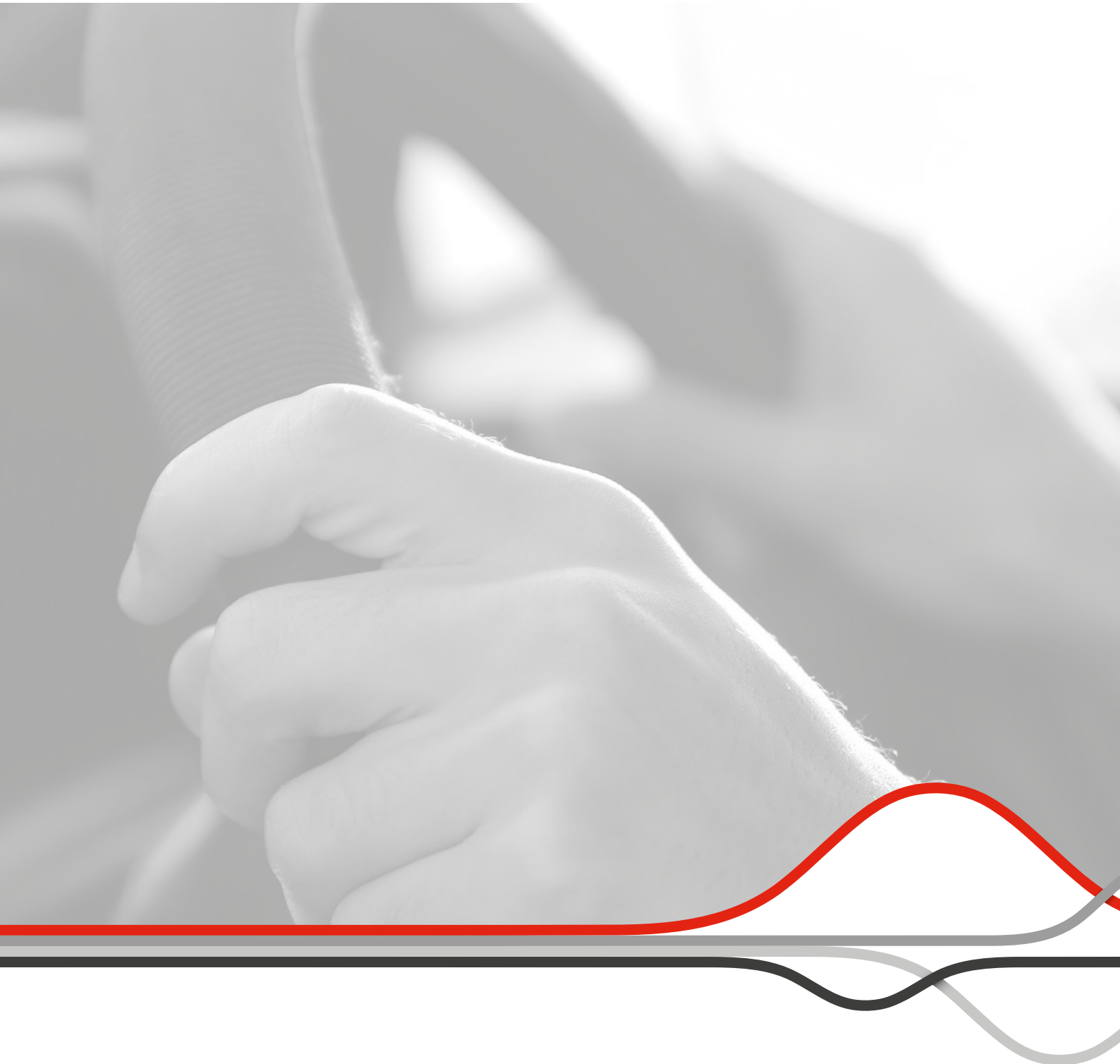


FTA Skills Shortage Report

An independent analysis of professional drivers
and other job roles in the UK logistics sector



July 2017



Contents

Selected Key Indicators	4
Report Summary.....	5
Employment in UK Logistics.....	6
Slowdown in Logistics Job Creation.....	7
EU Nationals in Key Logistics Occupations	7
EU Nationals in Logistics Post-Referendum	8
Logistics Occupations: Comparison of Job Shortage Rankings.....	9
LGV Drivers: Employment Statistics	10
Driver Numbers	10
LGV Driver Claimant Count.....	11
LGV Driver Employment Status	11
LGV Driver Job Retention	13
Driver Pay and Conditions	13
Gross Weekly Pay	13
Measures of Working Hours.....	14
LGV Driver Age: The Average has Started to Decrease	15
Average Age for LGV Drivers	15
LGV Driver Age Compared to General Population	15
Gender	16
New Entrants and Test Pass Rates	16
Initial Qualification	16
LGV Driver Apprenticeships.....	17
LGV Pass Rate	18
Age of Test Takers	19
Gender of Test Takers	19
Appendix: The Job Shortage Ranking Measure.....	20

Selected Key Indicators

Indicators	2014				2015				2016				Δ%***
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
LGV drivers													
Total LGV drivers in employment (thousands)	290	287	293	284	288	299	286	298	299	315	330	333	11% 😊
Driver number index (Q4 2014 = 1.00)	1.02	1.01	1.03	1.00	1.01	1.05	1.01	1.05	1.05	1.11	1.16	1.17	11% 😊
Average age of LGV driver	48.1	48.0	48.7	48.8	48.2	48.0	48.0	48.2	48.1	47.9	47.9	47.7	-1% 😊
Number of EU LGV drivers in employment (thousands)	23	19	21	22	25	25	32	34	29	32	40	43	26% 😊
Percentage of LGV drivers who are EU nationals	8%	7%	7%	8%	9%	8%	11%	11%	10%	10%	12%	13%	😊
Gross hourly pay	£10.49	£9.54	£9.67	£10.00	£9.94	£10.01	£10.42	£10.23	£10.78	£10.70	£10.63	£10.26	0.2% 😊
Number of drivers claiming jobseekers allowance*	3,003	2,187	1,568	1,362	1,317	1,053	857	730	788	627	540	500	-32% 😊
Number of LGV practical tests taken	11,850	8,332	12,929	14,129	15,481	16,819	17,563	17,286	18,565	19,819	20,154	19,085	10% 😊
Number of practical tests passed	6,527	4,494	7,178	7,930	8,615	9,126	9,771	9,693	10,410	11,076	11,308	10,849	12% 😊
Driver CPC initial qualification	5,583	5,869	7,549	8,767	7,840	8,117	8,978	9,748	9,772	10,358	9,265	9,754	.06% 😊
Other selected logistics occupations													
Total transport managers and directors in employment (thousands)	71	70	77	82	82	79	79	74	83	80	80	87	18% 😊
Total van drivers in employment (thousands)	199	201	205	211	200	205	215	240	241	251	254	259	8% 😊
Number of EU van drivers in employment (thousands)	16	17	19	17	17	20	21	31	28	22	24	22	-41% 😞
Percentage of van drivers who are EU nationals	8.0%	8.5%	9.3%	8.1%	8.5%	9.8%	9.8%	12.9%	11.6%	8.8%	9.4%	8.5%	😞
Total forklift drivers in employment (thousands)	95	104	102	102	103	93	83	91	92	97	101	87	-4% 😞
Number of EU forklift drivers in employment (thousands)	12	13	15	17	22	16	14	21	23	20	13	16	-24% 😞
Percentage of forklift drivers who are EU nationals	12.6%	12.5%	14.7%	16.7%	21.4%	17.2%	16.9%	23.1%	25.0%	20.6%	12.9%	18.4%	😞

* Figures taken at midpoint of each quarter

** Latest year-on-year percentage change

Report Summary

1. Job creation in the logistics sector has slowed sharply as the number of jobs in logistics remains at around 2.5 million.
2. LGV and van driver numbers have, however, both increased year-on-year, although there have been falls in postal and courier workers.
3. Over the last four years there has been a steady increase of EU nationals arriving in the UK for the first time to join the workforce, however the logistics industry has seen a small reversal of this trend in Q4 2016.
4. A comparative job shortage measure shows that among managerial and administrative logistics occupations, **managers in transport** rank as the most severe for job shortage. For non-managerial/administrative roles, drivers demonstrate the highest shortage scores, with **van drivers** in particular demand.
5. In Q4 2016 the average age of an LGV driver was 47.7 years (down from 48.2 a year earlier). This decrease reverses the trend observed over the previous 15 years, which saw a steady increase in average driver age, from 45.3 years back in 2001.
6. Around 64% of LGV drivers are 45 years or older. Only 2% of employed drivers are under 25 whereas over 12% of the total employed population (of working age) is under 25.
7. The number of LGV drivers claiming Jobseeker's Allowance in Q4 2016 was 500. This was down from 620 in Q2 2016 and 715 in Q4 2015. The current LGV drivers' claimant count is 96.7% lower than the peak of 15,255 in March 2009 during the economic downturn, almost double that of the UK as a whole in the same period.

Note: In recent years the truck and coach licensing category names have changed. HGV (Heavy Goods Vehicle) is now LGV (Large Goods Vehicle). For consistency in the document the term LGV is used.

Employment in UK Logistics

Table 1 provides estimates of employment in UK logistics in Q4 2016.¹ The total number of people employed in logistics occupations and/or working for companies in the logistics sector is currently around 2.5 million.

Table 1: Year-on-year comparison of employment in logistics: numbers and percentages employed (Q4 2016 with Q4 2015)

Logistics occupations	Employment (thousands)*				By nationality (thousands)*			
	Logistics sector	All other sectors	Total	%	UK	EU	EU %	Other
Purchasing managers and directors	7 (5)	49 (47)	56 (52)	2.2% (2.1%)	53 (48)	1 (1)	1.8% (1.9%)	2 (3)
Managers and directors in transport and distribution	36 (33)	51 (41)	87 (74)	3.4% (3.0%)	84 (69)	3 (3)	3.4% (4.1%)	0 (2)
Managers and directors in storage and warehousing	35 (27)	69 (62)	104 (89)	4.1% (3.6%)	91 (86)	9 (2)	8.7% (2.2%)	4 (1)
Importers and exporters	9 (4)	2 (4)	11 (8)	0.4% (0.3%)	7 (6)	3 (1)	27.3% (12.5%)	1 (1)
Transport and distribution clerks and assistants	22 (23)	30 (44)	52 (67)	2.1% (2.7%)	48 (62)	2 (4)	3.8% (6.0%)	2 (1)
Large goods vehicle drivers	207 (194)	126 (104)	333 (298)	13.2% (11.9%)	290 (260)	43 (34)	12.9% (11.4%)	0 (4)
Van drivers	107 (102)	152 (138)	259 (240)	10.2% (9.6%)	227 (202)	22 (31)	8.5% (12.9%)	10 (7)
Forklift truck drivers	35 (30)	52 (61)	87 (91)	3.4% (3.6%)	66 (66)	16 (21)	18.4% (23.1%)	5 (4)
Postal workers, mail sorters, messengers and couriers	126 (156)	28 (30)	154 (186)	6.1% (7.4%)	141 (168)	7 (12)	4.5% (6.5%)	6 (6)
Elementary storage occupations	186 (179)	253 (257)	439 (436)	17.4% (17.4%)	306 (348)	113 (72)	25.7% (16.5%)	20 (16)
Other occupations within the logistics sector	948 (959)	N/A	948 (959)	37.5% (38.4%)	834 (840)	92 (84)	9.7% (8.8%)	22 (35)
Total	1,718 (1,712)	812 (788)	2,530 (2,500)	100.0%	2,147 (2,155)	311 (265)	12.3% (10.6%)	72 (80)

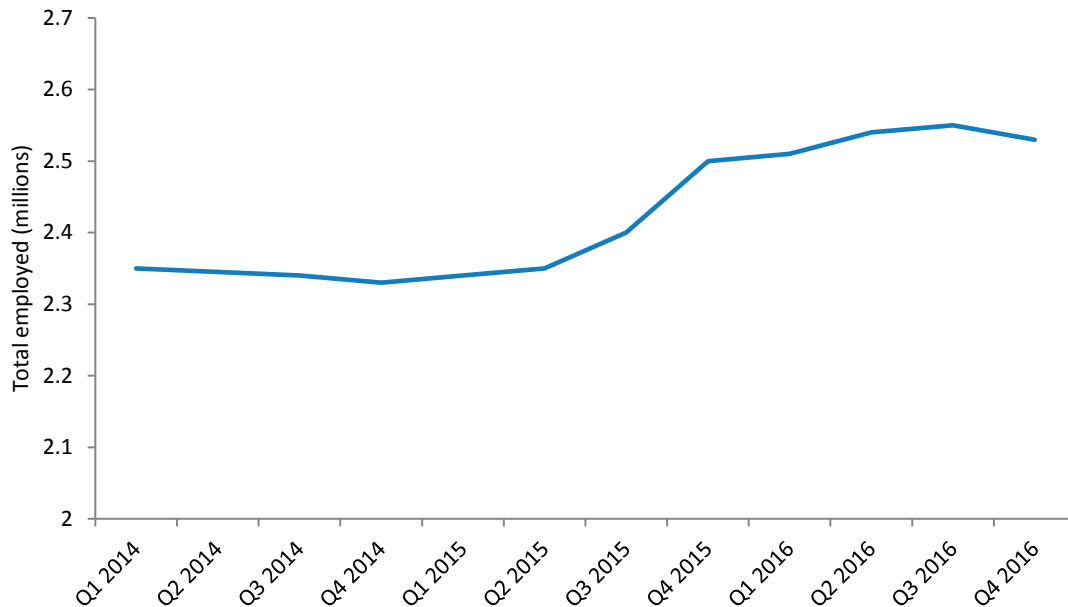
*Numbers in round brackets are for Q4 2015, provided for comparison

¹ Source: Repgraph analysis of ONS Labour Force Survey for Q4, 2016

Slowdown in Logistics Job Creation

In the year from Q4 2015 to Q4 2016 the logistics sector added an estimated 6,000 jobs but when 'all other sectors' are included, employment in logistics increased by around 30,000. Nonetheless, this represents a sharp slowdown in job creation compared to Q2 2016, when employment in logistics increased 190,000 year-on-year.²

Figure 1: Total employment in logistics³



The LGV driver population expanded by 35,000 (5%), helping to reduce the driver deficit. The van driver population continued to increase at a steady pace. In Q4 2015, van drivers accounted for 240,000 jobs and this went up by 8% year-on-year; an increase of 19,000 jobs. Around 12% of van drivers are non-UK nationals.

EU Nationals in Key Logistics Occupations

EU nationals now represent an estimated 12.9% of the LGV driver population. The majority come from Eastern Europe and in particular Poland, Romania and Bulgaria. EU nationals account for 8.5% of the logistics van driver population or 22,000 jobs, however this proportion is down quite dramatically from 31,000 or 12.9% a year earlier. A similar situation can be seen for forklift drivers. In Q4 2015 EU nationals accounted for 21,000 (or 23.1%) of forklift driver jobs. In Q4 2016 the count had fallen to 16,000 (or 18.4%) forklift driver jobs, although there has been a small reduction in the total number of forklift driver jobs (down by 4%). By way of contrast, elementary storage occupations added only 3,000 jobs, however the number of EU workers increased from 72,000 (16.5%) to 113,000 (25.7%).

It is not clear why the proportion of EU nationals has fallen for some vocations, but risen for others, however it is possible that there are fewer skilled and semi-skilled EU nationals coming to the UK to work in logistics since the referendum result in June 2016. The following section analyses the current working population and the influence of new arrivals from the EU.

² The Driver Shortage: Issues and trends. RepGraph and FTA, September 2016

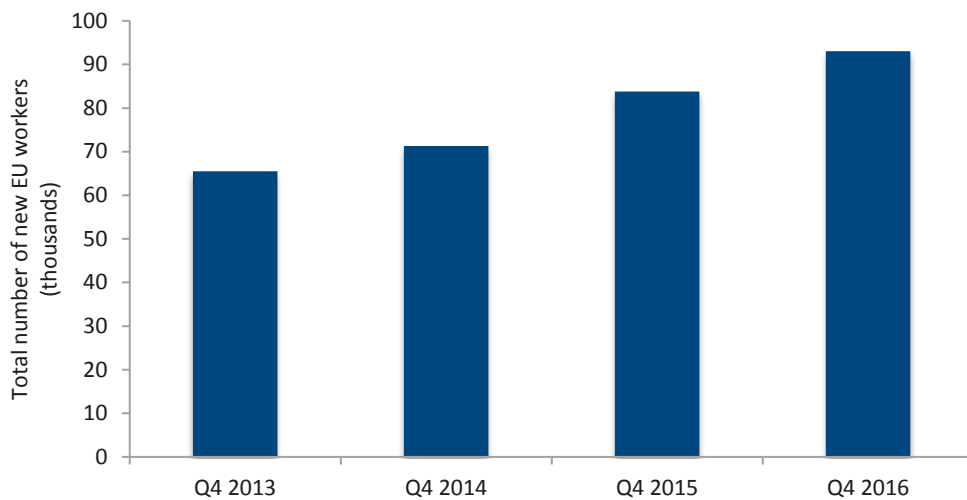
³ RepGraph analysis of non-seasonally adjusted ONS quarterly Labour Force Survey data

EU Nationals in Logistics Post-Referendum

In the February 2017 UK Labour Market Statistical Bulletin, the ONS noted that the total number of EU nationals in the UK labour market in Q4 2016 was lower than for the previous quarter, falling from 2.26 million in Q3 2016 to 2.24 million by Q4 2016. It is unclear from these statistics to what extent the reduction was due to fewer EU citizens arriving in the UK to work or more moving away from the UK following the referendum in June.

The following graph shows estimates of the number of recently arrived EU workers for Q4 over the last four years.⁴ In Q4 2016 there were around 93,000 newly arrived EU workers in the UK - an increase of 11% compared to Q4 2015.

Figure 2: New EU workers entering the UK workforce over the last four years⁵

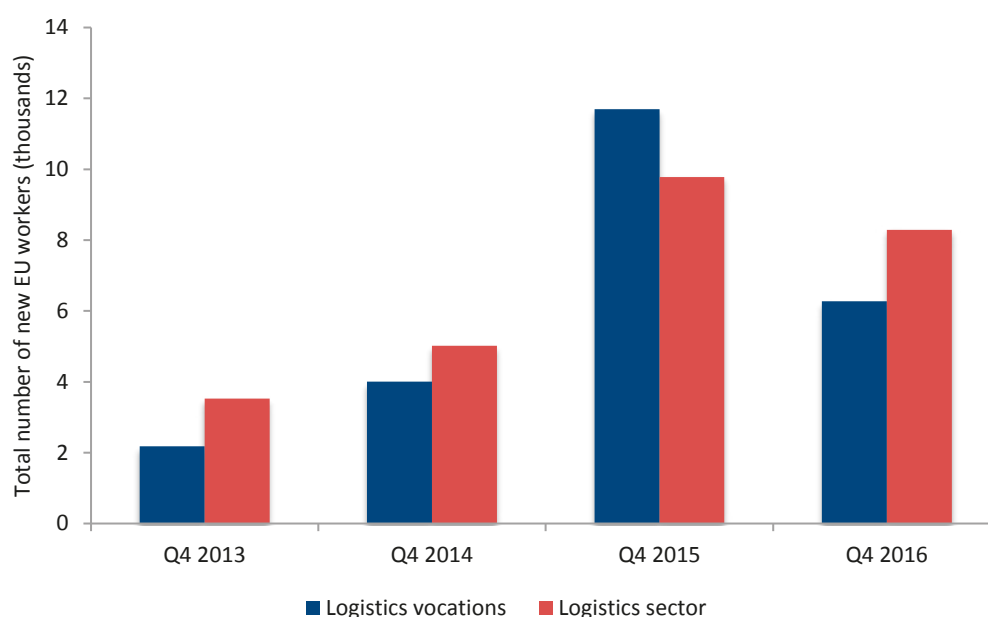


It is clear that despite the small fall in total EU worker numbers in the quarter to Q4 2016, the number of newly arrived workers from the EU has increased steadily in the last few years.

⁴ Source: RepGraph analysis of ONS Labour Force Surveys for Q4, 2013 - 2016

⁵ New arrivals are defined as those who stated that they had arrived in the UK within that calendar year

Figure 3: New EU workers entering the logistics workforce over the last four years



By contrast, the number of EU nationals arriving in the UK to work in the logistics sector or in logistics vocations both fell in Q4 2016 by 15% and 46% respectively. Although the numbers involved are a small proportion of the total logistics workforce, this may nevertheless be an early indication that certain areas are beginning to experience a reduction in the supply of labour from the EU, post-referendum. This is reflected in Table 1, which indicates that EU van drivers, forklift drivers and couriers now form a shrinking proportion of their respective occupations.

Logistics Occupations: Comparison of Job Shortage Rankings

A higher score indicates a relatively more acute job shortage.

Table 2 shows the job shortage scores and constituent measures for the main logistics occupations. A higher score indicates a relatively more acute job shortage.

Table 2: Overall job shortage rankings for logistics occupation categories

Logistics occupations	Job shortage score ⁶	Job shortage measures (Q4 2013 to Q4 2016)		
		Δ job number	Δ average pay	Δ claimant count
<i>Vets (Highest Job shortage score)</i>	<i>988</i>	<i>54%</i>	<i>48%</i>	<i>-100%</i>
Importers and exporters	885	28%	35%	-88%
Managers and directors in transport and distribution	728	21%	14%	-86%
Van drivers	644	29%	12%	-82%
Managers and directors in storage and warehousing	608	1%	7%	-87%
Transport and distribution clerks and assistants	572	-25%	33%	-86%
Fork-Lift truck drivers	539	-1%	18%	-82%
Large Goods Vehicle drivers	526	11%	1%	-83%
Elementary storage occupations	440	4%	15%	-74%
Postal workers, mail sorters, messengers and couriers	263	-21%	4%	-75%
<i>Traffic wardens (lowest job shortage score)</i>	<i>6</i>	<i>-72%</i>	<i>0%</i>	<i>+160%</i>

⁶ Across all occupation categories, veterinarians ranked the highest with a shortage score of 988 and traffic wardens ranked the lowest with a shortage score of 6

Overall, importers and exporters are ranked as having the greatest job shortage score although it is worth noting that this occupational category accounts for a very small percentage of jobs in logistics (0.4%).

For managerial and administrative occupations, the transport managers and directors category has the highest job shortage score. This highlights potential issues in recruiting and retaining transport managers, which is also evident in the steady downward trend in the number of issued O licences at the same time as the number of LGVs on O licences has increased.

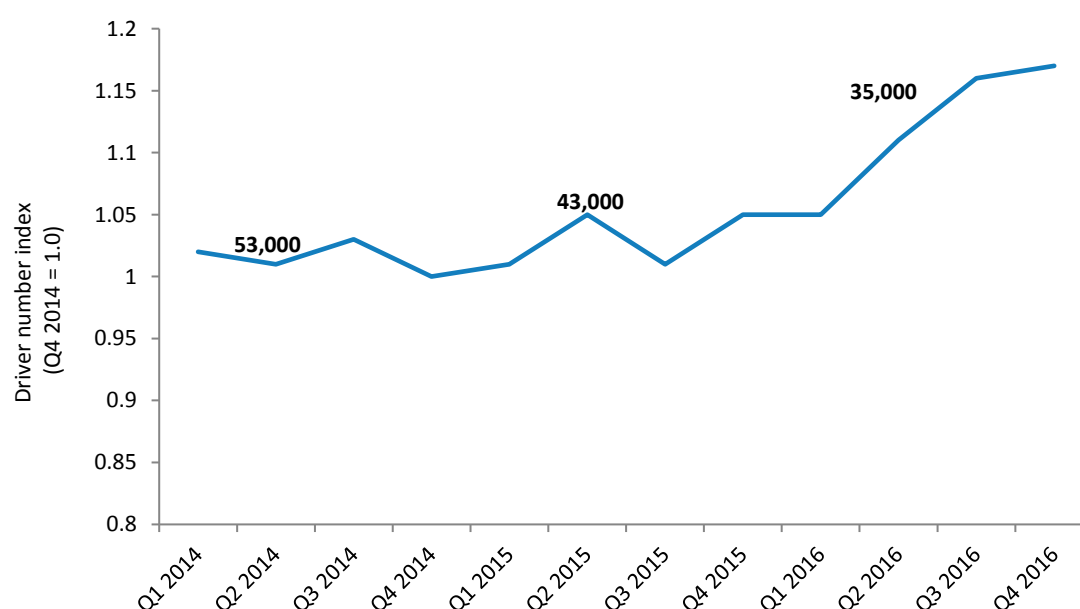
Among the non-managerial/non-administrative occupation categories, drivers had the higher job shortage scores. Van drivers scored the highest, followed by forklift then large goods vehicle. The relatively high scoring for van and forklift drivers is of particular concern given that these occupations now appear to be experiencing a downturn in the number of EU nationals employed in these occupations and may therefore be more vulnerable to labour shortages in the future.

LGV Drivers: Employment Statistics

Driver Numbers

As the economy emerged from recession, many companies reported shortages in the supply of LGV drivers. This issue has persisted, however there are signs that the shortage has diminished. The following graph shows the trend for the estimated driver shortage and for the number of LGV drivers as a proportion of the total number of jobs from Q4 2014 to Q4 2016:⁷

Figure 4: Driver number index and driver shortage estimates



The number of LGV drivers has continued to rise and conversely it is anticipated that the driver shortage will persist in its downward trajectory.

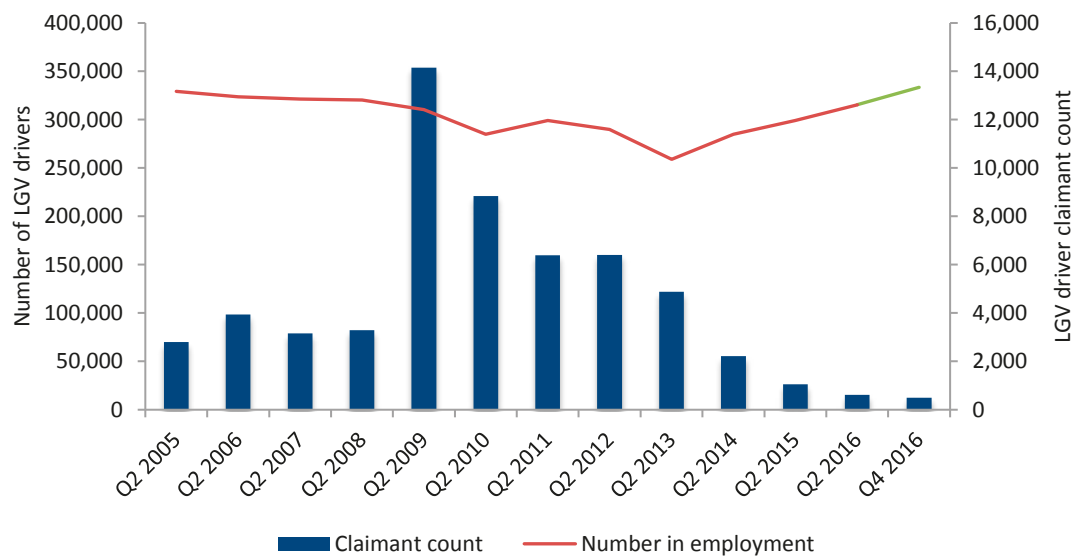
⁷ Source: ONS Quarterly Labour Force Surveys 2014-2016. Figures are seasonally unadjusted

LGV Driver Claimant Count

The number of LGV drivers claiming Jobseeker's Allowance in Q4 2016 was 500 (taking the month of November as the mid-point for Q4). This was down from 620 in Q2 2016 and 715 in Q4 2015.

This statistic shows that the pool of unemployed LGV drivers has continued to shrink and it is therefore vital that efforts to recruit people into the industry are successful. The current LGV drivers' claimant count is 96.7% lower than the peak of 15,255 in March 2009 during the economic downturn, almost double that of the UK as a whole in the same period.

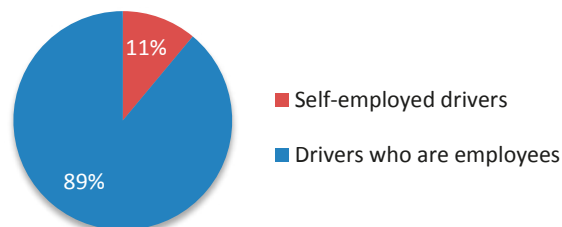
Figure 5: Employment and unemployment of LGV drivers, United Kingdom, Q2 2016 ⁸



LGV Driver Employment Status

Figure 6 shows the employment status of the UK's LGV drivers.⁹

Figure 6: LGV driver employment status



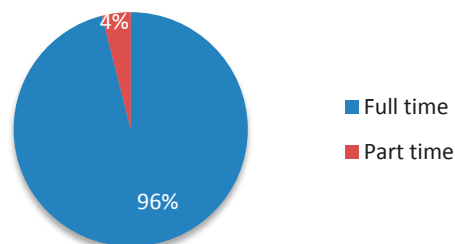
⁸ Sources: Nomis - Claimant count by occupation (Nov figures) Dec 2016 and RepGraph analysis of non-seasonally adjusted ONS quarterly Labour Force Survey data

⁹ Source: Labour Force Survey, Q4 2016

In Q4 2016, 11% of respondents indicated that they were self-employed (up from 9% in Q2 2016) whilst 89% stated that they were employees. This compares to only 6% who were self-employed in 2009 during the recession¹⁰ and reflects the national trend of increasing numbers of self-employed people in the workforce.

Perhaps not surprisingly most LGV drivers work full time (Figure 7).

Figure 7: LGV drivers in full and part time work



In Q4 2016, 96% of respondents stated that they worked full time and 4% part time. This compares to 5% working part time in Q2 2016. It is likely that this small proportion of part time drivers is due to the long hours and general work patterns associated with LGV driving, in particular haulage.

Ninety six per cent of LGV drivers were in a permanent job in Q4 2016,¹¹ highlighting the large amount of work available and the large demand for LGV drivers at the moment. Agency workers continue to represent a small proportion of LGV drivers. In Q4 2016 only 3% of respondents stated that they were agency workers,¹² reflecting low demand currently for agency staff, as employers prefer to take on permanent LGV drivers.

¹⁰ Source: Labour Force Survey, Q2 2009

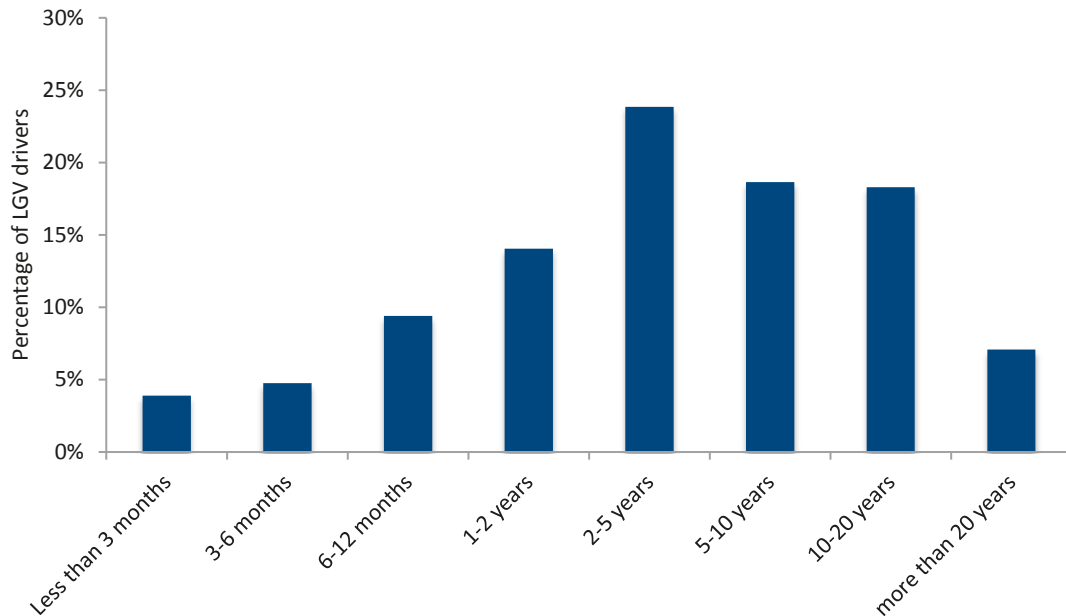
¹¹ Source: Labour Force Survey, Q4 2016

¹² Source: Labour Force Survey, Q4 2016

LGV Driver Job Retention

Most LGV drivers have remained with the same employer for a relatively long period of time. Figure 8 shows length of time in current job as of Q4 2016.

Figure 8: LGV drivers: time in current job



A large majority have been in the same job for more than two years and more than half have been in the same job for more than five years, which is in line with the trend across the general working population.¹² There was a small increase in the proportion of those in their current job for less than 2 years, up from 29% in Q2 2016 to 32% in Q4.

Driver Pay and Conditions

The Labour Force Survey asks participants about various aspects of their pay and employment conditions, including average weekly and hourly pay as well as hours worked and overtime. This section presents the results of the analysis to these questions for LGV drivers.

Gross Weekly Pay

The median gross weekly pay increased marginally from £401 in Q4 2015 to £404 in Q4 2016 for the whole UK workforce. Although year-on-year, median gross weekly pay for drivers fell very slightly to £500 from £503 a year earlier, it is still very competitive compared to the rest of the UK workforce.

Table 3: Median gross weekly pay

	Q4 2015	Q4 2016
LGV driver gross weekly pay	£503	£500
UK workforce gross weekly pay	£401	£404

Measures of Working Hours

Working time is captured via a number of variables in the Labour Force Survey, including usual and basic weekly hours of work as well as usual weekly hours of overtime.

Table 4: LGV driver hours

Q4 2015			Q4 2016		
Usual hours:	Mean	Median	Mean	Median	% change
Excluding overtime	43.6	40	43.6	40	0.00%
Including overtime	53.8	52	53.5	52.5	-0.56%
Paid overtime	11.5	9	12.1	8	5.22%
Unpaid overtime	1.8	0	1.7	0	-5.56%

Hours of work both including and excluding overtime remained broadly the same, however hours of unpaid overtime decreased and paid overtime increased in the same period.

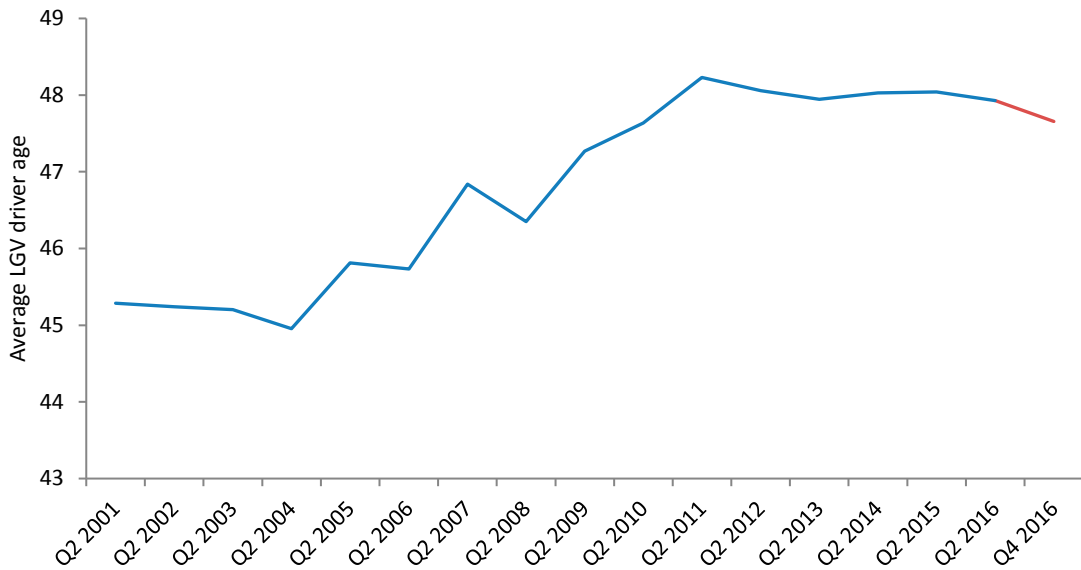
A small majority (57%) reported that their hours of work vary from week to week whilst less than 6% stated that they would work longer hours at current basic pay.

LGV Driver Age: The Average has Started to Decrease

Average Age for LGV Drivers

Over the 15 years to 2016, there was a fairly steady increase in average driver age, rising from 45.3 in 2001 to around 48 in recent years (Figure 9). It is encouraging to note, however, that the average driver age has recently begun to fall again, going from 48.0 in Q2 2015 to 47.7 in Q4 2016.

Figure 9: Average age of LGV driver population over the last 15 years



Source: Quarterly Labour Force Surveys, 2001-2016 (Q2 for each year and Q4 for 2016)

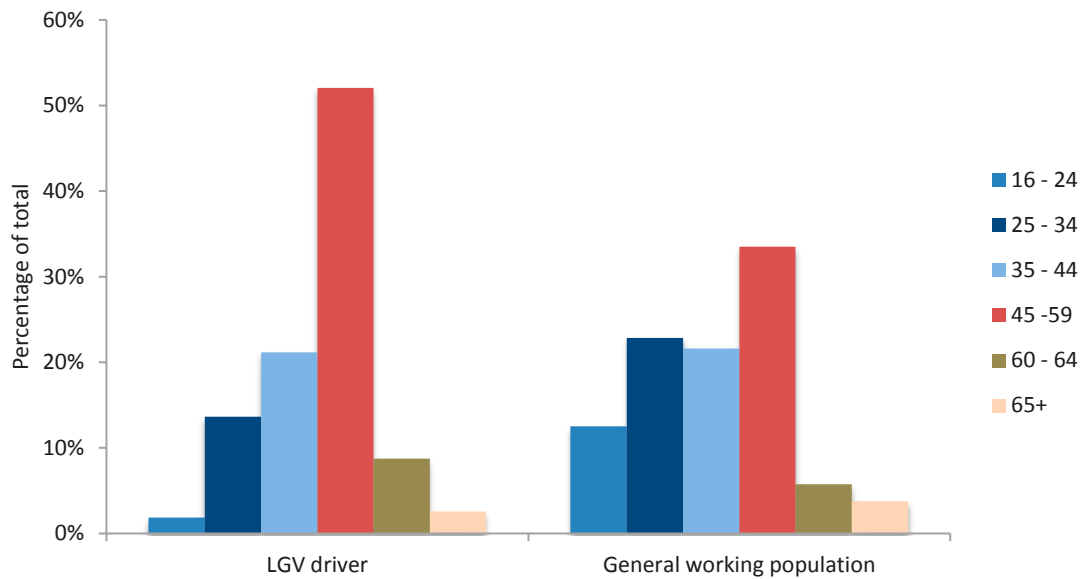
LGV Driver Age Compared to General Population

Data on age demography from the Labour Force Survey (Q4 2016) revealed that 63% of LGV drivers are 45 years or older.¹³ This is vastly different to the economy-wide demographics, where the population aged 45 years or older in employment was found to be around 43% (Figure 10). Only 2% of LGV drivers are under 25, whereas over 12% of the total employed population is under 25. The large number of LGV drivers over the age of 65 (around 8,500) in Q4 2016 also points to continued pressures on driver recruitment in order to backfill positions vacated due to recent retirements, however this figure is down substantially from the 21,000 drivers who were over 65 in Q2 2016.¹⁴

¹³ Source: Quarterly Labour Force Survey, Q4 2016

¹⁴ http://www.fta.co.uk/export/sites/fta/_galleries/downloads/campaigns/the-driver-shortage-report.pdf

Figure 10: Age demographics for professional drivers compared to the general population



Source: Quarterly Labour Force Survey, Q4 2016

Gender

Labour Force Survey data indicates that the LGV driver profession continues to be dominated by men. The approximate estimate is consistently around 1% for female drivers in the population, however the small number of female driver respondents prevents a more accurate measure. According to the Labour Force Survey in Q4 2016, only an estimated 3,000 (0.9%) were female.

New Entrants and Test Pass Rates

Initial Qualification

The figures for drivers acquiring Driver Certificate of Professional Competency (DCPC) through initial qualification (which represents new entrants to the industry who did not hold a category C licence prior to 10 September 2009) are provided in Table 5. There was a 22% increase in new entrants for the year ending March 2016 compared to the previous year. However, the trend for the first month of the 2017 shows a drop off in the number of first time DCPCs issued, falling by 18% compared to 2016 and 5% compared to 2014 (Figure 11).

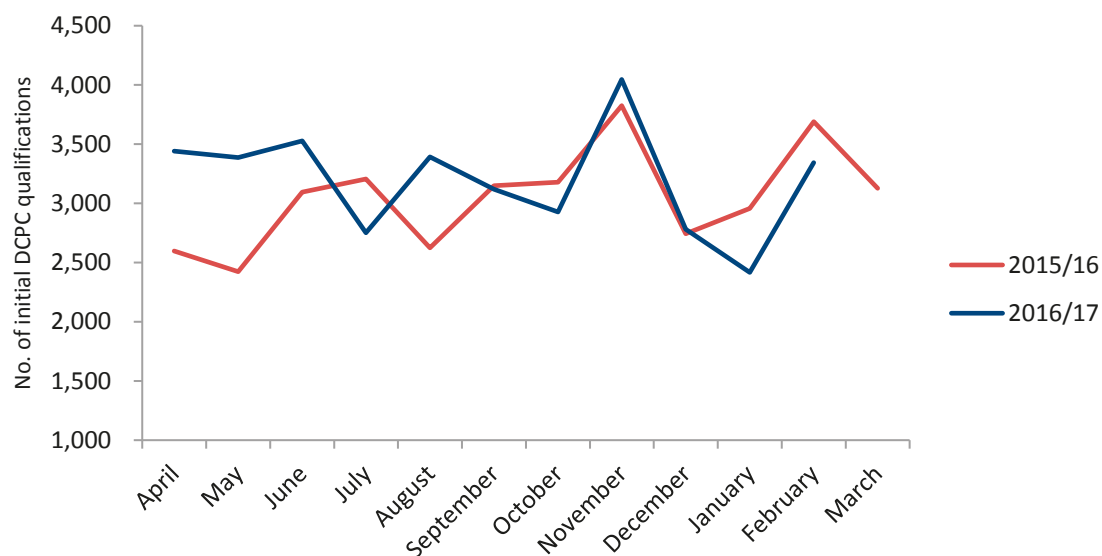
Note: DCPC initial qualification includes both lorry and bus drivers combined

Table 5: Initial qualification

Financial year	DCPC initial qualification ¹⁵
April 08 – March 09	3,948
April 09 – March 10	7,524
April 10 – March 11	12,104
April 11 – March 12	14,003
April 12 – March 13	16,511
April 13 – March 14	21,054
April 14 – March 15	30,025
April 15 – March 16	36,615

Figure 11: Monthly trends in initial DCPC qualification

Axis title



LGV Driver Apprenticeships

Latest figures published in January 2017 by the Skills Funding Agency and the Department for Business, Innovation and Skills indicated that for the 12 months from August 2015 to August 2016, 5,490 people started apprenticeship programmes learning to drive goods vehicles¹⁶ which is an increase of 11% compared to 2014/15 but is 25% lower than 2011/12.

Table 6: LGV driver apprenticeship numbers

Year	2011/12	2012/13	2013/14	2014/15	2015/16	Aug 16-Jan 17
Count	7,260	5,510	4,000	4,930	5,490	2,290

¹⁵ <https://www.gov.uk/government/statistics/driver-certificate-of-professional-competence-cpc-statistics>

¹⁶ <https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships>

Table 7: Achievement rates for apprentices 2014/15*

Age	Overall achievement rate %	No. of achievers
16-18	79%	212
19-23	78%	524
24+	75%	1,712
Total	76%	2,448

*latest available data

LGV Pass Rate

The pass rate for LGV drivers impacts on the number of drivers in employment. The number of practical tests taken in 2016 increased by 16% compared to 2015. Overall the number of tests taken has increased by 88% since the low of 2010. Although the pass rate has gradually improved since 2008, only just over half of test takers pass (Table 8).¹⁷

Table 8: Practical large goods vehicle (LGV) test,¹⁸ Great Britain: 2008-2016

Year	Tests	Passes	% pass rate ¹⁹
2008	69,386	33,708	49%
2009	50,626	25,680	51%
2010	41,174	21,267	52%
2011	47,069	24,639	52%
2012	46,744	24,634	53%
2013	47,511	25,679	54%
2014	51,530	28,486	55%
2015	67,149	37,205	55%
2016	77,623	43,643	56%

¹⁷ <https://www.gov.uk/government/statistical-data-sets/drt05-practical-large-goods-vehicles-LGV-test-pass-rates>

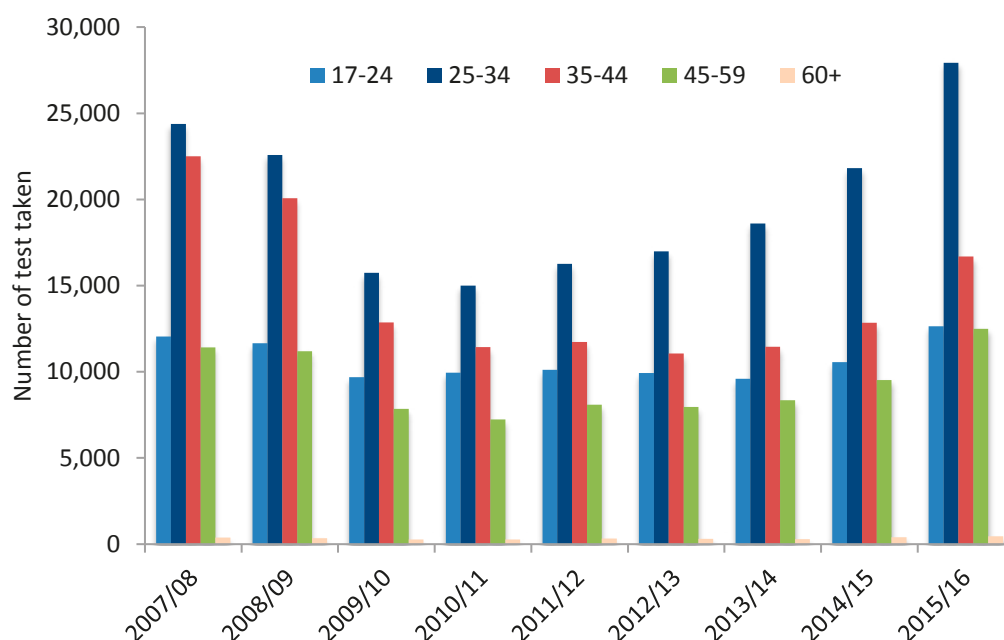
¹⁸ Includes test categories C, C1, C+E, C1+E

¹⁹ Source: DfT 2017 Practical large goods vehicles (LGV) test pass rates (DRT0501)

Age of Test Takers

In the year to the end of March 2016, over half (58%) of all tests were taken by those under the age of 35. In addition the average age of a person taking a practical test was 34.

Figure 12: Age breakdown for the number of practical LGV tests conducted²⁰



Gender of Test Takers

The number of women taking the practical LGV test has remained between 6 and 7% of all test takers since 2008. The pass rate for women is, however, consistently higher than their male counterparts.

Table 9: Pass rates for men and women

Year	Male pass rate	Female pass rate
2008	48%	51%
2009	50%	54%
2010	51%	54%
2011	52%	54%
2012	53%	54%
2013	54%	58%
2014	55%	58%
2015	55%	59%
2016	56%	60%

²⁰ Source: DfT 2016 Practical large goods vehicles (LGV) test pass rates (DRT0503)

Appendix: The Job Shortage Ranking Measure

Absolute job shortages are very difficult to measure due to a number of factors, including the reliability and consistency of measurable data across all occupations.²¹ For this reason, RepGraph has recently developed a measure that provides a relative ranking of occupations, based on the following factors.²²

- Rising demand for labour: reflected in an increase in job numbers
- Falling supply of labour: measured by a decrease in claimant count
- The need to attract and retain staff: manifested in rising pay

Occupations that experience the greatest labour shortages therefore typically see high growth in worker numbers, accompanied by large falls in claimant count and increases in pay.²¹

The relative job shortage measure is used in this report to compare potential job shortage issues in logistics occupations. The measure is comprised of the sum of the three labour market factors which are thought to correlate strongly with job shortages.²¹

1. **Claimant count**²³ (*ranking 1-353: 353 = greatest percentage fall in claimant count*)
2. **Job totals**²⁴ (*ranking 1-353: 353 = largest percentage rise in job numbers*)
3. **Average weekly earnings**^{24,25} (*ranking 1-353: 353 = largest percentage increase in average weekly pay*)

The shortage ranking measurement used data from Labour Force Surveys for Q4 2013 and Q4 2016 along with ONS claimant count data for the same periods. The percentage difference was determined for each of the ONS occupational categories across the three job shortage measurement factors outlined above (ie claimant count, job totals and average weekly earnings).

Percentage differences were calculated for each occupation category and these were ranked relative to each other. The rankings for the three measurement factors were then combined to give an overall relative job shortage score per-occupation category. The highest score for the job shortage ranking measure represents the greatest labour shortage (the maximum possible value is 1,059 and the lowest possible is 3).

²¹ http://www.workandeconomy.org/images/Measuring_Labor_Market_Shortages_07-17-09_FINAL_color.pdf

²² UK Industry Workforce Demographics: prepared for Business with Europe, 2016

²³ Official Labour Market Statistics: Claimant Counts by Occupation. Claimant count values are calculated as the mean of monthly claimant count values for October, November and December (the three months of Q4)

²⁴ Labour Force Surveys, Q4 2013 and Q4 2016

²⁵ Earnings are the median weekly earnings values, calculated according to ONS guidelines, described in the Labour Force Survey Manuals