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Small Project Report

Insecure Employment and Mental Health: One Pathway in the Productivity Puzzle

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About PIN

The Productivity Insights Network was established in January 2018 and is funded by the Economic and Social Research Council. As a multi-disciplinary network of social science researchers engaged with public, private, and third sector partners, our aim is to change the tone of the productivity debate in theory and practice. It is led by the University of Sheffield, with co-investigators at Cambridge Econometrics, Cardiff University, Durham University, University of Sunderland, SQW, University of Cambridge, University of Essex, University of Glasgow, University of Leeds and University of Stirling. The support of the funder is acknowledged. The views expressed in this report are those of the authors and do not necessarily represent those of the funders.

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Employee Mental Health and Productivity: A Shared Agenda

The mental health of employees is a crucial input into firms' production functions. Positive employee mental health is associated with greater organisational commitment, motivation, and reduced absence. Negative mental health can involve clinically significant mental illness requiring professional support and long-term absence from work. Additionally, a substantial number of employees experience mental health issues which may not be clinically significant but are economically significant.

The Stevenson-Farmer review [1] into workplace mental health estimated the loss to employers from poor mental health to be equivalent to 2% of GDP, mainly resulting from reduced labour productivity. There is therefore scope for policies to improve productivity by addressing employee mental health. The Chartered Institute of Personnel and Development (CIPD), the professional body for human resources (HR), recognise this point when they state "As well as having a framework to support people if they experience poor mental health, it's essential to promote good mental health throughout the workforce. Investing in employee well-being is the right thing to do, and it also enhances employee engagement and productivity, which in turn supports business growth."

In this project we quantify the effect on productivity of one factor, insecure employment, which has been shown to affect mental health. The implicit assumption motivating our analysis is that employee mental health is a key pathway through which insecure employment impacts on productivity.

Insecure Employment: What is it and Why is it Important?

Insecurity is one feature of employment relationships which affects mental health and can be influenced by policymakers. Employment can be considered insecure if it is perceived by the employee to provide inadequate protection from volatility in hours, earnings, or employment. Since insecurity is determined by the perceptions of the employee, it is not restricted to those with non-standard employment contracts; rather different degrees of exposure to insecurity can be found across groups in the entire workforce. This point was demonstrated in a report from the RSA's Future Work Centre [2] which segments the UK workforce into seven groups based on varying experiences of work and economic security.

A relationship between insecure employment and adverse mental health effects has been found consistently across a range of institutional settings ([3],[4],[5],[6],[7],[8]). Importantly, such effects have been found amongst those often considered to be most secure: Kopasker et al. [3] found employees on full time permanent contracts in the UK suffer substantial reductions in their mental health caused by perceived insecurity in their employment. Therefore, there is a large proportion of the UK workforce who could potentially benefit from policies which are effective in reducing exposure to insecurity.

Through the Good Work Plan [9], the UK Government aims to improve many aspects of job quality. One early proposal emerging from the plan is to provide a "right to request" a more secure employment contract after a fixed period with an employer. If this policy is effective in reducing exposure to insecure employment, the existing evidence suggests that this would improve the mental health of employees. Less is known regarding the likely effects of such legislation on employers.

The current debate regarding insecure employment sets the interests of employees and employers in contrast. Greater security for employees is often assumed to come at a cost to employers, through

reduced international competitiveness and ability to respond to changing market conditions. However, through the channel of mental health, policies which effectively reduce insecure employment could benefit both employers and employees.

Quantifying the Mental Health Benefit to Employees of Effective Policies and Legislation

The analysis in this report complements our ongoing research [10] valuing the benefit to employees, in terms of health-related quality of life, of limiting exposure to insecure employment. Our initial, and conservative, estimate of this benefit is around £2,000 per year of reduced exposure [10]. We are now working to test the robustness of this estimate using alternative data and measurement instruments.

Quantifying the Productivity Benefit to Employers of Effective Policies and Legislation

Within this project we focus on the employer's perspective and aim to quantify the productivity benefit to employers of effective policies to reduce insecure employment. To achieve this, we use employer-level data from the Business Structure Database (BSD) [12] and employee-level data from the Annual Survey of Hours and Earnings (ASHE) [11]. Using these datasets, we aim to advance the understanding the link between insecure employment and productivity by identifying characteristics of the employers which could potentially benefit from reducing insecure employment.

Project Outcome 1. Analysis of Insecure Employment and Labour Productivity.

To analyse the level of insecure employment within an industry we focus on temporary contracts. Although this does not capture all experiences of insecure employment [2], temporary employment[1] contracts provide an objective measure of insecurity due to the intrinsic uncertainty regarding continuing employment. The CIPD's UK Working Lives Survey 2019 [13] found that this group of employees, which includes those on zero-hours or short-hours contracts, are the most insecure amongst the labour force. Therefore, they would also be expected to be at a greater risk of mental health problems, all else being equal.

Our approach to analysing the effects of insecure employment on industry-level labour productivity topic is guided by past literature. Lisi and Malo [14] analysed the topic using a multicountry panel mainly formed from the EU KLEMS database. They found that labour productivity decreased as temporary employment increased, especially in high-skilled sectors. We extend their analysis by using a higher level of industry disaggregation allowing us to capture greater heterogeneity across industries.

Figure 1 provides a simple illustration of the main roles which temporary contracts provide for an employer. The vertical and horizontal axes measure the level and the persistence of temporary employment, respectively. High persistence is characterised by frequent renewals of the same workers or a high turnover of short-term workers. It is within the upper right quadrant of Figure 1 that the largest productivity losses would be expected to occur. In this area, there is a high level of temporary employment for a sustained period. This may indicate that firms are substituting temporary employees for permanent positions, for example to reduce costs resulting from labour market regulation. This lack of employer commitment to the employee would be expected to be reflected in the employee's level of organisational commitment. The uncertainty of persistent temporary

[1] In this section we refer to temporary employment as the contract indicator in ASHE has two options only, temporary or permanent. Other non-standard contract types may be defined as temporary by respondents.

contracts would also be expected to create a strain on an individual's mental health, as important life decisions and transitions become complicated and delayed by uncertainty.

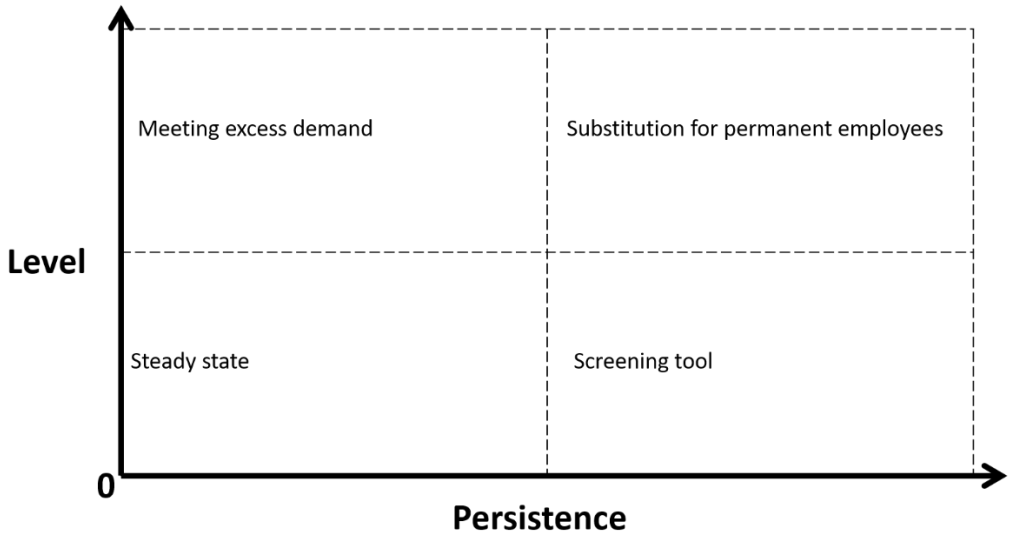
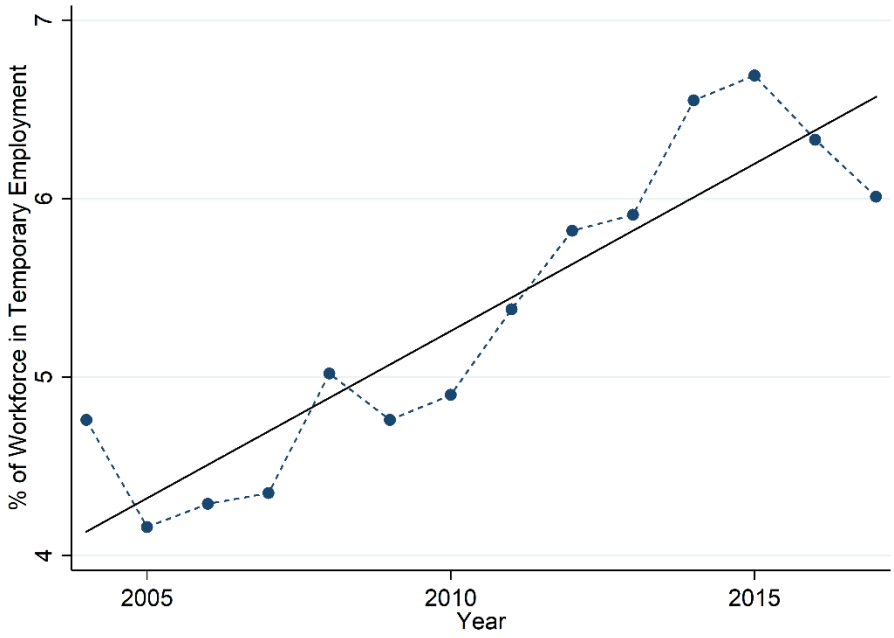


Figure 1. Characteristics of Employers' Motivation for Using Temporary Employment

The UK labour market provides an interesting case for analysis since levels of regulation are relatively low for both permanent and temporary employment. Consequently, employers face little friction in adjusting their labour force, and the incentive to substitute permanent employees with temporary employees should be comparatively low. Despite this, the incidence of temporary employment, along with other non-standard employment contracts, has increased in recent times. Figure 2 shows the trend is clearly increasing over the period from 2004 to 2017, with the level rising from 4.76% in 2004 to 6.01% in 2017. We found similar trends within both high and low skill industries, although the rate of temporary employment was higher within low-skilled industries at all data points.



Source: ASHE-BSD 2004-2017 matched dataset using main job only for private sector employees (n=1,428,901).

Figure 2. Trend in the Incidence of Temporary Employment Within the UK Private Sector

Within Figure 2, our sample is restricted to the main employment of an individual. Therefore, we do not capture those with additional employment on temporary contracts. Research from the CIPD [15], suggests that boosting income through additional employment is the incentive for many gig-economy workers. This motive would be consistent with emerging evidence which suggests gig-economy work may improve mental health outcomes [16]. Our ASHE-BSD sample does not capture additional employments, although inclusion would be possible by employing a different approach when constructing the dataset.

Our Estimates for the Effect of Temporary Employment on Labour Productivity

Our model estimates the effect of temporary employment on labour productivity at the industry level within the private sector. The sample aggregates the ASHE-BSD dataset to the level of two-digit Standard Industrial Classification 2007 (SIC07). This gives 74 industries covering the period 2004-2017[2]. Labour productivity is measured as real turnover per employee using the full BSD sample (99% of firms). Temporary employment is measured as the proportion of employees on temporary contracts in the ASHE sample (1% of employees). All variables are calculated at the industry level. To control for variables which our dataset does not capture, such as capital intensity and macroeconomic fluctuations, we include industry and time dummies within our regression models.

Table 1. The Effect of Temporary Employment on Industry-level Labour Productivity

	Effect on Level of Labour Productivity	Effect on Growth Rate of Labour Productivity
% of workforce in temporary employment	-1.4 %	-0.7%
Skill intensity x % temporary employed	+2.1%	0%
Highest decile with statistically significant results	5th (median)	-
Variability by international tradability	No	No
Observations	1008	1008
Industries	74	74

The results reported are from a fixed effects regression or quantile regressions (with fixed effects). Dependent variable is turnover per employee in either logs or the first difference of logs.
Results are statistically significant at the 5% significance level.
Source: Authors' calculations using the ASHE-BSD dataset 2004-2017

A summary of the main regression results is presented in Table 1. Our results predict that a 1% increase in temporary employment decreases the level of labour productivity by 1.4% and the growth rate of labour productivity by 0.7%. Therefore, the increase of 1.25% in the rate of this form of insecure employment between 2004 and 2017 is predicted to have contributed to stagnating labour productivity growth. However, the effect of temporary employment on productivity varies based on the skill intensity of the industry and the position of the industry within the economy-wide labour productivity distribution.

[2] Omitted firms are those in Sections B, O, P, Q, T, and U of the Standard Industrial Classification 2007 (SIC07). To meet the reporting requirement of the UK Data Service, industry-level variables are calculated only for industries with at least ten firms and ten employees in each year of the sample period.

Our results show a positive effect of temporary employment contracts on the level of labour productivity within high-skilled industries compared to low-skilled industries. However, the results based on growth rates are more reliable for this variable due to the way our model is constructed, specifically, owing to skill intensity being assumed to be fixed over the sample period. We find no difference between high and low skilled industries in the effect of temporary employment on the growth rate of labour productivity. Higher levels of temporary employment harm the growth rate in both types of industry.

We find the size and statistical significance of the effect on labour productivity of temporary employment decreases along the economy-wide productivity distribution. The largest negative effects are found within the least productive industries. These negative effects remain statistically significant until the midpoint of the productivity distribution. Beyond this point, we find no statistically significant effect of temporary employment on labour productivity for any industry. Therefore, it is within the least productive industries that a decision to use temporary employment contracts is most harmful to labour productivity. These are the industries which would benefit most from a change in practices.

Broader Experiences of Insecure Employment

Focusing on contract status alone may not capture the range of experiences of insecure employment. Research suggests that around 15% of the workforce experience insecure employment in any year [3], yet only around 5% are in temporary employment. Therefore, policies related to contract status are likely to influence only one third of those suffering from insecure employment. Although a substantial proportion, broader policies may be needed.

Beyond policies aimed at contract status, other factors have been found which influence insecure employment. Theodossiou and Zangelidis [17] identified that levels of insecurity are higher amongst those with a preference to work more hours, where a pensions scheme is not offered, and where career opportunities do not exist. Scheduling, notice, and the stability of hours have also been associated with insecurity [18]. These are aspects of job quality which the Good Work Plan and HR professionals can be influence.

Theodossiou and Zangelidis [17] also found that insecurity increases in the early years with an employer, but the rate of increase reduces as seniority is acquired. This aspect of insecurity is less easily understood or addressed. Some indication is provided by the CIPD's Health and Wellbeing at Work Survey [19], which found that the main drivers of poor mental health amongst employees are unmanageable workloads and management style. Similar findings are reported by Business in the Community [20], who also identify employees' financial wellbeing as a significant influence. It is conceivable that these factors influence levels of insecurity amongst employee who have yet to acquire seniority within the organisation. Having identified relevant factors, the challenge now is to provide robust evaluation of working practices to identify what works to improve employee mental health.

Emerging Approaches for Improving Workplace Mental Health

Insecure employment and mental health are two emerging issues related to modern working practices. Robust evidence that addressing insecure employment will improve employees' mental health has been found in many industrialised economies. However, evidence of effective approaches is scarce. Our project suggests that addressing insecure employment will require a wider focus than contract status alone. Issues regarding hours, notice, career progression, and pensions will also be

important. The Good Work Plan [9] may address these issues although, other than the "right to request", details of policies are yet to emerge.

A range of information is now available to guide businesses, particularly HR professionals, to improve workplace mental health. The CIPD has worked with the Royal Foundation's Heads Together campaign and Mind to develop the Mental Health at Work gateway which provides resources, training and information to develop approaches to workplace mental health. These include a guide to implementing six mental health core standards from the Stevenson-Farmer review [1]. These are:

- Produce, implement and communicate a mental health at work plan.
- Develop mental health awareness among employees.
- Encourage open conversations about mental health and the support available.
- Provide employees with good working conditions and ensure they have a healthy work life balance and opportunities for development.
- Promote effective people management through line managers and supervisors.
- Routinely monitor employee mental health and wellbeing.

Related guides have also been produced by the Advisory, Conciliation and Arbitration Service (ACAS) (ACAS Framework for Positive Mental Health) and Business in the Community (BITC Mental Health Toolkit for Employers). Through these guides, and by responding to emerging research, employers may reduce the labour productivity losses associated with employee mental health.

Conclusions

This study has provided a broad overview of the link between insecure employment and productivity. Previously, we established a causal effect between insecure employment and mental health. The findings from these two pieces of research combine to indicate that by reducing insecure employment, employers can increase productivity and provide a health benefit to employees, estimated to be worth around £2,000 per year. Our conjecture is that mental health is a pathway connecting insecure employment and productivity. The next natural step in this line of research is to work with firms to test this conjecture and determine practices which influence this pathway, so that the productivity and mental health benefits of addressing this issue are realised.

Appendix: Project Outcome 2. A Longitudinal Employer-employee Matched UK Dataset

The increasing opportunities to link large administrative datasets will enable detailed analysis of many issues. At present, the UK does not have a specific large employer-employee matched dataset with a longitudinal element. One contribution of this project was to form such a dataset by linking two large datasets which are available under the Secure Access licence of the UK Data Service. Specifically, employee-level data from the Annual Survey of Hours and Earnings (ASHE) was matched to employer-level information from the Business Structure Database (BSD). This combination provides an annual sample of around 100,000 private sector employees from 2004 onwards. Since the sampling frame of ASHE is based on national insurance numbers, which generally do not change over time, a substantial longitudinal element is within the sample.

Although the ASHE-BSD dataset has a relatively limited set of variables, in comparison to other matched datasets, it also has several potential advantages:

1. High quality administrative data which is routinely collected.
2. Large sample size enabling analysis at a disaggregated level.
3. Opportunities to supplement the firm level data by linking to other ONS datasets.

A limitation of the ASHE-BSD dataset is that, although it offers a large national sample, it is not known how representative it will be at the firm or industry level. In fact, although almost all firms are represented in the BSD, only a 1% random sample of employees can be matched from ASHE. We provide some descriptive statistics in Table 2 to assess these issues.

Table 2. Descriptive Statistics for the ASHE-BSD matched set.

	ASHE-BSD matched dataset Mean (standard deviation)
Individuals per year	103,522 (10,342)
Firms per year	39,995 (4,828)
Individuals per firm per year	3 (21)
Firms per two-digit industry per year	477 (618)
Individuals per two-digit industry per year	1,220 (2,229)

Source: ASHE-BSD 2004-2017 matched dataset using main job only for private sector employees (n=1,428,901).
Note: Two-digit industries based on Standard Industrial Classification 2007 (SIC07).

Table 2 suggests that when investigating firm-level issues, the ASHE-BSD dataset should be used with caution. Many firms have few employees within the sample, which in part reflects that many firms are small. However, this also suggests that as firms become larger the dataset becomes less representative. Restricting the sample to firms with a number (or proportion) of employees above a particular cut-off could be one option for researchers, but the influence of this decision upon the conclusions of a study would have to be carefully considered. At the industry level, however, the matched set appears to be more useful with almost 500 firms and over 1,200 employees within each two-digit industry each year.

Although Table 1 suggests that the ASHE-BSD matched dataset will be useful in some contexts, more work is needed to assess how representative the sample is and if appropriate sample weights can be formed to improve the representativeness of the sample. To ensure the maximum reliability of the analysis within this report, the decision was taken to form industry-level measures using the full BSD dataset, rather than the subset of firms which could be matched to employees in ASHE.

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