Covid-19 and the Welsh economy: working from home

BRIEFING PAPER
Preface

Declaration of funding

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About us

Wales Fiscal Analysis (WFA) is a research body within Cardiff University’s Wales Governance Centre that undertakes authoritative and independent research into the public finances, taxation and public expenditures of Wales.

The WFA programme adds public value by commenting on the implications of fiscal events such as UK and Welsh budgets, monitoring and reporting on government expenditure and tax revenues in Wales, and publishing academic research and policy papers that investigate matters of importance to Welsh public finance, including the impact of Brexit on the Welsh budget and local services, options for tax policy, and the economics and future sustainability of health and social care services in Wales.

Working with partners in Scotland, Northern Ireland, the UK and other European countries, we also contribute to the wider UK and international debate on the fiscal dimension of devolution and decentralisation of government.

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Covid-19 and the Welsh economy: working from home

Briefing Paper

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Executive summary

- Covid-19 and the social distancing measures enacted since the start of the pandemic have had huge economic consequences. The share of jobs that can be performed away from workplaces has been an important factor in the economy’s performance during this period of social distancing.

- We estimate that 14.4% of workers in Wales (some 211,000 people) could perform their jobs from home on a regular basis before the Covid-19 crisis. Workers in some industries, such as ‘finance, insurance & business, and ‘public administration’ were significantly more likely to work from home. Conversely, only 2% of workers in the ‘wholesale and retail’ and ‘hotels & restaurants’ sectors could do so. In terms of occupations, ‘managers & senior officials’ and ‘professionals’ were also more likely to carry out their jobs from home.

- As a result of these industry and occupational differences, the highest-earning decile of workers in Wales were 3.3 times as likely to work from home than the lowest-earners. This suggests higher income earners may have been better able to manage social distancing measures over the course of the crisis by working from home – another way the crisis may exacerbate existing economic inequalities.

- According to survey data in May 2020 around 23% of those in paid work or self-employment in Wales were always working from home, with another 5% doing so often, and 7% doing so sometimes, representing a significant shift away from pre-crisis working patterns.

- Using an assessment of the feasibility of homeworking across different jobs, we estimate that 39.9% of Welsh workers could plausibly perform their jobs at home. This means the Welsh economy has had scope to keep functioning without jeopardising some industries and occupations under social distancing measures.

- However, the feasibility to work from home is not uniform across sectors and occupations. Some occupations have very little or no scope to increase the extent of homeworking, putting them at greater risk of loss of employment, hours, and income during the crisis.

- Given the industry and occupational differences in the Welsh economy, Wales is the UK country with the lowest potential share of jobs that can be done from home - 5.3 percentage points below the UK average (45.2%), and significantly below London (58.7%) and the South East (53.6%). However, Wales still has greater relative potential for homeworking than some other European countries such as Finland, Ireland, Germany, and Italy.

- A permanent shift to greater levels of homeworking will have significant implications for the Welsh economy, from influencing regional productivity levels across the UK, to reducing demand for cleaning and catering services that currently service office workers in Welsh towns and cities. Though new jobs will also emerge, a role of government will be to manage such a transition, primarily by offering a more comprehensive safety net and support for those affected.
1. Introduction

Covid-19 and the social distancing measures enacted since the start of the pandemic have had huge economic consequences. With workers advised to work from home, the share of jobs that can be performed away from workplaces is an important factor in the economy's performance during this and potential future periods of social distancing.

On 17 July First Minister Mark Drakeford confirmed there would be no changes to the ‘work from home’ advice in Wales, describing the increase in people working “very effectively” from home as one of the few positives to come from the Covid-19 crisis. This followed comments by Prime Minister Boris Johnson that employers in England would be given more discretion to bring staff back to workplaces if safe to do so.

It is expected that social distancing measures will last at least until the end of 2020, meaning that the success of the Welsh economy will heavily depend on the ability of industries, sectors and workers to adapt to this new reality of mobility restrictions enforced by the current pandemic. Some occupations and industries are better equipped to carry out their jobs from home and therefore workers from those sectors are more likely to preserve their jobs and incomes during the crisis. Conversely, a large share of workers belongs to sectors where working from home is not feasible due to demands for high physical proximity to others in the workplace. For example, sectors whose activities are associated with social contact - such as non-essential retail, hospitality, and restaurants – were forced to completely shut down during the crisis, and temporary or permanent job losses here have been concentrated among low-paid service workers. The varying feasibility of performing jobs away from workplaces is another factor which will potentially exacerbate pre-existing economic inequalities (Tensley, 2020; North, 2020; Chotiner, 2020).

This briefing analyses data from Labour Force Survey and Understanding Society data to determine the share of employees who could work from home in Wales before the Covid-19 crisis, and the average gross weekly pay of workers by industry and occupation. Furthermore, this paper estimates the potential for jobs in Wales to be done at home and the gap between pre-Covid-19 levels of working from home and potential working from home by UK region, industry, and occupation. Finally, we conduct an international comparison between potential working from home in Wales and other nations in the world.

This is the second in a series of reports from the Wales Fiscal Analysis exploring the various labour market and economic implications of the current pandemic.
2. Working from home before Covid-19

To estimate the share of workers who were working from home in Wales before the onset of the Covid-19 pandemic, we combine Labour Force Survey (LFS) data from the last quarter of 2019 with the Understanding Society dataset from 2014-2016. The first dataset contains worker-level information on the average gross weekly pay by main job for a sample of 3,928 people in Wales, which represents 4.67% of the total sample (84,067 UK respondents). The second dataset contains individual-level information on whether respondents could perform their main job from home on a regular basis pre-Covid-19 crisis. We then aggregate at occupational and industry level to find the share of workers who can work from home in Wales and map it to the LFS data.

The results show that on average 14.4% of workers in Wales performed their jobs from home on a regular basis before the Covid-19 crisis, which represents around 211,000 people. It can be seen from Figure 1 that ‘public administration’ and ‘finance, insurance & business’ were the industries with the highest share of workers who could work from home prior the Covid-19 pandemic. Workers from these sectors were over twice as likely than average to be able to work from home.

![Figure 1](chart.png)

In contrast, ‘wholesale & retail’ (1.3%) and ‘hotels & restaurants’ (2.5%) were the sectors with the lowest ability to work from home. As a result, employees working in these industries are at most risk of reductions in working hours, losing their jobs, and suffering falls in their earnings during this crisis. These industries already received the lowest wages across all sectors, making their situation even more precarious.

There are also significant differences in the prevalence of homeworking across occupations. ‘Managers & senior officials’ and ‘professionals’ were the most likely to be able to work from home and are also the highest paid employees (averaging £746 and £670 per week, respectively). Meanwhile, lower-paying occupations, such as workers in ‘sales & customer services’, ‘elementary’ or ‘personal service’ categories, had very little ability to work from home pre-crisis.

Figure 2

Share of employees who worked from home pre covid-19 crisis in Wales, by individual earnings

These differences by sector and occupation mean that overall, the highest-paid workers in Wales had the highest rates of homeworking prior to Covid-19. Figure 2 shows the share of workers regularly working from home by decile of earnings – as earnings levels increase, workers are more likely to be able to work from home. In fact, 24.5% of all highest-income earners could perform their jobs from home, compared to only 7.4% of the lowest-income earners. In other words, workers from the top decile of the income distribution were 3.3 times more likely to be able to work from home than those from the bottom decile of individual earnings. This suggests the impact of Covid-19 and mobility restrictions will have affected the highest-paid workers to a lesser degree compared with lower-paid workers.

This is also supported by the data in Figure 3, which shows the strong and positive correlation¹ (R²=0.58) between the average gross weekly pay and the share of employees who can work from home across industries and occupations.

¹ It is important to mention here that correlation does not mean causality. Therefore, in order to have a robust estimate of about the possible causal effect of earnings on the share of workers who can work from home we will require to implement an econometric analysis with different identification strategies and instruments to address the possible endogeneity problems our variables could have.
Figure 3

Share of employees who worked from home pre covid-19 crisis in Wales by industry and occupation

R² = 0.5763


Average gross weekly pay in main job, 2019 (£)
3. Potential of jobs that can be done from home in Wales

The onset of the Covid-19 has led to substantial changes in working patterns, with a significant increase in homeworking compared to the data outlined in the previous section. To estimate the extent of homeworking during the crisis, we use a special survey from Understanding Society which covers experiences during the Covid-19 outbreak. According to the latest published survey for May 2020, around 23% of those in paid work or self-employment in Wales always worked from home, with another 5% doing so often, and 7% doing so sometimes. This represents a significant shift from pre-crisis working patterns in Wales. However, the estimated prevalence of homeworking in Wales is lower than the average across the UK (with 32% always working from home in May), and significantly below some regions such as London (45%) and the South East (38%).

Even though some restrictions are being lifted, such as the ‘Stay Local’ five-mile rule, social distancing measures are likely to remain in place for an extended period of time. The prevalence of homeworking and the regional differences outlined above will therefore be a key factor in the performance of the Welsh economy. In this section, we examine which jobs in the Welsh economy can be done from home by industry and occupation, to gain a better understanding of the potential for homeworking and to aid policy design as the economy gradually reopens.

We use data from a recent paper conducted in the United States (Dingel & Neiman, 2020) in which the authors elaborate a feasibility measure for working from home for all occupations and merge this classification with occupational employment data, which is based on responses to surveys from the Occupational Information Network (O*NET). In their analysis, they account for factors such as job location, use of technology, face-to-face interaction, and exposure to hazards. It is important to bear in mind that the author’s estimate is an upper bound on what might be feasible for working from home, and greatly exceeds the share of jobs that in fact have been performed entirely at home prior to the Covid-19 pandemic.

In order to merge the Dingel & Neiman data with the ONS’ Labour Force Survey, the first step was to map the industrial classification variable UK-SOC2010 onto ISCO-08. The latter variable corresponds to the 2008 edition of the international standard classification of occupations (ISCO) provided by the International Labour Organization (ILO). Once we converted UK classification (UK-SOC2010) into ISCO-08, we then proceeded to match the 820 codes (classified by whether an occupation can be done from home or not) from the United States classification (US-SOC2010) with the UK-SOC2010. Finally, we merged this with UK Labour Force Survey which contains worker-level information for 84,067 respondents (3,928 from Wales).

The results show that on average 39.9% of Welsh employees could plausibly perform their jobs from home. This potential for homeworking in Wales is around 25.5 percentage points higher compared to the share of workers who regularly worked from home (14.4%) prior to the Covid-19 crisis. This figure is close to but slightly higher than the share of workers who reported they worked from home ‘always’, ‘often’ or ‘sometimes’ during May 2020 (36%). This means the Welsh economy has had scope to keep functioning without jeopardising some industries and occupations under social distancing measures.

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2 See here: https://www.understandingsociety.ac.uk/topic/covid-19
3 For more information about the classification methodology used on O*NET survey responses see Appendix of the paper: How Many Jobs Can be Done at Home? (Dingel and Neiman, 2020)
4 The SOC2010 variable is comprised of 369 codes that corresponds to the Standard Occupational Classification for the UK.
However, the feasibility of working from home is not uniformly distributed across different sectors. Figure 4 plots our estimates by industry for the potential share of jobs that can be performed from home in Wales compared to the share of jobs that had been done from home before the Covid-19 pandemic. We can see that whereas most jobs in corporate management, education, finance, and professional services could plausibly be performed at home, very few jobs in energy, agriculture, construction, hotels and restaurants, or retail could be. This suggests that the support the government should be offering to employers and workers varies significantly by sector.

Among the industries with the highest feasibility of working from home, education stands out with 89.1%. But this feasibility is likely dependent on online teaching, which is currently being prepared for across Higher Education but is not the preference of the Welsh Government (and other UK administrations) for primary and secondary education. Higher Education therefore has a significant scope for sustaining working from home into the medium-term, with institutions having already adopted this widely. However, this does not detract from the risk of reductions in hours, pay and ultimately redundancy due to the wider financial pressures associated with student recruitment during the pandemic.

Figure 5 shows that ‘managers & senior officials’ (74.9%), ‘administrative & secretarial’ (63.8%) and ‘professional’ (59.4%) are the occupations with the highest potential to work from home. In terms of the largest gap between pre-Covid-19 homeworking and potential for homeworking, ‘administrative & secretarial’ workers had the largest scope to increase homeworking (45.0%), followed by ‘managers & senior officials’ (40.5%) and ‘professionals’ (34.4%).
It is worth noting the three occupations with no scope to increase the share of jobs that are done from home: ‘skilled trades’, ‘process, plants & machine operatives’ and ‘elementary’. Employees in these occupations therefore face the greatest potential risk of reductions in working hours and redundancy.

**Figure 5**

**Potential of jobs that can be done from home by occupation in Wales**

![Graph showing the potential of jobs that can be done from home by occupation in Wales.](image)


**Figure 6** shows the feasibility of homeworking also varies significantly by age and education level. Younger workers on the whole are less likely to be able to work from home, while workers with degree-level qualifications are more able to do so. This is in line with the evidence on the characteristics of workers employed in industries most affected by social distancing measures (i.e. shut-down sectors). The varying feasibility of homeworking is therefore another way in which the Covid-19 pandemic may exacerbate existing economic inequalities. This makes it important for governments to provide financial support to help buffer the impact of Covid-19 on the most vulnerable workers.
There are also significant differences in the feasibility of homeworking across the different nations and regions of the UK. As can be seen in Figure 7 and Figure 8, the regions with the highest potential to work from home are London (58.7%), South East (53.6%) and East of England (46.4%). Along with Northern Ireland, they are also the regions with the largest potential to increase homeworking relative to pre-Covid-19 levels. This can be explained by the fact that these regions have strong financial, insurance, banking and management services sectors as well as large corporate and public sector footprints. The greater scope for homeworking in these regions may mean their economies were better able to adapt to mobility restrictions. Relative to the other nations and regions of the UK, Wales had a low share of workers working from home on a regular basis before the crisis and a relatively low overall potential for homeworking for Welsh workers, though the potential gap between pre-Covid-19 homeworking and potential was close to the UK average of 27.5 percentage points.
Figure 7

Potential of jobs that can be done from home by UK regions

- London: 58.7%
- South East: 53.6%
- Northern Ireland: 42.7%
- East of England: 46.4%
- South West: 44.3%
- Scotland: 40.6%
- Wales: 39.9%
- East Midlands: 42.3%
- North West: 41.7%
- Yorkshire and Humberside: 40.9%
- West Midlands: 40.4%
- North East: 38.5%

Source: Labour Force Survey 2019 and Dingel & Neiman, 2020

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Figure 8

Potential of jobs that can be done from home by UK region

Finally, in order to place Wales in an international context, we compare it with data on 86 countries taken from Dingel & Neiman (2020). We match the different occupations classification used in this study (UK-SOC2010 to ISCO-08) to arrive at a similar estimate for the UK as a whole of the share of jobs that can be done from home, before comparing to our data by country and region.

Figure 9 provides evidence that there is a positive correlation between the economic development of a country (measured in GDP per capita) and the share of jobs that can be done from home. Wealthier countries with advanced economies, knowledge-intensive industries, more efficient labour markets and larger share of ‘high-skilled’ workers may be better equipped to cope with the economic consequences of Covid-19 than developing countries (though this will also crucially depend on their ability to contain or eliminate the virus).

The graph shows that Wales is the UK country with the lowest potential share of jobs that can be done from home (39.9%), a figure that is 5.3 percentage points below the UK average (45.2%). However, Wales still performs better than other European countries (including Estonia, Finland, Ireland, Germany, Italy, Portugal, Spain and others) despite some having higher GDP per capita than Wales.
4. Conclusion

This report has examined the prevalence and potential for homeworking in the Welsh economy, before and during the Covid-19 pandemic. We find that around two-fifths of workers in Wales could perform their jobs at home, similar to self-reported levels of homeworking in May 2020 during the Covid-19 lockdown. There are significant differences in the potential for homeworking across industries and occupations. In general, those in higher paid industries and occupations are more likely to be able to work from home and are therefore less likely to have been affected by mobility restrictions during the crisis. Meanwhile, there are some occupations and industries (generally lower-paid), with very little or no scope to increase the share of jobs that are done from home, and are therefore more likely to have experienced loss of employment, hours and income. This is another way in which existing economic inequalities may be exacerbated by the crisis and underlines the need for financial support for those most affected.

Given industrial and occupational differences in the Welsh economy, Wales currently has a significantly lower potential for homeworking than other countries and regions of the UK, which may have a significant effect on the relative performance of the Welsh economy in the short run. It is not known how long mobility restrictions will remain in place over coming months, and how working patterns may be changed over the longer term. A permanent shift to greater levels of homeworking will have significant implications for the Welsh economy. Agglomeration forces may become a less important determinant of regional productivity, a key factor that others have found to explain Wales’ persistent productivity gap with the rest of the UK (Price 2016). The shift to homeworking will also affect parts of Wales differently. For example, some areas have the lowest coverage of decent broadband speeds in the UK, limiting the scope for working from home in those areas.5 Homeworking will also have a significant effect on the demand for jobs, from cleaning to catering services, that currently service concentrations of office workers in towns and cities. Though new jobs will also emerge, a role of government will be to manage such a transition, primarily by offering a more comprehensive safety net and support for those affected.

References


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Replication file for the report: "Covid-19 and the Welsh economy: working from home” *****

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