Free to grow? Assessing the barriers faced by actual and potential high growth firms

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Assessing the obstacles faced by actual and potential high growth firms

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Summary
This report provides evidence on what high-growth firms and firms with the potential to achieve high growth see as the obstacles to their success. As a small proportion of high-growth firms are responsible for creating the majority of new jobs, this question is important for economic growth.

The research uses two business surveys to identify the obstacles to growth that firms believe they face: the Small Business Survey 2010 and the Annual Small Business Survey 2007/8. First, it selects a cohort of "high growth firms" that expect 20% employment growth per annum over a two-year period. Next, it identifies a second group of firms that are similar to the first in their activities, business structure and growth ambitions, but that have not achieved high growth. These may represent "potential high growth firms" and as such potentially important for policymakers.

The results highlight a series of obstacles faced by high-growth businesses – and which prevent potential high-growth firms from growing faster. When the results are separated from the impact of other firm characteristics such as sector, age, initial size and the nature of ownership, six obstacles were identified by high growth firms as being especially important. These are:

- **Obtaining finance.** 32% of high growth firms say obtaining finance is a significant obstacle to the success of their business, compared to 25% of other firms. 5% of high growth firms say it is the *most important* obstacle they face. Lack of access to long-term finance is a problem for rapidly expanding firms.
- **Cash flow.** As firms grow, they require short-term liquidity to fund both ongoing activities and expansion. High growth firms are more likely to argue this is an obstacle to their success.
- **Recruiting staff.** High growth firms say this is a significant obstacle for both high growth firms and potential high growth firms. 57% of high growth firms and 50% of potential high growth say this is a problem, compared to 47% of other firms.
- **Skills shortages.** As firms recruit staff to expand, this is when both recruitment problems and skill shortages become acute. More than half of high growth firms (52%) say skills shortages are a significant obstacle to success, compared to 40% of firms overall.
- **Managerial skills.** It can be difficult to manage firms which are experiencing rapid growth. 41% of high growth firms see managerial skills as a significant obstacle to their success compared to only 32% of potential high growth firms and 27% of other firms.
- **Availability and cost of premises.** Expansion challenges the ability of firms to find appropriate and affordable accommodation. 34% of high growth firms and 25% of potential high growth firms see this as a significant obstacle, compared to 22% of normal firms.

Potential high growth firms also faced a series of obstacles to firm success:

- **Management skills.** Controlling for their characteristics, potential high growth firms perceive the skills of management to be an obstacle to their success. This might be due to self-criticism amongst business owners, but it might also be that management skills present an obstacle to taking innovations to market.

The economy is also a more important obstacle for these firms. Potential high growth firms are less likely than other businesses to argue that regulation is a significant obstacle to their success. And both high growth and potential high growth firms are less likely to say that they have no obstacles to their success - perhaps indicating an awareness of the issues facing them.

The results also suggest that the two sets of firms perceive different obstacles as the main obstacles to their success. For actual high growth firms, recruiting is more likely to be the main obstacle they face. Competition and the general state of the economy are less likely to be the main obstacle.

For potential high growth firms, recruiting is more likely to be the main obstacle they face, but regulations less so. And for a small proportion of firms with high growth potential, but which have not yet achieved high growth, obtaining finance is the main obstacle to their success.

Finally, the survey also asks whether firms perceive obstacles without prompts. These questions lead to very small response rates, and so results need to be interpreted with caution. Controlling for other firm characteristics, high growth firms are more likely to perceive: lack of broadband access, non- or late paying customers, obtaining finance and recruiting staff are significant obstacles to their success. The economy, competition, insurance costs and transport issues are less likely to be obstacles.

Potential high growth firms are more likely to see crime, maintaining and improving reputations, lack of time available (perhaps because of childcare), obtaining quality products and lack of customer demand as important. Regulations and non- or late paying customers are less important.

The results suggest a number of important areas for policy intervention. Given that high growth firms perceive access to finance and cash flow as obstacles to their success, and that potential high growth firms also see finance as an obstacle, this suggests that reforms to the UK banking system and risk capital markets may be important. Skills shortages and recruitment difficulties highlight ongoing problems in the supply of labour to firms. Alongside this, reforms of the planning system may need to consider the ability of the market to provide flexible accommodation for firms undergoing rapid (and fluctuating) growth. Finally, efforts to improve management ability are justified by these results.

Keywords: High Growth Firms; Gazelles; SMEs; Entrepreneurship

1. Introduction

NESTA research has demonstrated that between 2007 and 2010 just 7% of firms created almost half of all new jobs (NESTA 2011). These 'high-growth firms' have been shown to be important to employment growth, to disseminate innovation throughout the wider economy, and to create social benefits in their local areas (Anyadike-Danes et al. 2009; Mason et al. 2010).[1] The idea that a small proportion of firms are disproportionately important to the economy is attractive to policymakers, to the extent that they can focus attention on a small group of firms and reduce expensive, and often ineffective, blanket business support (Bennett 2008).

When targeting high growth firms, policymakers face two related goals. First, they must ensure existing high growth firms can achieve their full potential by addressing the obstacles faced by firms as they expand rapidly. Problems related to growth might include access to capital, cash flow, skills shortages or a lack of flexible premises for expansion (Levy, Lee and Peate 2011). To establish what these obstacles are requires any analysis to first identify high growth firms and second investigate what, if anything, is holding them back.

Yet a focus on *actual* high growth firms is not quite enough. Firms already achieving rapid growth will have overcome the most significant obstacles to their growth. Policymakers also face a second, arguably more challenging goal: to address the obstacles faced by *potential* high growth firms, firms which have the potential to achieve high growth, but which have not done so. To isolate these obstacles requires a method of identifying firms with the potential to achieve rapid growth, and an analysis of the barriers they face to doing so. However, while this is an important goal, there is no simple way of identifying potential high growth firms.

This paper addresses these issues through an analysis of the Small Business Survey (SBS) and Annual Business Survey, a unique data set of Small and Medium Sized Enterprises (SMEs) across the UK. Two waves of the data set, for 2007/2008 and for the 2010 survey, are amalgamated, giving a full sample of around 4,800 firms. The data contain information on the characteristics of firms, activities such as innovation and exporting, their recent growth rates and – the core of this paper – the barriers they perceive to their success.

The SBS is used to divide firms into three types:

(1) **Actual high growth firms** –firms which are experiencing rapid growth. In this paper these are defined as those expecting average annual growth of over 20% over a two-year period.

(2) **Potential high growth firms** –propensity score matching is used to identify a second set of firms who are engaged in activities which might be expected to lead to growth, but which are not achieving high growth.

(3) **Firms with lower growth potential** –firms which are not aiming to grow or appear less likely to achieve high growth. Targeting these firms may be less effective than focusing on firms in the previous two categories.

[1]Note that while this paper focuses on high growth firms, it builds on similar literatures using the terms 'Gazelles', 'high impact firm' and 'rapid growth firms' to describe similar things.

This paper is the first to use a large-scale survey to consider the problems faced by high growth firms in the United Kingdom. It is also the first to use propensity score matching to identify potential, rather than actual, high growth firms. These are two important contributions to a literature focused on measurement rather than policy implications (Mason and Brown 2011).

The remainder of the paper is structured as follows. Section two provides a brief overview of the potential challenges faced by rapidly growing firms. Section three considers the data which will be used, with section four outlining the method of identifying actual and potential high growth firms. Section five outlines the type of obstacles these firms face, and section six considers the extent to which these are explained by the other characteristics of the firms. Section seven concludes with a discussion of the results and the implications for policy.

2. Obstacles faced by actual and potential high growth firms

The OECD defines high growth firms as those who achieve 20% employment growth per year for three consecutive years (OECD 2010). Evidence suggests that between 2007 and 2010 high growth firms created half of jobs in the UK, yet accounted for only 7% of all firms (NESTA 2011).[2] While firms like these, normally under the guise of 'gazelles' have been important for some time amongst academics, their popularity with policymakers has recently increased. In October 2010, David Cameron highlighted the importance of high growth businesses for UK economic recovery – and highlighted some policy measures which might help address the barriers they face to growth:

> "we've got to back the big businesses of tomorrow, not just the big businesses of today.
>
> That means opening up access to finance, creating an attractive environment for venture capital funding, getting banks lending to small businesses again and insisting that a far greater proportion of government procurement budgets are spent with small and medium-sized firms."
>
> David Cameron, 25th October 2011[3]

There is a wealth of research on high growth firms, outlining their scale, characteristics, the success factors behind their growth and their importance to the economy (Mason et al. 2007; Henrekson and Johansson 2010; NESTA 2011). This literature reaches a number of general conclusions: high growth firms are certainly important economically, comprise only a small number of firms and have relatively diverse characteristics (Henrekson and Johansson 2010; Mason and Brown 2010). It is also hard to predict where they will appear: while there tend to be more high growth firms in rapidly growing sectors, it is not uncommon to find high growth firms in previously moribund markets (Rigby et al. 2007; Mason and Brown 2010).

While there is some literature on the problems faced by firms while growing (e.g. Storey 1994; Bhide 2003), little research has specifically considered the barriers faced by high growth firms. One exception is Mason and Brown (2010: 42) who interview 22 firms in Scotland. The firms do not report a dominant barrier, but a range of different ones. The recruitment of staff, including both skilled staff and senior management was cited by just under half of their interviewees (45%). Other barriers were competition (18%), "problems associated with growth" such as absorbing new staff and the increased organizational complexity which might follow (14%) and obtaining planning permission (9%). Finance was particularly important for technology businesses, although it was not the most important of the barriers suggested (18%).

High growth firms tend to have erratic growth paths, and this will lead to particular obstacles (Parker, Storey and van Witteloostuijn 2010; Mason and Brown 2010; Levy et al. 2011). High growth firms do not grow in a linear, predictable manner. Firms may only achieve high growth for a short period, often followed by relative stagnation or decline. Unpredictable, erratic growth will cause a number of problems for firms (Mason and Brown 2010; Levy et al. 2011).

[2] More precisely, 7% of surviving firms with ten or more employees in 2010 had created around half of all gross new employment between 2007 and 2010.

[3] See: http://www.number10.gov.uk/news/creating-a-new-economic-dynamism/

Very rapid growth may create problems in recruitment. By their nature high growth firms need to expand, and so may be more susceptible to shortages of staff generally, and shortages of skilled staff in particular. Alongside this, there may be difficulties in integrating new staff into the organisation. This will create challenges for managers. And where firms have specific skills needs, it may be harder to fill vacant positions quickly.

The erratic nature of firm growth may create problems in the physical accommodation of the firms themselves. Levy, Lee and Peate (2011) suggest that this issue was one faced by rapid growth entrepreneurs. Erratic expansion can be difficult to plan for, and inflexible business premises can restrict rapid growth. This might mean that suitable accommodation or planning permission are seen as problems for fast growing firms.

Other research has highlighted the importance of management, as organizational structures will be challenged as firms increase or decrease in size (Parker, Storey and van Witteloostuijn 2010). Change can create problems for managers, and sustaining rapid growth requires management structures which are able to seek new opportunities as firms expand, address obstacles and barriers which come up and act flexibly to integrate new staff and expand products.

3. Data

The data set

The data for this paper is the combined Small Business Survey (SBS) 2010 and Annual Small Business Survey (ASBS) 2007/8. Both are surveys of Small and Medium Sized Enterprises (with fewer than 250 employees) conducted by the UK Department for Business, Innovation and Skills (BIS). The SBS 2010 contains the most up to date and policy relevant information. As the fieldwork occurred after the banking collapse and financial crisis of 2007 / 2008 it will include information on the relatively rapidly changing situation of whether firms can obtain finance. The SBS has a sample of 4,559 SMEs.

To expand the sample, we combine data from the SBS with a predecessor survey, the ASBS 2007/2008. This has an expanded number of observations (9,303) and contains many of the same questions as the SBS – the results here are limited to these. However, the order of the questions may vary slightly.

The literature on high growth firms focuses on those with more than ten employees, in part to address the challenge that growth rates may be considerably higher for small firms than larger (an additional staff member employed by a sole trader increases firm size by 100%). A first cut on the data is to exclude firms who start the period with fewer than ten employees, and those with missing observations for the variables used. The final sample is 4,877 firms.

Obstacles to firm success

The principal variable of interest is the self-perceived obstacles to success for the SMEs. As part of the (A)SBS, each firm is asked:

> I'd like to ask you now some questions about any obstacles or difficulties that your business might face in achieving your business objectives. What would you say are the main obstacles to the success of your business in general?

Firms are asked about the obstacles they face in three ways. First, they are asked to suggest obstacles unprompted. This leads to a large group of suggested obstacles, but for many there are small sample sizes. Following this, firms were prompted with 12 major obstacles (see figure 2). If a firm suggests an obstacle unprompted, their response is also included in the prompted results. Response rates are higher for the prompted results, and these are the results on which the core of this paper is based. Finally, firms are asked what the 'biggest obstacle' is to the success of their business. This question shows the priority firms place on each obstacle.

An important caveat is that answers reflect the perceptions of the SMEs. Firms may blame failure on external issues (such as the economy) more than internal factors (for example, management skills). Answers may reflect media coverage, such as the ongoing argument about bank lending to SMEs. These caveats need to be considered when interpreting the results. Yet survey questions are the only viable way of systematically addressing the problems faced by firms. To ensure robustness, in the discussion it is noted whether findings are both theoretically appropriate and fit with the results of other studies using different methodologies.

4. Identifying high growth firms and potential high growth firms

A two-stage methodology is used to classify the SMEs as actual or potential high growth firms. Actual high growth firms are identified on the basis of past and expected employment growth over a two-year period. Potential high growth firms are then identified using propensity score matching according to their similarity to high growth firms.

Stage one: Identifying high growth firms

The first stage of the analysis is to identify high growth firms. To fit with previous research, employment is used to measure growth (the alternative is turnover). However, the data does not contain an independent measure of long-term growth. Firms give data on total employment one year ago, employment now and expected employment in the subsequent year. This two-year window is used to identify high growth firms as those expecting 20% growth per year for two years.

Most definitions of high growth use a three-year window, but unfortunately data limitations prevent this for the current study. However, the use of a two year window is unlikely to lead to major changes in results. As a measure of robustness, a small number of firms (7) are excluded as they achieve high growth by this measure but do not say they are achieving 'sustained growth' in another question. Moreover, the majority of these firms (80.1%) experienced growth of 20% or more in the previous year. Future work will address this caveat using the linked Business Structure Database / Small Business Survey data when this becomes available, although this will result in smaller sample sizes.

Stage two: Identifying potential high growth firms

The second stage of the methodology is to identify 'potential' high growth firms. These are firms with similar observable characteristics and activities to high growth firms. They have a significant probability of achieving rapid growth, but have not done so. The assumption here is that they face obstacles to doing so.

Propensity score matching is used to identify potential high growth firms. This is a common technique in studies evaluating labour market policies where there is good data on individual characteristics, but a policy has been introduced without an experimental design. The technique creates a pseudo-control group based on similarity to the treatment group (Bryson et al. 2002; Caliendo and Kopeinig 2008). In this case, the treatment group are actual high growth firms and the control group are potential high growth firms — firms which are similar in terms of observed characteristics, but which are not achieving high growth.

Propensity score matching uses a regression approach to estimate the similarity of one group to another. It does this through assessing the relationship between a given set of variables and treatment status (in this case, whether a firm has achieved high growth). Then it uses those variables to identify a second group of firms which have similar observable characteristics.

Research on high growth firms suggests a series of characteristics likely to be important in explaining growth performance (Henrekson and Johansson 2010; Parker, Storey and van Witteloostuijn 2010). The following are used here:

- **Initial employment.** As larger firms may find rapid growth harder, the first variable for high growth potential is employment in previous years.

- **Product and process innovation**. The next two variables included are whether a firm has introduced an entirely new product innovation or an entirely new process innovation in the previous year. Innovation is likely to help firms grow, although the benefits of innovation may be skewed to only a small proportion of innovating firms (Coad and Rao 2008).

- **Ownership**. Two variables are used to control for the characteristics of entrepreneurs. The first is a binary variable which has the value of one if the firm's owner has a qualification and zero if not. Secondly, if entrepreneurs purchase firms they see as having latent growth potential, firms which change owner will be more likely to subsequently experience rapid growth. A dummy for whether the firm has changed ownership in the previous 3 years is used for this.

- **Corporate structure.** The ownership of a firm is seen as important. A dummy variable for whether a firm has more than one director is used. A second dummy controls for whether a firm is a publically limited company.

- **Sector dummies.** High growth firms can appear in any sector, not just high-technology ones. Two controls are used: whether firms are in the 'primary' sector and whether they are in 'production'.

Finally, for robustness we exclude all firms which are not aiming to grow. Clearly, for firms to achieve rapid growth there has to be some desire amongst the management to do so (BIS 2008). Excluding lifestyle businesses focuses the results on those firms with the desire to create new jobs.[4] Results of the propensity score regression are included in table A1 in the Appendix.

There is no prior theoretical or empirical estimate for the proportion of potential high growth firms. Instead, we use stratification matching to separate this group of firms. The matching technique gives five 'bands' of similarity to high growth firms. To keep a relatively focused group of firms in the potential high growth category, we include the first two bands of probability. The final number of potential high growth category is 615 firms.

[4] Our initial specification also included a full set of sectoral dummies and variables for whether a firm exported, took advice and innovated generally. However, as we were using a large number of binary variables which were often highly collinear this meant the model specification tended not to correctly specify (i.e. it was impossible to distinguish between particular groups of firms). The problem here is that studies have suggested that high growth firms may be difficult to predict on the basis of observed characteristics. Research on high growth firms tends to suggest that they have relatively diverse characteristics (Mason and Brown 2010). In response, we enter all variables at once and remove sequentially according to the selection criteria.

Table 1. High growth and potential high growth firms by survey year

	Survey 2007/8	2010	Combined
Not HGF	3, 125	854	3,979
	(80.4)	(86.26)	(81.59)
Potential HGF	525	90	615
	(13.51)	(9.9)	(12.61)
Actual HGF	237	46	283
	(6.1)	(4.65)	(5.80)
Total	3,887	990	4,877

Column percentages in parenthesis.

Table one sets out the results of this process. By this measure the number of high growth firms in each category is as follows: just under 6% of our firms are high growth, with 13% potential high growth and just over 81% in neither category. Note that the estimates here are slightly below the 6% or 7% figures which NESTA research has found. In one sense this is surprising – it is easier to grow rapidly for a two than a three-year period. Given that 10.4% of firms report experiencing 20% employment growth in the first year, this suggests that firms are pessimistic about future growth.[5] In contrast, NESTA research suggests that the proportion of high growth firms actually increased slightly between 2004 – 2007 and 2007 – 2010 (NESTA 2009; 2011).

There are some important caveats to the use of propensity score matching. It is only possible to control for observable characteristics, and not unobservable characteristics such as quality of product. This is particularly a problem in studies of firms, rather than the studies which use individuals as the basis of analysis. Another challenge to these results is the extent to which they are robust to different specifications of the matching equation.

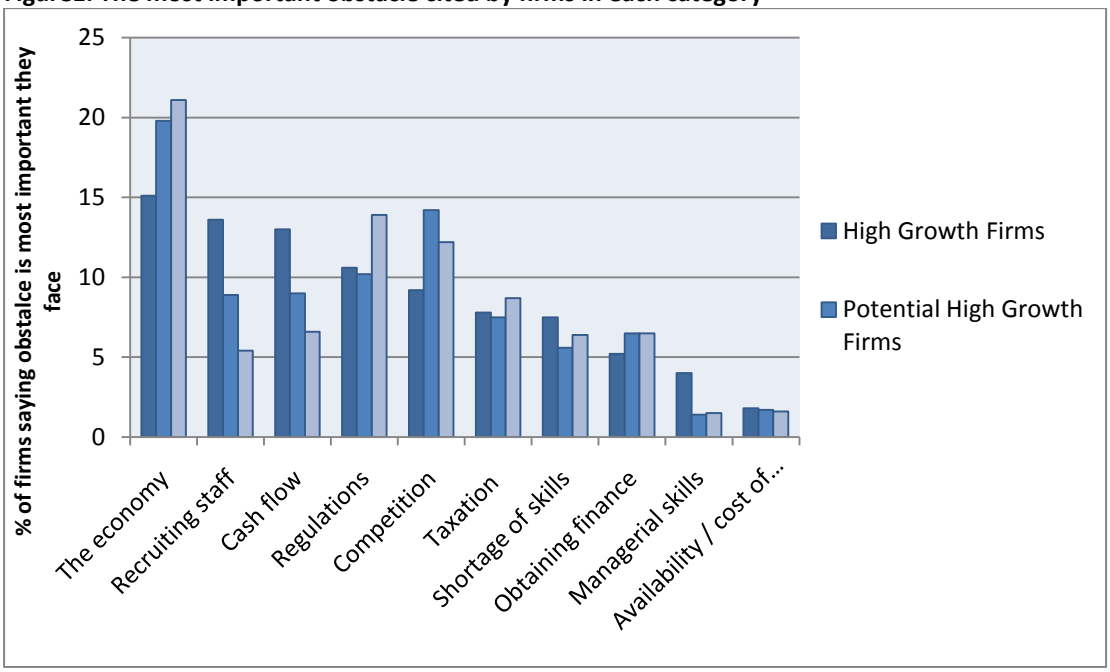
[5] 10.71% of firms in the 2007/8 survey had experienced greater than 20% employment growth in the previous year compared to 9.51% of firms in the 2010 survey.

5. Descriptive results

This section considers simple descriptive results. These fall into three categories: the obstacles firms say they see as the most important; obstacles firms give when prompted, and; those given without prompts.

5.1 Main barriers faced by firms

Figure1. The most important obstacle cited by firms in each category



Ordered by importance for high growth firms. Percentage of firms reporting each obstacle as the most significant given in parenthesis. The 'other' and 'no opinion' categories are excluded. Weights applied. Actual data presented in appendix.

The SBS gives data on the obstacle firms say is the most important to their growth. Figure 1 gives the results of the ten most commonly cited. For all three categories, the economy is most commonly cited as the main obstacle to firm success. However, high growth firms are less likely to cite it than normal firms as, to a lesser extent, are potential high growth firms. Only 15% of high growth firms say the economy is the most important obstacle they face compared to 21% of other firms.

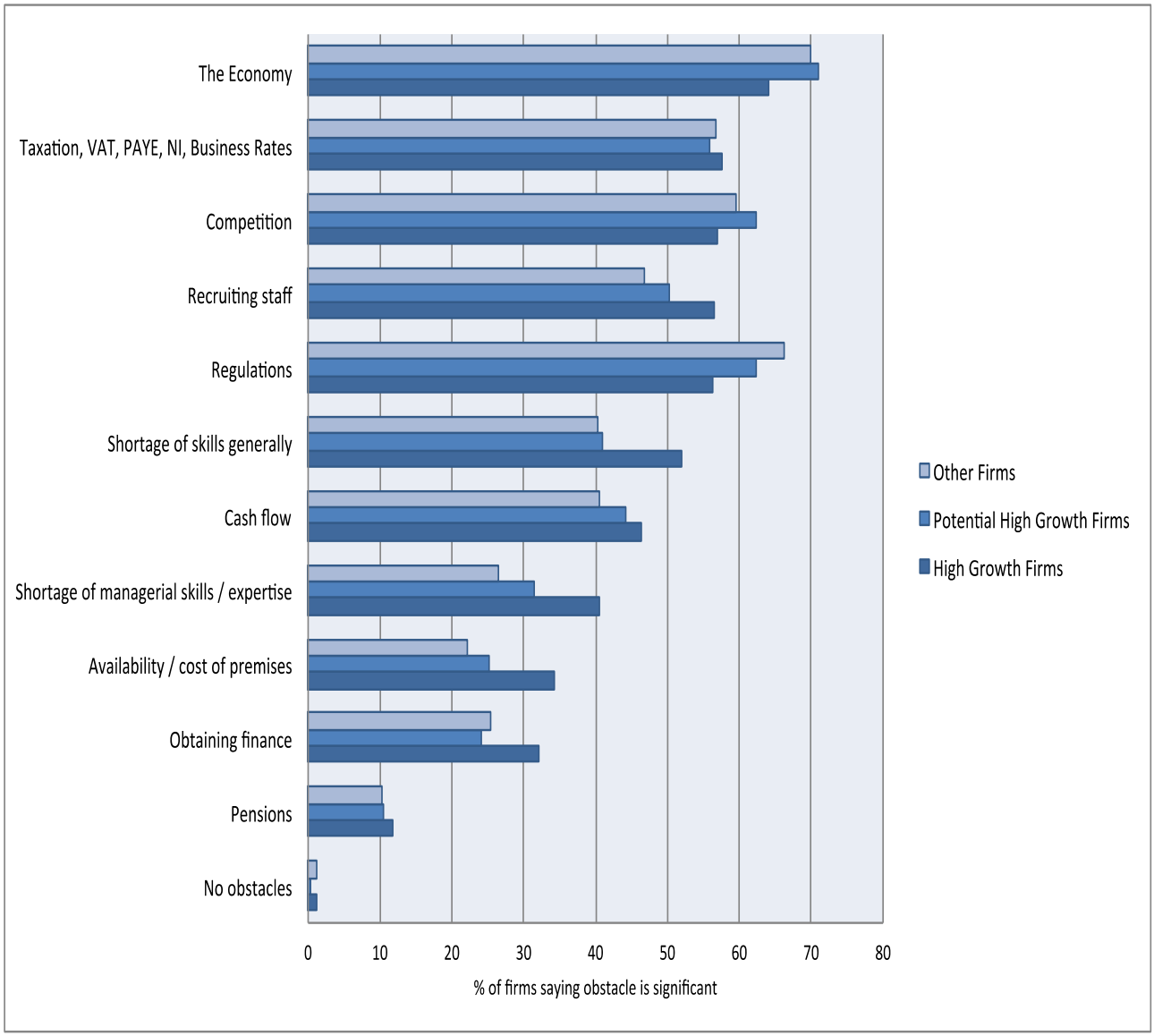
Similarly, high growth firms are less likely to consider competition as their main obstacle – although they still rate it as important. These results presumably reflect the quality of high growth firms in that they are less vulnerable to either competitors or wider economic change. This is consistent with evidence that suggests high growth firms can be found even in difficult economic climates. Competition is most important for potential high growth firms – this suggests that many of these firms may be struggling to break through into markets.

High growth firms, in contrast, find a few obstacles to be more important than other sets of firms. Recruiting staff is more difficult for these firms (13.6% say this is the most important obstacle facing them), than potential high growth (8.9%) or other firms (5.4%). Similarly, cash flow appears to be a problem of success: 13% of high growth firms say this is their major obstacle, but only 9% of potential high growth firms and 6.6% of other firms. Both recruitment and cash flow will be particular obstacles for firms which are expanding. Similarly, high growth firms seem to be particularly affected by management problems –

4.0% of firms in this category see this as the main obstacle they face, but only 1.4% of potential high growth firms and 1.5% of other firms. Finally, obtaining finance is seen as actually less important for high growth firms (5.2%) than potential high growth firms (6.5%) and other firms (6.5%).

5.2 Obstacles given by firms when prompted

Figure 2. Obstacles reported by actual and potential high growth firms (prompted)



Weights applied. Ranked by importance to high growth firms. Actual data presented in appendix.

Figure two outlines the prompted results from the survey, ordered by the proportion of high growth firms arguing that each category is significant. As with major obstacles, the most cited obstacle is the economy. High growth firms are least likely to see this as a major obstacle to their success – although it is still very important. Only 64% of high growth firms saw it as an obstacle, compared to 70% of all firms.

The results suggest there are six problems which are felt particularly by high growth firms compared to other firms: recruiting, skill shortages, cash flow, managerial skills, the availability and cost of premises and obtaining finance. Recruiting staff is a particular

problem for high growth firms, of whom 57% see it as a significant obstacle compared to only 48% of firms overall. Recruiting staff is also slightly more of a problem for potential high growth firms, half of whom see it as a problem. Skills shortages are similar, but with less importance to potential high growth firms: more than half of high growth firms say this is a significant obstacle, compared to only 41% of firms overall.

46% of high growth firms say cash flow is a significant obstacle, as do 44% of potential high growth firms and only 41% of firms overall. This suggests a problem in short-term financing of businesses. Problems with obtaining finance are skewed towards high growth firms: almost a third of high growth firms see this as a significant obstacle to their success, compared to around one quarter of firms overall.

Managerial skills are also a greater problem for high growth firms, 41% of whom report this as a significant obstacle. Only 32% of potential high growth firms and 27% of other firms see this as a problem. This suggests a relationship where firm growth strains management ability.

Finally, the availability and cost of premises is a particular problem for high growth firms. 34% of high growth firms see this as a problem, only 25% of potential high growth firms and 22% of other firms. Premises may be a problem principally for expanding firms.

Regulation is actually less likely to be a problem for high growth firms, presumably in order to grow, the businesses must have succeeded in overcoming some regulatory difficulties or have been lucky enough not to face them. 56% of high growth firms see this as a problem, 62% of potential high growth firms and 66% of firms generally.

Competition is a problem for almost 62% of potential high growth firms, but only 57% of high growth firms and 60% of other firms. This result is perhaps revealing, as it suggests that potential high growth firms fail because of market problems, rather than other, objective barriers.

For two obstacles there are few differences between the categories. While a majority of high growth firms see taxation as a significant obstacle, the differences are only small between high growth (57.6%), potential high growth (55.9%) and other firms (56.7%). Alongside this, pensions are seen as important to a similar degree by all three types of firms. However, only 10% of firms see pensions as a significant obstacle.

5.3 Results given when unprompted

Table 2. Obstacles reported by actual and potential high growth firms (Unprompted)

Percentage of firms reporting each category as significant obstacle to success of their business:

	HGF	PHGF	Other	Total		HGF	PHGF	Other	Total
Regulations	18.0	23.7	24.7	24.2	Customer satisfaction	1.1	0.5	1.0	0.9
The Economy	15.9	17.7	19.2	18.8	Suitability of staff	1.1	0.5	0.7	0.7
Recruiting staff	14.8	10.9	9.0	9.6	High price of materials	1.1	1.0	1.4	1.3
Competition in the market	14.1	17.9	20.8	20.0	Change of customer attitude / fashion	1.1	0.5	0.4	0.5
Obtaining Finance	11.0	9.1	10.6	10.4	Other	0.8	1.7	1.3	1.4
Taxation, VAT, PAYE, NI, Business Rates	10.2	8.0	7.8	8.0	No opinion	0.8	0.8	0.7	0.7
Shortage of skills generally	10.2	5.4	5.9	6.1	Obtaining quality products	0.7	1.8	1.3	1.3
Cash flow	8.5	9.4	9.1	9.1	Unfavourable weather conditions	0.7	1.0	1.1	1.1
No obstacles	6.3	3.4	5.1	4.9	Tapping into overseas market	0.7	0.7	0.3	0.4
Availability / cost of suitable premises	4.9	2.6	2.7	2.8	Avoiding bad debts	0.4	0.0	0.1	0.1
Keeping staff	2.5	2.4	1.9	2.0	Lack of confidence / motivation	0.4	0.4	0.4	0.4
Advertising / marketing issues	2.1	1.6	0.9	1.0	Planning laws / permission	0.4	0.2	0.3	0.3
Non / late paying customers	2.1	0.5	1.0	1.0	Transport issues	0.4	1.5	2.1	1.9
Lack of customer demand	2.1	2.8	2.0	2.1	Lack of broadband access	0.4	0.3	0.1	0.1
High fuel costs	2.1	0.8	1.4	1.4	Crime	0.4	0.0	0.2	0.2
Keeping up with new technology	1.8	2.0	1.0	1.1	Natural disasters / terrorist attack	0.4	0.2	0.3	0.3
Shortage of managerial skills / expertise	1.4	1.5	1.3	1.3	Supplier problems	0.4	0.3	0.5	0.5
Lack of support / encouragement	1.4	1.5	0.8	0.9	Shortage of raw materials	0.4	0.5	0.4	0.4
Location	1.1	1.0	0.8	0.8	Seasonal trading	0.4	1.0	0.6	0.6

Weights applied. Total observations: 4,877 of which 283 are HGF and 615 PHGF

Table two gives the results for the unprompted obstacles. Note that for the majority of these questions the sample size which sees obstacles as significant is very small. The results tend to support the prompted results. When not prompted, regulation is the obstacle cited most often by high growth firms. Yet it seems more important for the other types of firm, of whom almost one quarter argue it is significant. Second in importance is the economy – again, this is least important for high growth firms. Recruiting staff is most significant for high growth firms, as is a shortage of staff. Yet given the small number of firms reporting this as an obstacle relative to the number of observations, any of these results should be treated with caution.

6. Regression results

6.1 Empirical specification

The results given above may be skewed by other variables, such as the initial size, age or legal status of the firm. To control for these, a probit model is estimated where the dependent variable is whether the firm experiences a particular barrier to growth.

The model is estimated as follows:

$$Y_i = \alpha + \beta_1 HGF_i + \beta_2 PHGF_i + \beta_3 Sector_i + \beta_4 Age_i + \beta_5 Size_i + \beta_6 PLC_i + \beta_7 Multi_i + \beta_8 BME_i + \beta_8 Region_i + \beta_8 SBS2010_i + \varepsilon$$

where Y is the outcome variable indicating whether firm 'i' perceives that a particular issue is an obstacle to the success of the business. HGF and PHGF are dummy variables which control for whether firms are either actual or potential high growth firms.

The other control variables are as follows. The obstacles firms face will change according to the sector in which a firm is located, so 13 sectoral dummies are included to control for this. These might control for sector specific skills shortages, for example, or whether an industry is growing or in decline.

Age is one of three dummy variables for firm age (with young firms as the reference category). Younger firms may face challenges such as raising initial finance to be harder than older firms which have developed established relationships.

Similarly, larger firms may experience different challenges, such as great management complexity, than small firms whose unique challenges might include accessing external markets. To control for this, 'size' is the log of initial firm size.

Legal structures will also matter. PLC is a dummy which takes the value one if a firm is a Public Limited Company. Similarly, if firms operate in more than one location they may find some obstacles – such as availability of premises – to be a challenge. Multi is a dummy which is one if a firm is a multi-site firm.

Different ownership groups will also condition the results, and so 'BME' controls for whether firms are owned by a Black or Minority Ethnic community and 'woman' whether a woman leads the organization (Nathan and Lee 2011).

Geography is highly likely to influence our results. Region is a set of regional dummies for the nine English regions, the Highlands and Islands, Central Scotland, Wales or Northern Ireland. This will control for issues such as region specific skills shortages or planning restrictions.

Finally, between the two survey years was a major change in the UK economy. This will have influenced everything from the available labour supply to finance available to firms. To control for this, SBS2010 is a dummy variable which takes the value one if the firm was surveyed in the 2010 Small Business Survey.

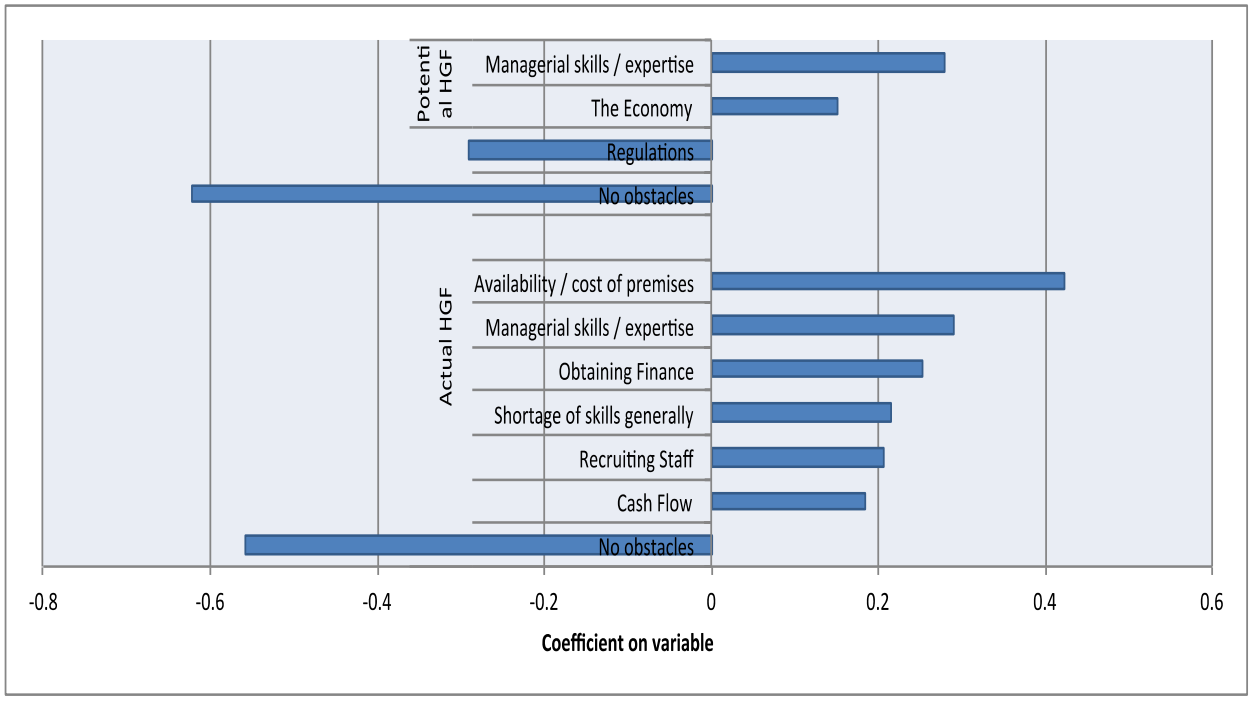
The models are estimated as a simple probit model where the dependent variable is whether or not a firm sees a particular obstacle as significant. Regressions are estimated

using the weights provided by BIS for the survey, and – as is standard in the literature – robust standard errors are used. The following section considers the prompted result followed by the unprompted results and finally the results for the main obstacles given by firms.

6.2 Regression results for prompted obstacles to firm success

Figures 3, 4 and 5 present the coefficients for both actual and potential high growth firm measures from each of the regression models. Only those significant at less than the 10% level are included. Each bar represents the size of the coefficient. If positive, bars indicate that a firm in either category (high growth or potential high growth) is more likely to perceive an obstacle is significant, relative to the reference category of firms with lower growth potential. Negative bars indicate a lower probability relative to the reference category. Because the models are probit regressions and the two variables are binary variables (i.e. take the values of 0 or 1), these coefficients are directly comparable. Larger bars indicate a greater influence on the probability of firms in each category experiencing a particular obstacle.

Figure 3. Regression coefficients



Bars represent probit regression coefficients. Only significant coefficients reported. Negative coefficients indicate firms are less likely to experience that barrier; positive coefficient means more likely. For full results see table 3.

Table three gives results for the prompted obstacles. These relate to the obstacles which the firms have offered as important when firms are prompted with the particular obstacle. Controlling for age, sector, firm size, legal status, ownership, multiple sites, region and year, high growth firms face particular obstacles in four areas. Obtaining finance is significantly more likely to be an obstacle for high growth firms. This supports the interpretation above that obtaining finance is a particular issue for rapidly growing firms (Levy, Lee and Peate 2011; Hutton and Nightingale 2011).

Similarly, the availability and cost of premises is important for high growth firms, although not by potential high growth firms. This might simply be an issue with expansion, if firms which have not yet achieved growth do not need to move premises.

A shortage of managerial skills is also important for high growth firms. This supports the view that as firms experience rapid growth, in whatever sector, this can cause difficulty for the organization in responding successfully (Parker, Storey and van Witteloostuijn 2010). Similarly, a shortage more generally of skills is important for high growth firms.

For potential high growth firms, the economy is a significant obstacle to their success as are management skills. They are also significantly less likely to say that they have no obstacles to their success.

Table 3. Probit regression results for prompted obstacles

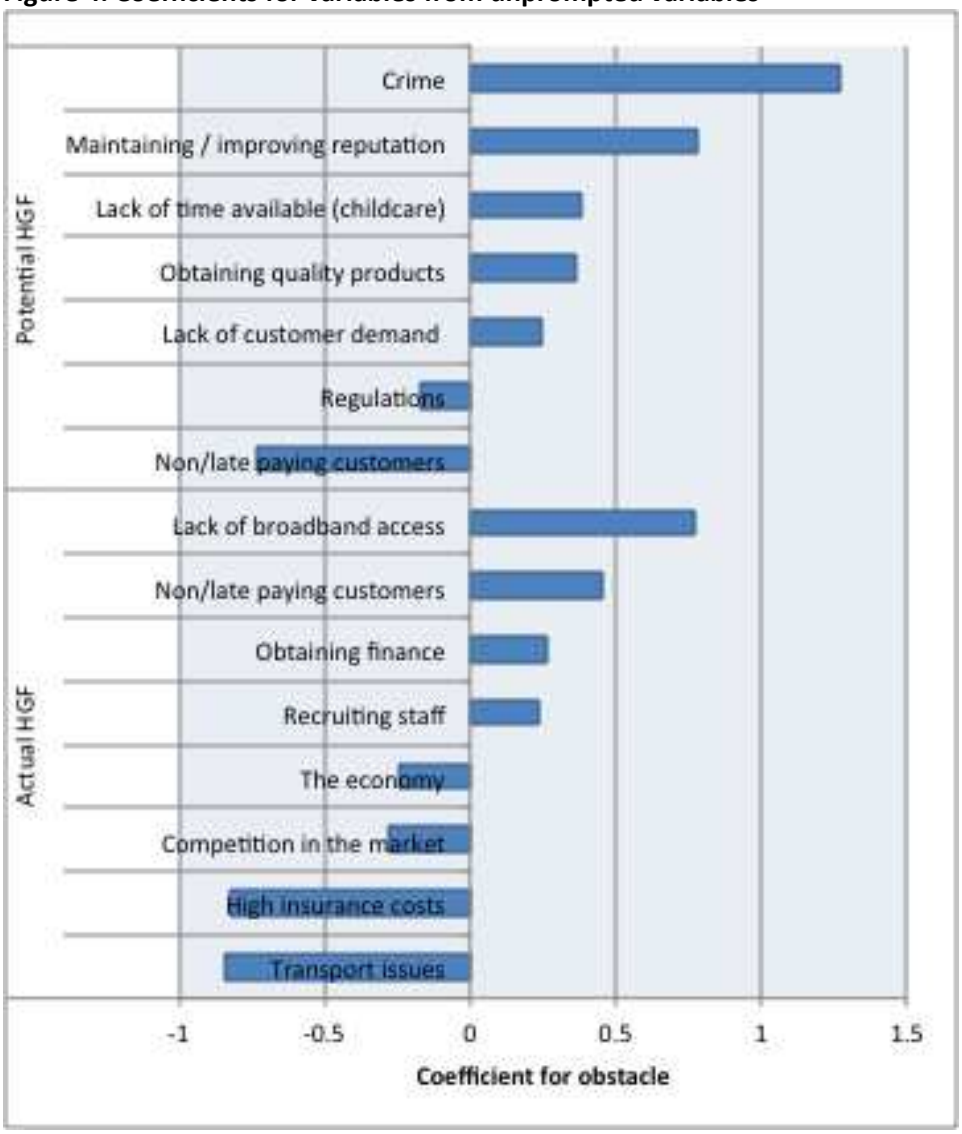
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Obstacle:	The Economy	Obtaining Finance	Cash Flow	Tax, VAT, PAYE, NI	Recruiting Staff	Regulations	Availability / cost of premises	Competition in market	Managerial skills / expertise	Shortage of skills generally	Pensions	No obstacles
Actual HGF	-0.00350	0.252**	0.184*	0.0708	0.206**	-0.165	0.423***	-0.0479	0.290***	0.216**	0.116	-0.557**
	(0.107)	(0.112)	(0.103)	(0.105)	(0.103)	(0.104)	(0.107)	(0.104)	(0.105)	(0.103)	(0.133)	(0.269)
Potential HGF	0.152*	0.0358	0.00525	-0.0838	-0.0971	-0.290***	0.146	0.0762	0.279***	0.0288	-0.0179	-0.621**
	(0.0830)	(0.0940)	(0.0799)	(0.0793)	(0.0782)	(0.0835)	(0.0903)	(0.0790)	(0.0891)	(0.0848)	(0.0956)	(0.309)
11 + Years	-0.0929	0.630*	0.417	-0.435	-0.0932	-0.348	-0.409	0.554	-0.407	0.107	-0.671*	0.736*
	(0.303)	(0.339)	(0.296)	(0.303)	(0.306)	(0.318)	(0.359)	(0.346)	(0.314)	(0.302)	(0.395)	(0.395)
6 – 10 Years	-0.158	0.0736	0.0228	-0.0260	0.0475	-0.143*	-0.0419	-0.126	0.0718	-0.0626	-0.101	0.510**
	(0.0996)	(0.100)	(0.0870)	(0.0810)	(0.0962)	(0.0855)	(0.0822)	(0.0918)	(0.0834)	(0.0940)	(0.108)	(0.204)
2 – 5 Years	0.157	0.431***	0.0935	0.110	0.0309	-0.158	0.299**	-0.167	0.414***	0.169	-0.431**	-0.0421
	(0.140)	(0.165)	(0.144)	(0.128)	(0.154)	(0.166)	(0.152)	(0.161)	(0.157)	(0.165)	(0.177)	(0.265)
Size (ln)	0.0362	-0.153**	-0.195***	-0.167**	0.125**	0.0557	0.0287	0.0454	0.120***	0.00571	0.0229	0.0800
	(0.0596)	(0.0683)	(0.0648)	(0.0674)	(0.0568)	(0.0608)	(0.0550)	(0.0612)	(0.0426)	(0.0575)	(0.0526)	(0.0806)
Multisite	-0.000539	0.0431	0.151**	0.227***	0.0346	0.0445	0.200***	0.0436	0.0940	0.0274	0.0504	0.149
	(0.0614)	(0.0705)	(0.0604)	(0.0571)	(0.0581)	(0.0651)	(0.0614)	(0.0608)	(0.0589)	(0.0590)	(0.0783)	(0.173)
PLC	-0.0741	-0.177**	-0.204**	0.132	0.113	0.0977	0.0623	0.0233	0.0773	0.185**	-0.0538	-0.0913
	(0.0770)	(0.0899)	(0.0839)	(0.0907)	(0.0795)	(0.0815)	(0.0819)	(0.0799)	s(0.0708)	(0.0794)	(0.103)	(0.146)
MEG Firm	-0.0444	0.161	-0.0117	0.0790	0.230	0.127	0.0153	0.259*	0.442***	0.321**	0.317*	-0.0690
	(0.126)	(0.161)	(0.130)	(0.138)	(0.143)	(0.147)	(0.142)	(0.149)	(0.138)	(0.138)	(0.168)	(0.222)
Women Led Firm	0.0911	0.108	0.0803	-0.0249	0.0352	-0.107	0.225**	0.125	0.0270	-0.0207	0.0227	0.169
	(0.0918)	(0.110)	(0.0963)	(0.0996)	(0.0962)	(0.101)	(0.107)	(0.102)	(0.106)	(0.0998)	(0.105)	(0.198)
SBS2010	0.684***	0.663***	0.0762	-0.321***	-0.537***	-0.537***	-0.201**	0.129	-0.290***	-0.557***	0.128	0.633***
	(0.0931)	(0.0958)	(0.0908)	(0.104)	(0.0841)	(0.0937)	(0.0995)	(0.0940)	(0.0805)	(0.0847)	(0.0994)	(0.168)
Constant	-0.345	-0.240	0.402	0.141	-0.756***	0.510	-1.080***	-0.0818	-1.389***	-0.552*	-1.368***	-2.789***
	(0.301)	(0.334)	(0.325)	(0.357)	(0.279)	(0.335)	(0.399)	(0.307)	(0.282)	(0.290)	(0.352)	(0.445)
Obs	4,808	4,808	4,808	4,808	4,808	4,808	4,801	4,808	4,808	4,808	4,794	4,373
Pseudo R2	0.0596	0.103	0.0356	0.0604	0.0426	0.0530	0.0338	0.0342	0.0489	0.0488	0.0297	0.129
LLikelihood	-302.5	-279.0	-351.3	-334.1	-348.0	-325.2	-276.1	-343.5	-292.5	-339.4	-164.4	-27.33

All regressions include dummies for sector and region. Robust standard errors in parentheses. A small number of observations dropped because of perfect prediction groups. Reference category for age is one year or younger. Weights applied.
*** p<0.01, ** p<0.05, * p<0.1

6.3 Unprompted results

Figure four presents graphically the coefficient of the high growth firm and potential high growth firm dummy variables for the unprompted obstacles. As there are a large number of variables included, we only report results where either the dummy for high growth or potential high growth firms are included as significant at the 10% level at least.

Figure 4. Coefficients for variables from unprompted variables



Bars represent probit regression coefficients. Only significant coefficients reported. Negative coefficients indicate firms are less likely to experience that barrier; positive coefficient means more likely. Actual data presented in appendix.

The unprompted results generally support those for the prompted obstacles. Both the economy and competition in the market are less significant for high growth firms, who also face fewer significant transport problems, presumably because these have already been overcome. Transport, again, is less important for these firms, as are high insurance costs. Yet high growth firms face obstacles in three areas: obtaining finance, recruiting staff, and non or late paying customers.

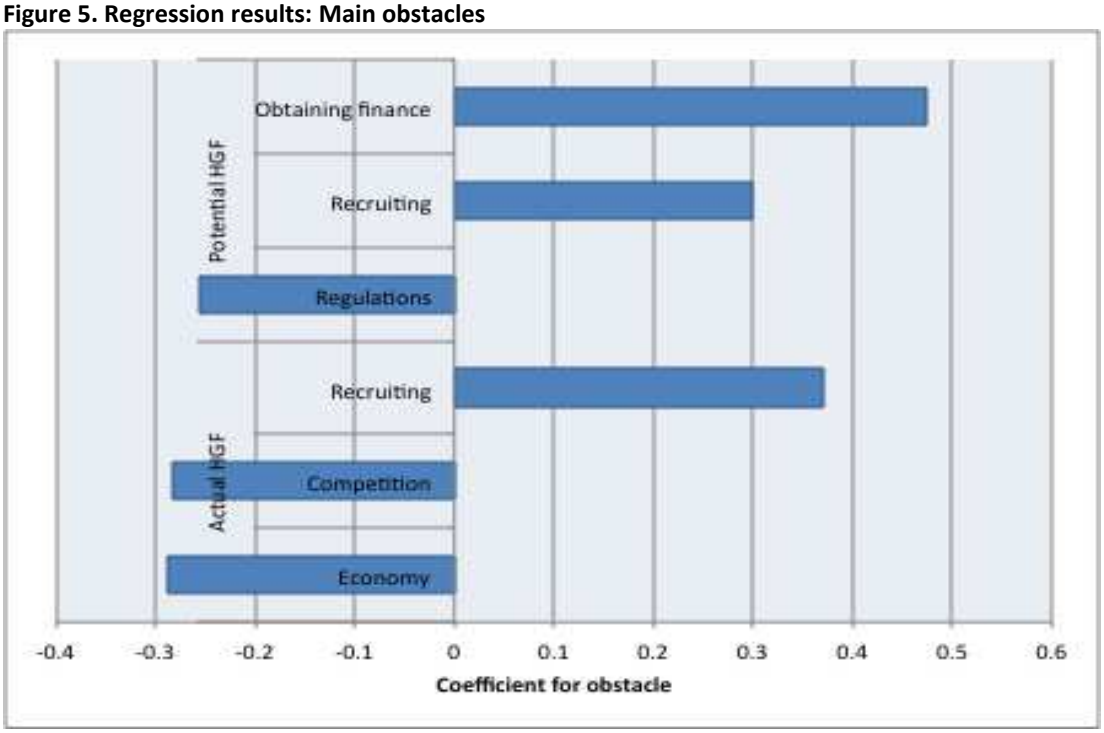
Potential high growth firms are more likely to complain about crime, maintaining and improving their reputation, lack of time available (perhaps because of childcare), obtaining

quality products and lack of customer demand. Potential high growth firms are less likely to see regulation as significant, and similarly non or late-paying customers.

6.4 Regression results: Main obstacles

Figure 5 gives the regression results for the main obstacles faced by firms. Results are presented only where significant.

Figure 5. Regression results: Main obstacles



Bars represent probit regression coefficients. Only significant coefficients reported. Negative coefficients indicate firms are less likely to experience that barrier; positive coefficient means more likely. Actual data presented in appendix.

The results are, if anything, slightly less specific. The economy is less likely to be a problem for high growth firms, as is competition. Recruiting is a problem for both high growth and potential high growth firms. One result is particularly interesting: for a minority of potential high growth firms, obtaining finance is the single largest obstacle to their success. The size of the coefficient, 0.475, is large relative to those in the other models.

7. Summary

Addressing the obstacles firms face to growth is an important goal of public policy. In this paper we have identified the barriers faced by both high growth firms and firms which are engaging in activities which might be expected to lead to high growth, yet are failing to achieve these actual growth rates. While we do not expect all this second set of firms to inevitably achieve high growth, they represent a group who have a relatively high probability of doing so. The results are summarised in table four below. Focusing on the core results - for obstacles given when prompted - they suggest that the obstacles specific to high growth firms fall in six main areas.

First, **obtaining finance** is a problem for high growth firms**.** 32% of high growth firms say obtaining finance is a significant obstacle to the success of their business, compared to 25% of other firms. 5.2% of high growth firms say it is the most important obstacle they face. Access to finance is a problem for a small but significant minority of high growth firms. Moreover, controlling for other firm characteristics, *potential* high growth firms are particularly likely to argue this is the main obstacle to their success. One interpretation is that for a small proportion of firms with high growth potential, a lack of finance is stopping them achieving growth.

Second, high growth firms are significantly more likely to say that **cash flow** is a significant obstacle to their success. As firms grow, they require cash to expand and fund ongoing activities. Taken together with the result on obtaining finance, this result supports other research suggesting that the UK banking system is currently ill-configured to support SMEs undergoing rapid growth (Davis 2011; Hutton and Nightingale 2011).

The results also highlight labour market issues holding back rapidly growing firms. The third obstacle, **recruiting staff** is a significant obstacle for both high growth firms and potential high growth firms. 57% and 50% of firms in these categories say this is a problem, compared to 47% of other firms.

Fourth, high growth firms are more likely to suffer from **skills shortages.** Half of high growth firms – 52% say this is a significant obstacle, compared to 40% of firms overall. This result is robust to the inclusion of controls. As firms recruit staff to expand, this is when both recruitment and skill shortages become acute. Problems in skill supply and the availability of labour are particularly important obstacles for high growth firms.

Fifth, managerial skills are seen as an obstacle for both actual and potential high growth firms. 40.6% of high growth firms and 31.5% of potential high growth firms see this as a significant obstacle to their success compared to only 26.5% of other firms. This supports previous work in this area which suggests expansion can be hard for owners and managers, requiring new management systems and the ability to upgrade and change management competencies (Levy, Lee and Peate 2011).

Finally, the results also suggest that the **availability of premises** is a significant obstacle for high growth firms. 34% of high growth firms and 25% of potential high growth firms see this as a significant obstacle, compared to 22% of normal firms. As firms expand, this is when they require new office space and issues such as premises become important.

For potential high growth firms, many of these effects are less acute. When prompted, management skills are a significant obstacle, controlling for other firm characteristics. This

suggests that management skills are important for firms in order to achieve growth, as well as during growth. Potential high growth firms also suggest that regulation is less likely to be an obstacle to their success.

Potential high growth firms are also more likely to say the economy is an obstacle. This result is revealing as it suggests that for many firms in this category it is simply lack of demand which is preventing them from growing.

Results from the unprompted obstacles are also informative, although low response rates mean these should be treated with caution. Crime is holding back some potential high growth firms, as is the need to maintain and improve the firm's reputation – this suggests that some of these firms are failing to establish a foothold in the market. Lack of time available may be a problem as is difficulty in obtaining quality products. A caveat to the analysis of potential high growth firms is that they face a lack of customer demand – this might indicate that firms in this category are simply not providing products which the market wants.

The unprompted results also highlight four problems faced by actual high growth firms. Lack of broadband access is one complaint. Alongside this non or late-paying customers are a problem, which may be a source of the cash flow problems firms in this category constantly complain of. Supporting the prompted results, obtaining finance is a problem for these firms, as is recruiting staff.

For policymakers seeking to achieve the maximum value from limited public investment, these are important potential areas of intervention. These results highlight a series of areas in which high growth firms may face particular problems. Three of the areas highlighted – the banking systems, the supply of skilled labour and the planning system - are already undergoing reform. Each of these problems will vary by sector, according to specific skill needs and geographically. Recent UK government policy to improve management ability appears to address genuine problems.[6] Future research should begin to unpick these findings in more detail to assess ways in which policy can best address the obstacles to success faced by both actual and potential high growth firms.

[6] For example, the UK government recently launched a 'Business coaching for growth' policy aimed at providing mentoring services for managers in SMEs.

Table 4. Summary of results for main obstacles

	Descriptive results:						Regression results:					
	Main obstacle		Prompted obstacle		Unprompted obstacle		Main obstacle		Prompted obstacle		Unprompted obstacle	
Obstacle	**HGF**	**PHGF**	**HGF**	**PHGF**	**HGF**	**PHGF**	**HGF**	**PHGF**	**HGF**	**PHGF**	**HGF**	**PHGF**
The economy	-		-		-		--			+	-	
Obtaining finance			+		+			++	++		+	
Cash flow	+	+	+	+	+	+			+			
Tax												
Recruiting	+		+	+	+	+	+++	++	++		+	
Regulation	-	-	-	-	-	-		-		---		--
Availability / cost of suitable premises			+	+	+	+			+++			
Competition	-	+	-	+	-	+	-				--	
Managerial skills	+		+	+	+	+			+++	+++		
Shortage of skills			+		+				++			
Pensions												
No obstacles									--	--		

Where '+' is more likely'-' less likely. For the regression results they also indicate significance: at the 10% level, '++' is 5% and '+++' is 1%; '-' is negative and significant at the 10% level, '--' is 5% and '---' is 1%'.

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Appendix A: Propensity score results

Table A1. Propensity score equation

Dependent variable: Firm is high growth firm	
	Coef.
Initial employment (previous year)	-0.002***
	(0.001)
Introduces new process innovation in previous 12 months	0.119*
	(0.996)***
Introduces new product innovation in previous 12 months	0.247
	(0.079)**
Owner has qualification	0.071
	(0.073)*
Owner changed recently	0.236**
	(0.093)
No. of directors	-0.041
	(0.074)
SBS 2010	-0.129*
	(0.077)
PLC	0.156**
	(0.715)
ACT 1	-0.295
	(0.320)
ACT 2	-0.111
	(0.765)
Constant	-1.661
	(0.102)
Obs	4,877
Pseudo R2	0.0210

Standard errors in parenthesis.
*** p<0.01, ** p<0.05, * p<0.1

Appendix B. Data for figures

Data for figure 1. The most important obstacle cited by firms in each category

	Actual HGF			Potential HGF			Other firms	
1.	The economy	15.1	1.	The economy	19.8	1.	The economy	21.1
2.	Recruiting staff	13.6	2.	Competition	14.2	2.	Regulations	13.9
3.	Cash flow	13.0	3.	Regulations	10.2	3.	Competition	12.2
4.	Regulations	10.6	4.	Cash flow	9.0	4.	Taxation	8.7
5.	Competition	9.2	5.	Recruiting staff	8.9	5.	Cash flow	6.6
6.	Taxation	7.8	6.	Taxation	7.5	6.	Obtaining finance	6.5
7.	Shortage of skills	7.5	7.	Obtaining finance	6.5	7.	Shortage of skills	6.4
8.	Obtaining finance	5.2	8.	Shortage of skills	5.6	8.	Recruiting staff	5.4
9.	Managerial skills	4.0	9.	Availability / cost of premises	1.7	9.	Availability / cost of premises	1.6
10.	Availability / cost of premises	1.8	10.	Managerial skills	1.4	10.	Managerial skills	1.5

Weight applied. 'Other' excluded.

Data for figure 2. Obstacles reported by actual and potential high growth firms (Prompted)

	High Growth Firms	Potential High Growth Firms	Other Firms	All firms
The Economy	64	70.9	69.9	69.7
Taxation, VAT, PAYE, NI, Business Rates	57.6	55.9	56.7	56.7
Competition	56.9	62.3	59.5	59.7
Recruiting staff	56.5	50.2	46.8	47.8
Regulations	56.2	62.4	66.2	65.2
Shortage of skills generally	51.9	41	40.3	41.0
Cash flow	46.3	44.1	40.6	41.4
Shortage of managerial skills / expertise	40.6	31.5	26.5	27.9
Availability / cost of premises	34.3	25.2	22.2	23.3
Obtaining finance	32.2	24.1	25.4	25.6
Pensions	11.7	10.4	10.3	10.4
No obstacles	1.1	0.3	1.3	1.3

Weights applied. Ranked by importance to high growth firms.

Data for fig. 3. Regression results: Selected unprompted obstacles

	High growth firm	Potential high growth firm
The economy	-0.239*	-0.0340
	(0.125)	(0.0900)
Obtaining finance	0.262*	0.139
	(0.149)	(0.124)
Recruiting staff	0.241*	0.0534
	(0.125)	(0.0934)
Transport issues	-0.840**	-0.153
	(0.347)	(0.175)
Lack of broadband access	0.500	0.775*
	(0.518)	(0.402)
Regulations	-0.186	-0.170**
	(0.122)	(0.0797)
Competition in the market	-0.283**	-0.0212
	(0.123)	(0.0960)
Crime	-0.210	1.267***
	(0.298)	(0.448)
Obtaining quality products	-0.0826	0.364**
	(0.253)	(0.177)
Lack of time available (childcare)	0.249	0.379**
	(0.229)	(0.186)
Non/late paying customers	0.453*	-0.735***
	(0.237)	(0.234)
Lack of customer demand	0.0313	0.243*
	(0.209)	(0.147)
Maintaining / improving reputation		0.781**
		(0.321)
High insurance costs	-0.827**	
	(0.353)	
High fuel costs	0.166	-0.498**
	(0.249)	(0.209)

Figures presented are coefficients for the likelihood of firms in either category perceiving the obstacle is important, with other firms as the reference category. Regressions also include controls for age, initial firm size, legal status (PLC or not), MEG ownerships, Female ownership, whether firm has multiple sites, sector and region. Where figures are not given this is because there is no variation within the category.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Data for fig. 4. Regression results: Main obstacles

	High growth firm	Potential high growth firm
Economy	-0.288**	0.0158
	(0.140)	(0.133)
Obtaining finance	0.0402	0.475**
	(0.265)	(0.215)
Cashflow	0.18	0.218
	(0.145)	(0.177)
Taxation	0.152	-0.277
	(0.156)	(0.187)
Recruiting	0.371***	0.299*
	(0.136)	(0.163)
Keeping staff	0.277	
	(0.396)	
Regulations	0.0237	-0.257*
	(0.149	(0.149
Premises	-0.0249	-0.172
	(0.185)	(0.201)
Competition	-0.284*	-0.0498
	(0.151)	(0.145)
Management skills	0.229	0.104
	(0.200)	(0.263)
Skill shortages	-0.00676	-0.174
	(0.161)	(0.191)

Figures presented are coefficients for the likelihood of firms in either category perceiving the obstacle is important, with other firms as the reference category. Regressions also include controls for age, initial firm size, legal status (PLC or not), MEG ownerships, Female ownership, whether firm has multiple sites, sector and region. Where figures are not given this is because there is no variation within the category
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1