

A Scottish Four Day Week:

*Initial costings for implementation in the
public sector*

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Autonomy

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Contents

- Key findings: how much would a four day week in the Scottish public sector cost?
- Method
- Appendix 1: Why the public sector in Scotland?
- Appendix 2: Using public-private relations in Scotland

Key findings

- A four day week in the Scottish public sector would cost between £1.4bn and £2bn.
- This constitutes 3% of the public sector pay bill in Scotland (and 2% of Scottish public spending overall).
- These figures do not take into account the reduced costs to the healthcare system that having a healthier workforce would bring.
- Such a scheme would create between 45,000 and 59,000 new job opportunities in the sector.
- Scotland has a high rate of public sector employment when compared to the rest of the UK.
- A four day week in the Scottish public sector would be a high-impact, low cost policy that could pioneer better work-life balance for workers across the UK.

Method

The calculations use the following figures from the 2020 Annual Survey of Hours and Earnings tables:

1. There were 524,000 full-time public sector employees in Scotland in 2020
2. The average full-time public sector employee in Scotland had a basic work-week of 36.5 hours
3. The average full-time public sector employee in Scotland had gross annual earnings of £37,442

We are using basic working hours, i.e., working hours excluding overtime, alongside gross earnings, i.e., earnings including overtime. Thus, the exercise is predicated on a reduction of the normal working-week to 32 hours, as some public sector workers have to work overtime, including doctors, nurses, midwives, the police, the fire brigade, paramedics, and this will continue if a four-day week model is adopted.

Given these figures, the basic person-hours of full-time public sector employees in an average week in 2020 was 19,126,000 (i.e., $36.5 \times 524,000$).

Gross cost with no productivity gains

To maintain the same basic person hours if the average full-time employee worked a 32 hour basic week rather than a 36.5 hour week, and assuming no increase in productivity, the public sector in Scotland would require 597,688 employees (i.e., $19,126,000 \div 32$). This would require **73,688** extra full-time employees, at a gross annual cost of **£2.8 billion**.

Gross cost with productivity gains

However, it is unrealistic to expect no productivity gain whatsoever from a shorter working week, given the available evidence and successful implementations (see Henley Business School, 2019). We therefore consider two potential productivity increases as a result of moving to a four day week: 2.5% and 5%. Initially, with no productivity gain, the 32 hour basic week requires 597,688 employees to achieve a fixed public sector weekly output. The formula linking this output with labour input is given by,

$$597,688 \times 32 \times A = Q,$$

where A denotes hourly labour productivity (output per hour) and Q denotes output. Now, let us suppose that productivity increases by some multiple $(1+a)$ and that the number of employees adjusts to keep output and hours constant. Thus, we have,

$$E \times 32 \times (1+a)A = Q,$$

where E denotes the new number of full-time employees. Combining these two equations yields,

$$597,688 \times 32 \times A = E \times 32 \times (1+a)A$$

and thus,

$$E = 597,688 \div (1+a)$$

So a 2.5% productivity gain would require 583,110 full-time employees (i.e., $597,688 \div 1.025$). This would require 59,110 extra full-time employees, at a gross annual cost of **£2.2 billion**.

Alternatively, a 5% productivity gain would require 569,226 full-time public sector employees (i.e., $597,688 \div 1.05$). This would require 45,226 extra full-time employees, at a gross annual cost of **£1.7 billion**.

Net cost with productivity gains: how much does a public sector employee cost?

According to the www.scotfact.com and www.gov.uk income tax calculators, an individual earning £37,442 per year in Scotland would pay around £5,090 in income tax, which is just over £100 more per year than the same individual would pay in the rest of the UK. Adding £3,353 in national insurance leaves a disposable income of approximately £29,000. This is a headline tax rate of around 22.5%.

Calculating how much indirect tax net of benefits paid by individuals is difficult, as a lot of benefits and expenditure taxes are determined by household income, rather than personal income. However, according to the *Effects of Taxes and Benefits on Household Income, UK, 2018/19* reference tables, an individual living in an average household pays £5,909 per year in indirect taxes gross of benefits, excluding intermediate taxes and excluding property taxes. A conservative ballpark for indirect taxation is therefore £6,000, yielding a conservative post-tax income of £23,000. This is an effective overall tax rate of just under 40%.

Accounting for lost tax income from private sector employees

If a newly arrived immigrant or school-leaver were employed as a full-time public sector employee at the average wage, an effective tax rate of 40% would imply a net wage cost to the public sector of 60% of £37,442, or £22,465. However, some new public sector employees will move from existing private sector jobs. The tax income from these employees net of lost taxes from previous employment would therefore

be lower than 40%, and could even be negative if the employee transferred from a higher paying private sector job. Unfortunately, this is impossible to estimate with any precision, but is likely to be somewhat less than 40%.

Given the above, we consider two conservative effective tax rates, net of lost tax income from previous employment: 20% and 10%. Combining these two effective tax rate scenarios with our two productivity scenarios gives four potential costs to the public sector of a four day, or 32-hour week:

	High prod	Low prod
High tax	1.4	1.8
Low tax	1.5	2.0

Key:

High tax rate = 20%;

Low tax rate = 10%

High productivity gain = 5%;

Low productivity gain = 2.5%

Thus, the total annual cost of moving Scottish public sector workers to a four day week is likely to be in the region of £1.4 billion to £2 billion. It is also worth noting that this does not take into account savings on costs resulting from overwork (e.g. by reducing sick absences). The average cost of the four scenarios, £1.7 billion, is in the region of 3% of the total public sector salary bill in Scotland, or around 2% of Scottish public sector spending.

Appendix 1: Why the public sector in Scotland?

Scotland has amongst the highest rates of public sector employment in the UK: a four-day week would have maximum impact there.

As Jones et al. (2020) shows, public sector employment is concentrated largely in Scotland, the North of England and Wales. Outside of London, the South East and West have relatively low levels of public sector employment (with some exceptions). In many parts of Scotland, public sector employment makes up between $\frac{1}{3}$ and $\frac{1}{5}$ of all employment, making a four day week a high impact policy on working life in the country.

Scottish region	Public sector employment as % of overall employment
West Dunbartonshire	33%
East Ayrshire	30%
Inverclyde	26%
North Lanarkshire	25%
City of Edinburgh	23%
Fife	22%

Source: Jones et al. analysis of ASHE (2020)

It's required for health, wellbeing and greater productivity

- Nearly 9/10 teachers in the UK report being often or always exhausted after work, up from three quarters in 2006 (Felstead et al., 2018).
- 7/10 of nurses report being often or always exhausted after work, up from 25 percent in the 1990s (ibid.).
- Double the amount of NHS staff left due to problems of work-life balance in 2015 compared with 2011 (Johnson et al., 2017).

“When workload is raised excessively employers may benefit in the short term, but costs rise in the long term as sickness absence and labour turnover increase.”

(Felstead et al., 2018)

Appendix 2: Using public-private relations

The role of public sector procurement in shaping market outcomes

In areas with lower public sector employment, procurement based on select criteria could be utilised to encourage private sector contractors to adopt shorter working weeks as part of working agreements. Using tendering processes to give preference to firms that meet work-life balance targets - and in general, labour practices and hourly wages that go beyond the legal minimum - public sector organisations across the country could embed reduced working hours as a new standard across the economy.

Scotland leading the way in socially-oriented public procurement

The Scottish government has taken a leading role in advancing social goals via procurement policy. Since 2014, all public sector contracting authorities in Scotland have been required to consider community benefit requirements for all contracts worth £4 million or more, as well as requirements related to sustainability.

Sutherland et al. (2015) have demonstrated that community benefit requirements are widespread in Scotland, and have been effective in meeting certain social goals including improvement of labour market outcomes for certain priority groups. In addition, they argue that many contractors now view community benefit clauses as 'business as usual', and proactively adopt them in their business models (ibid., pp.9). The Scottish experience suggests that community benefit clauses could be

profitably used on a UK-wide basis, and that they can in fact embed positive practices as social norms.

Over the last decade, however, the tide has turned back toward the use of procurement policy as an active policy lever, at least in Europe. This followed the introduction of three directives on public procurement in 2014 within the European Union, which explicitly permit member states to take social objectives into account when awarding procurement contracts. In turn, this followed the earlier proactive examples of some member states, e.g. the incorporation of sustainability criteria in Dutch government procurement contracts from 2005 onward (Ludlow, 2016)

Within the UK, the example of Preston Council has been well documented. Recognising that significant value was leaking out of the local economy, in 2012, the council began a progressive procurement strategy to shift spending toward local goods, services and suppliers. In 2016/17, an analysis of spending in the local economy found that the value of the procurement spend retained in Preston was £112.3 million, up £74 million on figures from 2012/2013 (CLES and Preston City Council, 2019).

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