

Dreaming of a white Christmas?

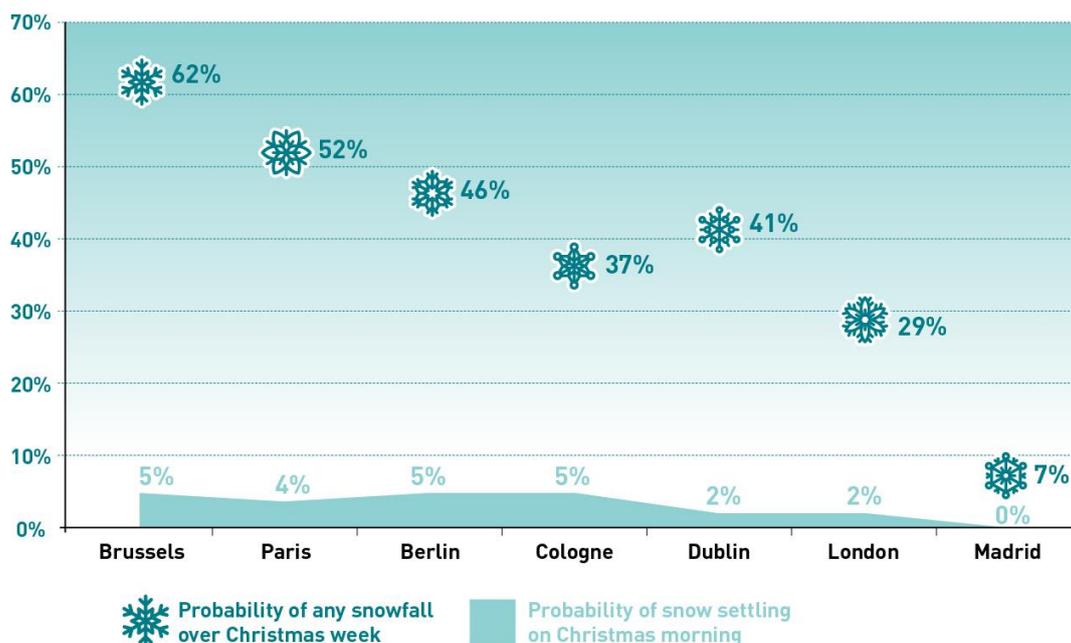
THE ECONOMICS OF CHRISTMAS SCENE-SEEKING



Last week's flurry of snow across the UK and Ireland raised hopes of a white Christmas. Sledges were dragged out of dark cupboards, Christmas sweaters got an early outing. But as panic amongst health and safety officers revealed, with everything from school to Christmas fairs cancelled at the drop of a snowflake, the white stuff doesn't actually land that often. So our thoughtful elves have been analysing the data to find the most cost-efficient sleigh-ride (aka airline trip) giving you reasonable certainty of a picture-book Noel.

Meteorological data from the last 50 years (sprinkled around in Figure 1 below) shows that historically, there has been a hope-worthy chance of at least some snowfall over Christmas week in most of our office locations. The problem for snow fun-seekers is that it very rarely settles; while the chance of seeing a snowflake in Brussels during Christmas week is around two-thirds, the likelihood of snow actually settling on Christmas morning is closer to 1 in 20. It isn't regular enough, or dry enough, for us to be able to count on a thick, snowman-making, crunchy coating on Christmas Day.

Figure 1 Probability of a white Christmas in each of Frontier's European office locations (based on data from 1966 to 2016)



Source: Frontier Economics analysis of National Oceanic and Atmospheric Administration (NOAA) Integrated Database.

One alternative for snow-hunters is a quick holiday to a destination where having a white Christmas is more likely – while keeping an eye on the budget (we are economists, after all).

Whither the winter wonderland?

Our aim was to maximise the probability of enjoying a white Christmas, subject to a travel budget constraint. (In economic jargon, this is known as a “constrained optimisation” problem.) An important first step, of course, is to define the outcome we want to maximise.

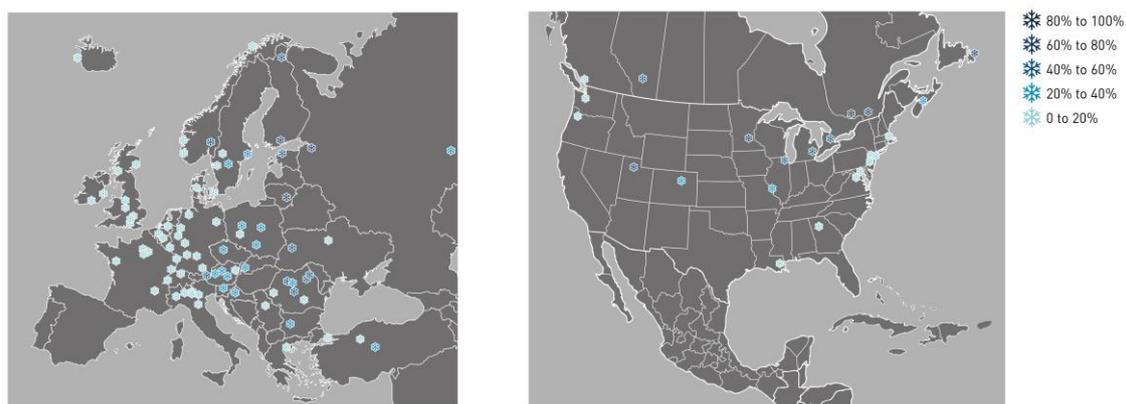
What, precisely, is a “white Christmas”? Let’s start with the official definition. All it takes for the Met Office – the UK’s national weather service – to declare a white Christmas is “for one snowflake to be observed falling in the 24 hours of 25 December”. This may strike readers from snowier climes as a bit of an exaggeration – perhaps borne out of desperation with a mild(ish), wet, maritime climate. We decided to raise the bar, at least to snowball level: i.e., there must be enough snow, and it must be dry enough, for it to settle on the ground.

The second question is the nature of the destination. There are, of course, lots of snow-seekers streaming out of European business centres in pursuit of a good winter skiing holiday. But we’re looking for something more modest: a short snow-covered “city break” offering nothing more strenuous than a skating-rink. That filters out the low-lying snow-light destinations with ground connections to (expensive) ski resorts.

Figure 2 below shows the probability of snow settling during the Christmas 24 hours in a range of different travel destinations with regular direct flight connections from the leading airports serving Berlin, London, Madrid or Paris. (“Direct” is important: no one wants to drag snowman-seeking children through successive transit lounges for a short Christmas trip: one airport departure is quite enough.)

Each of the airports we identified has a connected weather station, so we were able to look at how often there was (settled) snow on Christmas day. As Figure 2 shows, there are remarkably few easily-reachable city destinations that can guarantee a white Christmas; but there are a number of options where the probability exceeds 40% and a handful where it is over 60%.

Figure 2 Probability of a white Christmas by airport destination



Source: Frontier Economics analysis of NOAA database.

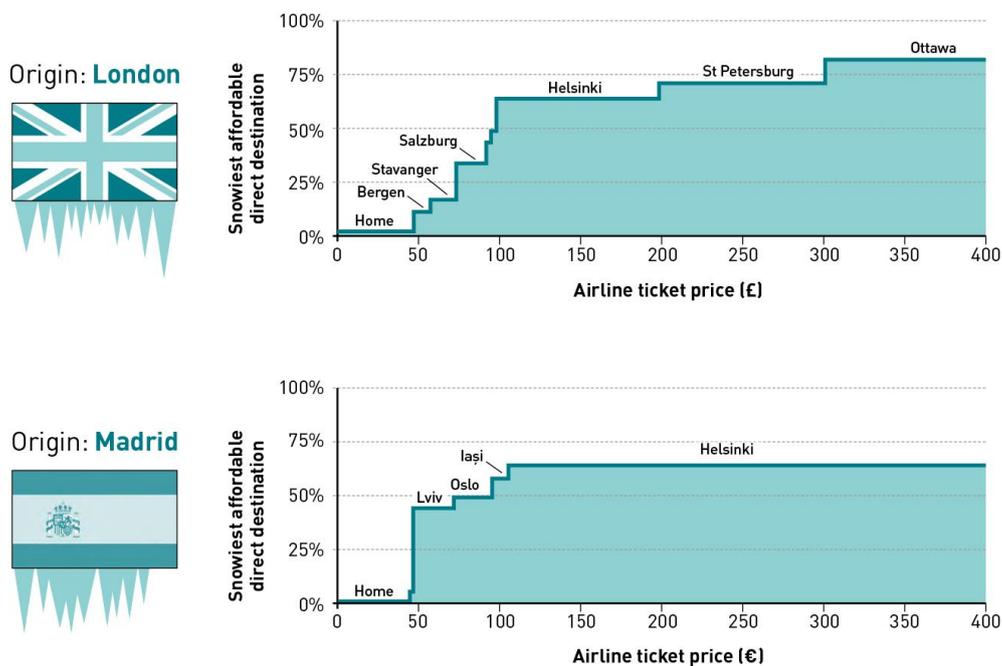
Next, we overlaid information on the historical cost of flights from each of Frontier’s offices to each destination over December. For this part of the exercise, we used the world’s largest air travel database, operated by OAG, to identify the average cost of a one-way economy ticket in the month of December 2016.

Using this information, we were able to identify the destinations that would maximise the probability of a white Christmas at various (modest) levels of travel cost.

Figure 3 below charts travel cost against snow probability for trips from our two most snow-deprived offices, London and Madrid. It shows, for different snow probability levels, the cheapest destination in our dataset. For example:

- if travelling direct from London, the cheapest place to travel for around a 75% chance of a white Christmas is St Petersburg – at a cost of around £200 (excluding taxes and duty); and
- if travelling direct from Madrid, the cheapest place to travel if you want to lock in a 50% chance of a white Christmas is Oslo, at a price of around €70.

Figure 3 Destinations with highest probability of white Christmas, depending on travel budget constraint



Source: Frontier Economics analysis of NOAA database and OAG Traffic Analyser. Excludes airport taxes and duty.

As Figure 3 above shows, Ottawa sets the cold standard, with an 82% chance of a proper white Christmas. However, direct flights are only available from London – and even there, only at a chill-inducing cost of more than £300 plus taxes. So the Gulf of Finland – and in particular Helsinki – would seem to be a more cost-effective choice for the European traveller, with almost a 65% chance of a white Christmas for not much more than a €100 air ticket. Indeed, Helsinki offers the best probability for the lowest price for travellers from London and Madrid. The same is also true for those travelling from Berlin. Interestingly, nearby Tallinn and St Petersburg are both better bets for Parisians – a flight to the latter costs just over a €100 from Charles de Gaulle and comes with almost a 75% chance of snow cover on Christmas day.

There are, mind you, some things to bear in mind before using

Figure 3 to set off on a snow-chasing adventure:

- First, the analysis is based on the historic *average* cost of December flights actually purchased in 2016. In practice, the cost of flights can vary widely, depending on when the ticket is bought. So the results above may overplay or underplay the cost of purchasing a

ticket, depending on whether you are an early bird or a last-minuter (check: how late do you leave your Christmas present shopping?).

- Second, the results are based on the average cost of an economy one-way ticket. So - obviously - it would cost you more assuming you “want” to get home. And still more, of course, if you want to avoid the excesses of other people’s Christmas spirit in economy and travel business or first class.

To add to this, the cost of the flight is of course only one part of the cost of a city break. For example, while Helsinki looks like the no-brainer when travelling from **Madrid**, Iași in Romania offers a similar chance of a white Christmas with less than half the living cost of the Finnish capital. And Spaniards in search of a real holiday bargain should look no further than Lviv – with a 45% chance of snow it is one of the most affordable places to visit in Europe, with restaurant prices just a quarter of those in Madrid.

But for those dreaming of a (cheap) white Christmas from **London**, beware. Hopping across the North Sea to Bergen or Stavanger would appear to offer a decent chance of snow coverage for December airfares of less than £100, but each of these Norwegian cities is over 25% more expensive than the British capital. So if this bulletin has made you feel a guilty slug-a-bed home bunny, take comfort. The snow may be whiter elsewhere, but maybe the grass isn’t greener, after all.

The Elves



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