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Assessing the impact of public venture capital programmes in the United Kingdom: Do regional characteristics matter?

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ABSTRACT

This article analyses whether and how the impact of publicly backed venture capital (VC) funds varies across regions, depending on their level of innovation intensity and in comparison with private VC funds. Building on agency and human capital theories, the authors distinguish public VC funds into regional and governmental types, to assess potential differences in the performance of their portfolio companies. The analyses rely on a sample of 628 VC-backed companies in the United Kingdom during 1998–2007, and they confirm that regional characteristics matter for rigorous assessments of the effectiveness of public VC programmes.

1. Executive summary

Governments and regional authorities throughout Europe and the world have implemented programmes to improve small firms' access to equity financing (Lerner, 2002b; Lockett et al., 2002; Wright and Robbie, 1998). Although this topic received considerable attention, the impact of public policies in support of venture capital (VC) markets at the regional level has not been investigated.

Building on agency and human capital theories and using a large-scale sample of 628 UK companies that received first-round backing from public and private VC funds during 1998–2007, we analyse whether and how the impact of publicly supported VC programmes varies (1) with respect to the impact of private VC funds, (2) between regional and governmental public VC funds and (3) among regions according to their level of innovation intensity. We assessed the effectiveness of publicly backed VC funds for the creation of active VC markets by studying their ability to invest in successful companies and attract additional funding from qualified VC investors in the region. Our results show a significant reduction in investments by private VC sources in the United Kingdom, offset by the greater availability of public sources. At the same time, these public VC funds, especially those with a regional focus, are less effective because of the distortions their tight geographic constraints introduce. These negative consequences tend to be more pronounced in technologically lagging regions.

Our analyses highlight the importance to consider the design of publicly supported initiatives as a critical issue to avoid damaging their overall impacts (Mason and Brown, 2013). In addition, we suggest that a mere supply-side approach is insufficient to solve the

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equity gap; it is necessary to consider demand-side opportunities and constraints as well (Lerner, 1999; Mason and Harrison, 2003; Venkataraman, 2004).

2. Introduction

Governments and regional authorities throughout Europe and the world have implemented programmes to mobilise venture capital (VC) to support newly established, innovative firms within their borders, with the objective of remedying funding gaps in private capital markets, leveraging private sector financing and fostering the creation and growth of technology-based companies. Stimulated by the implementation of such initiatives, several entrepreneurial finance studies have worked to assess the effectiveness of different public policy instruments in terms of creating active VC markets (Brander et al., 2014; Cumming, 2007; Cumming and MacIntosh, 2006; Grilli and Murtinu, in press; Lerner, 2002b; Nightingale et al., 2009). Such research has identified successful experiences, critical aspects for designing effective public venture initiatives and potential distortions due to public involvement in the VC market (Lerner, 2010). However, several issues remain unexplored, including the impact of public policies in support of VC markets at the regional level.

This lack of attention is surprising for several reasons. First, VC investments tend to concentrate in a limited number of high-tech clusters, while other regions host little, if any, VC activity (Florida and Kenney, 1988; Martin et al., 2004). Second, these "regional equity gaps" (Chen et al., 2010; Martin et al., 2002; Mason and Harrison, 2003; Sunley et al., 2005) have prompted more and more regional government policies aimed at fostering new venture financing (European Commission, 2006). Third, growing academic and policy interest centres on how the spatial structure of financial markets might affect the provision of finance to small and medium-sized enterprises (SMEs) and new ventures across regions (Klagge and Martin, 2005). Yet few empirical studies take regional dimensions into consideration when assessing the effectiveness of public VC programmes (Carlson and Chakrabarti, 2007; Collewaert et al., 2010; Lerner, 1999; Mason and Harrison, 2000; Murray, 1998). The few studies along these lines generally perform analyses of single regions (e.g. the Silicon Valley or Boston area in the United States; Wales or Scotland in the United Kingdom; the Flanders region in Belgium) and/or specific programmes (e.g. SBIR programme in the United States, Regional Venture Capital Funds in the United Kingdom, European Seed Capital Fund Scheme in Europe). To the best of our knowledge, no studies based on large samples compare the effectiveness of different public programmes while taking into account the intensity of innovation activity at the regional level, nor do any of them focus on regional VC funds compared with other types. Thus we still know little about the character, operations and outcomes of regional VC policies (Lerner, 2010; Mason and Pierrakis, 2013; Sunley et al., 2005). In addition, theoretical predictions regarding the impact of regional VC funds are not straightforward, in that different theoretical premises lead to conflicting conclusions.

Starting from this premise, we aim to fill these gaps by using a large-scale sample to analyse whether and how the impact of publicly supported VC programmes varies (1) with respect to the impact of private VC funds, (2) between regional and governmental public VC funds and (3) among regions according to their level of innovation intensity. In addition to comparing the performance levels of private and public VC funds, we contribute to previous literature in several ways. First, we introduce a regional dimension to assessments of public VC programmes from a supply-side perspective, distinguishing between regional VC funds (financed by regional or local authorities and/or with a specific regional delimitation on their investments) and governmental VC funds. We argue that this specific design dimension has a relevant impact on final outcomes. Second, from a theoretical perspective, we build on agency theory (Sahlman, 1990) and human capital theory (Dimov and Sheperd, 2005; Zarutskie, 2010) to advance contrasting hypotheses regarding the likely direction of such relationships. Third, from a demand-side perspective, we assess the moderating role of regional characteristics, in terms of innovation intensity level, and argue that it significantly affects the availability of suitable investment opportunities and thus the effectiveness of public VC programmes (especially those with a regional focus).

We perform our analysis with a specific focus on the experience of the United Kingdom. As discussed further in Section 4.1, the United Kingdom represents an ideal context in which to address our central research questions, because of its long tradition and experience with government interventions and equity investments in start-up companies. The sizeable wave of public support that followed the introduction of the Competitiveness White Paper in 1998 prompted the subsequent creation of a wide range of publicly backed VC funds, including both funds established and managed at the national level and those operating at the regional level, such as nine regional venture capital funds (RVCFs). We therefore gathered empirical evidence from a sample of 628 UK companies that received first-round backing from public and private VC funds during 1998–2007. We define publicly backed VC funds as those that received part of their capital from the public sector. Following previous studies (Collewaert et al., 2010; Cumming, 2007; Nightingale et al., 2009), we investigate the impact of these funds, in contrast with privately backed VC funds, at the portfolio level by studying two interrelated dimensions, coherent with the main goals of public VC programmes: the ability of publicly backed VC funds to invest in and promote successful companies, which we measure with exit rates (IPOs and acquisitions), and the capacity of public VC funds to attract additional funding from qualified VC investors in the region, through staging and syndication investment policies. We further differentiate publicly backed VC funds into regional and governmental funds. In all cases, we assess whether these differences are more or less pronounced, depending on the innovation intensity of the regions in which the investee companies operate.

The results indicate greater importance of public intervention in the VC market, especially after the early 2000s. However, publicly backed VC funds, in comparison with private ones, also exert a lower impact on the three performance dimensions considered in the analyses: success rate, staging and syndication. For the distinction between regional and governmental VC funds, we find that companies backed by regional VC funds achieve the lowest level of performance, especially when they operate in less innovative regions. Thus even if public intervention is increasing and offers a "certification signal" to attract additional VC investments, its effectiveness