

The economic impact of OTAs in the EU: summary report

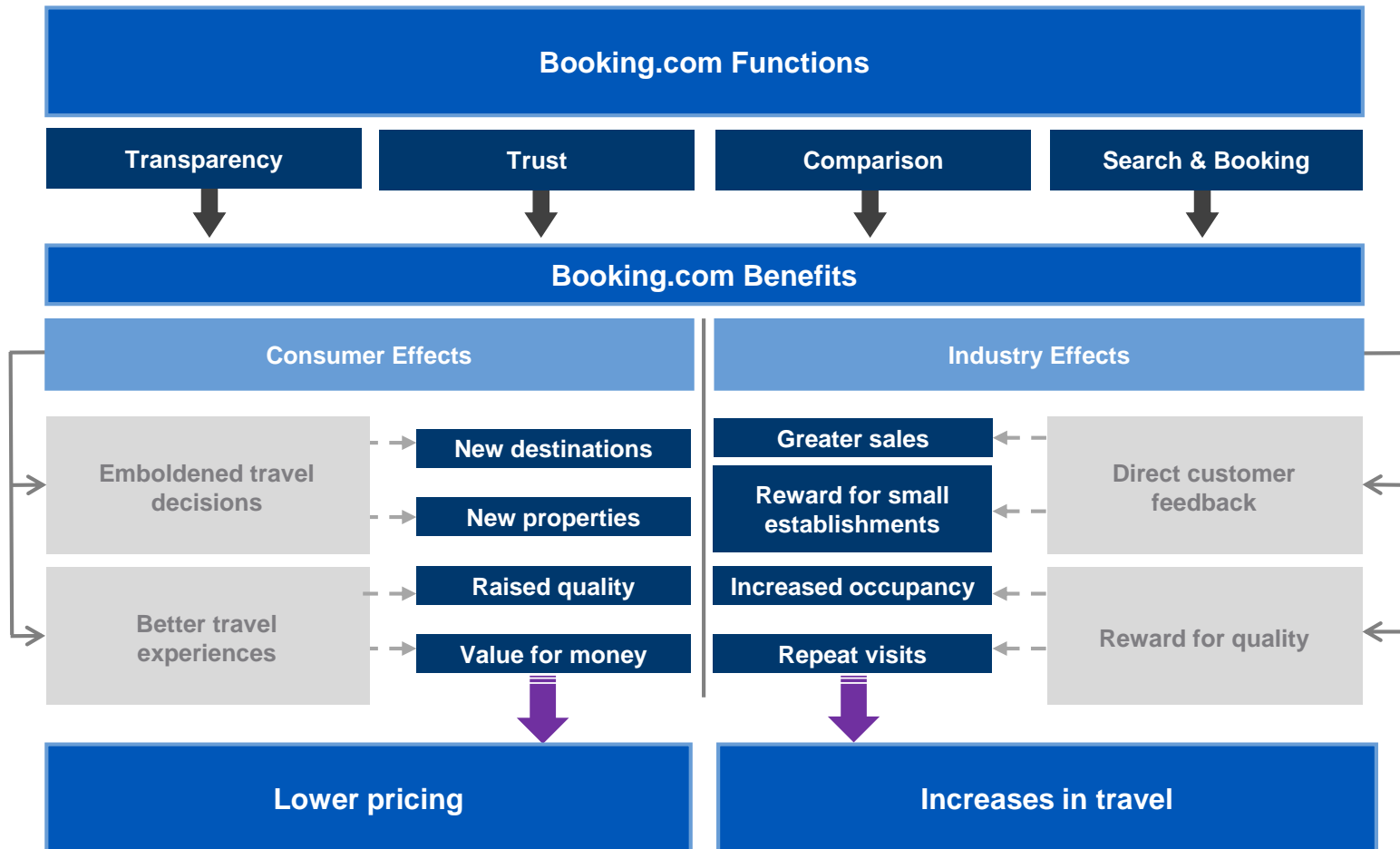
Impacts on trips, night, spend and
employment

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Booking.com generates benefits both for the consumer and the industry

Booking.com's integrated search and booking functions generate increased demand and improved services.



Executive Summary: additional OTA impact

The additional impact of OTAs was around 81 million nights across the EU as a whole, equivalent to 2.1% of all overnights in the region. 'Additional impact' refers to benefits which would not have occurred without OTAs.

Consumers have benefitted from lower hotel room rates due to the increased competition provided by search and comparison functions of OTAs. Travellers have been able to take more trips and overnights at a lower average cost.

There has been a net benefit to the tourism sector in terms of increased revenue equivalent to 0.6% of all revenue. This leads to a GDP impact of around €7.7 billion and supports some 155,000 jobs across the EU.

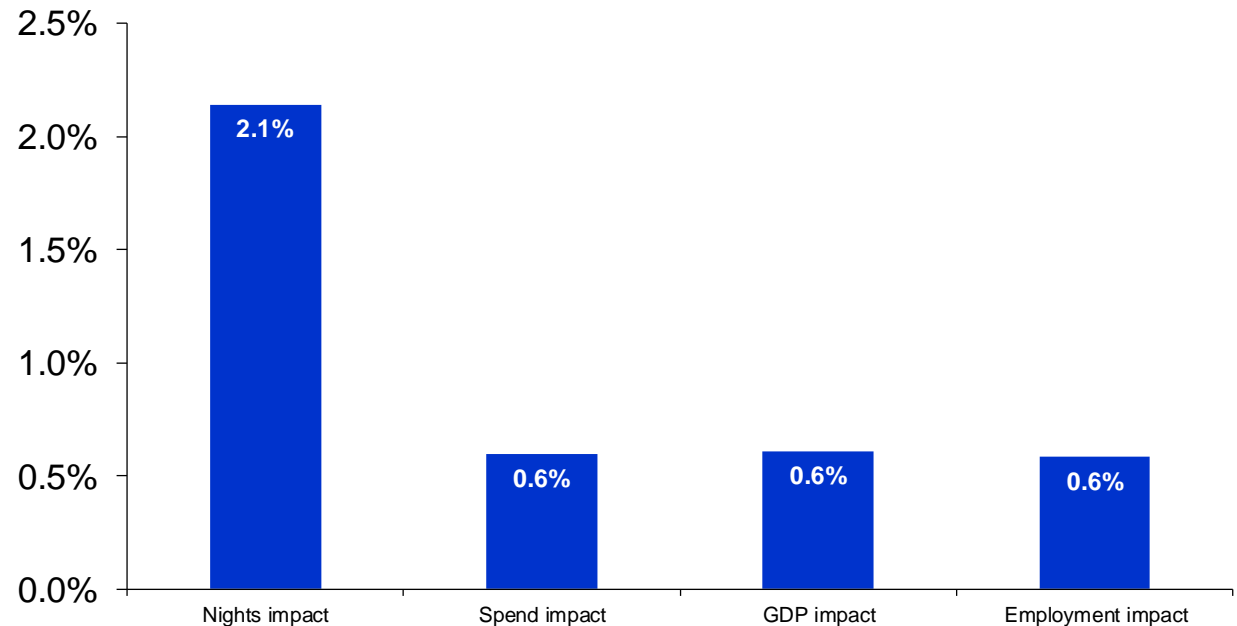
| Oxford Economics

In 2015 OTAs generated:

- around 81 million additional nights, equivalent to 2.1% of all tourism nights;
- a GDP impact of over €7.7 billion;
- Supported some 155,000 jobs across the EU.

EU Percentage impacts

% tourism nights / spend / GDP / employment, 2015



Source: Oxford Economics

Executive Summary: OTA influence

OTAs influence around 30% of trips and up to 25% of overnights across the EU as shorter trips are typically booked on OTAs. Booking.com influenced around 10% of all overnights (42% of the total OTA influence).

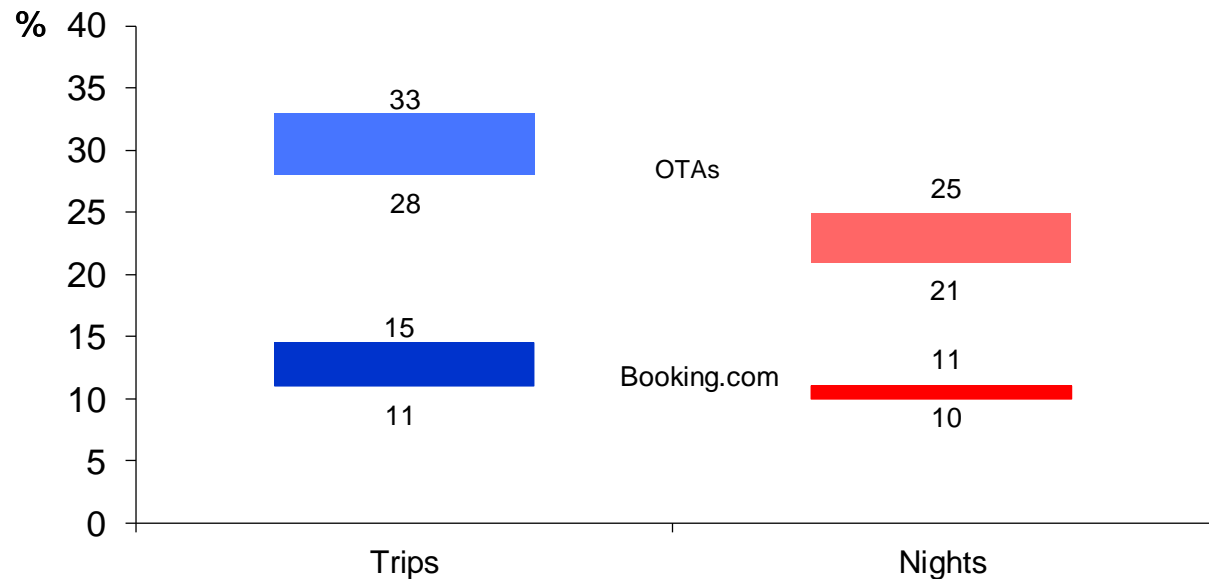
Europeans are increasingly organising travel online with a large share of that through OTAs.

A combination of methods has been employed to understand the influence of OTAs on travel behaviour:

- First we looked at the online population, the proportion organising travel online and the OTA share of this: the *top-down* approach.
- Next we considered the number of transactions through Booking.com and the share of total OTA activity this represents: the *bottom-up* approach.

Around 30% of visits have been influenced by OTAs but involving some shorter length of stay and slightly lower influence on nights.

Range of OTA and Booking.com influence on EU trips & nights, 2015



Source: Oxford Economics, Booking.com, ComScore, Eurostat, Eurobarometer, STR

Executive Summary: Distinctive characteristics of the OTA market

OTA use is disproportionately skewed towards international travel with larger benefits for independent properties.

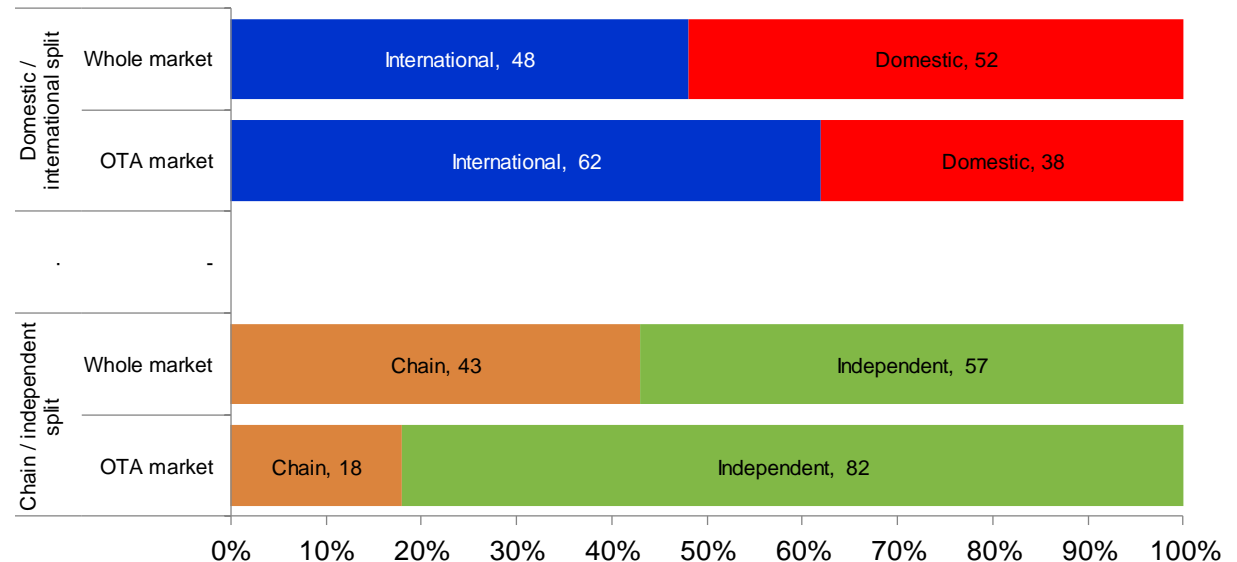
The OTA market is distinct from the wider travel market in a number of different respects.

It is more focused on international travel when compared to the market as a whole (which approaches a 50/50 split).

However, the most marked of all differences is the predominance of booking at independent hotels via OTAs. This results in greater benefits accruing to the non-chain sector from OTAs.

Characteristics of OTA market compared to wider market (EU)

% share



Source: Booking.com, STR, Oxford Economics

Executive Summary: ADR impact

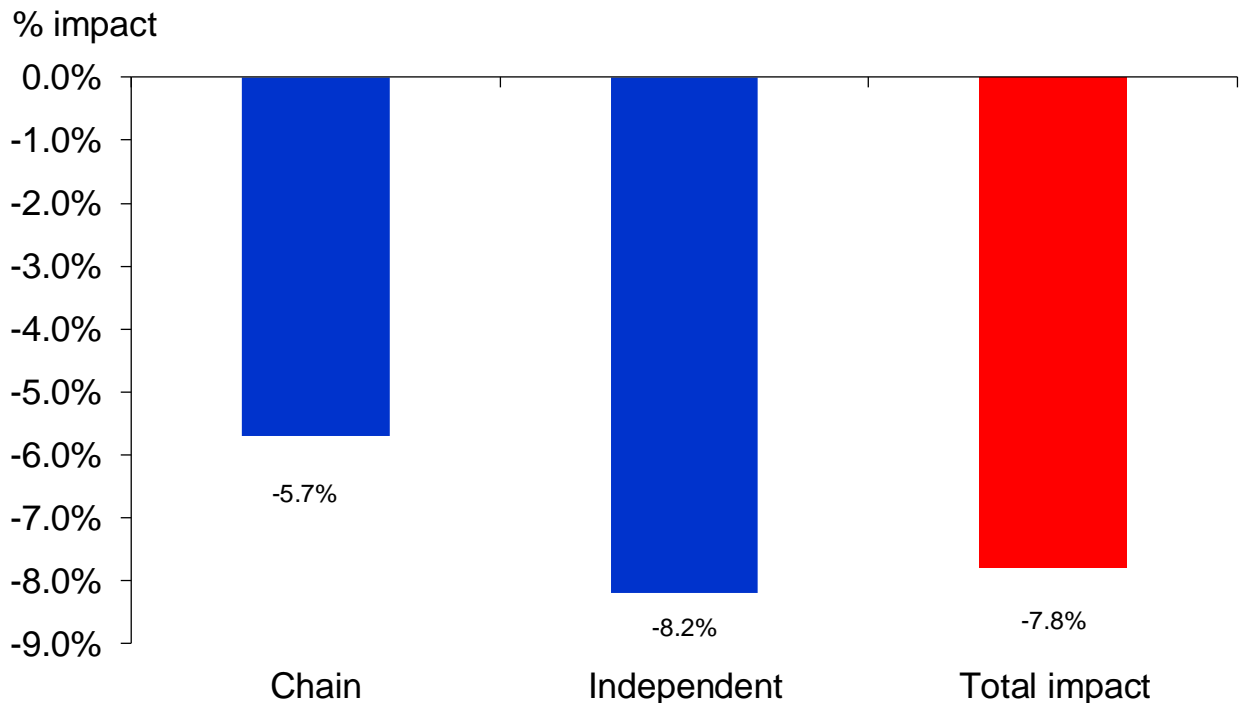
OTAs' search, comparison and booking functions have increased competition and have lowered room rates across the EU by almost 8%, relative to a counterfactual case of no OTA activity.

Hotel room rates are, on average, 7.8% lower than would otherwise be the case in the EU due to the presence of OTAs.

ADR by type of property and point of sale has been estimated as a function of the OTA share of sales, while controlling for other key drivers of rate. Actual rates are compared to a counterfactual case of no OTA activity. Lower rates are estimated for rooms sold through OTAs (-12.5%) but also for non-OTA sales (online or offline), albeit to a lesser extent, due to increased competition and with more information available to consumers.

Consumers benefit from these lower costs for travel as well as from lower search costs and the ability to find better quality rooms for the same price.

ADR impact by chain and independent hotels, EU 28



Source: Oxford Economics

Executive Summary: Additional OTA impact

Consumers benefit from lower prices while the tourism sector benefits from increased demand and revenue.

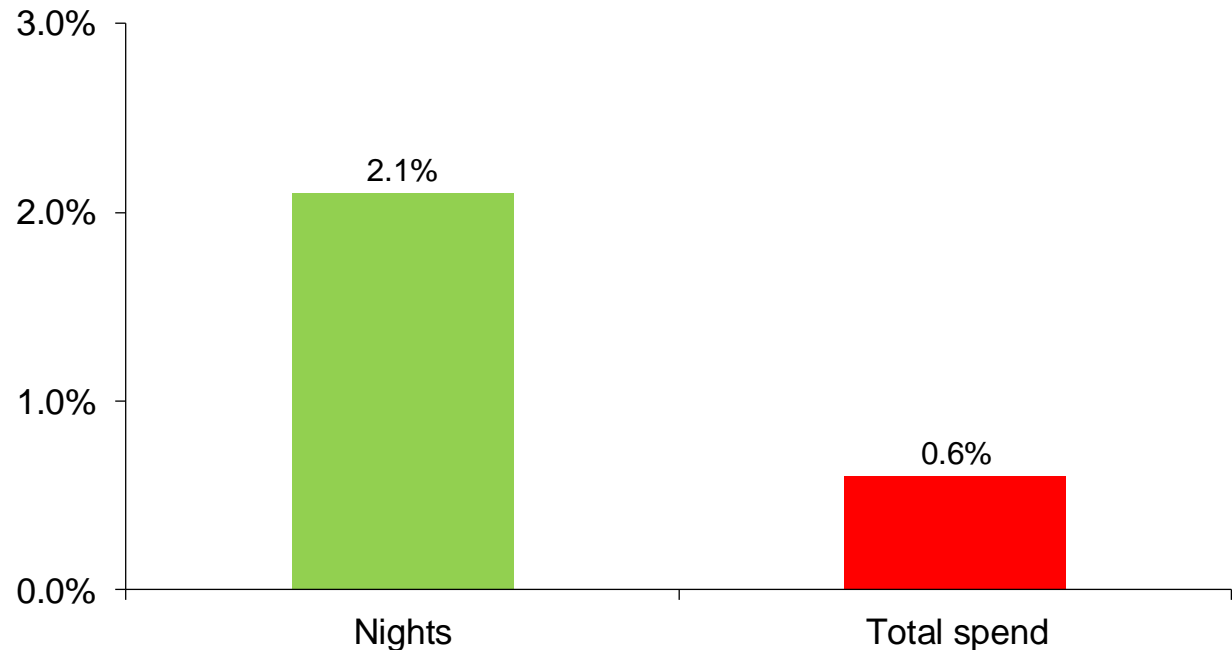
Additional tourism spend comes from:

- Additional overnights, and higher room occupancy, arising from key functions of OTAs including search and comparison. This includes more trips being taken due to both marketing and price effects, as well as impacts on average length of stay.
- Reduced ADR and average spending per night from the ability to find lower cost quality alternatives as well as increased competition.

For the EU as a whole, the lower ADR has reduced total average spend per night by around one and a half percent, and the net effect on tourism spend was 0.6%

Total EU impact of OTA activity

% tourism demand, 2015



Source: Oxford Economics

Executive Summary: Additional OTA impact: foreign & domestic

A higher OTA impact is estimated for foreign visitor nights, consistent with the skew in Booking.com bookings towards foreign travel, including

- 70.9 million additional foreign nights
- 10.2 million additional domestic nights

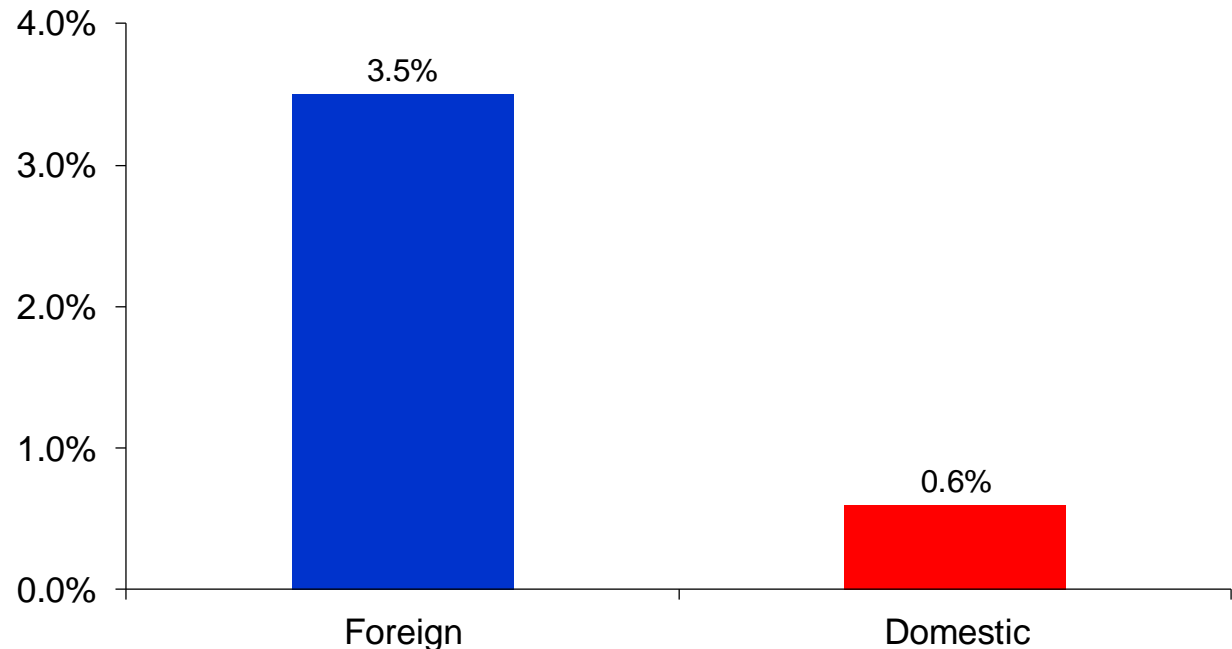
In general, higher OTA impact is seen on foreign visitor nights (3.5%) than on the domestic market (0.6%). The majority of additional generated nights (nearly 71 million) were generated by foreign visitors.

This is consistent with a greater share of OTA bookings being related to foreign travel. The incremental benefits of OTA search and comparison functions are also clearer for markets which are not as well known to consumers, such as overseas markets. A greater proportion of the domestic bookings involve a shift from non-OTA to OTA booking, but these would still involve some benefits of lower pricing.

This effect varies considerably across the different EU countries.

Total EU impact of OTA activity: foreign and domestic

% tourism demand, 2015



Source: Oxford Economics

Executive Summary: OTA employment impact

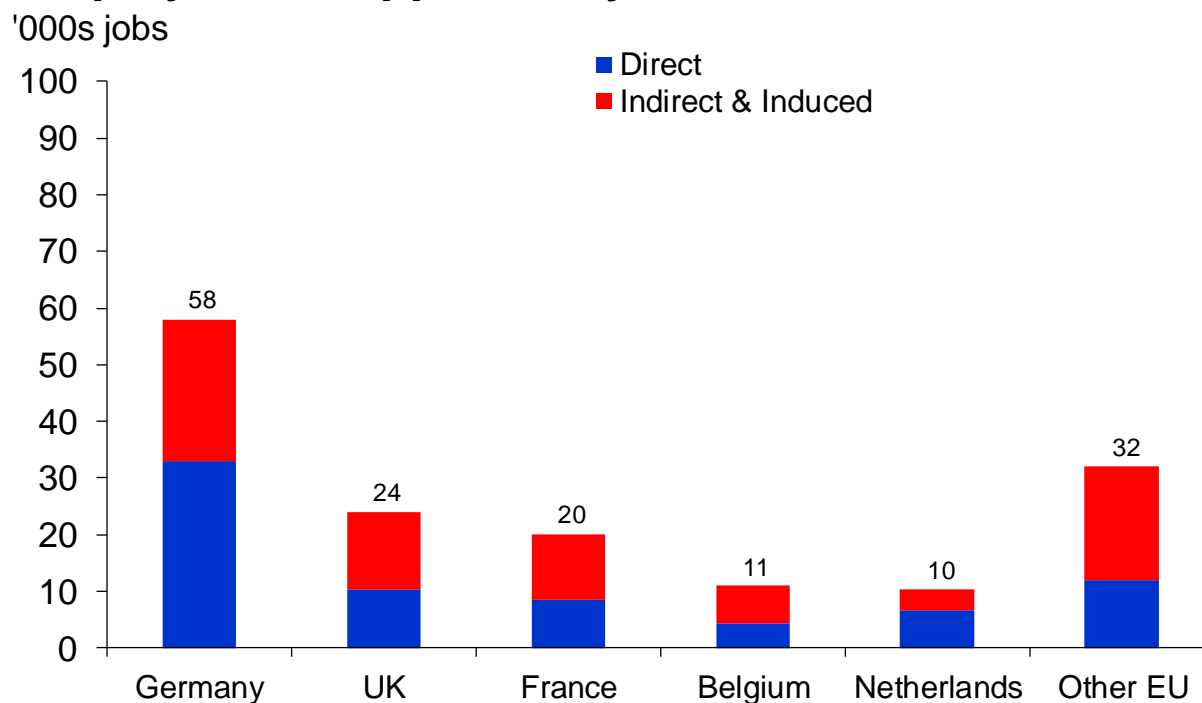
OTA generated spending supports 155,000 jobs across the EU. Especially large impacts are evident in Germany.

Spending generated by OTAs across EU countries makes a similar proportional contribution to both tourism sector GDP and employment in those countries.

Including the indirect and induced impacts through the supply-chain and spending of earnings the total impact on EU employment has been estimated at over 155,000 jobs for the EU as a whole.

The graphic shows the five biggest positive impacts in actual terms by country and these same five countries are compared in other analyses in this summary report. Especially large impacts are evident in Germany.

Employment supported by OTAs



Source: Oxford Economics, WTTC

OTA Influence Calculation

Influence calculation overview

The large influence of OTAs has been estimated as a starting point to understanding the impact.

Bottom-up

1. Booking.com provided data for 2012, 2013, 2014 and 2015 including total number of transactions and total transaction values in Euro terms, nights and Average length of stay (ALOS). Chain and non-chain properties were able to be examined separately. Number of guests was not provided but was calculated assuming a value of 2 guests per booking average to fit in with the company's own assumptions.
2. Using these data country level activity as a proportion of EU28 was derived. The implicit assumption in grossing up here is that a unique visitor to Booking.com was equally likely to result in a booking than a visit to any other OTA.
3. Booking.com also provided a complete set of bilateral data so the OTA footprint could relatively easily be converted to a destinations basis. An implicit assumption was that Booking.com was representative of OTAs as a whole.
4. Where ComScore data were unavailable (ComScore only collects data for 14 of the 28 EU countries) shares were established from Booking.com and simply grossed up to the OTA level.
5. Using unique visitor traffic data provided by ComScore, the Booking.com share was grossed up to an all OTA share. This was then presented as a share of demand from the TDM model. The TDM denominator was also converted to a destinations basis as sources and destinations are available on TDM based on data supplied by individual national statistical institutes.

Top-down

1. The top-down methodology started from total population by country. Usually the data source used for this was EUROSTAT total population by country for 2013, 2014 and 2015.
2. EUROSTAT data was also used to determine the proportion of total population online by country. This was also checked against other sources such as Internet Live Stats to ensure that Internet penetration was consistent. Eurobarometer undertakes an irregular survey of attitudes to tourism with a focus on methods of researching, organising and booking. This survey data was used as a baseline to estimate numbers by all 28 EU countries using the Internet to research travel and tourism decisions.
3. The ComScore data (which was also used on the 'bottom up' methodology) was used as a match for these shares. Some small adjustments were apportioned across all countries in order for the residual to make sense. For each country proportions were established as well as raw numbers in millions.
4. A previously established origins-destinations matrix for all 28 EU countries was then used in order to convert from a source markets basis to a destinations basis. The source for this matrix was Tourism Economics' Tourism Decision Matrix model (TDM) which takes its data from the UNWTO and official national statistical agencies.
5. For trips, average length of stay was used to convert nights to trips and then this dataset was also put through a similar matrix to convert source markets to a destinations basis.

Bottom-up calculation

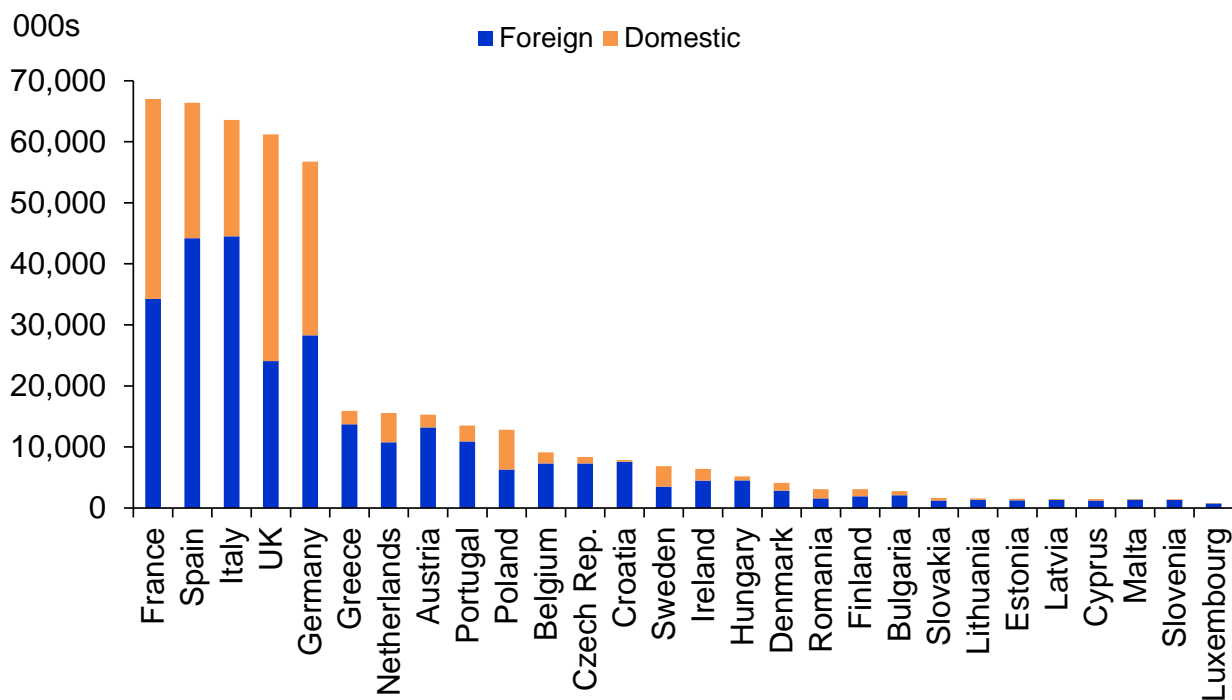
On a destinations basis, 62% of all EU28-bound room nights sourced through online travel agencies countries were foreign.

Using the Booking.com bilateral bookings data the outbound OTA bookings have been mapped to a destination basis. Bookings from outside the EU have also been accounted for and grossed up to an OTA total using an average ratio.

In grossing up to the OTA market we aim to capture the full influence including those who research travel options on OTAs but book through other channels.

France as a destination enjoyed the greatest number of room nights booked on OTAs; almost half of these were domestic. Spain and Italy received a similar number of foreign room nights, but a smaller share of domestic bookings. The UK stands out as a large destination where domestic demand was largest.

Foreign and domestic room nights by destination, 2014



Source: Oxford Economics

Top-down calculation

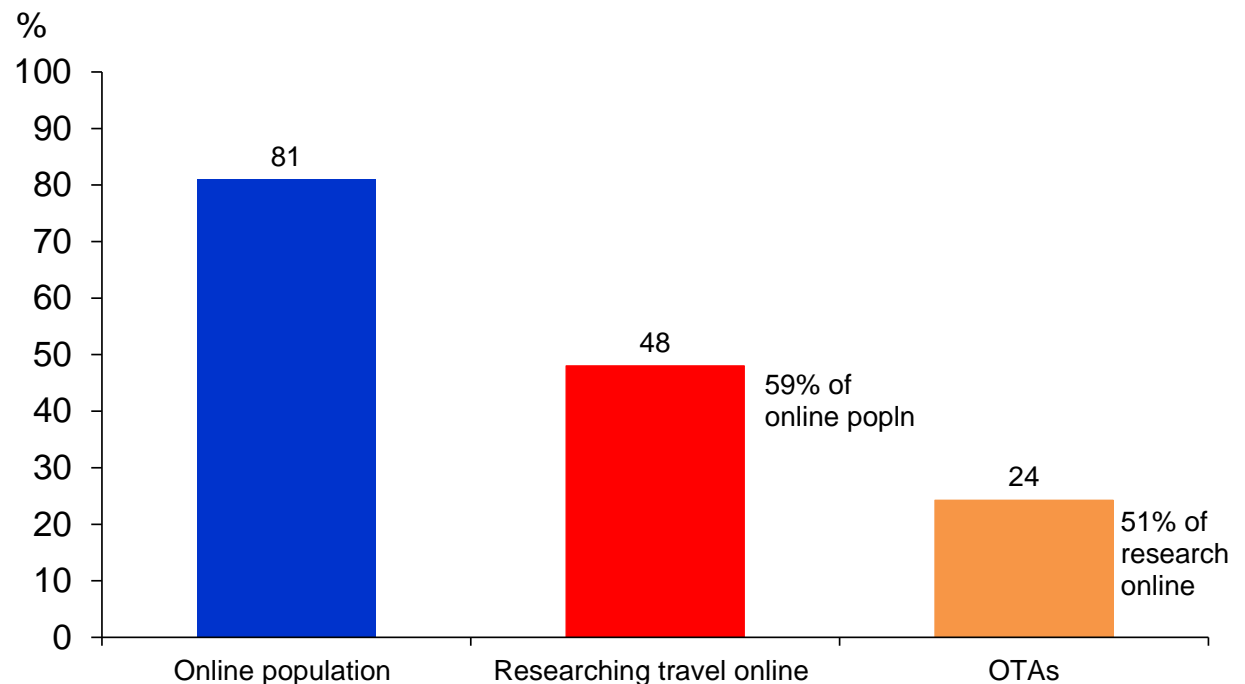
Online travel use & OTA share suggests that OTAs are used by about a quarter of the EU population.

The online population represents the majority of EU population: in fact, more than four fifths. Those organising travel online represent approximately 48% of population (and 59% of the online population).

OTA share of all travel sites is 51% for EU, looking at the proportion of unique visitors to different sites. Therefore, 24% of the EU population used OTA sites in 2015. This definition of influence also includes those people researching on OTAs but booking through other channels.

Data have been mapped from origin to destination using matrices of typical origin-destination travel to understand the influence of OTAs to destinations according to this methodology.

Percentage share of total EU population, 2015



Source: Oxford Economics, Eurostat, Eurobarometer, ComScore

OTA influence on EU nights: sensitivity of results

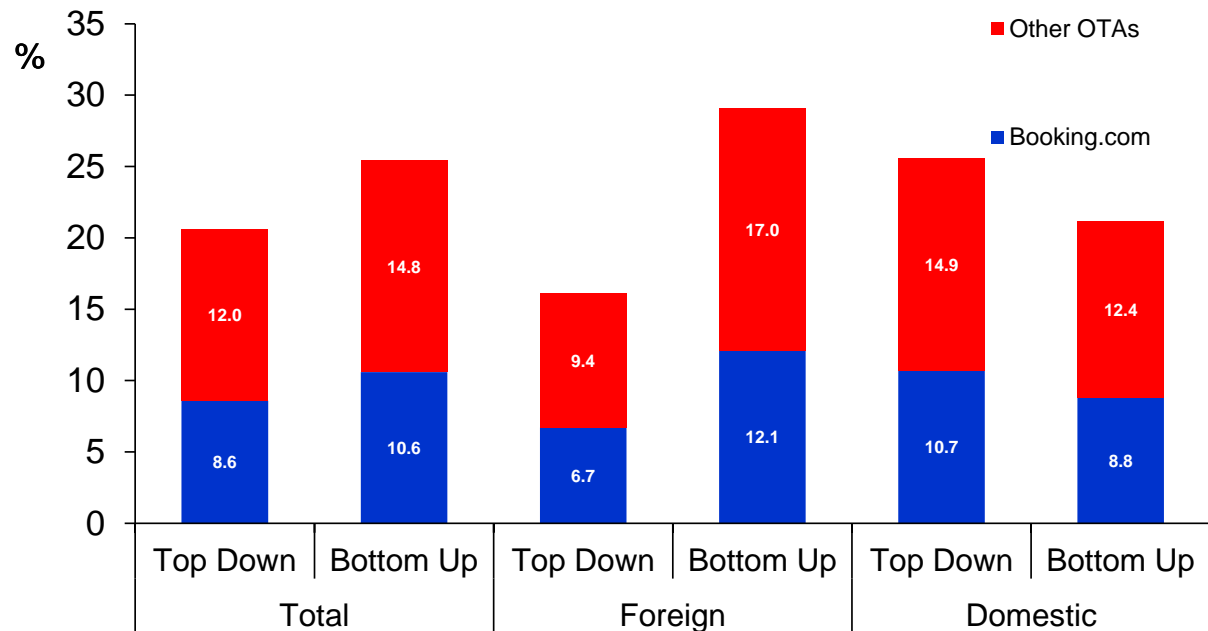
Across the EU, around 23% of nights are influenced by OTAs. The bottom-up approach produces a slightly higher estimate; the top-down methodology a slightly lower one.

The two methodologies present slightly different results at a total level.

The overall influence on nights is in the order of 20 to 25% with a mid-point of around 23%. Calculation is fully consistent with estimates for trips as well.

There is much wider divergence in the estimated influenced share of foreign nights. Nevertheless, the influenced shares of all nights, foreign nights and domestic nights are relatively similar taking the mid-point of the ranges.

Range of OTA and Booking.com influence on EU nights, 2015



Source: Oxford Economics, Booking.com, ComScore, Eurostat, Eurobarometer, STR

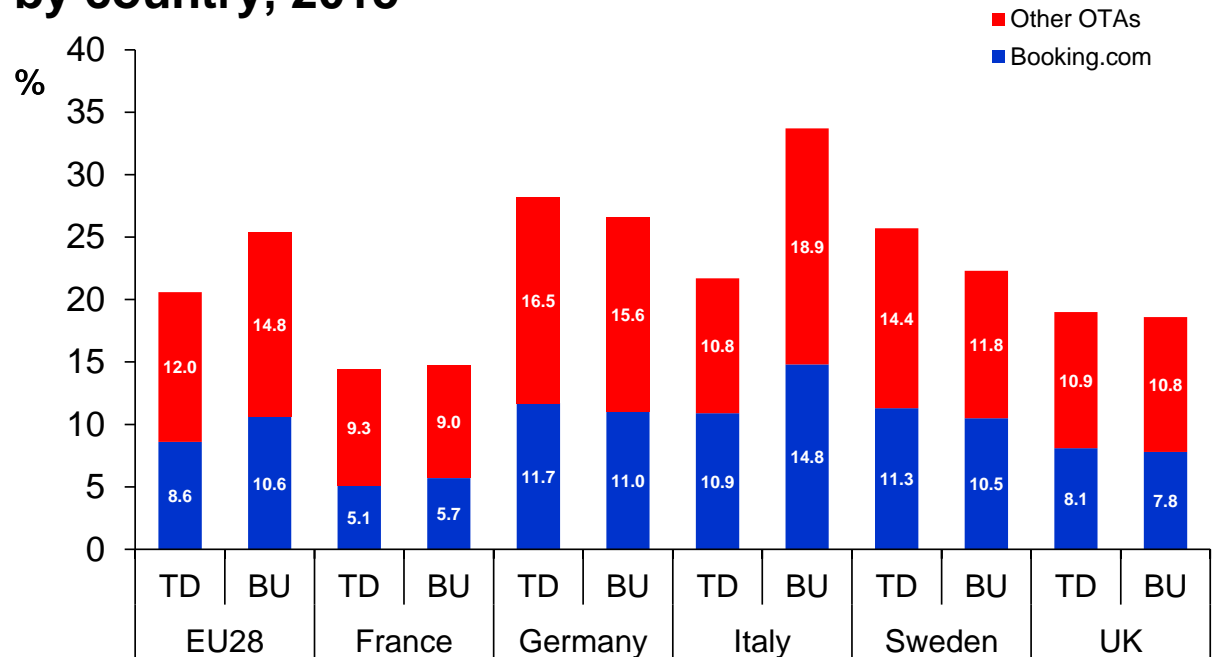
OTA influence on nights by country

There is considerable variation by country from around 15% in France to nearly twice that in Germany and Italy.

Looking at the OTA influence on nights for a selection of main countries of interest, there is considerable variation with both France (around 15%) and the UK (around 19%) noticeably below the EU average percentage share (around 23%). Influence in Sweden is consistent with the EU average.

Influence in Germany is slightly higher than average (around 27%), while Italy is even higher but it is worth noting that the two methodologies produce very different results in this particular case.

Range of OTA and Booking.com influence on nights by country, 2015



Source: Oxford Economics, Booking.com, ComScore, Eurostat, Eurobarometer, STR

OTA Additional Nights Impact

Nights Estimation Methodology Overview

OTA impact on outbound was estimated using the OTA influence as an input to estimation. Both the bottom-up and top-down influence figures have been used in estimation providing some sensitivity measures. But in general, the average impact is presented as the most mid-range.

By accounting for other major explanatory variables, including influence of other online research and booking, the additional impact of OTA activity can be derived. A reduced form version of Oxford Economics' global tourism model as been used as the basis for calculation to first determine tourism demand by source market as a function of fundamental economic drivers. Coefficients have been imposed for economic drivers to avoid excess explanatory power being afforded to any new indicators. These relatively simple models include some errors and also a reliance on a trend term. The importance of online travel research and booking, specifically using OTAs, is tested to determine how much of this other trend can be explained.

Calculation looked at the impact of OTA activity on both trips and overnights as well as for domestic and outbound travel separately and combined. The best results were for the number of nights taken in total (domestic and outbound combined). These concepts better match actual travel decisions, but ideal would be to use spending. However, country-to-country spending flows data are not as robust for modelling.

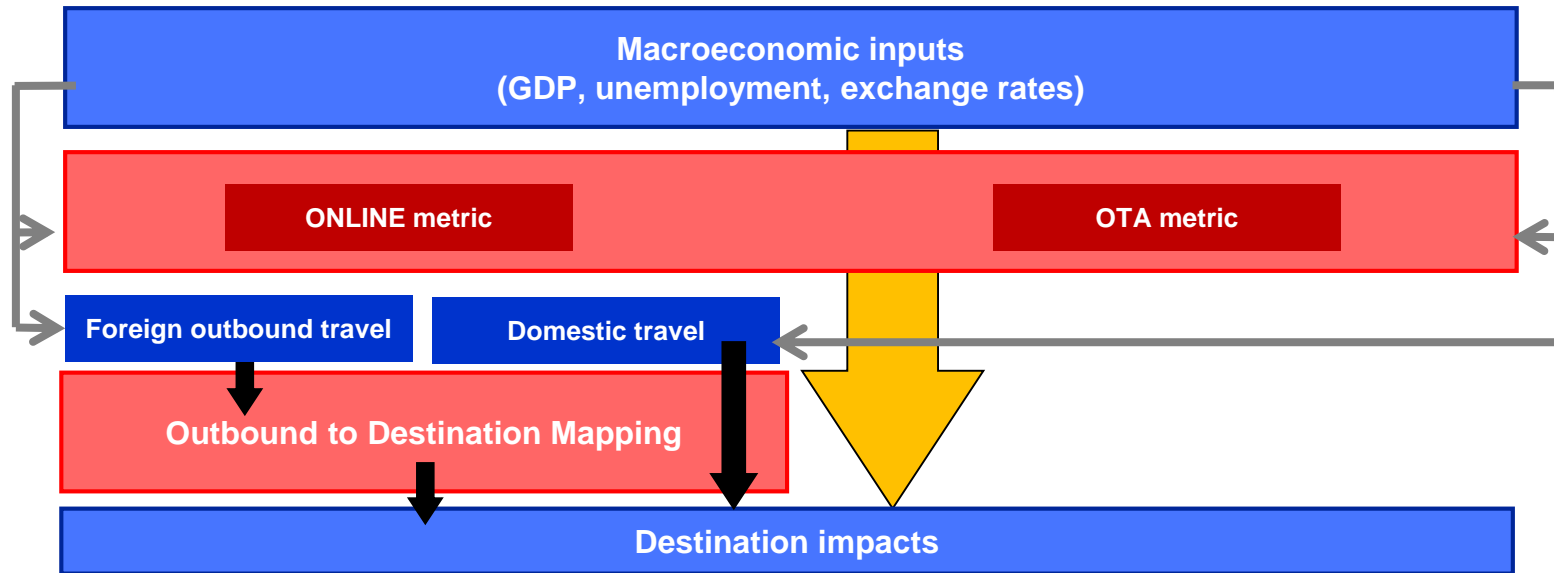
Estimation of outbound and domestic overnights as a function of OTA activity provided a strong fit to observed data.

Causality: Tests have been run to test for causality rather than just correlation. There is only limited time series available, but panel granger causality tests suggest causality runs in both directions as we would expect. Increased travel activity will result in more OTA activity as it is a significant part of the market. But more importantly, for this analysis, tests show that OTA activity causes additional travel volumes in subsequent years.

Collinearity: by including a lagged impact of OTAs, and also quantifying this relative to other travel research and booking collinearity is avoided in the estimation.

Introducing online and OTA metrics to Oxford Economics' global tourism model

Including the proportion of tourism transactions on OTAs confirms that they have a significant influence on travel and improves the model results.



Without the inclusion of any OTA data, existing equations of tourism demand by source market are based solely upon GDP, unemployment and exchange rates. Equations match observed data well including time trend and country specific fixed effects.

Including the online population has minimal impact on the already high explanatory power of the overall panel. But this is statistically significant. Further tests also confirm a causal relationship rather than just correlation.

Including the proportion of tourism transactions on OTAs instead of the broader indicator of online access confirms that OTAs do indeed have a significant influence on travel. To isolate the additional impact of OTAs on demand the proportion of transactions relative to online travel searches is included as an explanatory variable well as online access.

Foreign outbound travel was mapped to destinations using Booking.com transactions data and a pre-existing matrix for the wider market.

Nights impact – EU summary: sensitivity

Sensitivity testing shows a degree of uncertainty around the results but overall it is clear that nights impacts are higher for foreign travel than for domestic travel. Overall there is an estimated 2.1% uplift.

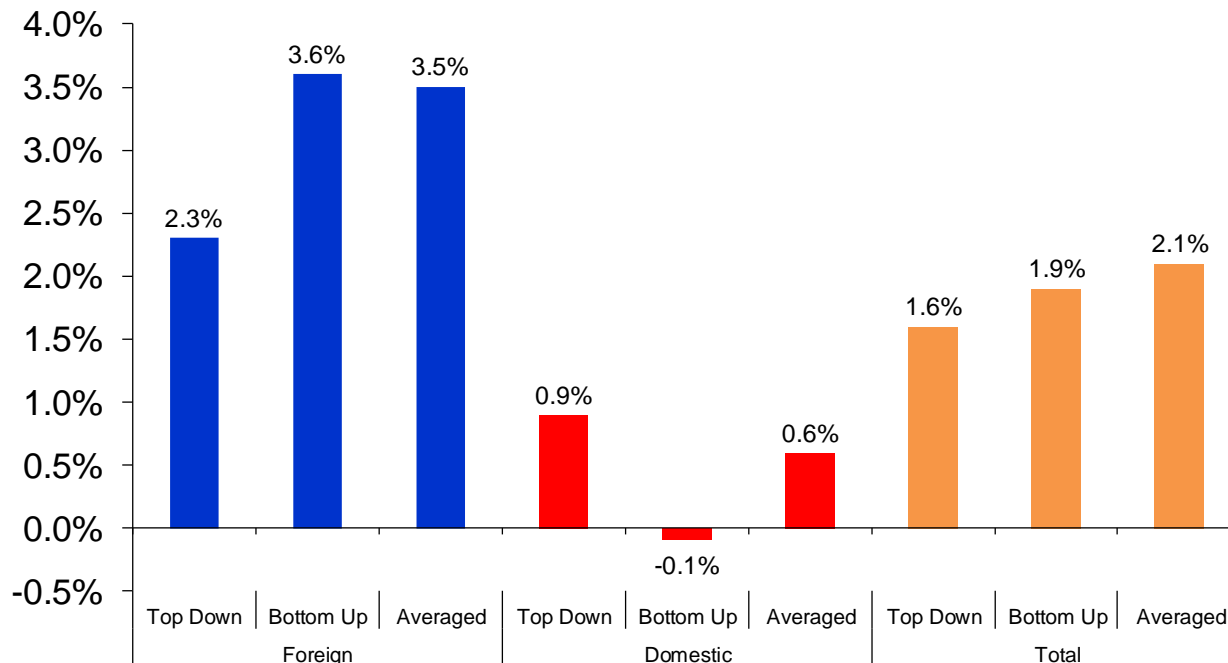
Using the two different methodologies for influence, it is important to examine the range of additional impacts. Across the EU, the two methodologies produce results of a similar magnitude for both domestic and foreign travel and both sets of estimations are statistically valid.

The impact of OTAs is higher on foreign nights for all measures, consistent with Booking.com's greater penetration here. A 3.5% foreign nights impact compares with a 0.6% domestic market nights impact, resulting in a 2.1% overall nights impact across the EU for the average measure.

Note here that 'averaged' refers to an average of the OTA influence used for estimation.

Nights impact - foreign & domestic (EU28)

% tourism nights, 2015



Source: Oxford Economics

OTA Impact on ADR

ADR Estimation Methodology Overview

This section tests the hypothesis that the additional competition provided by OTA platforms, in terms of transparent search, comparison and booking, has a downward effect on ADR. To assess this, ADR equations were estimated for all EU countries as a function of key hotel industry drivers, consistent with previous modelling by Oxford Economics, as a starting point for this analysis. Key drivers are:

- Inflation according to the CPI index (converted to euro terms). ADR typically follows prices in the wider economy reflecting increased costs as well as consumer purchasing power.
- Hotel room occupancy, whose cycle ADR typically follows with a six-month lag period.

Estimated equations using the above indicators, plus country-specific explanatory variables and a time trend, closely match actual ADR.

Estimation relies on STR data of hotel occupancy and ADR for the entire hotel market in each European country; data are collected from a representative sample of properties and grossed up to the total census of hotel rooms. Equations have been estimated over a panel data set covering all 28 EU countries over the years 2001-2015.

Further indicators have been added into estimation to understand the impact of OTA activity on pricing. Additional indicators of online activity improve equation fit and help explain movements in ADR:

- OTA share of room sales. Higher OTA activity is related to lower ADR.
- Relative importance of online travel research for that country as a destination. Some of the benefits of increased competition provided by OTAs are also provided by other online platforms

ADR was estimated for all EU countries over time as a function of OTA activity as well as all other key identified drivers. OTA impact as been isolated.

Estimated equations have been used to determine a counterfactual world in which OTAs did not exist. Observed data have been compared with the counterfactual case to quantify the impact that OTA activity has had on room rates over time.

Other drivers of ADR, including occupancy, are held constant in order to isolate the OTA impact on ADR. Occupancy would arguably be lower under a counterfactual of non OTA activity given the estimated impact on room demand. But room supply may also have risen in response and constant occupancy is a conservative assumption. Other online travel research activity is also held constant in order to isolate the OTA impact.

Estimation, and this counterfactual analysis, has been conducted for total room sales in each EU country. The impact on room rates for sales through OTAs have also been separately quantified as well as non-OTA sales (which includes some other types of online booking – for example, through hotels' own websites). Calculation also separately addresses the impacts on chain and non-chain hotels.

Note: the results from calculation are not a measure of how much lower ADR is one sector relative to the other, but a measure of how much lower ADR is relative to a world excluding OTAs.

Further testing has also been carried out to confirm causality rather than just correlation: OTA activity does indeed generate lower room rates.

OTA impact on ADR

A higher proportion of room sales through OTAs is linked with lower ADR. Estimation confirms the causal relationship, controlling for other relevant factors.

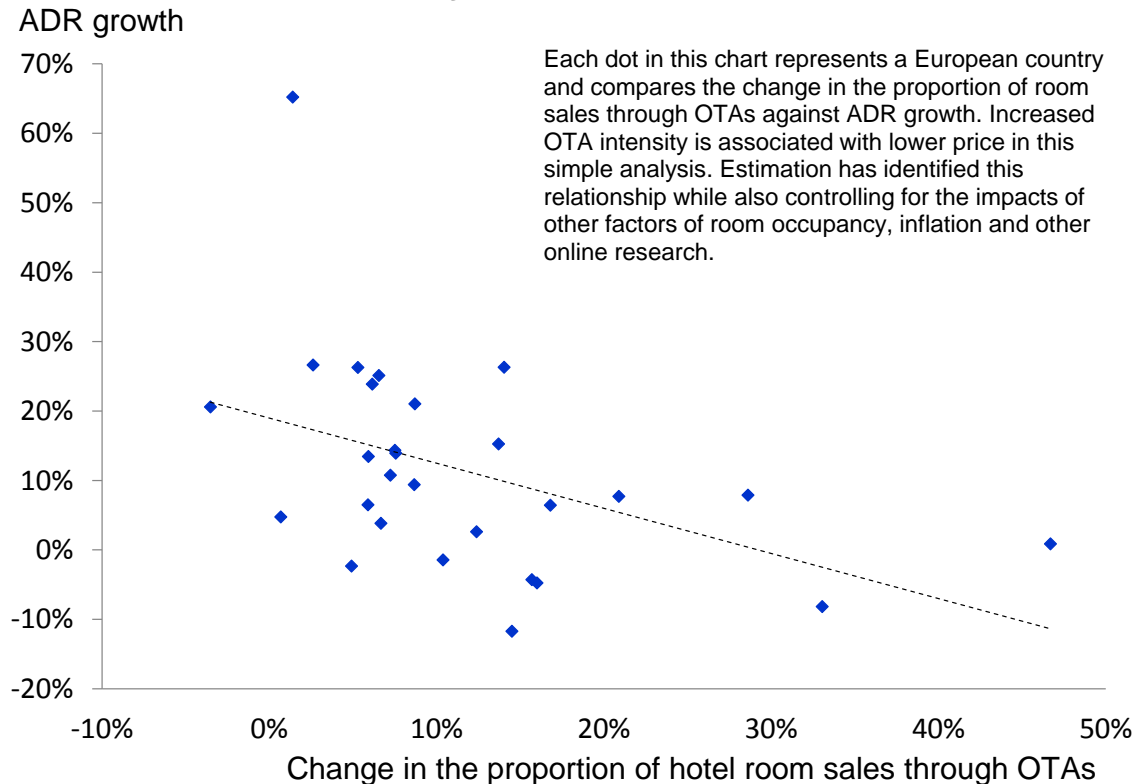
Average Daily Rate (ADR) for hotels is typically modelled as a function of two main drivers:

- Occupancy rate – higher demand allows hoteliers to exercise pricing power
- Prices in the wider economy (CPI) – increased costs result in higher prices for consumers

Including the proportion of OTA sales as an additional driver in estimation improves the equation fit. Online travel research intensity is also included to separately identify the impact of just OTAs.

The chart illustrates correlation between OTA intensity and ADR, but further estimation and testing proves that the relationship is statistically valid and causality as been confirmed.

OTA Intensity and ADR, 2012-15



Source: STR, Oxford Economics, Booking.com

ADR impact by type of room sale

Room rates are lower than a counterfactual case of no OTA activity, evident for sales through OTAs as well as for non-OTA sales. Across the EU as a whole the impact is a 7.8% reduction in ADR.

The impact of OTA activity on ADR for different types of room sales has been estimated. Results shown in the table are relative to a counterfactual case of no OTA activity according to estimated relationships.

Estimation also controls for other factors such as room occupancy; other costs and prices in the economy; and broader online activity.

Sales through OTAs are at a much lower price point than would otherwise be the case, especially for non-chain properties. Non-OTA sales (whether online or offline) are also at a lower cost than would otherwise be the case due to increased competition. However, the cost reduction is lower than for the OTA sales.

EU ADR impact by type of property:

Reduction in rates relative to counterfactual of non OTA activity

	Chain	Non-chain	Total
OTA sales	8.0%	13.8%	12.5%
Non-OTA sales	5.0%	4.6%	5.2%
Total	5.7%	8.2%	7.8%

ADR impact is largest for independent properties

Hotel room rates are, on average, nearly 8% lower than would otherwise be the case across the EU due to the presence of OTAs.

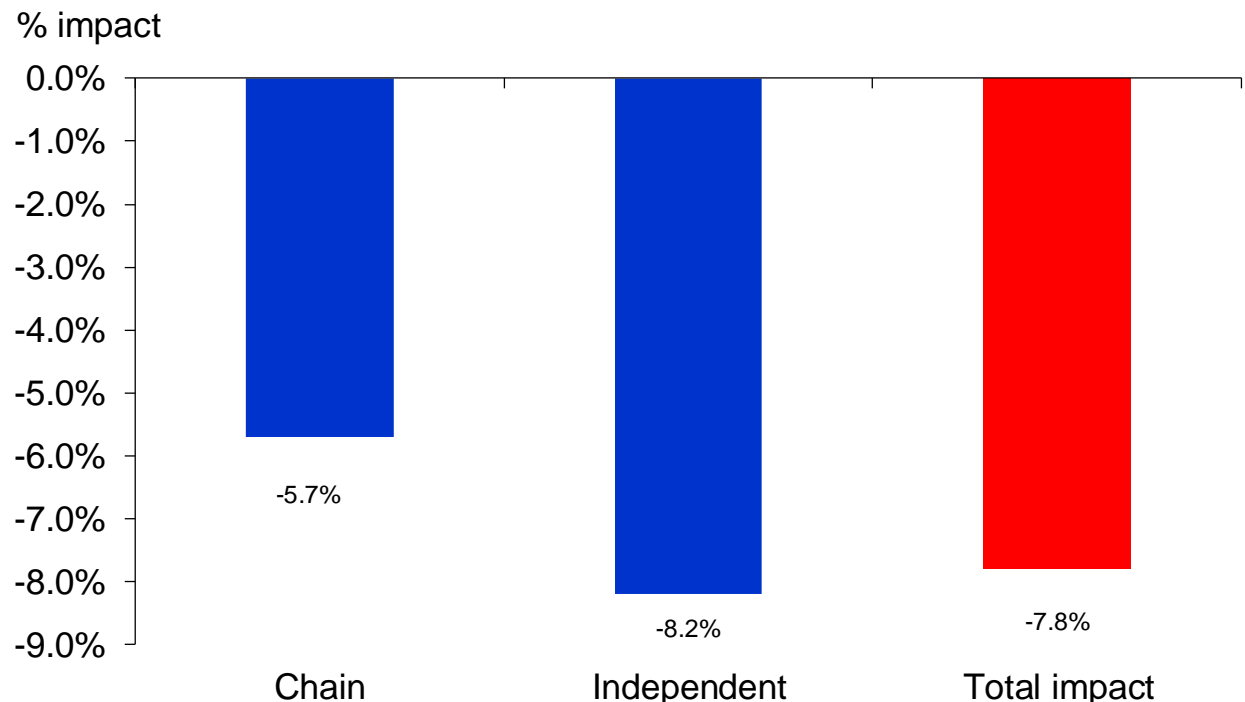
Hotel room rates are, on average, nearly 8% lower than would otherwise be the case across the EU due to the presence of OTAs.

The ADR impact on independent hotels is larger than for chain hotels.

Price is an important factor but 'competition takes place over a range of factors, including quality, that appeal to consumers.'¹

Consumers benefit from both the lower costs for travel and raised quality. Consumers also benefit from the lower search costs provided by OTAs with the easier search functions. Similar benefits are evident for travellers to EU destinations as well as for EU travellers to all destinations.

ADR impact by chain and independent hotels, EU 28



Source: Oxford Economics

ADR impact over time

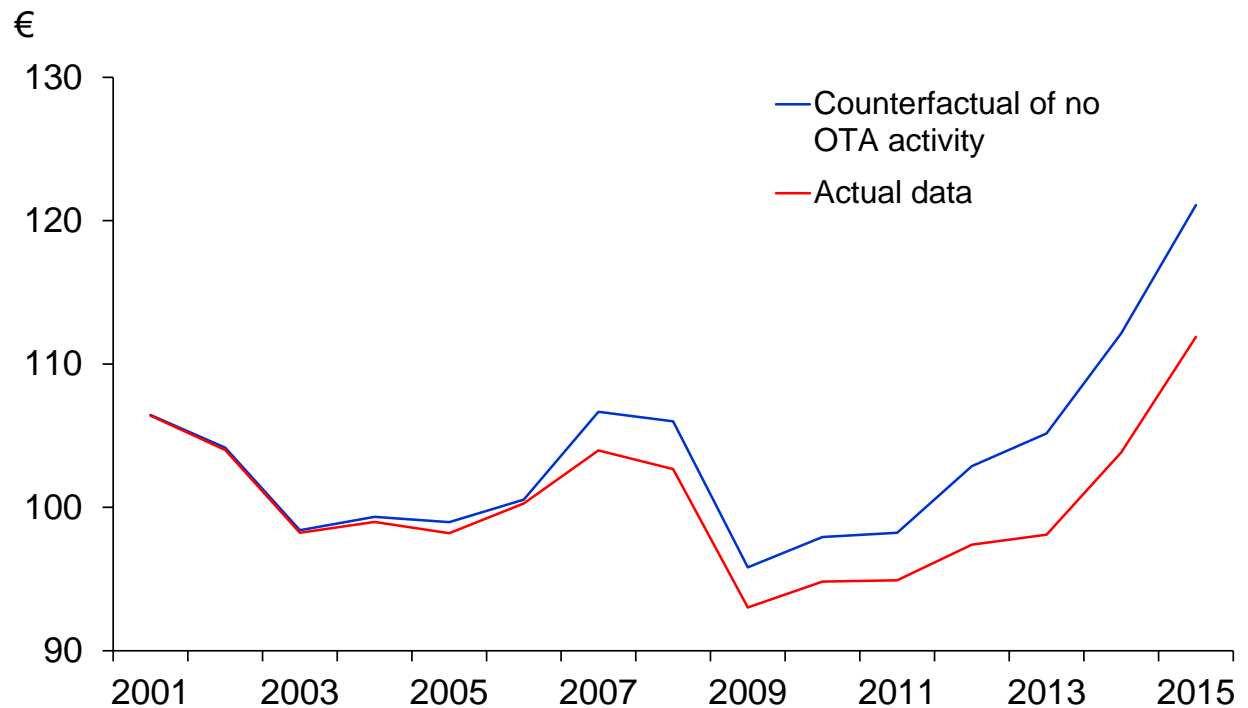
The ADR impact on hotel average daily rates has grown over time across the EU but has stabilised somewhat in recent years.

A notable impact is evident for all years beginning 2007 as the proportion of bookings through OTAs increased significantly. Some small impacts have been quantified for earlier years for the EU as a whole, and early impacts are more isolated in a few individual countries. The proportion of rooms sold through OTAs increased significantly in 2012 with a further large impact on ADR for subsequent years.

In 2015, it is estimated that ADR was €9.5 (7.8%) lower than would otherwise be the case in the absence of OTAs.

The impact of OTAs on ADR across the EU has grown over time

EU: ADR over time & OTA impact



Source: Oxford Economics, STR

ADR for OTA sales and wider market

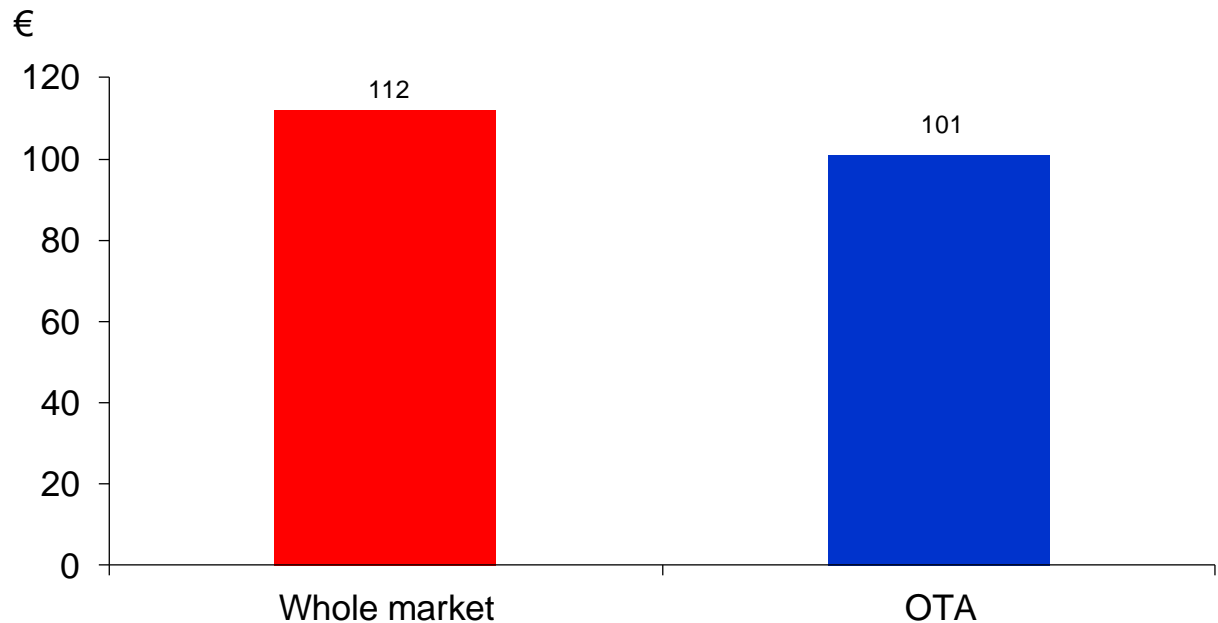
Reported ADR for room sales through OTAs is lower than the overall market average, which is consistent with the estimated OTA impact, but there are other reasons for the difference.

Lower ADR is evident for OTA sales relative to the market average. This difference is not the same as the estimated OTA impact on rate and other factors can explain some of this difference.

A variety of factors account for the difference between ADR for OTA sales and for the wider market. Domestic/international mix; chain/independent share; and class mix account for a large proportion of this, but other factors exist which are hard to identify, including:

- Booking window
- Exact location of properties
- Day of week
- Seasonality
- Cancellation terms
- Room characteristics
- Group / corporate bookings (mainly evident for chains)

ADR - OTAs and wider market, EU



Source: Oxford Economics, STR, Booking.com

Different market mix means ADR on OTAs will differ from market average

ADR for OTA sales differs from the typical market average, partly explained by different types of room sales. In particular, OTA bookings are more skewed towards non-chain properties.

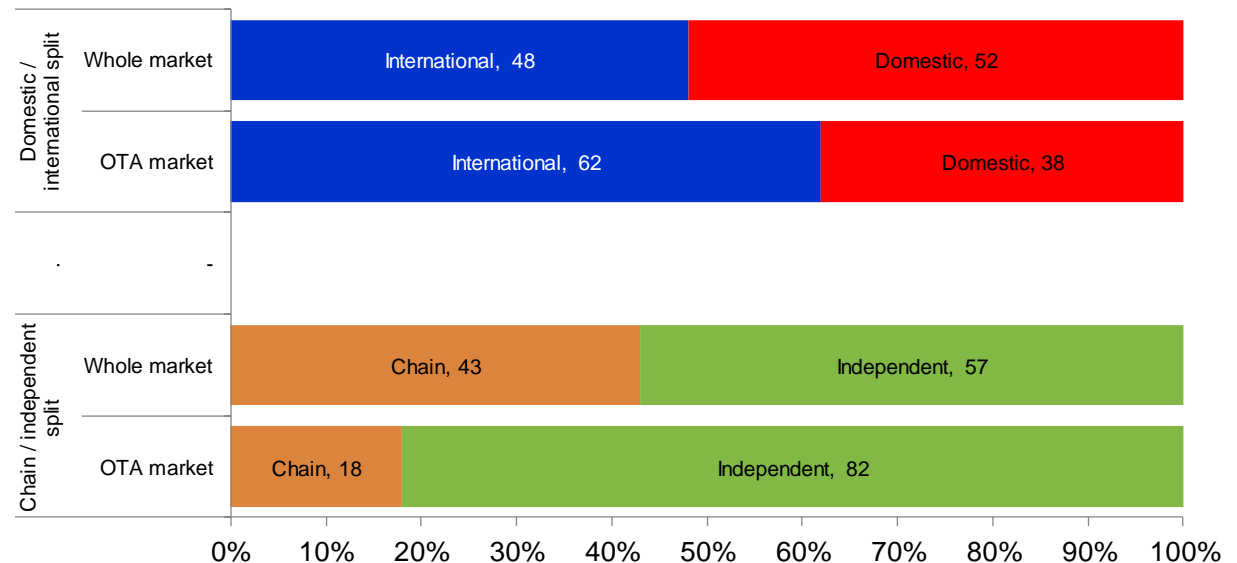
There is an evident difference for OTA sales relative to the market as a whole. Part of this difference is due to different types of sales including a different balance of chain vs independent properties, purpose of visit, type of visit, booking window etc.

The graphic shows that Booking.com's market is more international compared to the whole EU market which is closer to a 50/50 split.

Booking.com is also skewed more towards independent properties, which also tend not be smaller businesses.

Characteristics of OTA market compared to wider market (EU)

% share



Source: Booking.com, STR, Oxford Economics

Economic Impact of OTAs

Additional revenue generated by OTAs

Across the EU the percentage impact on tourism revenue was lower than the percentage impact on nights. This is to be expected as the OTA share of the market involves a lower spend per day. Across the EU the average impact of OTAs on tourism revenue was 0.6%.

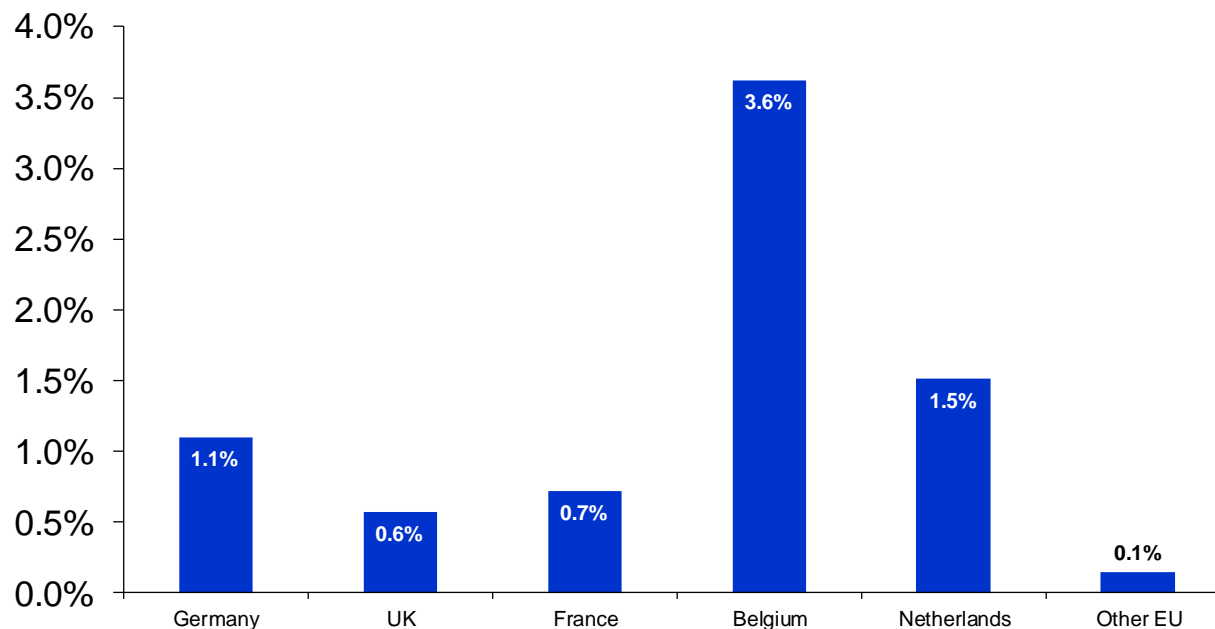
Amongst the five biggest impacts in actual terms, the greatest percentage impact was in Belgium (3.6%).

But the benefits of OTAs are wider than increased revenues for the tourism industry. There are clear consumer benefits as lower ADR increases value for money for the consumer. And the playing field has also been levelled for smaller, non-chain properties.

Across the EU the percentage impact on total tourism revenue was significantly lower than the percentage impact on nights at 0.6%. This varies considerably by country.

Spend impact by country (averaged %s)

% tourism spend, 2015



Source: Oxford Economics

Additional tourism revenue generated by OTAs

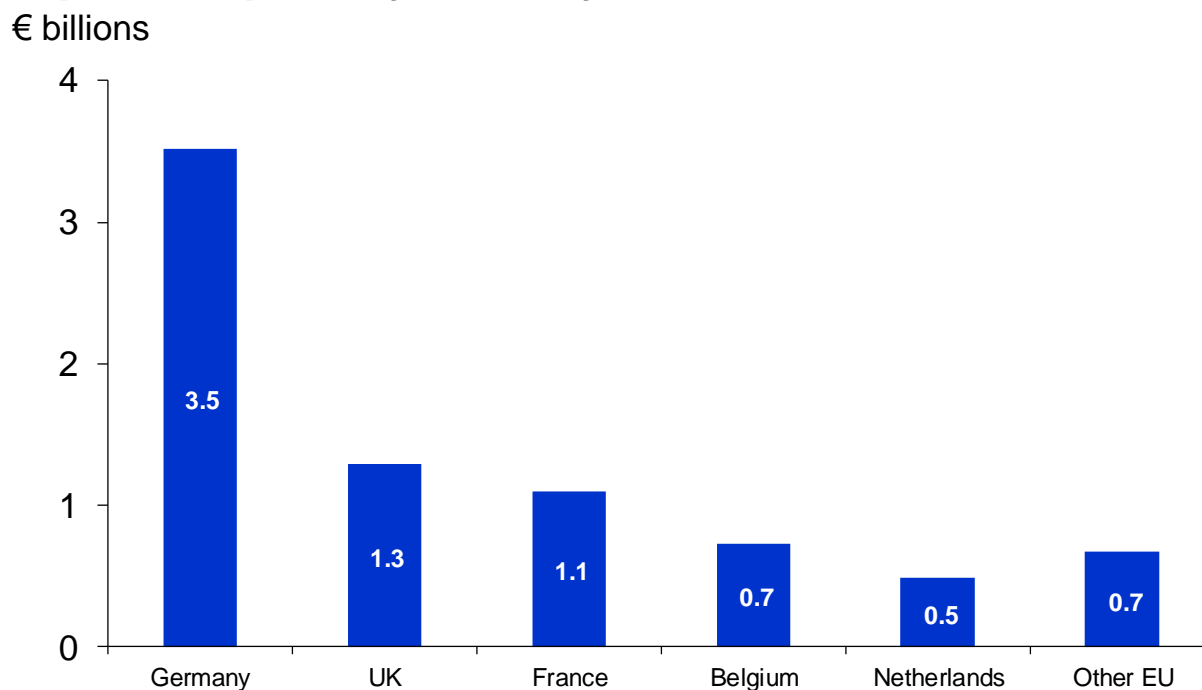
OTAs are estimated to be worth €7.8 billion in terms of additional revenue for the tourism sector.

In terms of additional generated tourism spending, the OTA impact was estimated to be worth €7.8 billion across the EU as a whole in 2015.

The biggest country impact by far was in Germany, accounting for €3.5 billion additional spend.

The next largest impacts on tourism spending was the UK (€1.3 billion) and France (€1.1 billion). Further large benefits were evident in Belgium in both euro terms and as a share of total tourism revenue.

Spend impact by country



Source: Oxford Economics

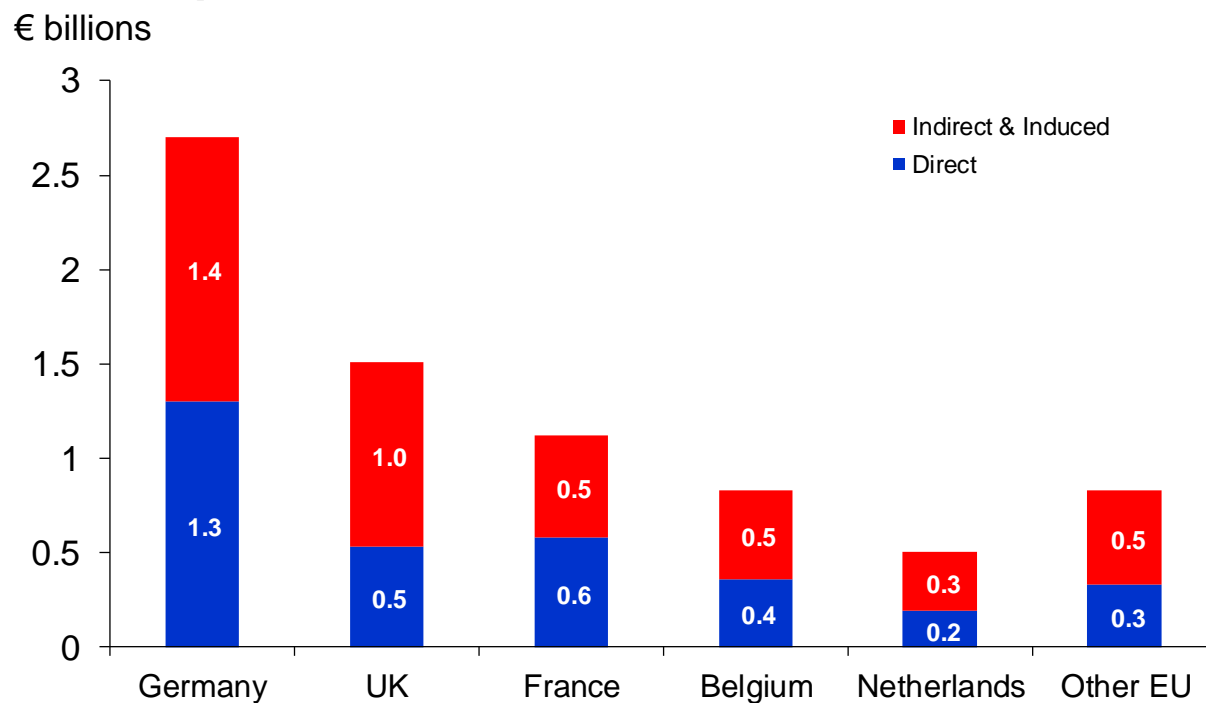
Additional economic activity generated by OTAs

OTA impact adds €7.7 billion to economic output in terms of GDP, over a third of it in Germany.

Across the EU as a whole, OTAs added €7.7 billion to GDP in 2015. More than €3 billion of this is the result of direct impacts within tourism facing sectors. The remainder is driven through indirect and induced impacts through supply chains and spending of wages earned in tourism sectors.

Germany and the UK receive the largest single impacts in actual terms, followed by France and Belgium, following the pattern of OTA generated spending. The GDP impacts are also consistent with the specific structure of the tourism sector in each country.

GDP impact from OTAs



Source: Oxford Economics, WTTC

OTA employment impact

OTA generated spending supported around 155,000 jobs in the travel and tourism sector across the EU. 73,000 jobs are directly supported by OTAs.

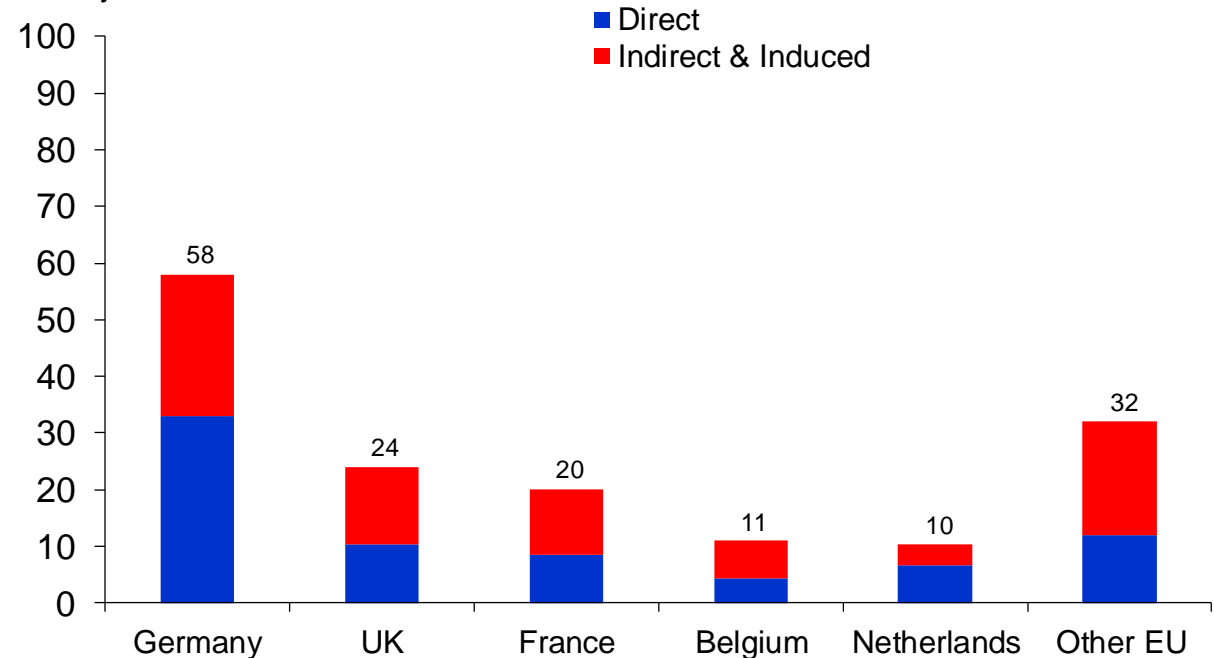
OTA generated spending directly supports around 73,000 employment within the tourism sector across the EU as a whole.

Including the indirect and induced impacts of through the supply-chain and spending of earnings the total impact on EU employment has been estimated at 155,000 jobs for the EU as a whole.

The five largest countries in actual impact terms account for about 123,000 supported employment.

Employment supported by OTAs

'000s jobs



Source: Oxford Economics, WTTC