

ASSESSING THE IMPACT OF TAX-FREE SHOPPING IN THE UK

**A REPORT FOR THE ASSOCIATION OF
INTERNATIONAL RETAIL (AIR)**

NOVEMBER 2022

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November 2022

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EXECUTIVE SUMMARY

BACKGROUND AND CONTEXT

In Autumn 2022, the UK Government’s Growth Plan¹ considered restoring tax-free shopping (TFS), both VAT-RES and airside, for non-EU27 visitors and extending it to visitors from the EU27. **HM Treasury estimated that this scheme would cost the Exchequer £1.3 billion in 2024/25**, increasing to **£2.0 billion in 2025/26**. These estimates reflected the projected value of VAT refunds that would be issued and did not account for how the policy would affect incentives for non-residents to visit and shop in the UK.

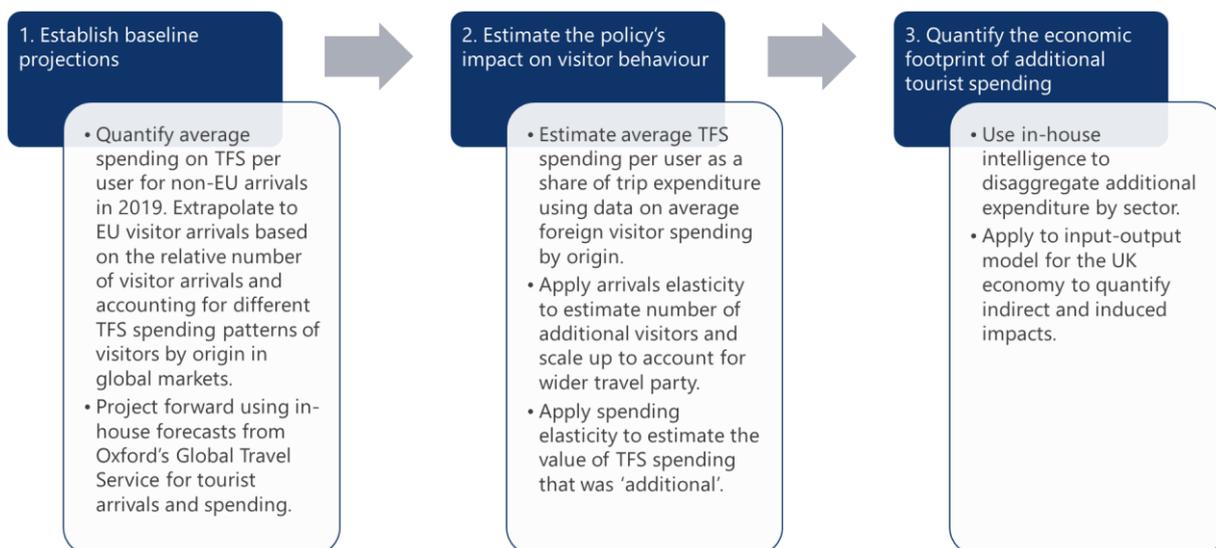
Oxford Economics was commissioned by the Association of International Retail (AIR) to produce an independent assessment of the implications of reintroducing TFS. This has included two analytical workstreams:

- estimating the direct **fiscal impact of reintroducing TFS** accounting for how the policy would affect visitor behaviour; and
- quantifying the **economic footprint** supported by the **additional foreign visitor spending in the UK** as measured through its contribution to GDP, employment and tax revenue.

OUR APPROACH

Our analysis follows a three-step approach as illustrated in Fig. 1. Further detail can be found in the methodological appendices to this report.

Fig. 1. Overview of methodological approach



¹ HM Treasury, “[The Growth Plan 2022](#)”, 2022.

KEY FINDINGS

HM Treasury’s forecasts are likely to significantly overstate the total value of TFS refunds...

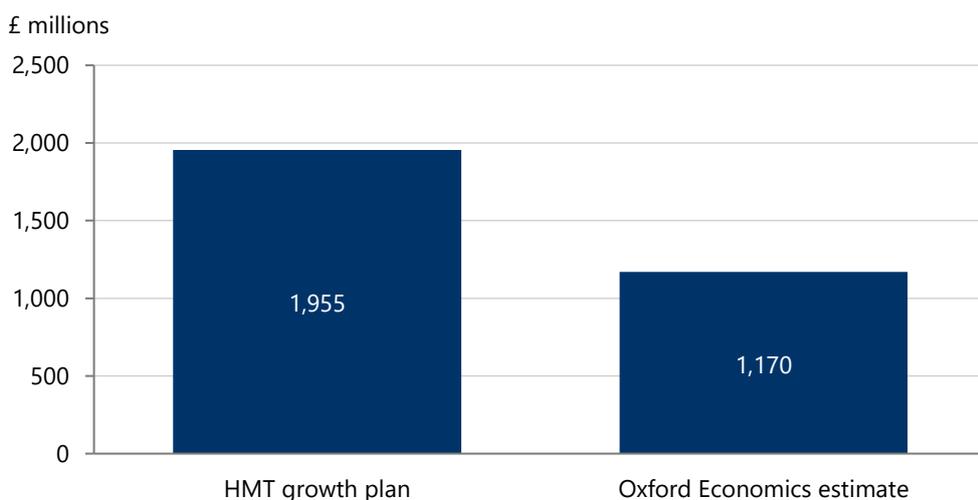
HM Treasury estimates that if TFS were to be introduced, total refunds would be £1.3 billion in 2024/25 increasing to £2.0 billion in 2025/26. The reason for the steep increase is that it was assumed that the policy would be implemented part way through fiscal year 2024/25. To aid consistency, we focus our comparisons on fiscal year 2025/26, the first full year of implementation.

According to Her Majesty’s Revenue and Customs (HMRC), total TFS refunds in 2019 were worth £500 million with a further £150 million of claims linked to airside shopping in 2019.

How visitors from the EU27 would have behaved if this discount were available to them is clearly subject to a high degree of uncertainty. HM Treasury’s projection was developed by assuming that the average value of refunds per visitor would be the same for both EU and non-EU tourists. An analysis of data from Global Blue, an operator who cover around 70% of the market, shows that TFS spending by EU27 tourists is substantially lower than those originating from China, the Gulf Cooperation Country (GCC) markets and the United States. In 2019, the average refund claimed by an EU27 tourist, in comparable markets, was 63% lower than from the aforementioned countries. Adjusting for the fact that tourists from these origin markets (China, GCC and the United States) are disproportionately high spenders on TFS, the evidence from other markets shows that users of TFS from the EU27 spend significantly less per trip than those who used TFS in the UK in 2019.

This analysis implies that assuming EU tourist will spend as much on average on TFS and airside, as HMT have done, is likely to significantly overestimate the value of total VAT refunds. Using our alternative approach, which we believe to be more robust, we forecast that total VAT refunds in 2025/26, if TFS were to be reintroduced, would be £1.17 billion, 40% lower than HMT’s estimate (Fig. 2).

Fig. 2. Total value of TFS refunds, 2025/26



Source: HMT, Oxford Economics

... whilst the reintroduction of TFS would attract more than 1.6 million extra visitors to the UK in FY 2025/26 and stimulate an extra £2.8 billion of tourist spending...

The reintroduction of TFS will encourage more people to visit the UK and spend money on eligible goods as well as a variety of tourism-facing services. Some potential TFS users will travel as part of a wider group, e.g., with friends or family, some of whom may not be TFS users. These people are referred to as the “wider travel party”.

Including those in the wider travel party, we project that in 2025/26, TFS will encourage 1.6 million visitors to come to the UK who would not have done so. This comprises just over 1 million visitors from the EU27 and 590,000 from outside the EU27. Moreover, even visitors who would travel even without TFS can be expected to spend more given the significant discount on their retail purchases.

Accounting for both these channels of additionality, we estimate that £2.1 billion (35%) of the forecast expenditure on shopping would not take place if the policy were not in place. Moreover, the extra foreign visitors attracted to the UK are forecast to spend an additional £1.0 billion on other goods and services. Summing these values together implies that reintroducing TFS would lead to an increase in foreign visitor spending of over £3.1 billion in FY 2025/26, as decomposed in Fig. 3.

Fig. 3. Expected changes in tourism activity in the UK due to the reintroduction of TFS

Description	2025/26
Additional visitors due to TFS, thousands	1,629
Additional spending on TFS, £ billion	2.069
Spending on non-TFS items by additional visitors, £ billion	1.014
Total TFS-linked additional expenditure, £ billion	3.083

Source: Oxford Economics estimates

...implying that the net direct fiscal cost of reintroducing TFS would be 70% lower than HMT’s projection

As noted, when considering the actual fiscal cost of the policy it is important to adjust for the impact it would have on tourist behaviour. Notably:

- A portion of VAT refunds reflect spending on shopping by tourists that would not otherwise have occurred—these are fiscally neutral.
- Additional visitors to the UK will spend on a variety of goods and services that will result in revenues being collected through a variety of taxes on expenditure, primarily VAT.

Fig. 4 breaks down how these adjustments affect our estimate of the direct net fiscal cost of reintroducing TFS in comparison to HMT’s projections. Our modelling indicates that approximately half of TFS refunds issued by HMT would be offset by the policy’s impact on visitor behaviour. In total, we estimate that the policy would have a direct fiscal cost of £590 million in 2025/26, 70% less than HMT’s projection. To put this in context, based on our forecast at the time of writing, this would be equivalent to 0.05% of projected government revenue.

Fig. 4. Comparison of the expected fiscal cost of reintroducing TFS in 2025/26: HMT vs OE

Description (all £ billions)		2025/26
a.	HMT: Value of TFS refunds projected in the Growth Plan	1.955
b.	Oxford Economics: Total value of TFS refunds	1.170
c.	Oxford Economics: Value of TFS refunds due to additional spending on shopping	0.431
d.	Oxford Economics: Value of tax collected on spending by additional visitors	0.153
e.	Oxford Economics: Net direct fiscal cost to the Exchequer (= b - c - d)	0.586
f.	Difference in estimated fiscal cost of TFS (= e - a)	-1.369

Source: HMT projection, Oxford Economics estimates

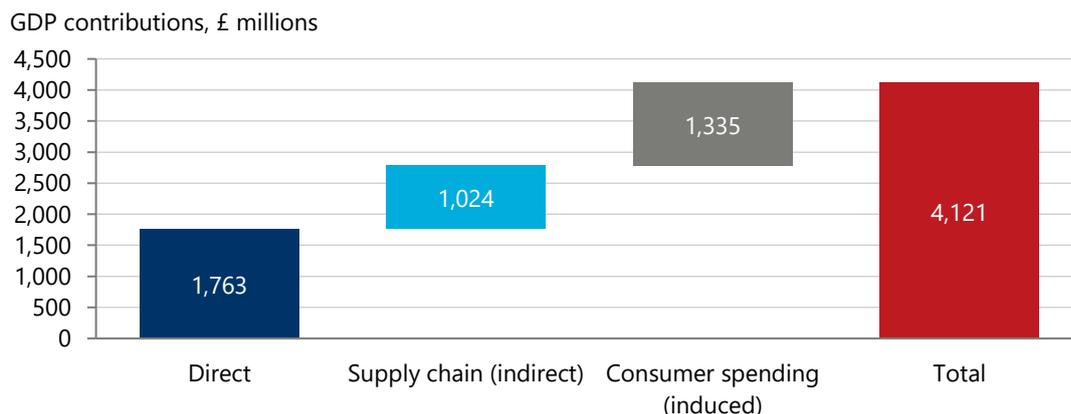
These estimates do not account for additional tax contributions associated with the economic footprint that would be enabled by additional visitor spending. These are described in the next section.

Additional visitor spending would sustain £4.1 billion in GDP and support 78,000 jobs...

Our modelling shows that the additional foreign visitor spending incentivised by TFS would support a total gross value added contribution to UK GDP of £4.1 billion in 2025/26. Of this contribution, £1.8 billion in GDP would be supported directly on site at businesses where the additional visitor spending took place. The remainder is expected to be stimulated by:

- TFS-related retailers and tourism businesses’ spending on goods and services from its UK supply chain (which is expected to contribute £1.0 billion in 2025/26); and
- the spending of wage income in the consumer economy by those whose jobs are supported by additional foreign visitor spending (leading to a projected GDP contribution of £1.3 billion in 2025/26).

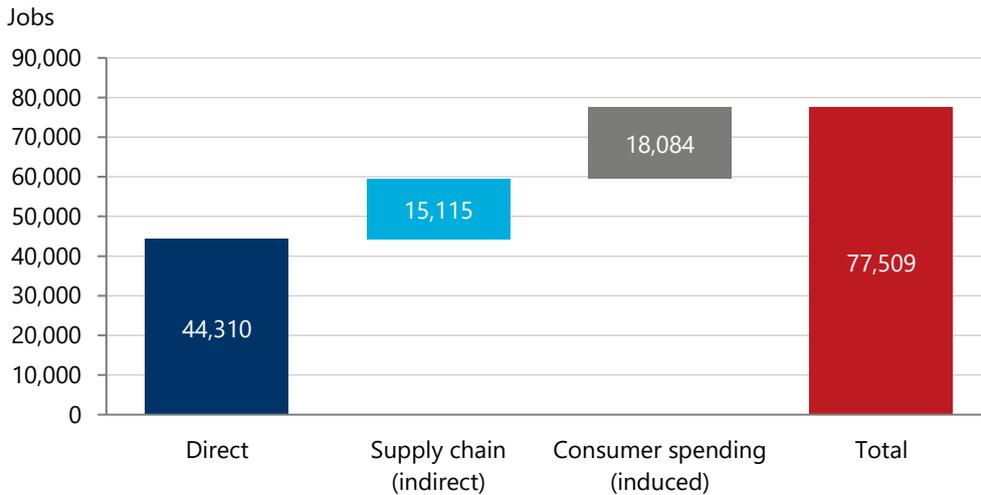
Fig. 5. GDP contribution of additional foreign visitor spending enabled by TFS, 2025/26



Source: Oxford Economics

We calculate that the reintroduction of TFS would support a total of 78,000 jobs across the UK in 2025/26. Of these, just over 44,000 workers (58% of the total employment contribution) will be employed directly by businesses which receive the additional foreign visitor spending. The remainder will be supported by the procurement of goods and services, and by the spending of wage income by those whose jobs are supported by the additional foreign expenditure, as shown in Fig. 6.

Fig. 6. Employment contribution of additional foreign visitor spending enabled by TFS, 2025/26

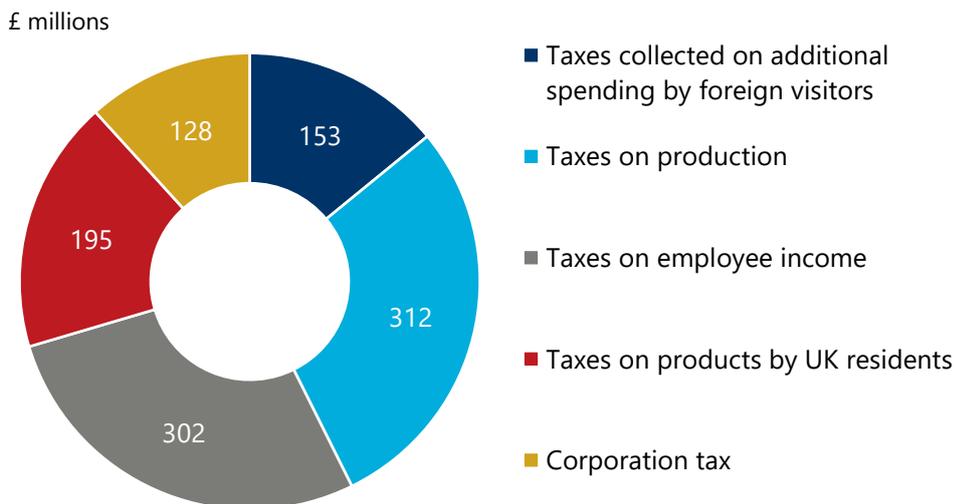


Source: Oxford Economics

... activity that would generate £1.1 billion in tax revenue for the Exchequer

The additional economic output and employment sustained by the TFS scheme is expected to generate £1.1 billion in tax revenues in 2025/26 (Fig. 7). This includes the previously referenced £153 million that we estimate would be collected directly based on the wider (non-shopping) spending of foreign tourists. The remaining extra £940 million reflects taxes that would be collected through various channels as described in Fig. 7.

Fig. 7. Tax revenue contribution of economic activity supported by additional foreign visitor spending enabled by TFS by type, 2025/26



Source: Oxford Economics

Conclusion

Our research indicates that the direct fiscal cost of introducing TFS in the UK would be over 70% lower than implied by the current HMT estimate. This difference arises because of both an anticipated overestimate of the total value of refunds that would be claimed and the failure to capture the policy's impact on visitor behaviour.

Our modelling indicates that the economic footprint supported by the additional foreign visitor spending would offer a considerable boost to the UK tourism and wider economy, sustaining over 78,000 jobs and £4.1 billion in GDP. Whilst it would be reasonable to contest that this *total* contribution will not be fully additional, since it will incorporate some level of displacement, the fact that it is being supported by an increase in export revenue implies that the net boost to UK GDP will be significantly higher than a policy that incentivizes UK consumer spending.

1. INTRODUCTION

Tourism plays a vital role in the UK economy, and its importance, prior to the pandemic, had been growing. In 2019, there were almost 25 million EU visitors and 16 million non-EU visitors to the UK, who spent a combined £28.5 billion in the UK. UK workers from all walks of life rely on tourism spending for their livelihoods, from the hospitality staff working directly with tourists to deliver world-class experiences in the restaurants and hotels of the UK's best cities, to the background staff – the accountants, builders, transport engineers, business managers and many more – working behind the scenes to make these services possible.

Tax-free shopping (TFS) for tourists is a policy designed to boost the competitiveness of host markets as a destination. It has been widely embraced globally and is currently in operation in countries spanning from Argentina to Japan. Up to the end of 2020, the UK operated its own version of the system that included "airside" TFS (more colloquially known as 'duty free') together with the VAT Retail Export Scheme (VAT RES) which applied to retail purchases by non-EU27 visitors outside of the airport. The schemes were withdrawn in 2021, with the government citing concerns that under the newly signed trade and cooperation agreement (TCA) the services would need to be extended to visitors from the EU27 if they were to be maintained.

In September 2022, the Government announced its intention to restore TFS in the UK. In the technical note that accompanied the mini budget, HMT projected that the scheme would cost £2.0 billion in fiscal year 2025/26, its scheduled first full year of implementation.² The Government has since renounced its intention to introduce TFS, in line with various fiscal consolidation measures that were announced in an October 2022 fiscal statement.³

In the context of these developments, we have been commissioned by the Association of International Retail (AIR) to produce an independent assessment of the net fiscal cost of reintroducing TFS in the UK accounting for the behavioural effects that policy would have on visitor behaviour (these are not modelled in HMT's estimates). We also produce forecasts of the economic footprint of the additional foreign visitor spending that would be enabled by TFS in terms of GDP, jobs and tax contributions.

The structure of the paper is set out below:

- Section 2 describes the impact of the reintroduction of TFS accounting for how the policy would affect visitor behaviour;
- Section 3 presents the results from our economic contribution modelling, describing the impact of TFS-enabled economic activity in terms of GDP, jobs and tax contributions; and
- Section 4 concludes with a comparison of the tax loss estimates from HMRC, our comparable estimates, and the tax contributions, i.e., potential benefits, associated with TFS-enabled economic activity.

² HM Treasury, "The Growth Plan 2022", September 2022, Table 4.2, p.26.

³ HM Treasury and The Rt Hon Jeremy Hunt MP, "[Chancellor statement on the Medium-Term Fiscal Plan](#)", dt. 17 October 2022.

2. THE NET FISCAL COST OF TFS

2.1 THE GROSS COST OF REINTRODUCING TFS

Reintroducing TFS in the UK would mean that the government will need to reimburse millions of pounds worth of VAT to visitors to the UK. As described in the previous chapter, HMT project that in its first full year of implementation – 2025/26 – the value of total refunds would be almost £2.0 billion.

HMT's projection was developed by assuming that the average value of refunds per visitor would be the same for both EU and non-EU tourists. This contradicts the pattern of average foreign visitor spending by origin in the UK—ONS data suggest that the average spending per visitor from the EU27 in 2019 was £429 compared to £1,110 per visitor from those outside the EU27.⁴

Of course, it might be that this relationship would not apply to users of the TFS scheme, who are a somewhat atypical group in terms of their spending pattern. To shed light on this topic, we analysed transaction data from Global Blue, an operator who cover around 70% of the market. This showed that, in 2019, the average refund claimed by a tourist from the EU27 was 63% lower than the average value claimed by tourists from China, the Gulf Cooperation Country (GCC) markets and the United States in a set of comparable markets i.e., those where the service is available to tourists from all these origins.

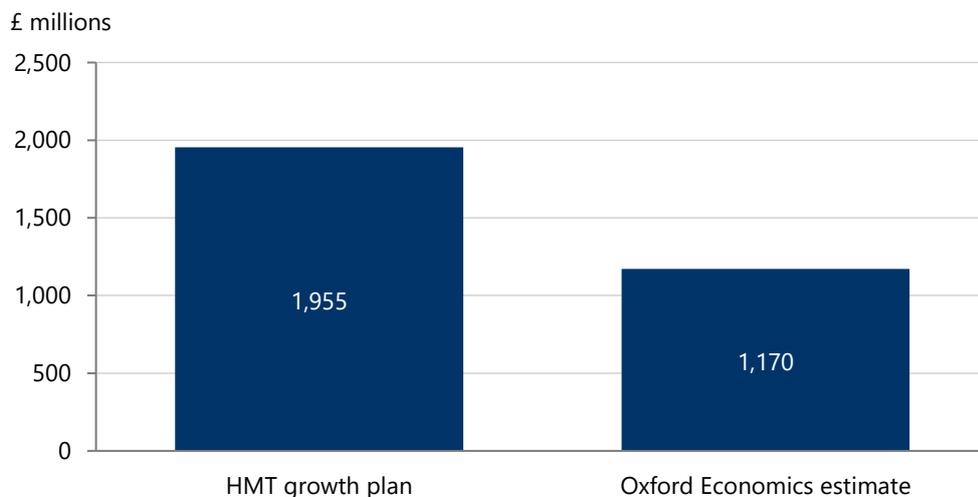
These three origin markets (China, the GCC economies and the United States) together accounted for 60% of total TFS spending in the UK in 2019. Global Blue data also indicates that users from these markets are above-average spenders. Adjusting for this factor, our analysis implies that each TFS claimant from the EU27 would have spent just under half as much as non-EU visitors did in 2019, if the policy had been open to them.

To create projections for 2025/26, we apply growth rates to the estimated number of users and the average refund value based on our Global Travel Forecast (GTS) at the time of modelling. This links to Oxford's wider macroeconomic forecast to create projections for spending and trips for individual origin-destination pairs. Based on this modelling, we expect the value of total refunds in 2025/26 would be £1.2 billion, approximately 40% less than the equivalent figure projected by HMT in the *Growth Plan* (Fig. 8).⁵

⁴ Calculation based on data obtained from the Tourism Quarterly databased maintained by the ONS obtainable at <https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/overseastravelandtourism>. In 2019, there were 16.029 million arrivals from the Eu27 who spent a total of £17.787 billion in the UK compared to 24.828 million arrivals from the EU27 who spent a total of £10.661 billion.

⁵ HM Treasury, "[The Growth Plan 2022](#)", 2022.

Fig. 8. Comparison of total TFS refunds in the UK in 2025/26: HMT vs OE estimates



Source: HMT, Oxford Economics

2.2 THE IMPACT OF TFS ON VISITOR BEHAVIOUR

Our forecasts indicate that if the TFS scheme were re-introduced in the UK, there would be approximately 4.0 million tourists who claim TFS refunds from all destinations in 2025/26, spending a combined £5.9 billion.

It can be expected that some of these visitors would only visit the UK due to the reintroduction of the policy, which will, in effect, reduce the cost of their trip. Moreover, if these individuals are travelling as part of a group e.g., with friends or family, the impact on visitor arrivals would be amplified—in this report we refer to the additional non-TFS users who travel with these visitors as the “wider travel party”. Finally, visitors who would have still travelled to the UK can be expected to spend more on shopping given the significant discount on their retail purchases.

To estimate the likely scale of these effects, we have applied two elasticities (one for arrivals and one for TFS spending) to the estimated impact of the policy on the effective trip cost (arrivals) and the price of retail shopping (TFS spending). To account for the wider travel party impact, we have assumed that there would be an additional 1.01 visitors per lost TFS visitor.⁶

Including those in the wider travel party, we project that in 2025/26, TFS will encourage 1.6 million visitors to come to the UK who would not have done so. As implied above, approximately half of these would be TFS users and half would form part of the wider travel party.

Accounting for the spending on by visitors who would not otherwise come and the additional spending on TFS by those who would have come anyway, we estimate that £2.1 billion (35%) of the forecast expenditure on shopping would not take place if the policy were not in place. Moreover, the extra foreign visitors attracted to the UK are forecast to spend an additional £1.0 billion on other

⁶ This assumption is the simple average of values obtained via two methods: a survey of Global Blue customers; and data from the International Air Transport Association (IATA) on the number of travellers per flight booking to the UK, weighted to fit the distribution of TFS claimants in the UK by origin.

goods and services. Summing these values together implies that reintroducing TFS would lead to an increase in foreign visitor spending of over £3.1 billion in FY 2025/26, as decomposed in Fig. 9.

Fig. 9. Additional foreign visitor arrivals and spending in the UK due to TFS, 2025/26

Description	2025/26
Additional visitors due to TFS, thousands	1,629
Additional spending on TFS, £ billion	2.069
Spending on non-TFS items by additional visitors, £ billion	1.014
Total TFS-linked additional expenditure, £ billion	3.083

Source: Oxford Economics

2.3 THE DIRECT IMPACT ON THE EXCHEQUER

Any estimates of the actual costs to the Exchequer of these refunds should account for the behavioural changes described in the previous section: without TFS, fewer people would travel to the UK and those that do will spend less. Fig. 10 decomposes expected fiscal cost of reintroducing TFS is affected by adjusting for these effects.

Starting with refunds, our modelling indicates that around 37% of the associated transactions would not have taken place if the policy were not to be introduced. These refunds are technically fiscally neutral and so can be deducted from the gross refunds figure reported in the previous section.

Next, the £1.0 billion of foreign visitor non-TFS spending enabled by the policy would generate an additional £150 million in tax revenue. It is important to note that this value is restricted to the value of tax revenue that would be directly collected through this spending. The value of tax that would be supported through the economic activity that is sustained by additional foreign visitor spending is reported in the next chapter.

Netting these values off our estimate of total refunds implies that the net fiscal cost of TFS in 2025/26 would be £590 million, approximately 70% lower than HMT's estimate.

Fig. 10. Comparison of the expected fiscal cost of reintroducing TFS in 2025/26: HMT vs OE

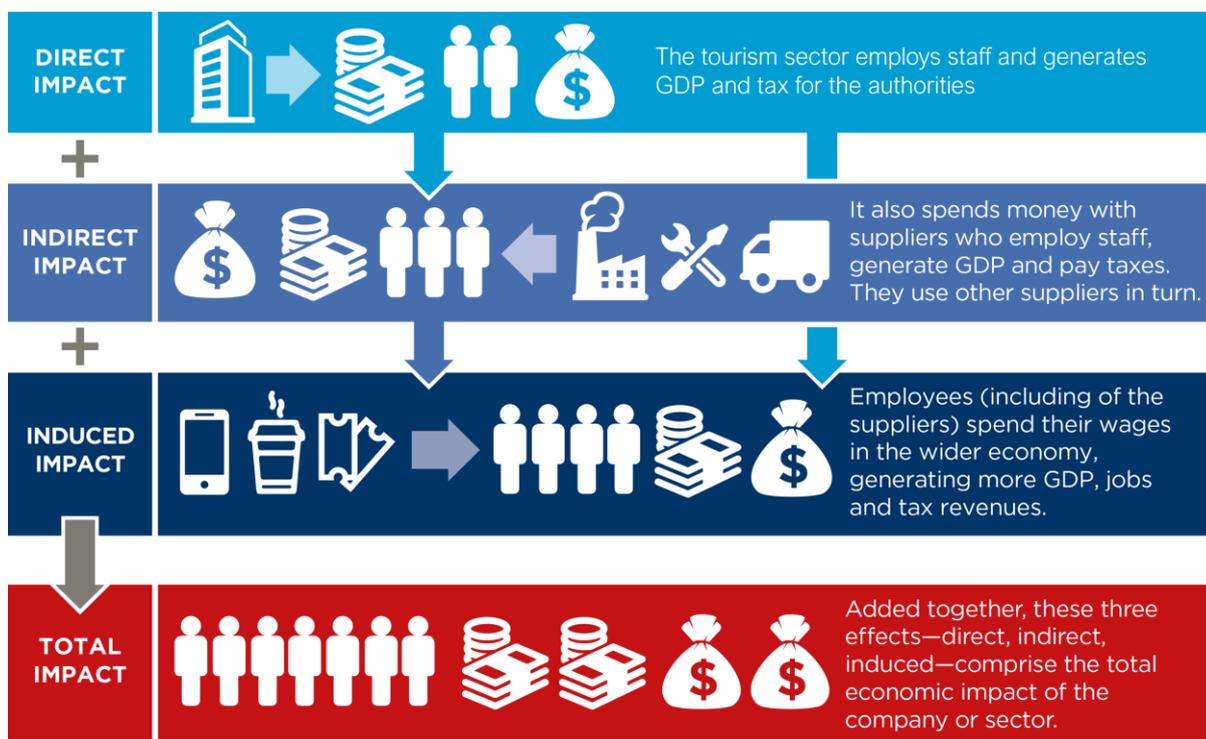
Description (all £ billions)		2025/26
a.	HMT: Value of TFS refunds projected in the Growth Plan	1.955
b.	Oxford Economics: Total value of TFS refunds	1.170
c.	Oxford Economics: Value of TFS refunds due to additional spending on shopping	0.431
d.	Oxford Economics: Value of tax collected on spending by additional visitors	0.153
e.	Oxford Economics: Net direct fiscal cost to the Exchequer (= b - c - d)	0.586
f.	Difference in estimated fiscal cost of TFS (= e - a)	-1.369

Source: HMT data, Oxford Economics estimates

3. ECONOMIC ACTIVITY ENABLED BY TFS

TFS will encourage more tourism to the UK and will stimulate greater visitor spending. The increase in sales by retailers selling TFS goods will sustain economic activity in a range of sectors through these retailers' value chain. Retailers will purchase goods from wholesalers and use a range of business services for their day-to-day operations. These wholesalers and service providers will purchase goods from manufacturing businesses and other service providers, and so on. A further round of economic activity will be sustained through spending on consumer goods by employees of TFS-related retailers and businesses in their supply chain. The impacts of these rounds of economic activity are grouped into three categories, as shown in Fig. 11.

Fig. 11. Direct, supply chain (indirect) and consumer spending (induced) channels of impact



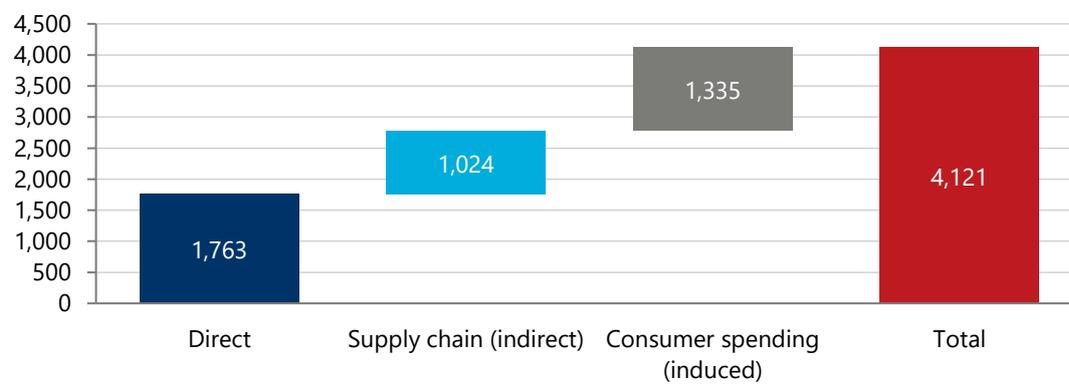
We model these impacts using the TFS-enabled spending estimates (see previous chapter) and the Oxford Economics Global Economic Impact Model (GEIM). This approach allowed us to estimate the economic impact of additional economic activity enabled by TFS in terms of jobs, GDP contributions, and tax revenues supported. As described above, the projected impacts were measured across direct, supply chain (indirect) and consumer spending (induced) channels of impact.

We forecast that the additional foreign spending enabled by TFS would support a total gross value added contribution to UK GDP of £4.1 billion in 2025/26. Of this contribution, businesses that directly serviced this additional spending are projected to contribute £1.8 billion to GDP. The remainder is expected to be supported by:

- The economic activity of businesses that form part of the associated UK supply chain (which is expected to contribute £1.0 billion in 2025/26); and
- The spending of wage income by those working directly with TFS-related and tourism-related retailers and for businesses in its UK supply chain (a projected GDP contribution of £1.3 billion in 2025/26).

Fig. 12. GDP contribution of additional foreign visitor spending enabled by TFS, 2025/26

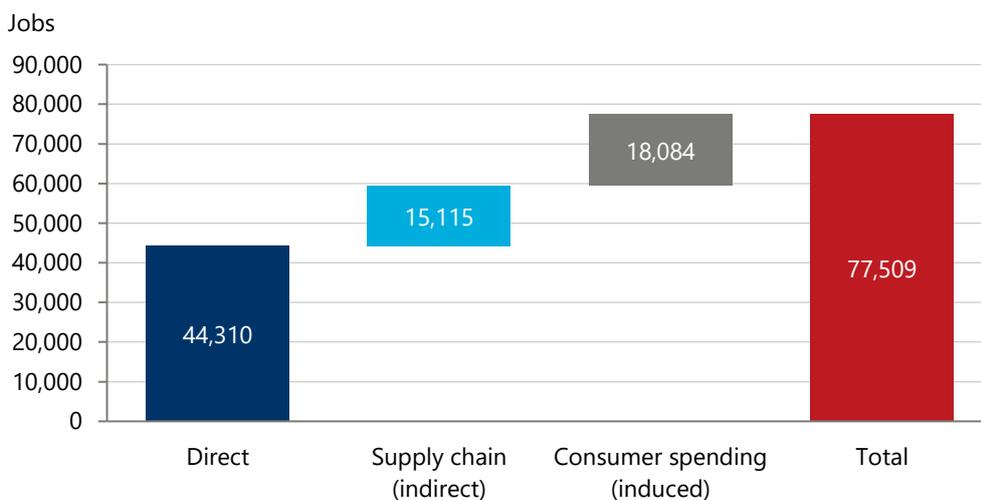
GDP contributions, £ millions



Source: Oxford Economics

We estimate that TFS will support more than 77,000 jobs, in total, across the UK in 2025/26. Of these, around 44,000 workers (58% of the total employment contribution) will be employed directly by businesses servicing the additional spending enabled by TFS. The remaining 33,000 jobs will be supported by the procurement of goods and services, and by the spending of wages by employees.

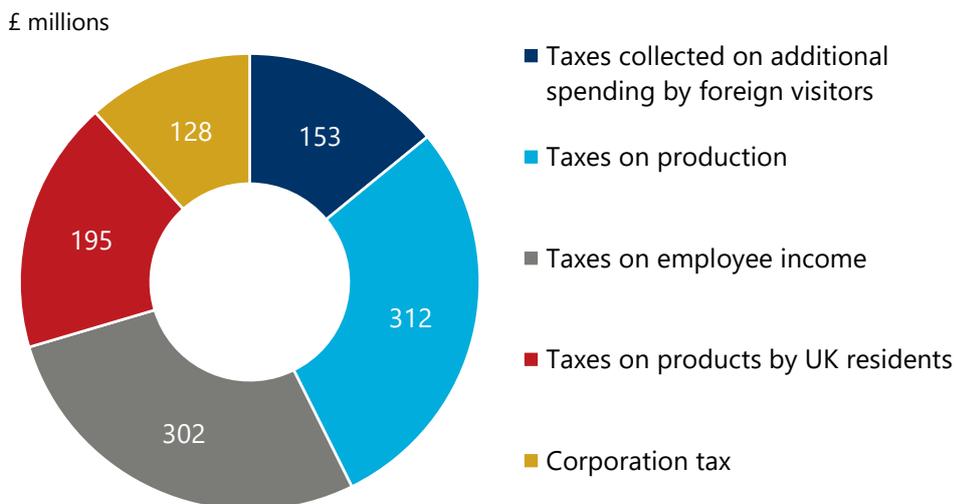
Fig. 13. Employment contribution of additional foreign visitor spending enabled by TFS, 2025/26



Source: Oxford Economics

The additional income and expenditure previously described would also generate tax revenues for the Exchequer via a wide variety of channels, as described in Fig. 14. This includes the £153 million of tax revenue (net of VAT refunds) that we estimate would be directly collected from the additional foreign spending enabled by TFS. In addition, our modelling indicates that a further £940 million would be raised through taxes on employee earnings (PAYE and employee NICs), on production (primarily employer NICs and business rates), on products purchased by UK businesses and consumers and corporation tax on company profits. In total, therefore, we estimate that £1.1 billion could be raised by the economic activity that is supported by the additional foreign visitor spending enabled by TFS in 2025.

Fig. 14. Tax revenue contribution of additional foreign visitor spending enabled by TFS by type, 2025/26



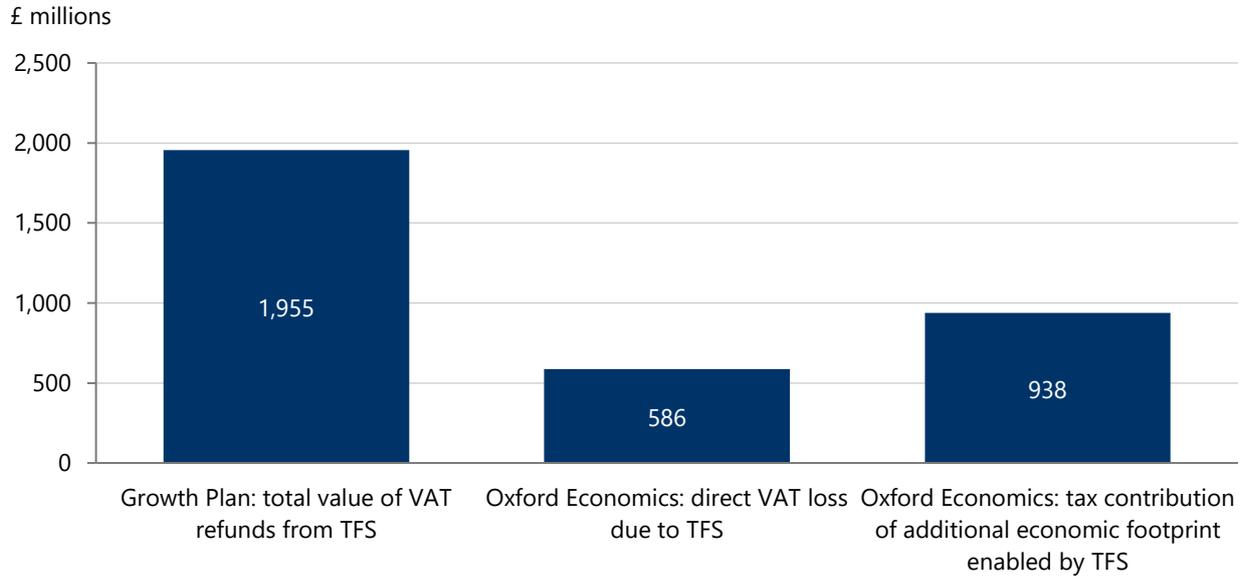
Source: Oxford Economics

4. CONCLUSION

When evaluating the merits of any policy it is important to appropriately weigh up the relative costs and benefits. HM Treasury's projections of the value of VAT refunds contained within the 'mini budget' are an attempt to measure the former but not the latter. Based on our detailed modelling exercise, we offer the following thoughts and findings that have relevance for policymakers:

- Projecting the value of TFS refunds in the UK, if it were to be reintroduced, is complex because it will need to apply to all visitors. With no benchmark of how visitors from the EU27 would react to this incentive (in the UK), assessing the policy's cost and impact is necessarily more uncertain.
- Nevertheless, our analysis suggests that HM Treasury is likely to have overestimated the gross cost (total refunds) of implementing TFS. Users from the EU27 claim significantly less (in comparable markets) than those from key non-EU origin markets. **Our best estimate is that the total value of refunds, in 2025/26, will be 40% lower than projected by HMT.**
- **The value of refunds is a poor measure of the fiscal cost** of this scheme because it fails to account for how the incentive would affect traveller behaviour. Notably:
 - Passengers will be incentivised to travel to the UK who would not otherwise have done so.
 - Passengers who do travel to the UK will spend more on retail than they would otherwise have done.
- Taking account for these behavioural changes, we find that **over one-third of spending on TFS is additional** i.e., would not have occurred without the policy and, therefore, should be discounted from the estimated fiscal cost.
- Additional visitors would also spend on other goods and services from which the Exchequer directly collects revenues. Accounting for these effects, we estimate that the actual fiscal cost would be **approximately 70% lower** than projected by HMT.
- The reintroduction of **TFS would support the growth of the UK's tourism industry**. Our modelling indicates that by 2025, the additional foreign visitor spending enabled by TFS would sustain over **£4.1 billion in GDP and more than 77,000 jobs** across the UK, inclusive of indirect and induced effects.
- This economic activity would generate an additional **£940 million of tax revenue** for the Exchequer (on top of the revenue collected directly from visitor spending). As shown in Fig. 15, the total tax contribution is **more than 60% larger** than the **estimated fiscal cost**.
- Whilst we do not consider that this value would be fully additional given some degree of displacement, the fact that it is being **supported by an increase in export revenue** due to the UK becoming a **more attractive tourist destination** implies that the **net boost to UK GDP** will be **significantly higher** than a **policy that incentivizes UK consumer spending**.

Fig. 15. VAT loss vs. TFS-enabled tax contribution, 2025/26



Source: HMT, Oxford Economics estimates

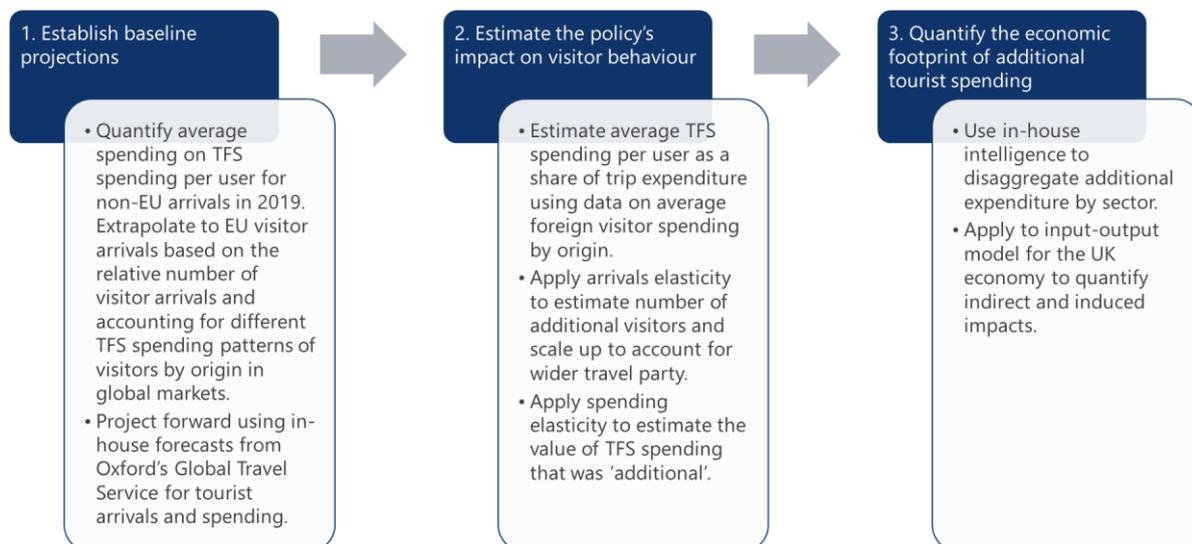
5. APPENDIX: DESCRIPTION OF MODELLING APPROACH

OVERVIEW

For this study, we employed a three-step analytical approach. This is visually described in Fig. 16, with each step then briefly summarised in the bullets below. A more detailed overview of each stage is then provided in the remainder of this chapter.

- In **step one**, we establish a baseline projection for the total number of TFS claimants, spending and refunds in 2025/26 assuming that the policy is reintroduced in the UK and, therefore, is open to visitors from both within and outside the EU27.
- In **step two**, we explored the extent to which the policy can be expected to influence visitor behaviour. It will incentivise tourists to visit the UK who would not otherwise do so and encourage additional spending on shopping by those who would still travel to the UK. Estimates for additional visitors and TFS spending were generated by applying demand elasticities⁷ to the estimated effective change in price of travel and TFS respectively.
- In **step three**, we modelled the economic footprint that would be supported by the additional foreign visitor spending. This was accomplished by mapping the spending flows to appropriate sectors and then simulating how this would sustain activity across the economy using an IO model.

Fig. 16. Three-step modelling approach



⁷ These demand elasticities were estimated based on in-house econometric analysis of transactions and trips by TFS users. Further details on the approach and findings can be found in section six.

1. ESTABLISHING BASELINE PROJECTIONS

The position in 2019

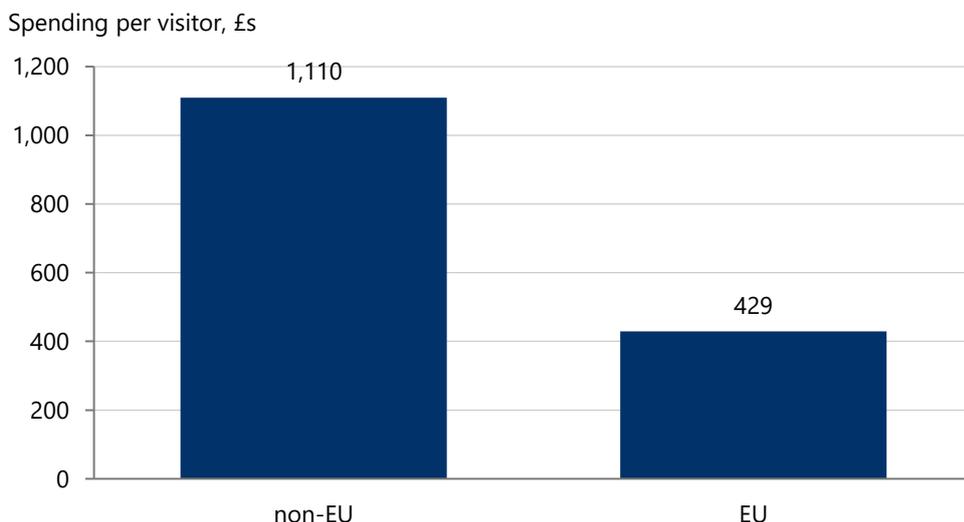
Prior to the pandemic, which had a severely disruptive impact on global travel patterns, the VAT-RES and airside schemes in the UK were available only to visitors from outside the EU27. According to data from HMRC, VAT refunds from TFS in this year totalled £500 million with a further £150 million claimed on airside shopping i.e., £650 million in total. Given that the headline rate of VAT in 2019 was 20% this would imply that total associated spending was in the region of £3.3 billion. HMRC estimate that there were 1.2 million TFS users i.e., those who successfully processed claims.

How would EU visitors react to the availability of TFS?

Since the TFS service has never been available to visitors from the EU27, gauging their spending, and therefore the value of refunds, in the event that the policy were introduced, is clearly subject to a high degree of uncertainty. HMT generate their projection for the total value of spending/refunds by extrapolating the value of refunds by non-EU visitors in 2019, adjusting for the difference in the total number of visitor arrivals in this period.

Such a method implicitly assumes that the average value of TFS spending per visitor will be the same for visitors from both regions. Although this has the virtue of simplicity, the fact that spending patterns of visitors from these two origin regions differ significantly implies that it may lead to an unrealistic estimate. As shown in Fig. 17, according to ONS data, visitors from the EU27 spent 63% less per trip than those other tourists, reflecting, among other factors, typically shorter lengths of stay.

Fig. 17. Average spending per visitor to the UK by origin, 2019



Source: Oxford Economics calculations, ONS data

Of course, it would be reasonable to counter that TFS users are a relatively atypical group and that these (average) patterns might not hold. For this project, we analysed data from Global Blue which tracked the average refunds claimed by users in non-European markets that are available to visitors from the EU27 and tourists from key non-EU TFS origin markets for the UK—China, the United States and GCC countries. This analysis showed that EU27 tourists tend to issue significantly lower refund

claims, a pattern that was consistent across all regions. On average, claims were 63% lower than the simple average from these countries.

Together, we estimate that visitors from these three origin markets (China, the GCC countries and the United States) accounted for 60% of TFS refunds in the UK in 2019. Data from Global Blue shows that TFS users from these non-EU origin markets are typically above-average claimants. To account for this, we have scaled our assumed benchmark so that it was consistent with the full sample of non-EU TFS users in the UK by origin, again using Global Blue transaction data.

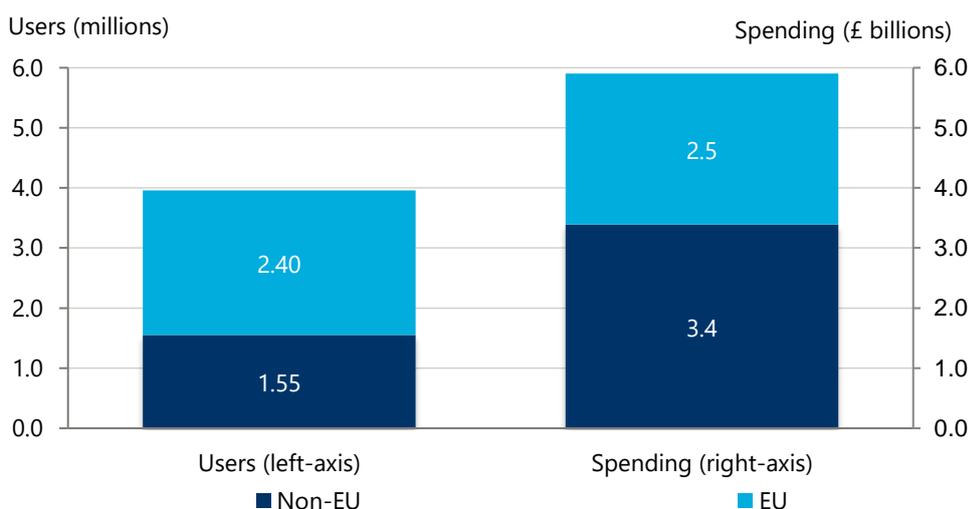
Overall, based on this analysis, we assume that each TFS user will claim refunds worth just under half (48%) of the average claimed by other visitors. Since we have no information on the relative likelihood of using TFS (per trip) for each group, we assume that the ratio of TFS users to visitors is the same for both EU and non-EU visitors. On balance, we think this assumption is likely to overestimate the value of TFS spending and refunds, given the shorter average length of stay.

Projecting forward to 2025/26

The previous steps gave us estimates of the total value of TFS users, spending and refunds if the policy had been available to all tourists in 2019. To project these to 2025/26, we used internal forecasts for the global tourism economy supplied as part of our GTS. These forecasts are underpinned by Oxford’s baseline view of the macroeconomy. Forecasts are generated for visitor arrivals and spending at the bilateral origin—destination level for over 80 of the world’s largest travel markets.

Based on this method, we forecast that, if reintroduced, in 2025/26 there would be 3.955 million TFS users in the UK spending £5.85 billion and claiming £1.17 billion in VAT refunds. Fig. 18 breaks these values down between EU and non-EU visitors.

Fig. 18. Forecast TFS users and spending in the UK by visitor origin in 2025/26



Source: Oxford Economics

2. ESTIMATING THE POLICY’S IMPACT ON FOREIGN VISITOR BEHAVIOUR

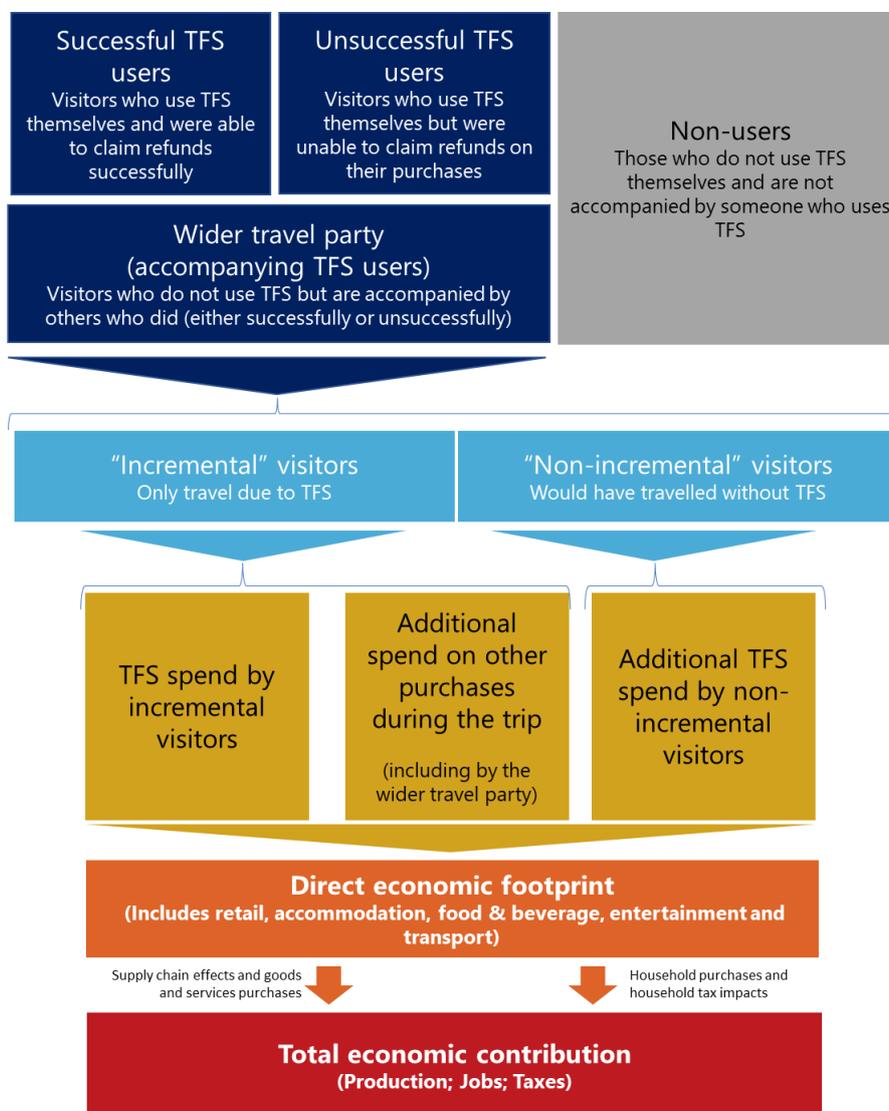
Conceptual model

The existence of TFS can be expected to increase the value of tourist expenditure in the UK via the following two channels:

- Some visitors will have been incentivized to travel to the UK who otherwise would not have done so. These individuals will spend money on a variety of tourism-facing services (in addition to shopping).
- (Net) spending on shopping among those who would have travelled anyway will have been higher although this might have, in part, displaced other expenditure e.g., on food or accommodation.

We estimate this using the conceptual approach described below:

Fig. 19. Conceptual approach



TFS is expected to be made available to all visitors to the UK. As shown in the figure above, the market is broken down into:

- **Successful TFS users** – who were able to claim refunds on their purchases;
- **Unsuccessful TFS users** – who wanted to claim refunds on their purchases but were unable to do so;
- The **wider travel party** accompanying the two types of TFS users above; and
- **Non-users**, i.e., visitors who do not use TFS and are not accompanied by others who do.

Using results from our econometric analysis and data from Global Blue, we then estimate the number of:

- **“incremental”** visitors, i.e., visitors who travel mainly for TFS (i.e., they would cancel their trip otherwise); and
- **“non-incremental”** visitors, i.e., visitors who use TFS but would have travelled even if the scheme did not exist.

Estimating the number of incremental visitors

To estimate the number of incremental visitors we first apply a travel demand elasticity of -1.78 to the estimated change in the effective cost of each trip, and then scale up to account for the wider travel party. To calculate the impact of the policy on average effective trip cost we assume that each user’s non-TFS spending mirrors the average (non-retail) value of spending for those visitors by origin based on GTS data.

We think that this assumption is likely to be conservative given that TFS users tend to be high-income and, therefore, above-average tourist spenders. It is worth noting, however, that the projected fiscal/economic impact of the policy is relatively insensitive to this assumption. A higher value would imply that TFS accounts for a lower share of trip cost and, therefore, lead us to conclude that the policy’s impact on visitor *arrivals* would be lower. These lost visitors, however, would spend more per trip on non-TFS items, more than offsetting the first effect.

To account for the wider travel party, we gathered evidence to inform our assumption from two sources. One was a survey of Global Blue customers in which we asked them about the average number of visitors that accompanied them on their trips when using TFS who did not use TFS. Weighting average responses by origin (according to the split of non-TFS users in the UK) implies an average travel party size of 1.56 i.e., 0.56 extra tourists per incremental visitor. The other source was data on airline bookings available through IATA. We mapped trip booking size (the number of seats booked per transaction) to the projected distribution of visitor arrivals in 2025/26 by origin. This implied an average travel party size of 2.46.

Ultimately, both sources are likely to be subject to error and so we decided to take the simple average of the two. As such, we assumed an average travel party size of 2.01 i.e., 1.01 extra tourists per incremental visitor.

Estimating the value of additional TFS spending

To estimate the value of TFS spending that is additional we apply a demand elasticity of -2.21 to the effective change in the price of retail shopping. We assume the latter is -16.7% based on the difference between gross and net sales for TFS operators. Taken together, these two imply that 36.8% (-16.7% * -2.21) of spending on TFS shopping is additional. This share can be interpreted as being

inclusive of both the spending by incremental visitors and the additional spending that would be induced by non-incremental visitors i.e., those who would have travelled anyway.

3. QUANTIFYING THE ECONOMIC FOOTPRINT OF ADDITIONAL FOREIGN VISITOR SPENDING

In step three, we quantify the economic footprint that would be supported by the additional foreign visitor spending, associated with the introduction of TFS, estimated in step 2. This required us to, first, quantify the value of wider (non-TFS) spending by visitors who would no longer travel to the UK, second, to map the additional spending to various producer sectors of the economy and, third, use this as an input to an IO model for the UK economy. In the remainder of this section, we describe each step in more detail.

1. Estimating the value of non-TFS spending by incremental visitors

The additional visitors travelling to the UK because of TFS will spend money on a variety of goods and services, notably accommodation, food & beverage services and transportation. To estimate this additional wider spending, we combine Tourism Economics existing datasets on inbound tourism spending by category for the UK with other available data sources including Tourism Satellite Accounts (TSAs) and other survey evidence, including detailed visitor surveys to quantify how spending patterns for these other categories can differ for travellers primarily motivated by retail.

Our calculation accounts for the different source market composition for the additional visitors generated by TFS, taking into account spending differences for EU and non-EU visitors.

2. Mapping this additional spending to economic sectors

Next, we mapped the additional visitor spending to the various sectors within the economy that would directly supply these goods and services. The vast majority of TFS spending can be expected to take place through the retail sector. For the purposes of this task, however, it is important to disaggregate the gross value of spending on TFS between the following components.

- The value of direct tax applied on products, most notably VAT but also taxes such as excise duty e.g., sales of alcohol.
- The share that is captured by various intermediaries involved in the distribution of the product to end-consumers. Specifically, this involves retailers, wholesalers and the suppliers of associated transport services. These shares were estimated using ONS data on average industry mark-ups.
- The remaining value is what we estimate to be the (net) sales value captured by the manufacturer of the associated product.

Using the process above, we mapped spending on TFS to the various sectors involved in the distribution and manufacture of the goods. We used intelligence on the product composition of TFS sales to map it to appropriate manufacturing sectors within the UK economy, with allowance for the share of these goods that were supplied by foreign producers. The latter was estimated based on HMRC trade data on the product composition of UK imports as a share of final demand.

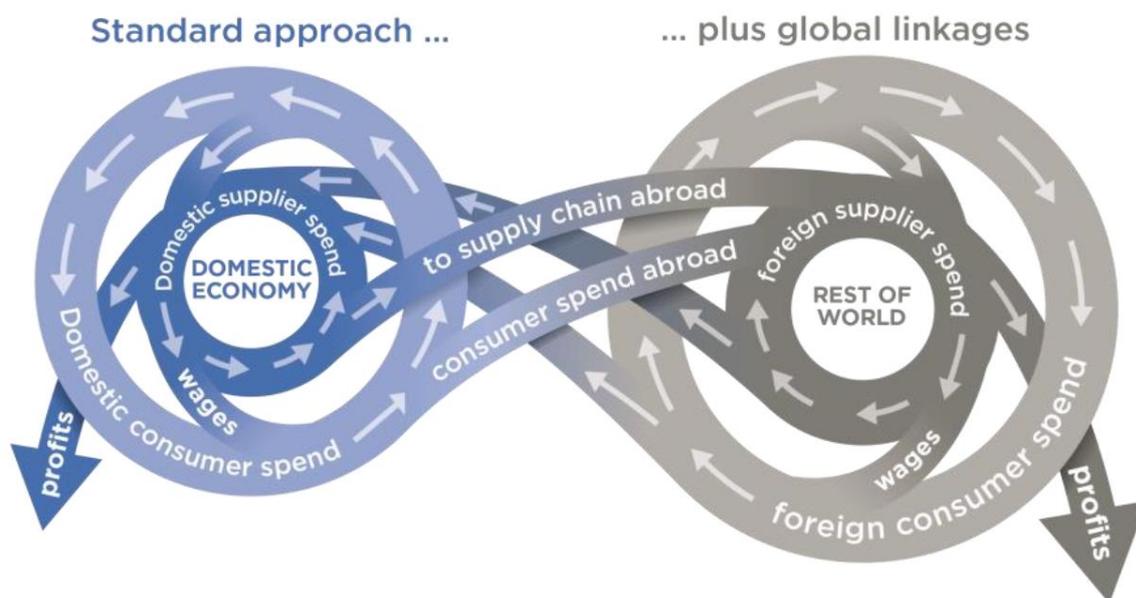
For the non-TFS spending, attribution to the appropriate supplier sector within our model was more straightforward e.g., spending on accommodation and eating out was assumed to take place in the ‘food and beverage services’ industry.

3. Modelling the multiplier effects of this spending in Oxford’s Global Economic Impact Model

Finally, these additional spending flows by sector were inputted into an IO model of the UK economy to simulate how this expenditure sustains activity inclusive of direct, indirect and induced effects. We used Oxford Economics’ Global Impact Model for this analysis to account for cross-country relationships and specifically to account for the fact that supply-chain linkages extend beyond the home country, as illustrated in Fig. 20.

The model captures the value of gross output, broadly equivalent to total sales, that is supported in each sector through these various impact channels. To estimate the associated values of GDP we applied sectoral averages of gross output to gross value added as documented in the latest ONS supply use data. The equivalent number of jobs was then estimated by applying sector-specific labour productivity ratios. Data on labour productivity in each sector was grown forward based on projected changes in UK sectoral GDP and employment according to in-house forecasts, so that they were consistent with projected conditions in 2025/26. The value of tax revenue that this would support for the Exchequer

Fig. 20. Oxford’s global impact modelling framework vs a traditional approach



6. APPENDIX: ESTIMATION OF VISITOR ARRIVALS AND SPENDING ELASTICITIES

Previous studies have attempted to quantify the impact on visitor arrivals by applying a general travel elasticity to the estimated average percentage reduction in the trip cost for a typical visitor. Such an approach is entirely reasonable for a policy such as air passenger duty (APD) which has a widespread and proportionately similar impact on tourists' trip costs. The proportionate impact of TFS, however, on visitors' trip costs is highly uneven. This implies that the application of a method reliant on (mean) average changes might produce misleading results.

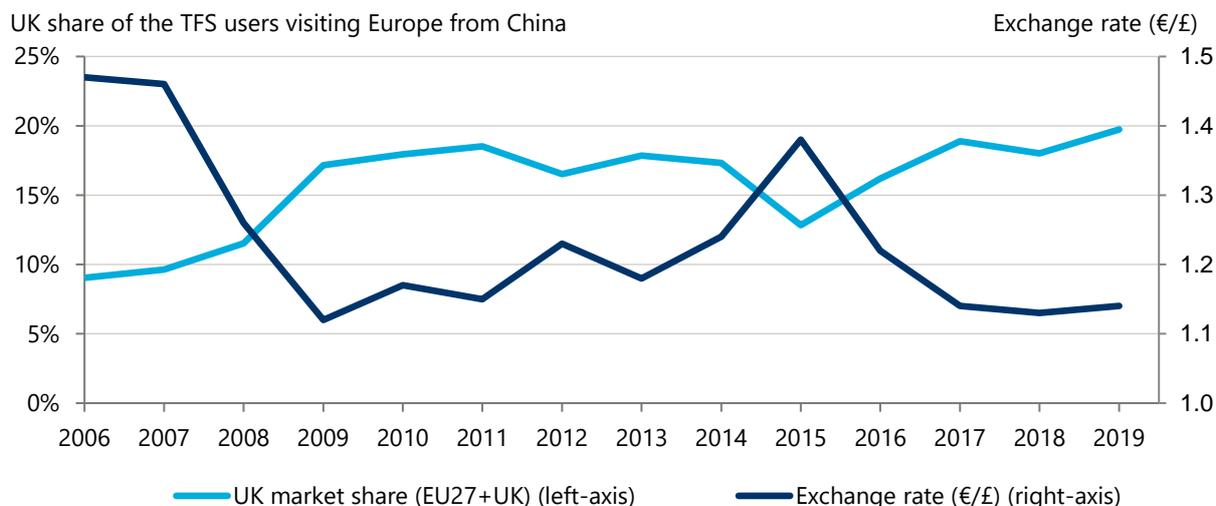
Using Global Blue's transaction data, we have estimated demand elasticities, for both trips and TFS spending, via econometric models. We believe that these elasticities are more likely to accurately simulate the behaviour of foreign tourists in this context because they are estimated on the basis of how this group have responded to price incentives (via exchange rate movements) historically.

6.1.1 Econometric approach

The price competitiveness of a country's retail sector to tourists is determined, among other factors, by the exchange rate. The depreciation of the Euro will increase the attractiveness of shopping in Eurozone shopping hubs such as Paris or Milan compared to other destinations such as New York, London or Singapore.

For example, as shown in Fig. 21 below, the depreciation of the Sterling with respect to the Euro between 2007 and 2009 around the financial crisis, coincided with an increase in the UK's share of the China-to-Europe TFS market. Chinese visitors were attracted to visit the UK due to the impact that this exchange rate movement had on the relative price of a trip compared to nearby competitor markets. Conversely, when the value of the Euro with respect to the Sterling declined sharply in 2015, the UK's share of TFS users visiting Europe from China declined as these users may have chosen to visit shopping destinations in Europe over the UK to take advantage of the relative value of the Euro.

Fig. 21. UK share of TFS users visiting Europe from China and exchange rates



Source: Global Blue, Oxford Economics

To rigorously test whether the correlations described above reflect a more causal link, we developed an econometric approach to estimate TFS-specific elasticities. Our econometric strategy was to use exchange rates as the proxy for the price of travel, and develop two models to measure the elasticity with respect to this price, i.e., exchange rates of:

- (i) TFS visitors (users); and
- (ii) TFS spending.

6.1.2 Data

Global Blue provided detailed high frequency panel series data on the number of TFS users, the value of their TFS shopping (on which they have claimed refunds), their country of origin and their destination. The advantage of using this dataset — compared to analysing the path of the aggregate visitor arrivals — is that it monitors the behaviour of TFS users and, therefore, can be expected to produce a more appropriate price elasticity.

To control for other factors that may determine visitor arrivals, e.g., origin country income per capita, distance, common language or historic links, we collected data from the Oxford Economics databank and the CEPII Gravity Database.⁸

The key variables for our models are:

- GDP per capita, in real US\$ at constant 2015 prices, both for the origin and the destination, logged
- The total population, in thousand persons, both for the origin and the destination, logged
- The exchange rate, for the period average and per Euro, using both the first lag and the contemporaneous exchange rate, logged
- Distance between the most populated city of each country, in km

⁸ Conte, Cotterlaz, and Mayer, "[The CEPII Gravity Database](#)", 2021.

- A language dummy variable with 1 if countries share a common official or primary language and 0 if not

6.1.3 Modelling approach

For both models, we use a gravity-type equation, controlling for a wide range of factors that may determine visitor arrivals. The gravity model was developed by Tinbergen (1962)⁹ to model trade patterns and is based on the basic assumption that bilateral trade flows depend on some factors related to the origin and destination countries and other factors that approximate the bilateral distance between the sending and receiving country. Since tourism can be considered as a trade in services and flow of tourists, the gravity model fits well. In addition, the advantages of this technique are that the geographical distance and source country characteristics can be clearly considered. This model has been used extensively in previous tourism demand studies such as those of Kosnan et al. (2013)¹⁰, Kaplan and Aktas (2016)¹¹, Yazdi and Khanalizadeh (2016)¹², Gouveia et al. (2017)¹³, Chaney (2018)¹⁴, and Xu et al. (2020)¹⁵.

6.1.4 Econometric findings

Estimating the number of incremental visitors

The results are shown in Fig. 22 overleaf. The econometric results of specification (1) suggest that origin GDP per capita, origin population, and common language are positive and significant determinants of visitor arrivals. Distance between origin and destination and the first lag of exchange rates negatively affect visitor arrivals. The significance of the lagged exchange rates suggests that changes in exchange rates take on average one year to affect visitor arrivals. The results show that a 1% increase in the cost of travel, as proxied by exchange rates, is associated with a -1.782% reduction in tourism arrivals.

We conduct three further specifications as robustness checks for the above results. Specification (2), which uses the contemporaneous exchange rate instead of the first lag of the exchange rate, provides slightly lower estimates as intuitively exchange rates can be expected to take some time to affect travel patterns that are often planned in advance. Therefore, we prefer a specification with a one-year lagged exchange rate. Specification (3), without the distance and common language variables, alters the coefficients, suggesting that this specification suffers from omitted variable bias. Specification (4)

⁹ Tinbergen, "Shaping the world economy: suggestions for an international economic policy", 1962. New York: The Twentieth Century Fund.

¹⁰ Kosnan, Ismail & Kaliappan, "Determinants of international tourism in Malaysia: evidence from gravity model", 2013. *Jurnal Ekonomi Malaysia* 47(1): 131-138.

¹¹ Kaplan & Aktas, "The Turkey tourism demand: a gravity model", 2016. *The Empirical Economics Letters* 15(3): 265-272.

¹² Yazdi & Khanalizadeh, "Tourism demand: a panel data approach", 2016. *Current Issues in Tourism* 20(8): 787-800.

¹³ Gouveia, Rebelo, Lina & Guedes, "International demand for the Douro (Portugal) river cruises: a gravity model approach", 2017. *Tourism Economics* 23(8): 1679-1686.

¹⁴ Chaney, "The gravity equation in international trade: an explanation", 2018. *Journal of Political Economy* 126(1): 150-177.

¹⁵ Xu, Wang, Li, Tang & Shao, "Modelling international tourism flows to China: a panel data analysis with the gravity model", 2020. *Tourism Economics* 25(7): 1047-1069.

suggests that destination GDP is not statistically significant, thus we opt for a specification that does not include destination GDP fixed effects.

Fig. 22. Regression results – incremental visitors

Variables	(1)	(2)	(3)	(4)
Origin GDP per capita (log)	0.548*** (0.0563)	0.538*** (0.0576)	0.580*** (0.0455)	0.528*** (0.0602)
Destination GDP per capita (log)				0.189 (0.417)
Origin Population (log)	0.817*** (0.0592)	0.821*** (0.0596)	0.728*** (0.0415)	0.813*** (0.0595)
Destination Population (log)				0.570*** (0.190)
Exchange rates (log) – first lag	-1.782*** (0.115)		-1.622*** (0.119)	-1.667*** (0.123)
Exchange rates (log) – contemporaneous		-1.473*** (0.151)		
Distance between origin and destination (log)	-0.519** (0.218)	-0.472** (0.218)		-0.491** (0.228)
Common Language (1=Yes, 0 otherwise)	1.224*** (0.266)	1.203*** (0.269)		0.984*** (0.327)
Constant	-0.155 (1.904)	-0.626 (1.920)	-3.774*** (0.651)	-8.214*** (2.885)
Observations	26,290	30,559	26,362	26,290
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Estimating the value of additional TFS spending

The results for the TFS spending model are displayed in Fig. 23 overleaf. The econometric results of specification (1) suggest that origin GDP per capita is a positive and significant determinant of visitor arrivals. The first lag of exchange rates negatively affects visitor arrivals. Unlike specification (1) in Fig. 22, the coefficients on distance and common language are not statistically significant but retained to avoid omitted variable bias and for consistency with the trips' specification. The significance of the lagged exchange rates in the sales model implies an elasticity of -2.21 indicating that a 1% increase in the cost of travel, as proxied by exchange rates, is associated with a -2.21% reduction in TFS spending.

Additional specification tests provide similar results. Similar to the corresponding sensitivity for visits, using the contemporaneous exchange rate instead of the first lag of the exchange rate (Specification (2)), provides lower elasticity estimates. This is because intuitively exchange rates can be expected to take some time to affect long-haul flights that are often booked in advance. Therefore, we prefer a specification with a one-year lagged exchange rate. Other alternate specifications with lagged exchange rates provided similar results.

Fig. 23. Regression results – TFS spending

Variables	(1)	(2)
Origin GDP per capita (log)	0.511*** (0.0518)	0.693*** (0.0536)
Origin Population (log)		0.808*** (0.0703)
Exchange rates (log) – first lag	-2.209*** (0.121)	
Exchange rates (log) – contemporaneous		-1.683*** (0.163)
Distance between origin and destination (log)	0.189 (0.125)	0.141 (0.107)
Common Language (1=Yes, 0 otherwise)	-0.447 (0.313)	-0.0749 (0.332)
Constant	10.03*** (1.068)	0.309 (1.314)
Observations	29,651	34,249
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		



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