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The economic impact of ATC strikes in Europe Key findings from our updated report for A4E

Prepared for A4E
September 2016





Updates to our analysis since June 2016

Since releasing our Preliminary Findings in June 2016, PwC has conducted supplementary analysis that adds additional robustness to our report – and new findings for 2016 impacts

Strengthens our findings

Incorporates new data and analysis – to validate and strengthen our findings with respect to the average delays incurred during strikes

2016 Strikes

Assess the impact of ATC strikes that have occurred in the first 9 months of 2016

Includes

the impacts arising from 9 days of strikes by the Trade Union of Air Traffic Control (GdF) at Frankfurt Airport in February 2012

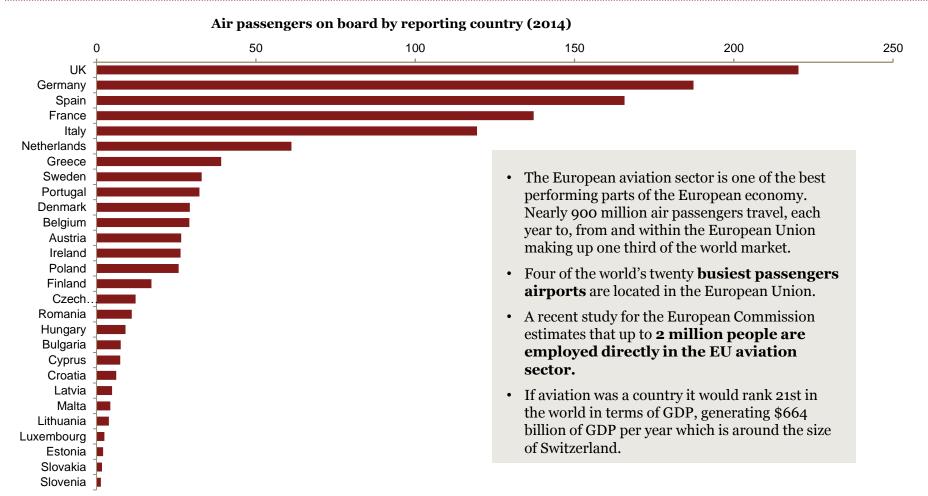
Focus

As in our June release of preliminary findings, the focus of this analysis is the impact of ATC strikes on consumers and the wider economy

Four facts you need to know

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Fact #1: In 2014, more than 879 million air passengers were transported across the European Union which is more than 1,600 air passengers per minute



Air passengers on board refers to all passengers on board the aircraft upon landing at the reporting country or at taking off from the reporting airport. Source: Eurostat

Fact #2: In the 2010-2015 period, 176 ATC strike days were recorded in the EU — equal to about one strike every 10 days — which we estimate affected 430,000 flights



Number of strikes and days affected during 2010-2015*

430,000

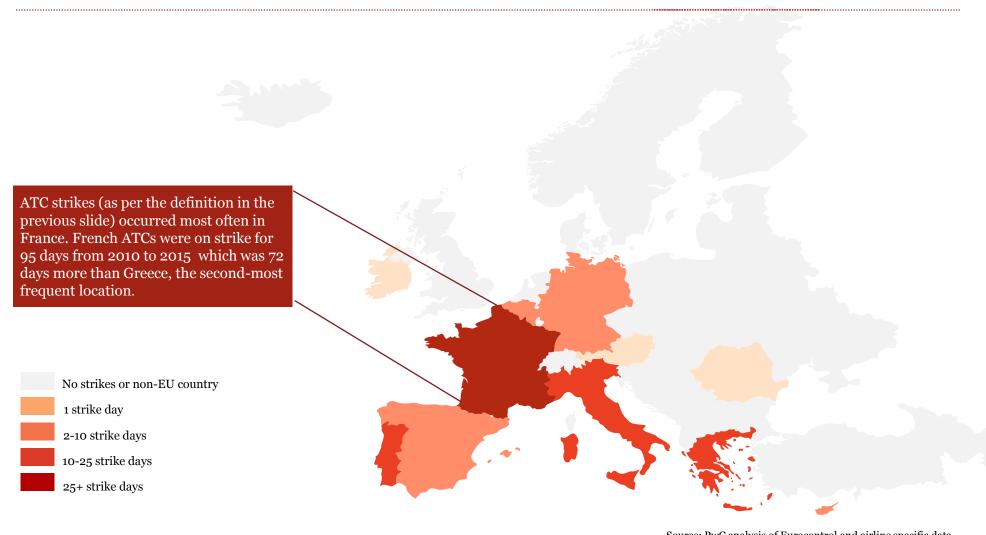
Estimated number of flights directly affected by ATC strikes**

Source: PwC analysis of Eurocontrol and A4E data_

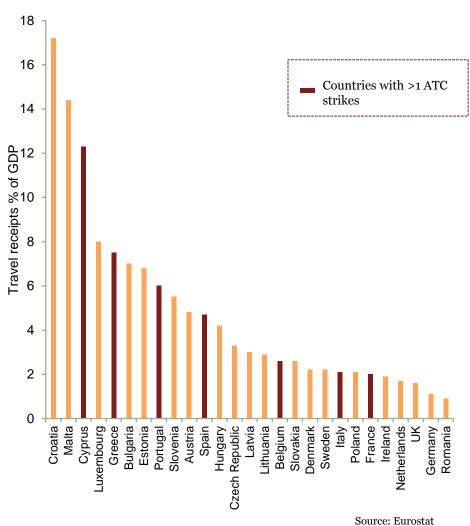
^{*}The figure represents the number of days during which a strike occurred in a particular jurisdiction. E.g. if a one-hour ATC strike took place in Belgium and an additional ATC 10 hour strike took place in Greece on the same day, we would record this as two separate strike days.

^{**} To estimate the number of flights affected by ATC strikes we calculated the number of flights directly affected by strike delays (as defined by Eurocontrol i.e. the delay in regulated flights due to ATC strikes) for a sample of a short (strike lasting one day or less) and long (strike lasting more than one day) strike days. We then extrapolated the delays from these strikes to the entire population of strike days reported by Eurocontrol.

Fact#3: In the 2010-15 period, most ATC strikes occurred in France, followed by Greece, Italy and Portugal



Fact #4: Most southern EU member countries are reliant on tourism receipts which could be adversely affected by ATC strikes



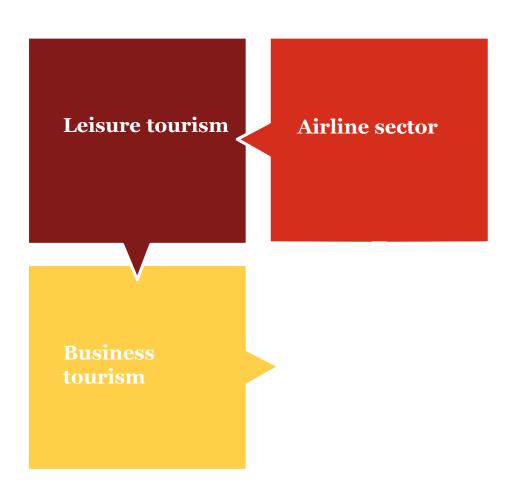
- Tourism plays a major role in the EU economy. The European Commission¹ estimates it is estimated that the tourism industry generated over 5% of EU GDP in 2010.
- However, the figure on the left shows that there are significant differences between countries.
- In the same study, the European Commission estimates that the EU tourism industries comprise of almost 2 million enterprises, most of them small and medium-sized enterprises, providing work for more than 5% of the total EU workforce.
- In 2013, the accommodation and food services sector alone accounted for almost 10 million jobs (4% of total EU employment)².
- Further analysis by the World Travel and Tourism Council (WTTC) shows that the economic impact of travel and tourism is more than 10% of GDP for most southern European countries, including Cyprus, Greece, Portugal and Spain.
- However, the European tourism industry could be at risk from disruption by ATC strikes. According to Eurostat data, air travel is the preferred mode of transport for outbound trips (i.e. trips out of the country of origin) for EU citizens.
- ¹ European Commission (2010), *Europe, the world's No 1 tourist destination a new political framework for tourism in Europe*
- ² European Parliament (2015), Tourism and the European Union: Recent trends and policy developments

Methodology





We identified three key economic sectors which are most disrupted by ATC strikes in Europe



To estimate the economic impact of ATC strikes in Europe, we used a four step analytical approach



Establish channels of transmission

We identified the channels of transmission through which ATC strikes could affect the wider economy based on a literature review and consultation with industry experts.



Data gathering and analysis

To aid our analysis, we obtained data from Eurocontrol, A4E member airlines and other public data sources. In some cases, our analysis of the numbers involved making assumptions which we have clearly laid out.



Estimate model inputs

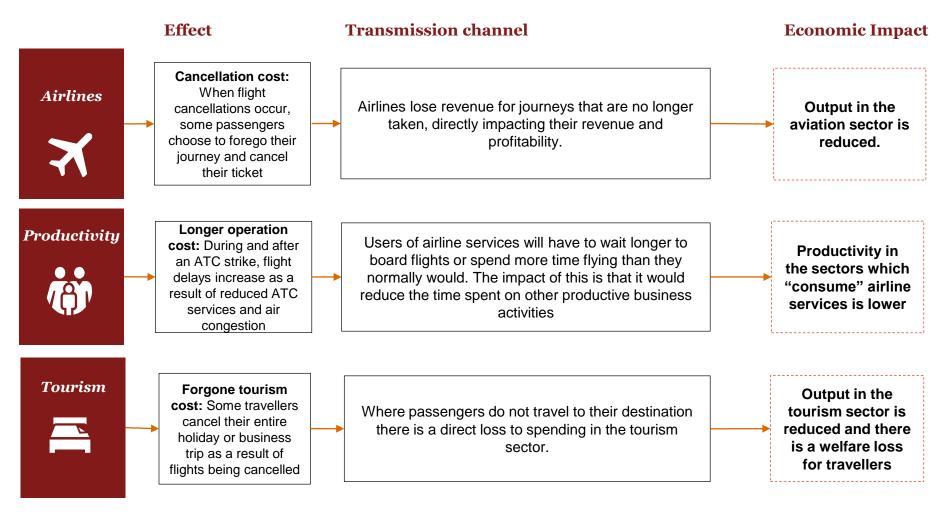
We estimated the direct shocks attributable to the relevant markets for which we had adequate data i.e. business and leisure tourism, and the broader airline transport sector. To do this we had to make assumptions.



Model impacts using a CGE model

We modelled the wider economic impact of ATC strikes by changing the various sector-specific assumptions available in the model that could change as a result of the strikes taking place.

Our model focuses on the revenue loss to airlines of cancelled passengers, the productivity loss from increased journey times and the impact on the tourism industry

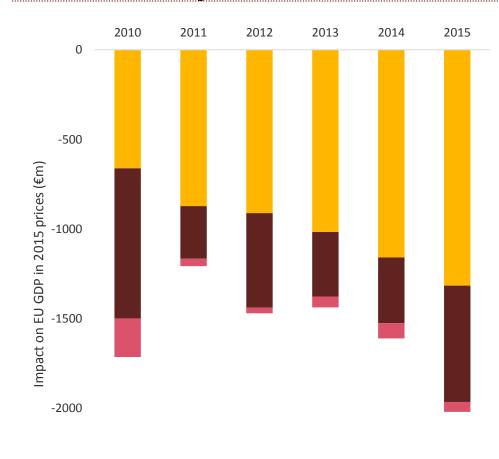


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Key findings

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Our modelling results suggest that in the 2010-15 period the overall impact of ATC strikes reduced EU GDP by € 10.4 billion, associated with 143,000 jobs



€10.4 bn.

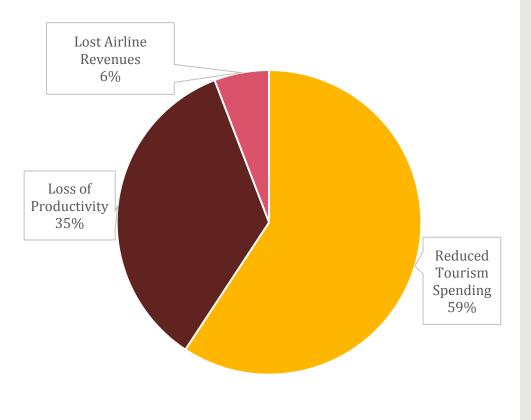
Cumulative impact of ATC strikes on EU GDP for the 2010-15 period

143,000 jobs

Cumulative negative impact of ATC strikes on EU employment for the 2010-15 period

The majority of impacts are felt in reduced tourism spending and loss of productivity

ATC Strike Impacts (-€10.4 bn 2010-15)



- The majority of the economic impact of ATC strikes is felt through reduced tourism spending. Our modelling suggests the overall impact through this channel over the past six years amounts to around €5.9 billion or €990 million a year in 2015 prices.
- Specifically, the second largest impact is felt through the reduction in productivity associated with longer flights and waiting times. The cumulative economic impact felt through this channel amounts to € 4 billion or just under €670 million a year in 2015 prices.
- Finally, the third largest impact is felt via lower airline sector revenues. The economic impact of this, however, is limited to around €590 million or around €80 million per year in 2015 prices.
- Our modelling results suggest that the cumulative negative impact on EU employment for the six years to 2015 was 143,000 jobs.
- However, this should not be taken at face value as ATC strikes are unexpected events which suggests that employers would react different compared to a state of the world where ATC strikes were business as usual.

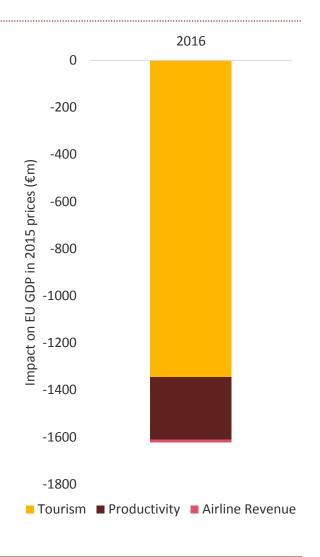
In the first nine months of 2016, there have already been 22 ATC strikes – costing € 1.6 billion of EU GDP



In the period 1 January – 30 September 2016, there have been 22 separate strikes by air traffic controllers in Europe, encompassing 41 days of strike, and 55 days of disruption.

€1.6 bn.

Cumulative impact of ATC strikes on EU GDP in the first nine months of 2016



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