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UNDERSTANDING THE FIRM-LEVEL EFFECTS OF REGULATION ON THE GROWTH OF SMALL AND MEDIUM-SIZED ENTERPRISES

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Authors: Dr. Oliver Mallett (Newcastle University), Dr. Robert Wapshott (University of Sheffield), Prof. Tim Vorley (University of Sheffield)

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Department for Business, Energy and Industrial Strategy
1 Victoria Street
London
SW1H 0ET
www.gov.uk/beis

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Executive summary

Small and medium-sized enterprises (SMEs) represent an important part of the UK economy. The impact of regulation on these firms is important to understand, especially amid frequent claims that SMEs are disproportionately affected by regulatory costs and that regulation may hamper business growth.

We searched major databases for relevant empirical research on the firm-level effects of regulation on SME growth. This search generated a return of 1431 papers for which 101 articles were analysed in detail, producing a list of 38 relevant empirical studies.

Key findings

There is still very little firm-level empirical evidence of the effects regulation has on SME growth.

The key findings from studies internationally encompass the following themes:

Perception

A persistent feature of the studies reviewed is their reliance on owner-manager perceptions of the impacts of regulation. Regulation tends to be reported as a barrier to firm-level growth although rarely is it identified as a principal hurdle.

In more detailed studies of owner-manager perceptions, stability emerges as a powerful aspect, emphasising the perceived demands for the reliability and continuity of regulation. This is particularly relevant to entrepreneurs' considerations about the feasibility of business growth through bringing new products and services to the market.

Correlation

There has not yet been much work focused on identifying correlations between regulations and firm-level growth effects. Initial firm-level studies identify no significant differences in SME growth between low and highly-regulated economies.

Studies on property rights and corruption do indicate the necessity of regulation to create a sense of stability and security. A lack of stability and security can inhibit entrepreneurs' growth aspirations.

Threshold effects

Where small firms receive specific exemptions from regulation they are less likely to grow beyond the threshold at which these exemptions are lost. These effects may also influence particular practices such as outsourcing, deployed by firms to maximise their opportunities and profits whilst maintaining their exemptions.

Informal economy

Many studies on the firm-level effects of regulation on SME growth rely on official sources and ignore those businesses not registered for tax purposes. The inclusion of these firms accounts for a lack of firm-level differences between high- and low-regulation economies.

Future directions

Over-reliance on the 'SME' label masks differences that can be important for understanding the impacts of regulations on firms. Adapting earlier research, we suggest seven dimensions to help usefully characterise SMEs: product market; labour market; resources; strategic choice; rules and routines; management style; and networks. This approach allows researchers to identify how regulations might have effects on different types of firm but also where particular regulations may be relevant or have disproportionate effects on firm growth.

The effects of regulation are not experienced in the same way among all firms. Adapting earlier research, we suggest a typology of the firm-level effects of regulation on SMEs. This highlights considerations such as differences in how relevant regulations are to particular firms, the ways that firms respond to regulations, knock-on effects and the role of regulations in shaping the broader operating context for firms.

Understanding the impacts of regulation on firm-level SME growth will benefit from greater use of longitudinal research designs. Such research designs are sensitive to how firms change and are affected by regulation over time. This is particularly important when considering effects on SME growth as the relevance and impacts of regulations upon particular firms can vary as those firms themselves change.

Conclusion

While cutting red tape and bureaucracy is broadly welcomed as beneficial for business growth, there is very little evidence demonstrating how or when it impacts on SME growth at a firm level.

It is necessary to fully understand these effects in terms of their dynamic, direct and indirect influences in order to appreciate both the ways in which they may constrain but also facilitate SME growth. Without this understanding, well-intentioned attempts to support these firms and growth-oriented owner-managers and entrepreneurs may be doomed to failure.

Introduction

Small and medium-sized enterprises (SMEs) represent an important part of the UK economy. If we include micro, small and medium-sized employers (1-249 employees), then such employers account for more than 1 million businesses and 10 million employees. These figures increase significantly if the self-employed are added. Given their prevalence, the impact of regulation on these firms is important to understand, especially amid frequent claims that SMEs are disproportionately affected by regulatory costs and that regulation may hamper business growth.

This report presents the results of a systematic literature review that attempts to identify the firm-level effects of regulation on SME growth. This reflects a move away from aggregate understandings of the effects of regulation that obscure the complexities of the different firms grouped together under the broad 'SME' label and how they interact differently with regulatory effects in a given operating environment.

The aims of this project are to:

- Identify the firm-level effects of regulation on SME growth via a systematic literature review
- Develop a typology of regulatory effects, rooted in published empirical evidence, that reflects their dynamic, direct and indirect effects and the heterogeneity of SMEs
- Identify significant gaps or limitations in the evidence base on the firm-level effects of regulation on SME growth

Background: the challenges of research on SMEs

Small and medium-sized enterprises are defined in various ways, often on the basis of employee numbers although some further qualifications such as balance sheet value and financial turnover can also feature.

It is therefore appropriate to adopt multiple measures of SME growth because, for example, increasing staff headcount may be undesired by a business owner and so avoided through the use of sub-contractors or other working arrangements to increase financial turnover. We therefore encompass both growth in employees and financial turnover. These measures of growth, used for example by the OECD, help to provide degrees of comparability when analysing a range of different studies.

'SME' is a problematic label and it is important to acknowledge the vast variety of firms grouped together by its use. Particular regulations, and how they are interpreted, will affect businesses in different ways owing to differences in firm size, age and sector as well as to competitive conditions, degrees of regulatory enforcement and the responses of others in the firm's external and internal environments (Edwards et al 2003, 2004; Kitching et al, 2015). Because of this heterogeneity it is vital to understand the effects of regulation at the firm level rather than relying on aggregated effects taken from across the range of firms encompassed by the SME label.

In exploring the impact of regulations on firm-level SME growth, it is also important to acknowledge that growth is relatively uncommon for new businesses (Levie and Lichtenstein, 2010). Understandably, a range of factors can contribute to this typical outcome of non-growth, including business owners being motivated to achieve goals other than business growth, limited resources and tough competition. The role played by regulation therefore represents part of an overall picture for firm-level growth and changes to regulation will not necessarily impact growth intentions or reinvestment.

Identifying research on the firm-level effects of regulation on SME growth

Macro-level studies have identified patterns of entrepreneurship in response to regulatory contexts. Capelleras et al (2008) outline two opposing viewpoints:

1) the ‘Djankov view’, reflecting the work of Simeon Djankov, argues that the costs of regulation present a burden on entrepreneurs and reduce the number of start-ups and the rate of business growth.

2) the ‘Baumol view’, reflecting the work of William J. Baumol, argues that regulations provide a set of rules and routines that influence the form but not the quantity of start-ups and firm growth.

However, because they aggregate data across a wide range of businesses, such studies fail to engage with the heterogeneity of SMEs and shed only limited light on firm-level experiences of *how* regulation impacts on SME growth.

There is a developing literature on the firm-level impacts of regulation that has begun to deepen our understanding, for example into the dynamic, direct and indirect effects regulations can have on SMEs (Edwards et al 2003, 2004; Kitching 2006; Kitching et al 2013; Jordan et al 2013; Atkinson et al 2014). However, this emerging area of research tells us relatively little about firm-level effects on SME growth.

Research such as Carter et al (2009), for example, presents rigorous, valuable data on owner-manager perceptions of the general effects of regulation on their business. However, they do not engage specifically with firm-level growth and it would be dangerous to make inferences from their more general findings. While the effects they identify may *suggest* possibilities for impacts on growth, these are only inferred possibilities, not underpinned by empirical evidence derived from studies specifically designed to explore these effects.

This literature review therefore sought to identify and review empirical evidence specifically on the firm-level effects of regulation on SME growth.

Method

To identify the firm-level effects of regulation on SME growth by analysing published empirical evidence, we focused on searching the primary research databases. We searched primarily for peer-reviewed academic research, the peer-review process ensuring a certain degree of rigour in the empirical work.

The initial searches returned 5638 'hits' within the databases. We cleaned these results, for example identifying duplicate search returns created due to overlaps in database coverage. 1431 entries remained for a manual check.

Abstracts for each of the 1431 papers were reviewed and either included in one of three groups (depending on degree of potential relevance) for a more detailed review or discarded for not falling within the focus of this study. A full description of the systematic process followed is described in the Technical Appendix.

We incorporated three further devices to enhance the rigour of our searches: 1) a narrative check through which papers known to be relevant were included if absent from the search results; 2) to follow up on any relevant studies cited in the articles reviewed and deemed relevant to our review (including government reports); 3) a manual review of work published over the past decade in the top small business and entrepreneurship journals.

Table 1: Articles reviewed by group

	Articles reviewed	Articles identified as relevant
Database searches	1431 abstracts, 153 articles identified as potentially relevant	
Group 1	72	27
Group 2	50	5
Group 3	31	0
Extra searches	29 identified as potentially relevant	
	29	6

Review findings: The empirical evidence

The review of the literature made clear that detailed empirical evidence specifically relating to the firm-level effects of regulation on SME growth is sparse.

The majority of the 38 studies that are included in this review are not predominantly focused on the firm-level effects of regulation on SME growth but include regulation or 'red tape' questions in surveys of owner-manager perceptions of barriers to growth. Exceptions, where empirical studies focused in detail on the firm-level effects of regulation on SME growth tend not to focus exclusively on the UK, although several papers include the UK in international comparisons.

The research evidence that exists can be organised into certain key themes, as described in Table 2. Whilst some studies are repeated across categories, in the findings presented below we have focused on the key empirical evidence presented in each paper.

Table 2: Overview of the empirical evidence

Focus	Papers	Countries	Notes
Perceived barriers to growth	Akinboade 2014; Beck et al 2005; Clover and Darroch 2005; Dasanayaka et al 2011; Davidsson and Henrekson 2002; De Jong and van Witteloostuijn 2014; Edwards et al 2003; Gill and Mand 2013; Grünhagen and Berg 2011; Honorati and Mengistae 2010; Jordan et al 2007; Joumard et al 1992; Lee 2014; Levy 1993; Mahadea and Pillay 2008; Moktan 2007; Robson and Obeng 2008; Schmidt et al 2007; Seker 2010; Tonoyan et al 2010; Trulsson 2002; Zapalska and Zapalska 1999	Australia; Bhutan; Cameroon; Central Asia; Eastern Europe; France; Germany; Ghana; Holland; Hungary; India; Niger; South Africa; Sri Lanka; Swaziland; Sweden; Uganda; UK; Zambia; Zimbabwe; International Comparison	(Generally) owner-managers reporting barriers they perceive to growth
Growth and context correlation	Aghion et al 2007; Baldock et al 2006; Ball et al 2010; Beck at al 2005; Capelleras et al 2008; Chen et al 2004; Estrin et al 2013; Johnson et al 2002; Klapper et al 2006; Troilo 2011	Post-communist countries; Spain; UK; International Comparison	Regulatory context and correlations with firm growth
Threshold effects	Allinson et al 2013; Bischoff and Wood 2013; Burgert 2005; Chen et al 2014; Edwards et al 2003; Garibaldi et al 2004; Lazerson 1988; Levy 1993; Mancini and Pappalardo 2006	Germany; Italy; South Africa; Sri Lanka; Tanzania; UK; International Comparison	Avoiding growth to avoid problems
Informal economy	Akinboade 2014; Bischoff and Wood 2013; Bunjongjit and Oudin 1992; Capelleras et al 2008	Cameroon; South Africa; Spain; Thailand; UK;	Impacts on non-registered firms (and lack of)

Reliance on owner-manager perceptions

A persistent feature of the studies reviewed is their reliance on owner-manager perceptions of the effects of regulation. In these studies, regulation tends to be reported as a barrier to firm-level growth although rarely is it identified as a principal hurdle. Reviewing Business Barometer results from recent years supports this general picture, with ‘regulation’ tending to rank behind the Economy, Cashflow, Taxation and Competition as the main hurdle to business success identified by SMEs.

Table 3 outlines the studies focused on owner-manager perception and summarises the key insights provided as they relate to business growth. Many papers do not look at specific regulations but ask broad questions about perceived barriers from ‘regulation’ generally or about ‘red tape’.

How owner-managers understand regulation and interpret its significance for their business can influence business decisions (De Jong and van Witteloostuijn, 2014). Provided that research instruments are able to access owner-manager perceptions accurately, understanding how they view the impacts of regulation has the potential to provide useful information. However, very few of the studies shine significant light on the specific details of these questions or how regulations affect business growth.

In the UK, studies have confirmed that some (not all) owner-managers perceive regulation as a barrier to the growth of their business. Lee (2014), in a large scale survey of 4,858 UK SMEs, found that the potential high-growth firms felt held back by the economy, their managerial skills, finance and cash flow but that they were less likely to perceive regulation as a problem than other firms. 52% of potential high growth firms saw regulation as a significant barrier, compared to 60% of SMEs undergoing high growth and 65% of SMEs generally. Lee suggests that his findings refute common claims that regulation is a barrier to SME growth, highlighting its potential for shaping activities and having a positive impact.

Administration is an important element for questions of red tape as a potential barrier to firm growth. Definitions of red tape involve excessive or meaningless paperwork, unnecessary rules and procedures that cause delays and obstacles to businesses (Bozeman, 1993). Schmidt et al (2007), whose main focus was on the impact of legislation on compliance costs for independent retailers in five UK market towns, indicated that over a third would consider growing their business if there were no red tape.

The barrier of red tape in Schmidt et al was related in terms of the burden on workloads, paperwork and the difficulties of staying up-to-date with legislation. For example, Schmidt et al describe how a respondent explained the significance of ‘concerns about bureaucracy and record keeping that stopped him from taking his casual but successful market stall business to a permanent shop base’ (p.266). They suggest that compliance can create problems at particular transition stages in a firm’s development, such as taking on premises or formalising policies and practices in response to growth in employee numbers.

Table 3: Owner-manager perceptions

Study (country)	Key findings
General report of owner-manager perceptions	
Beck et al 2005 (international); Dasanayaka et al 2011 (Sri Lanka); Davidsson and Henrekson 2002 (Sweden); Levy 1993 (Sri Lanka and Tanzania); Clover and Darroch 2005 (South Africa); Gill and Mand 2013 (India); Mahadea and Pillay 2008 (South Africa); Robson and Obeng 2008 (Ghana); Schmidt et al 2007 (UK); Zapalska and Zapalska 1999 (Hungary)	Owner managers report a negative impact or barrier to growth
Joumard et al 1992 (Swaziland and Niger); Lee 2014 (UK); Trulsson 2002 (Uganda, Zambia and Zimbabwe)	Growth-oriented owner managers report no/fewer problems
Jordan et al 2007 (Australia and France)	Owner managers report positive views related to business growth
Studies that identify specific evidence	
Akinboade 2014 (Cameroon)	Self-reported high compliance impacting negatively on business development and investment decisions
De Jong and van Witteloostuijn 2014 (Holland)	Perceived regulation cost, inconsistency, and change limit sales turnover growth. Regulation change hampers market competition performance
Edwards et al 2003 (UK)	'…the focus should not be on the impact on small firms as a whole but rather the impact of specific legislation under certain circumstances' (p.7)
Grünhagen and Berg 2011 (Germany)	Perceived regulatory support, complexity and reliability have different effects on growth
Honorati and Mengistae 2010 (India)	Probability that labour regulation is perceived as a constraint increases significantly with number of labour inspection visits
Moktan 2007 (Bhutan)	Concerns (trade sector) with lack of transparent business policies, bureaucracy and corruption.
Seker 2010 (Eastern Europe and Central Asia)	Labour regulations have a negative effect on the labour demands of firms
Tonoyan et al 2010 (International Comparison)	Poor quality legal institutions perceived as impeding firm growth.

However, it should be noted that there are limitations with investing significance in claims that a business would consider growth if not for certain, vaguely specified barriers. This is especially problematic given the social desirability of business growth. An owner-manager responding positively to a survey inquiry about business growth but reporting negative views on regulation is not robust empirical support for an argument that business growth is hindered by specific regulations, for example, by health and safety restrictions on the selling of meat.

Allinson et al (2013), in a research report for the Department for Business Innovation and Skills, conducted 25 minute telephone surveys with 1,000 microbusinesses (0-9 employees) to identify specific obstacles to growth. They found that almost half (47 per cent) reported regulations to be an obstacle to growth, emphasising that it is not an all encompassing problem. They also emphasise the importance of understanding a range of different obstacles together and not focusing on regulation in isolation.

Pursuing their findings in more detail, Allinson et al identified that business owners were unsure which regulations applied or how to implement specific regulations. This uncertainty, for example in relation to employment legislation and the recruitment process, are also important challenges for business growth (Honorati and Mengistae’s 2010 study in India also found restrictions on the hiring of casual or temporary labour was a specific area of challenge). The perception that dealing with regulation in itself was too difficult or burdensome was only mentioned by 14% of respondents.

In a report for the Department of Trade and Industry on the impact of legislation on SMEs (not focused on growth), Edwards, Ram and Black (2003) identify a well-recognised characteristic of attitudes expressed by owner-managers with regards to regulation: they dislike regulation generally but tend not to relate this to specific regulations or the experiences of their particular business. Edwards and colleagues express this difference between a general view and particular experience:

> …it does not follow from their general perceptions that they are providing detailed concrete descriptions of effects in their firms. The perceptions are part of the managers’ sense of the world in which they operate (2003: 36).

Nevertheless, the world-view expressed by owner-managers in respect of regulation can still influence practice, even if it is not formed on the basis of directly experienced negative outcomes. As Edwards and his colleagues illustrate in their case studies, perceptions of regulation and regulatory burden could influence decisions around employee selection. In this way, the insight provided by owner-manager perceptions on how regulations impact on SMEs becomes complicated and specific effects difficult to disentangle.

Internationally, some studies have presented more nuanced pictures than simple survey responses or ratings of regulation or red tape as a barrier. De Jong and van Witteloostuijn’s (2014) study of regulation as a source of red tape in The Netherlands provides additional insight by elaborating three different areas of perception: perceived regulation cost; perceived regulation inconsistency; and perceived regulation change. They found that both perceived high regulation cost and inconsistency have a negative and significant effect on sales turnover growth but did not have a significant effect on market competition performance. Perceived regulation change was found to significantly hamper both sales turnover growth and market competition performance. They suggest the challenges of owner-manager perceptions of barriers but also of regulatory change which, in and of itself, can create burdens for businesses and challenges to growth due to the costs involved in maintaining up-to-date knowledge and understanding. This is an important step forward in developing a more detailed picture of how regulation might impact upon firm-level growth.

Similarly, Grünhagen and Berg (2011) highlight some of the complexities of perceptions of regulation in their study of the antecedents of innovation-based growth intentions in Germany's renewable energies sector. They examine: perceived regulatory complexity; perceived regulatory reliability; perceived entrepreneurial flexibility; and perceived policy support. Stability emerged as a powerful aspect, emphasising the perceived demands for the reliability and continuity of regulation. This was identified as being particularly relevant to entrepreneurs' considerations about the feasibility of business growth through bringing new products and services to the market.

Overall, the findings on owner-manager perceptions suggest that regulation may not feature as prominently in the concerns of growth-oriented owner-managers as might sometimes be feared. Further, simple survey questions may miss much of the complexity involved in the impact of regulation on firm-level SME growth. While typically not highlighted in research and general discussions of regulation, some owner-managers also identify positive effects of regulation. However, these responses are not pursued in the studies reviewed.

Table 4: Key evidence on owner-manager perceptions

Study	Method	Empirical focus	Key Findings
Lee 2014 (UK)	Survey	Obstacles perceived by high-growth and potential high-growth SMEs	Potential high-growth firms less likely to perceive regulation as a barrier than SMEs in general
Schmidt et al 2007 (UK)	Mixed methods	Compliance costs and consequences for SME retailers in market towns	Compliance can create problems at particular transition stages in a firm's development
Allinson et al 2013 (UK)	Survey	Obstacles to performance and growth of microbusinesses	47% of microbusinesses report regulation as a barrier to growth
De Jong and van Witteloostuijn 2014 (Netherlands)	Survey	Regulation cost, regulation change, and regulation inconsistency in private firms	Regulation cost, inconsistency, and change limit sales turnover growth; regulation change hampers market competition
Grünhagen and Berg 2011 (Germany)	Mixed methods	Perceived regulatory conditions in the German renewable energies and disease management industries	Regulation should be kept stable, consistent, transparent and accessible to increase entrepreneur confidence

The limitations of owner-manager perception studies / measures

The frequent reliance on owner-manager perceptions to evaluate the impacts of regulation means that the limitations of this measure should be considered.

Several of the studies reviewed include an unspecified ‘regulation’ or ‘red tape’ as a possible constraint on firm growth to be rated or ranked by respondents. This is particularly problematic when asking about red tape (see Gill and Mand, 2013) since, for many people, ’red tape has a strongly negative tenor and most laymen would, in all likelihood, be unable to make much sense of the notion of beneficial red tape’ (Bozeman, 1993: 275). Further, this approach can compound issues arising from the possibility that not all regulatory effects will be perceived or understood by owner-managers.

Owner-manager understanding is often vague on the details of employment regulations (Hart and Blackburn, 2005; Marlow, 2003) and, while they express general dissatisfaction with regulatory conditions, relatively few identify specific provisions impacting on their businesses (Atkinson and Curtis, 2004; Carter et al 2009). The role of regulation in day-to-day operations may be overstated and more nuanced than is sometimes assumed (Carter et al 2009; Edwards et al 2004; Westrip, 1986). Journard et al (1992: 66) identified that, when asked which specific piece of regulation they would like to see changed or removed, many respondents ’had nothing to suggest: they said either “none” or “do not know”.’ In a general ‘anti-legislation’ context, the spectre of regulation may be greater than its reality such that reforming regulations themselves may have little impact on firm-level SME growth, management practices or investment decisions.

Qualitative case studies have demonstrated that ‘[i]t would be wrong to assume from replies given in surveys that a negative comment about the legislation necessarily means that the firm itself has had direct and significant experience of a relevant situation’ (Edwards et al 2003: 35). Importantly, perception surveys put a lot of trust in owner-managers not only to report honestly but accurately in terms of standard definitions and understandings. It is not, therefore, just that owner-managers might inflate particular challenges (especially if they relate to culturally dominant stories about business and regulation), they may also ignore practices and effects that remain unspoken and that are not considered within the formal language of the research.

Moreover, entrepreneurs have been found to demonstrate a tendency to internalise causes of success while externalising causes of failure or underperformance. Rogoff and colleagues (2004) found that, compared with the assessments of experts, a sample of entrepreneurs over-attributed reasons for business impediments to external factors, including regulation. Too great a reliance on owner-manager perceptions of business outcomes can be problematic, especially when concerning explanations for degrees of failure. It may also lead to under-reporting of how external factors contribute to business success, as these positive associations tended to be attributed by entrepreneurs to their own actions.

It is also important to recognise what measures of owner-manager perceptions are not representing. Perceptions of regulation as a barrier to growth are not necessarily demonstrating that these firms would grow were regulations to be reduced or removed. Small and new businesses face a range of challenges such that mortality rates in the early years of operation are high (Coad et al 2013) meaning that, regulation aside, these businesses face tough conditions. There are many different obstacles to business growth and some are more detrimental to success than others, with owner-managers often not seeing regulation as the most important. It cannot, therefore, be assumed that reducing or removing regulations will translate into business growth.

Correlations between firm-level SME growth and regulatory context

Some studies adapt methodologies from macro-level analysis to examine firm-level effects and to identify correlations with regulatory contexts (e.g. low versus high regulation economies) or with specific pieces of regulation. (Those focused specifically on 'threshold effects' are discussed separately and in detail below).

There has not yet been much work focused specifically on firm-level effects and the evidence so far creates a mixed picture. Some studies, such as Beck et al (2005) conduct large scale surveys, in this case across 54 countries. They present evidence on the importance of financial and institutional development to reduce the effects of financial, legal and corruption obstacles to growth, especially for smaller SMEs. However, they rely upon aggregated data across each country (for example, average growth rates) and, due to the focus on international comparison, are therefore not sufficiently clear on the firm-level effects on growth.

Capelleras et al (2008), which we discuss in detail in the section below on the informal economy, found that, when including non-registered businesses, there were broadly similar growth rates when comparing the relatively highly regulated Spain with low regulation England. They suggest that the inclusion of only registered businesses in other studies risks distorting their findings.

Klapper et al (2006) analysed a large data set (3,371,073 firms) across Europe, comparing high and low regulation countries, particularly in terms of entry barriers. They found that incumbent firms in industries with smaller scale tend to increase their productivity more slowly in countries with high regulatory entry barriers. These entry barriers were therefore identified as not only restricting start-up but also, perhaps through their disciplinary effects on entry, subsequent business growth. They contrast this with firms in countries with low entry barriers and therefore greater competition which is suggested to produce more efficient survivors.

Chen et al (2014) conducted an international comparison of the quality of a country's regulatory environment to explore entrepreneurial growth and family control of a business using World Bank data from 80 countries and one territory. They used the Worldwide Governance Indicators published by the World Bank, which includes six dimensions: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Chen et al's findings suggest that family firm growth strategies are more sensitive to poorer regulatory contexts with less effective macrogovernanace and, as a result, are more likely to reduce their growth strategies and have significantly lower employment growth objectives than non-family firms. They suggest that a lack of protection for property rights may put a family's control and succession plans at risk, affecting the ways in which they might invest in the business and its growth.

Ball et al (2010) examines the price elasticity of the housing supply in the UK and is not focused on firm-level SME growth. However, its findings suggest that supply elasticities are greater for large house building firms than for small firms, meaning that large firms are better equipped to respond to changes prompted by regulation. Small firms, disadvantaged in this competition, may struggle to grow when large firms are increasing their market share. This provides an example of the SME preference for consistency and stability in regulation indicated in the perception studies discussed above.

International studies such as that by Troilo (2011) have highlighted the importance of property rights, as well as the rule of law, for entrepreneurship. Troilo studied high tech entrepreneurs internationally in terms of firms engaged in market expansion, high job growth and those engaged in both (‘Schumpeterian firms’). Utilising data from the Global Entrepreneurship Monitor (GEM), Troilo found that property rights were more significant for market expansion entrepreneurs while rule of law was more important for high job growth. Both were significant for the Schumpeterian entrepreneurs. Research therefore suggests that insecure property rights (for example, arbitrary government action, Estrin et al 2013) will reduce the growth aspirations of entrepreneurs.

Other studies are suggestive of both positive and negative effects. For example, Baldock et al (2006) studied health and safety regulation in relation to small firms in Britain, conducting a telephone survey and some follow-up face-to-face interviews. While their study was not focused on the effects of regulation on SME growth, they identified that sales-turnover growth was significantly correlated with undertaking compliance-related improvements, especially in relation to visits from inspectors.

Several international studies also examine corruption, for example in relation to the importance of the rule of law in protecting businesses (e.g. a higher level of corruption reduces the growth aspirations of entrepreneurs, Estrin et al, 2013). However, since many of the types of corruption discussed are not generally seen as a significant challenge in the UK these findings are not discussed here.

This theme of studies looking for correlations has, to date, tended to highlight the value of regulation, and broader regulatory environments, in providing security and confidence for entrepreneurs and growing businesses that encourages the investment of time, effort and resources into growing the business.

Table 5: Key evidence on correlations

Study	Method	Empirical focus	Key Findings
Capelleras et al 2008	Survey	Comparing start-up size and subsequent growth of new firms in heavily regulated and a lightly regulated economies	Similar growth rates when comparing relatively highly regulated Spain with low regulation England
Klapper et al 2006	Existing database	The effects of market entry regulations	Incumbent firms in industries with smaller scale tend to increase their productivity more slowly in countries with high regulatory entry barriers
Chen et al 2014	World Business Environment Survey 2000	How macro-governance business environment affects growth strategies of entrepreneurial firms. How family involvement relates to growth.	Lack of regulation reduces sales and workforce growth rates to a greater extent for family-controlled than non-family-controlled firms
Troilo 2011	Global Entrepreneurship Monitor	Legal institutions and high-growth aspiration entrepreneurship	Property rights more significant for market expansion, rule of law for high job growth
Ball et al 2010	Microeconomic analysis	Price elasticity of the housing supply	Limited relevance but suggests large firms better placed to respond to regulatory changes in the market
Baldock et al 2006	Mixed methods	Influences on workplace health and safety in small firms	Sales-turnover growth significantly correlated with undertaking compliance related improvements

Threshold effects

It is wrong to assume that owner-managers are passive in the face of regulations and they must be considered as active if we are to understand the ways in which regulations affect SME growth. Different owner-managers may respond in different ways, both in terms of how they attempt to ensure (or avoid) regulatory compliance but also in terms of how they respond to regulations in terms of the growth of their business. The role of owner-manager agency in the face of real or perceived regulatory provisions is well demonstrated by apparent threshold effects reported in research studies.

There has been very little research on threshold effects in relation to firm-level effects of regulation on SME growth in the UK but international studies provide some interesting findings.

Bischoff and Wood (2013) conducted in-depth interviews with 22 respondents (owner-managers, lawyers, trade unions and relevant others) in South Africa. They report how small businesses appeared reluctant to expand employment on the basis that larger workforces tended to attract scrutiny from regulators and the need to engage with bargaining councils. Business expansion was therefore managed through outsourcing arrangements to enable increased production. As a result, Bischoff and Wood suggest that firm size is a pliable concept, highlighting the importance of the informal elements of organisations and the complexity involved in understanding the effects of regulation on firm-level SME growth.

Lazerson (1988) studied small firms in Italy that held onto a prized ‘artisan’ status, a legal classification based primarily on the number of employees (dependent on industry) that confers loan and tax advantages and reduced administrative expenses. They conducted plant visits and open-ended interviews with employers and business association and trade union representatives in 15 firms. Their results suggest that firms opted to set up satellite businesses in order to achieve market expansion whilst retaining their artisan status. They suggest that ‘[t]he strategies of Italian small firms would appear very different if tomorrow the entire legal structure promoting artisanal firms was withdrawn’ (p.340). This is understood as an indirect influence of state policies which privilege certain organisational forms, in this case those businesses with less than a certain number of employees.

Mancini and Pappalardo’s (2006) study of labour regulations in Italy also identified threshold effects, identifying a statistically significant discontinuity in the growth of firms with employee numbers below the threshold at which firms are legally obliged to rehire unfairly dismissed employees (as opposed to paying compensation). That is, they identified a lower average growth rate for firms close to the threshold than businesses above it.

Garibaldi et al (2004) similarly found a small but significant threshold effect in relation to the same exemptions. They used longitudinal panel data which records the monthly total number of individual firms’ employees over 6 years. They found that firms were more likely to remain the same size close to the threshold and firms above the threshold were more likely to decrease in size than to grow. It is important to note that, while statistically significant, the differences are quite small. Nevertheless, they indicate the potential dangers of variations in regulation dependent on firm size.

There is some initial support for the presence of these types of effect in the UK. Allinson et al (2013), in a research report for the Department for Business Innovation and Skills, found that 65% of UK microbusinesses reported a fear that growth might mean more regulations. They also identified attitudes suggesting that regulatory costs are disproportionately greater with growth. While this theme is not explored in detail, they quote a participant in a focus group:

> You take on x number of employees and you have to do certain things... you've now got to have a first aider in, if you've got more than five you've got to have two qualified to cover for holidays, you've got to think about health and safety regulations. As you get bigger the legislation gets more, you fall into the next category and the next which puts more rules and regulations around your business. (Gift shop) (p.73)

These attitudes were more prevalent amongst those businesses with no employees but were not very widespread (6% of these businesses), especially when compared to reasons not to grow such as 'Not enough business available' or 'Happy at this size' (both of which were stated by 29% of 0 employee businesses, p.27).

As discussed in the above section on owner-manager perceptions, the barrier to growth of perceived regulatory burdens need not correspond to specific regulations and may relate to misperceptions. Burgert (2005) presents findings on job protection legislation in Germany where a smaller employment growth rate was identified for establishments *above* the threshold at which they would be affected by particular labour regulations than for those possibly discouraged to grow into coverage of the law. Burgert suggests that this may be because owner-managers are not even aware of, or reflecting on, the thresholds or different protections.

Where SMEs receive exemptions or privileges due to their small size that, in theory, enable them to compete or not be unduly constrained by their lack of resources, some firms may become dependent on these exemptions. In this way, regulations can create effects such that SMEs do not grow, alter their form through outsourcing or create new small firms that they control.

Table 6: Key evidence on threshold effects

Study	Method	Empirical focus	Key Findings
Bischoff and Wood 2013	Interviews	Selective engagement and compliance by firms	To avoid scrutiny from regulators and bargaining councils, business expansion managed through outsourcing
Lazerson 1988	Site visits and interviews	Small firm alternative growth strategies	Firms set up satellite businesses to achieve market expansion without increasing employee numbers and losing exemptions granted for firm size
Mancini and Pappalardo 2006	Survey	The effects on SME growth of a legal exemption for firms with fewer than 15 employees	A discontinuity in the dynamic of growth for firms with employee numbers below the threshold at which firms are legally obliged to rehire unfairly dismissed employees
Garibaldi et al 2004	Italian Social Security (INPS) records	Variations in employment legislation by firm size	A lack of growth for firms with employee numbers below the threshold at which firms are legally obliged to rehire unfairly dismissed employees
Allinson et al 2013	Survey	Microbusiness growth	A fear amongst owner-managers that increased size leads to more regulatory requirements

The informal economy

The informal economy is understood as comprising economic activities that are legal apart from the fact they are not registered for taxation. Examples of work in the informal economy include cash in hand jobs by tradesmen where the tasks performed are legal but tax is not paid on the monies earned. Within the context of Western economies, the informal economy is thought to represent a significant proportion of total economic activity, for example Schneider and Williams (2013) suggest that informal economic activities constitute around 10 per cent of GDP in the UK and up to 20–30 per cent of GDP in many southern European countries.

However, the informal economy has received very limited coverage in research examining the effects of regulation on firm-level SME growth. However understandable this is in terms of research access and the challenges of research design, the role of regulation influencing activities within the informal economy represents a potentially important research gap. We do not include general research on informal economy or that relating to tax here as these areas are outside the scope of the review. Nevertheless, there are studies of the firm-level effects of regulation on SME growth that throw some important light onto the importance of accounting both for businesses legally outside the tax system and those operating in the informal economy.

As outlined earlier in the report, macro-level studies have identified patterns of entrepreneurship in response to regulatory contexts. Capelleras et al (2008) contrast the 'Djankov view', that the costs of regulation present a burden on entrepreneurs and reduce the number of start-ups and the rate of business growth, with the 'Baumol view', that regulations provide a set of rules and routines that influence the form but not the quantity of start-ups and firm growth.

Capelleras et al (2008) sought to test these contrasting ideas by conducting a firm-level survey study and comparing new firms in relatively highly regulated Spain with lower regulation England. Importantly, they surveyed not only those businesses included in the official statistics, but also those that are omitted, for example due to not being registered for VAT. Among these firms, some may trade with revenues legitimately below the VAT threshold while others may be avoiding the tax. When including both registered and unregistered firms, Capelleras et al (2008) found no significant difference between the two economies in terms of size or growth, whereas, when only looking at registered firms, those in Spain start bigger and grow more slowly.

Commenting on the macro-level studies, Capelleras et al (2008: 691) explain that, those studies providing evidence for the Djankov view draw upon official data using government-based business registers that exclude non-registered businesses. Further, such studies lack a focus on firm-level data (tending instead towards a macroeconomic focus) and often draw inferences from data reflecting the experiences of relatively large SMEs (for example excluding those firms that begin with 0-4 employees before embarking on business growth).

Some of the other studies in the review do include or mention firms from the informal economy, for example Bunjongjit and Oudin (1992), in a study of smaller garment manufacturers, metal goods manufacturers and restaurants in Thailand, found informal businesses relatively untroubled by regulation (ignoring their findings on taxation as outside the scope of this review). Others highlight the difficulties in competing with these firms (Akinboade, 2014; Bischoff and Wood, 2013). However, this is an area in need of further detailed study.

Capelleras et al (2008) is indicative rather than definitive but it suggests the need for further research and more detailed, firm-level evidence. Clearly, there is a need to include all firms, not just those that are registered when trying to understand the effects of regulation on SME growth.

Table 7: Key evidence on including non-registered firms

Study	Method	Empirical focus	Key Findings
Capelleras et al 2008	Survey	Comparing start-up size and subsequent growth of new firms in heavily regulated and a lightly regulated economies	Similar growth rates when comparing relatively highly regulated Spain with low regulation England if unregistered firms included

Future directions

From this review of empirical evidence for the firm-level effects of regulation on SME growth, we have identified a significant lack of rigorous research or empirical evidence, especially for how regulation may affect SME growth at a firm-level.

We have identified a predominance of studies designed around owner-manager perceptions of the burden of regulation. As discussed above, such research designs offer benefits but also significant limitations that mean additional studies along these lines will probably provide us with little novel information beyond what is obtained from regular governmental surveys that ask similar samples of SMEs the same questions.

- Owner-manager perceptions expressed in response to research questions typically lack detail of *specific* regulatory burdens and how they hinder their business.
- Owner-manager perceptions of regulation, its scope and its burdens do not necessarily reflect the actual regulatory landscape but rather a broader world-view.
- Identifying that regulations are perceived to represent a burden on a business does not mean that *but for* those regulations, *then* the business would grow.

As Doern (2009: 295) has identified: 'empirical evidence does not adequately explain "why", "how" or indeed "if", certain factors or barriers identified by studies […] limit or prevent behaviours that influence small business growth and development.'

The necessity of further firm-level research in this area is clear. Below we outline 3 potential ways forward in developing a research agenda to address the significant gaps in the knowledge base: SME heterogeneity; different types of effect; and longitudinal research designs.

SME heterogeneity

A tendency in the research literature is to homogenise groups of firms under the SME label. While 'SME' can be a convenient short-hand for distinguishing the majority of businesses from a minority of very large businesses, it is often unhelpful when trying to perform more detailed analyses.

To maintain a rigid adherence to an SME category as distinct is to suppose that businesses employing 200 people have more in common with those employing 20 than they do with businesses employing 300. Similarly, there will be important differences due to sector, age and other variables that are too often ignored in the research of regulation and SMEs.

Indiscriminate use of the SME label assumes that businesses employing similar numbers of people experience regulation in similar ways despite the scope for differences in whether regulations are relevant to all businesses of a given size and how those enterprises might choose to respond to regulations. Homogenising businesses under a single SME label overlooks the possibility that regulatory compliance burdens, and the costs of regulatory change, are, for example, disproportionately felt by the smallest of businesses.

Firm-level research in the area of small and medium-sized enterprises more generally is beginning to move away from unhelpful homogenisation. These structured, detailed approaches achieve useful insights that can then be read alongside other research findings of similar detail, with the bases of comparison made explicit. If firms cannot be compared beyond crude categorisations, the difference in outcomes may not be attributed to firm behaviour as opposed to other points of difference between firms.

One way in which to address the subtleties of SME heterogeneity is to incorporate factors in addition to size, sector or age. This would allow researchers to identify the ways in which regulation might have effects on different types of firm but also where particular regulations may be relevant or have disproportionate effects on firm growth.

To develop this approach, we suggest using the seven dimensions from Gilman and Edwards' (2008) framework that seeks to characterise SMEs and we have adapted the framework for a specific focus on regulation (see Table 8). This is not to suggest simple, rigid divisions (e.g. there are interactions such as between product markets and labour markets, see Ram and Edwards, 2003). An individual firm can be characterised in terms of the relevance of each of the seven dimensions. These characterisations can be used to cluster similar businesses and the effects of specific regulations on these clusters of firm can then be assessed.

At the most basic level, firms operating in highly regulated product markets may adapt more readily to certain types of regulations than those in typically less regulated markets. Studying the effects of particular regulations on an undifferentiated group of similarly-sized firms could hide important impacts of regulations. Characterising firms using these seven dimensions permits more refined distinctions on how firms are grouped and the effects of regulation understood.

Importantly given the focus on firm-level SME growth, this framework is dynamic - firms can move between 'types' - for example, as they grow, firms may become more formal, changing rules and routines or management style (Mallett and Wapshott, 2014). In this way, regulations may impact organisations in different ways as the organisations and their operating environments change (Carter et al 2009); evidence seeking to understand the effects of regulation should accommodate this. Our adaptation of Gilman and Edwards' framework is to create a focus on how regulation impacts on firm-level ability to pursue and achieve growth, in particular through management processes and investment decisions.

Table 8: Dimensions of SME heterogeneity (after Gilman and Edwards 2008)

Dimension	Description in relation to firm-level growth
Product market	the role of regulation in shaping markets and competition, the regulations applying to the products and services created, the role of supply-chain influences and industry norms to produce / effect regulations
Labour market	labour market flexibility, pools of suitably-qualified labour and terms of employment that encourage / do not discourage firms hiring staff
Resources	ability to access resources deemed necessary for growth, such as additional funding
Strategic choice	the extent to which a business has scope to pursue its preferred strategy when operating within its particular regulatory context, including perceived impacts affecting e.g. investment decisions
Rules and routines	the extent to which business processes are facilitated or constrained by regulatory structures outside the immediate firm, for example the insistence on health and safety regulations associated with certain processes or use of standard-operating-procedures to satisfy clients
Management style	management practices in use within the firm e.g. the degree to which the internal management and operation of firms is left to those within the firm as opposed to governed by regulatory requirements, e.g. grievance and disciplinary procedures, working time regulations
Networks	how widely available are advisory and support resources to help identify and adapt to regulation and how are these accessed if at all

A typology of the effects of regulation

In light of the complex and varying effects of regulation, it can be helpful to use a framework to structure considerations of regulation's effects. To this end our starting point in attempting to develop a typology of the firm-level effects of regulation on SME growth is Edwards et al (2003, 2004) who, in looking at the effects of employment laws on small firms more generally, identify three sources of influence: relevance effects, filtered effects and knock-on effects. Utilising the limited empirical evidence identified in our literature review we have developed this typology specifically in terms of the firm-level effects of regulation on SME growth.

This typology does not seek to classify the effects of regulation; some effects may cross different types in different contexts or businesses. Instead, it is a helpful tool for considering the potential complexity involved in the firm-level effects of regulation on SME growth.

We will briefly outline each of these effects with empirical examples.

Relevance effects

Where the firm's existing practices or procedures do not filter the effects, the type of effect can be determined by the relevance of the regulation ('relevance effects'). These relate to whether the effects of the regulation are direct, indirect or affinity effects.

Direct effects

This describes effects where the regulatory requirements are implemented by the firm. There was no evidence identified of these effects in the review but an example would be a newly introduced national minimum wage (NMW) which will impact some firms directly: they will be required to increase the amounts paid to staff, perhaps limiting the profits available to reinvest in business growth.

Indirect effects

This describes effects where the regulation requires some action to be taken but this is not mandated. For example, Baldock et al (2006) identified an impact on sales turnover growth that indirectly resulted from measures undertaken to ensure compliance with health and safety regulation. Other regulations may only become apparent after a business loses a dispute, for example in an employment tribunal, and take action to formalise their management practices as a result (which may leave the firm better equipped to grow). In this way businesses, and business growth, are indirectly impacted by regulation.

Affinity effects

Finally, relevance may simply be at the level of affinity, where the spirit of regulation is followed, for example in increasing pay that is already above the NMW, even though no action is legally required. Burgert (2005), for example, present findings on job protection legislation in Germany where a smaller employment growth rate was identified for establishments *above* the threshold at which they would be affected by particular labour regulations. Burgert suggests that this may be because owner-managers are not even aware of, or reflecting on, the specific thresholds or different protections. Instead, it may be that these businesses are responding to a general trend (in this case an idea that greater regulatory responsibilities come with business growth).

Filtered effects

This describes instances where regulation's effects are filtered by existing practices and procedures that are themselves influenced by a range of other factors, principally in areas such as the internal employment relationship and external industry-specific norms and standards. Routinised informal practices may limit administration costs. For example, some firms will pay well above the rate set by a national minimum wage and so the introduction of such regulation may not have a significant impact upon the business ('filtered effects').

Knock-on effects

There may also be 'knock-on effects' that result from the initial action taken to ensure compliance, for example improving staff retention through increasing wages to comply with a national minimum wage and producing an overall increase in productivity, leading to business growth. In this way, individual 'types' of effect are not mutually exclusive but part of a complex web of interactions and implications.

There was no evidence for knock-effects on business growth identified in the review. However, it is important to appreciate the dynamic nature of effects and the firms themselves. As a result, for example, affinity effects may take up resources early on, perhaps leading to knock on effects but, later, the firm's existing practices and degree of formalisation may provide filtering effects, limiting the impact from new regulation and providing an effective way of working to facilitate firm growth.

Context effects

The studies identified in our review suggest a further possible type of 'context effect' that needs to be considered. These context effects may be particularly important in areas such as management practices and investment decisions, where it is the operating environment, competition and discourse of regulation effects that impact most upon owner-manager behaviours and intent, rather than specific regulations that affect their business. These context effects go beyond the type of indirect effects outlined above because they apply where regulations are not directly *relevant*.

The limitations of studies into owner-manager perceptions appear to be of significant importance in relation to what we have termed context effects: the ways in which non-specific, irrelevant or non-existent regulation can have firm-level effects on SME growth through environmental, competition and discourse effects. Not only do we understand surprisingly little about where owner-manager perceptions arise from, nor do we understand the potential effects of these perceptions themselves, irrespective of any real or imagined regulations or red tape they may be referring to in their survey answers. These insights may have particular importance for understanding areas such as growth aspirations, management practices and investment decisions.

Environmental effects

This describes effects where regulation shapes the operating environment, for example, allowing businesses to trade (rule of law, limiting corruption) but also in the creation and enforcement of property rights. For example, Johnson et al (2002) found that secure property rights are necessary for entrepreneurs to take full advantage of opportunities to reinvest. This could also relate to the creation of opportunities or the closing of loopholes. Again, the relevant regulations may not be directly relevant to the SME itself but still have important implications for their growth.

Competition effects

We separate out competition effects where regulation impacts other, rival businesses which, in turn, impedes SME growth. For example, Ball et al (2010) found that supply elasticities in the housing market were greater for large firms than for small firms and their research suggests some of the ways in which regulation can benefit some firms ahead of others, potentially impeding growth in firms that are not directly affected by the regulation. This could also relate to the creation of opportunities or the closing of loopholes that benefit other firms but to which the SME pursuing growth cannot respond.

This can also be seen in the literature reviewed in relation to threshold effects and those businesses operating in the informal economy, where their rivals may be negatively affected by the gains made through the exemptions available to these businesses. In this way, problems can be created where, for example, newly created firms are protected or subsidised while existing ones are not, so the new firm can undercut an existing competitor.

Discourse effects

This describes effects derived from the ways in which regulation or red tape is talked about and perceived, where this may bear little or no relationship to the actual regulations. The significant focus on owner-manager perception in the studies identified in our review demonstrates the prevalence of perceiving regulations as a barrier to growth but such perceptions often do not relate to specific regulations. This may also apply to lay person understandings of ‘red tape’ where survey questions suggest an inherent sense of challenges and barriers rather than specific experiences. What is important here is that these perceptions, even if misguided, may have an effect on SME growth, for example deterring growth aspirations or investment decisions. The ways in which governments and the media talk about regulation may be particularly influential here.

Table 9: Typology of effects of regulation on SME growth

Effect on SME growth	Description	Example	Literature
relevance effects: how relevant a particular piece of regulation is to a firm will vary, leading to:			
direct effects	the regulatory requirements are implemented by the firm	A specific response to regulatory requirements	No evidence identified
indirect effects	the regulation requires some action to be taken but this is not mandated	Formalisation following a tribunal loss	Baldock et al (2006): sales-turnover growth correlated compliance related improvements
affinity effects	changes in the spirit of a perceived general trend in regulation, even though the regulation does not require action	Firms exempt from a regulation enacting its spirit	Burgert (2005): mixed picture on threshold effects
Filtered and knock-on effects			
filtered effects	how deeply embedded regulatory requirements are into existing practice affects ability to absorb compliance costs	Routinized informal practices may lower administration costs	Edwards et al (2003): market conditions filter NMW effects
knock-on effects	further effects may result from the initial changes made to ensure compliance	Training staff for compliance may lead to risk of poaching	No evidence identified
context effects: the ways in which regulations (or lack of) create the operating context			
environmental effects	regulation shapes the SME's operating environment	Property rights, corruption	Johnson et al (2002): property rights necessary for reinvestment
competition effects	regulation distorts competition through effects on other businesses	Market competition	Ball et al (2010): regulation benefiting large firm rivals
discourse effects	the ways regulation is talked about and perceived that bares little or no relationship to the actual regulations	Red tape	Joumard et al (1992): owner-managers not clear on specifics

Longitudinal studies

Longitudinal research designs are of value because they can attend to the dynamic nature of businesses and the ways in which they may be affected by regulation. It is difficult to identify the nature of effects on businesses if there is only one, cross-sectional measurement point.

This difficulty is heightened when looking at growth and when one considers that firms, especially those that are growing, can change in terms of which of the seven dimensions identified above become more salient. For example, as a small firm grows it may become more formal, changing rules and routines or management style (Mallett and Wapshott, 2014). In this way, regulations may impact organisations in different ways as the organisations and their operating environment changes; evidence seeking to understand the effects of regulation should accommodate this.

The future directions identified above (the seven dimensions to characterise SMEs and the typology to characterise regulatory effects) help to make sense of changes over time. This can be usefully seen in the case of threshold effects where, as discussed above, firms may avoid taking on additional staff to retain specific exemptions or privileges associated with their present size. This may be particularly relevant for firms sensitive to labour market concerns but become less so as the firm changes over time and therefore less reluctant to grow and lose its exemptions.

For some firms, specific regulations may not be directly relevant (due to their exemptions), however, there may still be affinity effects where, for example, employees exert pressure on owner-managers to abide by the spirit of the regulation even where it does not apply which may, in turn, constrain or facilitate growth. If the firm continues to avoid growth due to the threshold there may be knock-on effects, for example in the case of the creation of satellite businesses identified by Lazerson (1988). Such effects, which may not be immediate, could be missed by cross-sectional research.

Garibaldi et al (2004) uses data from the Italian Social Security Administration (INPS) archive. The longitudinal panel data records, at the level of individual firms, the monthly total number of employees over a 6 year period. Garibaldi et al followed a random cross-sectional sample of firms to test the effects of the threshold at which firms are legally obliged to rehire unfairly dismissed employees (as discussed above). The benefit of their methodological approach is that, as well as being firm-level, they study the potentially fluctuating changes in employee numbers over time to test the changing influence of threshold effects.

Business growth and the effects of regulation necessarily unfold over time. To capture the dynamic, direct and indirect effects of regulation on firm-level growth, studies are required that can account for how firms *discover* the regulation, *interpret* how it is relevant for the business, *plan* any required changes and *implement* required changes in addition to tracking outcomes associated with any changes made. Such understanding requires longitudinal research designs that are sensitive to how firms change and are affected by regulation over time. This is particularly important when considering effects on SME growth.

Although not focused on investigating growth, the work of Arrowsmith et al (2003) offers a good example of how longitudinal qualitative research designs can reveal potential impacts of regulations in small firms. The study incorporated 55 firms, chosen from two different sectors known to pay low wages, prior to the introduction of the National Minimum Wage and then followed up with a year later. Interviews were bolstered by five more detailed case studies to offer greater depth to the research. The research not only captured how a range of possible responses may be open to small firms, and how these differed among firms, but also how the responses played out over the first year of the legislation being in effect.

These examples are, of course only suggestive of potential research designs to study the firm-level effects of regulation on SME growth in greater depth and detail. They demonstrate that, while potentially more resource-intensive, such longitudinal research is achievable and can provide valuable insights.

Conclusion

The key conclusion from the literature review is that there is very limited empirical evidence on the firm-level effects of regulation on SME growth. While we have outlined some interesting research on owner-manager perceptions, correlations, threshold effects and the informal economy, overall we have identified very few studies focusing explicitly on this area. This is despite the frequent mention of SME growth and its importance when regulation is discussed by politicians, lobby groups, the media and, in the perception studies identified in the review, by owner-managers themselves.

It is important to understand and address this lack of empirical evidence if regulators are to fully account for the potential effects of the regulation they produce. While cutting red tape and bureaucracy is broadly welcomed as beneficial for business growth, there is very little evidence demonstrating how or when it impacts on SME growth. We suggest that it is necessary to fully understand these effects in terms of their dynamic, direct and indirect influences in order to appreciate both the ways in which they may constrain but also facilitate SME growth.

Without this understanding, well-intentioned attempts to support these firms and growth-oriented owner-managers and entrepreneurs may be doomed to failure.

Technical appendix

To produce the systematic literature review, we followed the procedures described by Thorpe et al (2005), which incorporate three stages: Planning the review, Conducting the review and Reporting the review.

(1) Planning the review

Starting with our objective, to identify the firm-level effects of regulation on SME growth through analysing published empirical evidence, we developed and refined our search terms. Search strings were built around combinations of terms relating to regulation, SMEs and growth. A variety of terms were used so for example, ‘regulation’ was also searched for under ‘statute’ and ‘legislation’ and this was repeated for terms close to ‘small business’ such as ‘micro enterprise’ and ‘start-up’. The particular focus of this study on growth meant that we did not search for more general ‘growth’ terms other than outlined below.

These search terms were discussed between Dr Mallett and Dr Wapshott and a check was conducted by Prof Vorley, with adjustments made as appropriate. The aim at this stage of the planning process was to balance search terms that would produce relevant results for our particular research question while also delivering sufficient breadth in the search findings to provide some assurance that key studies would be returned in the search. This was particularly challenging given the specific focus of the review; studies were required to be firm-level, focused on SMEs and, specifically, looking at the effects of regulation on growth.

We did not include studies looking at the impacts on performance (e.g. Kitching et al, 2015) unless growth was explicitly an element in the measure of performance. This potentially excludes some important studies but this decision was made to ensure that empirical material included did relate clearly to firm-level effects of regulation on SME growth. Performance is complicated to conceptualise and can include many definitions (including, for example, business survival) that are very different from the growth focus of this review. For example, Kitching et al (2015) do include some mentions of regulation’s impacts on growth but they are in passing, as part of broader points about how we think about regulation’s effects, rather than clearly presented empirical evidence in its own right. These kinds of evidence are difficult to identify in a systematic literature review where the focus is on the key findings highlighted in the title, abstract and key words and where the findings themselves are not entirely clear because they are not the focal point of the article. Minor findings such as those above that do not feature in the title, abstract or keywords may have been missed by the systematic review but are also, by the nature of their not being highlighted by the authors, unlikely to provide significant empirical evidence that discounts this observation.

Where the databases allowed and as per our initial proposal, we searched only for peer reviewed materials in the academic journals; peer review being the usual standard of evidence and quality required. We excluded any articles focused on tax regulation, as required in the tender instructions. However, unlike previous literature reviews in this area (see, for example, Frontier Economics 2012 report for the client), we did not exclude consideration of planning regulation and environmental regulation. While these areas remain under-studied they are potentially relevant, timely and could potentially develop the comprehensive range of our evidence base.

The planning stage ensured that focused, relevant and appropriate search terms were generated such that the subsequent review returned research papers that can help to gain a more detailed understanding of the firm-level growth impacts of regulation.

We focused on searching the major databases for work in this area: Business Source Premier (EBSCO), EconLit, International Bibliography of the Social Sciences (IBSS), PsycINFO, ScienceDirect, Scopus, Sociological Abstracts, Social Sciences Citation Index (SSCI), Web of Knowledge and Web of Science. As part of the checking procedures, we also determined to follow Thorpe et al's decision to incorporate a 'narrative check' through which studies known to be relevant could be included even if they were not detected by the systematic search of major databases.

(2) Conducting the review

Search strings (below) were built around combinations of terms relating to regulation, SMEs and growth. Each of the words used in search strings was extended to capture variants. We achieved this by adding an asterisk to the stem of the core search terms entered into the databases. For example 'regulation' became 'regulat*' in order to capture results including 'regulation', 'regulations' and 'regulatory'. The same device was used for terms searching for 'small business' and for 'growth'. In the latter case searching for 'grow*' enabled results including 'growth' and 'growing' to be captured.

The search strings enabled us to conduct 69 searches repeated across each of the 8 databases. Our initial plan to search 10 databases was altered by SSCI and Web of Knowledge now being integrated with Web of Science.

The search results from the initial searches were as follows:

Table 10: Search results by source

EBSCO	EconLit	IBSS	Psych INFO	Science Direct	SCOPUS	Soc. Abstracts	Web of Science
2947	272	492	41	48	754	89	995

Total 'raw' search results = 5638

The initial searches were conducted by entering search terms into the databases. Our searches returned 5638 'hits' within the databases when searched individually. The date range of raw results was from 1899 through to 2015. These raw search results were then 'cleaned' through various stages to remove duplication and sources such as conference papers, falling outside our search remit but which could not be filtered by each of the database search engines. We used EndNote reference management software to identify duplicate search returns, created owing to overlaps in database coverage. Further cleaning of the search results was required in EndNote to detect duplications owing to variation in the information recorded for example, a paper by Acs and Szerb (2007) is published in Small Business Economics, however this journal title information was missing from two of the three returns from the search so EndNote included them as distinct papers).

Items 'cleaned' included files showing in EndNote as: Conference papers, medical / science, Patent, Editorial; Books; Book section; Case study; Conference proceedings; Generic; Manual duplicate search; Foreign (non-English) language; No author; Off topic (e.g. Sports Mega Events abbreviated to 'SME')

Once these further checks had been completed 1431 entries remained for a manual check. The sources were spread over a number of years, with most of the search results arising over the past 30 years (see Figure 2):

Figure 1: an overview of how the results produced through our literature search, organised as described above, were distributed over time

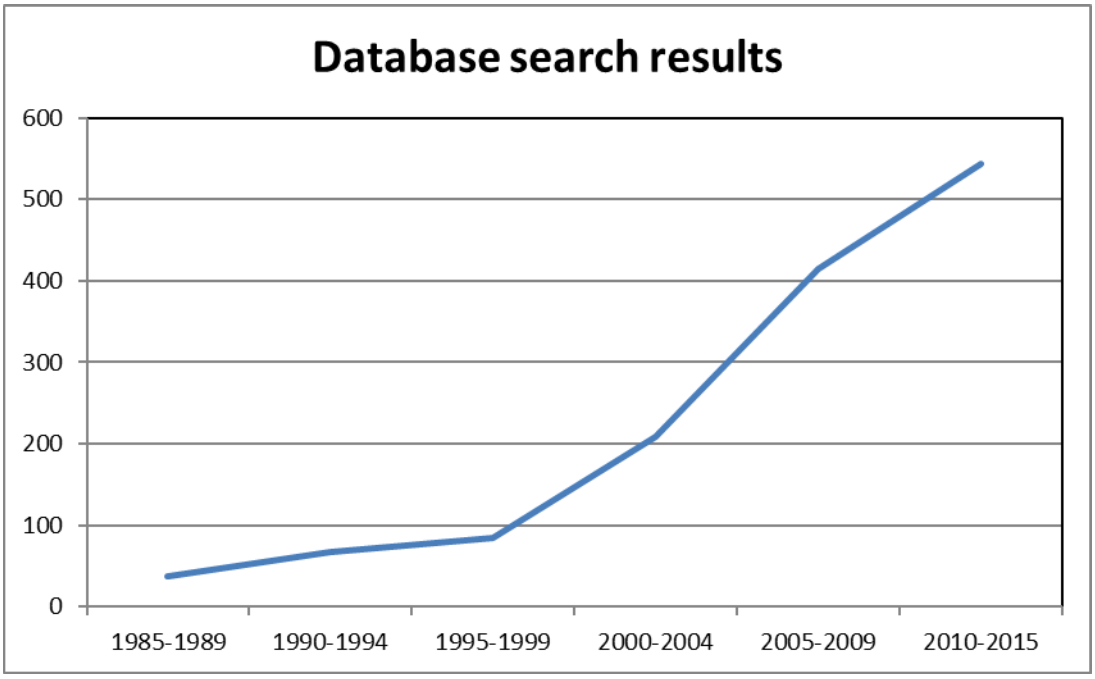


Table 11: Overview of paper sort

Stage	Number of articles/reports
Initial search results	5638
Abstracts/Exec Summaries reviewed	1431
Full papers reviewed in detail	101
Papers included in review	38

Abstracts for each of the 1431 papers were reviewed and either discarded for not falling within the focus of this study or allocated to one of three groups, as per Thorpe et al (2005):

> Abstracts that appeared directly relevant (to impact of regulation on firm-level SME growth) were allocated to Group 1 (72 articles). These articles were all reviewed in detail. All articles reviewed were input into a spreadsheet that captured their salient details, empirical focus and evidence. This included allocating research findings against the 7 factors adapted from the Gilman and Edwards framework: Product market, Labour market, Resources, Strategic choice, Rules and routines, Management style and Networks.

Abstracts that appeared related to topic were allocated to Group 2; for example: a paper by Ahn (2014) focused on how advice can aid growth, with advice about regulation providing one area of consideration in the paper (50 articles). These articles received an initial focused reading to identify relevance. Those identified as potentially relevant were then reviewed in detail.

Abstracts that appeared not clearly related to the topic but were worthy of further consideration were allocated to Group 3; for example: Aidis et al (2011) studied 'regulatory focus theory' a topic unknown to the authors so it was allocated to Group 3 for further consideration (31 articles). These articles were first re-examined at the level of the Abstract. If appropriate they then received a focused reading to identify relevance. Those identified as potentially relevant were then reviewed in detail.

Of these, 4 papers from Group 1 were not retrieved as they were not available from repositories at Durham or Sheffield or available from the authors. These articles were potentially relevant although the Abstracts did not suggest significant evidence that would change the nature of the report.

It is important to acknowledge that while systematic literature reviews offer potential strength in terms of transparency and breadth of coverage, the diversity of terminology used in organisational research and variety in terms of how research is reported create a role for exercising judgement when sorting search results. The approach is best described therefore as thorough rather than exhaustive.

We incorporated 3 further devices to enhance the rigour of our searches. The first of these was a narrative check through which papers known to be relevant were included if absent from the search results (after Thorpe et al 2005). The second device was to follow up on any relevant studies cited in the articles reviewed and deemed relevant to our review. Finally, it is a feature of systematic searches that they are shaped by the coverage provided by the databases selected (year range, journals included / excluded) and the search mechanisms used, for example tending to focus on title, abstract and keywords. Our response was to conduct an additional manual search of the top small business and entrepreneurship journals (*Entrepreneurship Theory & Practice, Journal of Business Venturing, Small Business Economics, Journal of Small Business Management and International Small Business Journal*) for the past 10 years for relevant papers and more generally for relevant government and NGO reports.

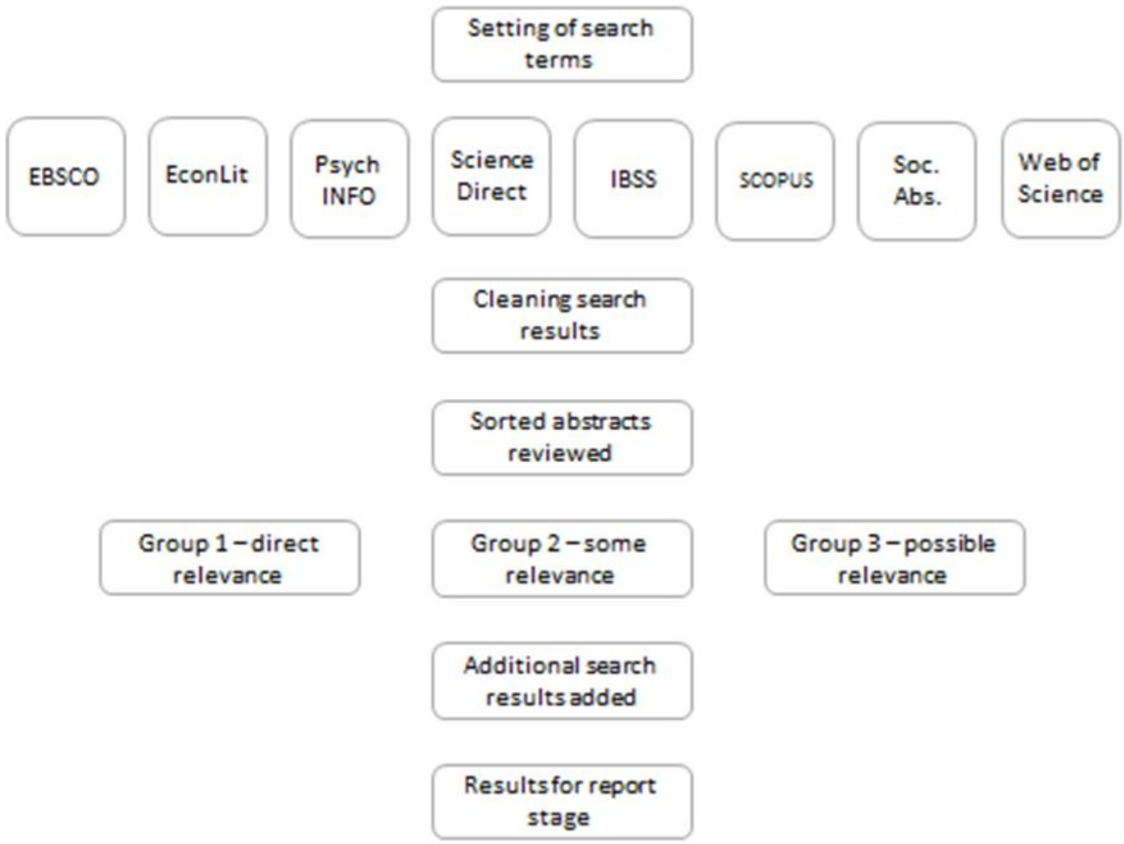
Studies identified through these manual checks that were found to be potentially relevant (29 articles) were first examined at the level of the Abstract. If appropriate they then received a focused reading to identify relevance. Those identified as potentially relevant were then reviewed in detail.

Table 12: Articles reviewed by group

	Articles reviewed	Articles identified as relevant
Database searches	1431 abstracts, 153 articles identified as potentially relevant	
Group 1	72	27
Group 2	50	5
Group 3	31	0
Extra searches	29 identified as potentially relevant	
	29	6

The following flowchart summarises the systematic literature review method.

Figure 2: Overview of literature review process



(3) Reporting the review

The final stage of the process was to develop the detailed summary of empirical evidence into descriptive and thematic accounts of the firm-level effects of regulation on SME growth. In our report we have included descriptive accounts that provide an overview of the main research papers and empirical evidence. We use the thematic accounts to synthesise the key themes in the findings generated through the systematic review process. From this synthesis we developed a typology of the effects of regulation drawing on the empirical evidence identified to gain more detailed understanding of the dynamic, direct and indirect effects of regulation on SME growth at a firm level. Finally, we have presented the key gaps in the empirical evidence and suggested future directions in addressing these research gaps.

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