

# Information, Perceptions and Exporting – Evidence from a Randomized Controlled Trial\*

H. Breinlich<sup>†</sup>, D. Donaldson<sup>‡</sup>, P.J. Nolen<sup>§</sup>, G. Wright<sup>¶</sup>

January 2016

## Abstract

We present novel evidence from the results of a randomized controlled trial on the role that information plays in the perceptions of the benefits and costs of exporting. We first present results from a baseline survey of approximately 1,000 UK manufacturing firms to show that non-exporters hold substantially more negative beliefs about the costs and benefits of exporting relative to exporters. We then explore the extent to which these differences in perceptions are due to a biased understanding of the true costs and benefits of exporting on the part of non-exporters, or are instead a reflection of underlying differences in performance characteristics across firms, the view assumed by most theories of international trade. To do this, we make targeted information available to a randomly selected subset of these firms in the form of information from the UK's export promotion agency about the benefits and costs of exporting. The results of our intervention reveal a surprising, asymmetric response on the part of exporters and non-exporters. Instead of revising their negative perceptions upward, treated non-exporters become more likely to report *lower* perceived benefits and *higher* perceived barriers compared to non-treated non-exporters. In contrast, the attitudes of existing exporters improve. We discuss different behavioral and non-behavioral explanations for this result and highlight possible implications for export promotion policies.

KEY WORDS: Exporting, Information, Perceptions, RCTs

JEL CLASSIFICATION: F10, F14

---

\*We are grateful to seminar participants at the Tri-Continental International Trade Policy workshop at UIBE, Essex, ETSG, UCD, Oxford, Louvain and Nottingham for helpful comments and suggestions. We gratefully acknowledge financial support through the British Academy Small Research Grant “Evaluating the Consequences of Exporting - An Experimental Approach”. All remaining errors are ours.

<sup>†</sup>Corresponding author. University of Nottingham, CEP and CEPR. Email: holger.breinlich@nottingham.ac.uk.

<sup>‡</sup>Stanford University.

<sup>§</sup>University of Essex.

<sup>¶</sup>University of California, Merced.

# 1 Introduction

A large proportion of firms do not export, even in industries whose products are, in principle, easily traded. For example, only around 50 percent of UK manufacturing firms reported any export activity in 2006 (BIS, 2010). Trade theory has typically ascribed these differences fact to performance differences across firms, with exporting only being profitable for the more productive or innovative firms. There are several versions of this hypothesis – for instance, Melitz (2003) emphasizes a pure selection mechanism whereby *ex-ante* more productive firms select into export status. Alternatively, Iacovone and Javorcik (2012) and Molina and Muendler (2013) argue that firms that are preparing to export engage in productivity-enhancing activities, while another, smaller literature finds evidence in support of *ex-post* learning-by-exporting.<sup>1</sup>

Given the focus of the literature, it is unsurprising that the notion that exporting can be explained by firm performance measures is the view held by most economists. However, this view assumes full information and (usually) the absence of uncertainty. An alternative perspective is that the export decision is characterized by significant information frictions, in the sense that firms’ understanding of how their capabilities map into export profitability is uncertain. As a result, some firms may not export, or may not expand their existing exports, due to the fact that they have overly pessimistic expectations about the benefits and costs of exporting. In this case, once these biased expectations are corrected, firms might be ready to take up exporting, or to export more. This is a view (implicitly or explicitly) held by many export promotion agencies, and is the view that we address in this paper.

To do this, we implement a randomized controlled trial (RCT) with U.K. firms in order to address whether the provision of information changes the attitudes of firms regarding the costs and benefits of exporting. As a first step, we demonstrate that perceptions are indeed strongly correlated with export status, such that exporters perceive lower costs and greater benefits to exporting relative to non-exporters. Next, we show that perceptions can be changed by the provision of information, albeit in unexpected ways. In particular, we show that information provision leads to a significant *worsening* of the attitudes of non-exporters. At the same time, information provision makes exporters more likely to report plans to increase the value of their exports, report lower perceived barriers to exporting and larger benefits from exporting.

These findings contribute to the literature in three primary ways. First, we provide the first systematic evaluation of the differences in attitudes toward exporting between exporters and non-exporters. Second, using an RCT research design we evaluate whether the provision of information can change firms’ attitudes regarding exporting. We note that this research design also provides a useful evaluation of policy due to the fact that our intervention uses common and well-established marketing material used by UK Trade and Investment (UKTI, the UK’s export promotion agency) in a variety of contexts.<sup>2</sup> Third, we are among the first to apply an RCT research design in the context of international trade (also see Atkin, Khandelwal and Osman, 2014).

---

<sup>1</sup>See Crespi, Criscuolo and Haskel (2008) or De Loecker (2007) for examples. Note that even among papers which find evidence against pure selection, the consensus is that new and existing exporters are more productive to begin with than firms which remain non-exporters.

<sup>2</sup>As we will describe below, the intervention is also very low-cost and so would be easy to scale up.

The novelty of our research design places us within a very small literature, though we address questions relevant to several literatures within international trade. For instance, our paper is related to the literature on the role of uncertainty in exporting, a topic explored by Roberts and Tybout (1997), Das, Roberts and Tybout (2007), Handley (2014) and Novy and Taylor (2014), among others. We also contribute to the literature on the characteristics of exporters and non-exporters, important examples of which include Bernard and Jensen (1995) and Bernard, et. al. (2007).<sup>3</sup> Here we introduce a new dimension of firm heterogeneity in the form of perceptions regarding the costs and benefits of exporting. In particular, we show that these perceptions have explanatory power beyond the underlying firm characteristics. Finally, there is a policy literature that includes survey-based research by export promotion agencies such as UKTI, and which asks firms about the costs and benefits of exporting (e.g., BIS, 2010). So far, this research has not attempted to systematically measure differences in perceptions across exporters from non-exporters, nor has it used rigorous evaluation techniques such as RCTs.

## 2 RCT Research Design

Our research design proceeded in three steps: first, we sent a baseline survey to a representative sample of UK firms asking them a range of questions about the costs and benefits of exporting (see Appendix A). Next, we sent a subsample of these firms a cover letter and a UKTI brochure outlining the benefits and costs of exporting.<sup>4</sup> Finally, we sent a follow-up survey to the initial set of firms. The timeline was the following:

- **July 2013:** Sent surveys to a random sample of 6,015 UK manufacturing firms.
- **August 2013:** Sent a cover letter and UKTI brochure outlining the benefits of exporting to a 50 percent subsample of the firms contacted in July.
- **February 2014:** Repeated the July survey in order to track changes in firm perceptions due to the August treatment.

### 2.1 Firm Sample

The population of firms from which we sampled comes from FAME, a dataset produced by Bureau van Dijk that contains the universe of all incorporated firms in the UK. More specifically, we began with all UK manufacturing firms with between 2 and 250 employees, a group of 37,922 firms as of July, 2013. In focusing on this group we set aside proprietors who are possibly self-employed as well as those above 250 employees, for whom UKTI support is not available. Our results are therefore representative of UK manufacturing SMEs.

From this population we randomly selected a sample of 6,015 firms to receive the initial survey sent in July. We then selected a 50 percent sample of these firms to receive the treatment (the UKTI brochure). Note that this second sample could have been drawn from the smaller

---

<sup>3</sup>See Greenaway and Kneller (2007) for a survey of the literature, including studies for the United Kingdom.

<sup>4</sup>We describe the content of the brochure in more detail in Section 2.2. A copy is available from the authors upon request.

set of firms who responded to the initial survey, rather from the entire initial sample. However, given our expected response rates – based on discussions with UKTI about similar surveys – this potentially would have reduced our final sample of firms, following the final survey sent in February 2014, to fewer than 100 firms.<sup>5</sup> Indeed, as we will show below, the number of firms that replied to the first and the second survey is substantially lower than the number of firms that replied to the second survey only.

Our sample was stratified in order to increase the power of the research design. We stratified by total assets and industry classification (UK SIC codes) since these are the only variables for which we have information for all firms in FAME. At the industry level we grouped firms by 3- or 4-digit codes (95 industries total) in order to ensure there were at least 120 firms in each industry.<sup>6</sup> We then broke each of the industries into asset quartiles, giving us  $95 \times 4 = 380$  industry-asset bins. Within each bin we then randomly assigned firms to one of three groups: those receiving the initial questionnaire as well as the brochure; a group receiving only the initial questionnaire; and a third group that received nothing. We chose an equal number of firms for the first two groups so that the total number of firms was 6,015 (3,007 received the brochure and questionnaire and 3,008 received the questionnaire only). This allocation was ultimately determined according to our budget constraints.

## 2.2 The RCT

The questionnaire asked firms a range of questions, targeted separately to non-exporters and exporters, in order to elicit their perceptions of the costs and benefits of exporting.<sup>7</sup> The information treatment then consisted of a cover letter and a standard marketing brochure used by UKTI to advertise the benefits of exporting along with UKTI services. The brochure has three main sections: the first section lists the benefits from exporting, as reported by other UK firms, and has a number of case studies describing the experience of firms who successfully exported their products, or successfully expanded into new markets. The benefits of exporting listed in the brochure are very similar to the potential benefits that we inquire about in our questionnaire. The second section then discusses potential barriers to exporting (again similar to those that we inquire about in the questionnaire) and directs firms to the UKTI program most relevant to overcoming these barriers. The third section then explains the different UKTI programs available to firms.<sup>8</sup> Since UKTI research shows that only around half of eligible firms are aware of the existence of UKTI, the brochure should contain new and valuable information for a significant fraction of the firms in our treatment group.

Of the 6,015 baseline questionnaires sent out, 50 came back as undeliverable and 934 surveys (16 percent) were returned, most by mail though we offered a web-based option that was used by 7 percent of the 934 firms. For the endline questionnaire we again sent out 6,015 surveys,

---

<sup>5</sup>UKTI experience indicated a potential response rate of between 10 and 20 percent. At the lower bound, this would have implied a final sample of firms – those responding to the February 2014 survey – of  $6015 \times 0.1 \times 0.1 \approx 60$ .

<sup>6</sup>Some 4-digit SICs needed to be grouped into 3-digit SICs because of the small number of firms at the 4-digit level.

<sup>7</sup>See Appendix A for a copy of the questionnaire. The survey questions were drawn from existing UKTI surveys which were produced by survey professionals and have been implemented in a variety of contexts by UKTI. We refined these questions through a series of discussions with members of UKTI's research and marketing division.

<sup>8</sup>A copy of the brochure is available from the authors upon request.

100 of which came back as undeliverable and 630 (10 percent) of which were returned. Again, only a small proportion of firms chose the online option. These survey response rates are in line with previous UKTI experience from surveying the same group of firms.

The sample of firms which replied to our survey seems to be fairly representative of the UKTI target population. To see this, we regressed the variables available for all firms in the population (assets and industry) on a dummy for whether a firm replied to the survey. Table 1 displays results for the asset variable for both the baseline and the endline survey. As we can see, survey firms are slightly overrepresented in the middle-two quartiles of the asset distribution. However, these differences seem to even out so that mean (log) assets are the same in the survey sample and the population.<sup>9</sup> We repeated this analysis for the 95 industry dummies used to stratify the firms. For the baseline survey, we found statistically significant differences (at the 10 percent level) between survey and population firms in 7 out of 95 industries, slightly less than one would expect on the basis of pure chance. For the online survey, this figure rose to 14 out of 95, slightly more than one would expect.

### 2.3 Balance Checks

Note that the original 6,015 firms were balanced on total assets and industry by design. However, selective responses by the surveyed firms could alter this balance. Since firms responded to the questionnaire *before* they received a UKTI brochure this should not happen in expectation, but nevertheless might be observed for any given realization of survey responses. In addition, treatment and control groups may not be balanced in their initial perceptions of the costs and benefits of exporting. Again, this should not happen in expectation, but could happen in practice due to the fact that we are unable to stratify on perceptions, or as the result of selective firm responses.

To evaluate the balance of our sample, we regress observables from the first survey round on the treatment dummy. These observables include all variables captured in the questionnaire, plus dummies for the industry-assets bins. Since out of the 380 original bins there are 149 in which no firm replied to the questionnaire, we have to work at a more aggregate level. By construction, the original research design was also balanced at the 1-digit industry and asset-quartile level, and so we use these more aggregate cells, of which there are  $3 \times 4 = 12$ .<sup>10</sup> Overall, Table 2 shows that even with a low response rate, there is no significant difference between the treatment and control firms. More specifically, in Table 2 we regress our newly constructed industry-by-asset-quartile dummies and all responses from the baseline survey on the treatment dummy. We find statistically significant differences between treatment and control groups for only two out of 35 questions or question group averages.<sup>11</sup> Again, this is roughly what one

---

<sup>9</sup>Strictly speaking, in Table 1 we do not compute population means but means for the firms which did not respond to either the baseline or the endline survey. True population means could be computed by calculating a weighted mean of included and excluded firms, using the number of firms in each group as weights. But given the small survey sample size, this should not make a big difference.

<sup>10</sup>We merged the third and fourth asset quartiles for UKSIC 3 to ensure that we have at least one observation from both treatment and control group in each bin. So in practice we work with 11 bins only.

<sup>11</sup>The variables `q23_zmean`, `q24_zmean`, `q34_zmean` and `q35_zmean` are computed as simple arithmetic averages of the answers to questions in their respective question groups (e.g., `q23_zmean` is the mean of questions `q23_a` to `q23_e`). Question groups 2.3 and 2.4 measure perceived benefits and costs of exporting for non-

would expect on the basis of chance. Thus, going forward we use 1-digit-industry-by-asset-quartile dummies throughout the analysis in order to increase the power of the research design.

Overall it seems that our research design is balanced on pre-treatment observables and that our samples are representative of the UKTI target population – i.e., UK manufacturing firms with 2 to 250 employees. We next turn to the results.

### 3 RCT Results

There are two main sets of findings that come out of the RCT, and we discuss these in turn. First, we document the differences in the perceptions of the costs and benefits of exporting between exporters and non-exporters. Second, we estimate the impact of information provision on these perceptions.

#### 3.1 Differences in Perceptions

In the baseline survey, 73 percent of firms report positive goods exports, and this group of firms overwhelmingly reports that they will continue to export. On a scale of 1 to 5, where 1 is “very likely” and 5 is “very unlikely”, existing exporters’ average response to the question “How likely are you to continue exporting your products over the next 3 years?” was 1.15. These firms also report a high likelihood of increasing the total value of their exports (an average response of 1.29, where 1 is “increase the total value”, 2 is “stay the same” and 3 is “decrease the total value”) as well as increasing the number of markets they export to (average response of 1.4 on an analogous scale). On the other hand, non-exporters’ average response to the question “How likely are you to start exporting some or all of your products within the next 3 years?” was 4.27, where 1 is “very likely” and 5 is “very unlikely”.

Table 3 looks at the perceptions of the benefits of, and barriers to, exporting as reported by the firms in our baseline sample. We compute means for current exporters and non-exporters and report the difference between the two means, together with the associated standard error. Exporters state substantially higher benefits from exporting than non-exporters, and barriers are considered to be much less difficult to overcome. While the fact that exporter and non-exporter perceptions differ is perhaps not surprising, the magnitude of the differences is nevertheless striking in our mind. To the best of our knowledge, this is also the first time these differences have been described in a systematic fashion.

This then brings us back to our initial question: Are the differences in perceptions between exporters and non-exporters due to fundamentals, and therefore “unbiased”? Or do non-exporters have a biased view of the costs and benefits of exporting? In the next section we provide information regarding the potential benefits of exporting to a random sample of exporters and non-exporters. To the extent that “information bias” can explain the differences in perceptions the provision of information should reduce the perception gap between exporters and non-exporters – i.e., it should bring non-exporters’ views more in line with exporters’ views.

---

exporters, and question group 3.4 and 3.5 for exporters (see below for details, and Appendix A for a copy of the questionnaire). The variables `zq23q24_mean` and `zq34q35_mean` are “total impact” measures, calculated as the difference between mean reported benefits and cost (i.e., `zq23q24_mean = q23_zmean - q24_zmean`).

## 3.2 Impact of Information Provision

We begin with a discussion of the results from the endline survey only, and then later incorporate the first round survey results. Throughout, we report results from all individual questions but focus the discussion on indices constructed from results across groups of comparable questions. We do so in order to facilitate the exposition and to avoid discussion of potentially spurious results arising from the analysis of a large range of outcome variables. Specifically, we follow Kling, Liebman and Katz (2007) in constructing summary indices based on equally weighted averages of z-scores of their component questions. This aggregation improves statistical power to detect effects that go in the same direction within a domain (see O’Brien (1984) and Kling, Liebman and Katz (2004)). For each question, the z-score is calculated by subtracting the control group mean and dividing by the control group standard deviation.<sup>12</sup>

We construct four group averages in this manner, one for perceived benefits and one for perceived barriers, separately for exporters and non-exporters. We also compute a “total effect index” for each firm group as the difference between the benefits index and the barriers index. A positive treatment effect for this total effect index indicates that the provision of information has improved the overall perceptions of benefits and exporting.

### 3.2.1 Endline-only

The estimates presented here are the result of a regression of reported firm perceptions from the endline survey on a treatment dummy variable along with asset-quartile-industry dummy variables.<sup>13</sup> To begin, we note that although the treatment was randomly assigned among the firms we surveyed in the second round, not all firms replied to the second round survey. As a result, there is a potential attrition problem, and we explore this in more detail below.

As reported in Table 4, treatment seems to have made non-exporters more pessimistic about the benefits of exporting, while increasing the perceived costs.<sup>14</sup> This effect is statistically significant for both question group indices, and is particularly pronounced for barriers. The total effect index is also substantially lower in the treatment group, with the estimated coefficient significant at the 1% level. This indicates that the balance between perceived benefits and costs has deteriorated for the group of treated non-exporting firms.

In contrast, the treatment seems to have made current exporters more optimistic: the differences in treatment versus control groups for the “benefits of exporting” index is positive and significant. The perception of barriers also has improved (witness the negative coefficient on the `q35_zmean` variable), although the effect is not statistically significant. Again, improved perceptions of benefits and barriers also result in a positive and significant treatment effect for the total effect index.

The changes in perceptions also seem to have filtered through to firms’ export intentions to

---

<sup>12</sup>Our results for individual questions are also based on z-score-standardized responses. Note that standardization does not change the t-statistics and significance levels of the treatment-control group comparison. Results for group means based on non-standardized responses to individual questions can be different, in principle, but are almost exactly identical in practice. This is because individual question means and standard deviations within groups are similar in our data.

<sup>13</sup>Our reported standard errors are robust to heteroskedasticity.

<sup>14</sup>The reader should refer to the questionnaire in Appendix A for the exact questions asked in each case.

some extent (Table 5). On average, treated non-exporters are less likely to report wanting to start exporting (q21), though the difference is not statistically significant. At the same time, treated exporters are more likely to want to continue exporting over the next three years (q31), to expect the value of exports to increase (q32), and to expect the number of markets they are doing business in to increase (q33). The effect is particularly pronounced for q32 where it is also highly statistically significant.

Finally, in Table 5 we also look at the impact of the treatment on actual export status (q1\_byte). The overall effect is again positive, implying that treated firms are more likely to export, but statistically insignificant. We can think of at least three interpretations of this finding. First, our intervention was not substantial enough to make firms change actual behaviour (rather than only perceptions). Second, we may have to allow for more time to observe actual changes, or need to look at more detailed export information (number of destination markets, number of exported products etc.) not available from our survey. Third, the information treatment may have had opposing and offsetting effects on the export status of exporters and non-exporters.<sup>15</sup>

### 3.2.2 Difference-in-Differences

We next incorporate the responses from the initial survey round by applying a difference-in-differences strategy to the unbalanced panel of firms, comparing the treatment and control groups across the pre- and post-treatment periods. Formally, we run the following regression:

$$y_{it} = \beta_0 + dt_{endline} + \beta_1 brochure + \beta_2 (dt_{endline} \times brochure) + d_{IA} + \varepsilon_{it}$$

where  $dt_{endline}$  is a time dummy for the second-round (endline) period,  $brochure$  is a dummy equal to 1 if the firm was treated, and  $d_{IA}$  are the same industry-asset-quartile dummies as before. The coefficient on  $(dt_{endline} \times brochure)$ ,  $\beta_2$ , gives us our treatment estimate – i.e.,  $\beta_2 = (E[y_{treat,1}] - E[y_{control,1}]) - (E[y_{treat,0}] - E[y_{control,0}])$ .

Asymptotically (for large samples) this approach should yield identical results to our approach above in which we use the endline sample only. This follows from the fact that our sample is balanced, so that  $plim_{N \rightarrow \infty} (E[y_{treat,0}] - E[y_{control,0}]) = 0$ . However, in practice the difference in pre-treatment expected perceptions will not be exactly zero, even if it is statistically insignificant. As a result, to the extent that there are small deviations from perfect balance in the pre-treatment sample, applying the difference-in-differences strategy will correct for these and could yield different estimates relative to the endline-only results.

Tables 6 and 7 present the results. For non-exporters the results are qualitatively identical and quantitatively very similar – i.e., the perceived benefits of exporting go down for all questions, while the perceived barriers go up for all questions. With respect to exporters, the results

---

<sup>15</sup>We could in principle look at this with the survey data by using the baseline information and regressing changes in export status on the treatment dummy. In practice, there are only 14 non-exporters which become exporters and nine exporters which become non-exporters, making this analysis difficult. In unreported results, we show that the estimated coefficients go in the “right” direction (treatment decreases the probability of becoming an exporter, and decrease the probability of becoming a non-exporters) but the effects are not statistically significant. A subgroup analysis based on existing exporters using the HMRC data and looking at the number markets and products is probably more promising. (See the section on future work below.)



are also very close to the endline-only results in the case of perceived benefits and barriers. As before, the treatment effect on perceived barriers is less pronounced but the total effect (benefits-barriers) is positive and statistically significant. Finally, the results with respect to export intentions are similar to before (Table 7).

### 3.2.3 Controlling for Baseline Outcomes

Here, we again exploit the first-round survey responses but now we focus only on the balanced panel of firms that replied to both survey rounds. This allows us to control for baseline covariates but, at the same time, reduces our sample size. With perfect response rates in both rounds and balance in the baseline, controlling for baseline covariates should not change the coefficient estimates, but should lower standard errors. In practice, however, the estimates based on this approach may differ for several reasons. First, the number of observations may fall enough so that there is no overall efficiency gain from using the panel. Second, similar to the difference-in-differences strategy, the baseline sample will not be exactly balanced, such that the coefficient estimates may change when the first-round survey is included. And third, by altering the sample in this way we also change the nature of the selection and attrition biases compared to the endline-only results.

Tables 8 and 9 present the results, which we compare with the endline estimates in Section 3.2.1. Results for non-exporters are again very similar to the endline regression. In contrast, there is now a less positive impact of the treatment on the perceived benefits of exporters (smaller coefficients that are less significant). Beyond these differences the results are nearly identical, suggesting that the results are, overall, quite robust.

### 3.2.4 Attrition Analysis

As noted above, our estimates may be biased due to the fact that only a subset of surveyed firms responded in each of the rounds (16% in the first round and 10% in the second round). If this attrition is differentially correlated with firm perceptions across the treatment and control groups, then this will lead to biased estimates of the impact of the treatment on perceptions.

To test whether this is the case or not, we start with the sample of firms that responded to the first-round survey and regress (via OLS) a dummy variable indicating whether the firm is also present in the second-round survey on the outcome variables previously analyzed. We run one regression for each outcome variable and present the results in Table 10. As discussed, what matters is whether attrition is differentially correlated with firm perceptions across the treatment and control groups. We thus estimate equations of the form:

$$d_{inround2,i} = \beta_0 + \beta_1 perc_i + \beta_2 brochure_i + \beta_3 (perc_i \times brochure_i) + d_{IA} + \varepsilon_{it}$$

where  $d_{inround2,i}$  is the dummy variable indicating presence in the second round, and  $perc_i$  is the outcome variable in question. The coefficient of interest is the interaction between the outcome variable and the treatment dummy,  $\beta_3$ . If a higher value for  $perc_i$  reflects more positive perceptions (as is the case for reported benefits),  $\beta_3 > 0$  implies that receiving the brochure makes firms more likely to reply to our survey the higher the perceived benefit from exporting

is. This would bias results towards finding a positive treatment effect for reported benefits from exporting. Likewise,  $\beta_3 > 0$  would imply bias towards finding a negative treatment effect for the case of export barriers, where a higher value for  $perc_i$  reflects more negative perceptions. As Table 10 shows, however,  $\beta_3$  is never significantly different from zero for all our question group indices. We conclude that attrition bias is unlikely to explain our results.

### 3.2.5 IV/LATE Estimates

So far, we have defined our treatment as having received the UKTI marketing brochure. This of course raises the question whether firms read the material we provide them with, and if they do, what their reaction is. In the section, which use responses to an additional survey question in the end-line questionnaire to address these issues.<sup>16</sup>

Whether a firm decides to read the brochure or not is of course an endogenous outcome, and we cannot directly regress perceptions on this binary variable. Instead, we estimate the following instrumental variables/2SLS system of equations:

$$\begin{aligned} d_{read,i} &= \beta_0 + \beta_1 broch_i + d_{IA} + \mu_{it} \\ perc_i &= \gamma_0 + \gamma_1 \widehat{d_{read}_i} + d_{IA} + \omega_{it}, \end{aligned}$$

where  $\widehat{d_{read}_i}$  is the predicted value from the first stage. As shown by Angrist and Imbens (1994), the coefficient on  $\gamma_1$  gives us the effect of the treatment on those whose treatment status was affected by the instrument, or the local average treatment effect (LATE).<sup>17</sup>

Table 11 shows results for the second stage estimate of  $\gamma_1$ , with first-stage F-Stats reported in the last column.<sup>18</sup> Among the firms which receive the brochure and replied to our endline survey, 16% state that they have read the brochure. Exporters are slightly more likely to have read the brochure (17%) compared to non-exporters (13%) which, together with the lower number of observations, explains the higher first-stage F-statistics for the former group.

Firms which were pushed by our intervention into studying the UKTI information on the benefits and costs of exporting report strong changes in perceptions. The sign and significance patterns are again similar to our baseline (intention-to-treat) results, but the coefficient magnitudes are substantially larger than before, especially for non-exporters. The estimates for this latter group indicate that the exposure to the new information triggered a 2.1-standard-deviations increase in perceived barriers, and a 1.6-standard-deviations decrease in perceived

<sup>16</sup>This additional question is: ‘Have you received and read a copy of UK Trade and Investment’s (UKTI) brochure “Bringing Home the Benefits: How to Grow through Exporting?”’. (Answer yes/no.)

<sup>17</sup>This requires independence and monotonicity of the instrument, both of which are likely to be fulfilled in our context. Independence is fulfilled because our instrument is randomly assigned and can only impact the outcome indirectly (a firm cannot be affected by the brochure if noone reads it). Monotonicity will be fulfilled because, in principle, our mailing action is one of the few ways in which firms can obtain our brochure; receiving it will thus make firms more likely to read it by design.

<sup>18</sup>So far, we have assumed that receiving the UKTI brochure from us is the only way of obtaining it. In practice, firms can also get a copy by attending a UKTI trade fair. In this case, they will have to register with UKTI and will show up in UKTI’s client records. We have recently obtained these data and are currently verifying what fraction of firms has received the brochure through channels other than our mailing action. Note that UKTI does not send out the brochure (or other materials) as part of standard marketing campaigns, as there are tight restrictions on what UKTI (as a public body) can do in such campaigns.

benefits, compared to changes of +0.35 and -0.24 standard deviations in our baseline results, respectively.<sup>19</sup> For exporters, this effect is somewhat weaker (although still statistically significant overall), with treated firms reporting a 0.9 standard deviation higher perceived benefits, and -0.4 standard deviations lower perceived barriers. Thus, while only a fraction of firms studied the information material we provided them with, the firms which did read the brochure experienced substantial changes in perceptions, with the effect particularly pronounced for non-exporters.

### 3.3 Interpretation of Results

Our results hold fairly consistently across specifications, indicating that the provision of information about the benefits of exporting leads non-exporters to revise their perceptions of the benefits of exporting downward, and to revise their perceptions of the barriers to exporting upward. In short, they become less inclined to export, a result that is new to the literature. In contrast, for exporters, information provision reinforces their positive perceptions of exporting.

One possible explanation for the result for non-exporters is that the information provides them with a new set of facts that allows them to more accurately map their firm characteristics into potential export market profitability. In this case, the results suggest that for the average firm these new facts indicated that the potential profit from exporting was less than they previously believed, which therefore led to a more negative perception of exporting.

An alternative interpretation of the findings is that non-exporters are displaying confirmation bias in their responses. This would be the case if they are incorporating the new information selectively, or else combining it with existing information in a selective way in order to affirm their existing beliefs. The literature on confirmation bias tends to find that this effect is strongest when the information provided is ambiguous which, in our case, could be the case if the UKTI brochure does not directly address firms' concerns regarding exporting. To the extent that this is true, a firm's true export profit potential will remain unknown to both the firm and the econometrician. Ultimately, knowing whether the firm's perceptions are changing due to confirmation bias or as the result of an accurate weighing of the costs and benefits from exporting cannot be ascertained in the context of our current research design, and so we leave this for future work.

## 4 Conclusion and Remarks on Future Work

We presented the results of a randomized controlled trial designed to elicit, and then potentially alter, firms' perceptions of the costs and benefits of exporting. Interestingly, when provided with information about the benefits of exporting, firms responded asymmetrically. Whereas exporters reported lower barriers to exporting and higher perceived benefits following the receipt of the information, non-exporters became more pessimistic regarding the benefits and perceived larger barriers to exporting.

The next step in the project will be to link the firms (drawn from FAME) with their actual export behavior, recorded in HMRC transaction-level trade flows. This will allow us to explore

---

<sup>19</sup>Recall that our standardised variables can be interpreted as showing treatment effects expressed as standard deviations of the control group. (Note that this only holds in approximation for the group-mean variables.)

the link between our treatment – the provision of information – and export status, which can include the number of markets that are exported to and the number of products exported, along with whether the firm exports or not. If we find that information provision does, in fact, cause a change in export status, then we can exploit this exogenous (RCT-induced) variation in export status to identify the effects of changes in export status on firm performance measures – for instance, productivity or firm size.

Finally, the linked FAME-HMRC dataset can be combined with the results of the study presented here in order to evaluate the relationship between firm perceptions and export status. A potentially interesting question is whether firm perceptions are an independent determinant of export status, above and beyond observable characteristics.

## References

- [1] Atkin, D., A. Khandelwal and A. Osman (2014), “Exporting and Firm Performance: Evidence from a Randomized Trial,” NBER Working Paper 20690.
- [2] Bernard, A.B. and J.B. Jensen (1995), “Exporters, Jobs, and Wages in U.S. Manufacturing: 1976–1987”, *Brookings Papers on Economic Activity: Microeconomics*, 67–119.
- [3] Bernard, A., Jensen, J., Redding, S. and Schott, P. (2007), “Firms in International Trade”, *Journal of Economic Perspectives*, 21(3), pp. 105-130.
- [4] BIS (2010), “Internationalisation of Innovative and High Growth SMEs,” Department for Business, Innovation and Skills Economics Paper No.5, March 2010.
- [5] Crespi, G., C. Criscuolo and J. Haskel (2008), “Productivity, exporting, and the learning-by-exporting hypothesis: direct evidence from UK firms,” *Canadian Journal of Economics*, 41(2), pp.619-638.
- [6] Das, S. Roberts, M. and J. Tybout (2007), "Market Entry Costs, Producer Heterogeneity, and Export Dynamics," *Econometrica*, 75(3), pp. 837-873.
- [7] De Loeker, J. (2007), “Do exports generate higher productivity? Evidence from Slovenia,” *Journal of International Economics*, 73, pp. 69–98.
- [8] Handley, K. (2014), “Exporting under trade policy uncertainty: Theory and evidence,” *Journal of International Economics*, 94, 50-66.
- [9] Iacovone, L. and B. Javorcik (2012), “Getting Ready: Preparation for Exporting,” CEPR Discussion Paper 8926.
- [10] Kling, J., J. Liebman and L. Katz (2007), “Experimental Analysis of Neighborhood Effects,” *Econometrica*, 75(1), 83-199.

- [11] Melitz, M.J. (2003), “The Impact of Trade on Intra-industry Reallocations and Aggregate Industry Productivity,” *Econometrica*, 71, 1695-1725.
- [12] Molina, D. and M.-A. Muendler (2013), “Preparing to Export,” NBER Working Paper 18962.
- [13] Novy, D. and A. Taylor (2014), .“Trade and Uncertainty,” NBER Working Paper 19941.
- [14] O’Brien, P. (1984): “Procedures for Comparing Samples with Multiple Endpoints,” *Biometrics*, 40, 1079–1087.
- [15] Roberts, M. and J. Tybout (1997), “The Decision to Export in Colombia: An Empirical Model of Entry with Sunk Cost,” *American Economic Review*, pp. 545-564.

**Table 1: Representativeness of Survey Samples**

Baseline Survey:

Variable	meanpop	meansample	diff	se	pvalue	significance
Log(assets)	7.072951	7.136356	-0.063405	0.0437524	0.1472941	
dqcode1	0.2514797	0.206041	0.0454387	0.0134764	0.0007478	1pct
dqcode2	0.2490795	0.2664509	-0.0173715	0.0146956	0.237178	
dqcode3	0.248043	0.2847897	-0.0367467	0.0149941	0.0142609	5pct
dqcode4	0.2513979	0.2427184	0.0086794	0.0142627	0.5428333	

Endline Survey:

Variable	meanpop	meansample	diff	se	pvalue	significance
Log(assets)	7.072951	7.001082	0.0718689	0.0484126	0.1376833	
dqcode1	0.2514797	0.2035831	0.0478966	0.0164078	0.0035121	1pct
dqcode2	0.2490795	0.3045603	-0.0554808	0.0187103	0.0030263	1pct
dqcode3	0.248043	0.3061889	-0.0581459	0.0187375	0.001916	1pct
dqcode4	0.2513979	0.1856678	0.0657301	0.0158554	0.000034	1pct

**Table 2: Balance Checks on Baseline Sample**

Variable	Mean Treatment	Mean Control	Diff T-C	SE Diff	Tstat diff	pvalue diff	significance level
PANEL A: Industrv-Asset Bins							
dstrat1	0.032	0.028	0.004	0.011	0.364	0.716	
dstrat10	0.049	0.065	-0.016	0.015	-1.058	0.290	
dstrat11	0.134	0.135	-0.001	0.023	-0.049	0.961	
dstrat2	0.095	0.105	-0.010	0.020	-0.514	0.607	
dstrat3	0.079	0.073	0.006	0.017	0.342	0.732	
dstrat4	0.044	0.042	0.002	0.013	0.116	0.908	
dstrat5	0.144	0.172	-0.028	0.024	-1.178	0.239	
dstrat6	0.053	0.075	-0.022	0.016	-1.342	0.180	
dstrat7	0.076	0.059	0.018	0.017	1.073	0.284	
dstrat8	0.174	0.141	0.032	0.024	1.338	0.181	
dstrat9	0.120	0.105	0.015	0.021	0.734	0.463	
PANEL B: Survey variables							
q1_byte	0.749	0.721	0.028	0.029	0.971	0.332	
q21	4.212	4.301	-0.089	0.157	-0.569	0.570	
q23 a	2.058	1.821	0.237	0.173	1.370	0.172	
q23 b	2.035	1.857	0.178	0.177	1.002	0.318	
q23 c	2.122	1.856	0.266	0.166	1.605	0.110	
q23 d	1.655	1.532	0.123	0.146	0.843	0.400	
q23 e	2.230	1.982	0.248	0.183	1.353	0.178	
q23_zmean	2.011	1.798	0.213	0.149	1.428	0.155	
q24 a	2.774	2.761	0.012	0.241	0.051	0.959	
q24 b	3.232	3.355	-0.123	0.179	-0.686	0.493	
q24 c	3.329	3.278	0.051	0.179	0.288	0.774	
q24_d	3.768	3.589	0.180	0.167	1.078	0.283	
q24 e	3.537	3.598	-0.062	0.186	-0.331	0.741	
q24 f	3.593	3.757	-0.164	0.175	-0.938	0.350	
q24_g	3.679	3.720	-0.041	0.181	-0.224	0.823	
q24_zmean	3.405	3.422	-0.017	0.129	-0.128	0.898	
q31	1.143	1.160	-0.017	0.037	-0.458	0.647	
q32	1.282	1.289	-0.008	0.039	-0.193	0.847	
q33	1.393	1.401	-0.007	0.039	-0.188	0.851	
q34 a	3.461	3.458	0.003	0.083	0.039	0.969	
q34 b	3.477	3.515	-0.039	0.095	-0.409	0.683	
q34_c	2.994	2.966	0.027	0.090	0.303	0.762	
q34 d	2.682	2.808	-0.126	0.105	-1.198	0.231	
q34 e	3.567	3.580	-0.013	0.086	-0.150	0.881	
q34_zmean	3.235	3.264	-0.029	0.076	-0.388	0.698	
q35 a	1.737	1.895	-0.159	0.075	-2.111	0.035	5pct
q35 b	2.522	2.661	-0.139	0.087	-1.597	0.111	
q35 c	2.693	2.797	-0.104	0.084	-1.239	0.216	
q35_d	2.549	2.580	-0.032	0.085	-0.374	0.709	
q35 e	2.480	2.565	-0.085	0.087	-0.984	0.325	
q35 f	2.972	2.776	0.195	0.091	2.146	0.032	5pct
q35_g	2.528	2.463	0.065	0.081	0.798	0.425	
q35_zmean	2.504	2.535	-0.031	0.057	-0.556	0.579	
zq23q24 mea	-1.306	-1.642	0.337	0.222	1.515	0.132	
zq34q35 mea	0.734	0.728	0.006	0.086	0.072	0.943	

**Table 3: Perception differences, Baseline Sample**

Question	Mean Exporters	Mean Non-Exporters	Difference Exp.-Non-Exp.	S.E. of difference
<b>Benefits from Exporting: Extent Firm has Benefited from Exporting (1: No Extent, 5: Critical Extent)</b>				
Q2.3a, Q3.4a (Profitability)	3.459	1.918	1.541***	0.093
Q2.3b, Q3.4b (Sales Growth)	3.497	1.923	1.574***	0.098
Q2.3c, Q3.4c (New Ideas)	2.979	1.972	1.008***	0.093
Q2.3d, Q3.4d (Incr. Prod. Life)	2.749	1.585	1.163***	0.088
Q2.3e, Q3.4e (Improve Profile)	3.574	2.081	1.493***	0.099
Q2.3, Q3.4 (Average Score)	3.250	1.884	1.366***	0.081
<b>Barriers Exp. (Non-Exp.): How difficult would the following be? (1: Not difficult at all, 5: Very Difficult)</b>				
Q2.4a, Q3.5a (Adapt Products)	1.820	2.772	-0.953***	0.126
Q2.4b, Q3.5b (Legal/Tax Reg.)	2.595	3.303	-0.708***	0.099
Q2.4c, Q3.5c (Customs Proc.)	2.748	3.290	-0.543***	0.098
Q2.4d, Q3.5d (Enf. Contracts)	2.565	3.692	-1.127***	0.091
Q2.4e, Q3.5e (Mgmt. Time)	2.524	3.578	-1.054***	0.103
Q2.4f, Q3.5f (Contacts)	2.869	3.690	-0.822***	0.099
Q2.4g, Q3.5g (Lang./Culture)	2.494	3.712	-1.218***	0.097
Q2.4, Q3.5 (Average Score)	2.520	3.429	-0.909***	0.070



**Table 4: Results based on Endline Sample only (Perceptions), using z-score normalization**

Variable	Diff T-C	SE diff	Tstat diff	pvalue	obs_	significance
q23_a	-0.19128	0.166133	-1.15138	0.25161	147	
q23_b	-0.29364	0.162672	-1.80508	0.073291	147	10pct
q23_c	-0.19979	0.172678	-1.15698	0.249307	148	
q23_d	-0.19208	0.158443	-1.21229	0.227504	148	
q23_e	-0.32954	0.168346	-1.95749	0.052353	147	10pct
q23_zmean	-0.24041	0.142662	-1.68517	0.094283	146	10pct
q24_a	0.440238	0.188161	2.339683	0.0208	144	5pct
q24_b	0.130328	0.191886	0.679195	0.498222	142	
q24_c	0.358157	0.186756	1.917783	0.057315	143	10pct
q24_d	0.523522	0.182953	2.861506	0.004915	142	1pct
q24_e	0.340677	0.17744	1.919953	0.057071	141	10pct
q24_f	0.302343	0.181086	1.669612	0.097403	142	10pct
q24_g	0.319986	0.18762	1.705499	0.09049	142	10pct
q24_zmean	0.351472	0.141901	2.476879	0.014548	141	5pct
zq23q24_mean	-0.53917	0.204676	-2.63425	0.009498	137	1pct
q34_a	0.152493	0.092515	1.648318	0.100001	452	
q34_b	0.051681	0.099268	0.520625	0.60289	452	
q34_c	0.163962	0.098438	1.66564	0.096495	453	10pct
q34_d	0.211496	0.098135	2.155168	0.031693	450	5pct
q34_e	0.151856	0.093538	1.623479	0.105203	452	
q34_zmean	0.150409	0.079993	1.880292	0.060732	450	10pct
q35_a	-0.07485	0.097635	-0.76664	0.443705	451	
q35_b	-0.04114	0.09927	-0.41442	0.678769	451	
q35_c	-0.18503	0.100475	-1.84154	0.066216	451	10pct
q35_d	0.081953	0.099711	0.821913	0.411573	451	
q35_e	-0.09274	0.099609	-0.93105	0.352341	452	
q35_f	-0.04614	0.097635	-0.47255	0.63677	450	
q35_g	-0.05899	0.097739	-0.60356	0.546446	450	
q35_zmean	-0.0633	0.070169	-0.90213	0.367486	446	
zq34q35_mean	0.217772	0.097851	2.22554	0.026562	443	5pct

**Table 5: Results based on Endline Sample only (Export Intentions, Actual Exports), using z-score normalization**

Variable	Diff T-C	SE diff	Tstat diff	pvalue	obs_	significance
q1_byte	0.0899236	0.0782164	1.149677	0.250724	627	
q21	0.1624174	0.1325755	1.225094	0.2223631	170	
q31	-0.1031841	0.0854041	-1.208186	0.227623	453	
q32	-0.3007829	0.0887258	-3.390027	0.0007619	452	1pct
q33	-0.0910081	0.0978069	-0.9304879	0.3526265	454	

**Table 6: Diff-in-Diff (Perceptions), using z-score normalization**

variable	diff_bef	diff_aft	diff_aft_ bef	diff_bef _pvalue	diff_aft_ pvalue	diff_aft_ bef_pval	obs	Sign.
q23_a	0.214	-0.194	-0.408	0.193	0.235	0.072	345	10pct
q23_b	0.161	-0.259	-0.420	0.322	0.095	0.054	345	10pct
q23_c	0.219	-0.209	-0.428	0.162	0.212	0.058	345	10pct
q23_d	0.130	-0.177	-0.307	0.436	0.252	0.166	343	
q23_e	0.179	-0.343	-0.522	0.249	0.034	0.017	346	5pct
mean_q23	0.186	-0.240	-0.426	0.192	0.083	0.028	341	5pct
q24_a	0.022	0.405	0.384	0.882	0.026	0.096	337	10pct
q24_b	-0.083	0.062	0.145	0.582	0.748	0.550	334	
q24_c	0.065	0.306	0.241	0.675	0.105	0.318	333	
q24_d	0.171	0.447	0.276	0.284	0.015	0.246	331	
q24_e	-0.015	0.287	0.302	0.920	0.098	0.179	330	
q24_f	-0.113	0.296	0.409	0.445	0.099	0.076	330	10pct
q24_g	0.021	0.310	0.289	0.893	0.095	0.229	330	
mean_q24	0.015	0.312	0.297	0.891	0.028	0.091	328	10pct
mean_q23q 24	0.270	-0.517	-0.787	0.171	0.010	0.005	316	1pct
q34_a	-0.008	0.168	0.176	0.914	0.069	0.141	1129	
q34_b	-0.041	0.063	0.105	0.591	0.522	0.404	1130	
q34_c	0.006	0.177	0.171	0.935	0.070	0.166	1130	
q34_d	-0.107	0.227	0.334	0.174	0.020	0.008	1126	1pct
q34_e	-0.024	0.163	0.186	0.752	0.081	0.118	1130	
mean_q34	-0.037	0.164	0.201	0.557	0.040	0.048	1124	5pct
q35_a	-0.172	-0.083	0.089	0.026	0.393	0.476	1123	
q35_b	-0.134	-0.041	0.093	0.088	0.677	0.461	1123	
q35_c	-0.103	-0.176	-0.073	0.178	0.080	0.564	1125	
q35_d	-0.034	0.075	0.109	0.669	0.448	0.389	1125	
q35_e	-0.077	-0.098	-0.021	0.311	0.320	0.868	1126	
q35_f	0.162	-0.049	-0.212	0.036	0.612	0.088	1120	10pct
q35_g	0.054	-0.071	-0.125	0.480	0.463	0.312	1122	
mean_q35	-0.038	-0.066	-0.029	0.466	0.341	0.743	1114	
mean_q34q 35	0.005	0.232	0.226	0.944	0.019	0.066	1109	10pct

**Table 7: Diff-in-diff (export intentions), using z-score normalization**

variable	diff_bef	diff_aft	diff_aft_ bef	diff_bef _pvalue	diff_aft_ pvalue	diff_aft_ bef_pval	obs	Sign.
q21	-0.085	0.140	0.225	0.539	0.278	0.225	407	
q31	-0.034	-0.100	-0.065	0.641	0.243	0.566	1132	
q32	-0.014	-0.295	-0.281	0.863	0.001	0.019	1131	5pct
q33	-0.010	-0.088	-0.078	0.902	0.370	0.531	1134	

**Table 8/9: Baseline Covariates, using z-score normalization**

stats	diff_	SE_	tstat_	pvalue_	obs_	significance
q1_byte	0.018	0.062	0.286	0.775	319	
q21	-0.085	0.166	-0.512	0.611	58	
q23_a	-0.334	0.343	-0.974	0.337	45	
q23_b	-0.502	0.274	-1.836	0.076	45	10pct
q23_c	-0.548	0.248	-2.214	0.034	46	5pct
q23_d	-0.295	0.287	-1.029	0.311	45	
q23_e	-0.259	0.241	-1.073	0.291	46	
q23_zmean	-0.377	0.220	-1.712	0.097	44	10pct
q24_a	1.072	0.412	2.602	0.015	41	5pct
q24_b	0.078	0.471	0.166	0.870	42	
q24_c	0.329	0.444	0.742	0.465	40	
q24_d	0.224	0.305	0.736	0.468	40	
q24_e	0.883	0.300	2.946	0.007	39	1pct
q24_f	-0.033	0.303	-0.110	0.913	40	
q24_g	0.199	0.365	0.544	0.591	40	
q24_zmean	0.506	0.227	2.232	0.034	39	5pct
q31	0.027	0.101	0.266	0.791	232	
q32	-0.301	0.106	-2.837	0.005	231	1pct
q33	-0.086	0.114	-0.755	0.451	232	
q34_a	-0.013	0.096	-0.139	0.889	230	
q34_b	-0.073	0.099	-0.735	0.463	230	
q34_c	0.005	0.119	0.043	0.966	231	
q34_d	0.215	0.120	1.787	0.075	229	10pct
q34_e	-0.018	0.100	-0.181	0.857	230	
q34_zmean	0.001	0.075	0.019	0.985	229	
q35_a	0.029	0.109	0.268	0.789	227	
q35_b	-0.206	0.121	-1.703	0.090	228	10pct
q35_c	-0.319	0.115	-2.771	0.006	228	1pct
q35_d	0.106	0.125	0.844	0.399	227	
q35_e	-0.130	0.126	-1.030	0.304	228	
q35_f	-0.082	0.119	-0.690	0.491	227	
q35_g	-0.181	0.127	-1.425	0.156	227	
q35_zmean	-0.111	0.080	-1.389	0.166	225	
zq23q24_mean	-0.883	0.278	-3.172	0.004	36	1pct
zq34q35_mean	0.098	0.104	0.937	0.350	223	

**Table 10: Attrition Probability Regressions (OLS), using z-score standardized outcomes**

Outcome	Coeff interaction	stderr	pvalue	obs	significance
q1_byte	0.026726	0.030212	0.376603	926	
q21	0.077568	0.054968	0.159597	237	
q23_a	-0.05782	0.05836	0.323105	198	
q23_b	-0.0829	0.057358	0.150054	198	
q23_c	-0.0095	0.055995	0.865512	197	
q23_d	0.016367	0.058241	0.77902	195	
q23_e	0.030282	0.059605	0.612032	199	
mean_q23	-0.00755	0.06759	0.911198	195	
q24_a	0.117121	0.064065	0.069188	193	10pct
q24_b	0.051112	0.062785	0.416687	192	
q24_c	-0.01993	0.064077	0.756091	190	
q24_d	0.032765	0.066236	0.621457	189	
q24_e	0.059842	0.066857	0.371975	189	
q24_f	0.116631	0.06065	0.05611	188	10pct
q24_g	0.005096	0.066014	0.938554	188	
mean_q24	0.1125	0.093377	0.229932	187	
q31	-0.0543	0.034054	0.111291	679	
q32	-0.05432	0.035013	0.121241	679	
q33	-0.03337	0.036134	0.356145	680	
q34_a	0.027166	0.037037	0.463529	677	
q34_b	0.021861	0.036173	0.545826	678	
q34_c	0.080069	0.037008	0.030856	677	5pct
q34_d	-0.00211	0.035799	0.952995	676	
q34_e	0.067405	0.038149	0.077706	678	10pct
mean_q34	0.057755	0.045355	0.20333	674	
q35_a	0.042603	0.037166	0.252089	672	
q35_b	0.0035	0.037255	0.925182	672	
q35_c	-0.01181	0.038004	0.756168	674	
q35_d	0.019718	0.035823	0.5822	674	
q35_e	0.037565	0.035983	0.296894	674	
q35_f	-0.00683	0.036727	0.852432	670	
q35_g	0.009201	0.03639	0.800477	672	
mean_q35	0.023844	0.05557	0.668003	668	
mean_q23q24	-0.01876	0.054348	0.730387	179	
mean_q34q35	0.023343	0.039413	0.553885	666	

**Table 11: IV/LATE Results, using z-score standardized outcomes**

Outcome	Diff T-C	SE diff	Tstat diff	obs	1 <sup>st</sup> stage F-statistic	significance
q1_byte	0.586	0.495	1.185	624	42.685	
q21	1.222	1.073	1.138	170	7.696	
q23_a	-1.289	1.171	-1.101	147	7.760	
q23_b	-1.978	1.285	-1.539	147	7.760	
q23_c	-1.364	1.349	-1.011	148	7.726	
q23_d	-1.311	1.098	-1.195	148	7.726	
q23_e	-2.233	1.319	-1.693	147	7.728	10pct
mean_q23	-1.608	1.099	-1.463	146	7.762	
q24_a	2.866	1.563	1.833	144	7.954	10pct
q24_b	0.817	1.183	0.691	142	8.018	
q24_c	2.240	1.333	1.681	143	8.036	10pct
q24_d	3.281	1.529	2.146	142	8.018	5pct
q24_e	2.103	1.214	1.732	141	8.056	10pct
q24_f	1.895	1.209	1.568	142	8.018	
q24_g	2.006	1.297	1.546	142	8.018	
mean_q24	2.169	1.094	1.983	141	8.056	5pct
q31	-0.587	0.495	-1.186	451	36.249	
q32	-1.693	0.587	-2.885	450	36.340	1pct
q33	-0.469	0.555	-0.846	452	36.327	
q34_a	0.890	0.534	1.666	450	36.048	10pct
q34_b	0.302	0.562	0.538	450	36.048	
q34_c	0.953	0.573	1.662	451	36.078	10pct
q34_d	1.175	0.590	1.991	448	36.040	5pct
q34_e	0.856	0.542	1.579	450	36.048	
mean_q34	0.860	0.467	1.841	448	36.040	10pct
q35_a	-0.467	0.562	-0.830	449	36.022	
q35_b	-0.295	0.570	-0.518	449	36.020	
q35_c	-1.147	0.592	-1.937	449	35.997	10pct
q35_d	0.471	0.575	0.820	449	36.021	
q35_e	-0.599	0.577	-1.039	450	36.010	
q35_f	-0.331	0.558	-0.593	448	36.031	
q35_g	-0.327	0.559	-0.585	448	36.019	
mean_q35	-0.403	0.401	-1.006	444	36.039	
mean_q23q24	-3.185	1.567	-2.032	137	8.104	5pct
mean_q34q35	1.270	0.575	2.209	441	36.104	5pct

PLACE SURVEY NUMBER LABEL HERE

## QUESTIONNAIRE

**(1) Has your company exported some or all of its products (excluding services) in either the current or the last financial year?**

*Note:* This survey is about exporting physical goods ('products'). If you are only exporting services, please answer 'NO' to this question.

Denote choice with an X	
<b>YES</b>	
<b>NO</b>	

**If you answered YES to Question (1) go to SECTION 3 on page 5.**

**If you answered NO to Question (1) continue with SECTION 2 on the back of this page.**

***PLEASE TURN OVER***

**SECTION 2 If you answered NO to question (1) please begin here**

(2.1) **How likely are you to start exporting some or all of your products within the next three years?**

Denote choice with an X	
<b>Very Likely</b>	
<b>Likely</b>	
<b>Maybe</b>	
<b>Not Likely</b>	
<b>Very Unlikely</b>	

(2.2) **Please indicate whether you have already undertaken any of the following activities in preparation for exporting.**

*Put an X next to ANY that apply.*

	We have made changes or modifications to existing products.
	We have researched the business environment and ways of working in the foreign market we are targeting.
	We have contacted an external organisation for information or assistance about the foreign market we are targeting.
	We have made a business plan that includes an overseas component.
	Any other preparations. Please specify:
	Does not apply, we are not planning to start exporting.

**PLEASE GO TO NEXT PAGE**

(2.3) **In your opinion, to what extent would the following benefits of exporting apply to your company?**

*For each benefit (a) – (f), please place an X under the number associated with your answer to indicate the extent to which you feel your company would benefit.*

a. Exporting would increase the profitability of my company.

To No Extent			To a Critical Extent	
1	2	3	4	5

b. Exporting would help my company to achieve a level of sales growth otherwise not possible.

To No Extent			To a Critical Extent	
1	2	3	4	5

c. Exporting would expose my company to new ideas.

To No Extent			To a Critical Extent	
1	2	3	4	5

d. Exporting would increase the commercial life span of our products.

To No Extent			To a Critical Extent	
1	2	3	4	5

e. Exporting would improve my company's profile or credibility.

To No Extent			To a Critical Extent	
1	2	3	4	5

f. Other.  
Please specify: \_\_\_\_\_

To No Extent			To a Critical Extent	
1	2	3	4	5

**PLEASE TURN OVER**



(2.4) **In your opinion, how difficult would it be for your company to deal with the following issues when seeking to export your products?**

*For each issue (a) – (h), please place an X under the number associated with your answer to indicate the extent to which you feel this would be difficult.*

a. Adapting our products to be suitable for exporting.

Not Difficult At All			Very Difficult	
1	2	3	4	5

b. Dealing with legal or tax regulations and standards.

Not Difficult At All			Very Difficult	
1	2	3	4	5

c. Dealing with customs procedures and paperwork.

Not Difficult At All			Very Difficult	
1	2	3	4	5

d. Ensuring you get paid and enforcing contracts.

Not Difficult At All			Very Difficult	
1	2	3	4	5

e. Finding the necessary management time to do business.

Not Difficult At All			Very Difficult	
1	2	3	4	5

f. Identifying whom to make contact with in the first instance.

Not Difficult At All			Very Difficult	
1	2	3	4	5

g. Negotiating the language and culture of the foreign market(s).

Not Difficult At All			Very Difficult	
1	2	3	4	5

h. Other.  
Please specify: \_\_\_\_\_

Not Difficult At All			Very Difficult	
1	2	3	4	5

**STOP: YOU HAVE FINISHED THE QUESTIONNAIRE**

**SECTION 3    If you answered YES to question (1) please begin here**

**(3.1) How likely are you to continue exporting your products over the next three years?**

Denote choice with an X	
<b>Very Likely</b>	
<b>Likely</b>	
<b>Maybe</b>	
<b>Not Likely</b>	
<b>Very Unlikely</b>	

**(3.2) Do you expect the value of your exports (excluding services) to increase, decrease or stay the same over the next three years?**

Denote choice with an X	
<b>Increase</b>	
<b>Stay the Same</b>	
<b>Decrease</b>	

**(3.3) Do you expect the number of markets you are doing business in to increase, decrease or stay the same over the next three years?**

Denote choice with an X	
<b>Increase</b>	
<b>Stay the Same</b>	
<b>Decrease</b>	

***PLEASE TURN OVER***

**(3.4) In your opinion, to what extent do the following benefits of exporting apply to your company?**

*For each benefit (a) – (f), please place an X under the number associated with your answer to indicate the extent to which you feel your company has benefited.*

a. Exporting has increased the profitability of my company.

To No Extent			To a Critical Extent	
1	2	3	4	5

b. Exporting has helped my company to achieve a level of sales growth otherwise not possible.

To No Extent			To a Critical Extent	
1	2	3	4	5

c. Exporting has exposed my company to new ideas.

To No Extent			To a Critical Extent	
1	2	3	4	5

d. Exporting has increased the commercial life span of our products.

To No Extent			To a Critical Extent	
1	2	3	4	5

e. Exporting has improved my company's profile or credibility.

To No Extent			To a Critical Extent	
1	2	3	4	5

f. Other.  
Please specify: \_\_\_\_\_

To No Extent			To a Critical Extent	
1	2	3	4	5

**PLEASE GO TO NEXT PAGE**

**(3.5) In your opinion, how difficult has it been for your company to deal with the following issues related to exporting your products?**

*For each issue (a) – (h), please place an X under the number associated with your answer to indicate the extent to which you feel this has been difficult.*

a. Adapting our products to be suitable for exporting.

Not Difficult At All					Very Difficult
1	2	3	4	5	

b. Dealing with legal or tax regulations and standards.

Not Difficult At All					Very Difficult
1	2	3	4	5	

c. Dealing with customs procedures and paperwork.

Not Difficult At All					Very Difficult
1	2	3	4	5	

d. Ensuring we were paid and enforcing contracts.

Not Difficult At All					Very Difficult
1	2	3	4	5	

e. Finding the necessary management time to do business.

Not Difficult At All					Very Difficult
1	2	3	4	5	

f. Identifying whom to make contact with in the first instance.

Not Difficult At All					Very Difficult
1	2	3	4	5	

g. Negotiating the language and culture of the foreign market(s).

Not Difficult At All					Very Difficult
1	2	3	4	5	

h. Other.  
Please specify: \_\_\_\_\_

Not Difficult At All					Very Difficult
1	2	3	4	5	

**STOP: YOU HAVE FINISHED THE QUESTIONNAIRE**