotational Group 4**

	Total	PAPI (RB260 = 1)	CAPI (RB260 = 2)	CATI (RB260 = 3)	Self- administered by respondent (RB260 = 4)	Proxy interview (RB260 = 5)	Missing
Total	1,843	0	1,306	0	0	537	0
%	100.0	0.0	70.9	0.0	0.0	29.1	0

## **2.5 Interview duration**

As per Commission Regulation No. 28/2004, the mean interview duration per household is calculated by adding up the sum of the duration of all household interviews (HB100) and the sum of the duration of all personal interviews (PB120) and then dividing by the number of household questionnaires completed and accepted for the database (DB135). The average interview duration for EU-SILC 2010 amounted to 51.5 minutes.

## **3 Comparability**

This section highlights any minor departures in the definitions between the national concepts applied in the Maltese EU-SILC 2010 and the standard EU-SILC concepts. However, for comparability, Malta ensured that most national concepts coincide with EU-SILC methodology.

### **3.1 Basic concepts and definitions**

#### **Reference population**

No departure from the common definition i.e. the reference population is composed of all private households and their current members residing in Malta at the time of data collection. Persons living in institutions are excluded from the target population.

#### **Private household definition**

No departure from the common definition i.e. a private household is defined as a person living alone or a group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living.

#### **Household membership**

A person is a household member if s/he is usually resident in that particular dwelling and shares in household expenses. Persons who are temporarily absent for reasons of holiday, travel, work, health, education or similar are included as long as the persons do not intend to stay away for more than 6 months.

#### **Income reference period used**

The income reference period used for EU-SILC 2010 was calendar year 2009.

### **Period for taxes on income and social insurance contributions**

The tax on income and social insurance contributions reference period was the same as the income reference period i.e. calendar year 2009.

### **Regular taxes on wealth**

The variable on regular taxes on wealth is not applicable for Malta

### **Lag between income reference period and current variables**

The data collection was carried out between 1<sup>st</sup> July and 31<sup>st</sup> October 2010. Thus the lag between income reference period and current variables spans between 6 and 10 months, depending on the date of interview for each household. We did not succeed in limiting the interval to 8 months due to practical problems in data collection.

### **Total duration of data collection of the sample**

As stated above, data collection was carried out between 1<sup>st</sup> July and 31<sup>st</sup> October 2010.

### **Basic information on activity status during the income reference period**

The information was gathered through a question in the questionnaire where the respondents were asked to give us their activity status for every month of the income reference period (i.e. calendar year 2009).

## **3.2 Components of income**

### **3.2.1 Differences between the national definitions and standard EU-SILC definitions**

For the following components, the same definitions as standard EU-SILC were used:

- Total household gross income
- Total disposable household income
- Total disposable household income, before social transfers other than old-age and survivors' benefits
- Total disposable household income, before social transfers including old-age and survivors' benefits

- Income from rental of property or land
- Family/children-related allowances
- Social exclusion payments not elsewhere classified
- Housing allowances
- Regular inter-household cash transfer received
- Interest, dividends, profit from capital investments in unincorporated business
- Interest paid on mortgages
- Income received by people aged under 16
- Regular inter-household cash transfer paid
- Tax on income and social insurance contributions
- Cash or near-cash employee income
- Non-cash employee income
- Cash profits or losses from self-employment (including royalties)
- Unemployment benefits
- Old-age benefits
- Survivors' benefits
- Sickness benefits
- Disability benefits
- Education-related allowances

- Imputed rent

Data on imputed rent also became mandatory as from 2007. However, estimation of imputed rent values directly from EU-SILC data was not possible. This is due to the fact that the proportion of tenants renting at market price in Malta is rather low to enable the estimation of rent figures at reliable quality levels. On the basis of 2005 Census data, the National Accounts Unit of the NSO compiled a table of average imputed rent values for dwellings classified by size and type. These values were then attached to the EU-SILC datasets and used as estimates for the imputed rent.

- Employers' social insurance contributions

The employers' social insurance contributions in Malta are exactly equal to the social contribution paid by the employee. Thus, there was no need to include any additional questions since this information can be extracted directly from the employee income questions.

The following income components have not been collected for reasons specified below:

- Regular taxes on wealth

The variable on regular taxes on wealth is not applicable for Malta.

- Repayments/receipts for tax adjustments

Since Malta has collected a combination of gross and net values for income components, the tax adjustments are included under the variable on tax on income and social contributions.

- Gross monthly earnings for employees

This variable is not applicable to Malta, since we calculate the gender pay gap from other sources.

- Value of goods for own consumption

Following discussions with EUROSTAT, as from last year (EU-SILC 2009), it was agreed that this variable will not be submitted, since the value of goods produced for own consumption does not constitute a significant component of the total disposable income.

- Optional employer's social insurance contributions

As per Eurostat's documentation, Description of Target Variables: Cross-sectional and Longitudinal (Doc EU-SILC 065), this variable is not collected in Malta as the compulsory employers' social insurance contributions represent more than 90% of the total amount of employers' social contributions (compulsory + optional).

### 3.2.2 The source or procedure used for the collection of income variables

The table below illustrates the distribution of the interviewed household members aged 16 and over by type of interview.

Type of interview	Number	%
Face to face interview - PAPI	0	0.0
Face to face interview - CAPI	6,196	71.1
Proxy interview	2,521	28.9
Missing	0	0
Total	8717	100.0

As it has been done in previous years, the EU-SILC in Malta was undertaken using CAPI method. The only exception is the data on social benefits, which is obtained through a registered database, System of Social Assistance and Benefits (SABS) database, owned by the Ministry for Family and Social Solidarity (MFSS). The database covered the same reference period as EU-SILC 2010 and includes the details of all individuals who are eligible to receive some form of social benefit and the individual benefits as defined by the MFSS. These were then merged according to Eurostat definitions. Moreover, for those persons who receive social benefits by means testing, interests and dividends were also provided from another database.

Social benefits obtained from the SABS database are:

PY090G – unemployment benefits

PY100G – old-age benefits

PY110G – survivor's benefits

PY120G – sickness benefits

PY130G – disability benefits

HY050G – family / children related allowances

HY060G – social exclusion not elsewhere classified

HY070G – housing allowances (only energy benefits were obtained from SABS)

PY140G, education related-allowances and part of HY070G, housing allowances are the only variables not available in the SABS database, so this will continue to be collected from interviews.

Apart from this, as from EU-SILC 2008 we also calculated the water and electricity (as part of the Total Housing Costs (HH070)) consumption units using registered data obtained from the Water Services Corporation.

As from the year under review, data for variables PY010 (employee cash or near cash income) and PY050 (cash benefits or losses from self-employment) were obtained from the Department of Inland Revenue. It was decided to continue to collect income data from respondents as well to ensure best possible coverage from both sources. By using both sources, we were in a better position to ensure consistency with past data.

### **3.2.3 The form in which income variables at component level have been obtained**

Information on income variables was obtained from a number of sub-questions for each income component. These sub-questions are given below:

1. Number of payments during the 12 months
2. Gross income at each payment
3. Net income at each payment
4. Tax paid per payment received
5. National insurance paid per payment received

Apart from notes describing the income components that were included to serve as a guideline for the enumerator, a specific question directly preceding the questions listed above was specifically included in the questionnaire to remind the interviewers that the income reference period was 2009. Although the interviewer was expected to collect either the gross or net income at each payment, during the briefing sessions it was highlighted that ideally the gross income should be collected. Consequently, it was suggested that the net income will be collected only in those circumstances where the respondent could not provide the gross income.

### **3.2.4 The method used for obtaining income target variables in the required form**

As already mentioned, interviewers were instructed that, during the data collection process, gross income was preferred over the net income. Nevertheless, as this was not always possible, officials from the office stressed out that net income should be collected in the absence of gross income. In such cases, in order to convert these net values into gross values, a table was obtained from the Department of Inland Revenue showing gross income values corresponding to net income values.

The questionnaire also incorporated several questions that enabled to differentiate between the main and secondary job of the respondent. Consequently, this helped during the validation of the collected tax data. This was of vital importance as different tax bands apply depending on the type of job.

## **4 Coherence**

### **4.1 Comparison of income target variables and number of persons who receive income from each 'income component', with external sources**

Each year, a number of variables collected from EU-SILC are compared with other data collected by the National Statistics Office having the same reference period for benchmarking purposes. Sources included National Accounts, Labour Force Survey and Government Finance. Annual figures from the Inland Revenue Department were also used to verify income from employment, interests and dividends.