An assessment of the impact and cost-effectiveness of UKTI's support for Events

Final report

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Head Office: 71-75 Shelton Street, Covent Garden, London, WC2H 9JQ, United Kingdom.
w: www.londecon.co.uk e: info@londecon.co.uk
t: +44 (0)20 7866 8185 f: +44 (0)20 7866 8186

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Authors

Moritz Godel, Iris Mantovani, Dr Gavan Conlon

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Glossary

Terminology abbreviations

CV	Contingent Valuation
DSO	Defence & Security Organisation
EPA	Export Promotion Agency
EPP	Export Promotion Policy
GGG	Gateway to Global Growth
HQ	Headquarters
ITA	International Trade Advisor
MVS	Market Visit Support
OMIS	Overseas Market Introduction Service
P2E	Passport to Export
PIMS	Performance & Impact Monitoring Survey
R&D	Research & Development
UKTI	UK Trade & Investment
WTP	Willingness to Pay

Executive summary

Evaluation objectives

This research by London Economics was commissioned by UK Trade & Investment to evaluate UKTI's programme of Events[1]. The programme comprises a wide variety of different Event types, designed to support companies wishing to increase their exposure to overseas markets. In particular, the research aimed at:

- **identifying** which aspects of Events work best and why;
- **understanding** the role of Events in reaching new clients;
- **understanding client willingness to pay;**
- **evaluating** the cost effectiveness of Events; and
- **quantifying the benefit-cost ratio of the UKTI vents programme**.

This study was carried out as part of UKTI's commitment to undertake regular independent evaluation of all its services, both to help drive continuous improvement in service quality, and to ensure that its efforts are focused where they can be of greatest benefit. This evaluation research will feed into an ongoing UKTI review of Events and help inform UKTI's future practices.

Evidence base

The study draws on **five different strands of research** to compile the evidence base:

- A **review of academic and policy evidence** to understand the economic rationale for helping UK businesses develop their international trade potential.
- **Consultations with Event providers (4)** to gather qualitative evidence on the working relationships and delivery of Events.
- **PIMS secondary analysis** to assess the profile, performance and impact of the various Events as well as comparing performance across Events and in relation to other UKTI services; and to analyse whether the benefits derived from attending UKTI's Events are linked to client profile.
- A **qualitative survey of attendees of UKTI Events (19)** to address a number of the research issues and to help inform design of a quantitative survey.
- A **survey of users (600) and non-users (300)** and quantitative data analysis to investigate willingness to pay for Events, rationale for Event attendance and user satisfaction.

[1] Including ER Events; HQ Events; Outward Missions; Inward Missions; Sector Events UK; Post Events; Sector Events Abroad; and DSO Events.

Key Findings

The following conclusions emerge from the research strands described above:

Economic rationale for UKTI's Events programme

- The broader theoretical case for the provision of export support services (as outlined in BIS Economics Paper 13) rests on the existence of two information-related market failures: spillover effects that result in under-provision, and asymmetric information leading to intermediation failures.
- There is substantial empirical evidence of the efficacy of export promotion policies and agencies, particularly in terms of engagement in new markets for small and medium-sized firms.
- Previous evaluation evidence shows that the substitutability between private and public sector providers of trade advisory services is found to be only partial; moreover, government-branded provision is likely to be more cost-effective due to the government's ability to act as "trusted intermediary".
- Past research has found that UKTI's trade support measures are successful in improving clients' performance in terms of productivity and profits.
- Events may be among the most effective ways to reach firms that are undergoing periods of transition and help them to successfully navigate these transitions and continue to grow.
- There is a strong correlation between exporting and innovation, and causation appears to run in both directions. Hence, improving export performance is a means of increasing overall national productivity and prosperity.

Impact of Events

- The number of businesses participating in the UKTI Events programme increased substantially over the period, from around 5,200 in 2006 to almost 18,000 in 2011. The share of overseas visits in the total recorded number of business participants fell over the period.
- Quality ratings for Events, as reported through PIMS, rose over the period for all Event categories
- Despite some quarterly variation, the proportion of respondents that report significant business impacts from UKTI assistance through Events has remained stable over the six available years of PIMS
- Higher intensity Events (e.g. Visits, Overseas-based Events, Events lasting over a day) are associated with a higher probability of reporting improvements in productivity, and performance or significant profit gains (net of non-additionality).
- The proportion of participants at UK-based Events that reports profit gains in excess of £10,000 is rising over time.
- Although median additional profit (net of non-additionality) reported by Event attendees is zero in all years, mean additional profit reported by respondents attending UKTI Events stood at approximately £173,000 (over the 2011/12 financial year) and was shown to be increasing by approximately £26,600 per annum.

- The average value of the profit gain reported by participants at UKTI Events is rising over time for all Event categories although the increases are not statistically significant.
- Given a total cost of Events of £90.6 million for the 2011/12 financial year, the average additional profit of £173,000 multiplied by the number of firms assisted by Events (17,084 over the 2011/12 financial year), implies the benefit-cost ratio of Events stands at **33:1**, although this result is sensitive to a small number of 'big wins'.

The gateway role of Events

- A dataset that tracks company usage of different UKTI services over a five year period (2006-2011) is used to investigate the role of Events in promoting additional UKTI service deliveries.
- Events serve as signposts to other UKTI services, 76% of repeat-use UKTI clients attend an Event first.
- 54% of Event attendees go on to use at least one other UKTI service.
- Overseas Visits and Missions are associated with the highest subsequent service usage (68% of participants use at least one additional service).
- UK-based Events are associated with the greatest number of service deliveries (53% of all Events).
- 44% of participants at UK-based Events go on to use UKTI's overseas network.

Willingness to pay for UKTI Events

- Based on a well-established approach to eliciting willingness to pay for non-market goods or services, survey evidence is used to understand how much businesses value UKTI Events. The evidence indicates a mean willingness to pay of £522 for Outward Missions; £267 for Meet-the-buyer Events; and £74 for Information Events.
- The evidence shows no difference in the amount users and non-users are willing to pay for Events. This suggests that repeat experience of taking part in UKTI events has no effect on willingness to pay for them.
- Firms with higher turnover and those exporting a larger proportion of their turnover report systematically higher willingness to pay. Conversely, number of years of export experience and number of employees do not affect the companies' willingness to pay.
- Price itself plays a part in communicating the value of Events to companies.

Recommendations

Overall, this research suggests that Events and Missions are valued by UKTI clients and that the programme should therefore be continued. In terms of the specific recommendations emerging from the evaluation, we have grouped them according to three broad themes: **pricing**, **targeting** and **managing expectations**.

Pricing

The analysis demonstrates that firms' willingness to pay for Events in general exceeds the current price charged by UKTI. In addition, the analysis illustrates that price anchoring exists implying that pricing acts as a signal of quality. Therefore,

1) **we would recommend reviewing prices to ensure they are at a level that sends appropriate messages about the quality of UKTI Events;**
2) at the same time, **we would recommend that some time and effort should be taken to ensure transparency and consistency of pricing across the UKTI network**. However, it is important to recognise that consistency does not necessarily imply uniformity of pricing across the entire network as some allowance must be made for differing costs of provision.

The analysis also demonstrated the fact that smaller companies record lower willingness to pay to attend Events than larger firms. In contrast, the analysis showed that there was no difference in willingness to pay between previous users and non-users of UKTI services. This suggests that there is a justification for offering price discounts for SMEs to attend appropriate Events, although this differentiated pricing would not apply to firms with different prior experience of UKTI. Therefore,

3) **we would recommend that within the consistent and transparent pricing framework, flexibility is retained by UKTI to offer firms different levels of subsidy to attend Events where evidence supports differentiated willingness to pay.**

Targeting

Given the fact that observable firm level characteristics do not predict the business benefit from attending Events well, and also the fact that internal 'tipping' points at which external information has the greatest impact on firm performance are unobservable, and acknowledging the constraints on public sector expenditure,

4) **we would recommend that where resources for marketing are available, they should be used to raise general awareness of UKTI services and events and the benefit they can offer to different business groups rather than seeking to target individual firms.**

Managing expectations

In order to reconcile event participants with potentially higher prices, expectations have to be managed, both pre- and post-attendance. Pre-attendance, for the dual purpose of providing accurate information on the content and level of the Event ('master class' vs. 'introduction'), and ensuring firms make an informed decision to take part,

5) **we would recommend that resources are committed to the design and provision of low-threshold (easy access, limited time commitment, free/low cost) offerings (e.g. webinars, online information) to complement and effectively promote the Events programme.**

Despite Events offering a useful gateway to UKTI service more generally, post-attendance,

6) **we recommend that efforts should be made to ensure participants are more aware of UKTI and its services and subsequent access routes.**

In addition, given that around 54% of Events participants do not go on to use other UKTI services,

7) **we recommend that additional effort is made to understand the reasons why further attendance has not taken place.**

It is important to note that introducing a more transparent and coherent pricing structure will undoubtedly raise expectations amongst attendees. Acknowledging the obvious constraints on public sector expenditure,

8) **we recommend that UKTI commits adequate resources so that the Events programme is appropriately resourced, managed and monitored to ensure that these expectations are systematically met or exceeded.**
9) **In general, we recommend that promotional materials should be improved in terms of clarity about the content of Events, pricing, eligibility, networking opportunities etc. In particular, given the importance of the networking function reported by business, the networking aspect (even for Events where this is not the primary attraction) should be emphasised.**

The analysis demonstrated that prior engagement and better business preparation was associated with higher business benefits. As part of the information provision,

10) **we would recommend that firms are made aware of the potential preparation required so that the benefit they may achieve is maximised.**

1 Review of economic and policy evidence

1.1 UKTI policy and objectives

In the current economic climate, there is a growing emphasis on rebalancing the economy and strengthening UK exports as a means of stimulating national prosperity and productivity. As a result, UKTI is at the forefront of the government's efforts to increase the number of exporters and the volume of overseas trade.

The services offered by UKTI are designed to help businesses overcome barriers to accessing overseas markets and developing their international trade potential. In particular, UKTI intends to achieve these goals by:

- strengthening the social networks that underpin international trade and investment flows, and serving as a trusted intermediary to gain access to key contact networks;
- developing the internationalisation capabilities of innovative and high-growth businesses that would not be able to fulfil their potential without having access to overseas opportunities;
- providing access to information and advice that the private sector alone would not or could not provide;
- facilitating mutually beneficial cooperation among UK businesses that will enable them to overcome barriers and promote the reputation of the UK in overseas markets; and
- overcoming legal or regulatory barriers to market access through political and diplomatic support.

One of the key frameworks employed in the delivery of UKTI's support is the organisation and promotion of Events – domestic and abroad, sectoral and market-based – which serve as a springboard to introduce UK businesses to the vast gamma of export-related business support services, and to the steps necessary to realise their export potential.

This section provides a brief overview of the existing evidence on the role of government in the advancement of national exports. More specifically, it explores the necessity for export promotion policies, and the institutional structure that is most adequate for delivering export-related services.

1.2 Economic rationale for government support

This section restates and extends the evidence reviewed for a number of previous evaluation studies carried out by London Economics on behalf of UKTI[2]. Despite major reductions in policy-induced barriers to trade there is evidence that market failures continue to exist, preventing businesses from fully realising their potential. While barriers to entering new markets can affect all firms, including large companies and experienced exporters, particular difficulties are encountered

[2] Most recently London Economics (2012).

by innovative and high-growth firms. At the same time, such firms are the ones that derive the greatest benefit from exporting[3].

If not addressed by appropriate policy measures these market failures are likely to have an adverse impact on the UK's ability to exploit overseas business opportunities, which in turn will reduce the competitiveness of its most productive firms. In fact, through knowledge and technology transfers, exposure to international competition is what enables the best performing firms in an economy to expand and gain market share while the weaker ones shrink or exit. This reallocation of resources to their most productive use can account for a large proportion of a country's aggregate productivity growth[4].

1.2.1 Barriers to trade result in market failures

A study by Artega-Ortiz and Fernandez-Ortiz (2010) finds four main types of barriers firms face when they attempt to internationalise:

- knowledge barriers: lack of information about overseas opportunities or awareness of potential benefits from exporting;
- resource barriers: both financial resources and availability of staff to perform export-related tasks;
- procedural barriers: documentation and red tape as well as differences in language and culture; and
- exogenous barriers: macroeconomic risk and uncertainty in overseas markets.

UKTI's 2012 internationalisation survey[5] provides evidence that over 2011/12 a significant proportion of UK businesses were deterred from entering a new market due to a combination of barriers that fall into the above categories (particularly procedural barriers and risk of not being paid).

These barriers take the form of large upfront costs that are not recoverable if the attempt to establish an international presence is unsuccessful. According to Copeland (2010), these sunk costs are information-related and raise two potential sources of market failure: information spillovers (or externalities) and information asymmetries. While sunk costs in general do not justify government intervention, the market inefficiencies produced by these costs may provide a case for government activity in the area of export promotion.

Information spillovers

A firm investing in the acquisition of export-related information and skills will not reap the full benefits from the investment if other firms benefit from the knowledge without bearing the costs of acquiring it. Since knowledge is not a private good, there will be underinvestment in the

[3] BIS Economics Paper No. 13 (2011) and BIS Economics Paper No 5 (2010).

[4] Bernard et al. (2006).

[5] OMB Research (2012), 'International Business Strategies, Barriers & Awareness Monitoring Survey 2012', report for UKTI, available at: http://www.ukti.gov.uk/uktihome/item/411080.html [accessed 23.09.13].

acquisition of relevant information and suboptimal engagement in foreign markets. Government subsidies or provision of information-related services can eliminate this distortion.

Asymmetries of information

Information asymmetries arise from the lack of social networks in foreign markets and the resulting difficulty in determining the quality of the services provided by potential partners, distributors or suppliers. At the same time, foreign consumers' lack of information regarding the domestic firm's product quality or service provision capabilities reduce the returns from engaging in foreign markets and discourage firms from expanding internationally. Government agencies can alleviate this market failure by taking on the role of "trusted intermediaries," and helping local firms build a network of contacts in foreign markets.

Another source of asymmetric information is the potential exporter's lack of awareness about the benefits in terms of productivity to be gained from trading overseas. Agencies that help businesses identify and quantify these benefits can reduce this type of market failure.

1.2.2 Export Promotion Policies (EPP) are effective

There are a number of empirical studies that investigate the effectiveness of export promotion policies aimed at reducing the sunk information-related costs discussed above.

- Lederman et al. (2010) undertake a world survey of national Export Promotion Agencies (EPAs) and find that on average a 10% increase in EPA budgets leads to a 0.6 to 1% increase in exports.
- A study on the programmes delivered by the Canadian Trade Commissioner Service (Van Biesenbroeck et al., 2010) finds that exporters that receive assistance, on average, export 18% more than comparable exporters that received no assistance.
- A study on the effect of Spanish regional trade agencies (Gil et al., 2008) finds that, all else equal, having an export promotion agency in the region is associated with a 63% rise in exports. It is worth noting that the causality is likely to go in both directions: regions that export more heavily are also more likely to set up a trade agency. Nevertheless, this estimate remains very large and significant.
- Volpe Martincus et al. (2010) find that trade promotion substantially boosts exports of small and medium-sized companies. Moreover, the effect is primarily on the number of new destination markets, rather than the average volume of exports per market. This result is promising since the spillover effects from entering new markets are likely to be larger than those from expanding in established markets.

The evidence suggests that the presence of export promotion programmes and agencies is an effective means of boosting regional export performance.

1.2.3 UKTI services are effective

Past research (Hart et al., 2009) found evidence that UKTI's trade support measures are effective in improving recipients' performance. Evidence from UKTI's PIMS survey cited by the author shows

that 50% of UKTI clients have reported improved business performance (in the form of increased profit and productivity) since using UKTI services. These figures have remained consistent throughout subsequent years[6]. The mean additional profit attributed by clients to UKTI support has been growing consistently over the past five years, and was estimated to be £264,000 (for all services, including Events) in March 2011. Furthermore, a study carried out by Aston University shows that over a period of two years (2006 to 2007), UKTI support generated £65,000 of additional Research & Development (R&D) expenditure per firm[7].

Finally, previous evaluations of individual UKTI services yield high benefit cost ratios, providing evidence of good value for money of UKTI services. In particular, quantified estimates of the benefit in terms of additional profit attributed to the service are provided by four evaluations:

- UKTI's regional network support (London Economics, 2012) estimated a benefit cost ratio of 15:1 in terms of additional profit, and 102:1, in terms of additional turnover;
- Tradeshow Access Programme (London Economics, 2008) estimated a benefit cost ratio of £5:£1;
- High Growth Markets Programme (London Economics, 2009) assessed a benefit cost ratio of between £4.6 and £10 per £1; and
- International Trade Teams in the English Regions (SQW, 2006) found a benefit cost ratio of ITA services of £25:£1.

1.2.4 Private sector providers are a limited substitute for UKTI

Research carried out for UKTI[8] looks at the potential scope for private sector provision and expansion of UKTI services to SMEs. It finds that private sector provision of trade advisory services is limited; where present, it is dominated by small firms, with 90% having only one to nine employees. Market research is the most commonly provided service, while there is a weaker presence of private companies offering networking services (information on contacts) or technical services (documentation and certificates of origin). Moreover, the study finds that UKTI is not seen as a significant competitor by private trade advisory firms but rather as complementing their services.

A recent evaluation of UKTI's Overseas Network (London Economics; June 2011) argues that the government may be the best placed to provide export promotion services because it is impartial and has access to information and influence that cannot easily be replicated by the private sector. For instance, in the case of "intermediation failures"[9] (such as a transaction involving uncertainty where trust between business partners is crucial, but firms do not know whether they can trust their counterparties) a government-backed organisation is likely to find it easier to gain the trust of overseas businesses and acquire commercially valuable information than the private sector. This may be why there is little evidence of substitutability between private sector providers and UKTI.

[6] BIS Economics Paper No. 13 (2011), p. 120

[7] Driffield et al. (2010)

[8] CSSC (2007). *The potential scope for increased orivate sector provision of international trade advisory services to SMEs.*

[9] On the concept of intermediation failure, see also London Economics (2010).

1.2.5 Private provision may cause inefficient duplication

Beyond exploring the effect of EPA budgets on national exports, Lederman et al (2010) study the impact of different institutional structures on export performance. They find that while private sector involvement in the management of the EPAs is beneficial to export performance, the most effective agencies are publicly-funded. Furthermore, they find evidence that a single agency is more effective than multiple agencies with overlapping responsibilities. Indeed, if the source of the non-policy barriers to trade is large fixed costs, then a centralised institution will overcome these barriers more efficiently and avoid costly duplication of information-related services.

1.2.6 Events allow for 'tipping point' intervention

Within organisational lifecycle models, there is a body of literature that conceptualises the development and growth of businesses as a process in which companies go through a number of transitions. Each transition involves a 'tipping point'. Such tipping points occur at different times during a company's lifecycle and are characterised by significant risks, but also potential for change. Openness to new knowledge, ideas and behavioural changes is crucial for making the transition successfully. Seeking to enter a new market is identified as one such transition.[10]

In this context, the key to growth is seen as the "absorption of knowledge and solutions to successfully traverse the tipping points. In dealing with these tipping points the firm needs to grow its absorptive capacity. It needs to become aware of key issues it is facing and it needs new knowledge input to provide solutions to the crises and challenges generated at tipping points."[11]

The same research finds the impact of external advice can be most potent during these transitional periods, and can help to reach a 'tipping point', enabling a small amount of well focused advice to have very large business benefits. In particular, by facilitating the emergence of clusters and networks, external advice can greatly reduce the retardant effect of poor external linkages, low awareness of innovation and insufficient contact with sources of improvement.

One of the key aspects of tipping points is that they are not easily identifiable from the outside, or even foreseeable by the firm itself. Thus, within the range of UKTI services, an ongoing supply of Events that firms may enrol in at their convenience may be the most adequate form of support to attract and engage with firms that find themselves in such a period of transition. This also highlights the importance of the role of events as a gateway to other export support services.

1.2.7 Entry into new export markets is a route to growth

BIS Economics Paper No. 13 finds that exporting firms are more innovative and more likely to engage in research and development (R&D) than non-exporting firms: in 2011, exporters accounted for 60% of UK productivity growth. Exporting stimulates innovation through exposure to new ideas and competitors, and through higher returns on investment in R&D and increased revenues available for such investment. This results in a reallocation of resources to exporters with

[10] Bessant et al. (2005).

[11] Bessant et al. (2005), p.63.

higher productivity, meaning that the gains from exposure to overseas markets are larger for more innovative firms.

Nevertheless, there are many UK firms who do not export but whose productivity and innovation profiles match that of successful exporters. In fact, innovative firms tend to be more likely to report barriers to entering overseas markets[12]. This is because, unlike commodities, information about innovative products and services can be more complex to communicate to potential buyers or partners. Social networks are particularly important in this context to overcome this sort of information barrier. In conclusion, policies that target firms that have the requisite capabilities for long term export success may serve to spur economy-wide innovation and growth.

1.3 Summary

- The broader theoretical case for the provision of export support services rests on the existence of two information-related market failures: spillover effects that result in under-provision, and asymmetric information leading to intermediation failures.
- There is substantial empirical evidence of the efficacy of export promotion policies and agencies, particularly in terms of engagement in new markets for small and medium-sized firms.
- Substitutability between private and public sector providers of trade advisory services is found to be only partial; moreover, government-branded provision is likely to be more cost-effective due to the government's ability to act as "trusted intermediary".
- Past research has found that UKTI's trade support measures are successful in improving clients' performance in terms of productivity and profits.
- Events may be the most effective way to reach firms during periods of transition, where they need external help or support to successfully overcome the challenges presented during the transition, and continue to grow.
- There is a strong correlation between exporting and innovation, and causation appears to run in both directions. Hence, improving export performance is a means of increasing overall national productivity and prosperity.

[12] BIS Economics Paper No. 13 (2011), p. 100.

2 The impact of Events

UKTI Events assisted 17,084 companies, costing a total of £90.6 million[13] over the 2011/12 financial year. The following analysis aims to identify *a)* which aspects of Events work best and why; *b)* how cost-effective Events are; and *c)* which types of companies are more likely to benefit from Events.

To gain a comprehensive understanding of the user experience and impact on business associated with UKTI Events, the analysis draws both on qualitative evidence from interviews and a mystery shopping exercise, as well as quantitative evidence from UKTI's Performance and Impact Monitoring Survey (PIMS).

The UTKI Performance Monitoring Survey captures data reflecting the UKTI Performance Management Framework. PIMS measures 3 core elements:

- Activity volume: de-duplicated number of businesses helped;
- Service quality: clients rating for aspects of service quality, such as the "quality and relevance" of information and advice or contacts;
- Benefits to business: value of additional sales and profit attributed by the client to UKTI help; jobs created; % clients reporting improved business performance and significant business benefit.

The structure of this section follows the key measures of service outreach, quality, user experience and impact[14].

2.1 UKTI Events: outreach and quality

For the purpose of this study, UKTI Events are classified into four broad categories:

- UK-based Events;
- Overseas-based Events;
- Visits; and,
- Defence & Security Organisation (DSO) and Headquarters (HQ) Events.

This classification is chosen so as identify Events that are broadly similar in terms of core features such as cost of attendance, duration, geographic proximity and generality of content. Further, to account for varying levels of intensity we consider a more granular decomposition by Event function, which is summarised in Table 1 below.

The last row of the table relates the categories considered for this study to their administrative (UKTI internal) classification as found in PIMS.

[13] Cost estimates provided by UKTI.

[14] A detailed description of PIMS' key measures and sample selection is provided in Annex 1.

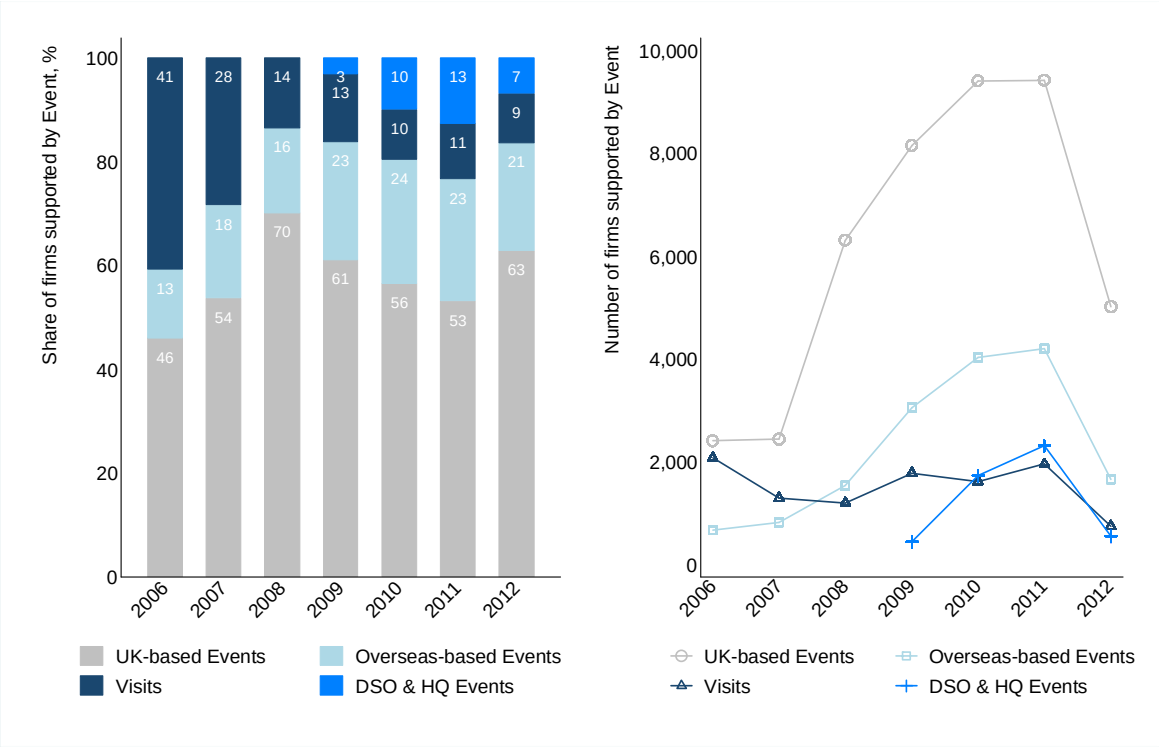
Table 1: Events classification by function of Event

UK-based Events			Overseas-based Events		Visits		DSO & HQ Events	
Seminar Networking event Meeting with overseas company			Attended seminar as speaker Attended seminar not as speaker Networking event		Organised group Independent visit		Seminar Networking event	
ER Events	**Sector Events UK**	**Inward Missions**	**Overseas Posts Events**	**Sector Events Abroad**	**Outward Missions**	**MVS**	**HQ Events**	**DSO Events**

Source: London Economics

The following figure illustrates the distribution of UKTI Events by number of firms supported.[15] As apparent in the figure, there has been a decline in participation in Visits both in absolute and relative terms. For all other Event categories, the number of firms supported has risen steeply, while the relative shares have remained fairly stable over time.[16]

Figure 1: Distribution of UKTI Events by number of firms supported, 2006-2012*



Note: *Data only includes first two quarters of 2012. Time period reflects quarter in which outputs were published. Number of Events recorded in PIMS 2-27 is adjusted using weights from CRM database.

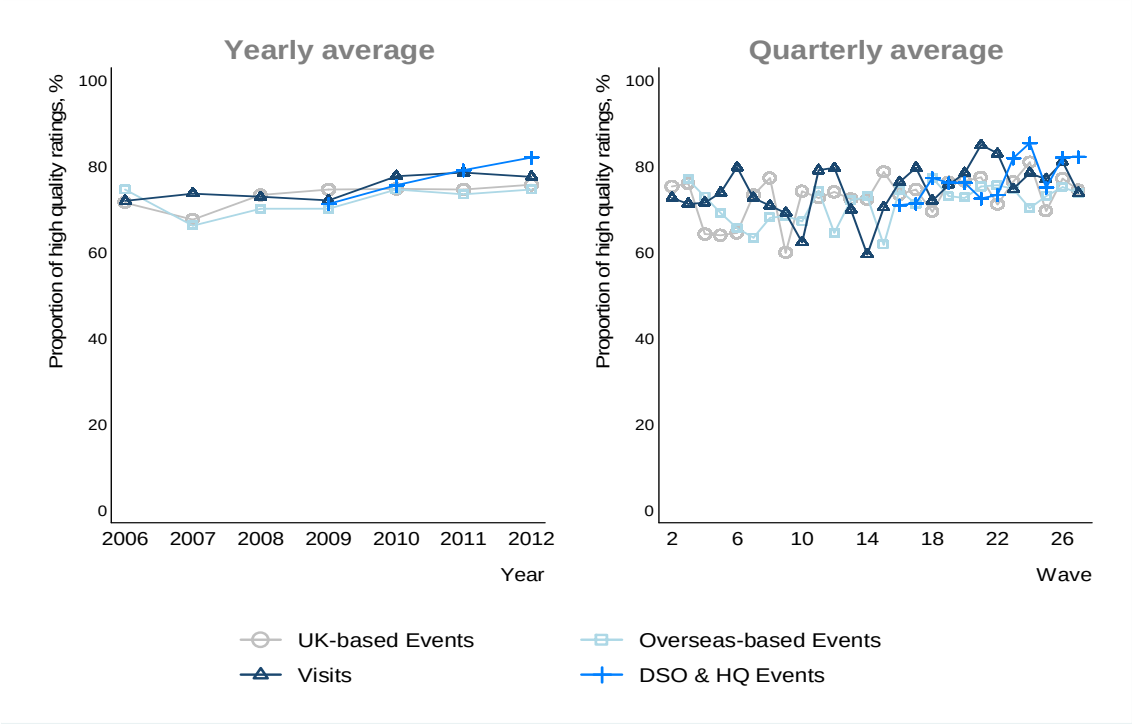
Source: London Economics' analysis of PIMS data waves 2-27

[15] This is not just the number of firms interviewed in PIMS, but all firms supported as recorded in UKTI's CRM database.

[16] The apparent drop in the number of firms supported in 2012 is distorted by the presence of only two quarters of data for this year.

Figure 2 illustrates the proportion of Events that received high quality ratings for each category of Event[17]. As apparent below, the share of companies reporting high service quality has been rising moderately but steadily over the past six ½ years (from 72% to 76%, on average) for all types of Events (though differences across Event categories are not statistically significant).

Figure 2: Proportion of high quality Events, 2006-2012*



Note: *Data only includes first two quarters of 2012. Time period reflects quarter in which outputs were published.
Source: London Economics' analysis of PIMS data waves 2-27

2.2 User experience

In order to gain a comprehensive understanding of the user experience of Events, London Economics carried out a programme of qualitative research consisting of interviews with organisations that organise Events on UKTI's behalf and representatives of companies attending UKTI Events; as well as a 'mystery shopping' exercise to experience a selection of Events first-hand. In particular, the qualitative research comprised:

- A series of interviews with **19 attendees of six different UKTI Events**, conducted over the telephone both before and after the Event (two interviews per participant). The Events covered were:

[17] Service quality is measured in PIMS as an aggregate variable consisting of between 6 and 8 sub-categories, each of which relates to one specific aspect of service quality. Respondents are asked to give a rating for each aspect of service quality in turn, using a scale of 1 to 5, where 5 is very good, and 1 is very poor. The Quality Rating is calculated for each firm based on how many of the elements considered are given a score of at least 4 out of 5 (indicating that the service quality was good or very good). E.g., if a respondent is asked to rate 4 elements and scores 4-5 for 3 of them they would have a Quality Rating of 75%.

  - Smart Cities, Smart Living mission to Singapore;
  - International Marketing Strategy workshop;
  - TechPitch workshop;
  - UKTI at International Motorsport Business Week;
  - Ports Trade Mission to Brazil; and
  - Education Show 2013.
- Consultations, in the form of in-depth face-to-face interviews, with **four providers of UKTI Events**, including:
  - ER Events;
  - Outward missions;
  - Sector events abroad; and
  - Inward Missions
- A **'mystery shopping' exercise**, in which London Economics' staff attended **four UK-based Events** selected to match their personal specialism, experience and interest:
  - an online seminar ('webinar') on opportunities in aid-funded business;
  - the International Aerospace Xchange 2013;
  - a half-day workshop on the topic "Exporting and the Internet"; and
  - the "Libya trade day 2013".

The qualitative research provided background knowledge to inform and structure the quantitative elements of the research, in particular the user/non-user survey. The qualitative evidence revealed the wide range of user experiences that are summarised under the 'Events' label and highlighted that generalisations about 'Events' have to be treated with caution: users' expectations and experience of a low-intensity Event (like a brief information Event) necessarily differs fundamentally from the experience of higher intensity events (such as a week-long overseas mission or a conference-type Event attended as a speaker).

A number of other important insights were gained through the qualitative research: companies generally report a positive experience, but information delivered beforehand is sometimes incomplete or misleading, which leads to dissatisfaction (one participant described being misled by an Event being labelled as a 'masterclass', when he considered the material to be introductory in nature).

Mystery shopping confirmed that the information provided about an Event in advance could be improved, as could general customer service (e.g. responsiveness to questions). However, it has to be recognised that the burden of preparing for an Event is shared between UKTI and the attending companies, as companies that are well prepared stand to benefit most from attending Events. This is particularly true for the overseas-based Events, which were universally described in glowing terms by interviewees.

A specific issue identified is the opaqueness of pricing of some Events: the availability of grants (TAP) and the inclusion of some Events in a package of UKTI services (Passport to Export, Gateway to Global Growth), as well as the treatment of travel costs (which for overseas Events can easily be the largest cost component) make it difficult for decision-makers in the companies interviewed to determine the true cost of an Event.

Regarding willingness to pay, overall, Events are perceived as good value for money, but willingness to pay more is limited by the uncertainty about the value of Events. However, in some cases attendees saw Events as being sold considerably below their value to companies. On the providers' side, nominal fees are seen as desirable to ensure commitment. At the same time, there is concern that higher prices could alienate companies. One provider emphasised that Events must be accessible to SMEs and not be seen as a 'money-making exercise'. However, there was agreement that willingness to pay is increased if benefits of attending Events are clear and visible.

However, there was also strong evidence that impact and outcomes of Events are difficult to measure. Companies have diverse goals depending on Event type (e.g. companies attending outward missions may want to appoint distributors; while companies attending seminars are more interested in training and information). Moreover, the long lead-times involved in measurable successes following an Event exacerbate the difficulty in matching the costs and benefits at the point of consumption (one interviewee gave a timeframe of two to six years for any measurable impacts).

The user experience of Events appears to be generally good. Interviewees and mystery shoppers often noted the high quality of the speakers, including UKTI personnel. However, there was some concern that this was not matched by the quality of the attendees. In some cases, attendees judged that 'more serious' companies would have been able to make greater use of the opportunities on offer (networking etc.). Providers also reported that they saw having 'the right companies' at an Event as important, but described clients as generally serious and professional, something that had not always been the case in the past.

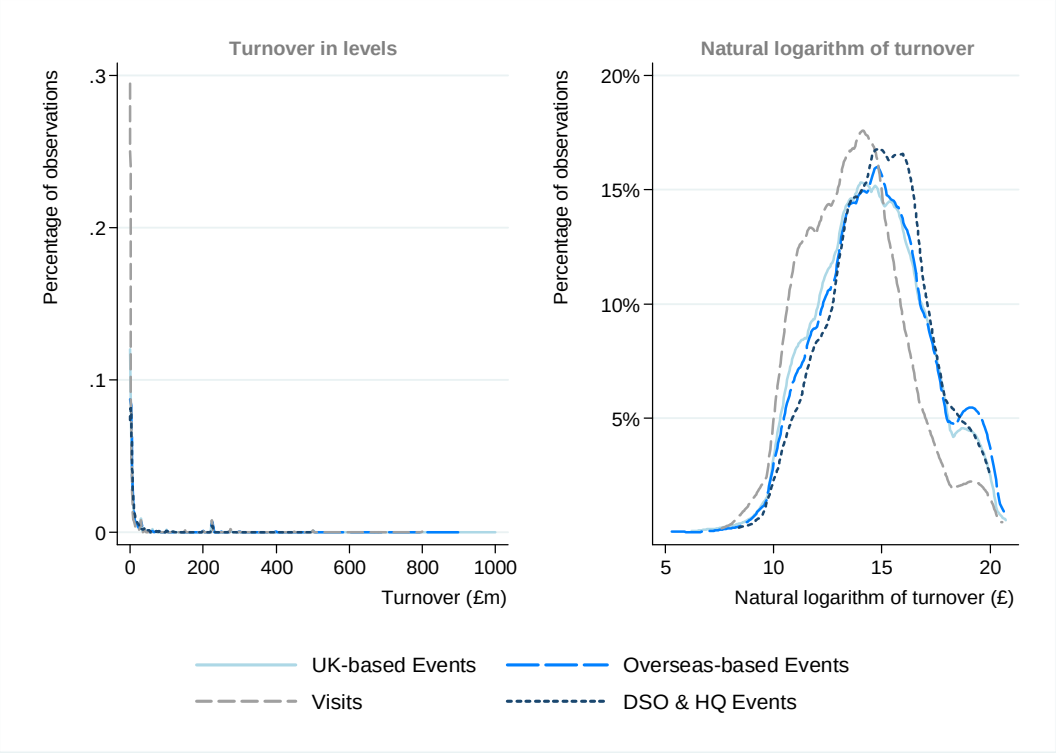
The attitude to selecting clients varied across providers. One provider reported filtering contacts in order to assemble 'credible' groups for overseas visits. Another provider reported serving clients at different levels of experience without any pre-selection based on prospect or perceived capabilities. Overall, finding the 'right companies' for Events continues to be a challenge for UKTI.

2.3 The profile of companies that attend Events

A descriptive analysis of the characteristics of companies that attend Events provides some evidence that companies at an earlier stage of development tend to favour Events based in the UK as well as organised market Visits, while Overseas-based Events are preferred by companies that are larger and have more experience as exporters. To some extent this can be explained by differences in costs of participating in an Event and the specialised nature of its content.

In order to examine the size of companies that attend different types of Events, it is more appropriate to look at the distribution of turnover and employment across companies than plain averages. This is because the turnover distribution of companies interviewed in PIMS (as in the business population overall) is heavily skewed and a small number of outlying observations will have a lot of weight on the average. Moreover, this pronounced skewness is such that, for presentational purposes, it is useful to transform the data into natural logarithms. In fact, as shown in Figure 3, the spread of the distribution of turnover is so wide and at the same time concentrated at low levels of turnover that it is not very informative if displayed untransformed (left); the logarithmic transformation is helpful in this case as it reduces the weight of large outliers (right).

Figure 3: Distribution of respondents by turnover in levels (*left*) and turnover in logs (*right*)

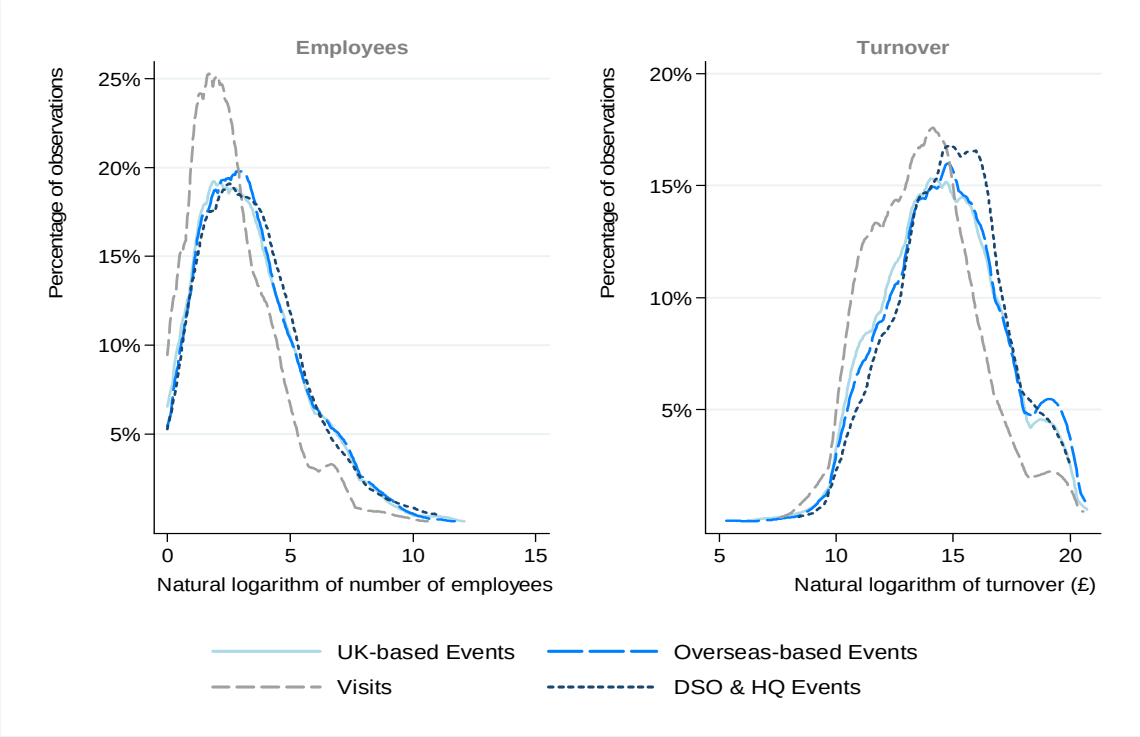


Source: London Economics

Figure 4 illustrates the distribution of the natural logarithm of number of employees (left) and turnover (right) for each Event category. While these distributions largely overlap for UK-based Events, Overseas-based Events and DSO/HQ Events, the distribution of firms that went on Visits is slightly shifted to the left in both pictures, indicating a larger proportion of respondents have lower levels of turnover and staff numbers.

Thus, the data shows that firms that participate in Visits tend to employ fewer staff and generate less revenue than firms enrolled in other types of Events. Unsurprisingly, the majority of participants in Visits received Market Visit Support (MVS), a grant to finance the Outward Mission that is only available to SMEs.

Figure 4: Distribution of respondents by number of employees (*left*) and turnover (*right*)



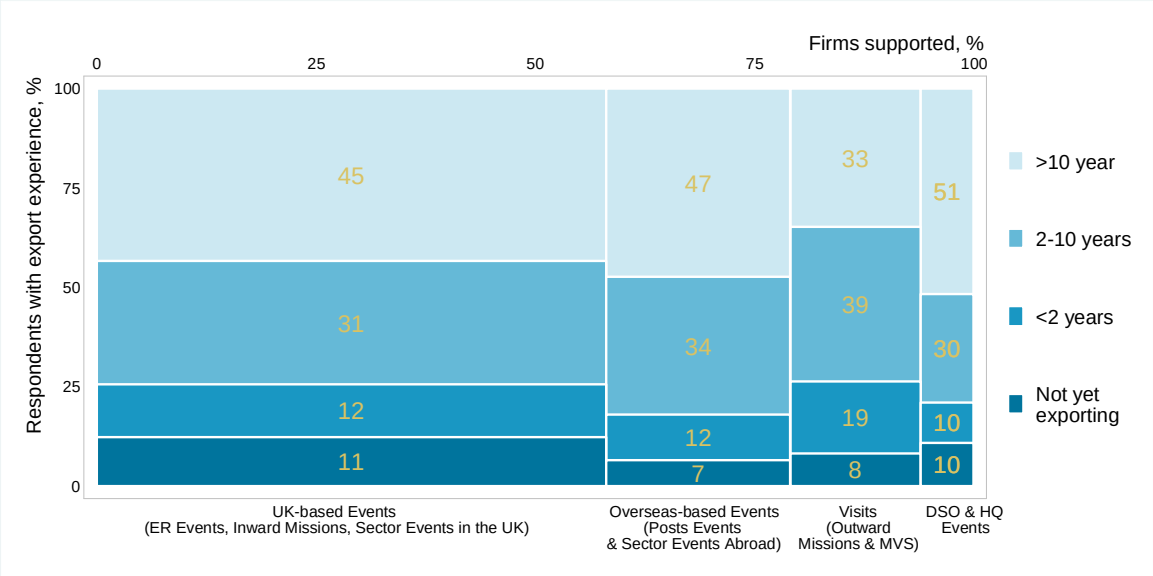
Source: London Economics

Experience doing business overseas is measured as the number of years since a company started exporting goods and services. For each event type, Figure 5 shows the percentage of attendance associated with firms that are at different levels of experience (height of the coloured blocks) as well as the outreach of the Event in terms of number of firms supported (width of blocks).

For instance, only 33% of participants in Visits have over 10 years of experience exporting goods and services. In other words, Visits attract the smallest share of firms with a significant amount of experience as exporters. Conversely, over 80% of participants in Overseas-based Events have at least 2 years of experience and almost 50% have over 10 years of experience. While both of these Event categories are demanding in terms of time commitment and travel costs, it appears as though companies that are smaller and less experienced exporters have a preference for Visits. Again, this may be explained by different levels of funding provided by UKTI[18], as well as a different degree of specialisation of the Event types.

[18] The majority of participants in Visits received Market Visit Support, which is a grant to finance the Outward Mission.

Figure 5: Distribution of respondents by export experience



Note: The width of the bars in the figure below represents the relative sizes of different events in terms of number of firms supported. Numbers in tiles reflect percentages over vertical axis only.

Source: London Economics

2.4 The impact of Events

During the PIMS interview, respondents are asked questions about the impact of UKTI services across a number of aspects of business practices and performance. In this analysis, we consider five impact indicators:

- the percentage respondents reporting any significant business benefit;
- the percentage respondents reporting improved business performance;
- the percentage respondents reporting increased R&D;
- the percentage respondents reporting additional profit[19] above £10,000; and
- the percentage respondents reporting additional profit above £500,000.

The impact that is most commonly reported by PIMS respondents who attended a UKTI Event is a 'significant business benefit' (confirmed by 69% of interviews). 'Improved business performance' is second most commonly reported (52%), followed by profit gain of over £10,000 (32%). Less than 20% of firms report increases in R&D expenditure as a result of participation in a UKTI Event and only 5% report additional profit in excess of £500,000.

[19] The £ additional profit figure reflects the amount of profit generated by the company that is specifically attributed by the client to the service (adjusted downwards where appropriate to take account of non-additionality).

Box 1: PIMS impact measures explained

A06 – Significant business benefit

The PIMS A06 Measure – "Significant Business Benefit", shows the % of clients saying their business had benefited significantly in one or more of the following qualitative measures: **Increased Skills; Changed Behaviour; Barriers Overcome.** These measures report only clients scoring 4 or 5 on a 1-5 scale, where 1 = no benefit and 5= benefited the business to a critical extent. The measures also exclude any client who believe their business would have achieved similar results without UKTI

The most frequently reported qualitative benefits contributing to this measure are:

Barriers to market access overcome:

Gained access to prospective customers or business partners

Or, gained access to information that you would otherwise have been unable to come by

Or, improved your company's profile or credibility

Or, overcome a particular problem or difficulty with a legal or regulatory issue or quality standards

Changed behaviour – developing capability:

Or, Made improvements to products or services

Or, made improvements to processes or management practices

Or, made improvements to your new product development strategy

Or, improved the way you do business in an overseas market

Or, gained the confidence to either explore a new market or expand in an existing one

Increased Skills:

Or, Improved your knowledge of the competitive environment in an overseas market

Or, gained new ideas about products, services, techniques or technologies

Or, improved your overseas marketing strategy

Improved business performance:

The measure reflects the proportion of firms

Who have or expect to increase productivity (in terms of sales per employee) (E21c)

And have or expect to improve profitability (proportion of turnover accounted for by profit) (E21e)

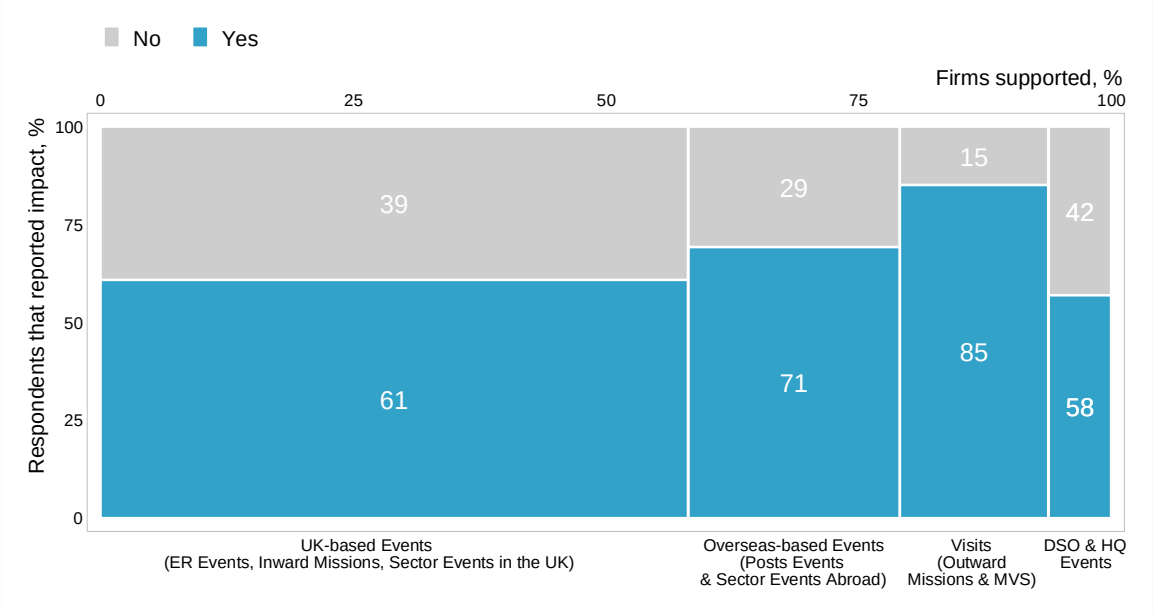
And have or expect to win new orders (D8a) or be invited to tender or quote for work (D8b) or significantly increase total sales as a result of the support (D3q)

2.4.1 The probability of reporting impacts

In this subsection, we examine differences in the probability of reporting business benefits across different types of Events. In essence, we find that Events that are more intensive and require greater commitment in terms of time and resources on the part of the firm are associated with a systematically higher likelihood of reporting business benefits. However, these are also the Events that are most costly for UKTI to stage. Thus, a comparison of benefits with costs is necessary before determining whether it is advisable to reallocate resources to higher intensity Events held overseas.

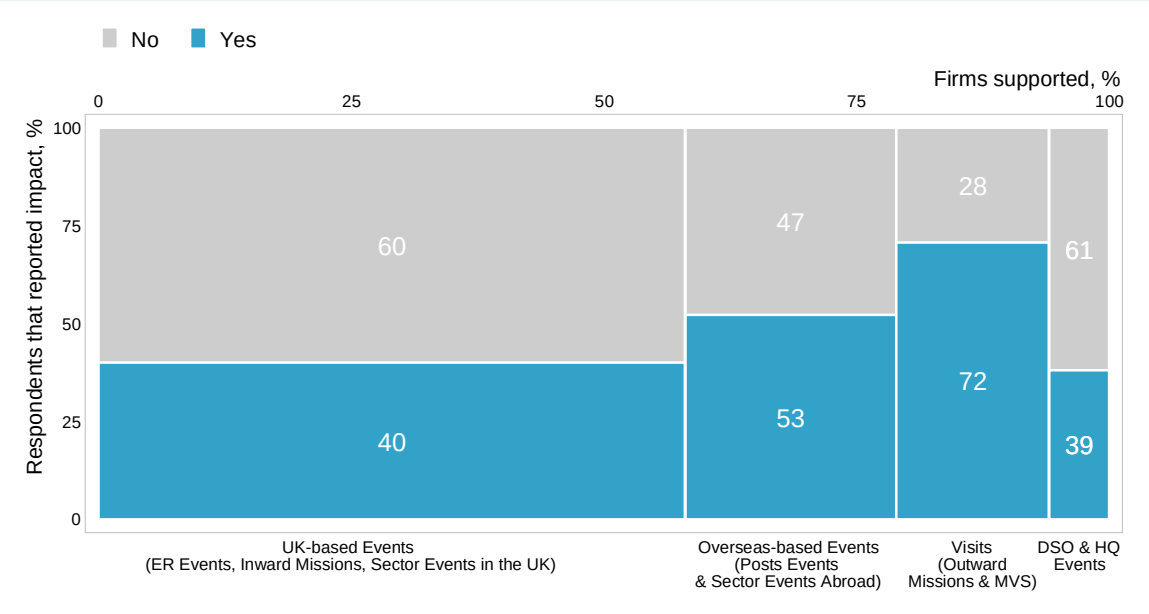
The following four figures illustrate how Events score against each impact measure (the height of the blue bar), as well as their relative sizes in terms of number of firms supported (the width of each bar). As is apparent from the figures, Visits are uniquely associated with the highest share of respondents reporting each impact measure, followed by Overseas-based events. This is likely to be a reflection of the greater degree of contact with prospective clients, partners and distributors offered by these types of Events.

Figure 6: Probability of reporting a *significant business benefit*



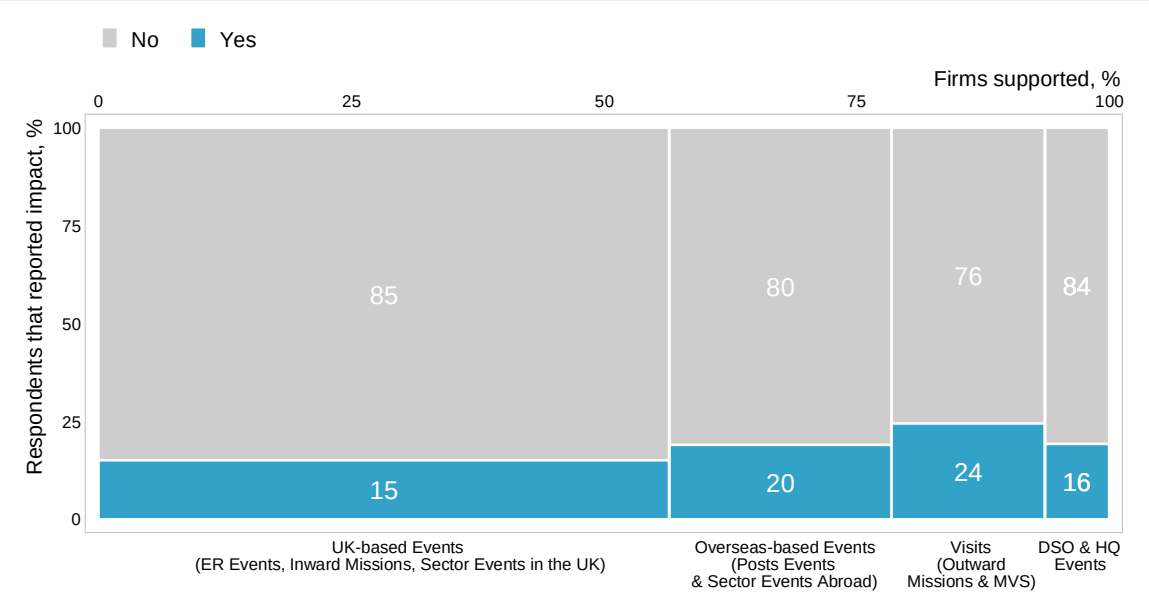
Note: Numbers in tiles reflect percentages over vertical axis only.
Source: London Economics' analysis of PIMS data waves 2-27

Figure 7: Probability of reporting *improved business performance*



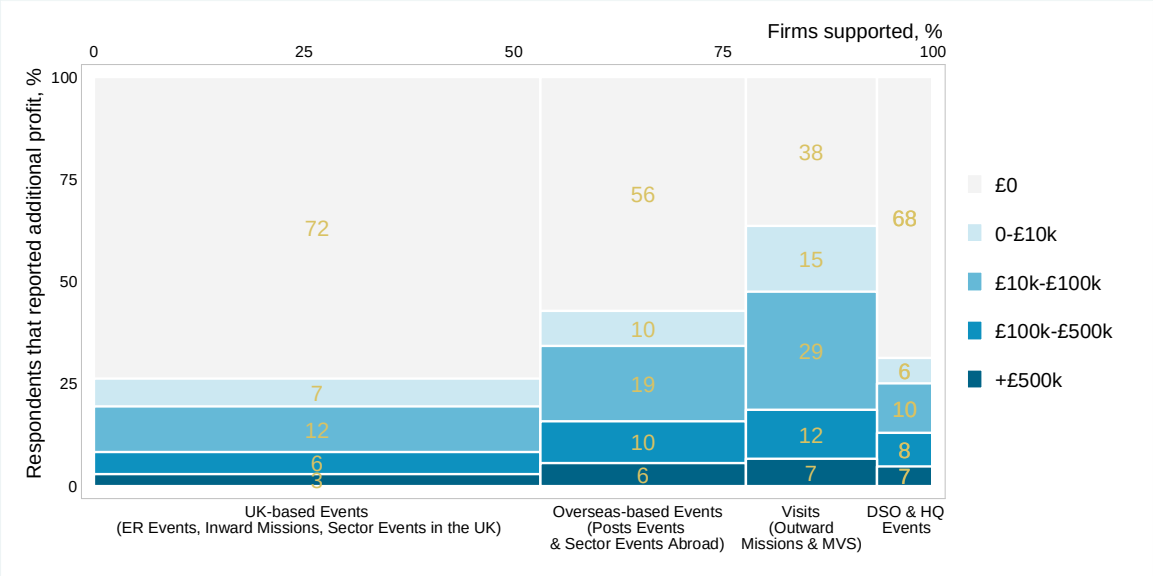
Note: Numbers in tiles reflect percentages over vertical axis only.
Source: London Economics' analysis of PIMS data waves 2-27

Figure 8: Probability of reporting *increased R&D*



Note: Numbers in tiles reflect percentages over vertical axis only.
Source: London Economics' analysis of PIMS data waves 2-27

Figure 9: Probability of reporting *additional profit*



Note: Numbers in tiles reflect percentages over vertical axis only.
Source: London Economics' analysis of PIMS data waves 2-27

When we consider the content or function of the Event (Table 2, below), we find that Events where the participant attended as a speaker (though, again, the most costly to UKTI) score the highest in terms of the proportion of respondents that report business benefits. Moreover, Events that provide networking opportunities receive consistently high scores. There is some evidence that the presence of International Trade Advisors (ITAs) and the longer duration of an Event are also associated with a larger share of realised benefits (see Table 10 and Table 11 in Annex 1).

Table 2: Proportion of firms reporting benefit by Event type and function, %

Event type	Description		Sig. business benefit	Improved business perf.	Increased R&D	Extra profit > £10k	Extra profit > £500k
UK-based Events	ER Events	Seminar	:	:	:	:	:
		Networking event	62	34	15	11	1
		Meeting with overseas company	65	46	27	20	4
	Inward Missions	Seminar	:	:	:	:	:
		Networking event	:	:	:	:	:
		Meeting with overseas company	60	41	12	24	3
	Sector Events UK	Seminar	58	39	11	20	4
		Networking event	61	44	14	22	4
		Meeting with overseas company	:	:	:	:	:
Overseas-based Events	Posts Events	Attended seminar as speaker	79	54	20	42	21
		Attended seminar (not as speaker)	66	45	19	21	6
		Networking event	64	48	15	34	5
	Sector Events Abroad	Attended seminar as speaker	74	57	25	35	6
		Attended seminar (not as speaker)	75	59	21	37	5
		Networking event	73	52	21	35	7
Visits	MVS	Organised group	88	71	25	47	5
		Independent visit	87	83	31	51	7
	Outward Missions	Organised group	83	65	20	44	7
		Independent visit	:	:	:	:	:
DSO & HQ	HQ Events	Seminar	48	25	13	13	2
		Networking event	57	38	21	25	7
	DSO Events	Seminar	53	33	12	26	15
		Networking event	65	44	15	33	9

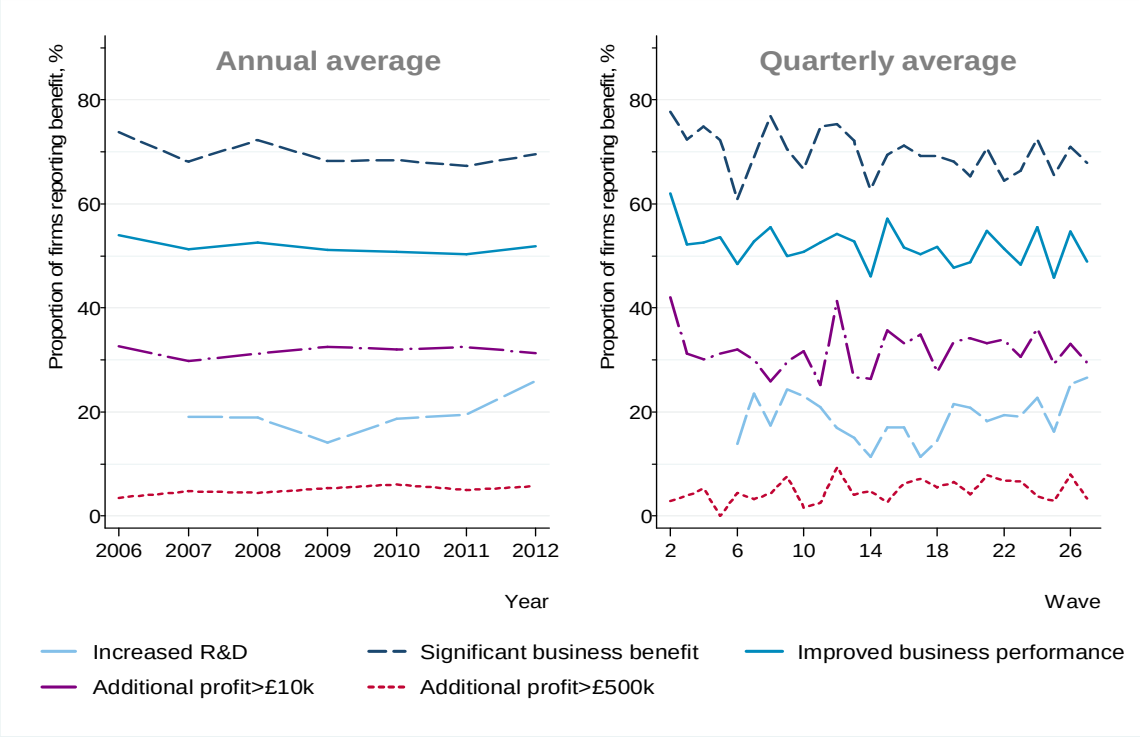
Source: London Economics' analysis of PIMS data waves 2-27

2.4.2 Trends in impact measures

Figure 10 shows how the share of PIMS respondents who report business benefits from attending UKTI Events has evolved over time. While there is clear evidence of quarterly fluctuations in positive PIMS responses, over the years this proportion has remained relatively flat. The only indicator that shows any sign of a trend is increased R&D, which has been rising slightly in recent years[20], though this is partly the result of a recovery from a recessionary slump during the recent economic crisis.

[20] A rough test to verify the statistical significance of these trends confirms an upward trend in the proportion of respondents reporting increased R&D and a downward trend in the proportion of respondents reporting significant business benefits (see Table 12 in Annex 0).

Figure 10:Comparison of trends in impact indicators, annual (*left*) and wave (*right*) averages



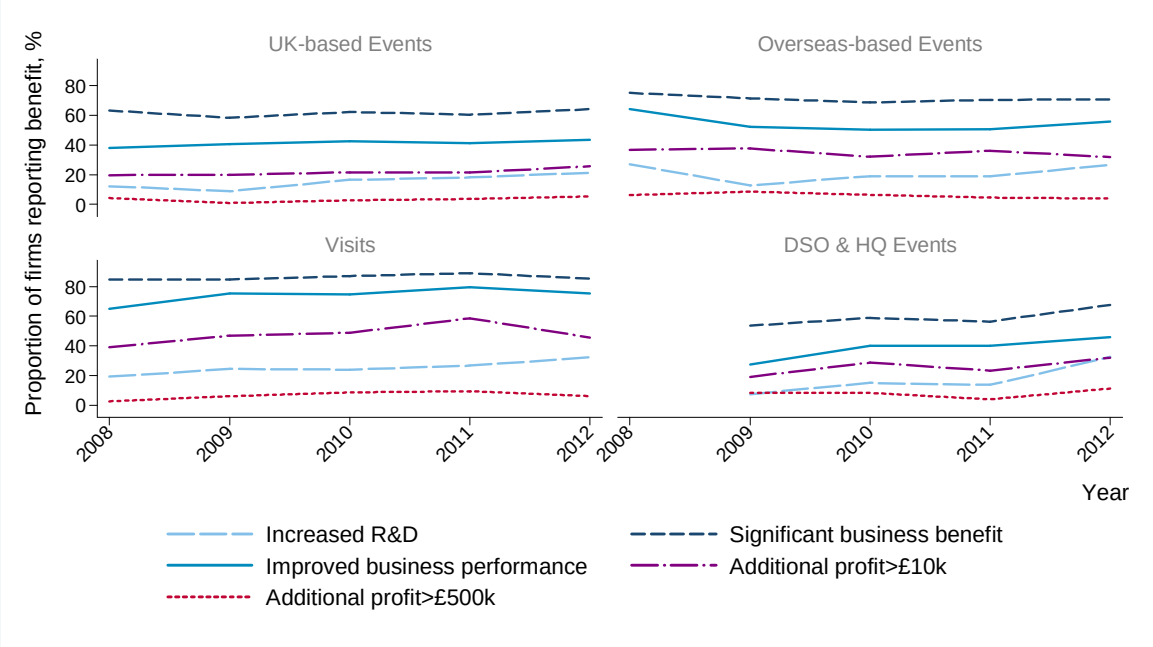
Source: London Economics' analysis of PIMS data waves 2-27

It should be noted that analysis of time trends at the aggregate Event level is not valid for the earliest PIMS years (2006-2007) because recording in these years was less complete for the lighter forms of Events (e.g. UK-based seminars) than for those which involved greater direct cost (e.g. Visits). Thus, the aggregate time series may be pulled down by a composition effect that actually reflects improved completeness of recording.

This being said, results described above remain broadly true for specific categories of Events (Figure 11), with one key difference: UK-based Events, Visits, DSO & HQ Events exhibit a growing proportion of attendees that report significant profit gains (i.e. over £10,000).[21]

[21] This is also statistically significant at the 10% confidence level (See Table 13 in Annex 0)

Figure 11:Comparison of trends in impact indicators across Events, annual average



Source: London Economics analysis of PIMS data waves 2-27

2.4.3 Financial impact: the value additional profit

This subsection is concerned with the magnitude of the profit gain that accrues to companies who attend Events, net of what they would have generated independently of UKTI support (i.e. *net of non-additionality)*.

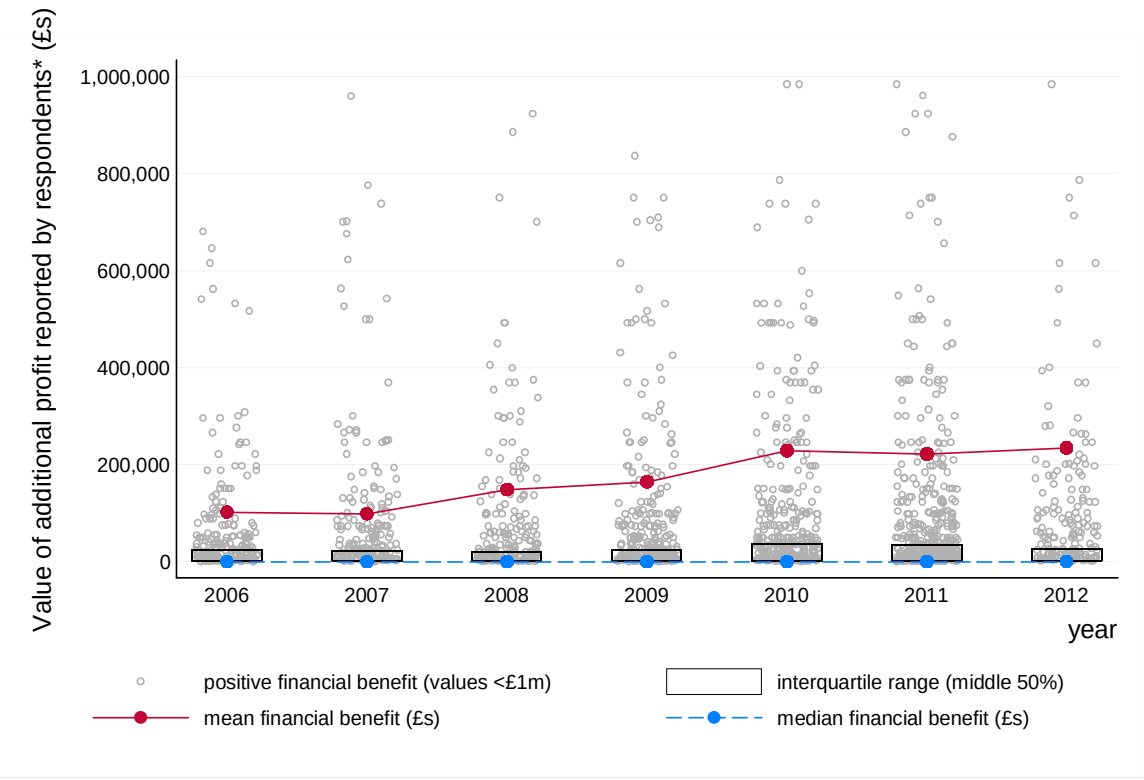
Figure 12 represents the distribution of profit gains from attending Events, over the period 2006 to 2012. The grey dots reflect individual data points (cut off at £1 million so as to aid visibility), while the blue and red lines correspond to overall median and mean, respectively. Two key features of the data are apparent from this figure:

- The median reported additional profit is zero in all years; and
- The mean reported additional profit is positive and rising over time;

These two traits reflect the skewed nature of the distribution of additional profit gains: while more than 50% of companies who attend an Event do not observe a direct financial benefit, there are a small number of firms who report very large profit gains from attending Events, which drives up the overall mean. Moreover, the magnitude of the additional profit generated by such firms is growing over time.

A simple regression of profit gains on an annual time trend and a constant confirm that, on average, additional profit from attending UKTI Events is rising by approximately £26,600 per year (see Table 14 in Annex 1).

Figure 12:Distribution of additional profit from attending Event, 2006-2012



Note: *Net of non-additionality. Mean, median and interquartile ranges are calculated based on the entire sample of respondents. The bubbles represent the individual data points, cut off at £10 million to aid visibility.
Source: London Economics' analysis of PIMS data waves 2-27

Given a total cost of Events of £90.6 million for the 2011/12 financial year[22], the average additional profit associated with the same financial year (£173,000), multiplied by the number of firms assisted by Events (17,084) implies a benefit-cost ratio of **33:1**, although this result is sensitive to a small number of 'big wins'[23].

While these results are heavily influenced by extreme outliers, there is a clear case for including the exceptional big wins in the benefit-cot ratio. First, they are real: each of these wins has been through a verification check (whereby a senior member of the OMB team contacts the company in question) to confirm that the reported gain was genuine and correctly recorded. Also, while the probability of achieving a very large gain for any given business is very small, this is just a reflection of the skewed nature of payoffs from investment in business development (and, more generally, profits) that accrue to the business population in general. Moreover, given that these very large gains are attributed *by the client* to UKTI support, they should be included in the overall assessment of the impact of UKTI services.

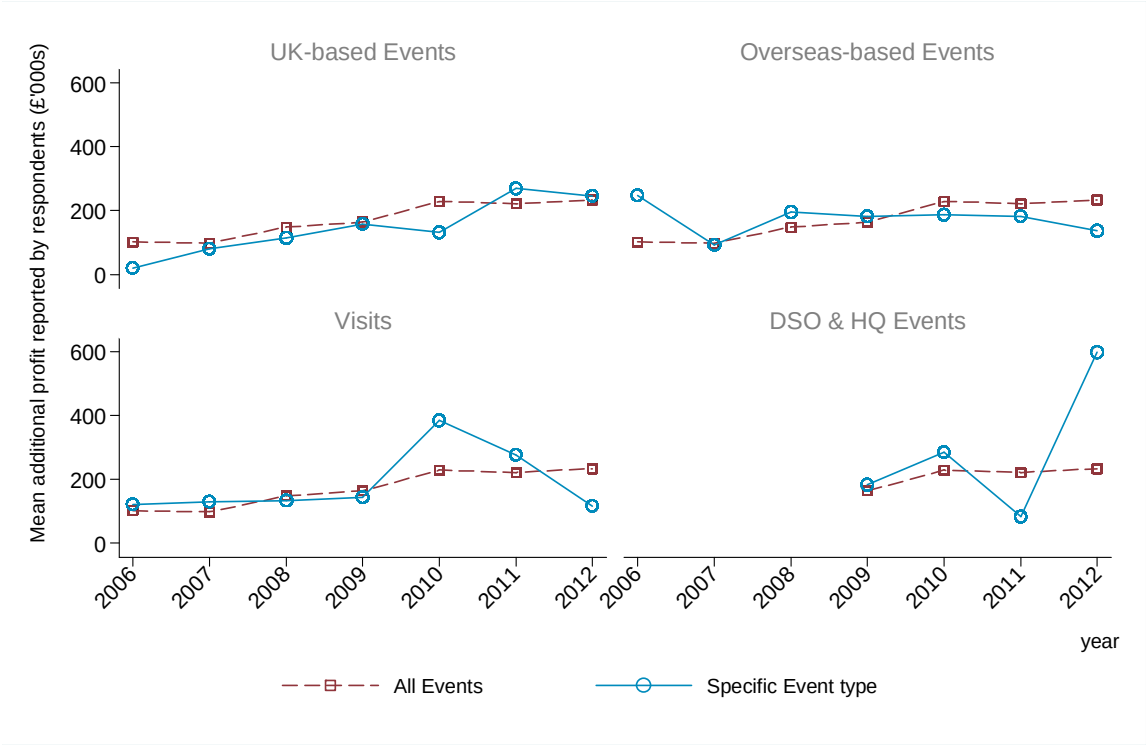
[22] Cost estimate provided by UKTI.

[23] If we exclude the top 2% of reported profit gains, average additional profit from attending UKTI Events drops to £56,500, and the benefit-cost ratio to 11:1.

In terms of individual Event categories, we observe significantly greater fluctuations in mean reported profit gain (see Figure 13), particularly for Visits and DSO & HQ Events. Regression analysis shows that average reported additional profit is trending upward for all categories of Events except Overseas-based Events (for which it is flat). DSO & HQ Events exhibit the strongest trend, followed by UK-based Events.[24]

In summary, the overall impression is that across UKTI Events the average financial value of attending these Events is rising.

Figure 13:Mean additional profit reported by Event type



Source: London Economics' analysis of PIMS data waves 2-27

2.5 Firm-level determinants of the impact of Events

This section attempts to shed light on the extent to which the probability of reporting business benefits from attending Events can be predicted on the basis of firm-level characteristics. After a brief explanation of key methodological issues, the following sub-sections present and discuss the results of regression models that were fitted to the PIMS data in order to provide answers to the question above.

[24] See Table 14 in Annex 0

2.5.1 Methodological issues

In order to identify which firm characteristics are associated with a greater likelihood of reporting business benefits, we fit a different model for each outcome variable (e.g. significant business benefit, increased R&D, etc) without changing the predictors (e.g. number of years exporting, foreign ownership, etc). For each model, we discuss:

- the probability of reporting the outcome given firm characteristics;
- trends associated with these probabilities; and
- the predictive power of the model.

Due to sample size limitations for certain types of Events, we focus mainly on the drivers of firm-level outcomes for UKTI Events as a whole.

This analysis applies the same methodology that is used in previous research carried out for UKTI, which looks at trends in the reported business benefits associated with *all* UKTI trade services, and investigates their determinants[25].

Probit regression

The questions that are addressed in this section seek to explore the determinants of the probability of reporting a given benefit (marginal effect), such as qualitative business benefit or a significant financial benefit (e.g. >£10,000). The dependent variables in the proposed analysis are therefore zero-one indicators.

The analysis is conducted using multivariate probit models, in keeping with previous work undertaken for UKTI on this topic[26]. Probit regressions are typically used to model discrete outcomes (binary yes/no dependant variables). In the present context, the probit model lends itself to identifying the factors (i.e. firm characteristics) that influence the probability that a given respondent will or will not report the benefit in question. In other words, it serves to assess which firm characteristics are associated with a higher likelihood of achieving a business benefit from attending a UKTI Event.

Formally, the probit model is:

$$Pr(Y=1) \mid X_1, X_2, \ldots, X_k) = F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k);$$

where the left-hand side is ***the probability of reporting a given benefit*** and the right-hand side contains the various business characteristics and strategy variables available in PIMS. While the probit model is generally preferred for binary outcome variables, it does not perform well if the data contains many unusual observations. In the PIMS data, this is the case for the outcome variable that measures whether firms received a financial benefit greater than £500,000. Here we use a linear probability model instead of probit.

[25] London Economics (2013), *Secondary Analysis of 24 waves of PIMS*, report for UKTI, January 2013.

[26] Breinlich, H., Mion, G., and Nolen, P. *Secondary Analysis of Data from UKTI Performance and Impact Monitoring Survey*, report for UKTI, January 2011

Variables

Our models were developed in an iterative procedure, starting with the broadest number of variables and then refined by iteratively eliminating insignificant variables. The variables that were used to address the various research questions are listed below.[27]

Outcome variables: impact of UKTI support

- Significant business benefit
- Improved business performance
- Increased R&D
- Financial benefit >£10,000
- Financial benefit>£500,000

Predictors: business profile and strategy

- Age of firm (ordinal, 8 categories)
- Percentage export turnover (continuous, X1a, mid-point of X1b)
- Employees (continuous, F2a, mid-point F2b)
- Innovative firm (binary)
- Highly innovative firm (binary)
- Growth objective (ordinal, 4 categories)
- Foreign ownership (binary)
- Business plan containing overseas sales target (binary)

It must be noted that the model described above is not intended to capture all the determinants of firm performance. Rather, the purpose of the model is to determine to what extent *the* profile *information collected in PIMS* can help predict firm-level outcomes.

We ignore service quality measures as explanatory factors (though they are found to be the strongest identifiable predictors of reporting a business benefit in previous research on PIMS[28]) because we are interested in characteristics of firms that are associated with a higher likelihood of reporting impacts. The aim is to gain a clearer understanding of which types of companies get the most out of events; thus, examining the relationship between perceived quality of an Event and reported impact is out of the scope of this analysis.

Transformation and standardisation of variables

A number of variables in PIMS have been re-coded for the econometric analysis. While it is normally good practice to preserve as much granularity in the data as possible, there are circumstances under which simplification is justified. In particular, using discrete instead of continuous predictors or reducing the number of categories in a discrete predictor is helpful if:

[27] We disregard all quality indicators due to their likely correlation with un-observables that also affect outcome variables.

[28] London Economics (2013).

- certain categories of an underlying continuous variable are of inherent policy interest (for example, the effect of being an SME rather than a large company might be more interesting than the marginal effect of a unit increase in the number of employees),
- an ordinal variable contains unequally spaced intervals.

Under these considerations, a number of PIMS variables warrant transformation, which is briefly explained in Box 1.

Box 2: Variable transformations

Age of firm
The AGE (S4) variable in PIMS is recorded as an ordinal variable with 9 categories and unequally spaced intervals. We transform AGE to a variable with only 4 categories: not yet trading (1), between 0 and 5 years ago (2), between 5 and 10 years ago (3) and over 10 years ago (4).

Employees
In PIMS, the EMPLOYEES (F2) variable is recorded as a continuous variable. For policy reasons, we would be more interested in the effect of being an SME compared to a large company, rather than the marginal effect of increasing the number of employees. For this reason, we recode EMPLOYEES to an ordinal variable with 5 categories: Zero employees (1), 1-9 employees (2), 10-49 employees (3), 50-249 employees (4) and over 250 employees (5).

Export experience
The EXPORT EXPERIENCE (S5A) variable in PIMS has 9 categories. However, some UKTI services are aimed at new exporters (0-2 years), whereas others are for more experienced exporters (2-10 years). Therefore, 9 categories appears to be too many in this case and we recode EXPORT EXPERIENCE to an ordinal variable with 4 categories: have not yet started exporting (1), between 0 and 2 years ago (2), between 2 and 10 years ago (3) and over 10 years ago (4).

Innovative firm
Both INNOVATIVE FIRMS and HIGHLY INNOVATIVE FIRMS are recorded as binary variables in PIMS. However, highly innovative firms are a subset of innovative firms, which implies innovative firms will always equal one when highly innovative firms equals one. This relationship between the variables can make it difficult to interpret regression results. To overcome this interpretation issue, we create a variable called INNOVATIVE with 3 categories: not an innovative firm (0), innovative firm (1) and highly innovative firm (2). Now, innovative and highly innovative firms are mutually exclusive.

2.5.2 Interpreting the regression results

Probit coefficients

Raw probit regression coefficients[29] are useful in two ways:

- the sign on a coefficient tells us whether an increase in the value of the predictor increases or lowers the probability of the outcome; and
- the p-values (and confidence intervals) tell us how reliable the estimates are and, importantly, whether they are statistically different from 0.

[29] The probit regression coefficient expresses the change in the z-score (probit index) for a one unit change in the predictor. Its interpretation is therefore not very intuitive. For this reason, throughout most of the following analysis we concentrate on predicted probabilities, instead.

Looking at the raw coefficients is also informative to determine the stability of the estimates over time. While the descriptive analysis in previous chapters shows that time trends are not a major feature of the PIMS data, a time series displays of the regression coefficients is still useful to give sense of trends[30].

Predicted probabilities

Predicted probabilities associated with probit models reflect the probability of observing a given (binary) outcome, given a set of observable characteristics. They are easily derived from probit coefficients and are widely used in the literature to predict discrete choices or outcomes.

More specifically, the predicted probability of outcome Y given a certain predictor value depends on the value of all the other predictors in the model. When looking at an individual predictor, we hold all the other predictor values constant at their means[31]. For example, a predicted probability of 0.65 for EMPLOYEES = 2 tells us that, for a hypothetical firm with average values on all other variables and 1-9 employees, the predicted probability of seeing an increase in business performance is 65%.

Previous research that examines the firm-level determinants of the impact of the broader range of UKTI services[32] successfully employed similar probit models to give reliable estimates of the predicted probabilities of reporting impacts. Table 3 below summarises the finding of this research in comparison with the corresponding findings that are specific to Events (and will be discussed in detail in the rest of the chapter).

[30] See Gelman and Hill (2007), p. 73.

[31] This is the default; for our analysis there is no basis in theory or past experience that would lead us to impose specific values for individual predictors

[32] London Economics (2013)

Table 3: Business characteristics and strategy factors that have a POSITIVE statistically significant impact on probability of reporting outcomes

Outcome variable	Higher probability of reporting outcome: UKTI Events	Higher probability of reporting outcome: All UKTI services
Improved business performance	1. firms with a business plan for overseas expansion 2. firms with less export experience 3. more innovative firms 4. firms under domestic ownership 5. older firms	1. more innovative firms 2. firms with a business plan for overseas expansion 3. firms with less export experience 4. firms under domestic ownership
Significant business benefit	1. firms with a business plan for overseas expansion 2. firms with less export experience 3. firms under domestic ownership	1. more innovative firms 2. firms with more ambitious growth plans 3. firms with a business plan for overseas expansion 4. firms with less export experience 5. smaller firms 6. firms under domestic ownership
Increased R&D	1. more innovative firms 2. firms with less export experience 3. smaller firms 4. firms with less ambitious growth plans	1. more innovative firms 2. firms with less export experience 3. smaller firms 4. firms under domestic ownership
Financial benefit > £10,000	1. older firms 2. firms with a business plan for overseas expansion 3. firms with less export experience 4. firms under domestic ownership	1. older firms 2. more innovative firms 3. firms with a business plan for overseas expansion 4. firms with less export experience 5. smaller firms 6. firms under domestic ownership
Financial benefit > £500,000	1. more innovative firms 2. firms with a business plan for overseas expansion 3. larger firms 4. firms with less export experience	1. more innovative firms 2. firms with a business plan for overseas expansion 3. larger firms 4. firms with less export experience

Source: London Economics

2.5.3 Outcome: significant business benefit

First, we look at the model of 'significant business benefit'. Predicted probabilities of predictors are illustrated in Figure 14. The following variables were significant in the model[33]:

- Export Experience (between 2 and 10 years**; over 10 years**)
- Percentage Export Turnover*
- Ownership (foreign-owned***)
- Overseas Business Plan***

[33] ***p<0.01, **p<0.05, * p<0.1

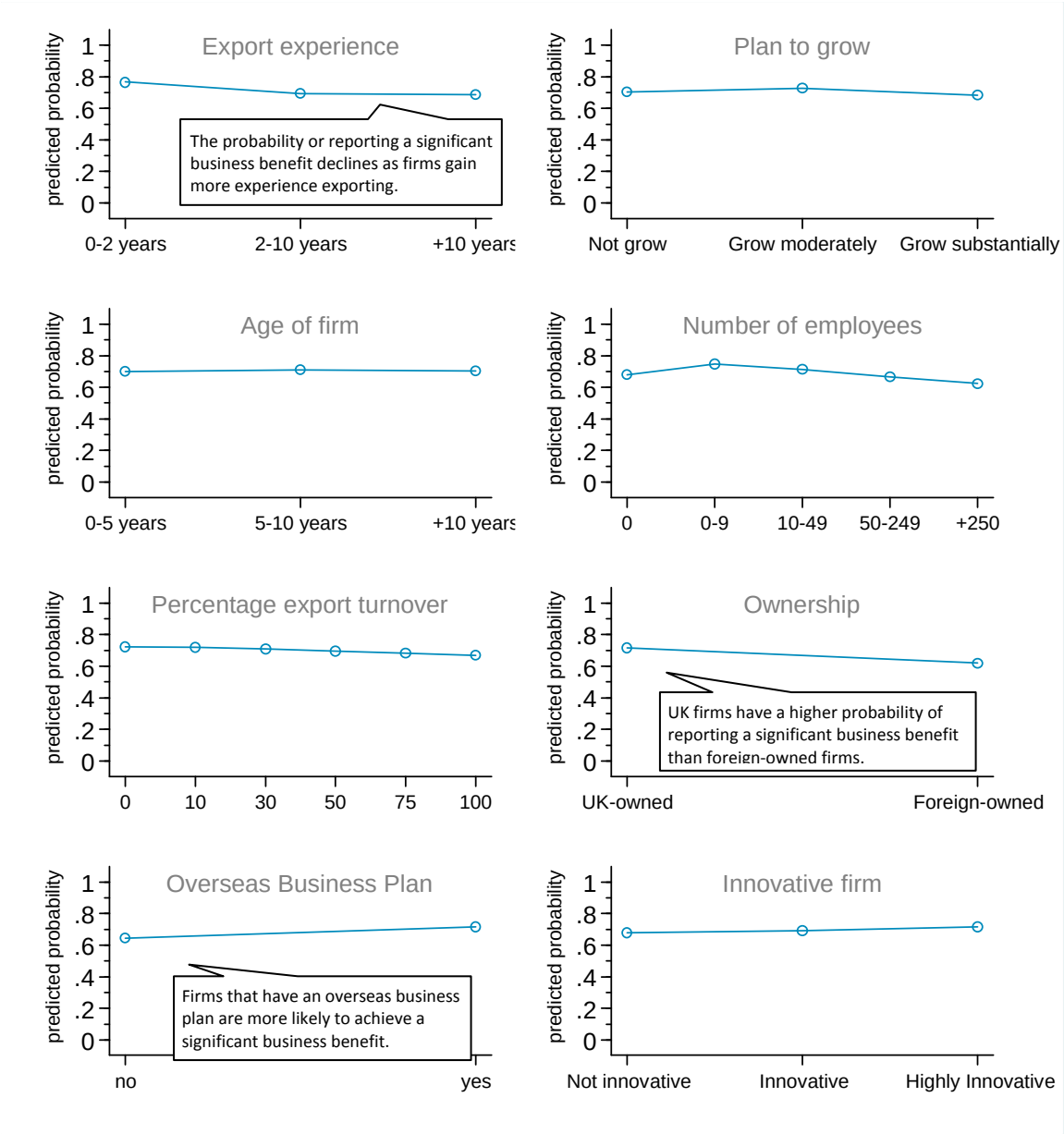
As export experience increases from 0-2 years to over 10 years, the probability of achieving significant business benefits after attending an Event decreases from 0.76 to 0.69. In other words, **Events are particularly beneficial to companies that are new to exporting**, while this benefit diminishes with experience. This tendency is corroborated by the fact that the coefficient on the percentage of turnover accounted for by exports is also negative: as the volume of exports increases from 0 to 75% of turnover, the probability of observing a significant business benefit drops from 0.72 to 0.68. Again, **as firms become more intensive exporters they derive fewer benefits from attending Events**.

On the other hand, **companies that have a written business plan with targets for overseas sales are more likely to experience significant business benefits after attending an Event** (0.72) than those who do not (0.62). This combined with the previous finding suggests that, while companies that are more experienced have less to gain from UKTI Events, companies that are better prepared are more likely to benefit.

Another interesting finding from this analysis is that **foreign-owned firms are less likely to report significant benefits following an Event than are UK-owned firms**.

Tables summarising marginal effects and predicted probabilities for all impact measures are included in Annex A1.1.

Figure 14:Significant business benefit: predicted probabilities



London Economics' analysis of PIMS data waves 2-27

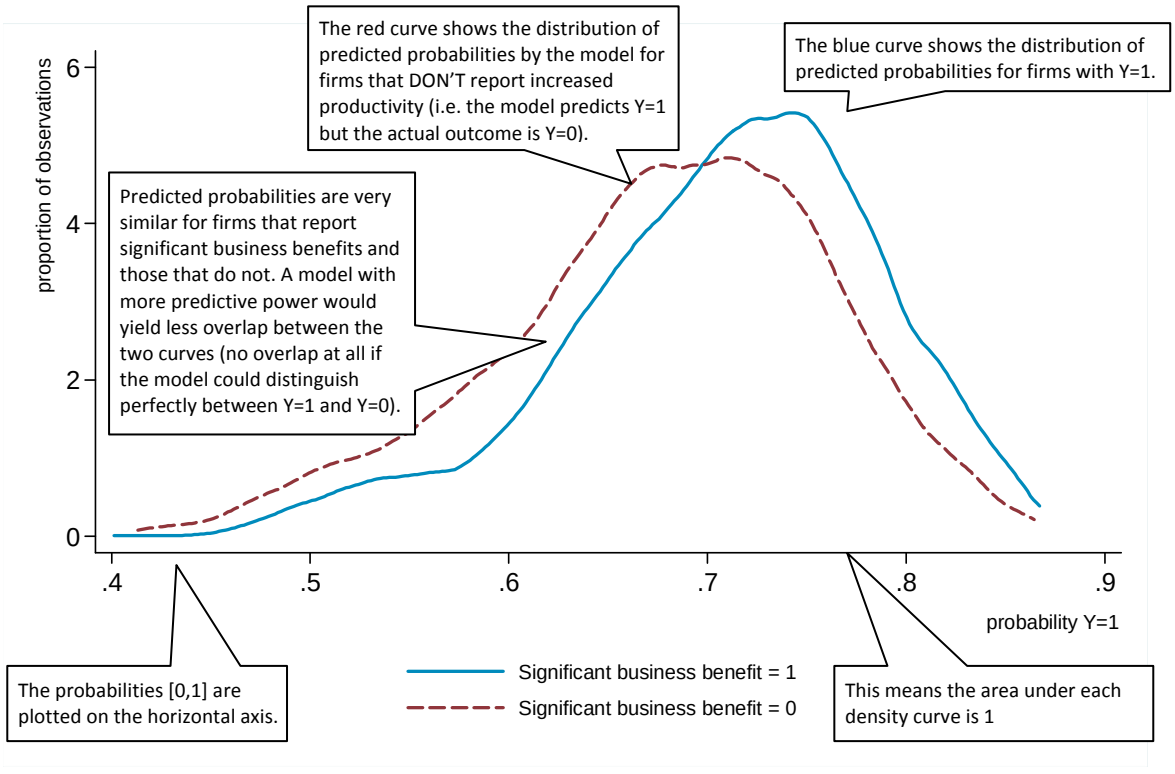
Predictive power

Can our model predict whether a company will experience a significant business benefit as a result of UKTI support? We can test this by comparing the predicted probabilities for firms who report that they observed such a business benefit with the predicted probabilities for those that didn't. More specifically, our model assigns a probability that the outcome is realised (Y=1) to each observation (service delivery). This is the 'predicted probability' based on the unique configuration of parameter values observed for this firm (number of employees, export experience, etc.). If the model is useful for making predictions about the likelihood of future success as a result of UKTI

support, we would expect that, on average, firms that report benefits have a higher predicted probability than firms who don't (and this would be represented by the two graphs below being 'far apart' or 'not overlapping' implying the modelling is able to distinguish between the firm reporting a benefit and firms not reporting a benefit).

We can gain a more complete picture by looking not at the average (which after all might be distorted by outliers), but at the complete distribution of predicted probabilities for the two groups (those who report the benefit and those who don't). This is shown in the figure below. Figure 15 shows that the predictive power of this model is low (there is a large area of overlap – and the firms reporting a benefit and not reporting a benefit cannot be easily distinguished): the model is largely unable to predict whether a firm will experience a significant business benefit based on the profile and strategy variables in PIMS.

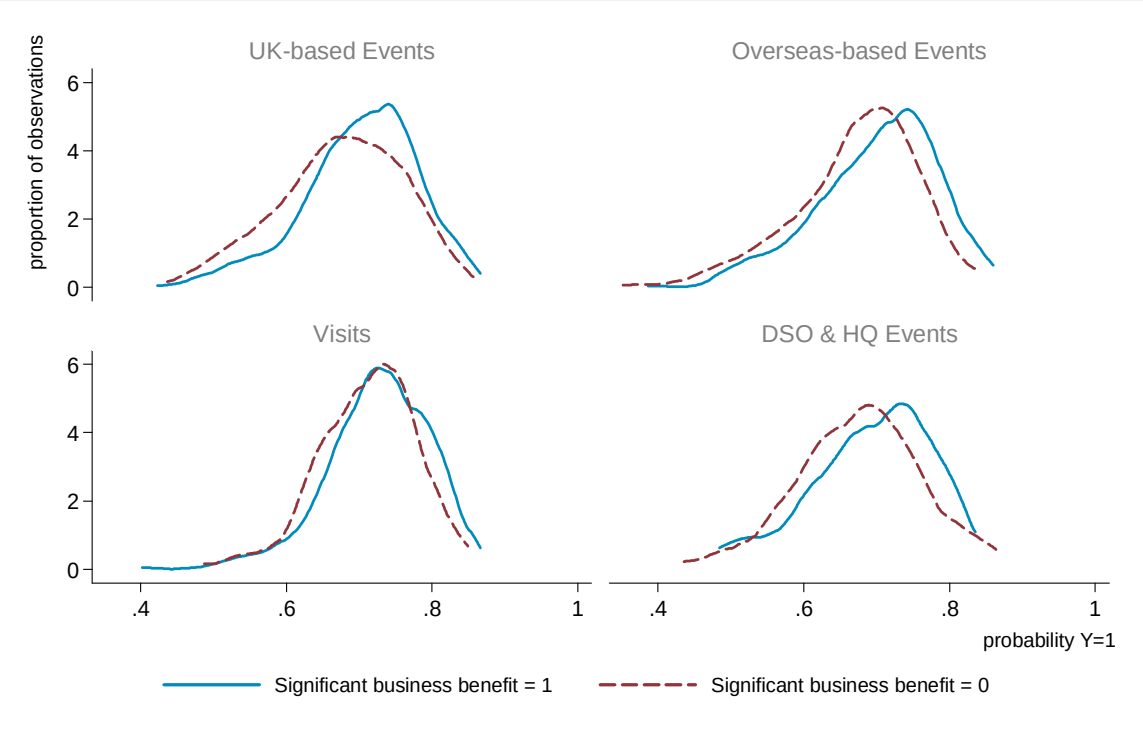
Figure 15:Significant business benefit: predictive power



Source: London Economics' analysis of PIMS data waves 2-27

As shown in Figure 16, the predictive power of the model is broadly the same across different Event types, with UK-based Events yielding only marginally better predictions than, say, Visits, for which the two curves almost exactly coincide.

Figure 16:Significant business benefit: predictive power by Event type



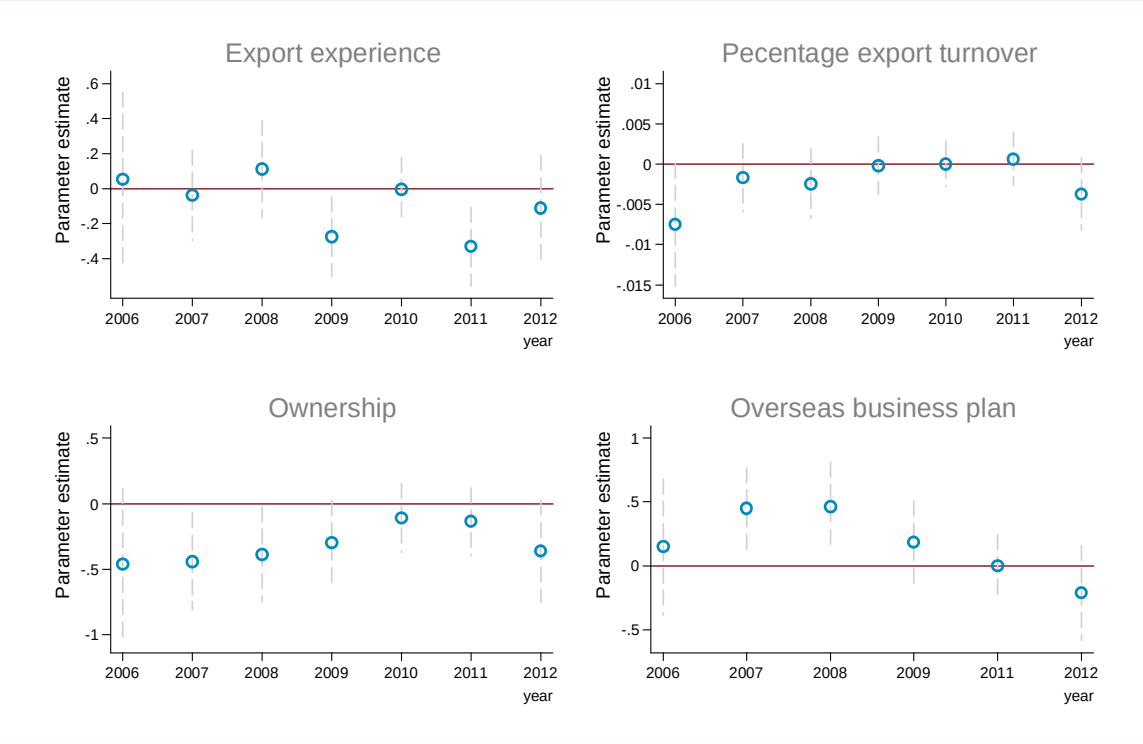
Source: London Economics' analysis of PIMS data waves 2-27

Time series display

To give a sense of the trends in the coefficients we show how the coefficient estimates for the most significant predictors have evolved over time. Note that fitting the model to only one year of data reduces the significance of the estimates. For this reason, we refrain from further disaggregating the data by Event type.

As expected, none of the coefficients shows a very pronounced trend (Figure 17). In fact, most parameter estimates oscillate around zero with little systematic variation over time. However, it is noticeable that the coefficient that captures the impact of having a business plan with overseas sales targets has become **less** significant over time – over the years the point estimate moves closer to the zero-line.

Figure 17:Significant business benefit: time series displays



Source: London Economics' analysis of PIMS data waves 2-27

2.5.4 Outcome: improved business performance

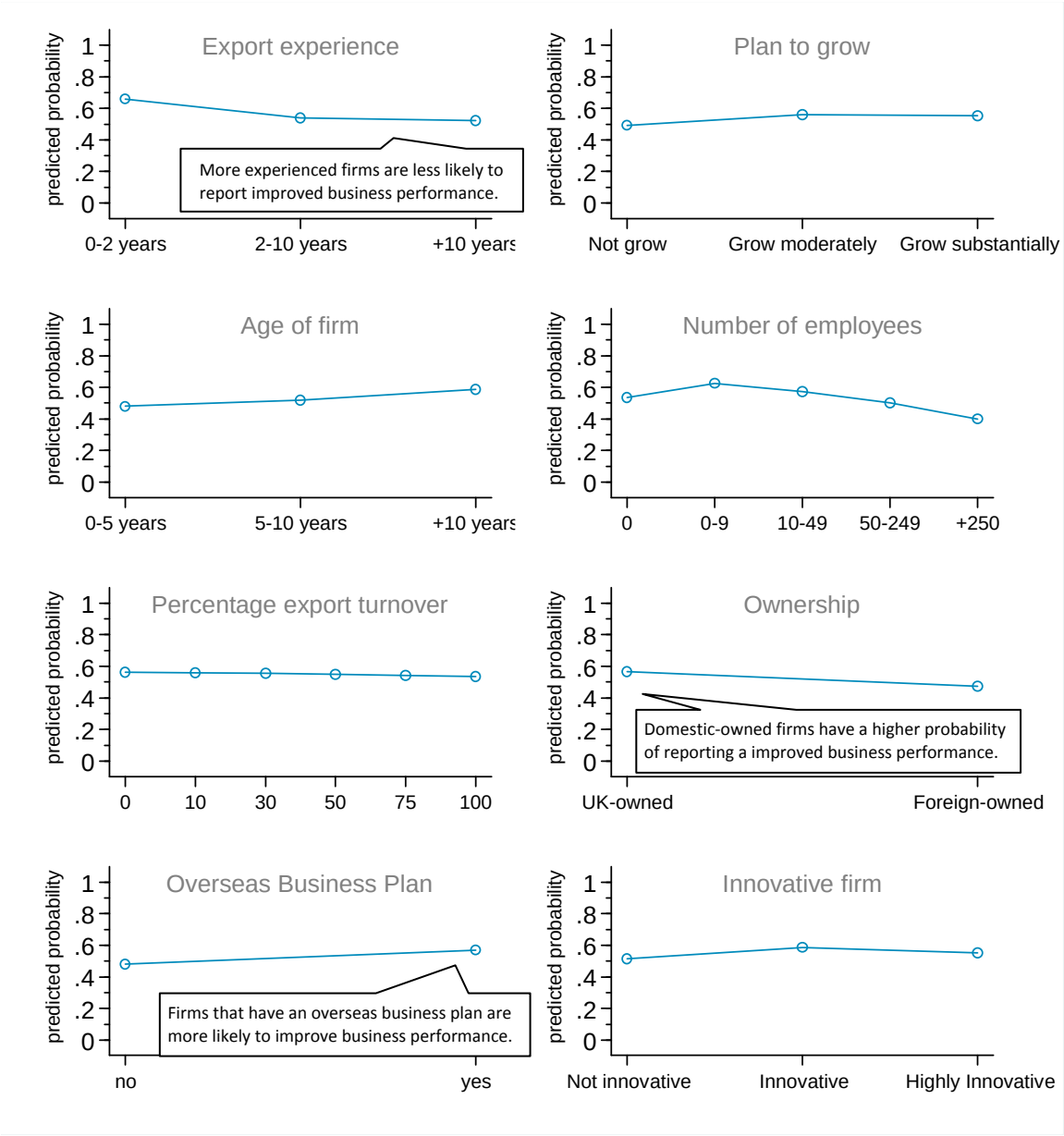
The results for the next outcome, improved business performance, are qualitatively very similar as those generated in the previous section; however, predicted probabilities are lower, overall. The most significant variables in the model when the dependent variable is improved business performance are:

- Export Experience (between 2 and 10 years***; over 10 years***)
- Age (over 10 years***)
- Ownership (foreign-owned***)
- Innovation (innovative firm**)
- Overseas Business Plan***

While companies that have already gained experience as exporters are less likely to improve business performance as a result of Event attendance, companies that are at a later stage of development (e.g. over 10 years since incorporation) are more likely report this impact.

Overleaf we present a graphical summary (Figure 18) of the predicted probabilities.

Figure 18:Improved business performance: predicted probabilities

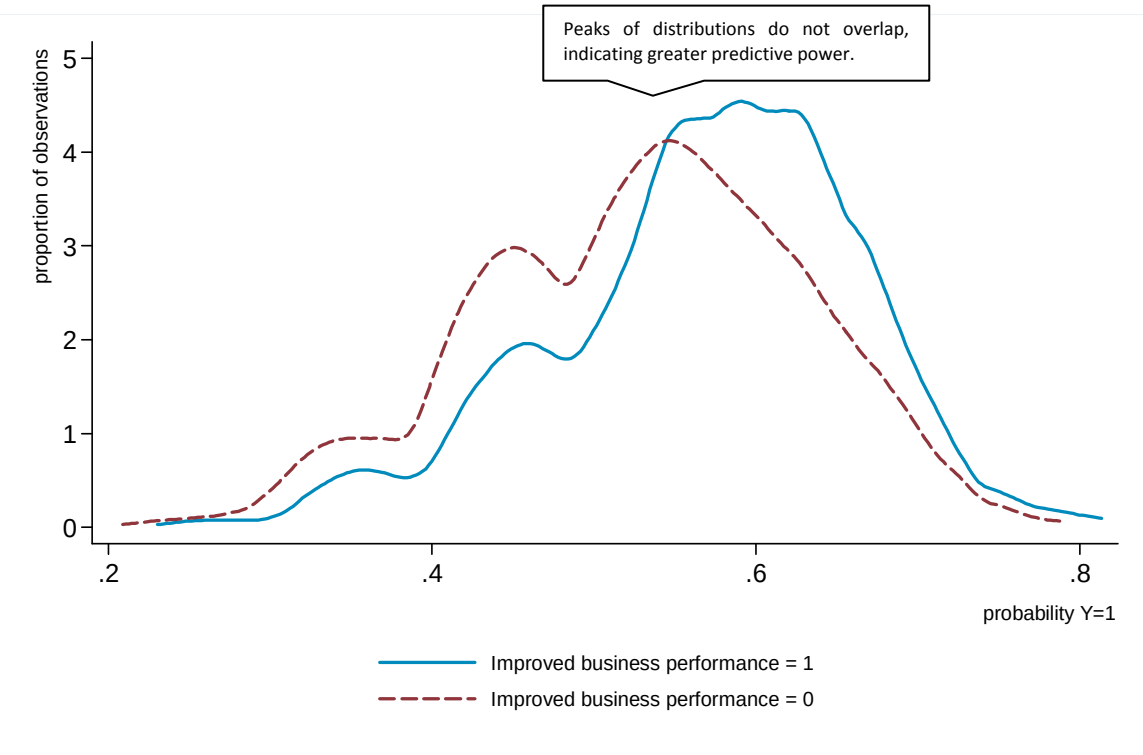


London Economics' analysis of PIMS data waves 2-27

Predictive power

In terms of predictive power, the picture (Figure 19) is again very similar to that observed when significant business benefit was the dependent variable. While there is slightly less overlap across the two distributions, this model predicts lower overall probabilities, both for firms that did improve business performance, and firms that did not.

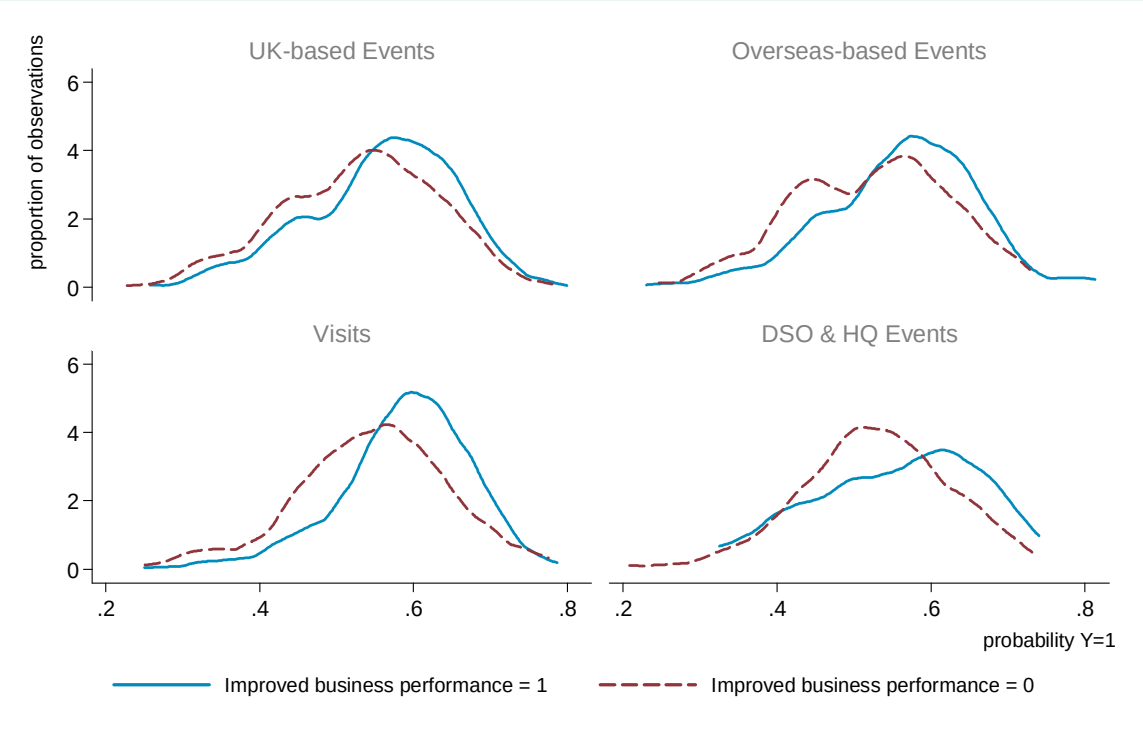
Figure 19:Improved business performance: predictive power



Source: London Economics' analysis of PIMS data waves 2-27

When broken down by Event type, we find that the model performs slightly better with Overseas-based Events and Visits, and slightly worse with UK-based Events (Figure 20). Indeed, the distribution of firms that did not report improved business performance is shifted slightly more to the left for Events held overseas – i.e. the model assigns a lower probability of improving business performance to firms that did not in fact report this business benefit.

Figure 20:Improved business performance: predictive power by Event type



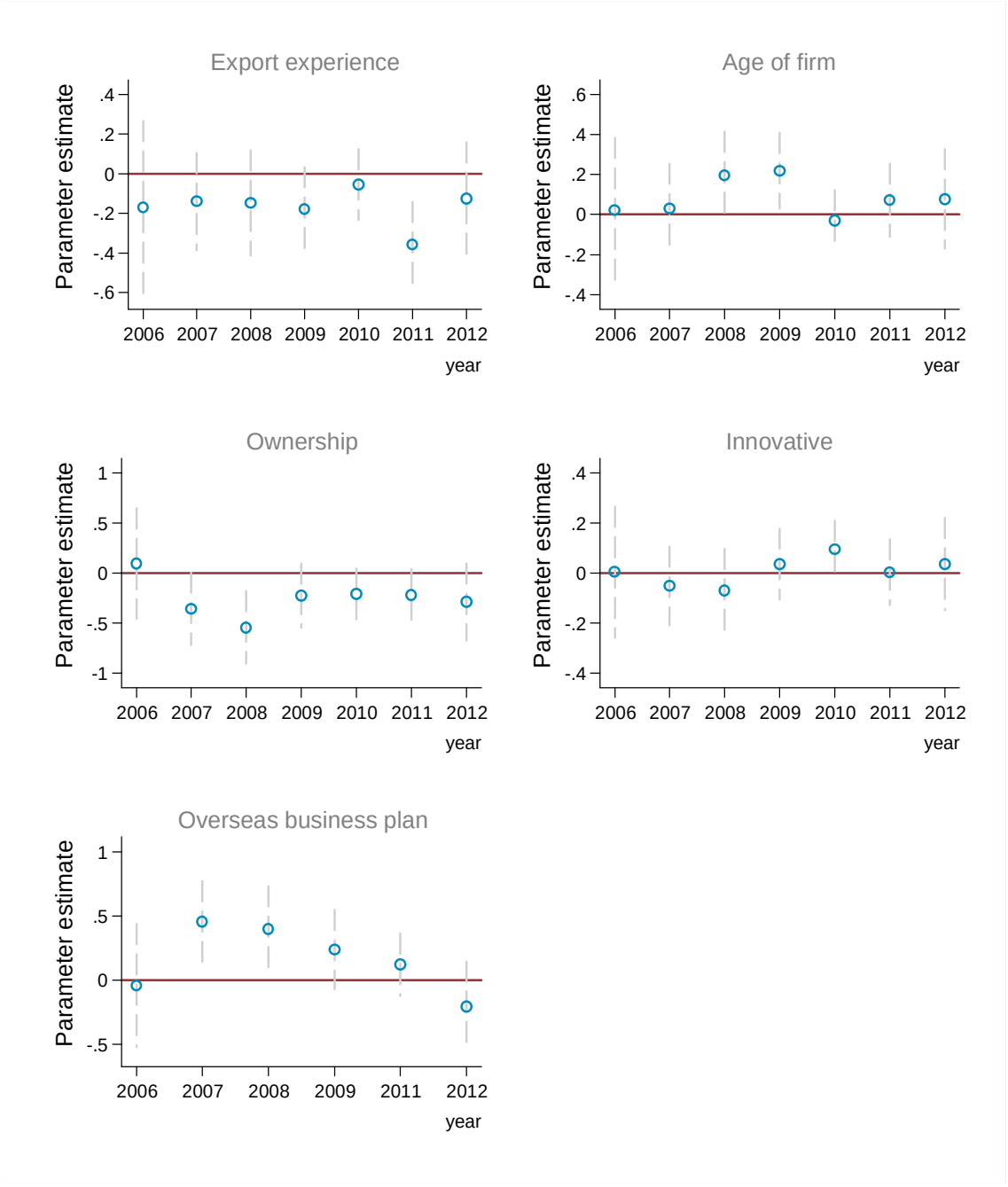
Source: London Economics' analysis of PIMS data waves 2-27

Time series display

A time series display of the most significant predictors over time confirms the absence of unambiguous trends over the six years (Figure 21).

Again, we find that firms with more years of export experience (i.e. over two years) are less likely to improve business performance due to UKTI support, though this is only significant for 2011. Similarly, foreign-owned firms were less likely to benefit from UKTI events over 2007-2008. Furthermore, as with the previous model, the effect of having overseas sales targets has become less significant in determining the effectiveness of UKTI Events in fostering business performance improvements.

Figure 21:Improved business performance: time series displays



Source: London Economics' analysis of PIMS data waves 2-27

2.5.5 Outcome: increased R&D

In the following three models we drop 'percentage of turnover derived from export' as an explanatory factor to reduce multicollinearity, as it is highly correlated with number of years exporting and overseas business plan.

The significant predictors for the model that describes increased R&D are:

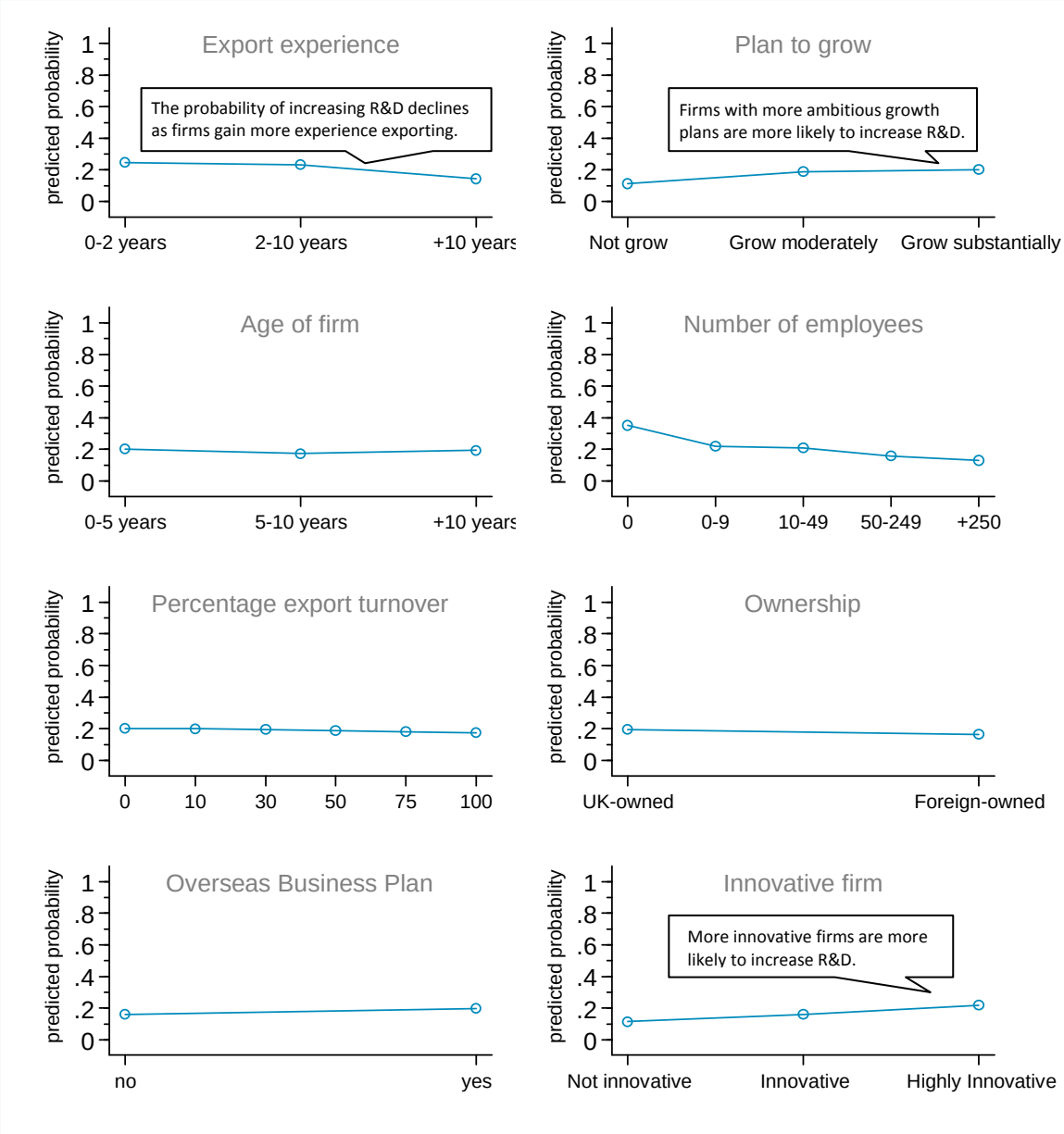
- Export Experience (over 10 years***)
- Plan to grow (grow moderately*; grow substantially**)
- Innovation (highly innovative firm***)

Figure 22 shows that the predicted probabilities are mostly flat, i.e. for most predictors the probabilities are not strongly affected by changes in the level of the predictor. Predictors that influence increased R&D are:

- innovation and plan to grow, where innovative firms with more ambitious growth plans have a greater probability of increased R&D; and,
- export experience and number of employees, with more experienced firms less likely to report increased R&D as a result of UKTI support.

Overall predicted probabilities are very low (<20% in most cases), which shows that increased R&D is not well modelled by the PIMS input variables.

Figure 22:Increased R&D: predicted probabilities

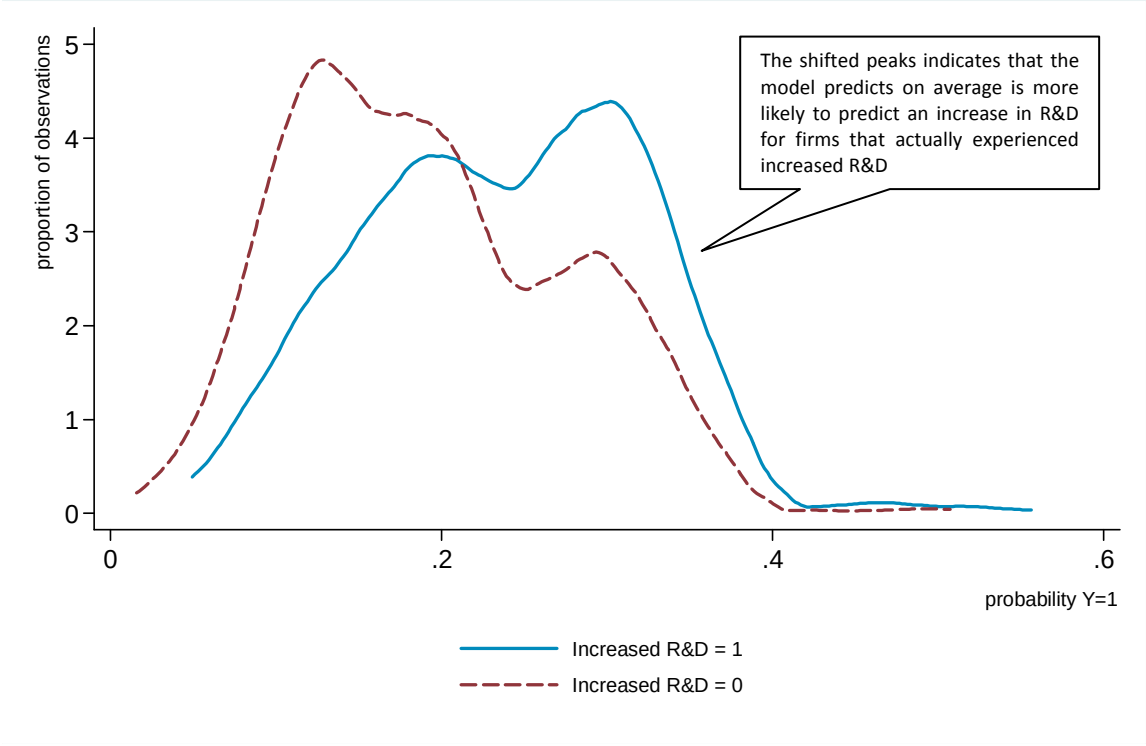


London Economics' analysis of PIMS data waves 2-27

Predictive power

While predicted probabilities are very low, Figure 23 reveals that firms that report benefits in terms of increased R&D tend to have a visibly higher predicted probability (though still low in absolute terms) than those that don't. Thus, the model is to some degree useful in making inferences about whether or not UKTI events positively impact a firms R&D.

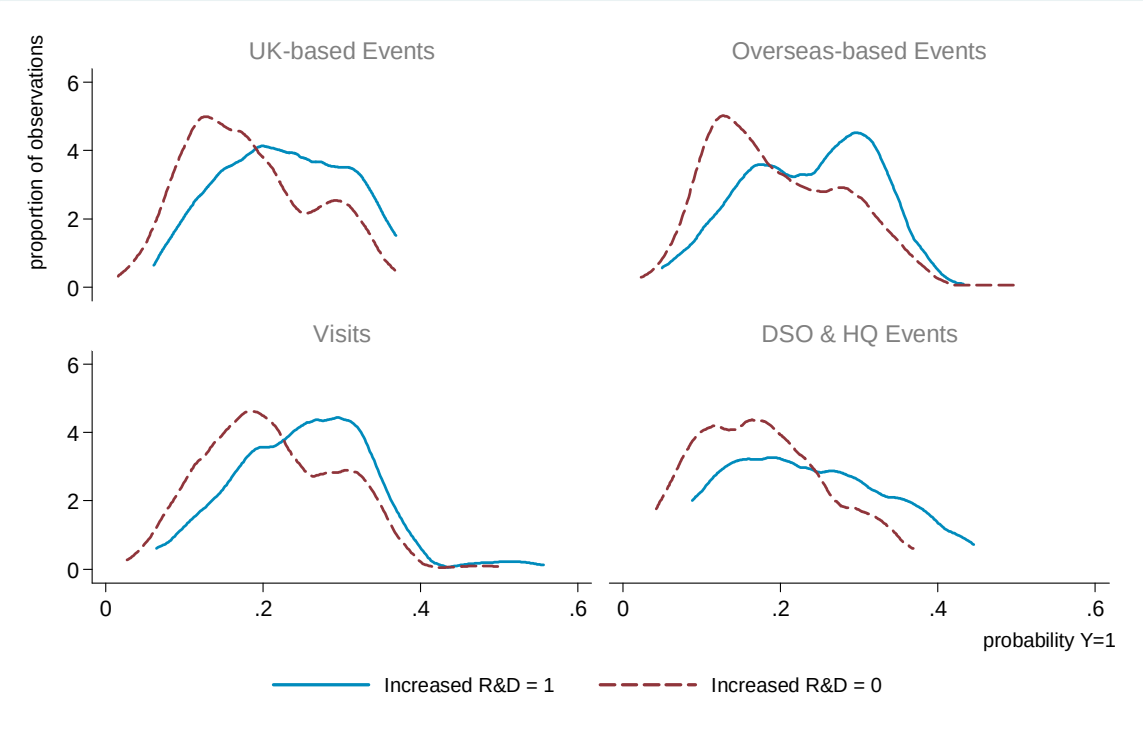
Figure 23:Increased R&D: predictive power



Source: London Economics' analysis of PIMS data waves 2-27

Once again, Overseas-based Events display the highest predictive power (as measured by the lowest degree of overlap between the two curves), while DSO & HQ Events have the lowest predictive power (Figure 24).

Figure 24:Increased R&D: predictive power by Event type

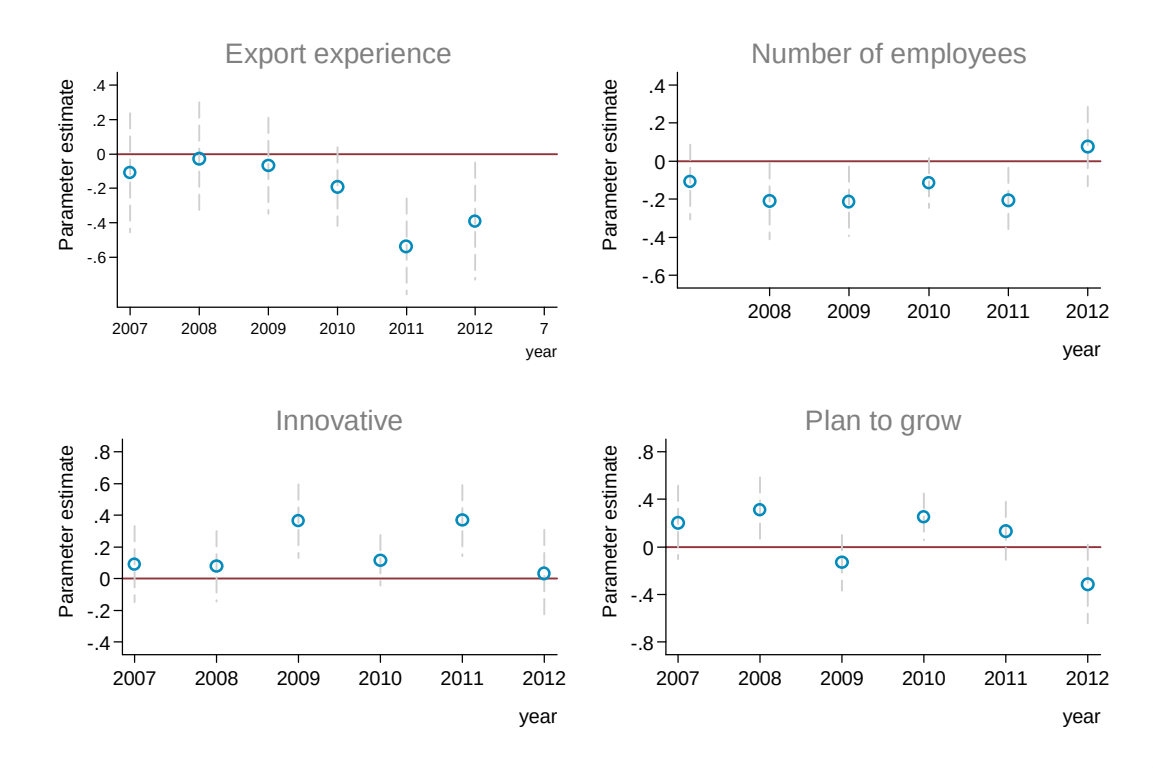


Source: London Economics' analysis of PIMS data waves 2-27

Time series display

The time series display of our model for increased R&D expenditure reveals a modest degree of variation in parameter estimates: the degree to which export experience reduces the benefit of UKTI Events in terms of increased R&D is declining, while the extent to which innovative firms reap greater benefits from UKTI support is rising moderately (Figure 25).

Figure 25:Increased R&D: time series displays



Source: London Economics' analysis of PIMS data waves 2-27

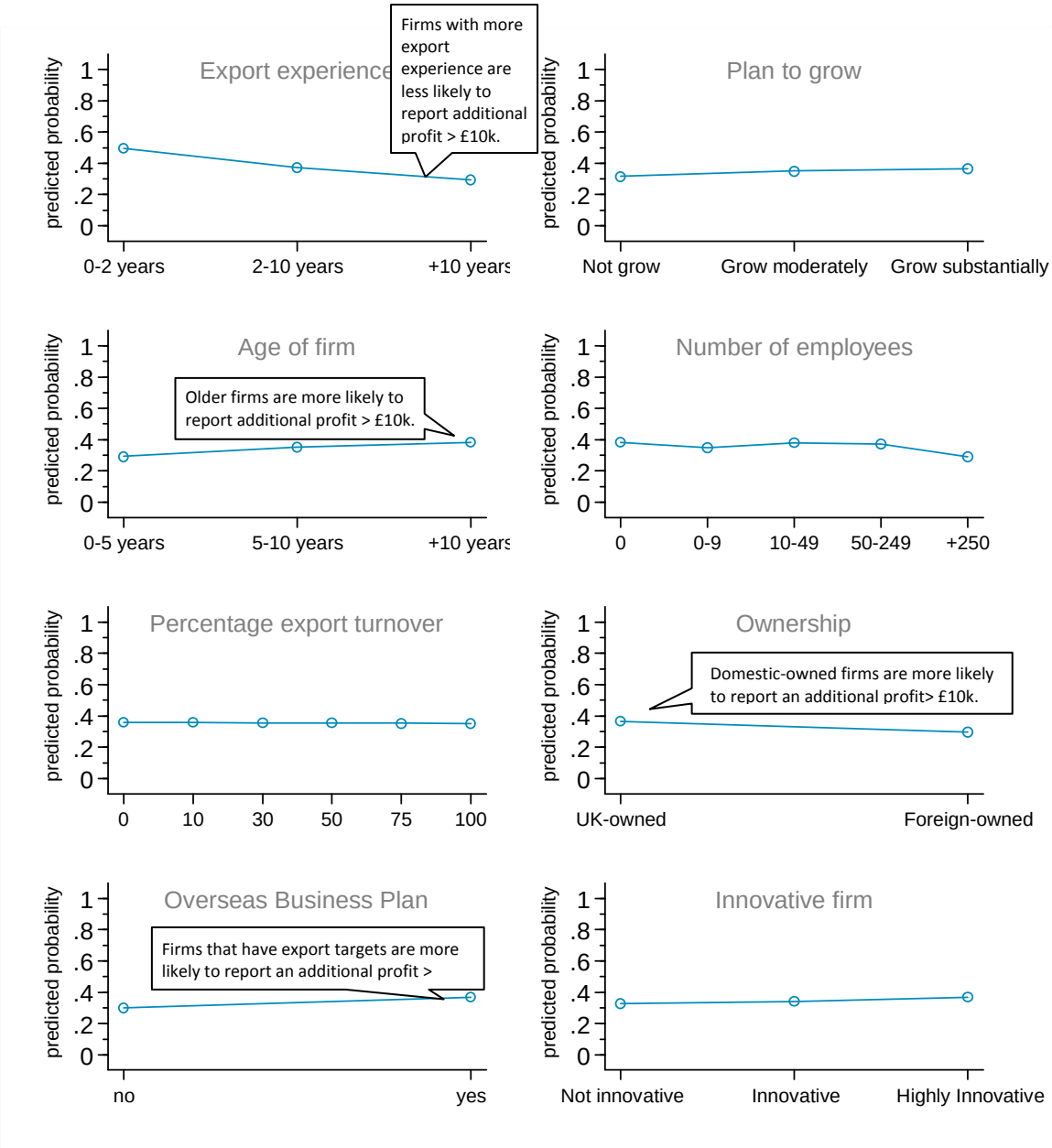
2.5.6 Outcome: additional profit > £10,000

With additional profit>£10,000 as the outcome variable, the significant predictors are:

- Export Experience (between 2 and 10 years***; over 10 years***)
- Age (over 10 years**)
- Ownership**
- Overseas business plan**

Once again, firms with little export experience (i.e. less than 2 years) but that have an explicit export strategy (i.e. an overseas business plan) are more likely to reap direct financial benefits from attending UKTI Events (Figure 26).

Figure 26:Additional profit >£10,000 predicted probabilities

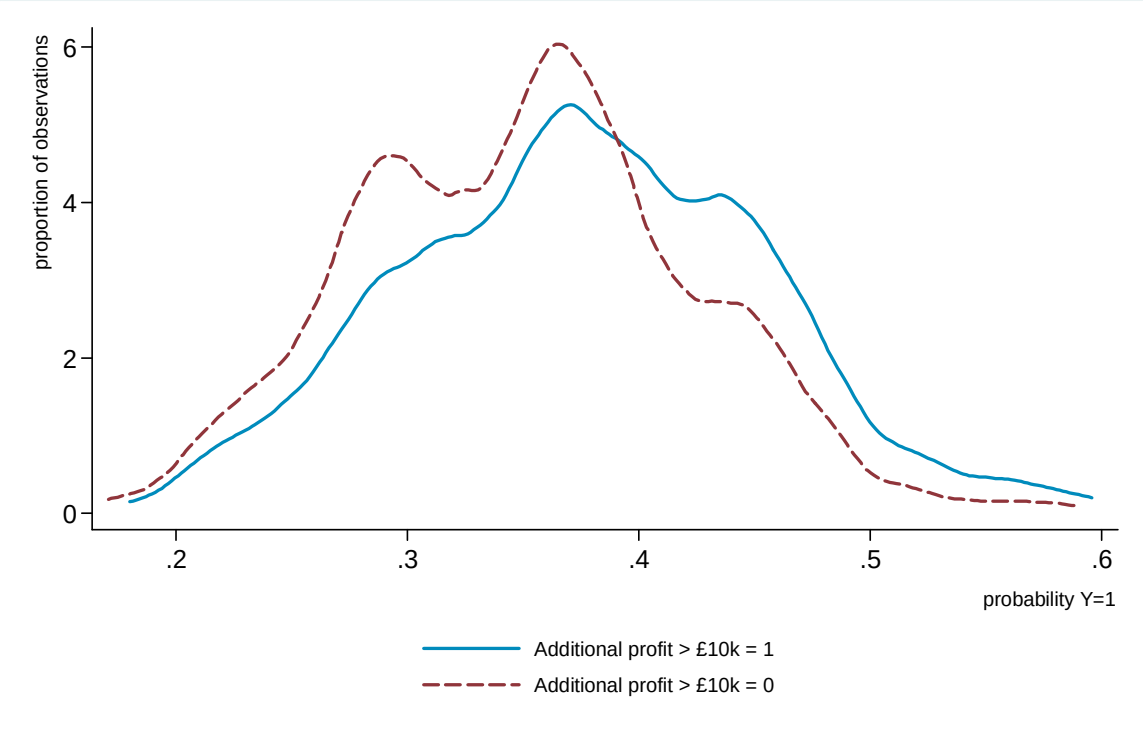


London Economics' analysis of PIMS data waves 2-27

Predictive power

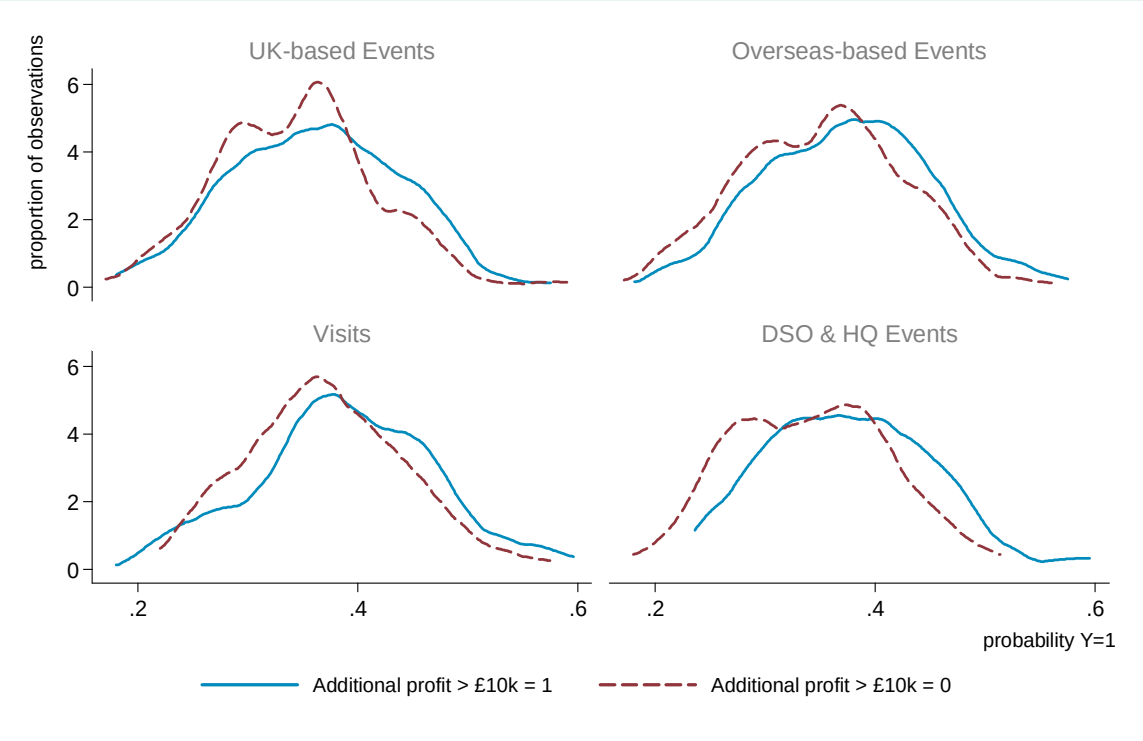
The comparison of the predicted probabilities shows that the model is not useful for determining which companies can expect a financial benefit in excess of £10,000 (Figure 27). This is also true for specific Event types (Figure 28).

Figure 27:Additional profit >£10,000: predictive power



Source: London Economics' analysis of PIMS data waves 2-27

Figure 28:Additional profit >£10,000: predictive power by Event type

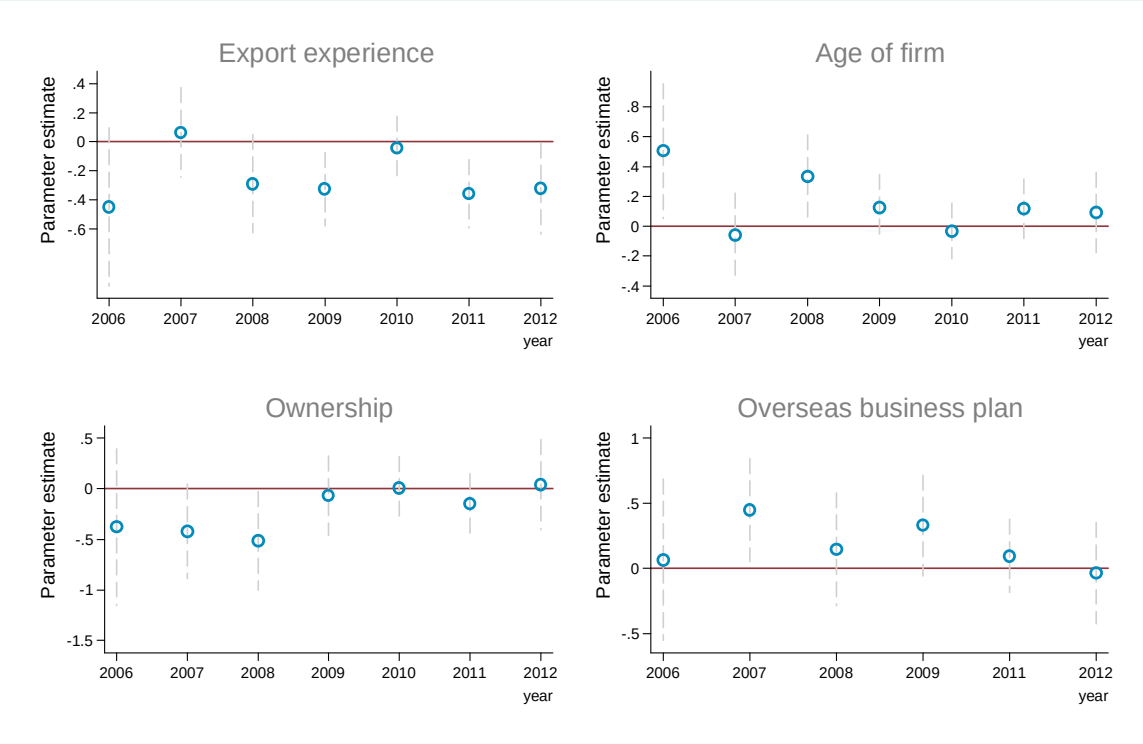


Source: London Economics' analysis of PIMS data waves 2-27

Time series display

Again, a time series display of the most significant predictors reveals no clear trend (Figure 29).

Figure 29:Additional profit >£10,000: time series displays



Source: London Economics' analysis of PIMS data waves 2-27

2.5.7 Outcome: additional profit > £500,000

Instead of using a probit technique for estimation of the effect of predictors on the probability of gaining financial benefit above £500,000, we use Ordinary Least Squares (OLS). The reasoning behind this is that the distribution of firms with financial benefits greater than £500,000 is characterised by observations which are a) relatively sparse and b) highly variable; this implies that a handful of outliers have a disproportionate influence on the mean. Under these conditions, the probit model does not perform well and the OLS model is a more appropriate approach.

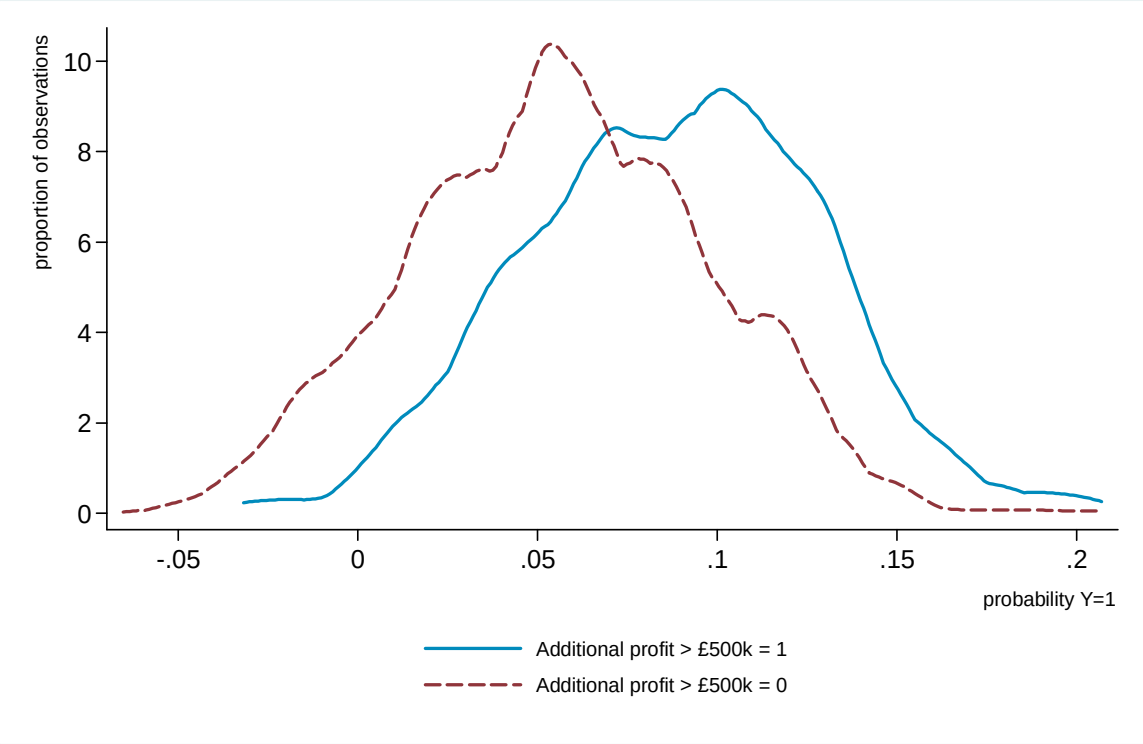
When we use the OLS approach, we find that the following predictors are significant:

- Export Experience (between 2 and 10 years***; over 10 years***)
- Employees (50-249**; over 250***)
- Innovation (Innovative***)

Unsurprisingly, in the case of large financial benefits, we find that firms that employ a larger number of staff are more likely to report profit gains in excess of £500,000. This suggests that the realisation of large financial benefits occurs for firms that are at a later stage of development, and attend UKTI Events to gain access to specific contacts or information.

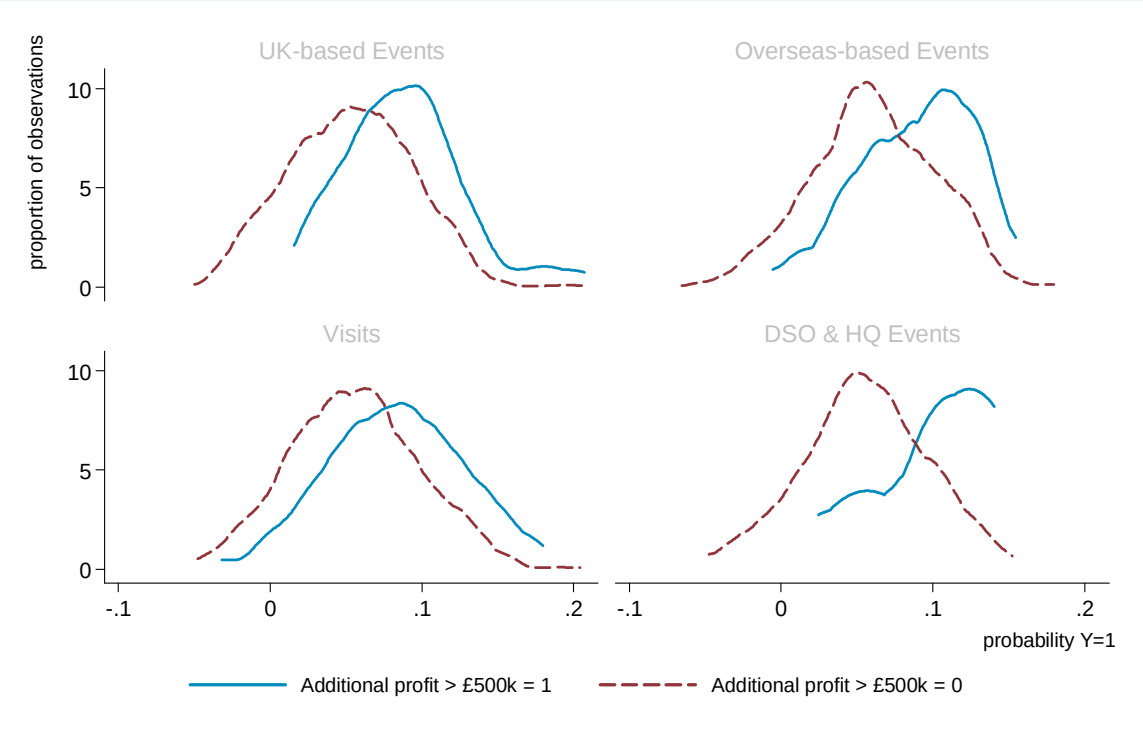
Figure 30shows that the predictive power of our model is greater than the previous models, and particularly high for DSO & HQ Events.

Figure 30:Additional profit >£500,000: predictive power



Source: London Economics' analysis of PIMS data waves 2-27

Figure 31:Additional profit >£500,000: predictive power by Event type



Source: London Economics' analysis of PIMS data waves 2-27

2.6 Summary

- Higher intensity events (e.g. Visits, Overseas-based Events, Events lasting over a day) are associated with a higher probability of reporting improvements in productivity, and performance or significant profit gains (net of non-additionality).
- The proportion of PIMS respondents that report increased R&D is rising over time, while the share that reports a significant business benefit is falling.
- The proportion of participants at UK-based Events that reports profit gains in excess of £10k is rising over time.
- Although median additional profit (net of non-additionality) reported by Event attendees is zero in all years, mean additional profit reported by respondents attending UKTI Events stands at approximately £173,000 (over 2011/12) and is increasing by approximately £26,600 per annum.
- Given a total cost of Events of £90.6 million for the 2011/12 financial year[34], the average additional profit associated with the same financial year (£173,000), multiplied by the number of firms assisted by Events (17,084) implies a benefit-cost ratio of **33:1**, although this result is sensitive to a small number of 'big wins'.

[34] Cost estimate provided by UKTI.

- The average value of the profit gain reported by participants at UKTI Events is rising over time for all Event categories – differences in this increase are not statistically significant.

3 The gateway role of Events

Previous studies undertaken for UKTI show that a large proportion of recipients of UKTI support make use of more than one UKTI service.[35] A natural hypothesis that arises in this particular study is that Events act as a catalyst to promote the use of other UKTI services.

In this section we consider the use of multiple UKTI services by a particular firm in order to gain insight on:

- whether Events are useful in reaching out to new clients;
- whether Events complement other UKTI services; and,
- which Events are associated with the largest number of repeat-users.

To do this, we employ a database that tracks the different services taken up by a specific firm over a five year horizon (2006-2011). Details of this dataset are provided in Box 2 below.

Box 3: OMB duplication data

The dataset consists of a list of all UKTI clients as recorded in UKTI's CRM database. This list was provided to OMB Research for PIMS, over a 5 year period (PIMS 3-22), though only a subsample of these clients were actually interviewed in PIMS. Each record includes:

- a unique ID (the OMB Reference);
- the corresponding service used (or sample group); and,
- the period of service delivery (i.e. the PIMS wave).

OMB linked all records that relate to the same company by matching them based on company name, address, telephone, email, and any other relevant contact information. All records for the same company are allocated the same 'Dupe reference', so that they can be used to look at patterns in service usage. In total there are 212,203 records (i.e. service deliveries) which relate to 65,422 individual companies.

OMB used a combination of automated and manual searches to identify and link duplicates. Due the sheer volume of records and the inconsistent way in which company contact details are recorded, the accuracy rate is approximately 98-99%. Moreover, in many instances the same Dupe reference is assigned to parent companies and subsidiaries even if they are not the same legal entity. This means that the frequency of repeated service use by any individual company as identified by this dataset is likely to be biased upwards.

The key findings from this analysis are the following:

- Events serve as signposts to other UKTI services, 76% of repeat-use clients attended an Event first;
- follow-on service usage comes from (only) 54% of all clients;

[35] See 'Evaluation of the impact and cost effectiveness of UKTI's regional network' (London Economics, 2012).

- Overseas visits and Missions are associated with the highest subsequent service usage (68% of participants use at least one additional service);
- UK-based Events are associated with the greatest number of service deliveries (53% of all Events); and
- 44% of participants at UK-based Events go on to use UKTI's overseas network.

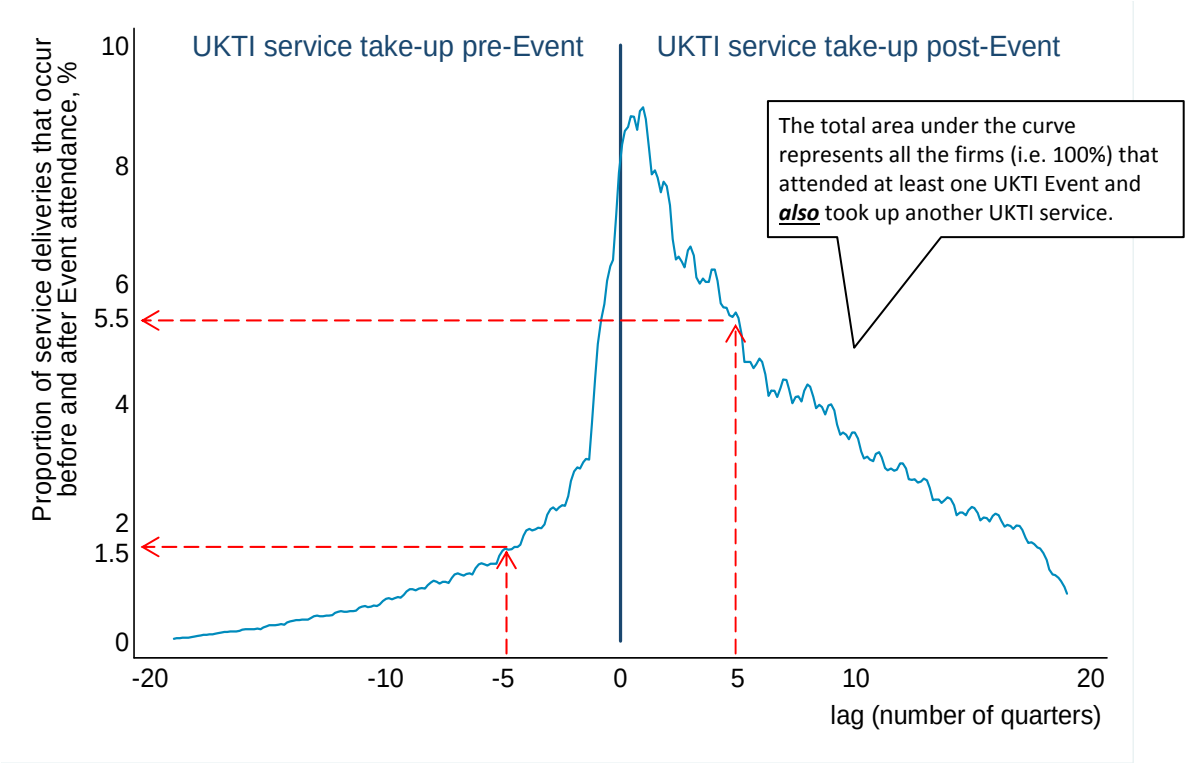
3.1 Repeat-users attend Events first

Figure 32 illustrates the distribution of the amount of time that elapses between the quarter in which a business attends its first UKTI Event and that in which it makes use of another UKTI service (which is negative if the other service is used prior to attending the Event). In order to avoid double counting any one Event, we exclude the lag between Events that are attended in the same quarter[36]. So, given the first Event attended by a firm, distribution considers all other services used by the same firm (before, during and after), and all Events attended subsequently.

For instance, the dashed arrow on the left indicates that 1.5% of firms (that used more than one UKTI service) took up a UKTI service 5 quarters *before* attending their first Event. The dashed arrow on the right indicates that 5.5% of firms (that used more than one UKTI service) took up a UKTI service 5 quarters *after* attending their first Event. The total area under the curve reflects all the firms that attended at least one Event and also took up another UKTI service.

[36] The rationale behind this is that we are interested in the extent to which Events promote additional service take-up, and it is unclear which Event is promoting which when firms attend multiple Events in one quarter.

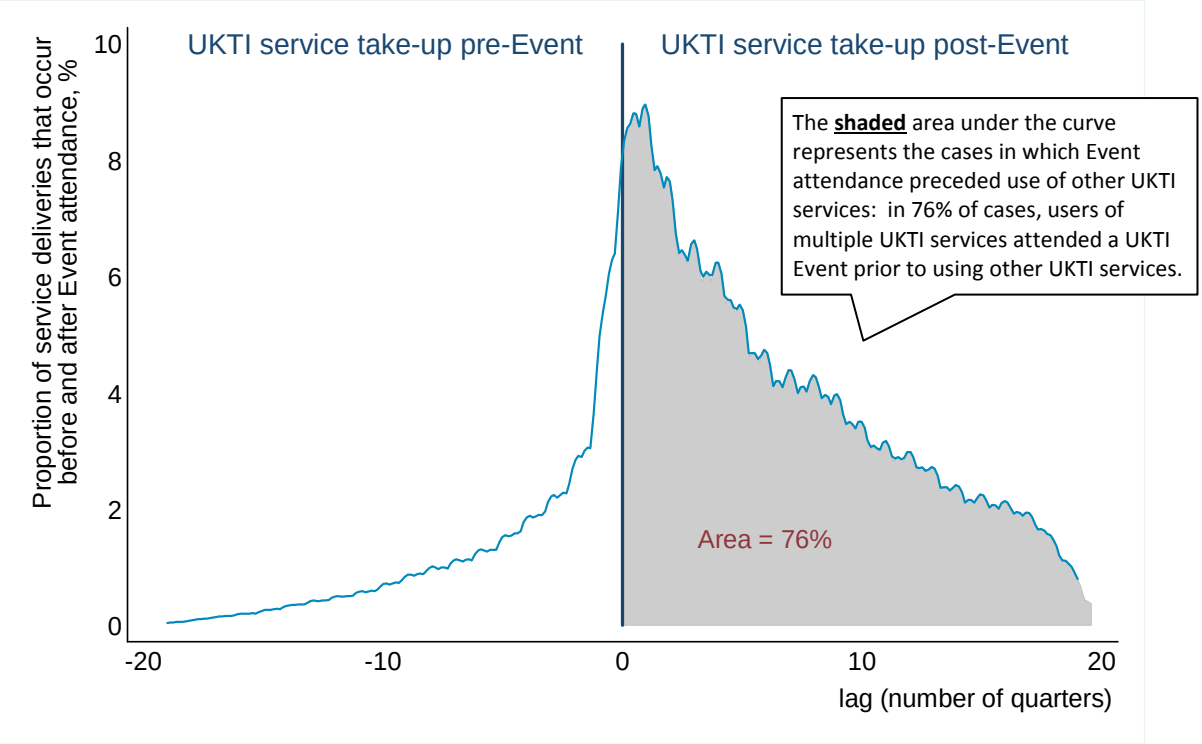
Figure 32: Distribution of the lag between a company's first UKTI Event and the same company's use of other UKTI services (1)



Source: London Economics' analysis of OMB Duplication data

By construction, the total area under the curve represents all the firms that participated in at least one UKTI Event and *also* took up another UKTI service. By the same logic, the area under the curve and to the right of the zero line represents of the fraction of repeat clients that attended an Event prior to using other UKTI services. Thus, by integrating this area we find that 76% of all multiple service users attend Events prior to using any other UKTI service (Figure 33).

Figure 33: Distribution of the lag between a company's first UKTI Event and the same company's use of other UKTI services (2)



Source: London Economics' analysis of OMB Duplication data

3.2 The volume of services used after attending Events

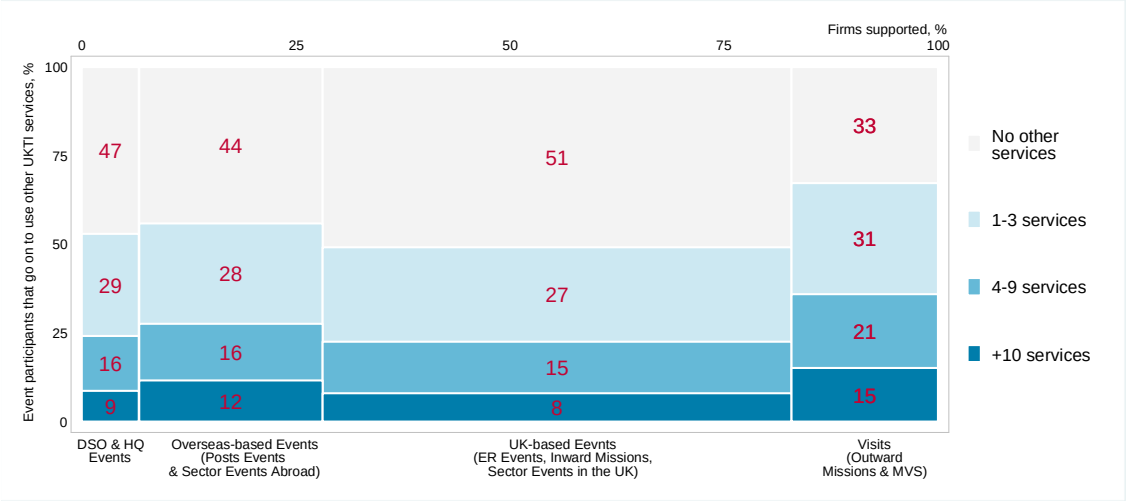
The duplication data allows us to track how many and which types of services were used after attending a UKTI Event. This is useful in determining a) to what extent different types of Events are most successful in terms of recruiting new clients; and, b) whether there are complementarities across different services offered by UKTI.

Overall, we find that over 2006 to 2011 54% of companies that attended a UKTI Event went on to use at least one other service. Nonetheless, 10% of these companies went on to use over 10 additional UKTI services after attending an Event.

Figure 34 illustrates subsequent service usage patterns for each Event category, while Table 4 specifies the types of services that are taken up after attending a specific Event. It is apparent that:

- Visits are associated with the highest subsequent service usage (2 on average), with 67% taking up at least one other service;
- UK-based Events have the lowest repeat-use rate (1.3 additional services, on average) but attract the widest client base (34% of all firms supported and over 50% of Events attended); and,
- Events serve to introduce clients to UKTI's overseas network – between 43% (UK-based Events) and 65% (Visits) of Event attendees go on to use either OMIS, Overseas Posts or other Overseas-based Events.

Figure 34:Volume of services used *after* attending an Event



Source: London Economics' analysis of OMB Duplication data

Table 4: Services used after attending Event by Event type

Service used after attending Event	DSO & HQ events	Visits	Overseas-based Events	UK-based Events
Overseas Network (excl. Events)	936	3,035	3,282	6,872
ITA services	498	2,479	1,630	4,805
Other services	548	2,203	2,028	4,201
DSO & HQ Events	451	537	732	1,356
Visits	227	1,587	1,092	2,009
Overseas-based Events	487	1,505	2,205	2,924
UK-based Events	855	2,547	2,611	6,794
No other services	*1,290*	*2,293*	*3,889*	*11,444*
Total number of companies	**2,741**	**7,019**	**8,808**	**22,503**
Total services used after Event	4,002	13,893	13,580	28,961
Average services used after Event	1.5	2.0	1.5	1.3
% Overseas Network (incl. Events)	52%	65%	62%	44%

Source: London Economics' analysis of OMB Duplication data

3.3 Summary

- Events serve as signposts to other UKTI services, 76% of repeat-use clients attend an Event first.
- 54% of Event attendees go on to use at least one other UKTI service.
- Overseas visits and Missions are associated with the highest subsequent service usage (68% of participants use at least one additional service).
- UK-based Events are associated with the greatest number of service deliveries (53% of all Events).
- 44% of participants at UK-based Events go on to use UKTI's overseas network.

4 Willingness to pay for Events

Fundamentally, UKTI wishes to investigate how much businesses value UKTI Events. However, since UKTI Events are not sold at market prices, no explicit market valuation exists. This section of the study presents estimates of willingness to pay (WTP) for UKTI Events based on responses to a dedicated survey of 901 UK companies. Further, it explores firm-level characteristics of willingness to pay and the impact of price increases on demand.

In the realised sample of interviewed companies, 601 had already used UKTI services of some description (including but not limited to Events), while 300 had not used any UKTI service. The survey was carried out on behalf of London Economics by OMB Research[37] by means of computer-assisted telephone interviews (CATI) between March and April 2013.

4.1 Sample selection

The firms interviewed for our willingness to pay analysis were selected so as to be representative of the population of beneficiaries of UKTI services. One of the main reasons for including companies with no prior exposure to UKTI services is to explore whether price increases may discourage the acquisition of new clients. In order to investigate this hypothesis we want to ensure that our sample of users and non-users are comparable: ideally, the only difference between the two groups of companies is their use (or non-use) of a UKTI service.

The sample of users is drawn from the companies interviewed in PIMS (waves 10-25) that had attended an Event and given permission to be contacted for further research. To determine a sample of non-users that is comparable to existing UKTI clients, we match companies interviewed in PIMS to company data from the Bureau van Dijk's Orbis database[38] over the same period (2008-2011).

In a first step, we selected 106,009 records from approximately 80 million Orbis records of companies that have their primary trading address in England. This sample consists of companies that are:

- uniquely identified (based on the internal BvD registration number);
- active (neither in receivership nor dormant);
- provide data on employee numbers in at least one of the years 2008-2011;
- have fewer than 8,000 employees;
- provide data on turnover in at least one of the years 2008-2011; and,
- generate less than £100 million in annual turnover.

We then exclude any public sector organisations, charities or companies for which telephone numbers are not available. This leaves us with a total of 46,521 UK companies to be matched with 4,165 participants in UKTI Events.

[37] www.ombresearch.co.uk

[38] Orbis is a commercial database containing detailed financial and profile information on 79 million companies across the globe. See http://www.bvdinfo.com/Products/Company-Information/International/ORBIS.aspx [accessed 04 June 2013].

Propensity Score Matching

The technique we employed to identify the non-user control group is *radius calliper propensity score matching*[39]. Due to limitations in data availability, we match datasets based on a restricted number of variables. The four covariates are:

- company size (number of employees);
- company age (years since inception);
- annual turnover (£s); and
- sector of activity (main SIC sections).

In order to fit the distribution of the treated group more precisely, we use size classes (micro, small, medium and large enterprises) rather than matching only on average company size. The same approach is taken with age dummies (younger than 5 years and older than five years).

The radius calliper algorithm allows us to select companies from Orbis (our control group) so as to give us a sample of firms with a sufficiently similar covariate distribution as our treatment group from PIMS. That is – for each company in our PIMS sample, the algorithm identifies all the firms in the Orbis sample that are within a certain radius of the former, along all preselected dimensions. In practice, starting from an arbitrary number (generally a function of the variance of the logistic regression that determines the propensity scores), the calliper is reduced until covariates are said to be balanced across the control and treatment groups (Orbis and PIMS, respectively).[40]

The matching procedure yields a treatment (user) group of 3,538 companies and a control (non-user) group of 43,977 companies.

4.2 The Contingent Valuation (CV) approach

To estimate WTP, we adopted a contingent valuation (CV) approach. CV is a method that uses stated preferences to estimate WTP for goods for which actual market prices are not available. This is a standard approach in the economics literature and a similar approach has been successfully implemented in previous UKTI research relating to the valuation of the commercial services (OMIS) provided by Overseas Posts.

In essence, the CV method consists of two elements:[41]

- First, respondents are presented with a valuation scenario, i.e. a detailed description of the good or – as in this case – service they are asked to value.
- Secondly, information is elicited about individuals' WTP for the good or service thus described.

[39] Detailed technical methodological notes are provided in Annex A2.1.

[40] While reducing the calliper improves the quality of the match, it also reduces the number of observations kept in our treatment group, meaning the resulting sample may be different from our general population in PIMS. Keeping this in mind, we select our final calliper so as to maximise the number of PIMS observations that are kept while ensuring a good statistical match quality (the chosen calliper of 0.01 results in a loss of 627 PIMS observations).

[41] For a detailed overview of stated-preference techniques for economic valuation see Pearce et al. (2002).

In consultation with UKTI, we formulated *three* valuation scenarios to describe stylised versions of

- Outward Missions;
- Meet-the-buyer Events; and
- Information Events/Presentations.

All respondents provided valuations in relation to *all three* services under consideration. The order in which respondents were presented the different scenarios was randomized to avoid order effects.

Creating the valuation scenario requires a trade-off between a) detail (so respondents can picture the service); and b) generality (so they are not biased by previous experience). To ensure that the CV approach is valid also for respondents with past experience of UKTI Events, the valuation scenarios aimed to create a clear image of each service such that respondents could evaluate independently of their past experience with Events. Given their crucial importance for the success of the CV estimation, the three scenarios were extensively tested and piloted so as to ensure that they were clear, economical and an accurate description of the services offered by UKTI.

The text of the valuation scenario is reproduced in the box below.

Box 4: The valuation scenarios

"I'm now going to read out descriptions of 3 different types of events that are put on by UKTI to support UK firms that want to sell into overseas markets. <If the respondent has used UKTI Events before: You may have attended similar events in the past, but please answer the subsequent questions based just on the descriptions I read out and not based on your own experiences of similar UKTI events.>

<Rotate order of all 3 scenarios (D1, D2 & D3).>

Scenario D1 – Outward mission

This event is a visit to an overseas market with a group of UK companies under the guidance of expert UK and local trade advisors. The programme has four key elements: a pre-visit briefing held in the UK, a seminar, lasting half a day, providing detailed information on the market and the potential opportunities in your business area, a networking reception with local companies hosted by the British consulate or embassy, and at least 3 pre-arranged one-to-one business meetings with local partners, distributors and suppliers. The visit will take place over 3 to 5 days.

Scenario D2 – Meet the buyer Event

The event involves meeting a group of high-profile overseas business representatives from sectors related to your business activity. Visiting companies have been matched with the attending UK businesses in advance based on their business objectives. Meetings will be one-to-one and in larger groups, facilitated by UK experts with knowledge of both the overseas market and the industry. The event will last one day.

Scenario D3 – Information Event/ Presentation

This event is presentation/seminar on a topic related to exporting. Potential topics include marketing strategy, export finance or specific markets and industries. The event will be attended by other UK companies in your area and will be delivered by an experienced overseas trade or industry expert. The Event will last half a day."

Once presented with a valuation scenario, respondents were screened on the basis of how well they could picture the service that had been described. Respondents stating they had "no real idea of what this service involves" were excluded from the WTP estimation.

Double-bounded dichotomous choice

WTP elicitation was implemented using a *double-bounded dichotomous choice* format. With double-bounded dichotomous choice, respondents are first asked to reply "yes" or "no" to the question whether they would pay a stated sum for the service. Respondents are then asked a second dichotomous choice question which depends on the previous response:

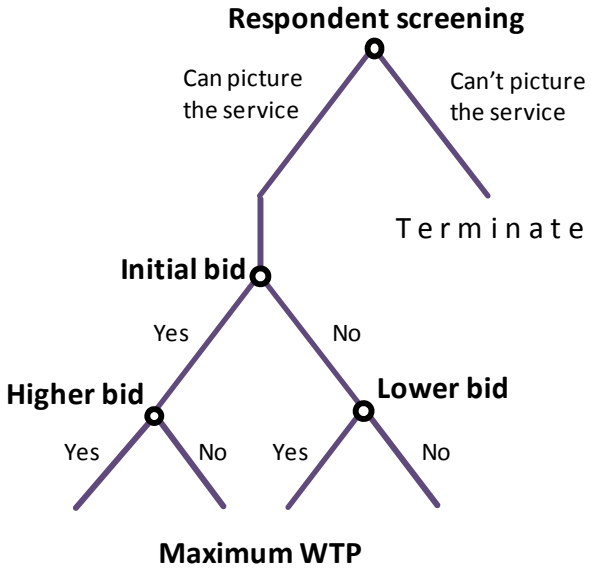
- if the first response is "yes", the second bid is greater than the first bid;
- if the first response is "no", the second bid is smaller.

This approach allows us to construct intervals around respondents' true WTP, thereby increasing the amount of information that can be used to estimate mean WTP relative to the single-bounded

(only one yes/no question) approach. The efficiency gains associated with the double-bounded approach have been shown to be substantial[42].

In a final step, respondents were asked to state their maximum WTP for the service. This was done to ensure the consistency of responses and to place upper bounds on the WTP intervals. A graphical summary of the elicitation approach is shown in Figure 35.

Figure 35:WTP elicitation approach



Source: London Economics

The success of the CV approach in eliciting accurate information on WTP and thus permitting the estimation of mean WTP across the sample depends on:

- the quality of the valuation scenario; and
- the choice of price points (bids).

Great care was taken to ensure that both conditions were met. The design of each valuation scenario was based on extensive discussions with UKTI staff as well as a number of pilot interviews with exporters. The screening question asking about respondents' ability to picture the service revealed that 95% of respondents had at least a "fairly clear picture" of each service after listening to its corresponding valuation scenario.

Price points

On the crucial issue of the choice of price points, two requirements are paramount. Price points must:

[42] See Hanemann et al. (1991).

- show enough variation – given the constraints imposed by the sample size – to allow meaningful statistical analysis; and
- cover the range of WTP values across the sample.

The two issues are interrelated, as a wrong price range will result in a low variation in responses (e.g. if the chosen price points are substantially below maximum WTP, we would expect a preponderance of "yes" responses at higher price points and thus a lower variation in observations than if the price points coincided with the true distribution of WTP). In practice, the choice of price points thus requires a good prior understanding of the likely WTP distribution.

We used consultations with UKTI staff as well as information about current pricing by UKTI to select a total of six price points[43] for each Event category. These were organised into four triplets consisting of an initial bid and associated lower and higher bids. An approximately equal number of respondents were randomly assigned to each of the four bid groups to achieve the desired variation in valuation intervals. On top of this, the additional open-ended question about maximum WTP acts as an insurance against missing price points.

Table 5: Bid groups

	Outward Missions			Meet-the-buyer Events			Information Events		
Group	Initial bid	Lower bid	Higher bid	Initial bid	Lower bid	Higher bid	Initial bid	Lower bid	Higher bid
1	£220	£150	£300	£100	£25	£175	£30	£15	£50
2	£370	£300	£450	£250	£175	£325	£50	£30	£70
3	£520	£450	£600	£400	£325	£475	£70	£50	£80
4	£670	£600	£750	£550	£475	£625	£80	£70	£95

Source: London Economics

WTP intervals

Each respondent's WTP interval is, thus, generated based on their response to the two price specific questions on WTP (and on maximum WTP) according to the following rules:

Table 6: Constructing the WTP intervals

Response			Bounds of the WTP interval	
Initial bid	Lower bid	Higher bid	Interval lower bound	Interval upper bound
YES	-	YES	Higher bid	Maximum WTP
YES	-	NO	Initial bid	Higher bid
NO	YES	-	Lower bid	Initial bid
NO	NO	-	0	Maximum WTP*

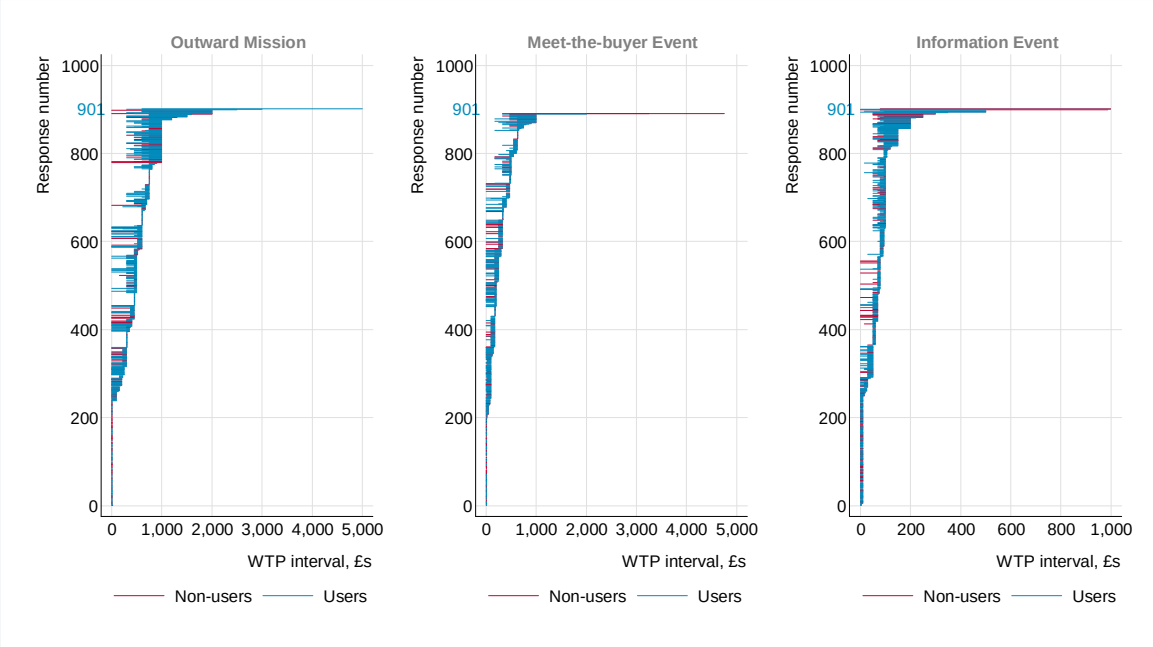
Note: * or lower bid, where maximum WTP is not observed.
Source: London Economics

[43] The number of price points was chosen based on the range of prices deemed feasible by UKTI. For a CV study that uses the same number of price points, see Ortiz et al. (2004).

The resulting intervals represented in the sample are shown in Figure 36. Each firm (Firm 1 to Firm 901) is presented on the vertical axis and its WTP interval is represented by a horizontal line, bounded according to the rule in Table 6. For instance, if a firm accepts £220 and not £300, then its WTP interval is [£220-£300]. WTP intervals are shown in blue for users, and red for non-users. Between 197 (Meet-the-buyer Events) and 239 (Outward Missions & Information Events) respondents reported a maximum WTP of zero, while the rest show positive valuations that lie within intervals of varying width. There is considerable variation in maximum WTP.

The extent to which the distribution of valuations of both users and non-users of UKTI Events covers the spectrum of possible valuations is further proof that the selected price points represent an adequate approximation of the true WTP distribution.

Figure 36:WTP intervals in respondent sample



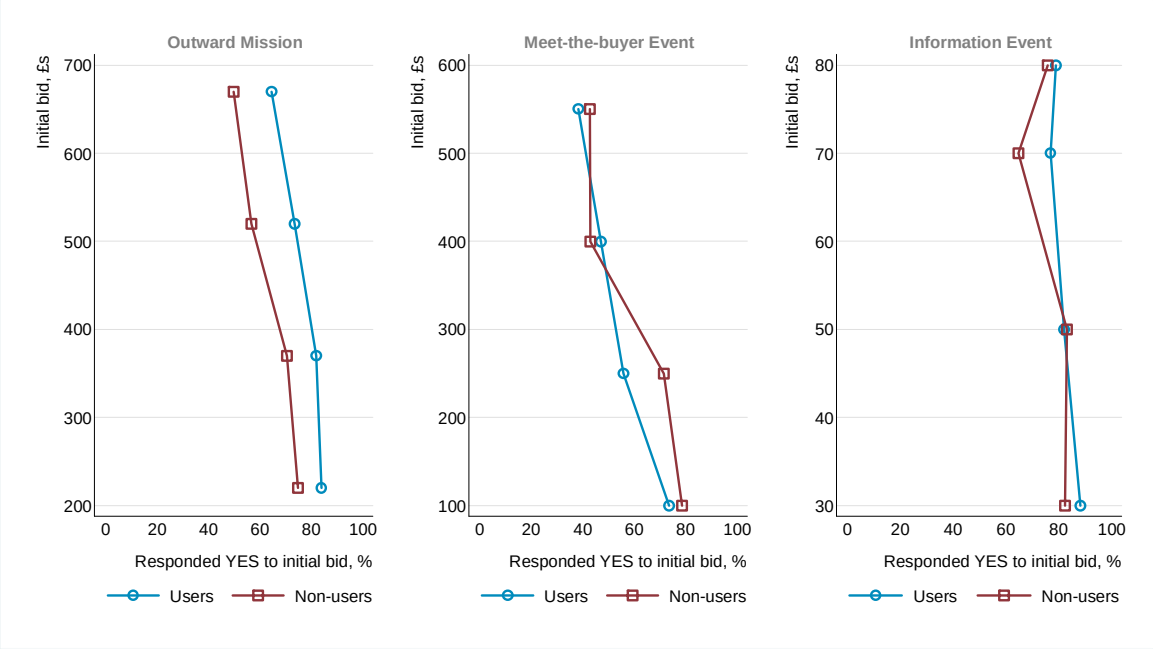
Source: London Economics

Quantity demanded and willingness to pay

As a sense check, we consider whether higher prices are associated with lower willingness to pay (and thereby consistent with a downward-sloping demand curve). The answer is generally 'yes', but there are a few localised bumps and spikes (Figure 37). This is partly because each respondent is only responsible for two points on each curve and we are overlaying different firms' responses on top of each other. The curves look very inelastic or unresponsive to price (especially low cost Events).

The valuation approach appears to be broadly consistent, though we may have benefitted from introducing a wider price range.

Figure 37:Quantity demanded and WTP for Events



Source: London Economics

4.3 WTP estimation

In a second step, we use all the information revealed by the double-bounded dichotomous choice approach, i.e., the full WTP intervals for all businesses whose upper bound WTP is greater than zero. Mean WTP is estimated using a constant-only interval regression model. "Constant-only" means that the model estimates mean WTP without including any predictors. Because of our chosen elicitation format, WTP is observed only in intervals, rather than exact values. Hence, mean WTP is not simply the mean of the observed values, but is calculated iteratively by maximising the log likelihood of the data given a mean predicted value.[44]

The constant-only interval regression model predicts a mean WTP of £522 for Outward Missions; £267 for Meet-the-buyer Events; and, £74 for Information Events. For each Event category, mean WTP estimates and their corresponding 95% confidence intervals are presented in Table 7.

Thus, for Meet-the-buyer Events and Information Events mean estimated willingness to pay is higher than current charging levels (in particular Information Events that are often free).

[44] The outcome variable is the WTP interval which varies in size and for which the cut-offs of the intervals are known. There is an ordered hierarchy to the intervals so one could consider using an ordered probit or logit model to estimate the effects. However, the key assumption for using ordered probit or logit, the proportional odds assumption, is not met, as is common when the intervals vary widely. Furthermore, since the cut-offs of the intervals are known, interval regressions can be used and requires less underlying assumptions than the ordered probit and logit models.

Table 7: "Constant-only" interval regression model			
	Coefficient	[95% Confidence Interval]	
Event category	Mean £ WTP	Lower bound (£s)	Upper bound (£s)
Outward Mission	522	500	545
Meet The Buyer Event	268	251	284
Information Event/Presentation	74	71	76

Source: London Economics

4.3.1 WTP and firm characteristics

WTP is likely to be influenced by a number of firm-level characteristics. For this reason, we extend the model to account for the following observable factors[45]:

- number of employees;
- turnover;
- number of years exporting;
- percentage of turnover accounted for by exports
- foreign ownership;
- written business plan;
- overseas sales targets; and,
- previous use of UKTI services.

Three crucial findings emerge from this analysis:

- firms with higher turnover report systematically higher WTP;
- firms that export a larger share of their turnover report systematically higher WTP; and,
- WTP does not differ systematically across users and non-users.

This has clear implications in terms of the pricing strategies available to UKTI: on the one hand, the fact that non-users value Events the same as users implies that offering discounts is not an effective way of attracting new clients. On the other hand, the analysis suggests that UKTI may lose some smaller companies that are new to exporting by charging higher prices.

The extent to which the above covariates influence willingness to pay is captured by the coefficients in Table 8. The *base* group consists of firms that generate less than £2 million in annual turnover; export less than 10% of their turnover; and, have not previously used UKTI services.

In summary, relative to micro firms (turnover < £2m), large firms (turnover > £50m) are willing to pay up to:

- £136 (32%) more for Outward Missions
- £84 (34%) more for Meet-the-buyer Events
- £15 (22%) more for Information Events

[45] Once again we develop the extended model in an iterative procedure, starting with all observed firm characteristics and progressively refining it by eliminating insignificant variables.

Even SMEs (turnover = £2-50m) have a significantly higher WTP for Outward Missions than micro firms.

Similarly, WTP for Outward Missions is £59 (14%) higher for firms that export over 50% of turnover relative to firms that export less than 10% of turnover; and, WTP for Information Events is £8 (12%) higher for firms that export 10-50% turnover, relative to those that export under 10% of turnover. Moreover, while companies that export with greater intensity (i.e. a larger share of their turnover) are willing to pay more to attend Events, experience (i.e. number of years as an exporter) does not influence WTP.

Table 8: Inclusion of covariates

Regressors	Outward Missions	Meet-the-buyer Events	Information Events
Turnover: £2-10 million	117.8***	41.22*	0.879
	(30.98)	(23.56)	(3.264)
Turnover: £10-50 million	102.1***	38.21	5.961
	(38.06)	(27.76)	(4.086)
Turnover: over £50 million	136.1***	84.17**	15.36***
	(49.25)	(35.18)	(5.066)
Exports: 10-50% of turnover	37.97	5.287	7.959**
	(31.17)	(23.17)	(3.257)
Exports: over 50% of turnover	59.24*	21.99	4.536
	(31.04)	(23.43)	(3.314)
User	22.76	-11.86	-1.215
	(29.12)	(21.00)	(3.023)
Constant	427.5***	248.3***	68.76***
	(33.74)	(24.11)	(3.446)
Observations	493	505	475

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: London Economics

Interestingly, a previous study on WTP for OMIS[46] confirms that SMEs' demand for OMIS is more elastic relative to large firms; and, firms with higher turnover are more likely to pay more for OMIS.

4.3.2 Price anchoring

Because we rely on stated preferences of participants in the users/non-user survey, it is useful to test whether respondents' WTP is influenced by the particular price points they are (randomly) assigned. We do this using a simple linear regression of maximum WTP on initial bids. That is, we test whether low initial bids are associated with systematically lower reported maxima, and vice versa.

The results are presented in Table 9. For ease of interpretation, we use the price point that is closest to mean estimated WTP as our base group. We find evidence of price anchoring for all

[46] London Economics (2011)

Event categories. For instance, respondents who were offered an initial price of £220 to attend an Outward Mission reported a maximum WTP that was £123 below the average – i.e. they value Outward Missions at £351 (= £474 – £123). Similarly, respondents offered £100 to attend a Meet-the-buyer Event valued at £134, £87 below the average. On the other hand, companies offered £80 for an Information Event valued it at £79 (£13 above average).

Table 9: Anchoring tests

Outward missions		Meet the buyer		Information Events	
Initial bid	**Max WTP**	**Initial bid**	**Max WTP**	**Initial bid**	**Max WTP**
£220	-122.8***	£100	-86.89***	£30	-3.718
	(42.72)		(28.18)		(8.055)
£370	-97.43**	*£250*	*(base)*	£50	0.0680
	(42.67)				(8.401)
£520	*(base)*	£400	68.88**	*£70*	*(base)*
			(28.62)		
£670	23.63	£550	40.00	£80	16.04*
	(41.96)		(29.52)		(8.635)
Constant	474.1***	Constant	220.9***	Constant	63.26***
	(29.77)		(20.02)		(6.012)
Observations	836	Observations	827	Observations	858
R-squared	0.020	R-squared	0.040	R-squared	0.008

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: London Economics

In summary, price anchoring is indeed present and a clear bias arises for each Event type:

- **Outward Missions:** lower initial bids lead respondents to list lower WTP; however, there is *no anchoring effect on higher initial bids.* So the estimated mean is likely to be biased downward – low initial bids led people to state lower WTP than they otherwise would have.
- **Meet-the-buyer Events**: both low and high bids influenced the stated WTP. The effect of a low initial bid is slightly larger, suggesting that actual WTP may again be underestimated, but the bias is likely to be less pronounced than with Outward Missions.
- **Information Events:** Here only high bids have an anchoring effect. This suggests that while valuations of these Events may be low, companies that are offered a higher price are willing to accept higher prices.

Aside from these biases, the presence of price anchoring has some important implications. First, it implies that companies have an unclear valuation of the services described and that the headline price charged may usefully serve as an indicator of the service's worth. In this respect higher prices for Outward Missions, Meet-the-buyer Events and Information Events are likely to be accepted by users and non-users who have no strong prior valuation of the service.

Secondly, improving companies' understanding of Events will allow for a more accurate valuation on the part of companies and hence a more efficient pricing strategy on the part of UKTI.

4.4 Summary

- Our model predicts a mean WTP of £522 for Outward Missions; £267 for Meet-the-buyer Events; and £74 for Information Events.
- There is no estimated difference in the value users and non-uses place on Events
- Firms with higher turnover and those exporting a larger proportion of their turnover report systematically higher WTP, while export experience does not affect WTP.
- Price plays a part in communicating the value of Events to companies.

5 Conclusions and recommendations

5.1 Conclusions

5.1.1 Economic rationale for UKTI's Events programme

- The broader theoretical case for the provision of export support services (as outlined in BIS Economics Paper 13) rests on the existence of two information-related market failures: spillover effects that result in under-provision, and asymmetric information leading to intermediation failures.
- There is substantial empirical evidence of the efficacy of export promotion policies and agencies, particularly in terms of engagement in new markets for small and medium-sized firms.
- Previous evaluation evidence shows that the substitutability between private and public sector providers of trade advisory services is found to be only partial; moreover, government-branded provision is likely to be more cost-effective due to the government's ability to act as "trusted intermediary".
- Past research has found that UKTI's trade support measures are successful in improving clients' performance in terms of productivity and profits.
- Events may be among the most effective ways to reach firms that are undergoing periods of transition and help them to successfully navigate these transitions and continue to grow.
- There is a strong correlation between exporting and innovation, and causation appears to run in both directions. Hence, improving export performance is a means of increasing overall national productivity and prosperity.

5.1.2 Impact of Events

- The number of businesses participating in the UKTI Events programme increased substantially over the period, from around 5,200 in 2006 to almost 18,000 in 2011. The share of overseas visits in the total recorded number of business participants fell over the period.
- Quality ratings for Events, as reported through PIMS, rose over the period for all Event categories.
- Despite some quarterly variation, the proportion of respondents that report significant business impacts from UKTI assistance through Events has remained stable over the six available years of PIMS
- Higher intensity Events (e.g. Visits, Overseas-based Events, Events lasting over a day) are associated with a higher probability of reporting improvements in productivity, and performance or significant profit gains (net of non-additionality).
- The proportion of participants at UK-based Events that reports profit gains in excess of £10,000 is rising over time.
- Although median additional profit (net of non-additionality) reported by Event attendees is zero in all years, mean additional profit reported by respondents attending UKTI Events stood at approximately £173,000 (over the 2011/12 financial year) and was shown to be increasing by approximately £26,600 per annum.

- The average value of the profit gain reported by participants at UKTI Events is rising over time for all Event categories although the increases are not statistically significant.
- Given a total cost of Events of £90.6 million for the 2011/12 financial year, the average additional profit of £173,000 multiplied by the number of firms assisted by Events (17,084 over the 2011/12 financial year), implies the benefit-cost ratio of Events stands at **33:1**, although this result is sensitive to a small number of 'big wins'.

5.1.3 The gateway role of Events

- A dataset that tracks company usage of different UKTI services over a five year period (2006-2011) is used to investigate the role of Events in promoting additional UKTI service deliveries.
- Events serve as signposts to other UKTI services, 76% of repeat-use UKTI clients attend an Event first.
- 54% of Event attendees go on to use at least one other UKTI service.
- Overseas Visits and Missions are associated with the highest subsequent service usage (68% of participants use at least one additional service).
- UK-based Events are associated with the greatest number of service deliveries (53% of all Events).
- 44% of participants at UK-based Events go on to use UKTI's overseas network.

5.1.4 Willingness to pay for UKTI Events

- Based on a well-established approach to eliciting willingness to pay for non-market goods or services, survey evidence is used to understand how much businesses value UKTI Events. The evidence indicates a mean willingness to pay of £522 for Outward Missions; £267 for Meet-the-buyer Events; and £74 for Information Events.
- The evidence shows no difference in the amount users and non-users are willing to pay for Events. This suggests that repeat experience of taking part in UKTI events has no effect on willingness to pay for them.
- Firms with higher turnover and those exporting a larger proportion of their turnover report systematically higher willingness to pay. Conversely, number of years of export experience and number of employees do not affect the companies' willingness to pay.
- Price itself plays a part in communicating the value of Events to companies.

5.2 Recommendations

Overall, this research suggests that Events and Missions are valued by UKTI clients and that the programme should therefore be continued. In terms of the specific recommendations emerging from the evaluation, we have grouped them according to three broad themes: **pricing**, **targeting** and **managing expectations**.

5.2.1 Pricing

The analysis demonstrates that firms' willingness to pay for Events in general exceeds the current price charged by UKTI. In addition, the analysis illustrates that price anchoring exists implying that pricing acts as a signal of quality. Therefore,

1) **we would recommend reviewing prices to ensure they are at a level that sends appropriate messages about the quality of UKTI Events;**
2) at the same time, **we would recommend that some time and effort should be taken to ensure transparency and consistency of pricing across the UKTI network**. However, it is important to recognise that consistency does not necessarily imply uniformity of pricing across the entire network as some allowance must be made for differing costs of provision.

The analysis also demonstrated the fact that smaller companies record lower willingness to pay to attend Events than larger firms. In contrast, the analysis showed that there was no difference in willingness to pay between previous users and non-users of UKTI services. This suggests that there is a justification for offering price discounts for SMEs to attend appropriate Events, although this differentiated pricing would not apply to firms with different prior experience of UKTI. Therefore,

3) **we would recommend that within the consistent and transparent pricing framework, flexibility is retained by UKTI to offer firms different levels of subsidy to attend Events where evidence supports differentiated willingness to pay.**

5.2.2 Targeting

Given the fact that observable firm level characteristics do not predict the business benefit from attending Events well, and also the fact that internal 'tipping' points at which external information has the greatest impact on firm performance are unobservable, and acknowledging the constraints on public sector expenditure,

4) **we would recommend that where resources for marketing are available, they should be used to raise general awareness of UKTI services and events and the benefit they can offer to different business groups rather than seeking to target individual firms.**

5.2.3 Managing expectations

In order to reconcile event participants with potentially higher prices, expectations have to be managed, both pre- and post-attendance. Pre-attendance, for the dual purpose of providing accurate information on the content and level of the Event ('master class' vs. 'introduction'), and ensuring firms make an informed decision to take part,

5) **we would recommend that resources are committed to the design and provision of low-threshold (easy access, limited time commitment, free/low cost) offerings (e.g. webinars, online information) to complement and effectively promote the Events programme.**

Despite Events offering a useful gateway to UKTI service more generally, post-attendance,

6) **we recommend that efforts should be made to ensure participants are more aware of UKTI and its services and subsequent access routes.**

In addition, given that around 50% of Events participants do not go on to use other UKTI services,

7) **We recommend that additional effort is made to understand the reasons why further attendance has not taken place.**

It is important to note that introducing a more transparent and coherent pricing structure will undoubtedly raise expectations amongst attendees. Acknowledging the obvious constraints on public sector expenditure,

8) **we recommend that UKTI commits adequate resources so that the Events programme is appropriately resourced, managed and monitored to ensure that these expectations are systematically met or exceeded.**

9) **In general, we recommend that promotional materials should be improved in terms of clarity about the content of Events, pricing, eligibility, networking opportunities etc. In particular, given the importance of the networking function reported by business, the networking aspect (even for Events where this is not the primary attraction) should be emphasised.**

The analysis demonstrated that prior engagement and better business preparation was associated with higher business benefits. As part of the information provision,

10) **we would recommend that firms are made aware of the potential preparation required so that the benefit they may achieve is maximised.**

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Annex 1 PIMS secondary analysis

Box 5: The Performance and Impact Monitoring Survery (PIMS)

The Performance and Impact Monitoring Survey (PIMS)[47] is a quarterly survey of users of UKTI's principal services. PIMS collects data on a range of indicators designed to quantify the impact of UKTI services on business operations. The main areas covered by PIMS have been consistent over the 6 ½ years of interviews and can be grouped in the following categories (see **Error! Reference source not found.**):

- service quality and user satisfaction;
- impact and benefit to business;
- additionality of reported impact (how much of the observed impact can be attributed to UKTI support);
- business profile (including innovation activity, growth experience and objectives, and expectations for the future); and,
- business context and export strategy.

The PIMS sample

In each quarter, the number of interviews allocated to different services is set based on a combination of factors.48 In the first instance, the number of interviews should broadly reflect the number of firms supported through each service. For most UKTI services, PIMS records include a simple random sample of firms supported in the previous quarter.49

However, this has to be balanced against the need to conduct relatively robust analysis at an individual service level. For this reason, many of the smaller services are over-represented in terms of interview numbers (in order to ensure that at least 40 interviews are conducted per service per year). Furthermore, in some cases, UKTI also requires a more detailed breakdown (e.g. by English region), so the interview numbers for certain service-market and service-region combinations are further increased to achieve a sample size sufficient for meaningful statistical analysis.

In summary, the sampling approach for each type of Event is as follows:

- English Regions Events, Market Visit Support (MVS): sample stratified to select an even number of contacts in each English region (subject to sample availability).
- Overseas Posts Events: sample stratified by market area (Europe, North America, South/Latin America, Asia Pacific, Middle East/Africa) to select a roughly even number of contacts receiving support about each of these areas.
- All other UKTI Events: a straightforward random sample of the contacts provided.

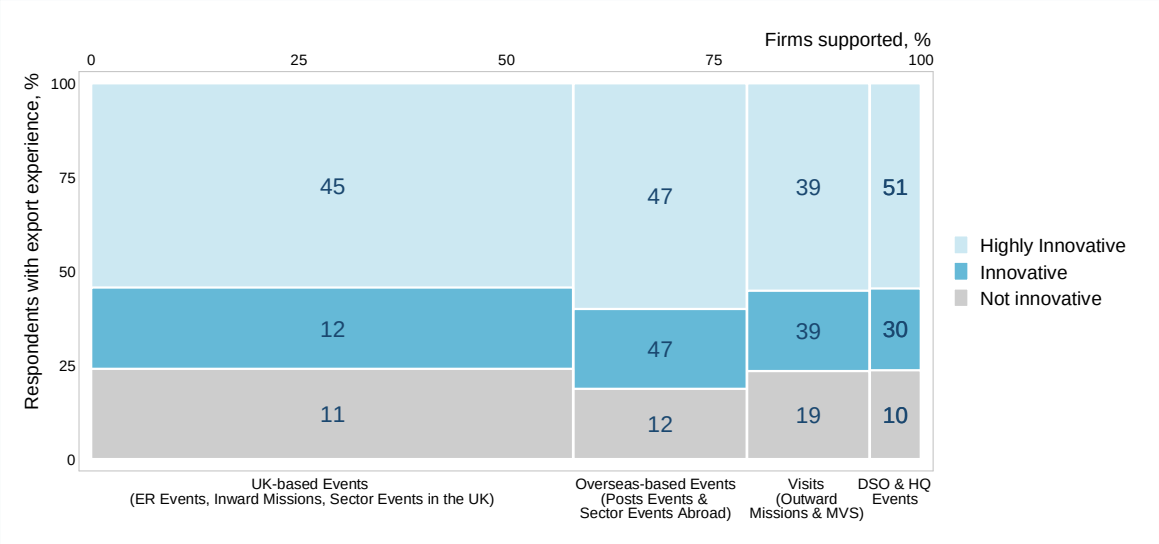
[47] http://www.ukti.gov.uk/uktihome/aboutukti/ourperformance/performanceimpactandmonitoringsurvey.html

[48] Description provided by OMB Research.

[49] Although the realised sample of interviews may be subject to biases arising from differences in response rates.

A1.1 Descriptive analysis

Figure 38:Distribution of respondents by degree of innovation



Note: Numbers in tiles reflect percentages over vertical axis only.
Source: London Economics

Table 10: Proportion of firms reporting benefit when companies had a chance to meet an ITA at Event, %

	Event type	Description	Significant business benefit	Improved business perf.	Increased R&D	Extra profit > £10k	Extra profit > £500k
UK-based Events	ER Events	ITA not present	72	27	27	25	0
		ITA present	68	44	29	29	5
	Sector Events UK	ITA not present	58	32	9	17	7
		ITA present	62	45	16	23	5
DSO & HQ Events	HQ Events	ITA not present	44	43	33	25	13
		ITA present	56	39	21	20	3
	DSO Events	ITA not present	:	:	:	:	:
		ITA present	:	:	:	:	:

Note: Information on Event duration is not available for Inward Missions, Outward Missions or Market Visit Support.
Source: London Economics' analysis of PIMS data waves 2-27

Table 11: Proportion of firms reporting benefit by Event type and duration, %

	Event type	Description	Significant business benefit	Improved business perf.	Increased R&D	Extra profit > £10k	Extra profit > £500k
UK-based Events	ER Events	Up to half a day	55	32	17	0	0
		Up to 1 day	72	43	23	30	3
		More than 1 day	81	63	28	31	9
	Sector Events UK	Up to half a day	54	34	12	15	3
		Up to 1 day	64	45	15	27	3
		More than 1 day	68	52	12	28	6
Overseas-based Events	Posts Events	Up to half a day	62	44	19	32	3
		Up to 1 day	57	47	8	6	0
		More than 1 day	84	72	18	55	5
	Sector Events Abroad	Up to half a day	52	52	29	29	6
		Up to 1 day	70	22	25	25	0
		More than 1 day	88	65	27	42	5
DSO & HQ Events	HQ Events	Up to half a day	49	28	16	19	6
		Up to 1 day	65	48	26	29	4
		More than 1 day	67	47	25	25	8
	DSO Events	Up to half a day	63	32	13	34	11
		Up to 1 day	61	41	12	24	5
		More than 1 day	65	54	16	37	12

Note: Information on Event duration is not available for Inward Missions, Outward Missions or Market Visit Support.
Source: London Economics' analysis of PIMS data waves 2-27

Table 12: Linear regression of impact indicators on time trend

Regressor	Improved Productivity	Business performance	Increased R&D	Extra profit > £10,000	Extra profit > £500,000
Year	-0.01**	-0.00	0.01**	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	15.85**	8.94	-18.95**	-2.46	-5.65
	(6.16)	(6.75)	(8.24)	(7.53)	(3.55)
Observations	6,460	6,318	3,857	4,449	4,449
R-Squared	0.00	0.00	0.00	0.00	0.00

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: London Economics' analysis of PIMS data waves 2-27

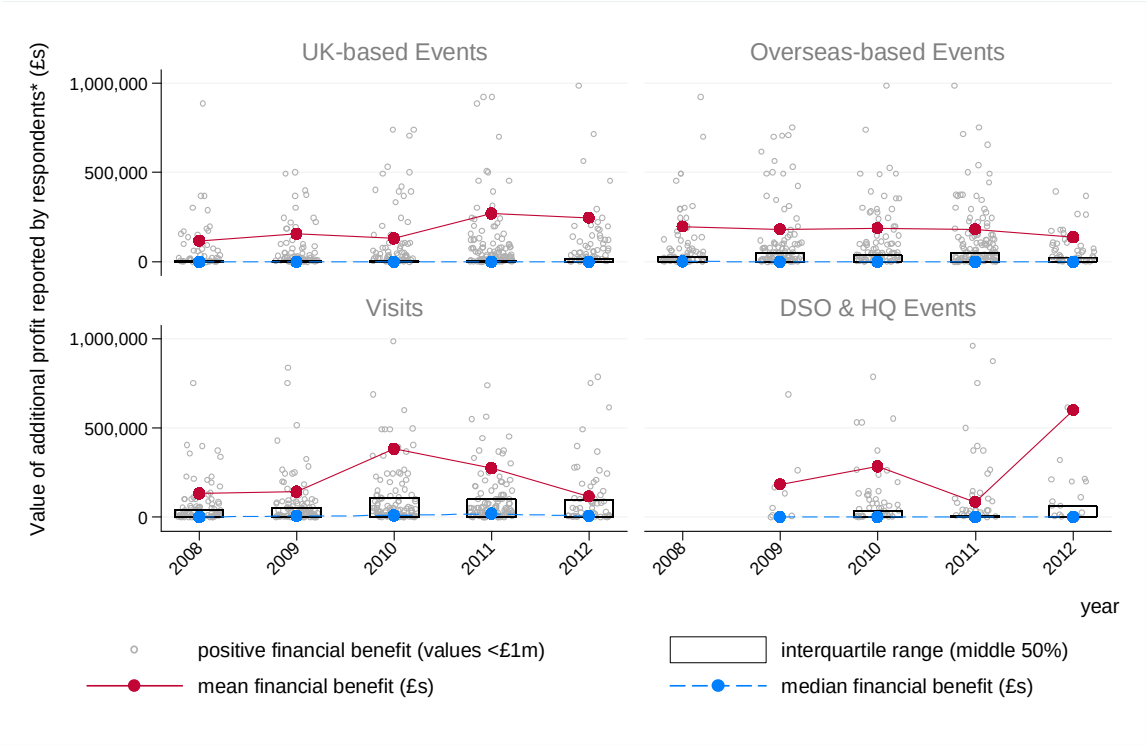
Table 13: Linear regression of impact indicators on time trend, Event types and interactions

Regressor	Improved productivity	Improved performance	Increased R&D	Extra profit > £10,000	Extra profit > £500,000
Year	0.01	0.01**	0.02***	0.01*	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)
(Overseas-based)*Year	-0.01	-0.02**	-0.02*	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Visits*Year	-0.00	0.01	-0.00	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
(DSO & HQ)*Year	0.02	0.04	0.04*	0.01	-0.00
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)
Constant	-12.90	-21.67**	-33.92***	-20.65*	-6.97
	(9.28)	(10.08)	(12.81)	(11.46)	(5.53)
Observations	6,460	6,318	3,857	4,449	4,449
R-squared	0.05	0.07	0.01	0.05	0.01

Note: UK-based Events are the base category in this regression – so the coefficient on 'Year' reflects the time trend for these Events. For all other Events, the coefficient on the time trend is captured by the sum of the coefficient on 'Year' and the coefficient on the relevant interaction term. Standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Source: London Economics

Figure 39:Distribution of additional profit from attending Event by Event category, 2006-2012



Note: *Net of non-additionality. Mean, median and interquartile range are calculated based on the entire sample of respondents. The bubbles represent the individual data points, cut off at £10million to aid visibility.

Source: London Economics' analysis of PIMS data waves 2-27

Table 14: Regression of reported profit gain on time trend, event types and interactions

Regressors	Additional profit	Additional profit
year	26.58***	39.94***
	(9.72)	(15.19)
(Overseas-based)*year		-40.12
		(25.02)
(Visits)*year		-11.38
		(24.05)
(DSO & HQ)*year		29.03
		(72.68)
Constant	-53,231.12***	-80,094.49***
	(19,522.18)	(30,511.65)
Observations	4,449	4,449
R-squared	0.00	0.00

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: London Economics

A1.2 Econometric analysis

A1.2.1 Marginal effects

Table 15: Regression output: marginal effects for *'Events'* vs *'All UKTI services'*

	Significant bus benefit (probit)		Improved bus performance (probit)		Increased R&D (probit)		Extra profit > £10k (probit)		Extra profit > £500k (OLS)	
Regressors	**Events**	**All services**	**Events**	**All services**	**Events**	**All services**	**Events**	**All services**	**Events**	**All services**
ExportExperience										
2 (0- 2 years)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
3 (2-10 years)	-0.07**	-0.04***	-0.12***	-0.07***	-0.02	-0.01	-0.12***	-0.06***	-0.06***	-0.03***
	(0.03)	(0.01)	(0.03)	(0.01)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.01)
4 (over 10 years)	-0.08**	-0.07***	-0.14***	-0.10***	-0.10***	-0.05**	-0.20***	-0.13***	-0.08***	-0.05***
	(0.04)	(0.02)	(0.04)	(0.02)	(0.04)	(0.02)	(0.05)	(0.02)	(0.02)	(0.01)
Age										
3 (5-10 years)	0.01	-0.01	0.04	-0.01	-0.03	-0.01	0.06	0.01	-0.01	0.01
	(0.03)	(0.02)	(0.04)	(0.02)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.01)
4 (over 10 years)	0.00	0.01	0.11***	0.04**	-0.01	-0.00	0.09**	0.05***	-0.01	0.01
	(0.04)	(0.02)	(0.04)	(0.02)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.01)
Employees										
2 (1-9)	0.07	0.05	0.09	0.01	-0.13	-0.11	-0.03	0.02	-0.01	0.02
	(0.08)	(0.04)	(0.08)	(0.04)	(0.14)	(0.07)	(0.09)	(0.04)	(0.04)	(0.02)
3 (10-49)	0.03	0.02	0.04	-0.01	-0.14	-0.13*	-0.00	0.05	0.01	0.04*
	(0.08)	(0.04)	(0.08)	(0.04)	(0.14)	(0.07)	(0.09)	(0.05)	(0.04)	(0.02)
4 (50-249)	-0.01	-0.00	-0.03	-0.07	-0.20	-0.19**	-0.01	0.05	0.04	0.07***
	(0.08)	(0.04)	(0.09)	(0.04)	(0.14)	(0.07)	(0.09)	(0.05)	(0.04)	(0.02)
5 (over 250)	-0.06	-0.04	-0.14	-0.17***	-0.22	-0.23***	-0.09	-0.04	0.08*	0.10***

	(0.08)	(0.04)	(0.09)	(0.05)	(0.14)	(0.08)	(0.09)	(0.05)	(0.05)	(0.02)
PercExportTurnover	-0.00*	-0.00***	-0.00	-0.00***	-0.00	-0.00	-0.00	-0.00**	0.00	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ownership										
1 (Foreign)	-0.10***	-0.06***	-0.09***	-0.06***	-0.03	-0.04**	-0.07**	-0.04**	-0.01	-0.00
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)
Innovative Firm										
1 (InnovativeFirm)	0.01	0.03*	0.07**	0.07***	0.04	0.02	0.01	0.07***	0.02	0.01
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.01)
2 (HighlyInnovativeFirm)	0.04	0.04***	0.04	0.06***	0.10***	0.08***	0.04	0.08***	0.05***	0.02***
	(0.03)	(0.01)	(0.03)	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)	(0.02)	(0.01)
PlanToGrow										
3 (grow moderately)	0.02	0.01	0.07	0.08***	0.08*	0.03	0.03	0.07***	-0.01	0.00
	(0.04)	(0.02)	(0.05)	(0.02)	(0.04)	(0.07)	(0.05)	(0.03)	(0.03)	(0.01)
4 (grow substantially)	-0.02	0.00	0.06	0.10***	0.09**	0.07	0.05	0.09***	0.01	0.03**
	(0.04)	(0.02)	(0.05)	(0.02)	(0.04)	(0.07)	(0.05)	(0.03)	(0.03)	(0.01)
OverseasBusinessPlan	0.07***	0.07***	0.09***	0.10***	0.04	0.02	0.07**	0.07***	0.01	0.01
	(0.02)	(0.01)	(0.03)	(0.01)	(0.02)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
Observations	2,713	10,740	2,661	10,448	1,810	7,098	1,991	8,294	1,991	8,294

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: London Economics

Table 16: Regression output: extended model

Regressors	Significant bus. benefit	Improved bus. Perf.	Increased R&D	Extra profit > £10k	Extra profit > £500k
	(probit)	*(probit)*	*(probit)*	*(probit)*	*(OLS)*
Year	-0.00	0.00	0.01**	0.01*	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)
Event type					
(Overseas-based)	0.09***	0.11***	0.07***	0.13***	0.01
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
(Visit)	0.22***	0.26***	0.09***	0.27***	0.04***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
(DSO & HQ)	-0.07*	-0.07*	0.01	-0.04	0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
ExportExperience					
2 (0- 2 years)	-0.01	-0.05	-0.09*	0.07	0.01
	(0.04)	(0.05)	(0.05)	(0.06)	(0.03)
3 (2-10 years)	-0.07**	-0.14***	-0.06	-0.08	-0.06***
	(0.04)	(0.04)	(0.04)	(0.05)	(0.02)
4 (over 10 years)	-0.07	-0.15***	-0.14***	-0.13**	-0.07***
	(0.04)	(0.05)	(0.05)	(0.06)	(0.03)
Age					
3 (5-10 years)	0.01	0.04	-0.02	0.05	-0.01
	(0.03)	(0.04)	(0.03)	(0.04)	(0.02)
4 (over 10 years)	0.01	0.12***	-0.00	0.09**	-0.01
	(0.04)	(0.04)	(0.03)	(0.04)	(0.02)
Employees					
2 (1-9)	0.06	0.11	-0.10	0.00	0.00
	(0.08)	(0.09)	(0.13)	(0.09)	(0.04)
3 (10-49)	0.03	0.07	-0.11	0.04	0.02
	(0.08)	(0.09)	(0.13)	(0.09)	(0.04)
4 (50-249)	-0.01	0.00	-0.16	0.05	0.06
	(0.08)	(0.09)	(0.13)	(0.09)	(0.04)
5 (over 250)	-0.05	-0.10	-0.19	-0.04	0.09*
	(0.08)	(0.09)	(0.14)	(0.09)	(0.05)
PercExportTurnover	-0.00*	-0.00	-0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ownership					
1 (foreign)	-0.08***	-0.07**	-0.03	-0.05	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
Innovative Firm					
1 (InnovativeFirm)	0.01	0.07**	0.04	0.01	0.02
	(0.03)	(0.03)	(0.03)	(0.04)	(0.02)
2 (HighlyInnovativeFirm)	0.03	0.03	0.10***	0.03	0.05***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
PlanToGrow					
2 (stay the same)	0.15	0.05	-0.28	0.00	0.04
	(0.13)	(0.14)	(0.17)	(0.00)	(0.07)
3 (grow moderately)	0.15	0.11	-0.17	0.00	0.03
	(0.13)	(0.13)	(0.17)	(0.00)	(0.07)
4 (grow substantially)	0.11	0.11	-0.16	0.00	0.05
	(0.13)	(0.13)	(0.17)	(0.00)	(0.07)
OverseasBusinessPlan	0.06**	0.08***	0.04	0.06*	0.01

	(0.02)	(0.03)	(0.02)	(0.03)	(0.01)
Observations	2,713	2,661	1,810	1,979	1,991

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: London Economics

A1.2.2 Predicted probabilities

Table 17: Regression output: predicted probabilities

Regressors	Significant bus. benefit	Improved bus. performance	Increased R&D	Extra profit > £10k
	(probit)	*(probit)*	*(probit)*	*(probit)*
ExportExperience				
1(0 years)				
2 (0- 2 years)	0.77	0.66	0.25	0.49
3 (2-10 years)	0.69	0.54	0.23	0.37
4 (over 10 years)	0.69	0.52	0.14	0.29
Age				
2 (over 0, up to 5 years)	0.70	0.48	0.20	0.29
3 (5-10 years)	0.71	0.52	0.17	0.35
4 (over 10 years)	0.70	0.59	0.19	0.38
Employees				
1 (0 employees)	0.68	0.54	0.35	0.38
2 (1-9)	0.75	0.63	0.22	0.35
3 (10-49)	0.71	0.57	0.21	0.38
4 (50-249)	0.67	0.50	0.16	0.37
5 (over 250)	0.62	0.40	0.13	0.29
PercExportTurnover				
0%	0.72	0.56	0.20	0.36
10%	0.72	0.56	0.20	0.36
30%	0.71	0.55	0.19	0.36
50%	0.70	0.55	0.19	0.35
75%	0.68	0.54	0.18	0.35
Ownership				
1 (UK-owned)	0.72	0.57	0.20	0.37
2 (Foreign-owned)	0.62	0.47	0.16	0.30
Innovative Firm				
O (Not innovative)	0.68	0.51	0.11	0.33
1 (InnovativeFirm)	0.69	0.59	0.16	0.34
2 (HighlyInnovativeFirm)	0.71	0.55	0.22	0.37
PlanToGrow				
2 (not grow)	0.70	0.49	0.11	0.32
3 (grow moderately)	0.73	0.56	0.19	0.35
4 (grow substantially)	0.68	0.55	0.20	0.36
OverseasBusinessPlan				
0 (No overseas business plan)	0.64	0.48	0.16	0.30
1 (Overseas business plan)	0.72	0.57	0.20	0.37
Observations	2,713	2,661	1,810	1,991

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: London Economics

Annex 2 Willingness to pay

A2.1 Sample selection methodological notes

- Software: Stata11 using the psmatch2 routine (Leuven & Sianesi, 2003)
- Covariates:
  - company size (measured by number of employees):
    - micro SME (1-9)
    - small SME (10-49)
    - medium SME (50-249)
    - large firm (250+)
  - company size (measured by annual turnover):
    - micro SME (<£2m)
    - small SME (£2-10m)
    - medium SME (£10-50m)
    - large firm (+£50m)
  - company age: under 5 years or over 5 years;
  - SIC sector aggregated by section;
- Logistic regression is used to predict the propensity score;
- Radius caliper matching algorithm is used;
- Caliper selection strategy:
  - Start with $[0.25*\sigma_{logit(pscore)}]$ (Rosenbaum & Rubin, 1983) and reduce incrementally (keeping an eye on treated observations dropped) until covariates are balanced;
    - Initial calliper: $[0.25*\sigma_{logit(pscore)}]= .011$
    - Final caliper = 0.01
    - Treated observations dropped: 627
- Covariate balancing was tested (t-tests of mean equality; standardised bias) using *pstest* (Leuven & Sianesi, 2003):
  - Null hypothesis: each covariate is balanced (means are equal) in treated and non-treated groups
  - P-values greater than 0.1 for all covariates in matched sample:
    - cannot reject the null hypothesis at 10% level
    - treatment and control groups are not statistically different given observable characteristics
- Realised sample
  - *Treatment* group: 3,538 firms
  - *Control* group: 43,977 firms
    - Keep the best (*highest propensity score*) 15,000 matches