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Public procurement and innovation—Resurrecting the demand side

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Abstract

Demand is a major potential source of innovation, yet the critical role of demand as a key driver of innovation has still to be recognised in government policy. This article discusses public procurement as one of the key elements of a demand-oriented innovation policy. The paper starts by signaling the new significance of public procurement for innovation policy strategies at the EU level and in a range of European countries. It then defines the concept of public procurement and embeds this concept within a taxonomy of innovation policies. The rationales and justifications of public procurement policies to spur innovation are discussed, followed by a consideration of the challenges and potential pitfalls as well as appropriate institutional arrangements and strategies, including some recent empirical examples of good practice. It concludes by confronting the public procurement approach with two of the most common objections to it and by considering future prospects.

Keywords: Innovation policy; Public procurement; Demand and innovation; Concepts of demand-oriented policy; Public sector innovation

1. Introduction

Demand is a major potential source of innovation yet the critical role of demand as a key driver of innovation has still to be recognised in government policy. Public demand, when oriented towards innovative solutions and products, has the potential to improve delivery of public policy and services, often generating improved innovative dynamics and benefits from the associated spillovers. Nonetheless, public procurement as an innovation policy has been neglected or downplayed for many years. In the 1970s, a number of empirical studies explored the meaning of procurement for innovation (for an overview, see Mowery and Rosenberg, 1979; Rothwell and Zegveld, 1981; Rothwell, 1984). Rothwell and Zegveld (1981) compared R&D subsidies and state procurement contracts without direct R&D procurement. They concluded that, over longer time periods, state procurement triggered greater innovation impulses in more areas than did R&D subsidies (see also Rothwell, 1984, p. 330). Geroski (1990, p. 183) also analysed the quantitative and qualitative meaning of state demand for innovation and concluded that procurement policy "is a far more efficient instrument to use in stimulating innovation than any of a wide range of frequently used R&D subsidies".

In a more recent survey of more than 1000 firms and 125 federations, over 50% of respondents indicated that new requirements and demand are the main source of innovations, while new technological developments within companies are the major driver for innovations in only 12% of firms (BDL, 2003). An analysis of the Sfinno data base collecting all innovations commercialized in Finland during between 1984 and 1998 (Palmberg, 2004;

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Saarinen, 2005) shows that 48% of the projects leading to successful innovation were triggered by public procurement or regulation.[1]

Not only demand as such, but also the interaction between demand and supply has crucial implications for innovation dynamics. Starting with von Hippel (1976) and Mowery and Rosenberg (1979, p. 148), a range of studies have argued that a major task for systemic innovation policy is the organisation of a discourse between users, consumers and others affected by innovations in order to articulate and communicate preferences and demand to the market (see also Smits, 2002). Furthermore, the scale and characteristics of demand in a given location have been recognised as major determinants of the competitiveness of locations and their innovation dynamic (e.g. Porter, 1990).

In principle, the potential for using public procurement as an instrument for innovation is considerable. At 16.3% of the combined EU-15 GDP (Georghiou, 2004), public procurement represents a key source of demand for firms in sectors such as construction, health care and transport.[2] Nonetheless, with a few exceptions, for many years the potential offered and challenges posed in using public procurement for innovation have been largely ignored in innovation policy, both conceptually and in practice. It has been argued that the introduction of more stringent competition regulations across the European Union has proven a major factor in the declining use of this instrument (Edquist et al., 2000). The extent of relative decline is indicated by statistics showing EU procurement four times less than the US in civilian sectors and two times less when defence is taken into account (Directors Forum, 2006). However, in the last 3–4 years, the issue has received renewed attention, especially at the EU level but increasingly so at national level in a number of Member States.

This article analyses the concept of public procurement as an integrated tool of innovation policy.[3] It explores the factors which have led to this renaissance of what has been considered a mature, if not obsolete approach, and its importance within the portfolio of demand-side policies. The paper starts by signalling the new significance of public procurement for innovation policy strategies at the EU level and in a range of European countries. It then defines the concept of public procurement and embeds this concept within a taxonomy of innovation policies. The rationales and justifications of public procurement policies to spur innovation are discussed, followed by a consideration of the challenges and potential pitfalls as well as appropriate institutional arrangements and strategies, including some recent empirical examples of good practice. The paper concludes by confronting the public procurement approach with two of the most common objections to it and by considering future prospects.

2. A new wave of interest: public procurement in the innovation policy debate at EU level

At European Union level a new interest has emerged in the meaning of demand-side approaches to innovation and, more concretely, in the use of public demand as an engine for innovation. The emphasis has been on the link between procurement and perceived under-investment in R&D by business. The way in which procurement has entered the policy agenda is in itself an interesting case-study in how an issue gets taken up by the system. Following the work of an expert group (Georghiou et al., 2003), procurement for innovation was incorporated as an element of the European Commission's Research Investment Action Plan to raise R&D expenditure to the 3% Barcelona target (European Commission, 2003). Follow-up work includes a specific action to support the development and diffusion of information to public buyers (for example, on best available technologies) and an initiative to set procurement in the broader context of "policy mixes", thereby exploiting synergies with other research and innovation policy measures, for example, technology platforms.

The issue gained further momentum within Europe when early in 2004 three governments issued a position

[1] There is further consensus in the literature, that military demand in systematic conjunction with military R&D programmes was the key to the development and diffusion of many technologies especially in the US (Internet, many further ICT technologies, Global Positioning System (GPS) and other satellite technologies (Alic et al., 1992; James, 2004; Wessner, 2004) and – lately – diagnosis and therapy methods within the military project Bioshields (James, 2004, p. 35)). However, the economic efficiency of procurement resting on military needs and only indirectly spilling over to private markets has been strongly challenged (Wessner, 2004; Cohen and Noll, 1991; Kelley, 1997; DOD, 1999; James, 2004, p. 29). Therefore, and because of the peculiarities of the defence market, defence procurement will not be dealt with in this article (see James, 2004 for an overview).

[2] There are alternative figures for the size of public procurement in different EU countries, depending on different assumptions concerning inclusion of all government levels. Audet (2002), for examples, reports slightly lower shares of public procurement within GDP. He also shows that the shares differs between the EU countries, in his calculation ranging from almost 5% in Belgium to slightly more than 13% for Sweden.

[3] For a broader overview on demand oriented measures in general, including the support of private demand, see Edler (2007a, 2007b, in press).