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## Barriers to innovation through public procurement: A supplier perspective

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### ABSTRACT

Public procurement is increasingly viewed as having important potential to drive innovation. Despite this interest, numerous barriers prevent the public sector from acting as an intelligent and informed customer. This paper seeks to understand how barriers related to processes, competences, procedures and relationships in public procurement influence suppliers' ability to innovate and to reap the benefits of innovation. We address this by exploiting a dedicated survey of public sector suppliers in the UK, using a probit model to investigate the influence of structural, market and innovation determinants on suppliers' perception of these barriers.

The main barriers reported by suppliers refer to the lack of interaction with procuring organisations, the use of over-specified tenders as opposed to outcome based specifications, low competences of procurers and a poor management of risk during the procurement process. Such barriers are perceived most strongly by R&D intensive organisations. Our results also indicate that certain organisations, particularly smaller firms and not-for-profit organisations, encounter greater difficulties with innovation arising from the procurement process, for instance in relation to contract size, lack of useful feedback and communication of opportunities. Government procurement policies are queried in light of the findings.

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### 1. Introduction

The use of public procurement to stimulate private sector innovation has been a much-debated issue of late, particularly in the context of so-called 'demand-side' innovation policies (Edler et al., 2006; OECD, 2011). While this debate is not new, it has seen a renewed impetus in policy discussions in the European Union (Kok, 2004; Aho et al., 2006) and across the OECD (Myoken, 2010; OECD, 2011). For instance, the OECD (2011) examined a range of experiences in the use of targeted demand-side innovation policies, including public procurement, regulation, standards, user-led innovation initiatives, and 'lead market' policies (see also European Commission, 2007). Further, the Europe 2020 strategy includes public procurement as one of the key market-based policy instruments for smart, sustainable and inclusive growth (European Commission, 2010).

It has been argued that public procurement can help counteract market and systemic failures hindering innovation (Edler and Georghiou, 2007; Edquist and Zabala-Iturriagoitia, 2012). Put simply, the public sector can overcome market failures by enlarging the market for certain goods and services, thus ensuring sufficient critical mass to encourage R&D investment. The public sector also influences standards

through procurement, thus facilitating diffusion (Blind, 2013). Public procurement can also help offset systemic failures by enabling interaction between users and potential suppliers, and by articulating and signalling unmet needs to the market. While the flexibility for interaction during a procurement process is regulated in all countries that are part of the Government Procurement Agreement in the WTO and EU Directives, there is still ample room for general engagement to signal market needs upstream, and a range of legal procedures such as Competitive Dialogue allow for controlled interaction even during the procurement phase (Arrowsmith and Treumer, 2012; Treumer and Uyarra, 2013). Finally, the use of public procurement has been associated with the emergence of so-called 'lead markets' (see e.g. Geroski, 1990; Georghiou, 2007; Edler and Georghiou, 2007).

Innovation scholars have provided empirical evidence of the impact on innovation of public procurement vis-à-vis traditional innovation policy instruments. For instance, Rothwell and Zegveld (1981) found that procurement was more likely to generate innovations than R&D subsidies. Geroski (1990) reviewed a series of innovations emerging from public procurement and concluded that, provided certain conditions were met, procurement was an effective means to stimulate innovation. Aschhoff and Sofka (2009) contrasted the effects of procurement vis-à-vis other instruments (regulation, R&D subsidies and university research) on the innovation activities of German enterprises and found that both public procurement and the provision of knowledge infrastructure in universities had positive

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effects on innovation success. Using Innobarometer data for 2006–2008, [Guerzoni and Raiteri \(2012\)](#) also observed that public procurement had a greater influence in stimulating firms' innovation behaviour than R&D subsidies, but noted that the strongest effects on innovation occurred when both instruments were combined.

Despite this body of work, few studies have investigated in detail the specific conditions or mechanisms within public procurement that actually lead to, or hinder, innovation ([Geroski, 1990](#); [Rothwell and Zegveld, 1981](#)). Given the multitude of practices and procedures involved in the procurement process, what matters in order to inform policy design and implementation is not so much whether it can influence innovation but *how and under what conditions* that impact takes (or could potentially take) place.

This is an important issue because, despite the perception of procurement as something of a policy panacea and repeated efforts to put procurement budgets to work to drive innovation, efforts have been met with limited success ([NESTA, 2012](#)). Barriers to effective implementation, including organisational, regulatory, skills and the inherent risk aversion of the public sector, have been documented in the literature (see e.g. [Wilkinson et al., 2005](#); [Rolfstam, 2013](#)). However this evidence tends to be anecdotal, case-study based and at times not consistent. This article provides a contribution in that it uses a dedicated and original survey to capture the perceptions and experiences of a broad range of suppliers, including small firms and third sector organisations (not-for-profit and non-governmental organisations), across different sectors and areas of the public sector. This paper thus underpins, qualifies and amends existing evidence by shedding a quantitative light on these questions: What are the main barriers that prevent the government from capturing innovation through public procurement? How do different types of suppliers experience these barriers? More specifically, the paper investigates the influence of structural, market and innovation determinants on suppliers' perceptions of these barriers.

We analyse this issue by looking at the UK and in particular we draw from a dedicated survey of 800 suppliers to the UK public sector. The UK is an interesting case to assess the development of these policies because it is considered a 'first mover' ([Edler and Uyarra, 2013](#)) in the promotion of policies and initiatives seeking to stimulate innovation through public procurement, as well as addressing the modernisation of public procurement more generally. In addition, and given the extent of private and third sector involvement in the delivery of public services, its 'public services industry' is generally considered to be one of the largest and the most developed in the world ([Julius, 2008](#)). Therefore the UK experience offers interesting lessons for other economies with similar agendas of privatisation and public sector reform.

This paper is structured as follows. In [Section 2](#), the paper reviews the literature that addresses the key conditions or mechanisms in the procurement process that are seen to influence the effectiveness of procurement in stimulating innovation. The paper seeks to investigate how government suppliers perceive these aspects. We address this by means of a survey of suppliers and we use a probit model to ascertain the influence of structural, market and innovation variables on their perception of those barriers. [Section 3](#) explains the data, the variables, and the approach for our econometric analysis. In [Section 4](#) we present the results and the final section discusses the findings and draws some conclusions and implications for policy.

## 2. Theoretical framework and key assumptions

### 2.1. Policy effort to boost public procurement of innovation – and their limits

Public procurement refers to the acquisition of goods and services by government or public sector organisations. Public

procurement is first and foremost a vehicle allowing public sector organisations to perform their functions and deliver key services effectively. This notwithstanding, a growing body of scholars and policy makers throughout the OECD have recognised that by purchasing innovative products and solutions the public sector can not only deliver services more effectively and efficiently but also influence the innovation activities of private firms ([The Economist, 2010](#); [OECD, 2011](#)). Public procurement of innovation has been associated with instances where public agencies act to purchase, or place an order for, a product-service, good or system that does not exist at the time but which could be developed within a reasonable period; that is, that requires innovative work to fulfil the demands of the buyer ([Edquist and Hommen, 2000](#); [Edler et al., 2006](#)). This contrasts with 'regular procurement', where governments place orders for 'off-the-shelf' products.

A renewed interest in the use of public procurement to drive innovation, and in so called demand-side innovation policies more generally ([Edler, 2010](#)), has emerged as a result of a perception of a relative failure of traditional, mainly supply-side, policies, to improve innovation performance ([OECD, 2011](#)). In addition, the rationales exercised for the use of public procurement have broadened (including the pursuit of further societal outcomes such as local employment or sustainability) ([McCrudden, 2007](#)), in parallel with a change in the understanding of innovation (from an R&D-centred, linear view to systemic approaches to innovation) and a realisation of the potential of the public sector as an innovator in its own right ([Flanagan et al., 2011](#)).

Initiatives to advance this policy agenda have proliferated in recent years both in OECD countries and emerging economies ([Georghiou et al., 2010](#); [Li, 2011](#); [OECD, 2011](#); [Uyarra, 2013](#); [Lember et al., 2013](#); [Vecchiato and Roveda, 2014](#)). Such initiatives vary strongly in their rationales and implementation modes, a reflection of national differences in the governance and structure of public procurement, different objectives associated with this policy across countries and policy sectors but also the inherent complexity of procurement processes ([Dimitri et al., 2006](#)). [Georghiou et al. \(2013\)](#) elaborate a policy framework and taxonomy of such interventions based on the functions supporting the procurement of innovation and the deficiencies they seek to remedy. Interventions may for instance address framework conditions for procurement (legislation, governance frameworks), organisational arrangements and capabilities for innovation procurement, the identification, specification and signalling of needs, and the provision of incentives for suppliers to take up innovative solutions.

The UK has been particularly active in this area in the last decade, introducing a host of initiatives and reforms in order to mobilise the use of procurement to support competitiveness and innovation (for a review see [Uyarra et al., 2013](#)). However, the implementation of such strategies and initiatives has been reported as being slow and fraught with difficulties. For instance, the Office for Government Commerce ([OGC, 2004](#)) noted that the public sector was failing to fully 'capture innovation' through procurement. In his review on creativity in business for HM Treasury, George Cox argued that, despite much progress in shifting the policy agenda, changing procurement practices remained an important challenge, a difficulty compounded by the fragmented nature of procurement in the UK ([Cox, 2005](#)). The 2008 'Innovation Nation' White Paper similarly concluded that "procuring innovative solutions has tended to be a low priority" ([DIUS, 2008](#): p.23; see also [Heseltine, 2012](#)).

Indeed, despite a generalised optimism regarding the potential of procurement to stimulate commercial innovation, the challenges are considerable. This paper thus aims to better understand what prevents suppliers from proposing innovative solutions. A better acknowledgement of such barriers should facilitate an

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