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THE ECONOMIC IMPACT OF JOB LOSSES IN THE CIVIL AVIATION AND AEROSPACE ENGINEERING SECTORS IN SCOTLAND

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Disclaimer

The analysis in this report has been conducted by the Fraser of Allander Institute (FAI) at the University of Strathclyde. The FAI is a leading academic research centre focused on the Scottish economy.

The report was commissioned in July 2020 by Unite the Union Scotland.

The analysis and writing-up of the results was undertaken independently by the FAI. The FAI is committed to informing and encouraging public debate through the provision of the highest quality analytical advice and analysis. We are therefore happy to respond to requests for factual advice and analysis. Any technical errors or omissions are those of the FAI.

Introduction

The coronavirus outbreak represents the greatest public health crisis in a generation. Whilst the health risk for the families impacted is the most important concern, the pandemic will have a significant economic impact.

One part of the economy particularly affected by Covid-19 is tourism-facing sectors. With borders shut down and aircrafts parked in airports from March of this year, there has been a significant knock-on effect to the civil aviation and aerospace engineering sectors

The government's Job Retention Scheme (JRS) has kept unemployment artificially low while the country is in lockdown however, as they begin scaling back the JRS, the number of job losses across the country will climb. Only now are we beginning to feel the real economic hit caused by the ongoing pandemic.

The purpose of this report is to estimate the economic impact that job losses in these sectors could have on the Scottish economy in terms of output, Gross Value Added (GVA) and employment.

While economic output measures the value of goods and services produced in the economy, GVA measures the final value of goods and services produced, minus intermediate goods.

GVA is the value added to the economy and is used to measure economic growth. GVA can be expressed generally as the difference between revenue from sales and the cost of inputs. GVA is therefore the headline figure indicating the loss to the Scottish economy.

The following job losses have been announced/proposed in the civil aviation sector:

- Swissport – over 800 jobs in Aberdeen, Edinburgh & Glasgow
- Menzies – over 300 jobs in Edinburgh & Glasgow
- North Air – almost 20 jobs in Edinburgh & Glasgow
- CHC helicopter services – over 20 jobs in Aberdeen
- Global Infrastructure Partners – almost 250 jobs in Edinburgh
- BA City Flyer – 80 jobs in Edinburgh
- ICTS Aviation – 15 jobs in Glasgow

The following job losses have been announced/proposed in the aerospace engineering sector:

- Rolls Royce – 700 jobs in the Inchinna factory
- GE Caledonian – over 270 jobs in Prestwick
- Spirit Aerosystems – over 180 jobs in Prestwick
- Wyman Gordon – over 70 jobs in Livingston

We estimate that the announced/proposed job losses in the Scottish civil aviation and aerospace engineering sectors is associated with the following loss to the Scottish economy:

- £715m loss in output;
- £320m loss in GVA; and,
- a decrease in full-time equivalent employment of 4,865.

The jobs lost will therefore not only reduce employment in the civil aviation and aerospace engineering sectors but, due to spill-over effects, there will also be a reduction in employment across other industries in the Scottish economy. All of which will lower economic activity.

Economic impact

The impact and wider spill-over effects of the mentioned job losses in the civil aviation and aerospace engineering sectors is estimated through fitting announced/proposed job losses into a detailed model of the Scottish economy.

This model estimates the impact that these job losses will have on economic output and growth in Scotland, both directly and through knock-on effects. Additionally, it models the employment spill-over effects resulting from the reduction in employment in industries of these sectors.

This report looks at the economic impacts of the announced/proposed 2,725 job losses in the civil aviation and aerospace engineer sectors on output, GVA and employment in Scotland.

Output here is the total value of goods and services produced within the economy. Output is calculated as GVA plus intermediate goods and services that are excluded in GVA calculations.

GVA is the value of all final goods and services produced within the economy in a given period of time and is used to measure economic growth. GVA can be expressed generally as the difference between revenue from sales and the cost of inputs.

Following standard regional modelling practices, we model GVA instead of Gross Domestic Product (GDP). GVA is technically GDP at basic prices, i.e. excluding taxes and subsidies on products.

Employment here refers to full-time equivalent (FTE) jobs. One FTE job is equivalent to one person working full-time for one year or, two people working half the hours of a full-time worker for one year, and so on.

When evaluating an economic impact like this, we examine three types of activity: direct, indirect and induced effects.

Direct impacts

These relate to the expenditure on activities of firms within the civil aviation and aerospace engineering sectors. To provide its services firms within these sectors purchase from suppliers. The reaction of suppliers to meet this demand generates GVA.

Indirect impacts

The suppliers of firms within the civil aviation and aerospace engineering sectors in turn purchase goods and services from their own suppliers, generating economic activity through the whole supply chain.

Induced impacts

The wages paid as a result of the activities of firms within the civil aviation and aerospace engineering sectors, and its supply chain, are spent on goods and services across the Scottish economy.

Methodology

Unite the Union Scotland provided us with the number of announced/proposed job losses in civil aviation and aerospace engineering firms across Scotland. These firms were mapped to Standard Industrial Classifications (SIC) codes. This mapping allows the impact of lost jobs in these firms to be modelled using the Scottish Government's (2016) input-output (IO) tables.

Using the IO tables, we applied a Hypothetical Extraction Method (HEM) which is essentially extracting the purchases and sales made by sectors from the model of the Scottish economy. This results in a reduction in economic activity across the whole economy. Once extracted, the total output of the post-extraction economy is smaller due to both the loss within the extracted sector, but also its purchases or sales to the remaining sectors, and the loss of forward and backward linkages elsewhere in the economy, as captured by the IO table. We extracted parts of these industries by calculating the fall in output associated with the fall in employment caused by these job losses.

For example, the following industries are affected by the announced/proposed job losses:

- Air transport services;
- Transport support services;
- Fabricated metal products;
- Manufacturing of transport equipment; and,
- Repair of transport equipment

This 'shock' to output was then input into the model, resulting in the output, GVA and employment effect of the shock.

Results

Table 1 highlights the direct, indirect and induced impact of the 1,501 job losses announced/proposed in the civil aviation sector.

The direct effect of these job losses on GVA is around a £90m loss to the Scottish economy however, when we add up the indirect and induced effects, we see that the overall economic impact is a loss of around £140m to the Scottish economy. That is, after accounting for knock-on effects, the 1,500 job losses are associated with a £270m reduction in output, £140m reduction in GVA and a decrease in FTE employment of 2,330.

The jobs lost will therefore not only reduce employment in the civil aviation sector but, due to spill-over effects, there will be a decrease in employment across other industries in the Scottish economy. All of which will lower economic activity.

Table 1: Economic impact of 1,501 job losses in the civil aviation sector, Scotland

	Output	GVA (£m)	FTE Employment
Direct	-182	-89	-1,501
Indirect	-61	-32	-583
Induced	-27	-16	-249
Total	**-270**	**-138**	**-2,333**

**totals may not sum due to rounding* *Source: FAI Calculations*

Similarly, Table 2 outlines the impact of the 1,226 announced/proposed job losses in the aerospace engineering sector. These job losses are associated with a £445m reduction in output, £185m reduction in GVA and a decrease in FTE employment of 2,530 across the Scottish economy. Although there has been less job losses announced/proposed in this sector its industries have different multipliers to the civil aviation sector and so the economic impacts are larger.

Table 2: Economic impact of 1,226 job losses in the aerospace engineering sector, Scotland

	Output	GVA (£m)	FTE Employment
Direct	-279	-103	-1,226
Indirect	-119	-53	-862
Induced	-48	-29	-442
Total	**-446**	**-184**	**-2,530**

**totals may not sum due to rounding* *Source: FAI Calculations*

The total impact of the job losses across the civil aviation and aerospace engineering sectors, totalling 2,727, is outlined in Table 3. Overall, the announced/proposed job losses are associated with a £715m reduction in output, £320m reduction in GVA and a decrease in FTE employment of 4,865.

Table 3: Total economic impact of 2,727 job losses in the civil aviation and aerospace engineering sectors, Scotland

	Output	GVA (£m)	FTE Employment
Civil Aviation	-270	-138	-2,333
Aerospace Engineering	-446	-184	-2,530
Total	**-716**	**-322**	**-4,863**

**totals may not sum due to rounding* *Source: FAI Calculations*