

WHAT IS DRIVING INSECURE WORK? A SECTOR PERSPECTIVE

Report to the Trades Union Congress

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Paul Bivand
Duncan Melville

*In January 2016, NIACE and the Centre for Economic and Social Inclusion
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Learning and Work Institute

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Registered office: 21 De Montfort Street, Leicester, LE1 7GE



EXECUTIVE SUMMARY

This report investigates trends in the insecure employment focusing in particular on the period 2011-16. We define insecure employment as the low paid self-employed and employees who are on some form of temporary employment, excluding those who are on fixed term contracts not combined with any other form of insecure or temporary employment, such as agency working or being on a zero-hour contract.

EMPLOYMENT REGULATION

Current employment law defines three distinct legal statuses: employees, workers and the self-employed. These each provide different levels of employment rights:

- Employees have the following legal rights, some of which only apply after a period of time working for their current employer: minimum wage protections, minimum sickness, holiday and redundancy pay, statutory maternity / paternity / shared parental / adoption leave and pay, and protection against unlawful discrimination and unfair dismissal.
- Workers have fewer rights than employees as they are not entitled to redundancy pay or protection against unlawful dismissal. They are covered by minimum wage and holiday pay requirements.
- Self-employed: A self-employed worker works for themselves and does not have a contract of employment with an employer. They have no right to receive minimum wages, sickness, holiday or redundancy pay, nor maternity / paternity / shared parental / adoption leave or pay. As they are not employed by an employer they are not covered by protections against unlawful discrimination and unfair dismissal.

INSECURE EMPLOYMENT 2011-16

The number of insecure workers has risen from 2.4 million in 2011 to 3.1 million in 2016, so that by 2016 one in ten of those employed were in insecure employment.

Insecure employees are half as likely to be supported by trade unions than secure employees – over the 2011-16 period only 14% of insecure employees were in workplaces covered by trade union representation compared to 30% amongst secure employees.

Insecure workers also suffer a double disadvantage because they are also paid less than workers on more secure contracts - £5 less per hour on average for the period

Autumn 2014 to Spring 2016¹. Earnings figures for the self-employed are not collected in our sources so this deficit only covers those with contracts of employment.

The top five sectors with the largest numbers of insecure workers in 2016 were:

- Education
- Restaurants, takeaways, cafés, catering, pubs and bars
- Land transport (which includes taxi, lorry, and van delivery drivers)
- Retail sector (except for sale of vehicles)
- Other personal services (includes hairdressing and beauty services)

The sectors with the largest increases in insecure employment between 2011 and 2016 were:

- Restaurants, takeaways, cafés, catering, pubs and bars
- Residential care
- Education
- Accommodation (including hotels)
- Human health activities

The prevalence of zero hour contracts has risen in recent years. In four sectors in 2016 more than half of all insecure workers were on zero-hour contracts: residential care; restaurants, takeaways, cafés, catering, pubs and bars; accommodation (includes hotels) and human health activities.

WHY HAS INSECURE EMPLOYMENT RISEN?

We identified six potential drivers of the rise in insecure employment since 2011. These are:

- UK employment laws and their enforcement
- Decline in trade unionism
- The taxation of different forms of employment
- Public sector monopsony
- Technological developments

¹ This finding applies to employees only as the Labour Force Survey, the data source we used, does not ask the self-employed about earnings levels. Also, note that while employment law recognises three employment types: employees, workers and the self-employed the Labour Force Survey (LFS) has a simpler two way split of employees and the self-employed. Workers in legal terms will be included as employees in the LFS.

- Post-recession opportunities for employers / pressures to reduce costs, including public sector austerity

A number of these factors have been longstanding feature of the UK and in existence long before 2011. Thus, we need to explain how these came to bear in this period rather than in earlier years.

Employment laws and their enforcement

The lower obligations placed on employers mean that they have an incentive to contract with workers on a self-employed basis rather than hire them on an employment contract as either workers or employees. By doing so employers are able to avoid the legal obligations of paying minimum wage levels, holiday and sick pay, and fair disciplinary and dismissal processes. Similarly, employers who employ individuals as workers rather than employees can avoid having to pay redundancy pay or having to pay compensation for unfair dismissals. Agency workers are employed not by the employer on whose premises they work but by the agency that supplies them to work for that employer. Hence, the customer of the employment agency transfers the obligations of being the employer to that agency.

Most individuals working with a contract of employment on a casual, temporary, seasonal or zero-hours basis are likely to be considered as workers rather than employees. So these differences in the obligations of employers create incentives for them to hire individuals in different forms of insecure employment. These differences are longstanding and so by themselves cannot explain why levels of insecure employment have risen since 2011. The enforcement of employment rights may provide one explanation, as it may have allowed employers to take greater advantage of these incentives since 2011 than before.

Substantial fees for taking cases to Employment Tribunals were introduced in 2013. The result was a collapse in the number of cases being taken to an Employment Tribunal in the year following the introduction of fees to a quarter of the level prevailing in the twelve months prior to their introduction. There can be little doubt that the introduction of fees in 2013 adversely affected workers' ability to challenge their legal employment status. The House of Commons Justice Committee's inquiry into courts and tribunals fees concluded in June 2016 that "the regime of employment tribunal fees has had a significant adverse impact on access to justice for meritorious claims"².

² House of Commons Justice Committee, 'Courts and tribunals fees', Second Report of Session 2016/17, HC 167, June 2016.

Influence of trade unions

Trade union membership density and the coverage of collective agreements have been declining for a number of decades. This process continued after 2011. Hence, trade unions are probably less able to act as a constraint on employers and have less opportunity to support individuals with legal cases to enforce their employment rights or challenge their insecure status.

Taxation of different forms of employment

The tax system also creates incentives for employers to engage workers as self-employed contractors rather than employ them on a contract of employment. Employers do not have to pay employer national insurance contributions (NICs) on any self-employed workers they engage. For individuals hired in this way there are also tax advantages because employees pay NICs at a higher rate than the self-employed. In addition, the self-employed generally have greater possibilities to deduct work-related expenses from their income before taxation is imposed than employees.

Some more sophisticated insecure self-employed workers may choose to incorporate themselves as businesses for further tax advantages. Company owner managers can further reduce their tax bills, in particular, by taking income as dividends rather than wages. Also, companies with a turnover below a certain threshold (currently £83,000) are exempt from VAT which gives another potential way for the self-employed to reduce their tax payments.

These differences in the taxation of employees and the self-employed are not new, and there has not been a greater tax incentive to be self-employed since 2011 than before. However, as discussed below there have probably been greater opportunities and pressures in recent years to respond to these tax incentives and work as a self-employed worker rather than as an employer.

Technology

The rise of the gig economy has been most widely reported on as a technological factor behind the rise of insecure work in the form of low paid self-employment. However, there are wider technological developments which have made self-employment rather than employment as an employee a more practical proposition.

The gig economy is where a company provides a digital platform that matches individuals selling services to customers. Typically, the individuals providing services have been legally defined as self-employed. The idea of offering a facility that matches consumers to service providers is not new. For example, it has long been a common practice for hairdressing salons not to employ the hairdressers working on their premises, but instead rent space within the salon to self-employed hairdressers.

The development of large scale IT based matching platforms made possible by recent technological advances has expanded the scope and scale of activities that can practically be undertaken in this way.

However, many of the activities where insecure work has grown lie outside of those most affected by these technological developments. Recent technological developments favouring self-employment are not restricted to digital platforms. Research by the Bank of England³ notes that many of the costs of business have been falling relative to the costs of goods and services more generally. Internet based commerce is now widespread and establishing a business on line, or partially on line, is much less costly than via traditional bricks and mortar premises.

Public sector monopsony

The situation of monopsony where one dominant purchaser faces a number of providers in a market appears to be playing a substantial role in the rise in insecure employment within social care. Local authorities are the largest single purchasers of social care in most parts of the country. This gives them very considerable purchasing power in local markets. Given the continuing pressures on local authority budgets, their response has been to negotiate lower prices for the care home places they purchase. This has placed great pressures on employers in social care to cut costs and so use lower cost insecure forms of employment.

Post-recession economic climate

The economic climate since the Great Recession has probably played a part in both focusing businesses on cost reduction and giving them the possibility to employ people as insecure workers. Slow economic growth following the Great Recession means that businesses are facing greater competitive pressures than they experienced previously. Engaging workers on insecure terms has been one way to reduce business costs. Pre-recession there was less of an imperative on businesses to cut costs in this way and employers at that stage had less reason to change and undertake the difficult task of pushing that change through.

One constraint on businesses' usage of insecure workers is their ability to attract a sufficient supply of labour to work for them. For most of the period since the Great Recession the working age employment and (16+) unemployment rates were at relatively low and high levels respectively compared to the years before the Great Recession. This was true until around late 2014 / early 2015. Hence the period of expansion of insecure employment generally coincided with a period when individuals generally had fewer alternative employment opportunities.

³ Tatomir, S. (2015), "Self-employment what can we learn from recent developments?", Bank of England Quarterly Bulletin 2015 Q1.

Sectoral Factors

At a sectoral level, no simple story emerged of either the incidence of insecure employment being expanded within sectors where it was already more prevalent, or being expended into new sectors where it was a relatively scarce form of employment.

At the sectoral level, we investigated the following potential drivers of insecure employment:

- Profitability
- Trade union density
- Earnings levels and growth
- Employment growth
- Productivity Growth
- Investment / ICT investment

We could find few associations between levels of, or changes in, insecure employment and these various potential causal factors. The exceptions were:

- a relationship between the level of earnings in 2016 and the incidence of insecure employment in that year. A non-linear relationship emerges: initially as median hourly earnings fall this is associated with an increase in the incidence of insecure employment. However, once insecure employment reaches around 30% of all employment then increased incidence becomes associated with increasing levels of hourly pay. Three of the six sectors with an incidence of insecure employment at or above 30% are creative sectors (including film, television and video production, design, photography and arts and entertainment) so this finding may in part reflect the prevalence of contracting in creative employment.
- a negative relationship between productivity growth between 2011 and 2016 and changes in the incidence of insecure employment over the same period. Thus, sectors which saw higher increases in productivity tended to experience falls, or smaller increases in insecure employment than other sectors. We cannot say from this correlation analysis whether lower productivity causes higher levels of insecure employment or vice versa, or whether causation runs in both directions or indeed whether there is any causal relationship between the two variables, as correlation does not necessarily imply causation. The result, however, is interesting suggesting that there *could* be some negative causal relationship between increasing insecure employment and declining productivity but establishing such a relationship exists would require further research.

WHAT IS INSECURE EMPLOYMENT?

The TUC wished to investigate a range of issues connected with patterns of insecure employment. Learning & Work has undertaken a rapid data analysis to examine the patterns of, and trends, insecure work, over the recent past.

We have defined insecure work to include all forms of non-permanent employment, with the exception of fixed-term contracts, people on zero-hour contracts including where these are permanent contracts, and self-employed people in occupations where there is a high risk of being low-paid. Our definition here is based on an analysis by the Social Market Foundation (SMF)⁴ which was undertaken on a sectoral basis. We have used a definition based on occupations because later we focus on the extent to which insecure work is concentrated in certain sectors, and or driven by sectoral differences. Using a sectorally based definition would have prejudged this point.

Most of the analysis we have undertaken relates to the period since 2011, where our data source from the Labour Force Survey is consistent. For earlier periods, classifications have changed, affecting the ways in which insecure work can be defined, and potentially introducing discontinuities into the data.

THE REGULATORY BACKGROUND

Current patterns of regulation in the UK labour market tend to be common across sectors, and to apply differently to people according to whether they are employees, workers or self-employed. These three statuses have different legal implications (and different enforcement implications given the increases in the fees for a wide range of courts and tribunals (including for Employment Tribunals) that enforce regulations and assess commercial contract disputes. The increases in such costs (in 2013 for Employment Tribunals) have impacted on actual enforcement of regulations and associated employment rights. The Box below summarises the different legal status of employees, workers, and the self-employed.

Box 1: Employees, workers and the self-employed

Employee: Employees have an employment contract with an employer. They have certain legal rights (some of which only apply after a period of time working for their current employer). This includes relevant minimum wage requirements, minimum sickness, holiday and redundancy pay, statutory maternity / paternity / shared parental / adoption leave and pay, and protection against unlawful discrimination and unfair dismissal.

⁴ Tough gig: Low paid self-employment in London and the UK; Nida Broughton; Ben Richards, Social Market Foundation 2016

Worker: Compared to employees, workers have fewer rights. They are covered by minimum wage and holiday pay requirements. However, they are not entitled to redundancy pay or protection against unlawful dismissal. Casual, seasonal, zero hours and temporary employees are most likely to be categorised as workers in law rather than employees.

Self-employed: A self-employed worker works for themselves and does not have a contract of employment with an employer external to themselves. In fact, they may themselves be an employer of others. Self-employed individuals are not covered by employment law. Thus, they have no right to receive minimum wages, sickness, holiday or redundancy pay, nor maternity / paternity / shared parental / adoption leave or pay. As they are not employed by an employer they are not covered by protections against unlawful discrimination and unfair dismissal.

However, this universalist approach to employment regulation has changed substantially in the last 30-40 years. Prior to the Conservative Government of Margaret Thatcher, the pattern of regulation was largely sectoral and/or based on supply chains. This regulation extended into groups that would now be classed as in law as self-employed, rather than as employees or workers. The Wages Councils regulated a range of terms and conditions in certain sectors for workers that in modern terms are classed as in insecure employment. The Fair Wages Resolution of the House of Commons provided that the public sector would not drive terms and conditions in their supply chains down below those normally pertaining by the exercise of monopsony power. These provisions had been enacted following a series of scandals and inquiries in the late Victorian and Edwardian period⁵.

This sectoral approach created both positives and negatives from the viewpoint of trades unions. Views differed among unions in relation to whether or not the regulatory underpinning of terms and conditions was a hindrance to the achievement of better results by collective bargaining directly between employers and unions. There were several cases of unions proposing the abolition of particular Wages Councils.

The 1980s changes to regulations initially abolished virtually all such sectorally based regulation. When greater regulation returned, it was largely on a universal basis, such as the National Minimum Wage, or sets of regulations to implement International Labour Conventions or European Directives implementing 'Social

⁵ See, for example, British Parliamentary Papers : Reports from the Select Committees and other Reports on wages (Government Contracts) and on Profit Sharing, with proceedings, minutes of evidence, appendices and indices, 1890-1897, ISBN: 0716506157; Royal Commission on Labour, 1892-1894.

Europe'. However, the UK labour market has remained substantially less regulated than nearly all other EU / OECD countries⁶.

There have been recent changes to regulations potentially providing new protections for insecure workers which result from EU directives. These require equal treatment between various groups of 'atypical' workers and workers on permanent full-time contracts. The definition of who is covered, and the extent of coverage under these differs, and has been subject to much debate. In the UK, there has been a focus on the 'Swedish Derogation' from the EU Agency Workers Regulations which otherwise provides for equal pay for agency workers. This exception operates where workers have an employment relationship with the agency that continues between placements, and they receive at least four weeks' pay during the times when they are not placed with an employer. The rate of pay between assignments must be at least the higher of 50% of their usual pay when assigned to an employer, or the minimum wage rate they are entitled to according to their age. The 'Swedish Derogation' has been criticised by the TUC, among others, for allowing some groups of workers to miss out on pay. In 2013, the TUC called for it to be ended.

HOW WE MEASURED INSECURE EMPLOYMENT

We have used the Labour Force Survey (LFS), a large, nationally representative survey, carried out by the Office for National Statistics. The questionnaires for this are designed so that various employment statuses can be assigned after a process of checking and confirming. For example, people who initially say they are self-employed are asked how they are paid. If they say they are paid a salary or wage by an employment agency, they are re-classified as employees, but as they will be employees of the agency, they are still defined as being insecure workers. Also, note that while employment law recognises three employment types: employees, workers and the self-employed the LFS has a simpler two way split of employees and the self-employed. Workers in legal terms will be included as employees in the LFS.

While all self-employed people may be regarded as carrying a business risk, the degree to which those risks make someone insecure depend to a large extent on the level of their income. As self-employment income is not measured in the Labour Force Survey, we have identified a range of occupations that are at high risk of being low-paid. Research by the SMF⁷, using the DWP's Family Resources Survey (which is much smaller than the Labour Force Survey, but does collect self-employed incomes, assessed for tax) found that around half (49%) of the UK's self-employed

⁶ The OECD has three different measures of the strictness of employment protection for individual and collective dismissals for those on 'regular' employee contracts. While the precise ordering of individual countries differs slightly the UK ranks third, fourth and fourth least strict on these measures amongst OECD member states and is the least strict of all EU member states. The other countries with low levels of such strictness are generally English speaking (USA, Canada, New Zealand, Australia, and Ireland) plus Japan.

⁷ Social Market Foundation, op cit.

were in low pay, measured on an hourly basis, compared to 22% of employees. So, low-paid self-employed workers are both more insecure as self-employment is inherently more insecure than being an employee, and at a higher risk of low pay. The SMF identified a number of self-employed groups who were at especially high risk of being low-paid self-employed.

We have used this approach for our purposes in this report by counting self-employed people working in the following occupational groups as being at high risk of low-paid self-employment:

- Administrative and secretarial occupations
- Caring, leisure and other service occupations
- Sales and customer service occupations
- Process, plant and machine operatives
- Elementary occupations
- Culture, media and sports occupations

We did not include within our definition self-employed workers in skilled trades as they are often relatively high paid. This means that, for construction workers, we include scaffolders and operative builders, together with a range of mobile machine operators (who are in the Process, Plant and Machine Operatives group), and building labourers and mates to skilled workers (who are in the elementary occupations). It also means that we do not include, for example, skilled bricklayers, electricians, plumbers or joiners, who can usually secure higher rates for their work.

Workers who are employed on temporary contracts are counted as insecure, excluding those employed on fixed-term contracts only, without combination with other forms of temporary employment. Thus, fixed term contract workers who are also temporary workers employed through an employment agency, or casual, seasonal workers or on other forms of temporary contract are included. This definition is used because there are substantial numbers of workers where, for human resources management reasons, fixed-term contracts are used but these are normally rolled over into new contracts, and workers on fixed term contracts normally have access to a full range of employee rights.

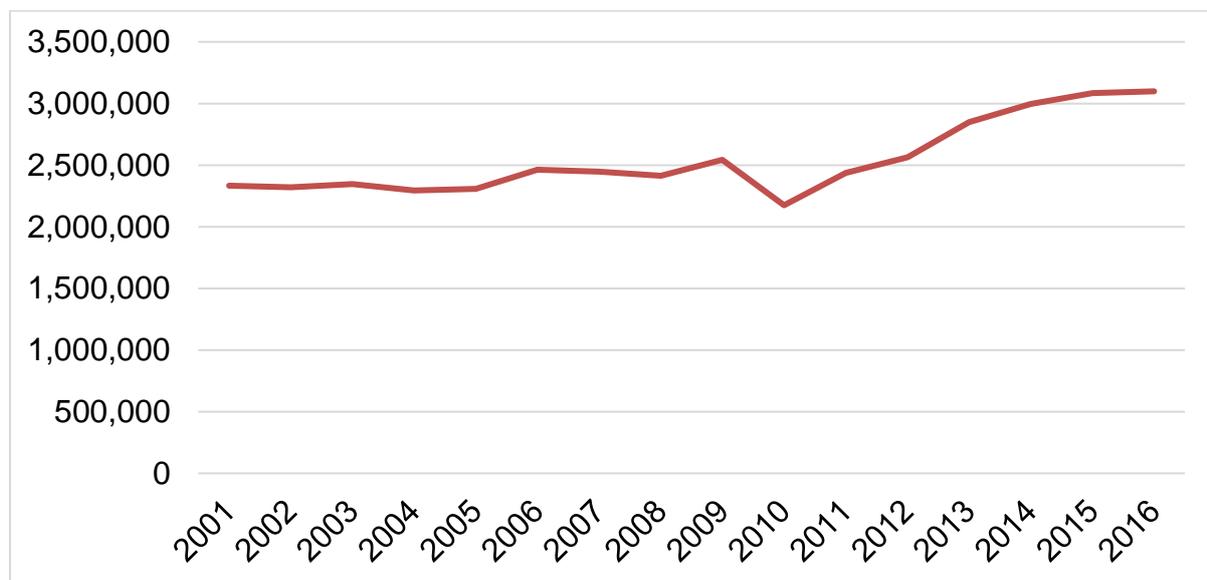
People on zero-hour contracts are included as insecure workers. The Labour Force Survey has asked about zero-hour contracts for many years, well before they became the subject of substantial media discussion. However, the placement of the question on zero-hour working may have led to under-reporting before they received high levels of media attention. Questions around zero-hours have been located within a section of the LFS questionnaire on flexible working, so people are asked

about zero-hour contracts after they are asked about flexitime, term-time working and annual hours contracts, as part of the same discussion, rather than with forms of insecure employment such as casual, agency and seasonal employment.

HOW HAVE THE NUMBERS CHANGED?

The total numbers of people in insecure work were largely unchanged between the 2001 and the recession in 2008-9. Since 2011, there has been a consistent pattern of rises.

Figure 1: Numbers in insecure employment 2001-2016



The 2010 figure is low due to a number of changes within the survey questionnaire. This introduces a discontinuity into the data. Hence, we prefer to assess changes from 2011, since when the survey questionnaire on non-permanent employment has been consistent. This should give a more robust picture of trends. Since 2011, people have been able to provide a number of different ways in which their employment is non-permanent, such as agency temping, seasonal work, casual work, fixed-term contracts and other forms of non-permanent working. In 2010, they only had one opportunity to choose to define their job. Prior to 2010, the question ordering was different, and produced slightly higher numbers than the 2010 version. Therefore, we do not know whether the drop in numbers in 2010 was genuine, nor whether the rise between 2010 and 2011 reflected underlying reality or resulted from the survey change. In addition, we cannot tell what the level of insecure employment would have been between 2001 and 2009 on the post-2010 definition.

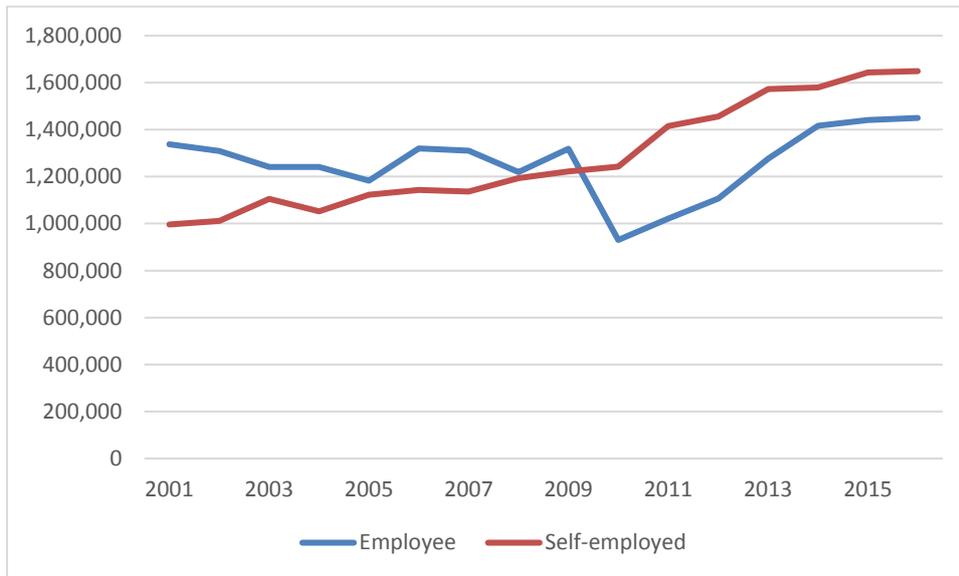
Employment status

Before the recession, there were more employees in the insecure categories than there were self-employed, but with the recession (and the survey changes) the

number of insecure employees dropped markedly between 2009 and 2010, before rising substantially thereafter.

Between 2010 and 2013, the increase in low-paid self-employment accelerated further, and low-paid self-employed people are now the majority of insecure workers.

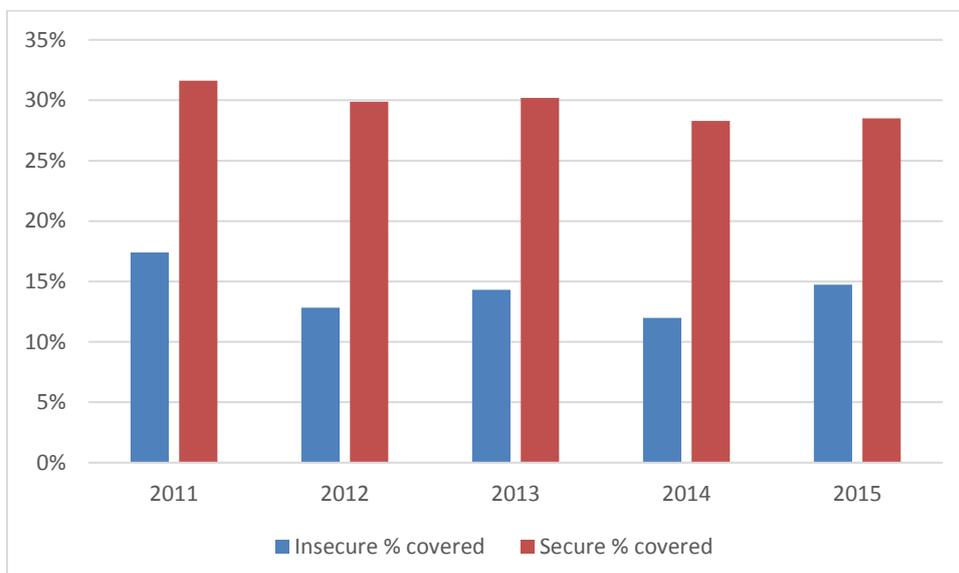
Figure 2: Insecure employment by employment status, 2001-2016



THE CHALLENGE FOR TRADES UNIONS

Insecure employees are much less likely to be in workplaces with trade union coverage than are employees with more secure contracts.

Figure 3: Union coverage for secure and insecure employees

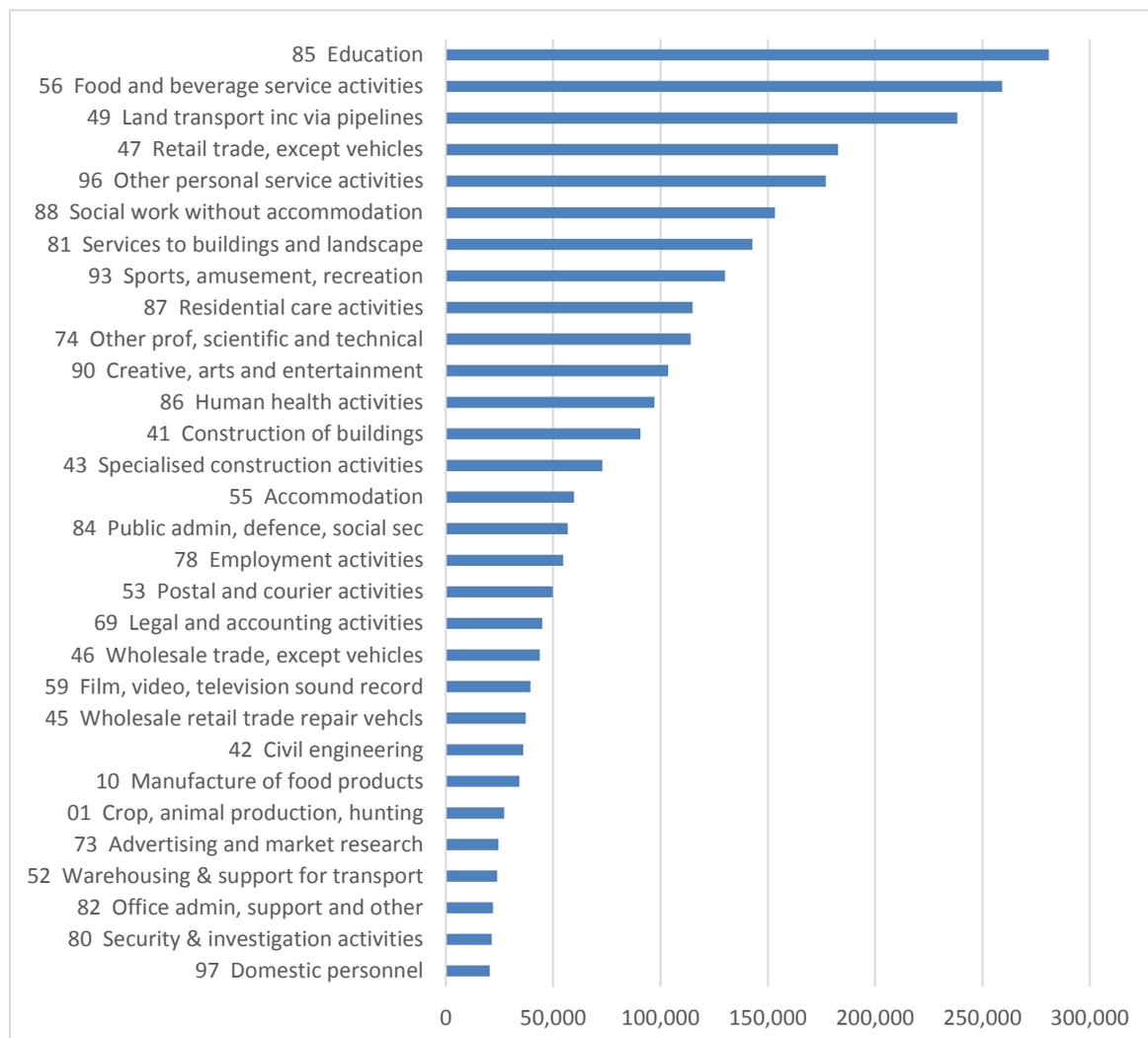


The proportion of insecure employees who are in workplaces with union coverage was, on average, 14% for 2011-16, compared with 30% for workers with secure contracts over the same period. The self-employed are not asked these questions. These figures are based on those who say their terms and conditions were influenced by trades unions, rather than membership of trades unions. These figures may exaggerate the extent to which a typical insecure worker is covered by trade union representation. This is because the insecure employment group includes teachers, nurses and other health professionals employed through agencies or on Supply or Bank contracts. These types of workers tend to have high rates of union coverage where they are employed as 'regular' employees, but outside these groups, union coverage is likely to be significantly lower.

SECTORAL PATTERNS

Figure 4 shows the pattern of insecure workers by sectors for all industrial sectors with over 20,000 insecure workers in 2016.

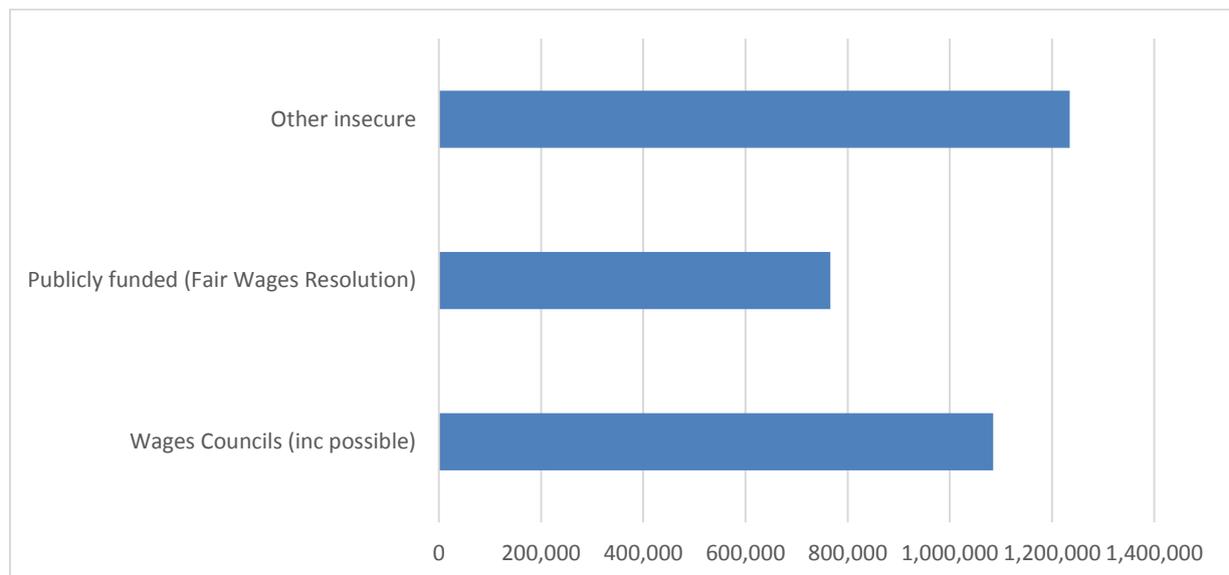
Figure 4: Sectoral distribution of insecure workers



These sectors cover a mix of supply chains. There are a number of sectors where the public sector is the funder and ultimate purchaser. This includes education, social work without accommodation (domiciliary care) and residential social care. In these sectors, the effects of Government as purchaser can drive down wages and conditions amongst suppliers. This is why, before the 1980s, wages and conditions among suppliers to the public sector were covered by the Fair Wages Resolution⁸, to ensure that the monopsony power of the Government did not risk pushing down wages and other terms below those normally available elsewhere in the economy.

There are also a number of sectors where low pay and insecure working conditions are long standing. Our estimate of those that would have been covered by Wages Councils is around 35% of current insecure workers⁹. Together, we estimate that public supply and former Wages Council sectors accounted for approximately 60% of all insecure workers in 2016.

Figure 5: Insecure workers and former sectoral regulatory regimes



Many of the remaining insecure workers are in sectors that have expanded since the 1980s, thus it was not possible to bring them within scope of the previous regulation.

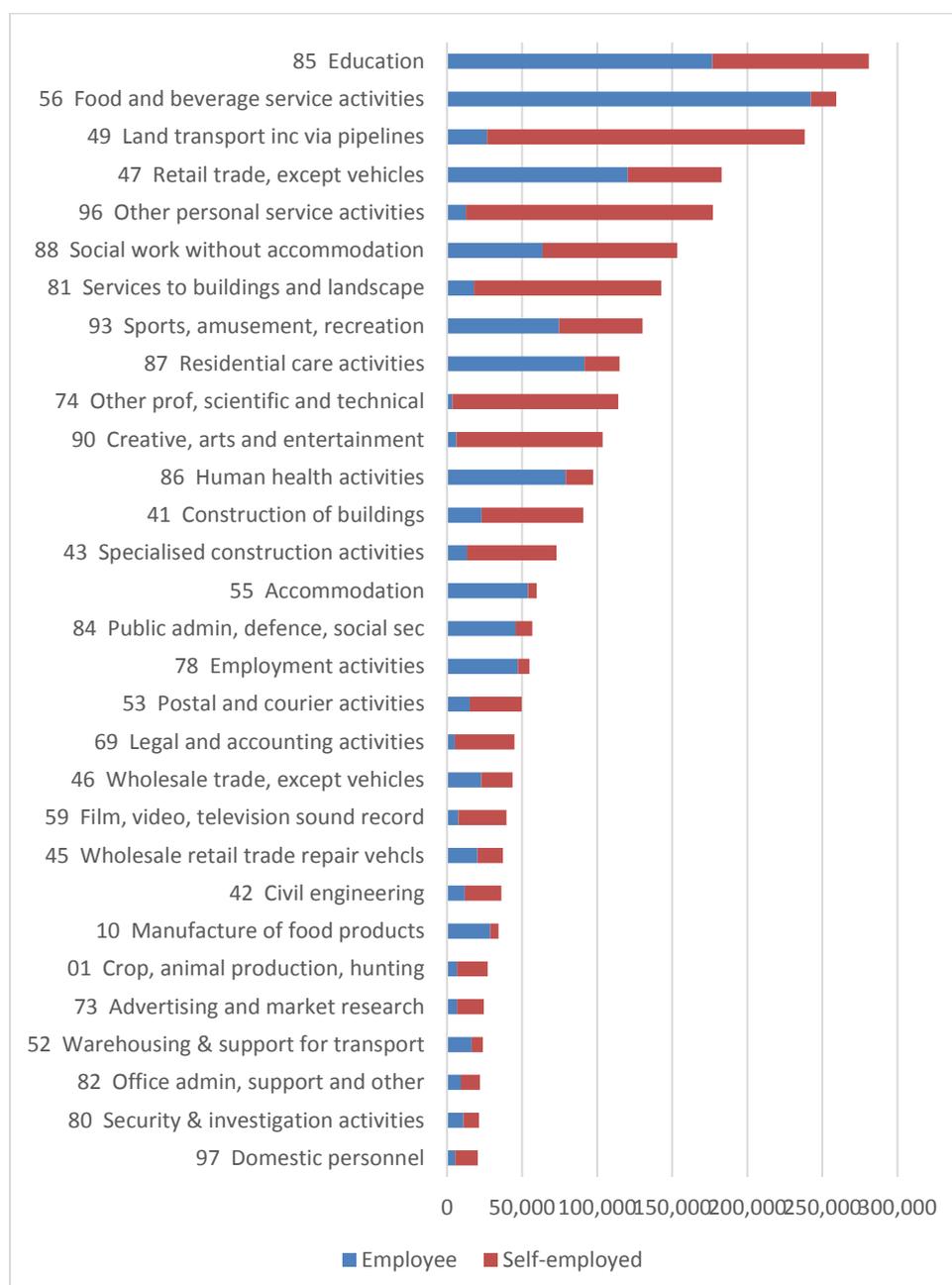
⁸ The Fair Wages resolution of the House of Commons was passed in 1891, and regularly repeated. Local Authorities generally adopted similar resolutions. The Resolution required departments to ensure that contractors paid terms and conditions not less favourable than relevant collective agreements. There was an Arbitration Board to which complaints could be made for failure to abide by the Resolution.

⁹ A short summary of the pre-1979 position is published by Eurofound at <https://www.eurofound.europa.eu/observatories/eurwork/articles/the-uks-first-national-minimum-wage>. We have used the list of Wages Councils published in the Department of Employment Gazette, May 1977, which quotes a Parliamentary written answer (to Peter Bottomley MP) on numbers of firms covered and employees covered by each Wages Council. As the sectors covered do not map precisely to the current industrial classification, we have included those sectors where Wages Council coverage is possible, or partial as well as those where identification is certain. The table identifies 2.9 million workers in 420,000 firms. At this time there was an annual article (in 1977 in the same issue) on statutory wage regulation in Great Britain.

Sectoral patterns of insecure workers by employment status

Figure 6 shows, for sectors with over 20,000 insecure workers in 2016, the split between employees (temporary or zero-hour contracts) and (low paid) self-employed. This shows that, while a majority of insecure workers were self-employed, there are many sectors where employee status is more usual. Those where self-employment is dominant include land transport (which will largely be various types of drivers, e.g. lorry, taxi, and van delivery), 'Other personal services' and construction activities, even though self-employed skilled tradespeople within construction are not included within our definition of insecure workers. Those classed as insecure in the artistic and media sphere are also predominantly self-employed.

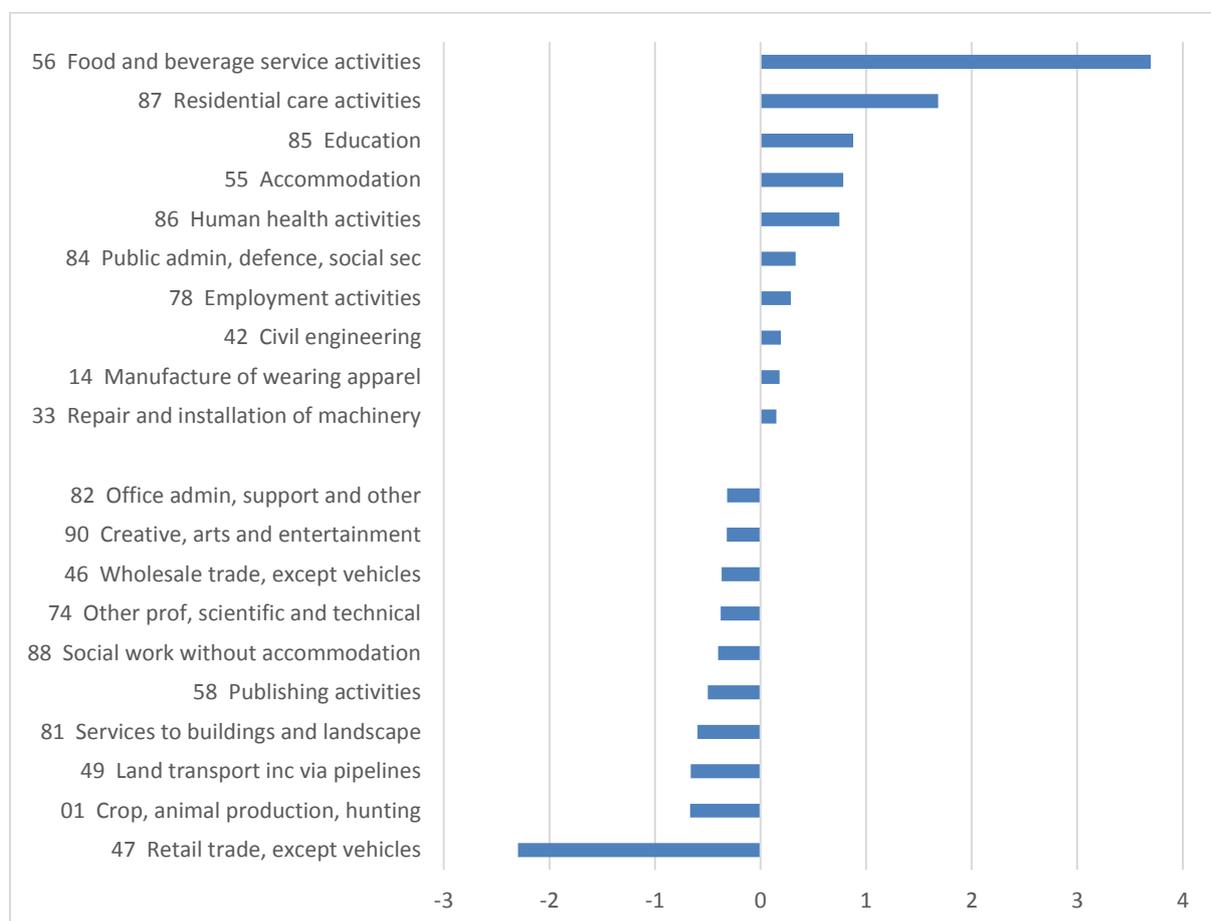
Figure 6: Distribution of insecure employees and self-employed by sector



Changes in the sectoral pattern of insecure work

The sectoral pattern of insecure work has also been changing alongside the overall increases. We have looked at the impact of these changes relative to the total of insecure workers. This is because there are many sectors with very small numbers of insecure workers, and random, purely statistical, shifts in these can produce very large percentage changes in these numbers. By looking at the sectoral changes in relation to the overall number of insecure workers, we can more clearly identify those sectors that are contributing to the overall increase, and those which are counteracting that trend. Figure 7 shows the top 10 and bottom 10 sectors for the change in their proportion of insecure workers.

Figure 7: Change in the proportion of insecure workers, 2011-16



The top sector is food and beverage service activities – or restaurants, cafes, fast food, bars and pubs. Low paid workers with a permanent contract are not included in our definition of insecure workers, so this sector which has always had a high incidence of low pay, also appears to have been moving towards increased usage of insecure employment terms. This compares with the situation in retail, where incidence of insecure employment has fallen. Hotels (Accommodation) is another growing sector for the use of insecure workers. In both these sectors, over 90% of

insecure workers are employees.

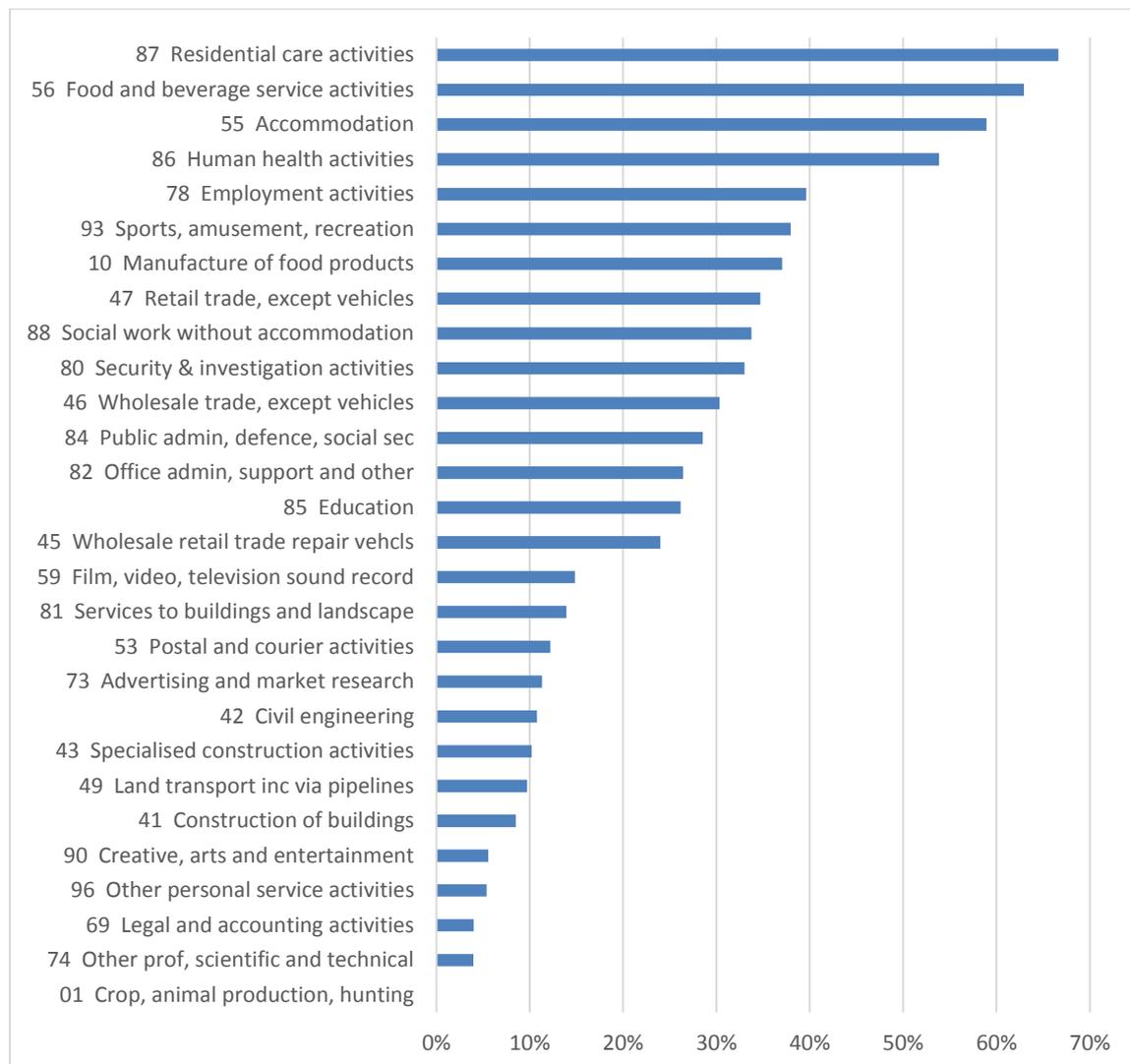
In residential care, another sector with a substantial increase in the number of insecure workers, over 80% of insecure workers are employees, but in social care without accommodation, (domiciliary care) only 41% are employees. This is a striking difference, as is the evidence that, while the numbers in social care without accommodation have increased, the increase has been below the average increase in insecure employment.

The growth in insecure employment in education and health may also be of concern. This may represent the increasing use of agency and zero-hour staff as the recruitment of permanent staff within the public sector is restricted by austerity.

Usage of Zero-hour contracts

Figure 8 shows the proportion of insecure employees (self-employed people are not asked about zero-hour contracts) who have Zero-Hour contracts, by sector in 2016.

Figure 8: Insecure employees with Zero-Hour contracts by sector (%)



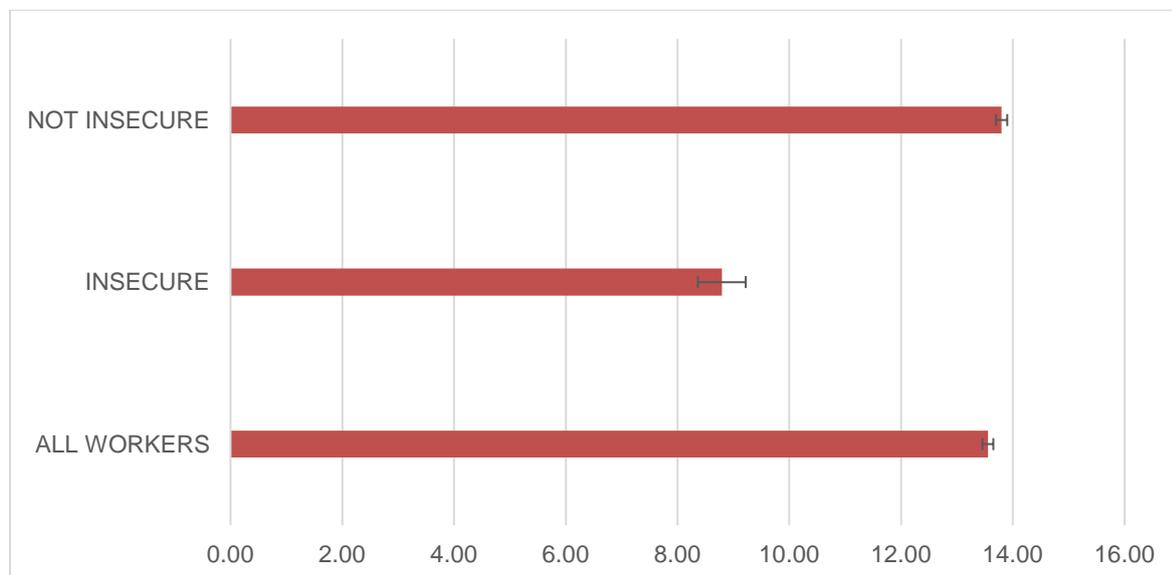
It is notable that the Employment Activities sector (Employment Agencies) is also a large user of Zero-Hour contracts. This perhaps restores to agencies some of the flexibilities they believed they had lost following the introduction of the Agency Workers Directive. The (human) health activities sector includes directly employed staff on Bank or Locum contracts that do not guarantee hours.

How much does insecure work pay?

The Labour Force Survey enables us to undertake some analysis of pay. However, earnings are not asked of the self-employed, which reduces the sample for analysis to under 50% of insecure workers. Further, earnings questions are only asked of 40% of the employees sampled. This reduces the sample further. Consequently, we have amalgamated datasets for four periods. As some of the questions relating to insecurity are only asked twice a year, this means that the four datasets used stretch from the autumn of 2014 to the spring of 2016. Therefore, different National Minimum Wages apply during this period, also vary depending on the ages of the individuals concerned.

We have calculated mean¹⁰ hourly pay, but included error bars (the width of the error bars are one standard error each side of the mean) to indicate the range in which the average is expected to lie. Insecure work pays less well than secure employment. On average, insecure workers earned £5.01 per hour less than secure employees. Thus, these workers suffer a double disadvantage of insecurity and lower pay.

Figure 9: Mean earnings of insecure and secure employees



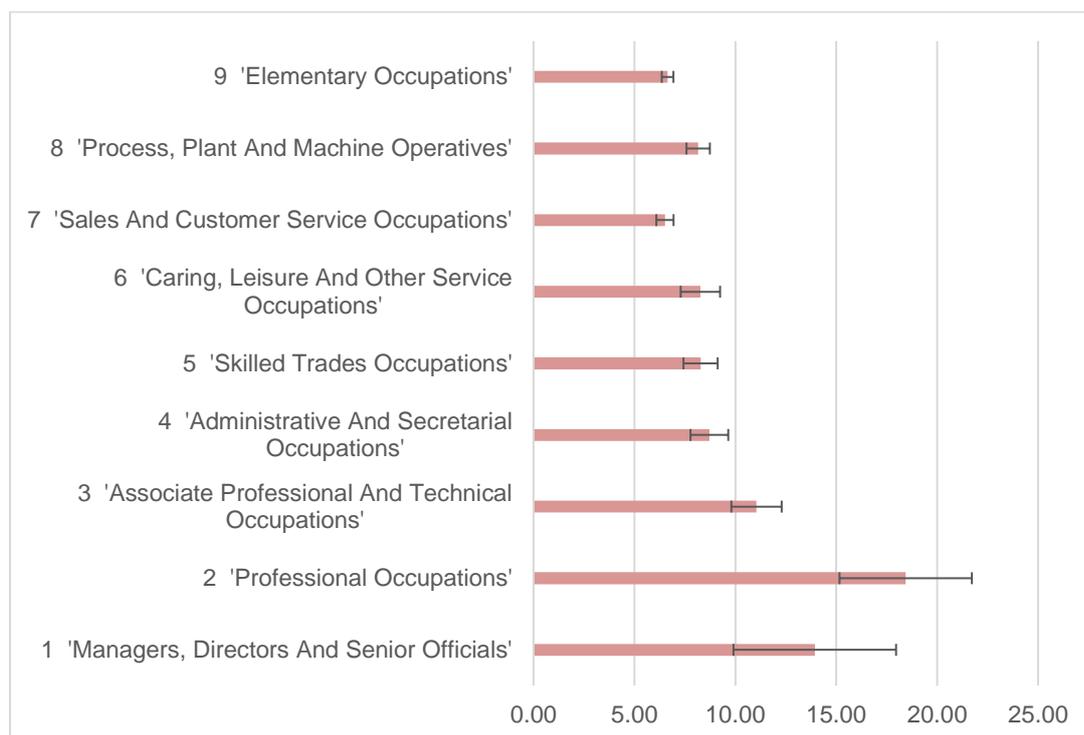
¹⁰ We calculated the mean for this purpose, rather than the median. The confidence intervals (shown in the chart) are defined more simply in a complex survey such as the Labour Force Survey for the mean than the median. We regard the confidence intervals as an important part of our survey analysis.

This finding is consistent with other research for the TUC¹¹ which found that, after controlling for a range of factors, median self-employed weekly earnings were 44% lower than median employee weekly earnings. The equivalent figure for those on zero hour contracts relative to ‘regular’ employees was 37%.

However, there are very substantial differences by occupation and by sector. By occupation, insecure workers in sales and customer service occupations are the lowest paid, followed closely by elementary occupations. The hourly rates of insecure workers in these occupational groups are around Minimum Wage levels.

Pay for insecure employees in Process, Plant and Machine Operatives, and those in Caring, Leisure and Other Services, Skilled Trades and Administrative and Secretarial occupations is slightly higher, but, on average around the Living Wage. Pay for insecure workers in associate professional, professional and managerial occupations is rather higher, but low by the standards of those occupations. The error bars around the mean hourly rates for these jobs are quite wide, indicating the degree of variation in the data.

Figure 10: Earnings of insecure employees by occupation

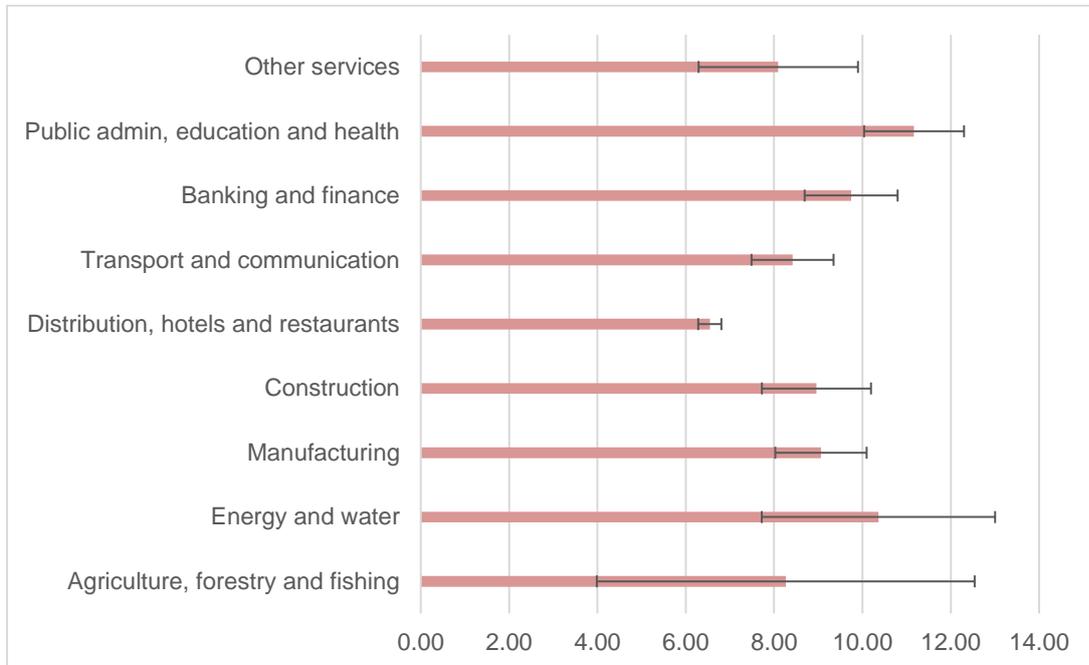


Analysing the pay by broad sector does not lead to quite such a clear a pattern. This is because all the sectors include people with a wide variety of occupations, which increases the variation in the pay of insecure workers within a sector and is indicated by the large error bars in Figure 11. The only sector that is unambiguously

¹¹ TUC (2017), ‘The impact of increased self-employment and insecure work on the public finances’, a report by Landman Economics.

very low paid for insecure workers is distribution, hotels and restaurants, which includes all retail, restaurant (including fast food) and bar staff. Care workers are included within the public administration, education and health sector so their situation is masked by the experience of other workers in that sector.

Figure 11: Earnings of Insecure Employees by broad sector



WHY HAS INSECURE EMPLOYMENT RISEN?

We have identified six potential drivers of the rise in insecure employment since 2011. These are:

- UK employment laws and their enforcement
- Decline in trade unionism
- The taxation of different forms of employment
- Public sector monopsony
- Technological developments
- Post-recession opportunities for employers / pressures to reduce costs, including public sector austerity

Below we set out how these factors might have influenced the levels of insecure employment in the UK and the evidence around this. A number of these factors have been longstanding feature of the UK and in existence long before 2011. Thus, we need to explain how these came to bear in this period rather than in earlier years.

Employment laws and their enforcement

As set out in Box 1, the three employment forms of employee, worker and self-employed bestow differing rights and protections on individual workers, and so impose differing obligations on employers. Hence, employers have an incentive to contract with workers on a self-employed basis rather than hire them on an employment contract as either workers or employees. By doing so employers are able to avoid the legal obligations of paying minimum wage levels, holiday and sick pay, and fair disciplinary and dismissal processes. Similarly, employers who employ individuals as workers rather than employees can avoid having to pay redundancy pay or having to pay compensation for unfair dismissals. Most individuals working with a contract of employment on a casual, temporary, seasonal or zero-hours basis are likely to be considered as workers rather than employees.

Agency workers are employed not by the employer on whose premises they work but by the agency that supplies them to work for that employer. Hence, the customer of the employment agency transfers the obligations of being the employer which we have discussed to that agency. The employment agency can in turn reduce its obligations to its workers by employing them as workers rather than employees on for example a zero-hour contract. An agency may also seek to engage workers it supplies to employers on a self-employed basis rather than as workers or employees.

These differences in the obligations of employers create incentives for them to hire individuals in different forms of insecure employment. However, these differences have long been in existence and so by themselves cannot explain why levels of insecure employment have risen since 2011. The enforcement of employment rights may provide one explanation, as it may have allowed employers to take greater advantage of these incentives since 2011 than before.

There are three principal mechanism for the enforcement of employment rights:

- By state bodies, for example, minimum wage enforcement is the responsibility of Her Majesty's Revenue and Customs (HMRC)
- By affected individuals themselves, for example, by making claims to Employment Tribunals and if necessary the courts system
- By trade unions via negotiation with employers, and or by supporting individuals to make claims to Employment Tribunals etc.

With regard to individual enforcement, 2013 saw the introduction of substantial fees for taking cases to Employment Tribunals. The result was a collapse in the number of cases being taken to an Employment Tribunal. In the 12 months following the introduction of fees cases fell to just a quarter of the level prevailing in the twelve

months prior to their introduction. The latest available statistics available (for the year to July to September 2016) indicate that case levels have only recovered to half the level before the introduction of fees. While recently some high-profile tribunal claims regarding workers' employment status (e.g. Uber taxi drivers and Pimlico Plumbers) have recently succeeded, there can be little doubt that the introduction of fees in 2013 adversely affected workers' ability to challenge their legal employment status. The House of Commons Justice Committee's inquiry into courts and tribunals fees concluded in June 2016 that "the regime of employment tribunal fees has had a significant adverse impact on access to justice for meritorious claims"¹².

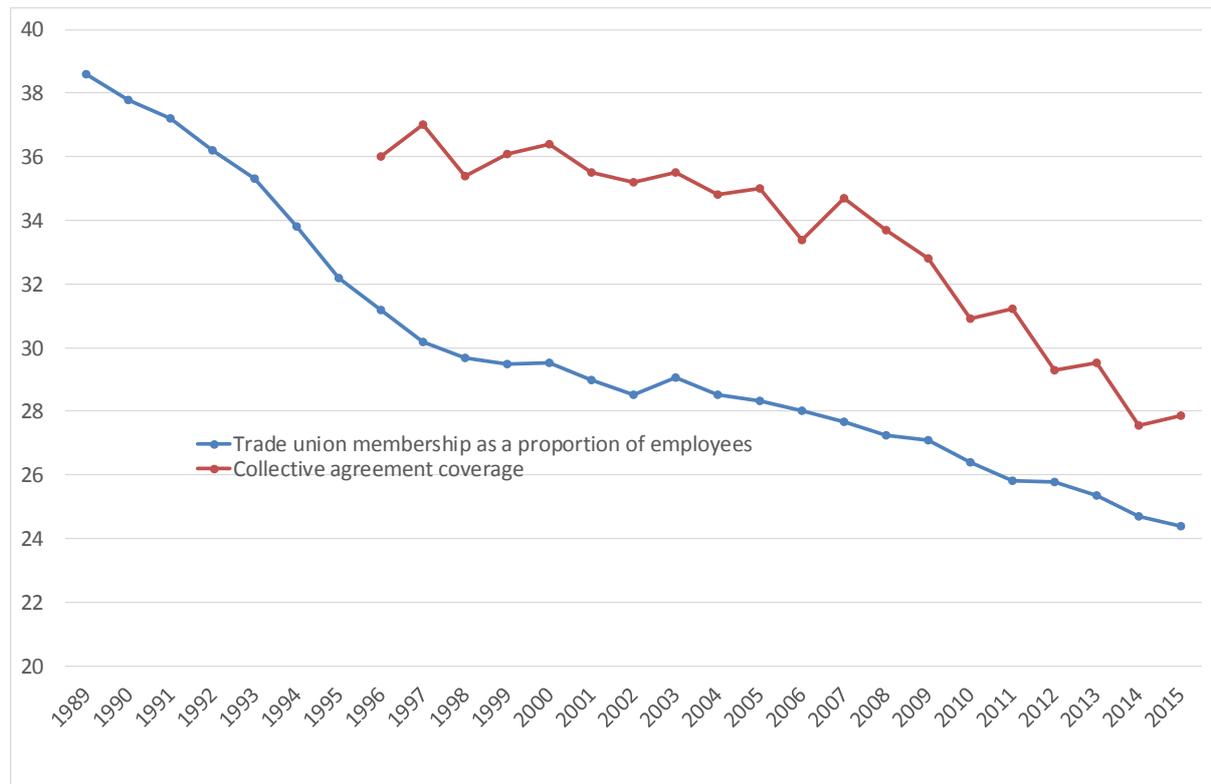
It is also noticeable that there was a big rise in insecure employment between 2012 and 2013, (287,000) which represents more than 40% of the total increase 2011 to 2016 in just one year. This is suggestive of the possibility that individuals now much less able to challenge their employment status. If so, then employers in turn are more likely to adopt insecure employment forms for their workforce as know they less likely to be challenged in a tribunal.

Influence of trade unions

As noted trade unions can influence the extent of insecure employment either directly via negotiations with employers or by supporting individuals who are legally challenging their employment status. Trade union membership density and the coverage of collective agreements have been declining for a number of decades. This process continued after 2011 and Figure 12 shows that union coverage, in particular, continued to fall after 2011. Hence, trade unions are probably less able to act as a constraint on employers and have less opportunity to support individuals with legal cases to enforce their employment rights or challenge their insecure status.

¹² House of Commons Justice Committee, 'Courts and tribunals fees', Second Report of Session 2016/17, HC 167, June 2016.

Figure 12: Trade union membership and collective agreement coverage (%)



Source: ONS

Taxation of different forms of employment

The tax system also creates incentives for employers to contract with workers on insecure terms, specifically to engage workers as self-employed contractors rather than employ them on a contract of employment. Employers do not have to pay employer national insurance contributions (NICs) on any workers they engage on a self-employed basis. For individuals hired in this way there are also tax advantages because employees pay NICs at a higher rate than the self-employed. In addition, the self-employed generally have greater possibilities to deduct work-related expenses from their income before taxation is imposed than employees. This may also benefit employers if lower taxation means that self-employed workers are willing to be employed at a lower pre-tax cost than would be the case if they were employed.

Some more sophisticated insecure self-employed workers may choose to incorporate themselves as businesses for further tax advantages. Company owner managers can further reduce their tax bills by taking income as dividends rather than wages, and by retaining income within their businesses and realising that income at a later date as capital gains when their businesses are sold or dissolved. Finally, companies with a turnover below a certain threshold (currently £83,000) are exempt from VAT which adds another potential avenue for avoiding taxation for a self-employed worker.

These differences in the taxation of employees and the self-employed are not new. Recent research by the Institute for Fiscal Studies (IFS)¹³ indicates that from 1999/2000 onwards the difference in tax due on an example fixed income of £40,000 (in 2016/17 prices) for a self-employed individual compared to an employee was broadly constant while the tax advantage for owner managers has tended to fall (but still be positive) over time. Hence, there has not been a greater tax incentive to be self-employed since 2011 than before. However, as discussed below there have probably been in recent years greater opportunities and pressures to respond to these tax incentives and work as a self-employed worker rather than as an employer. Research for the TUC suggests that the rise in self-employment and insecure employee employment between 2006 and 2016, cost the exchequer between £5.3 billion and £5.9 billion in 2016/17¹⁴.

Technology

The rise of the gig economy has been most widely reported on as a technological factor behind the rise of insecure work in the form of low paid self-employment. However, there would appear to be wider technological developments which have made self-employment rather than employment as an employee a more practical proposition.

The gig economy might be defined as a situation where a company provides a digital platform that matches individuals selling services to customers. Typically, the individuals providing services have not been employed as employees of the company providing the digital platform but as self-employed individuals. This designation as self-employed rather than workers (in legal terms and distinct legally from designation as an employee) is currently being tested in a number of cases, most notably in connection with tax drivers utilising Uber's digital platform.

The idea of offering a facility that matches consumers to service providers is not new. For example, it is a long-established practice that many hairdressing salons do not employ the hairdressers working on their premises. Instead, space within the salon (the platform) is rented out to self-employed hairdressers. However, the development of large scale IT based matching platforms made possible by recent technological advances does represent a new development that has expanded the scope and scale of activities that can practically be undertaken on the basis of matching self-employed workers and customers.

While these new platform technologies have undoubtedly played a role in increasing insecure work, many of the activities where insecure work has grown lie outside of

¹³ Adam S., Miller, H. and Pope, T. (2017), "Tax, legal form and the gig economy", Chapter 7 in the IFS Green Budget 2017.

¹⁴ TUC (2017), 'The impact of increased self-employment and insecure work on the public finances', a report by Landman Economics.

those most affected by these technological developments. Although less noticed in public debate recent technological developments favouring self-employment are not restricted to those supporting digital platforms. Research by the Bank of England¹⁵ notes that many of the costs of business (e.g. equipment and advertising) have been falling in relative terms compared to the costs of goods and services more generally. Internet based commerce is now widespread and establishing a business on line, or partially on line, is much less costly with much less need for traditional bricks and mortar premises with the cost savings this implies.

Public sector monopsony

The situation of monopsony where one dominant purchaser faces a number of providers in a market appears to be playing a significant role in the rise in insecure employment in the social care sector. The supply side of the care home market is rather fragmented, while local authorities are the largest single purchasers in most parts of the country. This gives local authorities very considerable purchasing power in local markets. Given the continuing pressures on local authority budgets, their response has been to stretch budgets as far as they can by negotiating lower prices for the care home places they purchase. A recent House of Commons Library Briefing Paper¹⁶ notes that between 2010/11 and 2015/16 local authorities have cut their fee rates by on average over 5% in real terms. One result of this situation is to place great pressures on employers in social care to cut costs in order to maintain their financial viability. In consequence, the use of lower cost insecure forms of employment becomes a key part of their survival strategy. It is notable that residential social care is the sector making the greatest use of zero-hours contracts.

Post-recession economic climate

One obvious question that has arisen in connection with the rise in insecure employment given the long-standing incentives for insecure employment created by UK labour law and the system of taxation is why now and not before? As discussed above, the decline of trade union influence, the imposition of employment tribunal fees, recent technological developments and the particular pressures placed on local authorities by public sector austerity all help to explain why the rise in insecure employment has occurred in recent years and not earlier. In addition, the economic climate since the Great Recession has probably played a part in both focusing businesses on cost reduction and giving them the possibility to employ people as insecure workers.

Slow economic growth following the Great Recession means that businesses are facing greater competitive pressures than they experienced previously. In order to

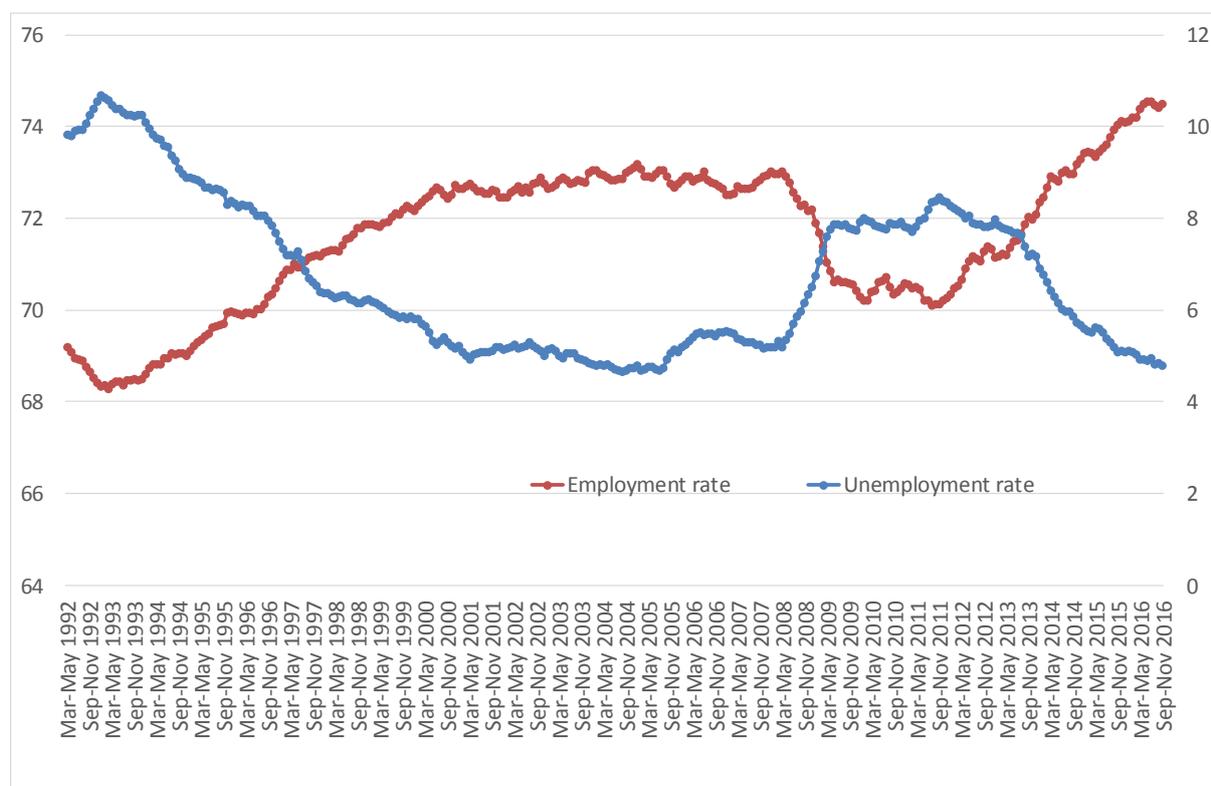
¹⁵ Tatomir, S. (2015), "Self-employment what can we learn from recent developments?", Bank of England Quarterly Bulletin 2015 Q1.

¹⁶ Jarrett, H. and Cromarty, H. "Funding social care and the care home market (England)", House of Commons Library Briefing Paper No. 7463".

maintain market share and business viability, businesses have focused much more on cost minimisation. Engaging workers on insecure terms which reduce costs and obligations to the business has been part of that strategy. Pre-recession there was less of an imperative on businesses to cut costs in this way and employers at that stage had less reason to change and undertake the difficult task of pushing that change through.

One potential constraint on employers' usage of insecure workers is their ability to attract a sufficient supply of labour given that individuals will normally have other labour market opportunities. Figure 13 shows the working age employment and (16+) unemployment rates since 1992. From around 2011 the employment rate started to rise but even so the employment and unemployment rates were at relatively low and high levels respectively. Hence the period of expansion in insecure employment coincided with a period when labour market opportunities were relatively scarce compared to the pre-recession period. This situation continued until around late 2014 / early 2015. Overall labour market conditions have continued to improve, but even today while the employment rate has reached an all-time high and the unemployment rate has returned to pre-recession levels, rates of involuntary part-time and temporary working remain by historic standards.

Figure 13: Working age employment and unemployment rates



Sectoral Drivers of Insecure Employment

In the previous sections of the report we have looked at insecure employment at the aggregate and sectoral levels, and considered some factors that could have driven the increase in insecure since 2011. Here we look at the potential relationship at the sectoral level between a range of factors and the level of, or change in, insecure employment. This is in order to try and understand the differences in insecure employment between sectors and what might be driving the move towards insecure work more generally. This approach is rather experimental as we are investigating possible relationships. There are also some gaps in data availability that affect some of the analysis that we can undertake. The sectoral factors we have looked at are:

- Profitability
- Trade union density
- Earnings levels and growth
- Employment growth
- Productivity Growth
- Investment / ICT investment

Our initial analysis of insecure employment was carried using the 2007 Standard Industrial Classification (SIC 2007) at the 2-digit level. There are 88 2 digit SIC 2007 industries. The data on a number of the above potential sectoral drivers above are only available at the 1-digit SIC 2007 level. Hence some of our analysis has to be done at the 1-digit level. There are 19 1-digit 2007 industries. One drawback of having to move from the 2-digit level to the 1-digit level is that it could be that concentrations of insecure employment at the 2-digit level become obscured by analysis at the 1-digit level. Appendix 1 shows the correspondence between the 1 and 2-digit level sectors and the incidence of insecure employment in 2011 and 2016. Here we set out a summary of the pattern of insecurity that emerges from our analysis at the 1 and 2 digit levels.

- **Agriculture, forestry and fishing** overall has an incidence of insecure work which is close to the whole economy average. Within this forestry and logging had a relatively high incidence of insecure work in both 2011 and 2016, although the extent of insecurity has declined 2011-16.
- Overall **manufacturing** has a low incidence of insecure work. Within manufacturing two industries have a concentration of insecure employment: manufacturing of wearing apparel (essentially clothes manufacturing) and the manufacture of leather and related products. The latter industry is, however, very small in employment terms and in 2011 recorded no insecure workers, reflecting the limitations of some disaggregated Labour Force Survey data.
- **Transportation and storage** as a whole had, in both 2011 and 2016, around double the incidence of insecure of the whole economy average. This is driven by the high incidence of insecure employment in land transport and

postal and courier activities, especially the former sector. Land transport includes taxi services and so is the sector where Uber's activities are located.

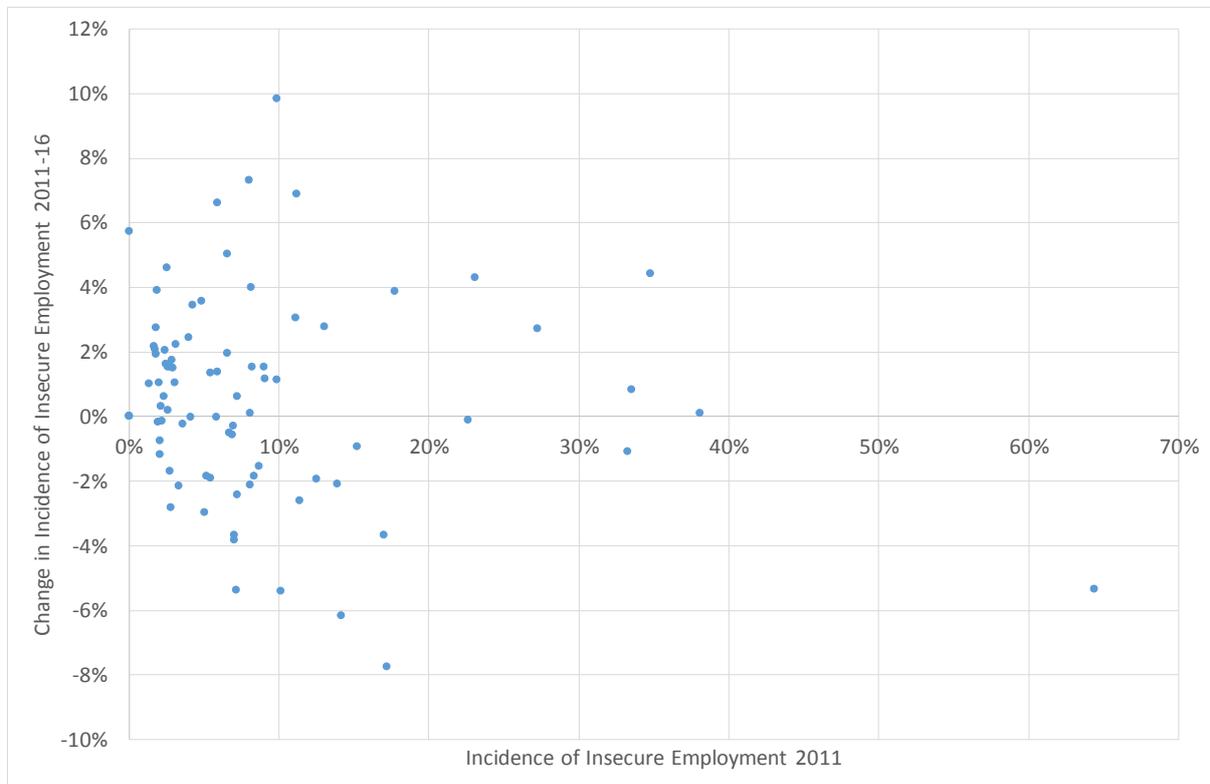
- Both parts of the **accommodation, and food services sector** have moved between 2011 and 2016 from having an average incidence of insecure employment to being sectors with a high such incidence. These are both sectors which also have a long history of employing high proportions of low paid workers.
- Within **information and communication**, film, video, and television programme activities stand out as having a very high incidence of insecure employment with in both 2011 and 2016, a third of workers in insecure work.
- Within **professional, scientific and technical activities**, advertising and market research and especially other professional, scientific and technical activities are concentrations of insecure employment. Other professional, scientific and technical activities includes design, photographic, translation and interpretation activities.
- **Administrative and support services** overall had a relatively high incidence of insecure employment in 2011 and 2016. Within this broad sector insecure employment was concentrated in employment activities, which includes the activities of employment agencies, and service to buildings and landscaping.
- Within **human health and social work**, social work without accommodation has a relatively high incidence of insecure employment and the incidence of insecure employment in residential care has doubled between 2011 and 2016.
- The **arts, entertainment and recreation sector** had the highest incidence of insecure employment in both 2011 and 2016 of any of the 19 1-digit SIC sectors. In particular, a majority of those working in creative arts and entertainment were in insecure employment in both 2011 and 2016. Additionally, in both these years around a quarter of workers in sports, and amusement and recreation activities were in insecure employment.
- Finally, between a fifth and a quarter of workers in **other services** in both 2011 and 2016 were in insecure employment, and within this 1-digit sector other personal services, which includes hairdressing and beauty salons, and domestic personnel had very high rates of insecure employment above 30% in both 2011 and 2016.

The level and change in incidence of insecure employment 2011-16

Before investigating the relationship between the incidence of insecure employment and various potential sectoral drivers noted above it is worth first establishing the relationship between the initial incidence of insecure employment in 2011 and the change in that incidence 2011-16. Figure 14 shows the scatter plot of these two

variables at the 2-digit level. No clear relationship is apparent so there is no simple story of either the incidence of insecure employment being expanded within sectors where it is already more prevalent, or being expended into new sectors where it is a relatively scarce form of employment.

Figure 14: Level and change in the incidence of insecure employment for 2 digit SIC 2007 industries



Profitability

ONS data on profitability is only available for the whole economy, and for manufacturing and services. Profitability data at the 1 and 2-digit sector level is not available. This is because the ONS' profits survey is based on a relatively small sample of around 1,600 companies which is stratified into 13 industries. In order to protect companies against identification, ONS is prohibited from providing data at this level of detail. Hence, we are unable to assess the relationship between sectoral profitability and the incidence of insecure employment. If more detailed profitability data becomes available in the future, then it would be pertinent to see if there is a relationship between tighter profit margins and seeking to reduce labour costs via increased use of insecure forms of employment by employers.

Trade Union Density

Figure 15 shows the relationship between Trade Union Density in 2015 (the latest available data from ONS) and the incidence of insecure employment in 2016 at the 1-digit SIC 2007 level. This suggests that we can group sectors into two groups:

those with trade union density above 30% and those with trade union density below 20%. Within these two groups there does not appear to be any clear relationship between trade union density and the incidence of insecure employment.

Figure 15: Level of Trade Union Density in 2015 and the incidence of insecure employment in 2016

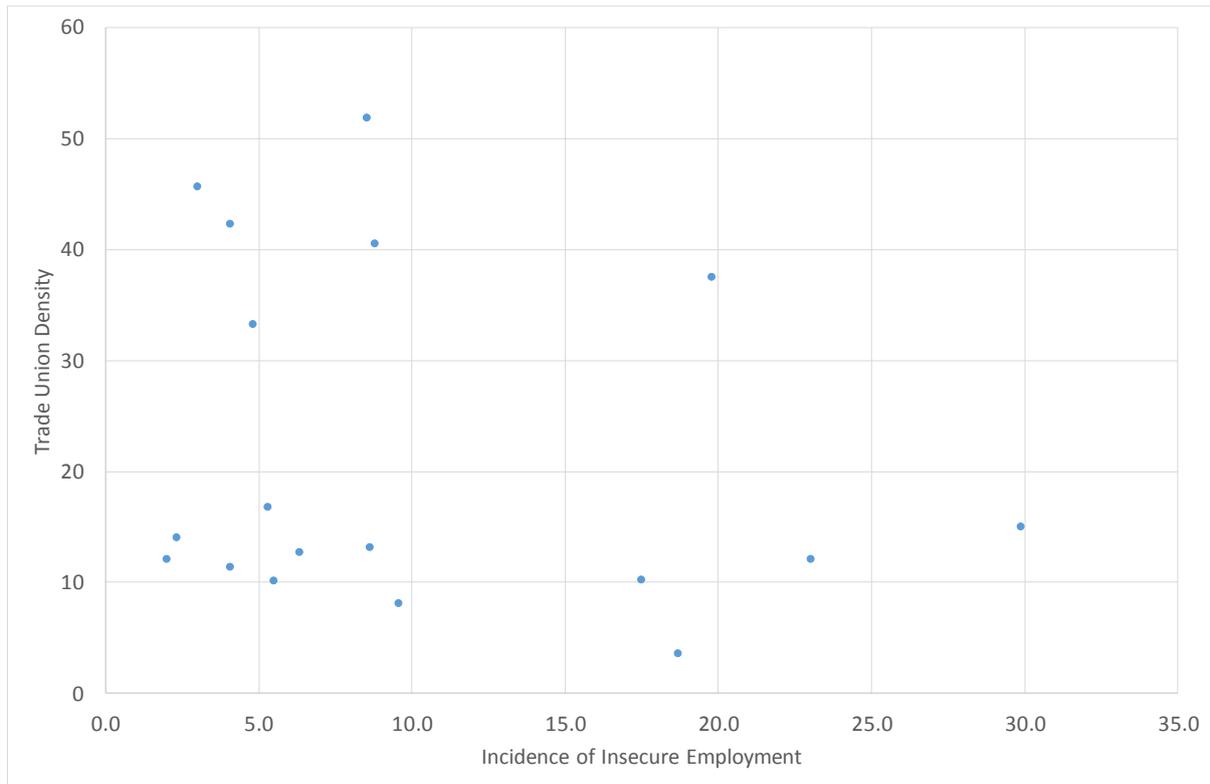
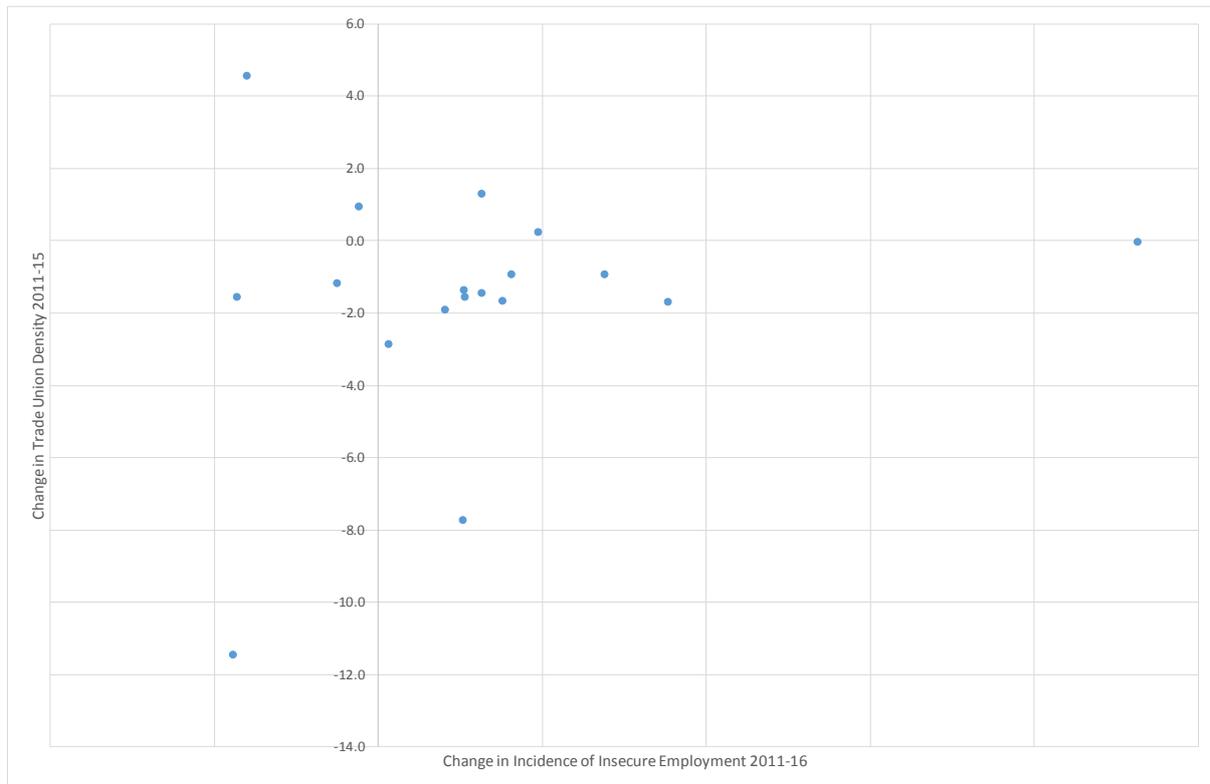


Figure 16 looks at this issue in terms of changes since 2011 in both trade union density and the incidence of insecure employment. Again, there does not appear to be a clear relationship between the changes in these two variables at a sectoral level for 1 digit sectors. However, we have noted earlier that for the economy as a whole declines in trade union density and coverage have occurred at the same time as insecure employment has increased.

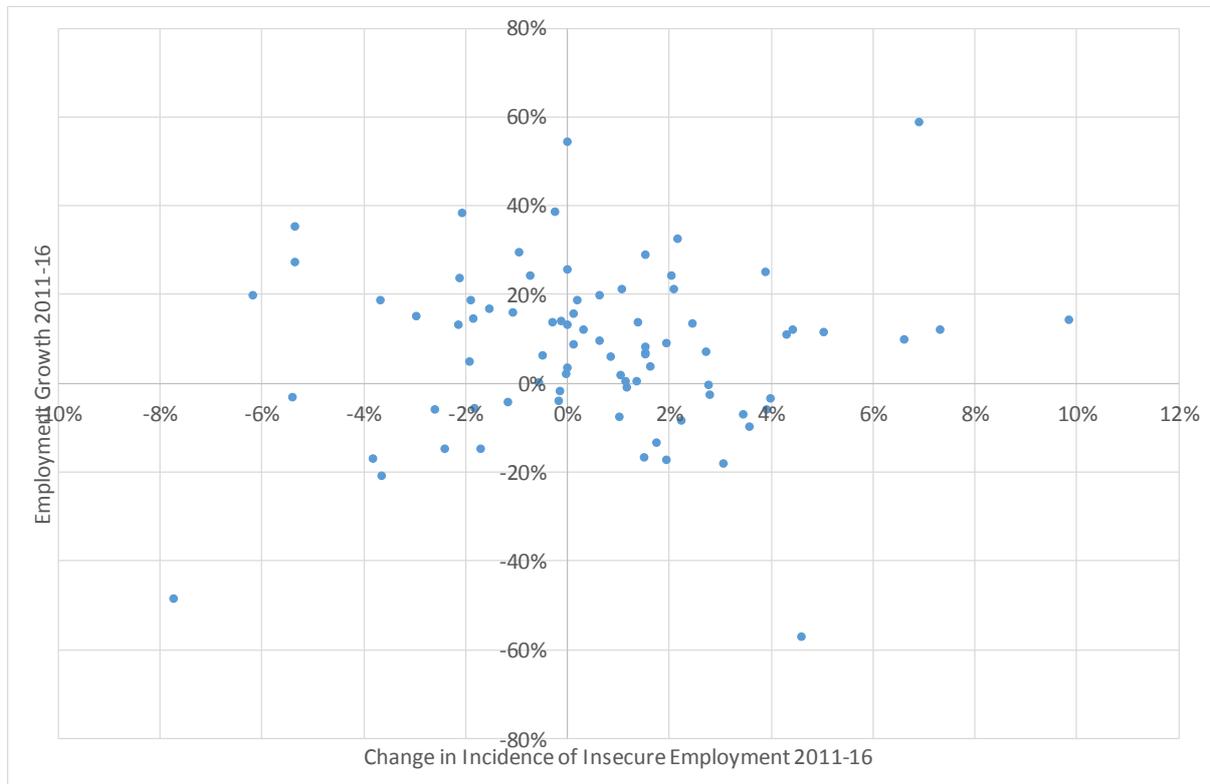
Figure 16: Change in trade union density and the incidence of insecure employment, 19 SIC 2007 1 digit industries



Employment

Figure 17 shows the relationship between the change in insecure employment and employment growth generally in the 2-digit SIC 2007 sectors. No clear relationship is apparent, so it is neither the case that relatively slow growing, nor fast growing sectors are associated with either expanding or declining incidence of insecure employment.

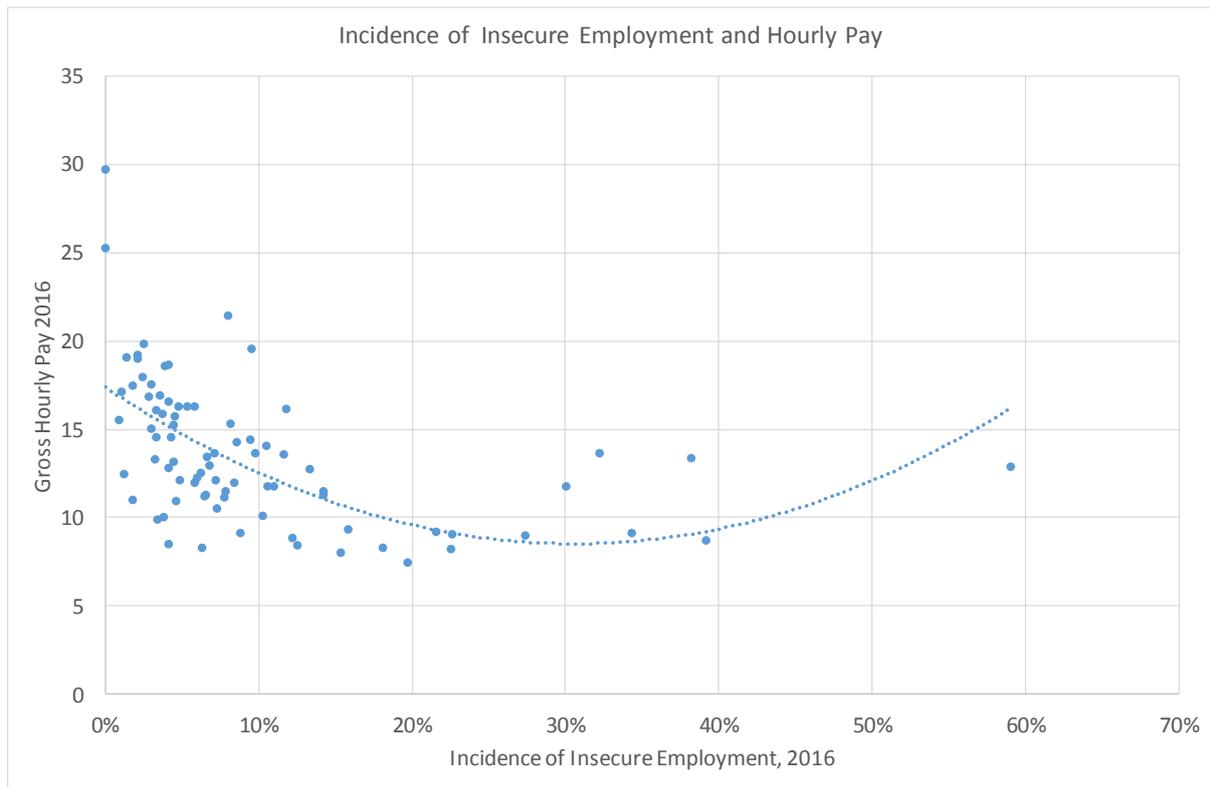
Figure 17: Employment growth and change in the incidence of insecure employment, 2 digit SIC 2007 industries



Earnings levels and growth

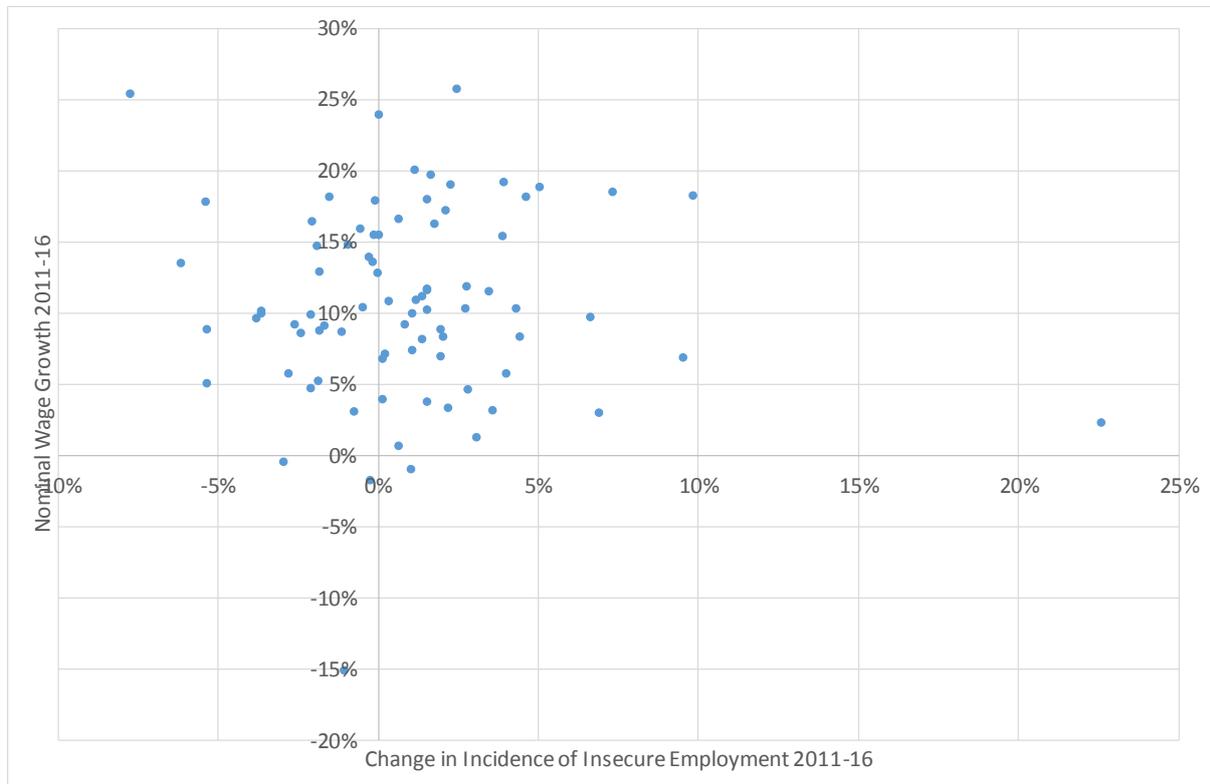
Figure 18 shows the relationship between the level of gross hourly earnings in 2016 and the incidence of insecure employment in that year at the 2 digit SIC level. A non-linear relationship emerges. Initially as median hourly earnings fall this is associated with an increase in the incidence of insecure employment. However, at an incidence of insecure employment of around 30% increased incidence becomes associated with increasing levels of hourly pay. Most 2 digit SIC level industries are covered by the initial negative relationship between hourly pay and the incidence of insecure employment. Three of the six sectors with an incidence of insecure employment at or above 30% are creative sectors (including film, television and video production, design, photography and arts and entertainment) so this finding may in part reflect the prevalence of contracting in creative employment.

Figure 18: Incidence of Insecure Employment and Hourly Pay



In contrast, there does not appear to be a systematic relationship between the growth in hourly earnings between 2011 and 2016 and the change in the incidence of insecure employment between these two years. This is shown in the Figure 19.

Figure 19: Change in hourly earnings and incidence of insecure employment 2011-16, SIC 2007, 2 digit sectors



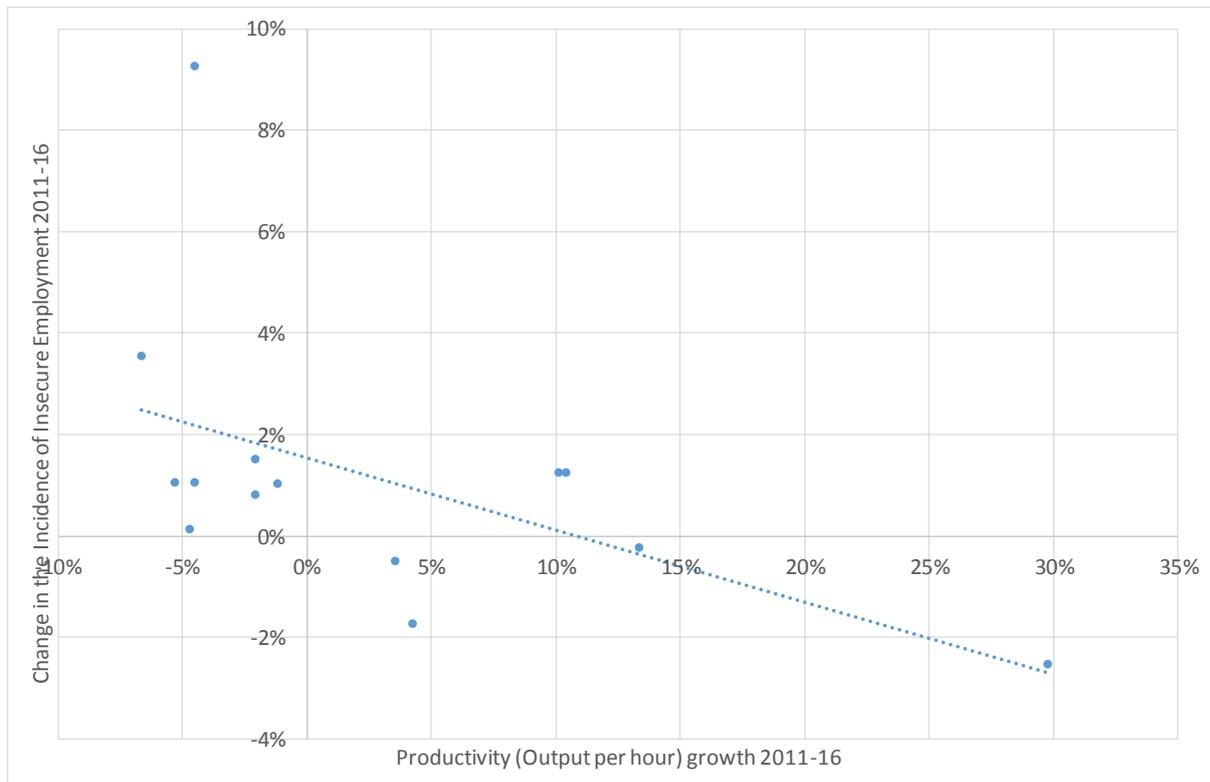
Productivity Growth

Figure 20 shows the relationship between productivity growth and the change in insecure employment between 2011 and 2016. We were only able to look at this relationship for 14 1-digit SIC 2007 industries, as productivity data was not available for mining and quarrying; electricity, gas, steam and air conditioning; water supply, sewerage and waste management; and data was available only for government services which covers the three 1-digit sectors of: health and social work; education; and public administration and defence, and not these sectors separately. The pattern that emerges is a negative association between productivity growth and changes in the incidence of insecure employment. Thus, sectors which saw higher increases in productivity tended to experience falls, or smaller increases in insecure employment than other sectors. There is a reasonably strong correlation between lower productivity growth and higher increases in the incidence of insecure employment. The correlation coefficient between these two variables is -0.52. A correlation coefficient of -1 would indicate a perfect negative linear correlation while a coefficient of 0 indicates no linear correlation.

We cannot say from this correlation analysis whether lower productivity causes higher levels of insecure employment or vice versa, or whether causation runs in both directions or indeed whether there is any causal relationship between the two variables, as correlation does not necessarily imply causation. The result, however,

is interesting suggesting that there could be some negative causal relationship between increasing insecure employment and declining productivity but establishing such a relationship exists would require further research.

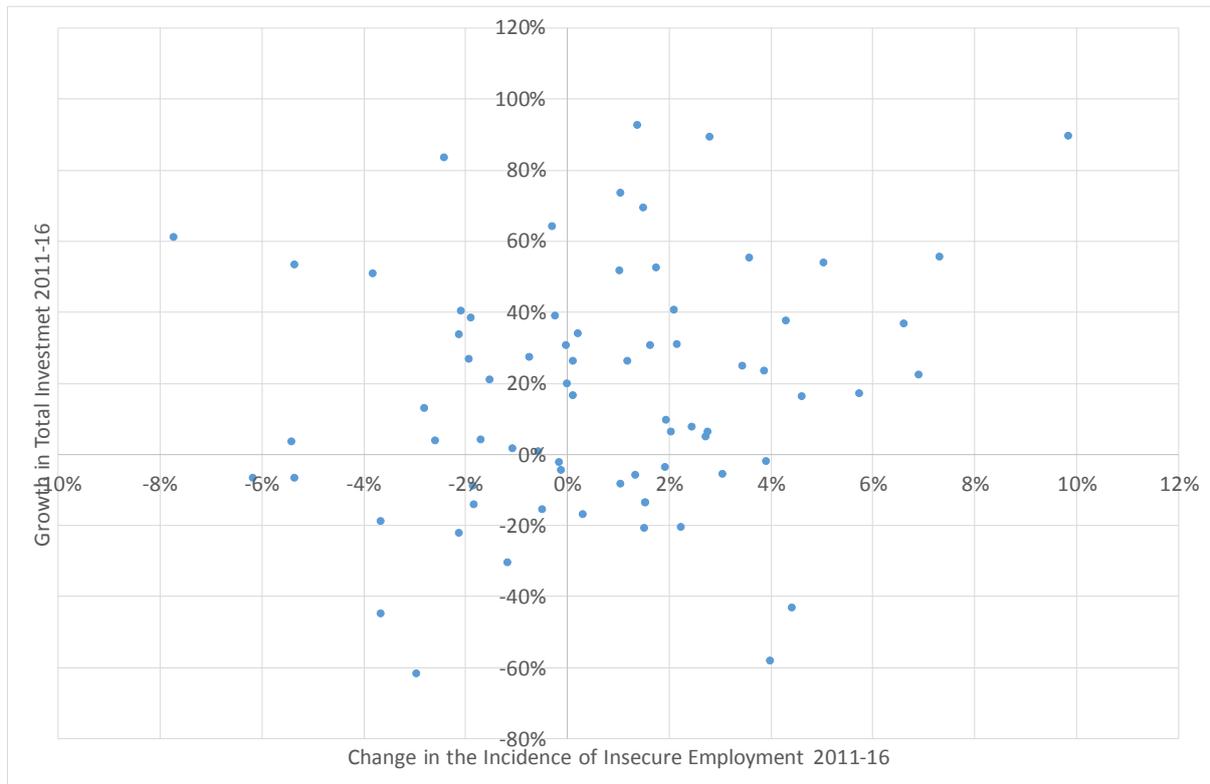
Figure 20: Productivity Growth and Change in the Incidence of Insecure Employment 2011-16



Investment / ICT investment

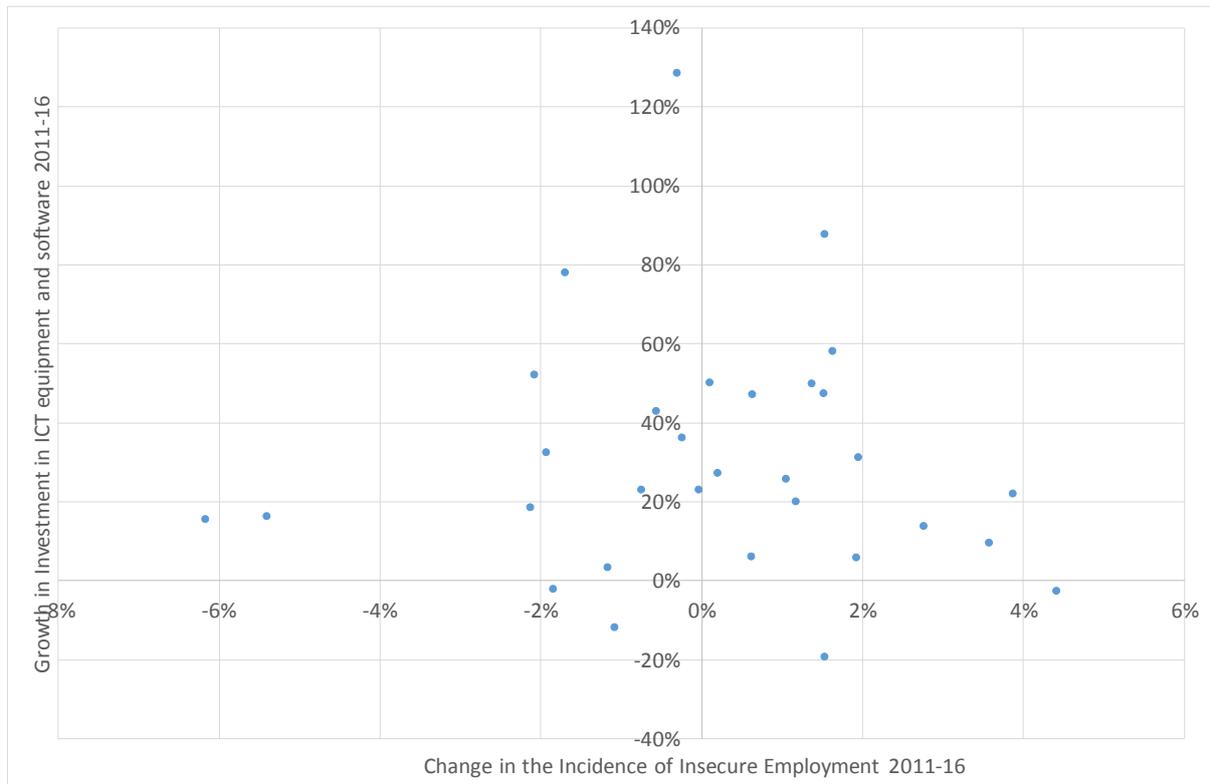
The chart below shows the relationship between the growth in total investment (in inflation adjusted or real terms) and the change in the incidence of insecure employment between 2011 and 2016 for 2 digit SIC 2007 sectors. Due to data constraints, this analysis was undertaken for 73 2 digit industries. No apparent relationship emerges between investment growth and the incidence of insecure employment.

Figure 21: Growth in total investment and change in the incidence of insecure employment, 2 digit Sic 2007.



Given the use of digital platforms to support some forms of insecure employment, it could be that the incidence of insecure employment is more related to investment in ICT than investment generally. The chart below shows the relationship between the growth in investment in ICT equipment and software (in inflation adjusted or real terms) and the change in the incidence of insecure employment between 2011 and 2016 for 2 digit SIC 2007 sectors. Due to data constraints, this analysis was undertaken for only 31 2 digit industries. Again no apparent relationship emerges between the growth in investment in ICT equipment and software and the incidence of insecure employment. One potential reasons for this result is that such investment may take place outside of the UK. For example, the digital platform used by Uber drivers located in the UK, and other countries is based in the Netherlands.

Figure 22: Growth in ICT and software investment and the change in the incidence of insecure employment



CONCLUSIONS

This paper has investigated the rise in insecure employment in the UK since 2011. The number of insecure workers has risen from 2.4 million in 2011 to 3.1 million in 2016. Thus by 2016 one in ten of those employed were in insecure employment.

Insecure employees are much less likely to be supported by trade unions than secure employees – over the 2011-16 period only 14% of insecure employees were in workplaces covered by trade union representation compared to 30% amongst secure employees.

Insecure workers also suffer a double disadvantage because they are also paid less than workers on more secure contracts - £5 less per hour for the period Autumn 2014 to Spring 2016.

The top five sectors with the largest numbers of insecure workers in 2016 are:

- Education
- Restaurants, takeaways, cafés, catering, pubs and bars

- Land transport (which includes taxi, lorry, and van delivery drivers)
- Retail sector (except for sale of vehicles)
- Other personal services (includes hairdressing and beauty services)

The sectors with the largest increases in insecure employment between 2011 and 2016 were:

- Restaurants, takeaways, cafés, catering, pubs and bars
- Residential care
- Education
- Accommodation (including hotels)
- Human health activities

The prevalence of zero hour contracts has risen in recent years. In four sectors in 2016 more than half of all insecure workers were on zero-hour contracts: residential care; restaurants, takeaways, cafés, catering, pubs and bars; accommodation (includes hotels) and human health activities.

We identified six potential drivers of the rise in insecure employment since 2011:

- UK employment laws and their enforcement
- Decline in trade unionism
- The taxation of different forms of employment
- Public sector monopsony
- Technological developments
- Post-recession opportunities for employers / pressures to reduce costs, including public sector austerity

A number of these factors are longstanding features of the UK and in existence before 2011. Thus, we need to explain how they impacted in this period rather than in earlier years. The decline of trade union influence, the imposition of employment tribunal fees, recent technological developments and the particular pressures placed on local authorities by public sector austerity all help to explain why the rise in insecure employment has occurred in recent years and not earlier. In addition, the difficult economic climate in the UK since the Great Recession has probably played a part in both focusing businesses on cost reduction and giving them the possibility to employ people as insecure workers.

One constraint on businesses' usage of insecure workers is their ability to attract a sufficient supply of labour to work for them. For most of the period since the Great

Recession the working age employment and (16+) unemployment rates were at relatively low and high levels respectively compared to the years before the Great Recession. This was true until around late 2014 / early 2015. Hence the period of expansion of insecure employment generally coincided with a period when individuals generally had fewer alternative employment opportunities.

At a sectoral level, no simple story emerged of either the incidence of insecure employment being expanded within sectors where it was already more prevalent, or being expended into new sectors where it was a relatively scarce form of employment. We could find few associations at the sectoral level between levels of, or changes in, insecure employment and various potential causal factors. The exceptions were:

- a relationship between the level of earnings in 2016 and the incidence of insecure employment in that year. A non-linear relationship emerges: initially as median hourly earnings fall this is associated with an increase in the incidence of insecure employment. However, once insecure employment reaches around 30% of all employment then increased incidence becomes associated with increasing levels of hourly pay.
- a negative relationship between productivity growth between 2011 and 2016 and changes in the incidence of insecure employment over the same period. Thus, sectors which saw higher increases in productivity tended to experience falls, or smaller increases in insecure employment than other sectors. However, this correlation does not imply that higher insecure employment causes lower productivity growth or vice versa. Correlation does not imply causation and it would require further research to establish whether any causal relationship exists and its nature if it did.

APPENDIX 1: 1 AND 2 DIGIT SECTORS AND THE INCIDENCE OF INSECURE EMPLOYMENT

1-digit sector	Insecure Incidence		2-digit sector	Insecure Incidence	
	2011	2016		2011	2016
Agriculture, forestry and fishing	11%	9%	01 Crop, animal production, hunting	11%	9%
			02 Forestry and logging	17%	13%
			03 Fishing and aquaculture	0%	6%
Mining and quarrying	4%	2%	05 Mining of coal and lignite	0%	0%
			06 Extraction crude petroleum and gas	3%	0%
			07 Mining of metal ores	0%	0%
			08 Other mining and quarrying	3%	7%
			09 Mining support service activities	5%	2%
Manufacturing	4%	5%	10 Manufacture of food products	9%	10%
			11 Manufacture of beverages	3%	5%
			12 Manufacture of tobacco products	0%	0%
			13 Manufacture of textiles	7%	3%
			14 Manufacture of wearing apparel	11%	18%
			15 Manufacture of leather and related	0%	23%
			16 Manufacture wood and wood products	3%	5%
			17 Manufacture paper & paper products	7%	3%
18 Printing and recorded media	5%	8%			

1-digit sector	Insecure Incidence		2-digit sector	Insecure Incidence	
			19 Manufacture of coke & refined petrol	0%	7%
			20 Manufacture of chemicals	2%	5%
			21 Manufacture of pharmaceuticals	5%	4%
			22 Manufacture rubber plastic products	4%	8%
			23 Manuf non-metallic mineral products	7%	5%
			24 Manufacture of basic metals	2%	6%
			25 Manuf fab metal prods, ex machinery	3%	1%
			26 Manuf computer, electronic & optical	2%	4%
			27 Manufacture of electrical equipment	3%	4%
			28 Manuf of machinery n.e.c.	5%	3%
			29 Manuf vehicles and trailers	4%	4%
			30 Manufacture of other transport	2%	4%
			31 Manufacture of furniture	2%	4%
			32 Other manufacturing	9%	7%
			33 Repair and installation of machinery	2%	4%
Electricity, gas, steam and air conditioning supply	2%	4%	35 Electricity, gas and air conditioning supply	2%	4%
Water supply, sewerage, waste management and	6%	5%	36 Water collection, treatment & supply	2%	1%

1-digit sector	Insecure Incidence		2-digit sector	Insecure Incidence	
remediation activities			37 Sewerage	17%	9%
			38 Waste collection, treatment, disposal	8%	6%
			39 Remediation & other waste management	4%	6%
Construction	7%	9%	41 Construction of buildings	9%	10%
			42 Civil engineering	8%	10%
			43 Specialised construction activities	5%	7%
Wholesale and retail trade; repair of motor vehicles and motorcycles	7%	6%	45 Wholesale retail trade repair vehicles	6%	7%
			46 Wholesale trade, except vehicles	6%	6%
			47 Retail trade, except vehicles	7%	6%
Transportation and storage	19%	20%	49 Land transport	27%	30%
			50 Water transport	7%	12%
			51 Air transport	1%	2%
			52 Warehousing & support for transport	7%	7%
			53 Postal and courier activities	15%	14%
Accommodation and food service activities	9%	19%	55 Accommodation	8%	15%
			56 Food and beverage service activities	10%	20%
Information and communication	7%	5%	58 Publishing activities	10%	5%
			59 Film, video, television sound record	33%	32%
			60 Programming and broadcasting	14%	8%
			61 Telecoms	3%	1%

1-digit sector	Insecure Incidence		2-digit sector	Insecure Incidence	
			62 Computer programming and consultancy	2%	1%
			63 Information service activities	0%	9%
Financial and insurance activities	2%	2%	64 Financial ex insurance and pension	2%	2%
			65 Insurance, reinsurance and pension	2%	2%
			66 Auxiliary to financial and insurance	2%	3%
Real estate activities	3%	4%	68 Real estate activities	3%	4%
Professional, scientific and technical activities	10%	10%	69 Legal and accounting activities	8%	8%
			70 Head offices; management consultancy	4%	3%
			71 Architectural and engineering	3%	3%
			72 Scientific research and development	2%	2%
			73 Advertising and market research	14%	12%
			74 Other prof, scientific and technical	38%	38%
			75 Veterinary activities	7%	2%
Administrative and support service activities	16%	17%	77 Rental and leasing activities	7%	8%
			78 Employment activities	18%	22%
			79 Travel, tour operator, reservation	10%	11%
			80 Security & investigation activities	8%	12%
			81 Services to buildings and landscape	23%	23%

1-digit sector	Insecure Incidence		2-digit sector	Insecure Incidence	
			82 Office admin, support and other	12%	11%
Public administration and defence; compulsory social security	2%	3%	84 Public admin, defence, social security	2%	3%
Education	7%	9%	85 Education	7%	9%
Human health and social work activities	6%	9%	86 Human health activities	3%	4%
			87 Residential care activities	6%	12%
			88 Social work without accommodation	13%	16%
Arts, entertainment and recreation	26%	30%	90 Creative, arts and entertainment	64%	59%
			91 Libraries, archives, museums	11%	14%
			92 Gambling and betting activities	3%	4%
			93 Sports, amusement, recreation	23%	27%
Other service activities	22%	23%	94 Activities membership organisations	8%	6%
			95 Repair of computers and other goods	7%	6%
			96 Other personal service activities	35%	39%
			97 Domestic personnel	34%	34%
			98 Undifferentiated goods	0%	62%
			99 Extraterritorial organisations	0%	1%
Whole Economy	8%	10%			