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Shift Employment IN MALTA

2015

Shift Employment in Malta



2015

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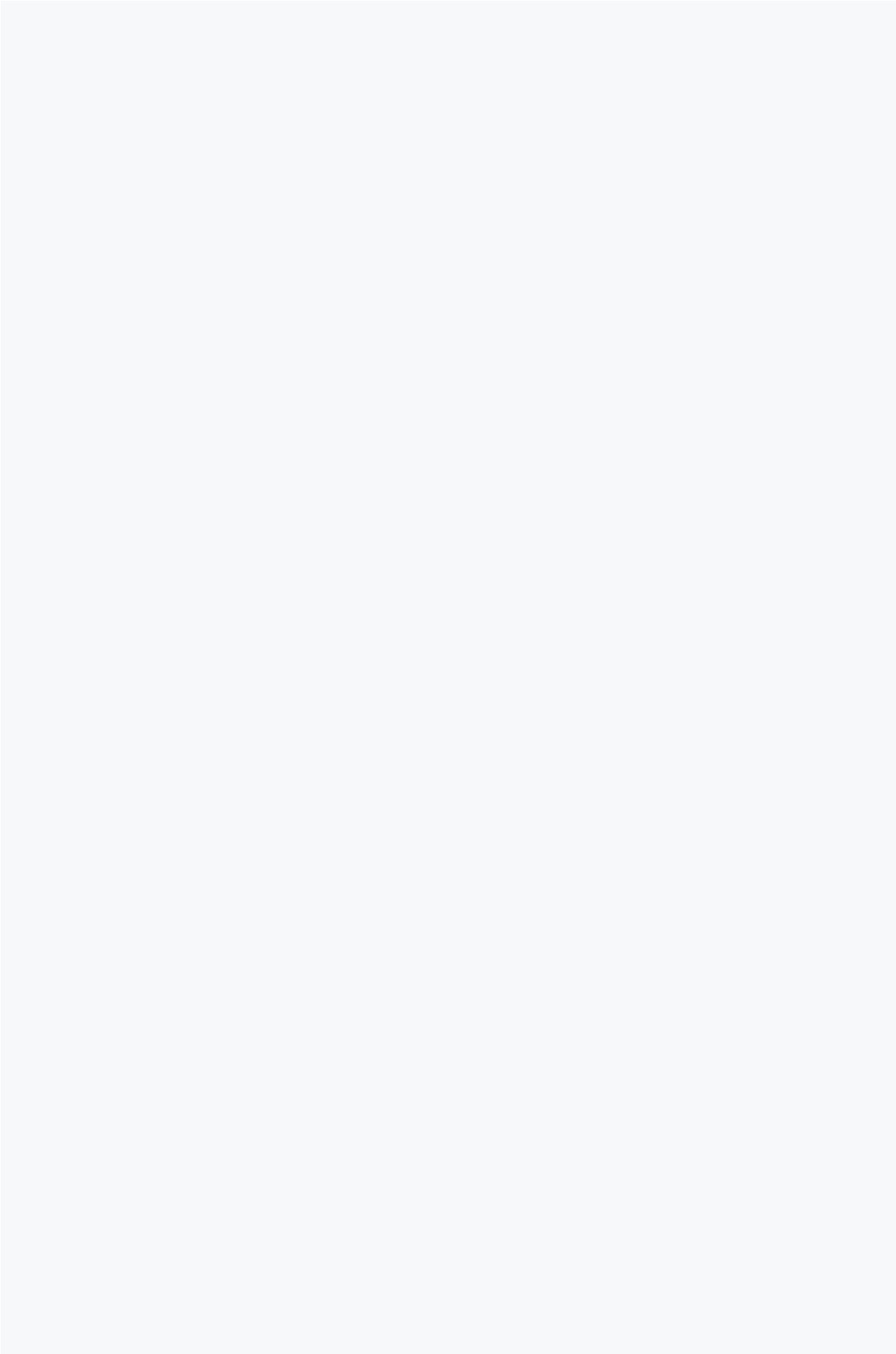
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FOREWORD



In 2015, one out of every five employees was engaged in shift employment. Of these, nearly one in four was engaged in the health sector. These are some of the insights which are brought to light in this publication - Shift Employment in Malta - a first of its kind for Malta. The publication is based on data extracted from the Labour Force Survey and presents a detailed demographic and economic picture of shift workers in Malta and their evolving working patterns over the last five years.

This detailed report demonstrates shift workers' greater tendency towards engagement in full-time employment when compared to non-shift workers, and the appeal of shift work in offering relatively economically rewarding jobs. Moreover, the publication enables interesting comparisons on specific variables between Malta and the rest of the European Union Member States.

My appreciation goes to the staff members of the Labour Market Statistics Unit for their work in compiling and organising this information in a comprehensive manner to serve the different needs of our users. This is another initiative that the National Statistics Office is taking to shed light on new socio-economic dimensions of Maltese society. I trust that policymakers, organisations dealing with labour and human resources, and researchers in related fields will find this publication enlightening in its own right, as well as a useful reference work to underline further research and to strengthen their perspectives on this specific topic.

Reuben Fenech
Director General
December 2016

INTRODUCTION

Shift work is defined as a working arrangement that comprises either non-day work (evening or night work) or weekend work or both. This publication sets out to provide a demographic and economic profile of shift work in Malta for the past five years.

The term “shift work” has been attributed different meanings across time and space. In general, many researchers define shift work as employment in which two or more groups of employees work at different times of a 24-hour or 48-hour time span, including a so-called “day” shift. Most discussions consider shift work to be any employment that regularly occurs on non-days between 7 p.m. and 7 a.m., or on weekends. Shift workers are mainly associated to working atypical working hours, that is working nights or weekends.

According to Presser, H.B., et al (2008, 2)¹ shift work is associated with a disruption in family routine, social life and negative consequence on the individual’s health. Their study shows that there are workers who due to different commitments such as furthering studies or personal preference, might choose shift work over standard working hours. A key advantage of shift employment is that it allows employees to enjoy more free time during the day. In addition, through shift work, it is possible for a

worker to accumulate several days off in a row on a regular basis. Persons who are unable to work normal hours, might still find it attractive to join the workforce. Moreover, women’s employment during non-standard hours may also reflect men’s greater involvement in care giving responsibilities.

Despite all the advantages of shift employment, Presser, H.B., et al (2008, 2)¹ demonstrate that non-standard work schedules may not always be in the best interest of workers. In fact various researchers have outlined ways in which these working conditions might have an adverse effect on the worker. Empirical evidence¹ shows that working at night and rotating shifts leads to greater health risks associated with the biological functions of the body. Late-hour work impinges on the health of shift workers due to irregular sleep. Sleep deprivation and consequently fatigue and stress can affect the job productivity resulting in higher workplace accidents.

¹ Presser, H.B., Gornick, J.C., and Sangeeta, P. (2008, 2), *Monthly Labour Review*, Gender and nonstandard work hours in 12 European countries, pp. 83-103.

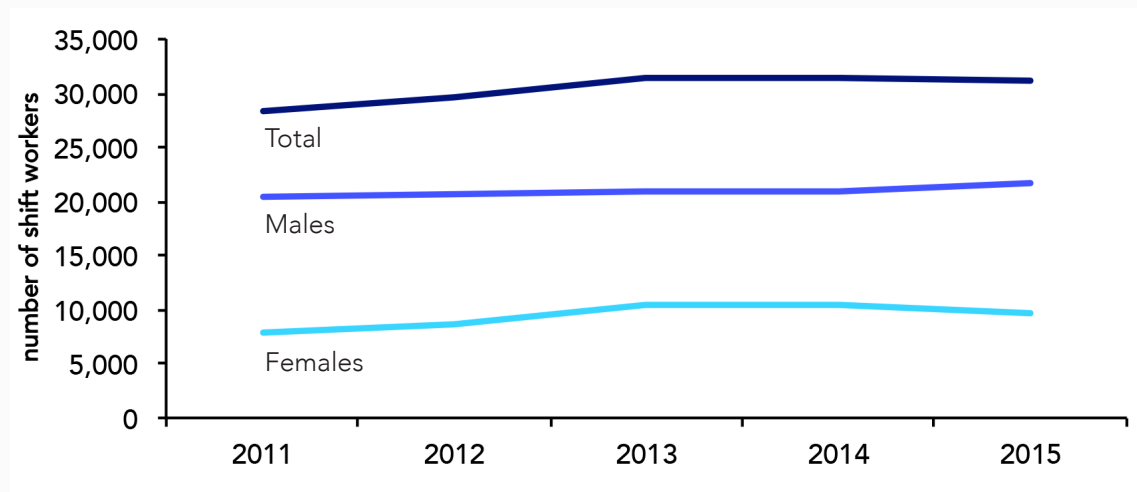


Statistical Findings

STATISTICAL FINDINGS

Figures show that for 2015 about 20 per cent of the working population in Malta worked on a shift hour basis (Table 1; Annex). The chart below (Chart 1) depicts the change in the distribution of male and female shift workers between 2011 and 2015.

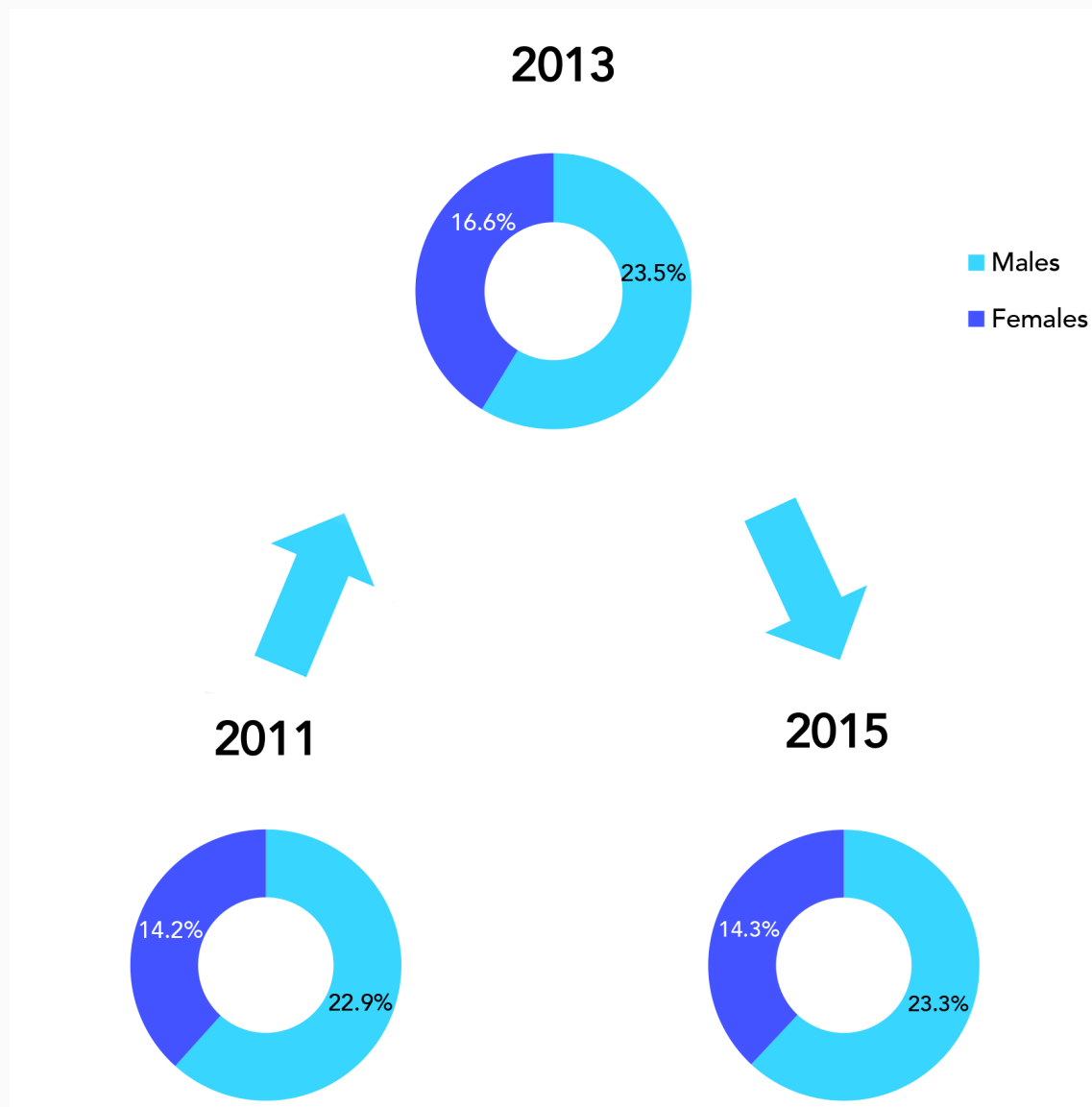
Chart 1. Distribution of shift workers by sex: 2011-2015



Source: Annual LFS; Table 2 (Annex).

From the information available in the Labour Force Survey (LFS), the share of persons in shift employment has remained practically constant over the years, at an average of 20 per cent (Table 3; Annex). Shift work was mainly dominated by male employees accounting for 69.4 per cent out of total employees. Chart 1 shows that shift employment among males remained quite constant, at an average of 23.2 per cent out of total employees, with a slight increase of approximately 1,000 persons between 2011 and 2015. On the other hand, an increase in female shift employment was registered mainly between 2011 and 2013. In fact, between 2011 and 2015 there was a significant rise of 1,754 female employees on shift basis (Table 2; Annex). Female shift employees rose from 14.2 per cent in 2011 to 16.6 per cent in 2013, but declined again in 2015 to the same levels as those of 2011 (Table 3; Annex).

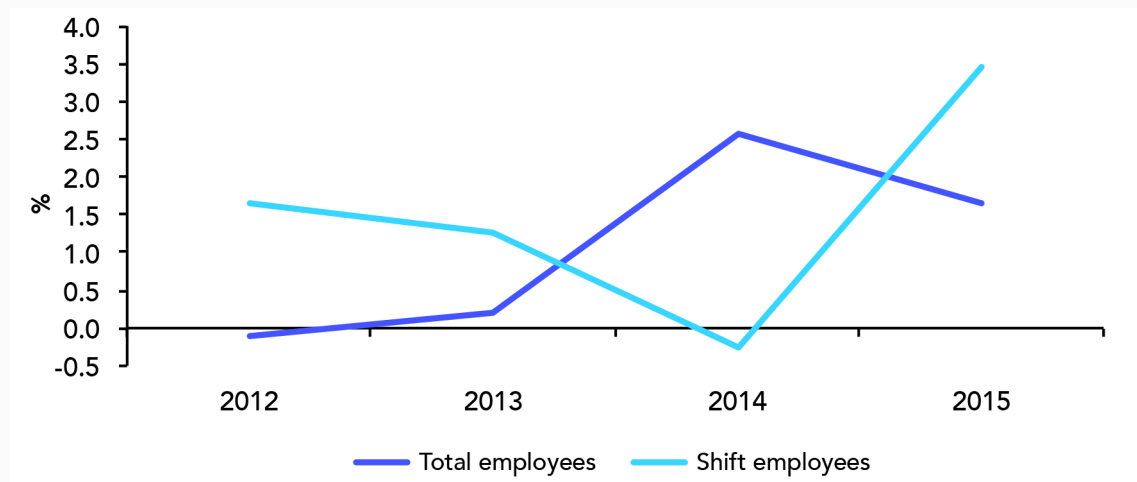
Chart 2. Share of shift employees as a percentage of total employees



Source: Annual LFS; Table 3 (Annex).

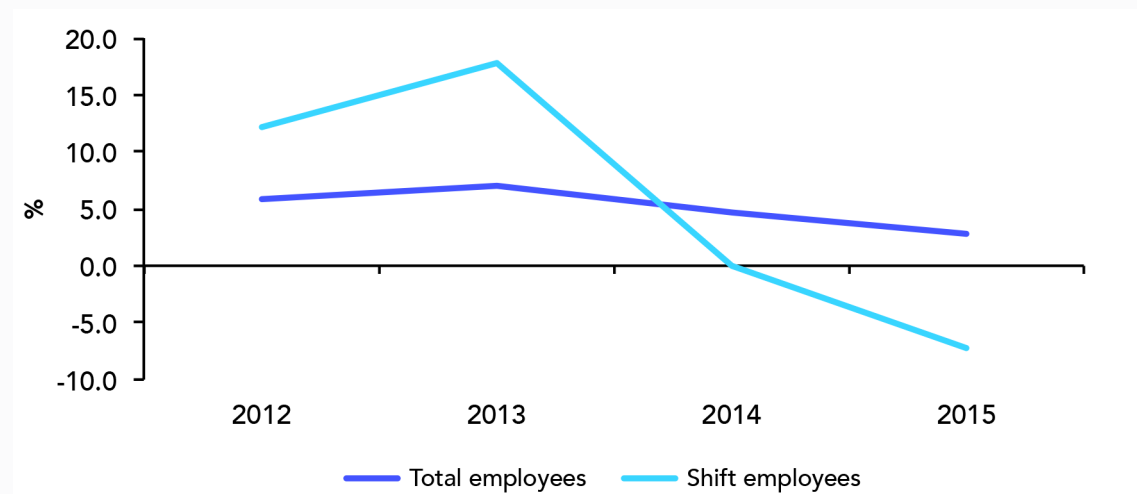
Growth rates in shift employment may not necessarily follow the same pattern as that of total employment. While the total number of employees has been steadily increasing over the past years, the growth rates of shift employment registered a decline in the last 2 years (Table 4; Annex).

Chart 3. Growth rates of total employees vs growth rates of shift employment for males: 2012-2015



When comparing growth rates for males in Chart 3, one notes opposing trends over the past years. Between 2011 and 2013, the growth rates for total male employees were almost negligible. However, they took an upward trend in the last two years. On the other hand, male shift employment registered a negative growth rate in 2014 (Table 4; Annex).

Chart 4. Growth rates of total employees vs growth rates of shift employees for females: 2012-2015

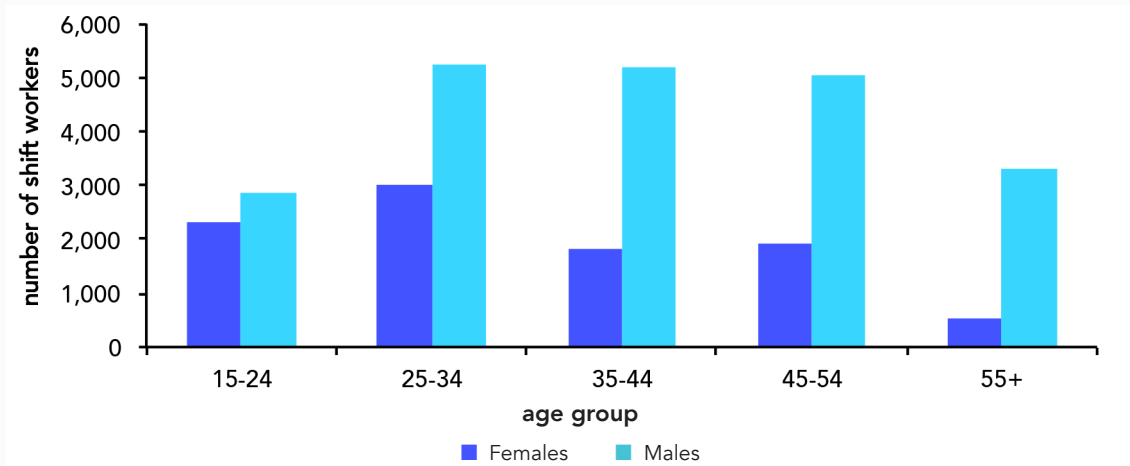


Source: Annual LFS; Table 4 (Annex).

Female participation in the labour market rose significantly over the past five years. Chart 4 shows a consistent positive growth rate in the total number of female employees, however there was a decline in growth rates from 5.9 per cent in 2012 to 2.8 per cent in 2015. On the other hand, female shift employment declined by 7.2 per cent in 2015. This negative growth rate of female shift employees had an impact on the total share of shift workers (Table 4; Annex).

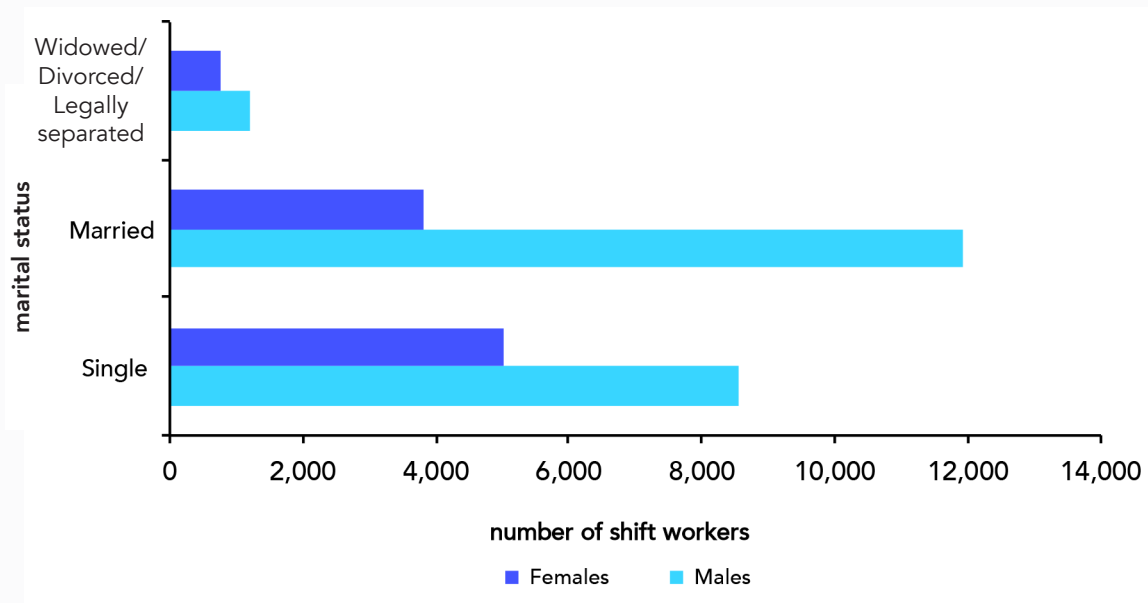
Shift Workers Demographic Profile: 2015

Chart 5. Distribution of shift workers by sex and age group: 2015



Source: Annual LFS; Table 5 (Annex).

Chart 6. Distribution of shift workers by sex and marital status: 2015

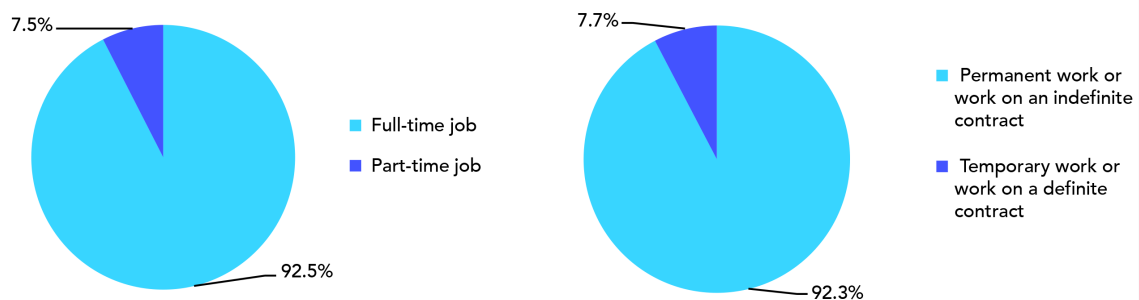


Source: Annual LFS; Table 6 (Annex).

Male dominance in terms of shift workers was evident in all age groups, with a significant difference between gender and age distribution for shift workers (Table 5; Annex). Most of those employed on shift basis were between 25 and 34 years (Table 5; Annex). Although this applies for both sexes, the share of shift employment was higher for females within this age group than for their male counterparts.

On comparing age groups with marital status, age was found to be a significant factor. Single persons who were engaged in shift work were mainly found in the 25-44 age bracket (54.8 per cent), while married, widowed or separated persons were mainly found in the 45+ age bracket (Table 7; Annex).

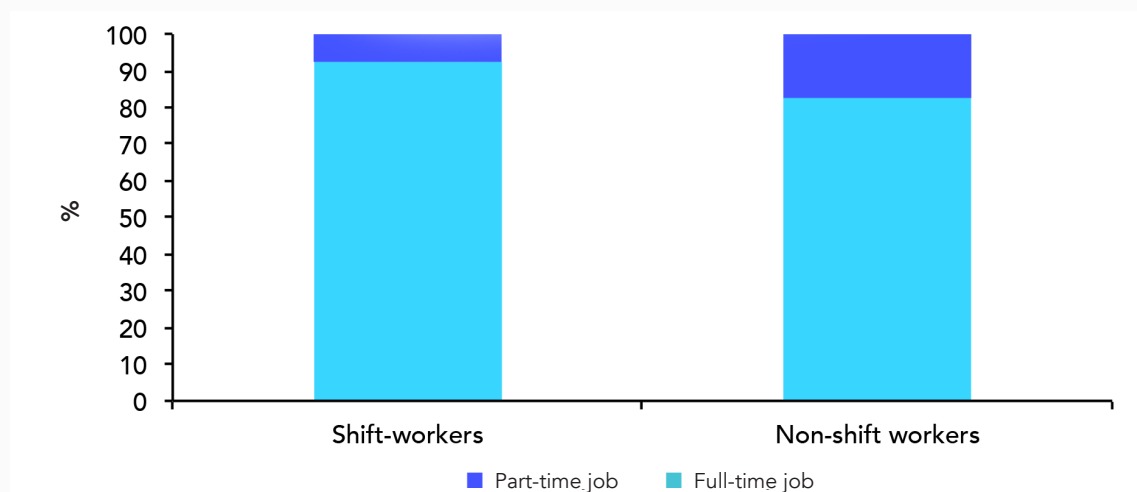
Chart 7. Distribution of shift workers by type of employment and type of contract: 2015



Source: Annual LFS; Table 8 (Annex).

The majority of shift workers were permanently employed on a full-time basis. When comparing shift and non-shift employment, the former occupied a higher share of full-time employment out of total employment (Table 8; Annex).

Chart 8. Distribution of workers by type of employment



Source: Annual LFS; Table 8 (Annex).

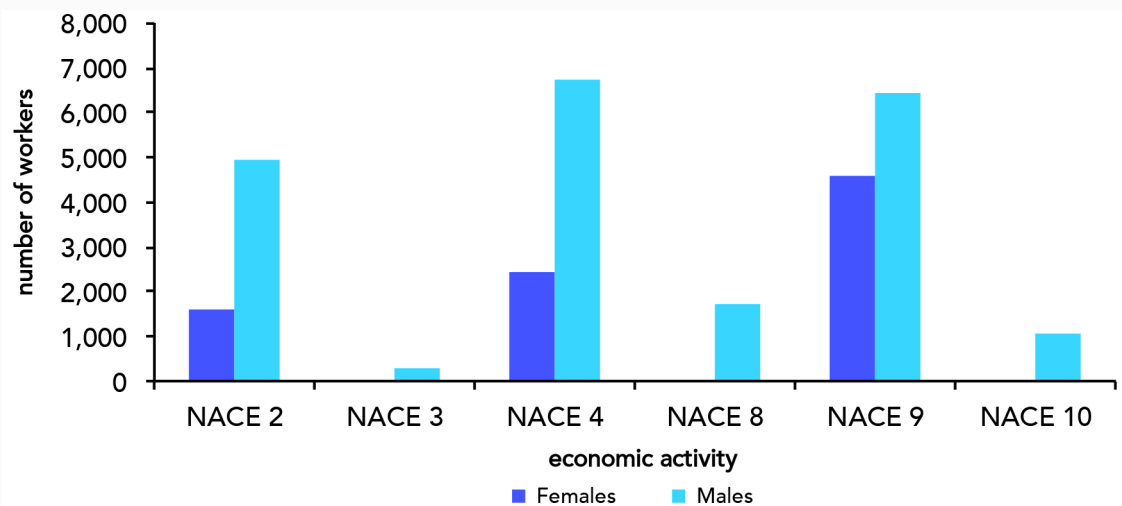
Table a. Distribution of workers with temporary jobs: 2015

Males		Females	
Shift workers	Non-shift workers	Shift workers	Non-shift workers
(%)			
6.3	6.8	10.8	8.5

Source: Annual LFS.

Overall findings showed that females occupy a higher share of temporary shift employment when compared to their male counterparts. This was evident among shift workers where the percentage distribution of females (10.8 per cent) was 4.5 percentage points higher than the share held by male shift workers (6.3 per cent) (Table 9; Annex).

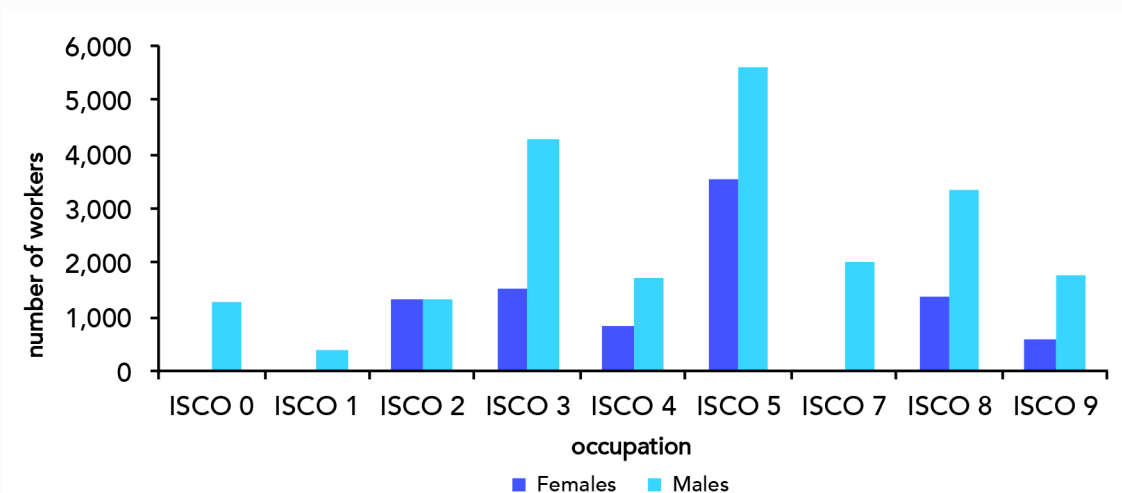
Chart 9. Shift workers by sex and economic activity: 2015



Note: for NACE refer to Annex 2.

Source: Annual LFS; Table 10 (Annex).

Chart 10. Shift workers by sex and occupation: 2015



Note: for ISCO refer to Annex 2.

Source: Annual LFS; Table 11 (Annex).

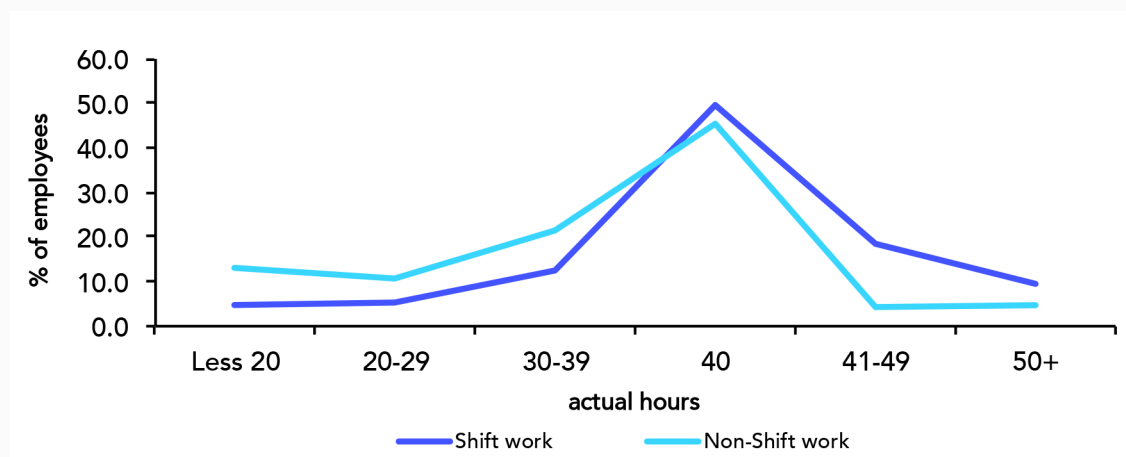
The majority of shift workers were engaged in the *public administration, defence, education, human health and social work activities* (35.2 per cent). It should be noted that within this group of economic activities, health was the dominant sector. This was followed by *wholesale and retail trade, transportation and storage, accommodation and food service activities* (29.3 per cent) and *manufacturing, mining and quarrying and other industry* (20.9 per cent). The trend that the majority of males were employed in *Wholesale and retail trade, transportation and storage, accommodation and food service activities* sector while females were mostly employed in *Public administration, defence, education, human health and social work activities* sector holds also for shift work with shares of 31.0 per cent and 47.8 per cent respectively (Table 10; Annex).

In line with the economic activity distributions, one notes that in terms of occupations most of shift workers were engaged as *service and sales workers* (29.2 per cent) followed by *technicians and associate professionals* (18.5 per cent). LFS data also indicated differences in main occupations of shift workers by gender. Despite the fact that both males and females were mostly employed as service and sales workers, the female share in this occupation was larger (36.8 per cent) when compared with that of the males (25.9 per cent) (Table 11; Annex).

The average hours normally worked by full-time shift workers amounted to 42.5 hours per week; 42.7 hours by males and 42.0 hours by females. The average hours normally worked by part-time shift workers added up to 24.4 hours; 24.6 hours by males and 24.3 hours by females (Table 12; Annex). In this regard, part time shift work was dominated by female workers (56.5 per cent) whereas at 71.5 per cent full time shift work was more male dominated (Table 13; Annex). When analysing the mean hours worked by occupation, the LFS results showed that in all cases males engaged in more hours of shift work when compared to their female counterparts (Table 14; Annex).

Shift workers were generally known to actually work more hours than non-shift workers. The chart below shows the longer hours actually worked by shift and non-shift workers, which clearly depicts this phenomenon (Table 15; Annex).

Chart 11. Hours actually worked by shift and non-shift workers: 2015



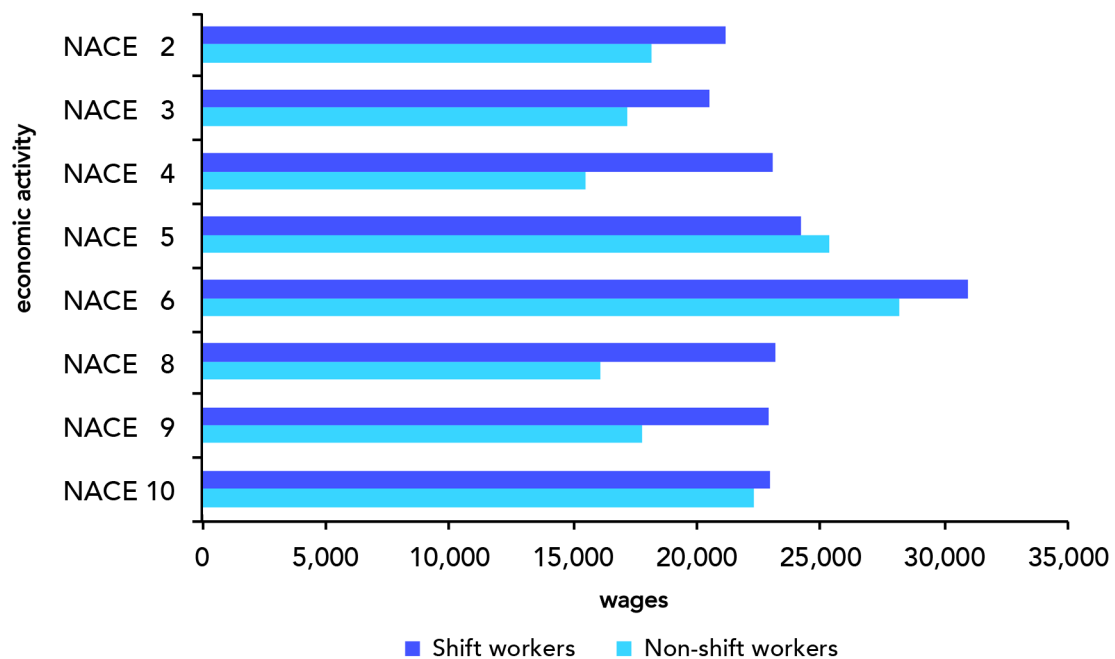
Source: Annual LFS; Table 15 (Annex).

This publication is also providing information on earnings as compiled in the Structure of Earnings Survey 2014. The Structure of Earnings Survey (SES) for 2014 is the fourth of a series of four yearly earnings surveys to be conducted under the Council Regulation 530/1999 and the Commission Regulation 1916/2000 as amended by Commission regulation 1738/2005¹. This survey is carried out among enterprises employing 10 or more employees and is carried out once every four years. On comparing the gross annual earnings, the SES showed that shift workers tend to have a significant difference in salaries when compared to non-shift workers. This tendency was found to be significant for both sexes. The average gross annual earnings include basic wages, overtime, shift payments, bonuses and allowances. In 2014, the average gross annual salary for shift employees stood at €22,720 as against €18,073 for non-shift workers (Table 16; Annex).

The graph below illustrates the average annual earnings for shift and non-shift workers by economic activity. One notes that with the exception of *information and communication*, the average earnings of shift workers for all economic activities was higher when compared to non-shift workers. This was mainly evident for *education, human health and social work activities* sector (dominated by the health sector) and *wholesale and retail trade, transportation and storage, accommodation and food service activities* sector.

¹ http://ec.europa.eu/eurostat/cache/metadata/en/earn_ses2014_esms.htm

Chart 12. The average wage of employees by economic activity for shift and non-shift workers: 2014

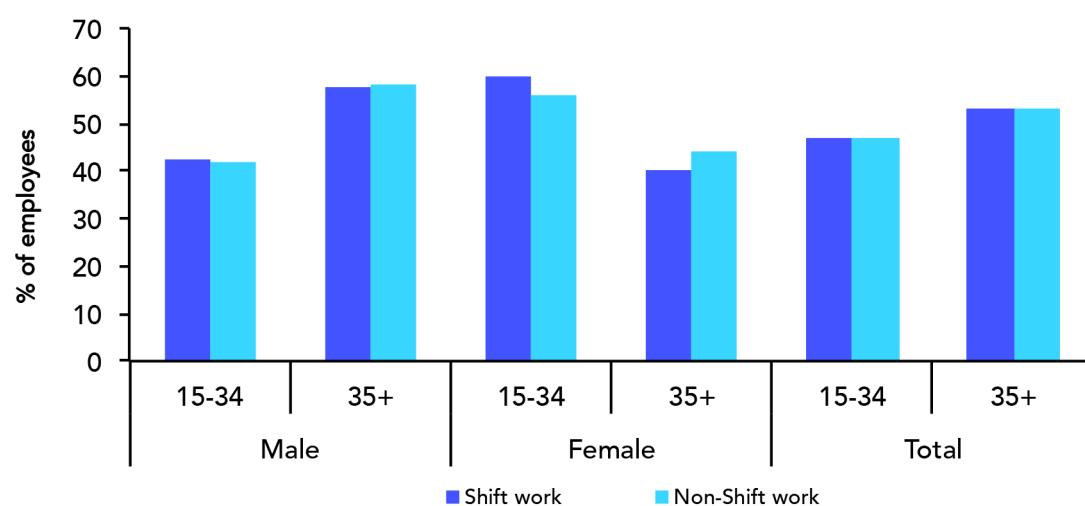


Note: Public administration, defence, education, human health and social work activities sector does not include any information on Public administration and defence.

Source: Annual SES 2014; Table 16 (Annex).

LFS results show that persons aged 35 years and over tend to be more interested in working more hours (53.3 per cent). This was mainly due to the number of males aged 35 years and over, who tend to be more interested to work additional hours.

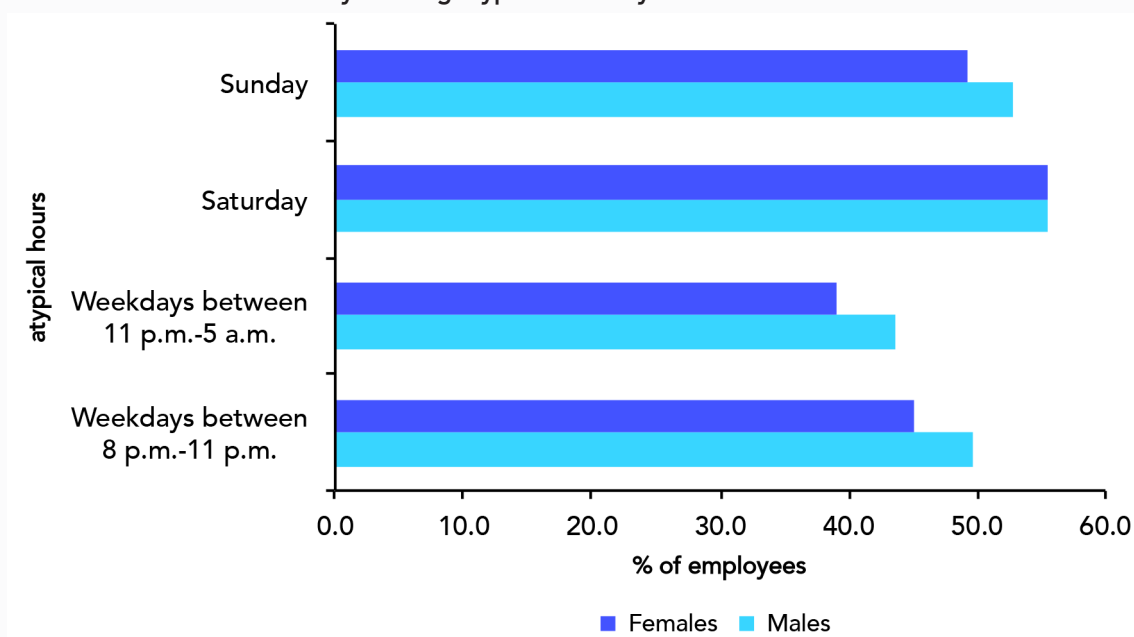
Chart 13. Workers willing to work more hours by sex and age group: 2015



Source: Annual LFS 2015; Table 17 (Annex).

In shift work, the arrangement of working time or work schedules is crucial. Some important aspects of shift work, include night work; weekend work; and various types of 'flexible' working time arrangements (the averaging of working time over extended periods (i.e. more than one week) and similar approaches. These working hours are generally known as atypical working hours. Eurostat (2009)¹ defines people accomplishing atypical working hours as individuals working in the evening (8 p.m. till 11 p.m.), at night (11 p.m. till 5 a.m.), on Saturday, or on Sunday. Moreover, Eurostat (2009)¹ defines working on Saturdays or Sundays as people who usually work on two or more Saturdays or Sundays in a month.

Chart 14. Shift workers usually working atypical hours by sex: 2015



Source: Annual LFS 2015; Table 18 (Annex).

From the chart above, it can be argued that males were more likely to engage in non-standard working hours than females. In this regard, in all types of atypical working hours, males covered the majority of workers. In terms of the distribution among females, LFS data indicated that they were more likely to engage in weekend atypical work given higher propensity of being engaged in the service sectors. On the other hand, males were more drawn to evening and night work and this may be related to the fact that they were usually engaged in the industrial sector (Table 18; Annex).

In addition, results show that most shift workers who were engaged in night hours were employed in *public administration, defence, education, human health and social work activities*. Atypical working hours in the *wholesale, retail, transport and storage, accommodation and food service activities* tends to pick up in the weekend due to persons working on Saturdays in the retail industry but also owing to the accommodation and food service activities which tend to be busier over the weekend. When looking into the predominance of shift work in the manufacturing industry one notes that there is a high share of shift workers engaged in non-day hours and that this share dropped in Saturday and Sunday atypical hours (Table 19; Annex).

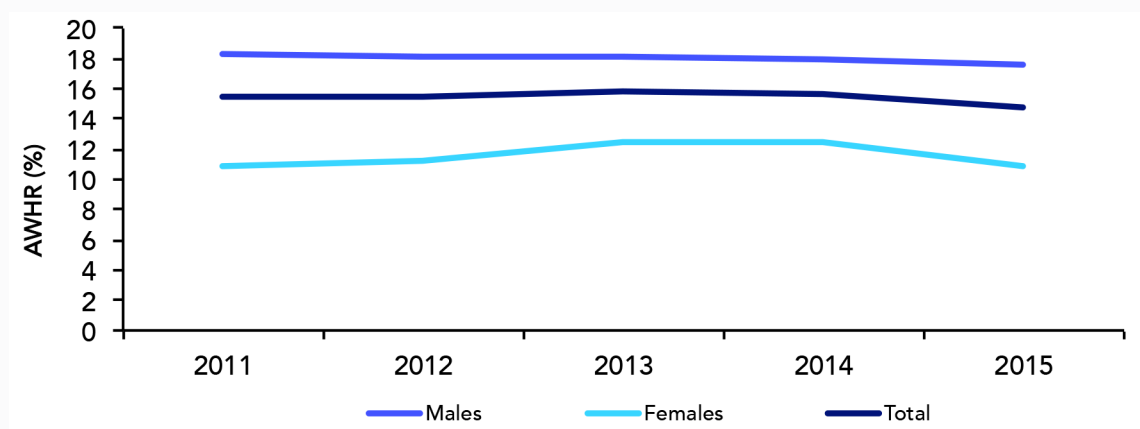
¹ Eurostat (2009), *Youth in Europe - A statistical portrait*, Technical report, Eurostat, European Commission.

Atypical Working Hours Rate (AWHR)

The number of persons working atypical hours has a significant impact on total employment. The AWHR is based on Eurostat's definition of atypical working hours and was used for the KOF YLM Index (Renold, U., et al (2014))¹. This indicator combines shift work with atypical working hours. The AWHR is the average share of employees working on Sunday, at night and on shift basis as a percentage of total employees.

The AWHR over the past 5 years was practically constant but in 2015 a drop of 1 percentage point was registered, coinciding with a drop in female shift workers.

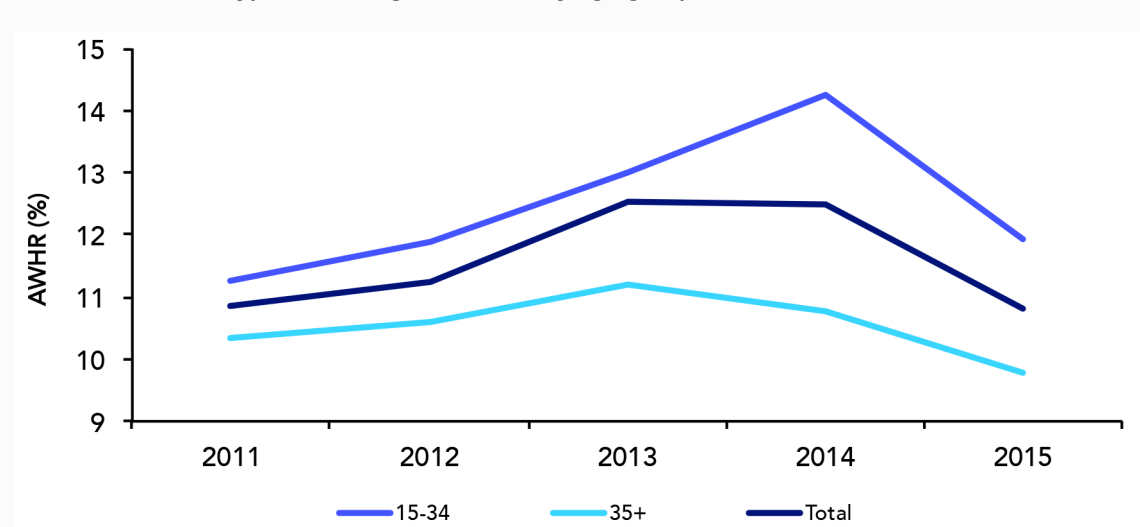
Chart 15. Atypical Working Hours Rate by sex: 2011-2015



Source: Annual LFS; Table 20 (Annex).

A closer look at the female AWHR by age group showed a similar pattern to total female AWHR, with the younger age group being more predisposed to work atypical working hours. This can be further sustained by the fact that the majority of female shift workers were single and between 15 and 34 years of age. (Tables 6 and 20; Annex).

Chart 16. Female Atypical Working Hours Rate by age group and sex: 2011-2015



Source: Annual LFS; Table 20 (Annex).

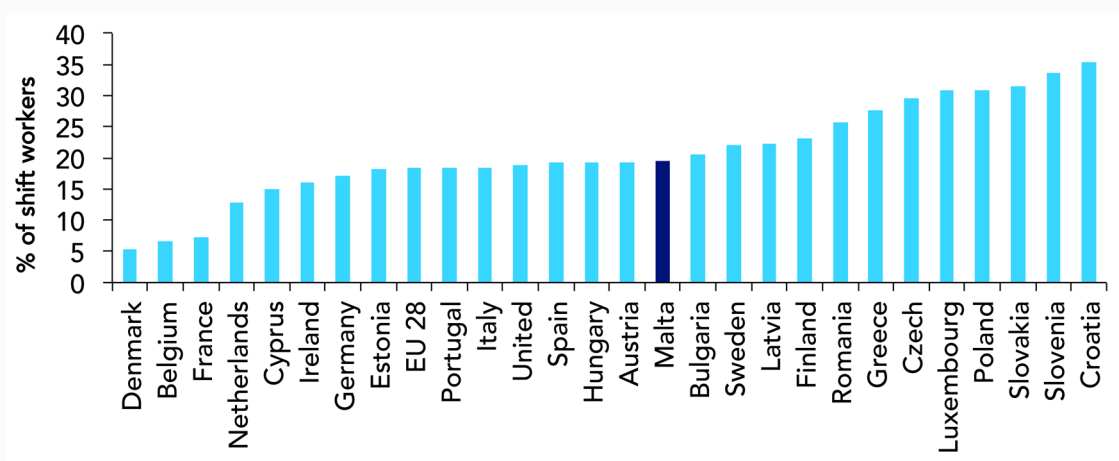
¹ Renold, U., Bolli, T., Egg, M. E., and Pusterla, F. (2014), On the Multiple Dimensions of Youth Labour Markets, KOF Studien, (51).

Presser, H.B., et al (2008, 2)¹ show that both atypical working hours as well as shift work may be beneficial to the employees as it gives them access to more flexible schedules. However, the study indicates that these working arrangements may be detrimental to the employees' social life, health and family duties as well.

LFS data show that the share of shift workers remained relatively constant over the years, despite a decrease in the AWHR between 2014 and 2015. This may imply that other flexible arrangements at the workplace are available without necessarily resorting to shift working arrangements. Figures show that males engaged in more atypical working arrangements when compared to their female counterparts. Whereas the share of males working atypical working hours decreased over five years, the share of females working these hours increased between 2011 and 2014, but then declined in 2015 (Table 20; Annex).

International Comparisons

Chart 17. Percentage of shift workers within European countries: 2015



Source: Eurostat Database 2015; Table 21 (Annex).

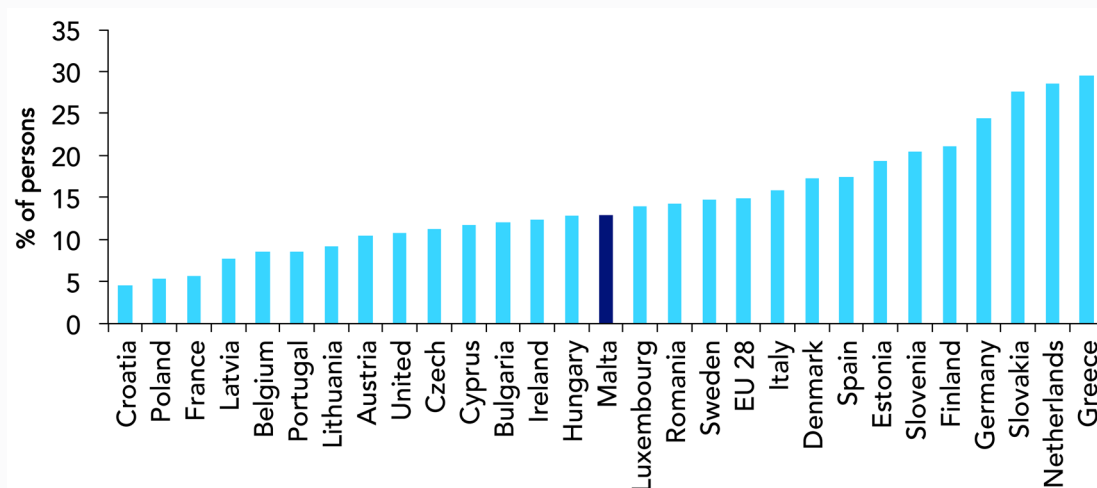
The predominance of shift work within the EU increased by 0.7 percentage points between 2011 and 2015. The highest increase (5.8 percentage points) was recorded in Greece. Belgium, Estonia, Ireland, Romania, Lithuania, Sweden and Malta were the only countries which recorded a decrease in this type of employment arrangement, with Ireland recording the largest decrease of 4.6 percentage points. When comparing all European countries, the lowest share of shift employment was found in Denmark (5.2 per cent), with Croatia having the largest share of shift employment (35.3 per cent) in 2015. Malta registered the 13th highest share of shift employment when compared to the other European countries in 2015 (Table 21; Annex).

¹ Presser, H.B., Gornick, J.C., and Sangeeta, P. (2008, 2), *Monthly Labour Review*, Gender and nonstandard work hours in 12 European countries, pp. 83-103.

For most countries, the increase in shift employment between 2011 and 2015 for both sexes was quite constant. Spain, France and Hungary were the only countries registering an increase in shift employment for males and a decrease for females. Conversely, Germany, Finland and the United Kingdom were the only countries with an increase in female shift employment and a decrease in male shift employment. In addition, the increase in shift employment in the Netherlands was predominantly driven by females (6.3 percentage points) rather than by males (3.0 percentage points) (Annex; Tables 22 and 23).

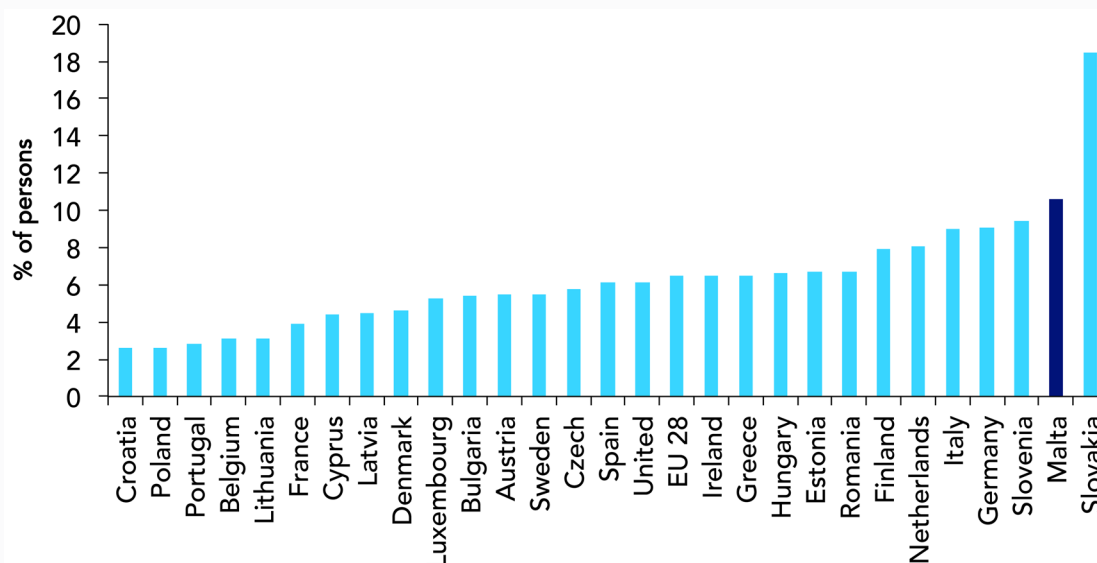
The graphs below show that Malta tends to have a large share of workers working atypical working hours when compared to other European countries.

Chart 18. Percentage of persons USUALLY working in the evening: 2015



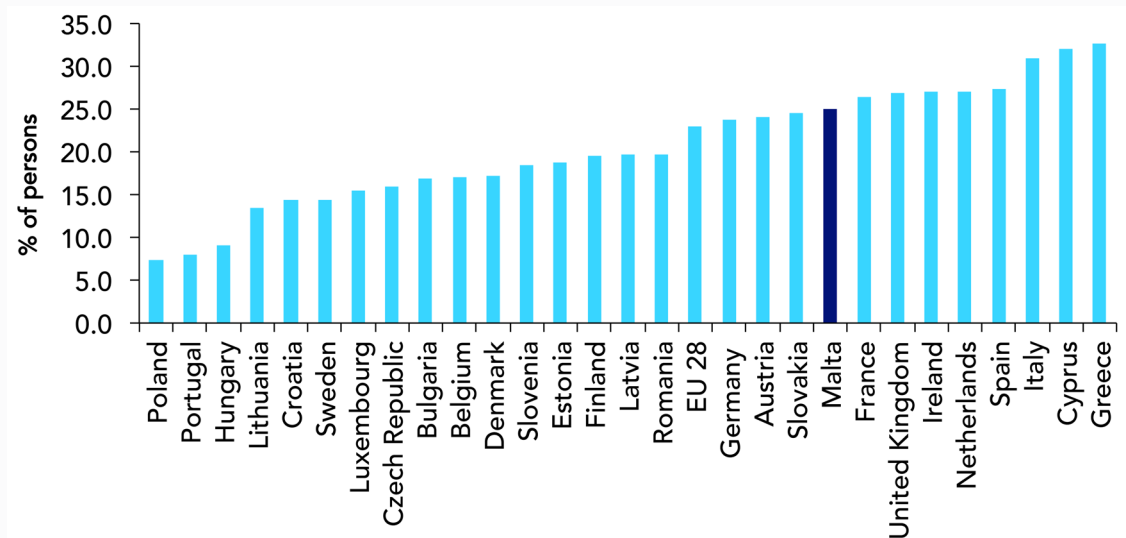
Source: Eurostat Database 2015; Table 24 (Annex).

Chart 19. Percentage of persons USUALLY working at night: 2015



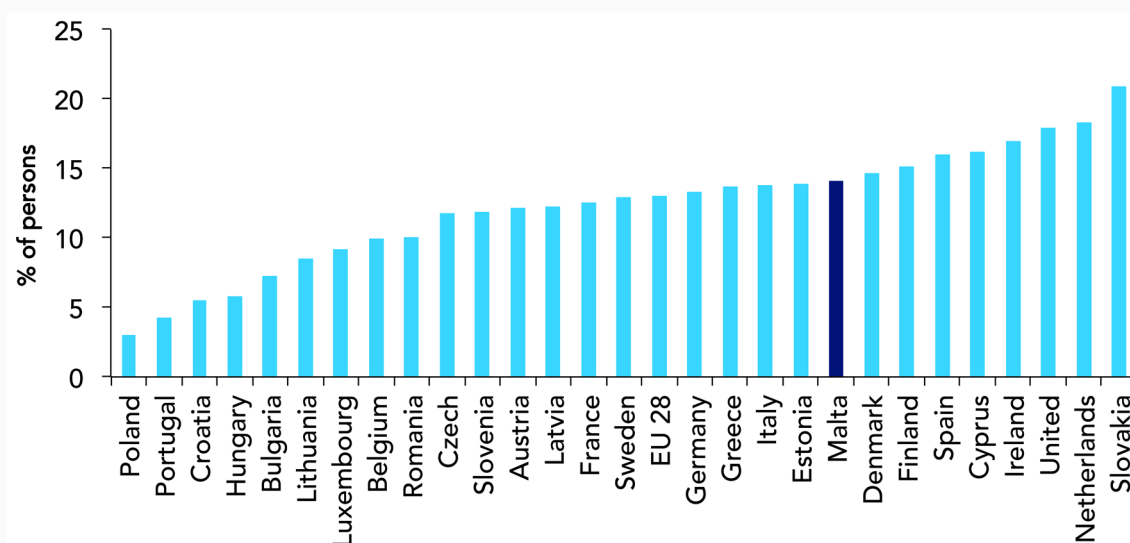
Source: Eurostat Database 2015; Table 24 (Annex).

Chart 20. Percentage of persons USUALLY working Saturdays: 2015



Source: Eurostat Database 2015; Table 24 (Annex).

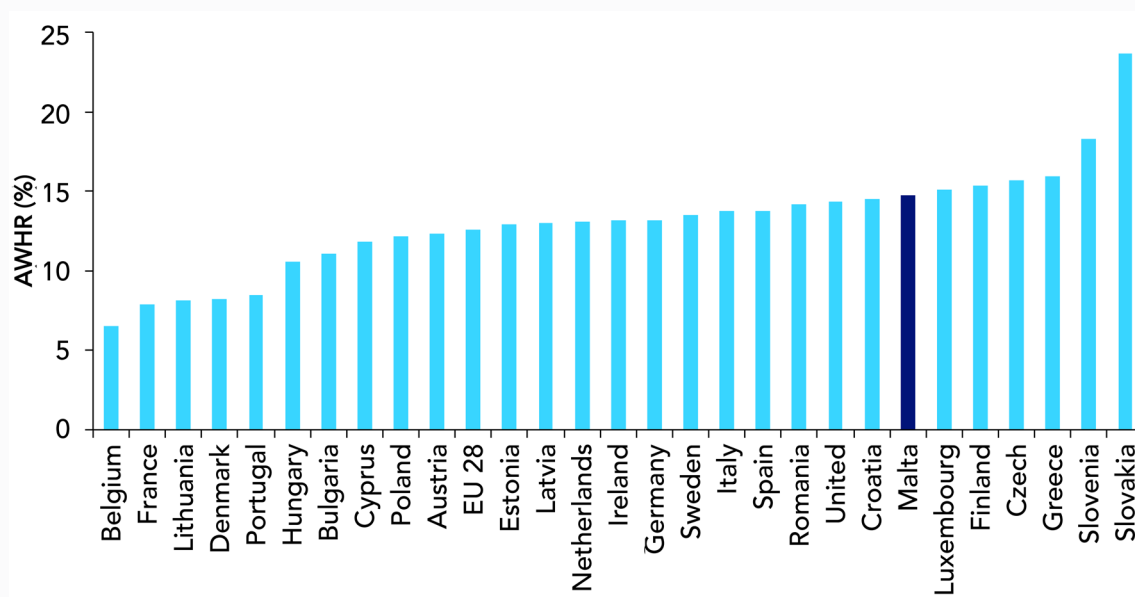
Chart 21. Percentage of persons USUALLY working Sundays: 2015



Source: Eurostat Database 2015; Table 24 (Annex).

From the charts above, Malta scored the second highest share of persons working at night in 2015. In fact, males scored third and females scored second out of all European countries with the highest share of persons working at night. As already stated, this high share may be attributed to the country's large share of employment in the health sector. Furthermore, the percentage of those working in the evening (12.9 per cent) is somewhat in the same level of the percentage of people working at night (10.6 per cent). However, this is not applicable for other countries, where the percentage of persons working at night is relatively lower when compared to the percentage of those working in the evening. With regards to weekend work, Maltese workers occupy a large share with Saturdays preferred to Sundays, in line with the trend observed in the rest of Europe. (Table 24; Annex).

Chart 22. Atypical working hours rate: 2015



Source: Eurostat Database 2015; Table 25 (Annex).

DEFINITIONS AND BACKGROUND

1. Background information

The Labour Force Survey (LFS) is carried out on an ongoing basis using a quarterly gross sample of 3,200 private households. The objective is to have a continuous assessment of labour market trends given that the reference weeks are evenly spread throughout the 13 weeks of the quarter. One-fourth of the sample is made up of households who have been selected to participate in the LFS for the first time. Three-fourths of the quarterly sample is made up of households who were selected to participate in the survey in previous instances, either one quarter before, or one year before, or one year and a quarter before (2-(2)-2). Figures provided in this release refer to persons aged 15 and over and living in private households during the reference period. All criteria used for this survey match international methodologies used by the International Labour Organisation (ILO).

The LFS is designed to satisfy the concepts and definitions as outlined by Eurostat, which is the EU Statistical Agency. This allows the comparability of results with other EU member states and countries following ILO definitions of employment and unemployment. Occupations are classified according to the ISCO - 08 classification (International Standard Classification of Occupations) whereas the economic activity is classified according to NACE Rev. 2 (Nomenclature générale des Activités économiques dans les Communautés Européennes).

2. Definitions used

- **Shift workers:** comprises all employees who work at least 2 out of the 4 atypical working conditions listed below.
- **Employees:** Persons who work for a public or private employer and who receive compensation in the form of wages, salaries, fees, gratuities, payment by results or payment in kind; non-conscripted members of the armed forces are also included. The distinction between employees and self-employed is based on the respondent's own judgement as stated during the interview.
- **Non-day work:** includes those persons who usually work in the evening between 8pm and 11pm or at night between 11pm and 5am.
- **Weekend work:** includes those persons who usually work on Saturdays or Sundays or both
- **Atypical working conditions:** Includes those persons working either non-day work or weekend work
- **Time-related underemployment:** refers to the number of persons having a main job but willing or wishing to work more than the number of hours currently worked in their job.
- **Atypical Working Hours Rate (AWHR):** is based on Eurostat (2009)¹ definition of atypical working hours and was used for the KOF YLM Index (Renold U., et al (2014)². This indicator combined shift work with atypical working hours. For the purpose of this study and as was used in the KOF YLM index, the AWHR includes

¹ Eurostat (2009), *Youth in Europe - A statistical portrait*, Technical report, Eurostat, European Commission.

² Renold, U., Bolli, T., Egg, M. E., and Pusterla, F. (2014), *On the Multiple Dimensions of Youth Labour Markets*, KOF Studien, (51).

people working shifts, at night and on Sundays. Persons working on Saturdays and evening work have been omitted from such an analysis because they are considered less damaging to social life and sleeping patterns. Working on Saturday is excluded because nowadays, an increasing part of employees work on that day. In 2015, the total employees working on Saturday either occasionally (sometimes) or regularly (usually) was 46 per cent. (Table 18; Annex). Such a widespread tendency should be, not considered as "atypical". Similar arguments apply for the exclusion of the parameter describing working in the evening with the additional argument that evening work make it easier for students to combine education and work.

The Atypical Working Hours Rate is hence defined as:

$$\left[\left(\frac{\text{Employees working on Sunday}}{\text{Total Employees}} + \frac{\text{Employees working at night}}{\text{Total Employees}} + \frac{\text{Shift Employees}}{\text{Total Employees}} \right) / 3 \right] * 100$$

3. Statistical tests

All statements in this publication have been statistically tested. The statistical tests used are:

- **Chi square** - Hypothesis tests on contingency tables are based on a statistic called Chi-square. A chi-square test is used to determine whether there is a relationship between two categorical variables. The chi-square test assumes that the expected value for each cell is five or higher. A significant result of this test means that the cells of a contingency table should be interpreted. A non-significant test means that no effects were discovered and chance could explain the observed differences in the cells. In this case, an interpretation of the cell frequencies is not useful.
- **Fisher's exact test** – This test is applied when the expected value for each cell is less than 5 and the chi square cannot be used. The hypothesis tests on contingency tables are similar to that of the Chi-square. A significant result of this test means that the cells of a contingency table should be interpreted. A non-significant test means that no effects were discovered and chance could explain the observed differences in the cells. In this case, an interpretation of the cell frequencies is not useful.
- **Independent sample t test** - The Independent Samples t Test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. The Independent Samples t Test is a parametric test.
- **Mann Whitney test** - Mann-Whitney U test is the alternative test to the independent sample t-test. It is a non-parametric test that is used to compare two population means that come from the same population, it is also used to test whether two population means are equal or not.

- **Kolmogorov Smirnov** – In statistics, the Kolmogorov–Smirnov test (K–S test or KS test) is a nonparametric test of the equality of continuous, one-dimensional probability distributions that can be used to compare a sample with a reference probability distribution (one-sample K–S test). This test is used to test the data for normality.

4. Other information

- Key
 - : - Unreliable - less than 20 sample observations.
 - ^u - Under represented - between 20 and 49 sample observations.
 - (b) – break in time-series.
- Percentage totals may not add up due to rounding.
- Absolute changes between one survey estimate and another must be treated with caution since minor changes (i.e. less than 800 persons) might be the result of sampling error.
- More information is available from the NSO upon written request.
- More information relating to this publication may be accessed at:
 - Statistical Concepts: <http://nso.gov.mt/metadata/concepts.aspx>
 - Metadata: <http://nso.gov.mt/metadata/reports.aspx?id=33>
 - Classification: <http://nso.gov.mt/metadata/classificationdetails.aspx?id=NACE Rev. 2>
 - <http://nso.gov.mt/metadata/classificationdetails.aspx?id=ISCO 2008>
 - <http://nso.gov.mt/metadata/classificationdetails.aspx?id=ISCED%202011>



Annexes

ANNEX 1

Table 1. Distribution of workers by sex

		No.	%
Shift work	Males	21,696	69.4
	Females	9,570	30.6
	Total	31,266	100.0
Non-shift work	Males	71,416	55.5
	Females	57,355	44.5
	Total	128,771	100.0
Total	Males	93,112	58.2
	Females	66,925	41.8
	Total	160,037	100.0

Source: LFS 2015

Table 2. Distribution of shift workers by sex

	2011	2012	2013	2014	2015
Males	20,424	20,764	21,027	20,972	21,696
Females	7,816	8,760	10,313	10,316	9,570
Total	28,240	29,524	31,340	31,288	31,266

Source: LFS 2011-2015

Table 3. Share of shift employees out of total employees by sex

	2011	2012	2013	2014	2015
Sex	%				
Males	22.9	23.3	23.5	22.9	23.3
Females	14.2	15.1	16.6	15.8	14.3
Total	19.6	20.0	20.7	20.0	19.5

Source: LFS 2011-2015

Table 4. Employment growth vs shift employment growth

Growth rates	Males		Females		Total	
	Shift employees	Total employees	Shift employees	Total employees	Shift employees	Total employees
	%					
2012	1.7	-0.1	12.1	5.9	4.5	2.2
2013	1.3	0.2	17.7	7.0	6.2	2.9
2014	-0.3	2.6	0.0	4.7	-0.2	3.4
2015	3.5	1.7	-7.2	2.8	-0.1	2.1

Source: LFS
2012-2015

Table 5. Shift workers by sex and age group

Age group	Males		Females		Total	
	No.	%	No.	%	No.	%
15-24	2,871	13.2	2,314	24.2	5,185	16.6
25-34	5,259	24.2	2,986	31.2	8,245	26.4
35-44	5,192	23.9	1,830	19.1	7,022	22.5
45-54	5,055	23.3	1,924	20.1	6,979	22.3
55+	3,319	15.3	516 ^u	5.4 ^u	3,835	12.3
Total	21,696	100.0	9,570	100.0	31,266	100.0

^u Under represented - between 20 and 49 sample observations
Source: LFS 2015

Table 6. Shift workers by sex and marital status

Marital status	Males		Females		Total	
	No.	%	No.	%	No.	%
Single	8,569	39.5	5,003	52.3	13,572	43.4
Married	11,937	55.0	3,805	39.8	15,742	50.3
Widowed / Divorced/ Legally separated	1,190	5.5	762 ^u	8.0 ^u	1,952	6.2
Total	21,696	100.0	9,570	100.0	31,266	100.0

^u Under represented - between 20 and 49 sample observations
Source: LFS 2015

Table 7. Shift workers by civil status and age group

Age group	Single		Married		Widowed / Divorced/ Legally separated		Total	
	No.	%	No.	%	No.	%	No.	%
15-24	5,121	37.7	:	:	:	:	5,185	16.6
25-44	7,435	54.8	6,981	44.3	851 ^u	43.6 ^u	15,267	48.8
45+	1,016	7.5	8,697	55.2	1,101	56.4	10,814	34.6
Total	13,572	100.0	15,742	100.0	1,952	100.0	31,266	100.0

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Source: LFS 2015

Table 8. Distribution of workers by type of employment and type of contract

	Shift workers		Non-shift workers		Total	
	No.	%	No.	%	No.	%
Full-time job	28,909	92.5	106,403	82.6	135,312	84.6
Part-time job	2,357	7.5	22,368	17.4	24,725	15.4
Total	31,266	100.0	128,771	100.0	160,037	100.0
Permanent work or work on an indefinite contract	28,864	92.3	119,052	92.5	147,916	92.4
Temporary work or work on a definite contract	2,402	7.7	9,719	7.5	12,121	7.6
Total	31,266	100.0	128,771	100.0	160,037	100.0

Source: LFS 2015

Table 9. Distribution of shift workers by sex and type of contract

Type of contract	Males		Females		Total	
	No.	%	No.	%	No.	%
Permanent work or work on an indefinite contract	20,331	93.7	8,533	89.2	28,864	92.3
Temporary work or work on a definite contract	1,365	6.3	1,037	10.8	2,402	7.7
Total	21,696	100.0	9,570	100.0	31,266	100.0

Source: LFS 2015

Table 10. Shift workers by sex and economic activity

Economic activity	Males		Females		Total	
	No.	%	No.	%	No.	%
NACE 1	:	:	:	:	:	:
NACE 2	4,949	22.8	1,575	16.5	6,524	20.9
NACE 3	291 ^u	1.3 ^u	:	:	291 ^u	0.9 ^u
NACE 4	6,716	31.0	2,434	25.4	9,150	29.3
NACE 5	:	:	:	:	497 ^u	1.6 ^u
NACE 6	:	:	:	:	:	:
NACE 7	:	:	:	:	:	:
NACE 8	1,694	7.8	:	:	1,988	6.4
NACE 9	6,438	29.7	4,579	47.8	11,017	35.2
NACE 10	1,055	4.9	:	:	1,403	4.5
Total	21,696	100.0	9,570	100.0	31,266	100.0

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Note: for NACE refer to Annex 2

Source: LFS 2015

Table 11. Shift workers by sex and occupation

Occupation	Males		Females		Total	
	No.	%	No.	%	No.	%
ISCO 0	1,272	5.9	:	:	1,356	4.3
ISCO 1	385 ^u	1.8 ^u	:	:	613 ^u	2.0 ^u
ISCO 2	1,302	6.0	1,323	13.8	2,625	8.4
ISCO 3	4,279	19.7	1,500	15.7	5,779	18.5
ISCO 4	1,714	7.9	841 ^u	8.8 ^u	2,555	8.2
ISCO 5	5,616	25.9	3,517	36.8	9,133	29.2
ISCO 6	:	:	:	:	:	:
ISCO 7	2,006	9.2	:	:	2,140	6.8
ISCO 8	3,329	15.3	1,372	14.3	4,701	15.0
ISCO 9	1,743	8.0	571 ^u	6.0 ^u	2,314	7.4
Total	21,696	100.0	9,570	100.0	31,266	100.0

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Note: for ISCO refer to Annex 2

Source: LFS 2015

Table 12. The average weekly normal hours worked for shift workers by sex and type of employment

Type of employment	Males	Females	Total
	Average hours		
Full-time employment	42.7	42.0	42.5
Part-time employment	24.6	24.3	24.4
Total	41.9	39.6	41.2

Source: LFS 2015

Table 13. Shift workers by sex and type of employment

Sex	Full-time		Part-time		Total	
	No.	%	No.	%	No.	%
Males	20,670	71.5	1,026	43.5	21,696	69.4
Females	8,239	28.5	1,331	56.5	9,570	30.6
Total	28,909	100.0	2,357	100.0	31,266	100.0

Source: LFS 2015

Table 14. The average weekly normal hours worked for shift workers by sex and occupation

Occupation	Males	Females	Total
	Average hours		
ISCO 0	42.6	:	42.7
ISCO 1	45.2 ^u	39.2 ^u	43.0
ISCO 2	48.0	44.9	46.5
ISCO 3	42.0	39.3	41.3
ISCO 4	41.4	38.6 ^u	40.5
ISCO 5	40.6	38.2	39.7
ISCO 6	:	:	:
ISCO 7	41.6	:	41.5
ISCO 8	42.2	39.0	41.3
ISCO 9	39.8	38.4 ^u	39.4
Total	41.9	39.6	41.2

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Note: for ISCO refer to Annex 2

Source: LFS 2015

Table 15. Hours actually worked by shift and non shift workers

Actual hours	Shift workers		Non-shift workers		Total	
	No	%	No	%	No	%
<20	1,485	4.7	16,665	12.9	18,150	11.3
20-29	1,623	5.2	14,153	11.0	15,776	9.9
30-39	3,954	12.6	28,016	21.8	31,970	20.0
40	15,519	49.6	58,154	45.2	73,673	46.0
41-49	5,803	18.6	5,528	4.3	11,331	7.1
50+	2,882	9.2	6,255	4.9	9,137	5.7
Total	31,266	100.0	128,771	100.0	160,037	100.0

Source: LFS 2015

Table 16. The average wage of employees by economic activity (SES 2014)

Economic activity	Non-shift workers	Shift workers
NACE 2	18,210	21,201
NACE 3	17,266	20,584
NACE 4	15,582	23,122
NACE 5	25,438	24,264
NACE 6	28,233	31,047
NACE 8	16,146	23,237
NACE 9	17,845	22,983
NACE 10	22,371	23,047
Total	18,073	22,720

Note: for NACE refer to Annex 2

Source: SES (Structure of Earnings Survey) 2014

Table 17. Workers willing to work more hours by sex and age group

	Age group	Males		Females		Total	
		No.	%	No.	%	No.	%
Shift work	15-34	1,411	42.4	657 ^u	59.6 ^u	2,068	46.7
	35+	1,918	57.6	445 ^u	40.4 ^u	2,363	53.3
	Total	3,329	100.0	1,102	100.0	4,431	100.0
Non-shift work	15-34	3,535	42.0	2,800	55.7	6,335	47.1
	35+	4,874	58.0	2,230	44.3	7,104	52.9
	Total	8,409	100.0	5,030	100.0	13,439	100.0
Total	15-34	4,946	42.1	3,457	56.4	8,403	47.0
	35+	6,792	57.9	2,675	43.6	9,467	53.0
	Total	11,738	100.0	6,132	100.0	17,870	100.0

^u Under represented - between 20 and 49 sample observations

Source: LFS 2015

Table 18. Distribution of workers working atypical hours by sex

			Males		Females		Total	
			No.	%	No.	%	No.	%
Shift workers	WeekDays between 8 p.m. - 11 p.m.	Usually	10,793	49.7	4,306	45.0	15,099	48.3
		Sometimes	7,171	33.1	3,025	31.6	10,196	32.6
		Never	3,732	17.2	2,239	23.4	5,971	19.1
	WeekDays between 11 p.m. - 5 a.m.	Usually	9,447	43.5	3,743	39.1	13,190	42.2
		Sometimes	7,020	32.4	2,667	27.9	9,687	31.0
		Never	5,229	24.1	3,160	33.0	8,389	26.8
	Saturday	Usually	12,053	55.6	5,321	55.6	17,374	55.6
		Sometimes	8,675	40.0	3,822	39.9	12,497	40.0
		Never	968	4.5	:	:	1,395	4.5
	Sunday	Usually	11,457	52.8	4,723	49.4	16,180	51.7
		Sometimes	8,629	39.8	4,051	42.3	12,680	40.6
		Never	1,610	7.4	796 ^u	8.3 ^u	2,406	7.7
Non-shift workers	WeekDays between 8 p.m. - 11 p.m.	Usually	3,879	5.4	1,649	2.9	5,528	4.3
		Sometimes	5,567	7.8	1,917	3.3	7,484	5.8
		Never	61,982	86.8	53,777	93.8	115,759	89.9
	WeekDays between 11 p.m. - 5 a.m.	Usually	2,326	3.3	1,388	2.4	3,714	2.9
		Sometimes	3,749	5.2	939	1.6	4,688	3.6
		Never	65,353	91.5	55,016	95.9	120,369	93.5
	Saturday	Usually	13,024	18.2	9,659	16.8	22,683	17.6
		Sometimes	13,879	19.4	7,209	12.6	21,088	16.4
		Never	44,525	62.3	40,475	70.6	85,000	66.0
	Sunday	Usually	4,151	5.8	2,277	4.0	6,428	5.0
		Sometimes	7,064	9.9	4,231	7.4	11,295	8.8
		Never	60,213	84.3	50,835	88.7	111,048	86.2
Total	WeekDays between 8 p.m. - 11 p.m.	Usually	14,672	15.8	5,955	8.9	20,627	12.9
		Sometimes	12,738	13.7	4,942	7.4	17,680	11.0
		Never	65,714	70.6	56,016	83.7	121,730	76.1
	WeekDays between 11 p.m. - 5 a.m.	Usually	11,773	12.6	5,131	7.7	16,904	10.6
		Sometimes	10,769	11.6	3,606	5.4	14,375	9.0
		Never	70,582	75.8	58,176	86.9	128,758	80.5
	Saturday	Usually	25,077	26.9	14,980	22.4	40,057	25.0
		Sometimes	22,554	24.2	11,031	16.5	33,585	21.0
		Never	45,493	48.9	40,902	61.1	86,395	54.0
	Sunday	Usually	15,608	16.8	7,000	10.5	22,608	14.1
		Sometimes	15,693	16.9	8,282	12.4	23,975	15.0
		Never	61,823	66.4	51,631	77.2	113,454	70.9

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Source: LFS 2015

Table 19. Shift workers working atypical hours by economic activity

Economic activity	Evenings		Night		Saturdays		Sundays	
	No.	%	No.	%	No.	%	No.	%
NACE 1	:	:	:	:	:	:	:	:
NACE 2	3,918	25.9	3,577	27.1	3,012	17.3	2,863	17.7
NACE 3	:	:	:	:	:	:	:	:
NACE 4	4,380	29.0	3,343	25.3	6,123	35.2	5,479	33.9
NACE 5	:	:	:	:	:	:	:	:
NACE 6	:	:	:	:	:	:	:	:
NACE 7	:	:	:	:	:	:	:	:
NACE 8	881	5.8	884	6.7	1,043	6.0	1,006	6.2
NACE 9	4,957	32.8	4,774	36.2	6,033	34.7	5,902	36.5
NACE 10	495 ^u	3.3 ^u	:	:	522 ^u	3.0 ^u	461 ^u	2.8 ^u
Total	15,099	100.0	13,190	100.0	17,374	100.0	16,180	100.0

: Unreliable - less than 20 sample observations

^u Under represented - between 20 and 49 sample observations

Note: for NACE refer to Annex 2

Source: LFS 2015

Table 20. Atypical Working Hours Rate by gender

Year	Males	Females	Total
	15-34 years (%)		
2011	16.7	11.3	14.3
2012	17.7	11.9	15.0
2013	19.9	13.0	16.6
2014	18.7	14.2	16.6
2015	17.2	11.9	14.7
	35 years and over (%)		
2011	19.5	10.4	16.5
2012	18.6	10.6	15.8
2013	17.2	11.2	15.0
2014	17.5	10.8	15.0
2015	17.8	9.8	14.7
	Total (%)		
2011	18.3	10.9	15.5
2012	18.2	11.3	15.5
2013	18.2	12.5	15.9
2014	18.0	12.5	15.7
2015	17.6	10.8	14.7

Source: LFS 2011-2015

Table 21. Employees working shifts as a percentage of the total of employees

Country	2011	2012	2013	2014	2015
	%				
EU 28	17.6	17.7	17.8	18.1	18.3
Belgium	7.5	6.9	6.8	6.9	6.5
Bulgaria	18.7 (b)	19.9	20.9	20.4	20.6
Czech Republic	28.9 (b)	27.9	28.4	28.6	29.5
Denmark	3.8	5.0	4.8	5.1	5.2
Germany	17.2	17.3 (b)	16.6	16.7	17.2
Estonia	19.2	17.6	17.2	19.3	18.2
Ireland	20.6	18.2	17.3	16.3	16.0
Greece	21.9	24.7	26.1	25.7	27.7
Spain	18.2	18.6	19.1	18.9	19.2
France	7.3	6.8	6.9	7.2 (b)	7.2
Croatia	34.5	34.5	35.0	34.4 (b)	35.3
Italy	16.8	17.9	17.8	18.3	18.5
Cyprus	10.6	11.5	12.4	13.5	14.9
Latvia	21.4	21.9	22.3	22.2	22.2
Lithuania	15.7	16.1	16.5	16.3	12.8
Luxembourg	13.3	12.0	12.9	15.4	30.8 (b)
Hungary	19.0	18.6	19.0	19.6	19.2
Malta	19.6	20.0	20.7	20.0	19.5
Netherlands	8.3	8.1	10.4	12.7	12.9
Austria	18.6	18.9	18.8	19.2	19.3
Poland	29.9	30.3	30.5	30.8	30.8
Portugal	16.1 (b)	17.7	18.5	18.2	18.3
Romania	27.4	26.8	26.7	27.0	25.8
Slovenia	31.8	31.2	33.3	33.0	33.6
Slovakia	29.9 (b)	31.0	31.5	30.8	31.6
Finland	22.5	23.1	22.2	23.7	23.1
Sweden	22.8	22.5	22.3	22.2	22.0
United Kingdom	18.7	18.7	18.8	18.9	18.9

(b) break in time series

Source: Eurostat 2015

Table 22. Male employees working shifts as a percentage of the total male employees

Country	2011	2012	2013	2014	2015
	%				
EU 28	18.8	19.0	19.1	19.3	19.5
Belgium	9.4	8.6	8.5	8.7	8.2
Bulgaria	19.1 (b)	21.6	22.3	21.6	21.3
Czech Republic	29.2 (b)	27.9	28.3	29.0	30.0
Denmark	3.7	4.6	4.4	4.7	4.6
Germany	19.0	19.1 (b)	18.2	18.3	18.7
Estonia	17.5	15.9	14.7	16.7	15.7
Ireland	23.6	20.6	19.3	18.4	17.8
Greece	24.2	27.5	28.5	27.9	29.8
Spain	18.7	20.1	20.4	20.4	20.7
France	8.8	8.2	8.4	8.9 (b)	9.1
Croatia	35.6	35.0	34.9	36.4 (b)	35.6
Italy	18.1	19.0	19.0	19.5	19.5
Cyprus	10.6	11.3	12.5	13.8	15.0
Latvia	21.1	22.1	21.9	21.3	22.1
Lithuania	15.8	16.3	15.4	14.9	12.8
Luxembourg	13.7	12.8	13.0	16.8	31.0 (b)
Hungary	18.4	18.4	18.7	19.6	19.5
Malta	22.9	23.3	23.6	22.9	23.3
Netherlands	9.5	8.9	10.9	12.4	12.5
Austria	20.0	19.8	19.9	20.3	20.0
Poland	31.0	31.3	31.6	31.9	31.5
Portugal	16.4 (b)	17.8	19.0	19.2	19.0
Romania	26.3	25.7	25.2	25.6	25.3
Slovenia	31.5	31.2	33.3	32.6	33.0
Slovakia	31.6 (b)	33.3	33.6	32.9	34.7
Finland	19.6	19.7	18.9	20.4	19.5
Sweden	20.1	20.1	19.9	20.2	19.9
United Kingdom	21.2	20.9	21.5	21.1	20.8
Iceland	23.9	26.1	25.0	27.0	26.7
Norway	19.7	19.6	20.9	20.2	21.3
Switzerland	13.5	13.4	13.8	13.4	13.7

(b) break in time series

Source: Eurostat 2011-2015

Table 23. Female employees working shifts as a percentage of the total female employees

Country	2011	2012	2013	2014	2015
	%				
EU 28	16.2	16.3	16.4	16.7	17.0
Belgium	5.4	5.0	5.0	5.0	4.7
Bulgaria	18.4 (b)	18.2	19.4	19.2	19.9
Czech Republic	28.6 (b)	27.9	28.6	28.1	28.9
Denmark	3.9	5.5	5.3	5.5	5.8
Germany	15.3	15.4 (b)	14.8	15.0	15.6
Estonia	20.9	19.2	19.5	21.8	20.7
Ireland	17.7	15.9	15.4	14.2	14.1
Greece	19.0	21.3	23.1	23.0	25.3
Spain	17.6	17.0	17.7	17.2	17.5
France	5.7	5.5	5.4	5.4 (b)	5.4
Croatia	33.2	34.0	35.1	32.2 (b)	35.0
Italy	15.2	16.5	16.3	16.8	17.2
Cyprus	10.5	11.7	12.3	13.2	14.7
Latvia	21.7	21.8	22.7	23.1	22.3
Lithuania	15.6	15.9	17.5	17.6	12.7
Luxembourg	12.7	11.0	12.7	13.6	30.5 (b)
Hungary	19.5	18.9	19.3	19.6	18.9
Malta	14.2	15.1	16.6	15.8	14.3
Netherlands	7.1	7.2	9.8	13.1	13.4
Austria	17.1	18.1	17.5	17.9	18.5
Poland	28.5	29.2	29.2	29.6	30.0
Portugal	15.9 (b)	17.5	18.1	17.2	17.7
Romania	28.7	28.1	28.5	28.9	26.5
Slovenia	32.2	31.1	33.4	33.4	34.4
Slovakia	28.1 (b)	28.3	29.2	28.5	28.1
Finland	25.3	26.3	25.4	26.7	26.6
Sweden	25.5	25.0	24.7	24.3	24.2
United Kingdom	16.1	16.4	16.2	16.7	16.9
Iceland	25.4	24.5	26.1	26.5	26.8
Norway	26.4	27.7	27.8	27.4	26.9
Switzerland	15.9	16.9	17.0	17.1	17.3

(b) break in time series

Source: Eurostat 2011-2015.

Table 24. Percentage of persons USUALLY working Atypical hours by country

Country	Saturdays	Sundays	Night	Evenings
	%			
EU 28	22.9	13.0	6.5	14.9
Belgium	17.0	9.9	3.1	8.6
Bulgaria	16.9	7.3	5.4	12.0
Czech Republic	15.9	11.8	5.8	11.2
Denmark	17.1	14.7	4.6	17.3
Germany	23.7	13.3	9.1	24.5
Estonia	18.8	13.9	6.7	19.3
Ireland	27.0	17.0	6.5	12.3
Greece	32.6	13.7	6.5	29.5
Spain	27.3	16.0	6.1	17.5
France	26.4	12.5	3.9	5.6
Croatia	14.4	5.5	2.6	4.6
Italy	31.0	13.8	9.0	15.8
Cyprus	32.0	16.2	4.4	11.7
Latvia	19.7	12.3	4.5	7.7
Lithuania	13.5	8.5	3.1	9.1
Luxembourg	15.4	9.2	5.3	14.0
Hungary	9.0	5.8	6.6	12.9
Malta	25.0	14.1	10.6	12.9
Netherlands	27.0	18.3	8.1	28.6
Austria	24.1	12.2	5.5	10.4
Poland	7.3	3.0	2.6	5.4
Portugal	7.9	4.3	2.8	8.6
Romania	19.7	10.0	6.7	14.2
Slovenia	18.4	11.9	9.4	20.4
Slovakia	24.5	20.9	18.5	27.6
Finland	19.5	15.1	7.9	21.1
Sweden	14.4	12.9	5.5	14.8
United Kingdom	26.9	17.9	6.1	10.7

Source: Eurostat 2015

Table 25. Atypical Working Hours Rate by country

Country	ATWR (%)
EU 28	14.1
Belgium	10.0
Bulgaria	9.9
Czech Republic	11.2
Denmark	12.1
Germany	15.4
Estonia	13.1
Ireland	16.8
Greece	17.6
Spain	16.5
France	14.3
Croatia	7.5
Italy	17.9
Cyprus	17.5
Latvia	12.2
Lithuania	8.4
Luxembourg	10.0
Hungary	7.1
Malta	16.6
Netherlands	17.8
Austria	13.9
Poland	4.3
Portugal	5.0
Romania	12.1
Slovenia	13.2
Slovakia	21.3
Finland	14.2
Sweden	10.9
United Kingdom	17.0

Source: Eurostat 2015.

ANNEX 2

Economic Activity- NACE Rev. 2 (Nomenclature générale des Activités économiques dans les Communautés Européennes)

Agriculture, forestry and fishing	NACE 1
Manufacturing, mining and quarrying and other industry	NACE 2
Construction	NACE 3
Wholesale and retail trade, transportation and storage, accommodation and food service activities	NACE 4
Information and communication	NACE 5
Financial and insurance activities	NACE 6
Real estate activities	NACE 7
Professional, scientific, technical, administration and support service activities	NACE 8
Public administration, defence, education, human health and social work activities	NACE 9
Other services	NACE 10

Occupation- ISCO - 08 (International Standard Classification of Occupations)

Armed Forces	ISCO 0
Managers	ISCO 1
Professionals	ISCO 2
Technicians and associate professionals	ISCO 3
Clerical support workers	ISCO 4
Service and sales workers	ISCO 5
Skilled agricultural, forestry and fishery workers	ISCO 6
Craft and related trade workers	ISCO 7
Plant and machine operators and assemblers	ISCO 8
Elementary occupations	ISCO 9

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