



Notes on regional determinants and preconditions of venture capital investment

Working paper

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Introduction

The aim of this paper is to launch a discussion on the linkages between Venture Capital and regional innovation.

In channelling an ongoing discussion that is the object of a rich academic production, we decided to focus on the perspective of which **best institutional and economic conditions contribute to the most appropriate investment environment for venture capital (VC)**.

Since the European VC market is not comparable with the one in the US (both for maturity of the market and the intensity of the investments) we cannot either make use of the evidence that has been produced to account for the determinants of VC in the US¹.

In attempting to account for VC determinants in Europe, we adhere nonetheless to a definition of venture capital as “independently managed, dedicated pools of capital that focus on equity, or equity-linked investments in privately held, high-growth companies”².

Our illustration attempts at highlighting three factors:

- To what extent is the public sector playing a role in early stage VC and why (*institutional factor*)
- To what extent a national innovation system and policy determine the VC flow (*country factor*)
- To what extent preconditions for VC flows can be tackled from a place-based, regional perspective (*regional factor*).

In our view the above factors should help shed some light on key determinants of VC stock and flows.

We are aware that these considerations do not cover all the possible aspects of the debate on VC³. The hope, nonetheless, is to contribute to the shaping of **policy recommendations**, for a regional context.

¹ See for example: P.A. Gompers and J. Lerner, What Drives Venture Capital Fundraising? NBER Working Paper No. 6906

² Lerner 2009; Sharpe, 2009.

³ See for example FP7-FINNOV and in particular: A. Mina, H. Lahr, Venture capital in Europe: recovery, downsizing or breakdown, FINNOV paper, November 2011.

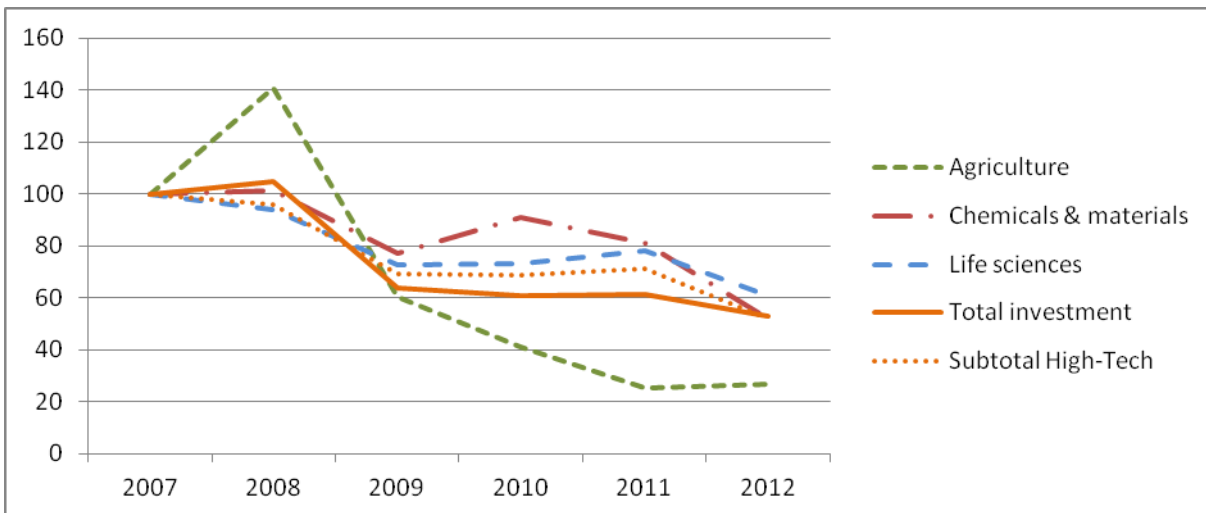


VC: the macro trend

The EVCA yearbook is one of the most reliable sources of private equity and venture capital investment in Europe.

Following the 2008-2009 crisis the volume of investment of VC has not yet recovered to the 2007 level. Life sciences is indeed the sector attracting the highest volume of VC in 2012 in Europe.

Fig. 1 - Venture investment in all European countries considered by EVCA analysis



Source: elaboration on EVCA

The trend shown in Figure 1 may be the result of averages across stages of investment. Mina and Lahr (2011) find that VC funds (especially in later stage funds) did not lose much during the crisis and uninvested capital as percentage of total capital committed to VC is lower after 2010. Moreover, there is clearly an uneven distribution of funds across sectors.

When we dissect the amount of VC per type of investor in selected H4G countries we discover a diversified institutional environment across the selected countries. Data in Table 1 show this diversified environment and help us detect a pattern of coexistence of both private (like corporate investors) and public (like government agencies) sources. This latter type of investor may sound off the mark given the general recognition of VC as a “privately held” kind of investment but reaches up to 85% of the total in Hungary and 78% in the Baltic countries.



Table 1

Venture Funds	Portugal 2011	Italy 2011	Hungary 2010	Netherlands 2011	Belgium 2011	Baltics 2010	former Yugoslavia 2011
Amounts in %							
Investor type							
Academic institutions					3%		
Banks	6%	100%			6%	4%	44%
Capital markets							
Corporate investors	14%			47%			19%
Endowments and foundations							
Family offices				15%			
Fund of funds					9%		
Government agencies	18%		85%	24%	28%	78%	8%
Insurance companies					3%		5%
Other asset managers (including PE houses other than fund of funds)					22%	9%	1%
Pension funds							19%
Private individuals				4%		2%	
Sovereign wealth funds	62%					2%	
Unclassified			15%	10%	31%	4%	4%
New funds raised	100%	100%	100%	100%	100%	100%	100%
Source: personal elaboration on EVCA							

Since VC investment by government agencies has increased since 2010⁴, it is appropriate to review the public role in promoting VC. In the next section we highlight a few considerations pertaining the public role in VC.

Public policy for VC

There is no consensus in the literature on the motivations for public policy activity in terms of VC⁵.

If we take the number of deals of new tech firms backed by the public sector as a proxy of public engagement we see that there is ample variance within Europe with the lion's share played by UK.

⁴ <http://infogr.am/VENTURE-FUNDS-FROM-GOVERNMENT-AGENCIES-in-selected-countries?src=web>

⁵ See for example Sharpe, Risk capital and innovation, FP - FINNOV, August 2009.



Fig. 2 – Public sector engagement with new technology-based firms

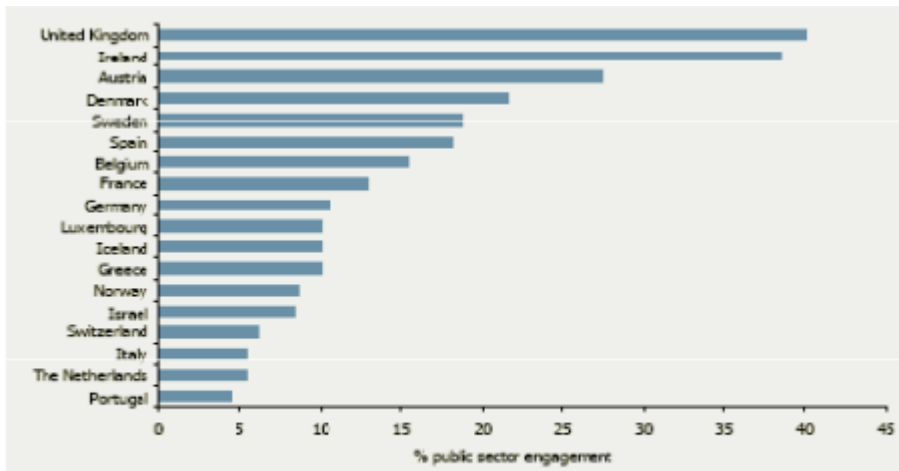


Figure 3 Public sector engagement with NTBFs.

Source Library House 2007

As reported by Sharpe (2009), however, this is a partially coherent proxy since public policy has switched in the past 15 years to investment in private sector managed funds (so called hybrid funds).

As for the motivations, there might be an attempt to solve a market failure or there might be an attempt to create a “demonstration effect” for future private investors. In general the public sector may have longer time periods on which to realize their investments.

Munari and Toschi find⁶ that hybrid funds have a higher propensity in the UK to finance high-tech sectors in lagging regions, especially in the seed early stage, but in doing so they run the risk of backing underachieving companies.

The assertion that government venture capital in Europe has crowded out private venture capital (Da Rin et al., 2006; Lerner 2009) has met with cries of approval, but has not gone without criticism⁷.

On the whole, early stage VC remains the particular focus for public policy, but the effect of such policy on tech-based development remains to be fully explored (Sharpe, 2009).

The country effect

A measure of VC intensity across European countries shows a clear predominance of Nordic countries (Sweden, Denmark, Norway, Finland) followed by France, Belgium and the Netherlands⁸.

⁶ See “Assessing the impact of public venture capital programmes in UK”

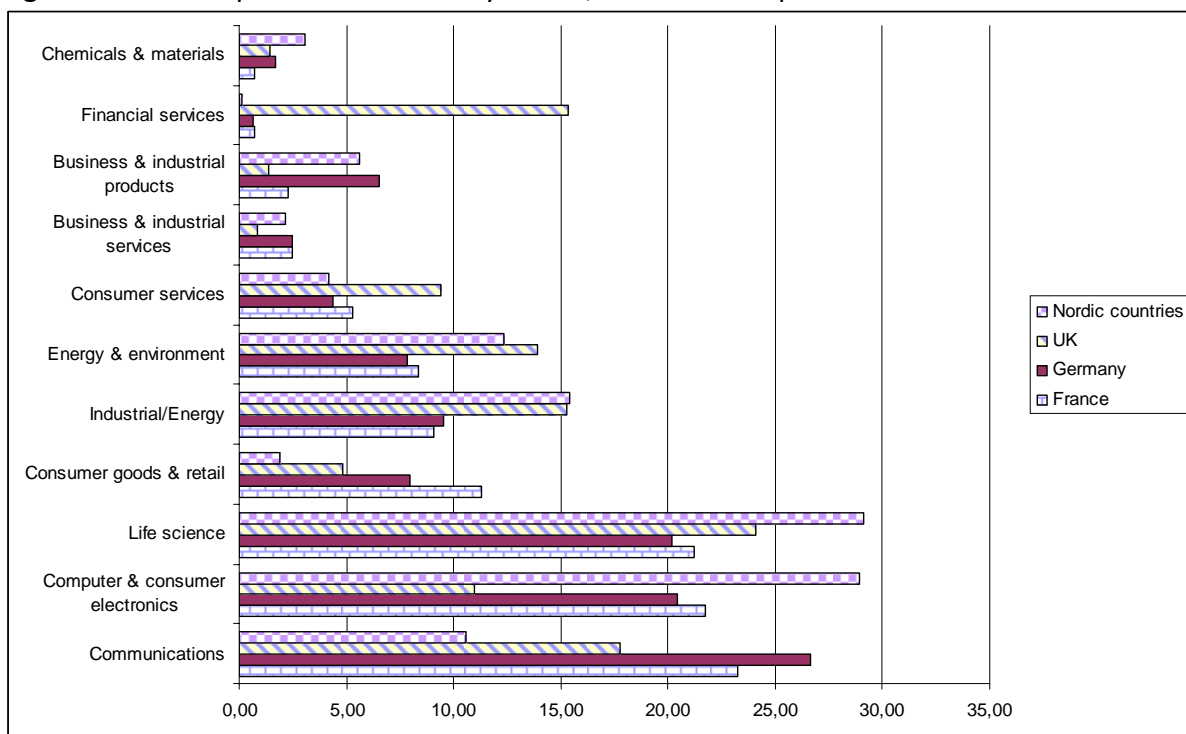
⁷ See for example D, Cummings, Public economics gone wild: lessons from VC, 2012

⁸ Of course every European country ranks behind the US in terms of Private Equity and Venture Capital investment.



Mina and Lahr (2011) look at the likelihood of investment per stage of investment and discover that Finland has the highest propensity to invest in seed and early stage capital, followed by Belgium, Germany and Portugal. Since they find that Finland has also a propensity to invest in mature firms, there might be indications that the so called “equity gap” may originate by a poor coordination of supply and demand mechanisms that are best tackled in systems with an established equity market culture (Christofidis and Debante, 2001), operating with specific policy intervention (Maula, Murray et al., 2007) and presenting specific patterns of sectoral and technological specialization (fig.2). In the case of Finland Life sciences and Computer and consumer electronics are the two leading sectors for VC investment.

Fig. 2 - Venture capital investments by sector, selected European countries



Source: elaboration on OECD

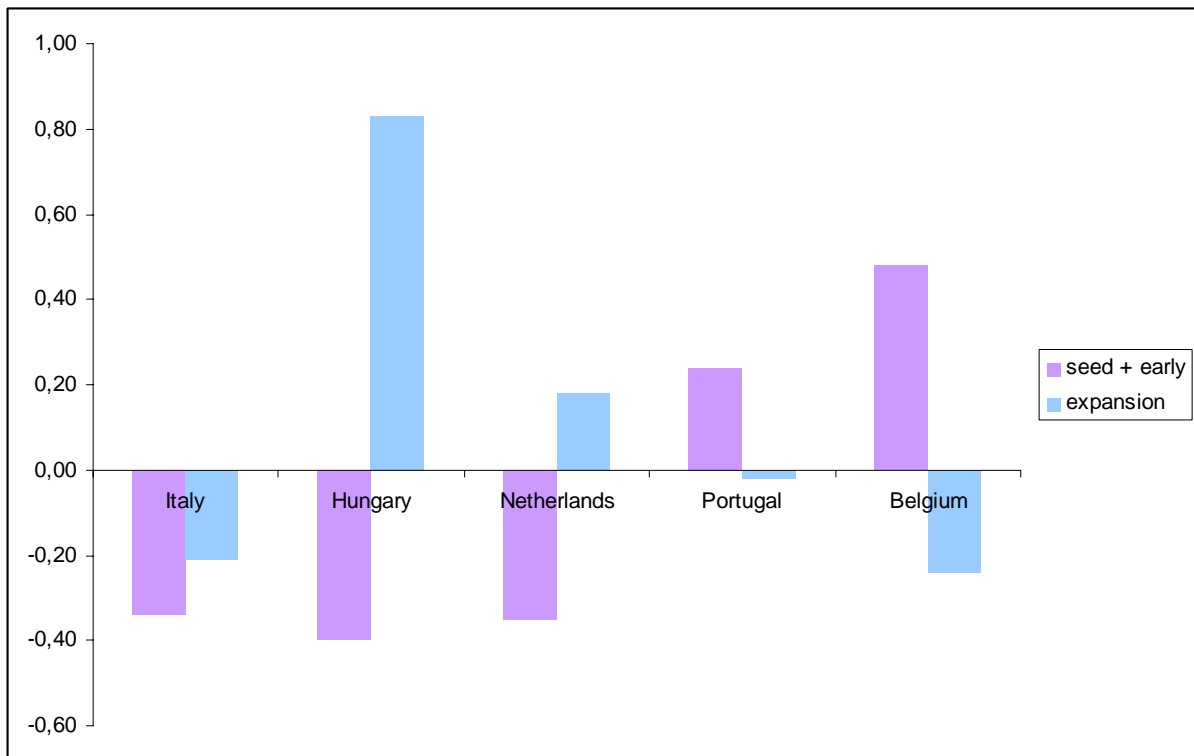
Moreover, if the size of VC deals may be taken as an indication of mature VC industry, than Finland has a larger size of deals (per GDP) than, for example, Germany or Belgium (Mina and Lahr, 2009), but smaller than Sweden and Luxembourg.

Figure 3 depicts H4G countries by likelihood of investment by stage of investment (seed and early stage and expansion phases) according to the indicator introduced by Mina and Lahr⁹. What we term the “country effect” (and the relative Institutional environment and National Innovation Policy) may lie behind the pattern revealed across H4G countries.

⁹ Multivariate analysis based on Thomson and Reuters and EVCA data.



Fig. 3 – Likelihood of VC stage focus



Source: Mina and Lahr, FINNOV (2011)

Slovenia and Latvia not treated due to lack of data

Place-based VC?

There is not ample empirical evidence on the relationship between VC markets and regional characteristics of localities and territories.

Munari and Toschi have explored the nexus for UK and reached the conclusion that hybrid funds (where the public plays a role) contribute to bridge the equity gap between high tech and low tech regions.

This conclusion, if proven for other regions across EU, may indeed confirm the need to include VC strategy in regional innovation policy in both high tech and lagging territories.



Recent research in the German context¹⁰ point to a scenario where:

“On the basis of our data (about 1,240 VC investments between 2004 and 2009), we found evidence that the regional supply of VC is largely independent of the location of an investment. The average distance between an investor and an investment is more than 232 kilometers, and 44 percent of the investments are made in locations that are more than 200 kilometers from the financier. Hence, the high levels of spatial proximity between VC companies and their investments that have been found for the United States and the United Kingdom cannot necessarily be considered proof that spatial proximity is crucial for VC investment, but rather may mainly result from the spatial structure in these countries.” (Fritsch and Shielder, 2011)

But nonetheless:

“Based on 1182 dyads of German new ventures and venture capitalists involved in a financing round between 2002 and 2007, we examine the impact of spatial proximity on the likelihood of an investment. We find that with each triplication of journey time the relative likelihood of an investment decreases by one third. Venture development stage, the experience of the entrepreneurial team, knowledge-intensity of the industry and the investment volume moderate the relationship between journey time and the likelihood of an investment. Our results suggest that even in economies with a dense infrastructure like Germany regional equity gaps may exist”. (Achleitner et al., 2010)

Given that spatial proximity may not be a determinant for VC, it may have nonetheless, if properly channeled, a clear place-based policy orientation in helping endogenous resources in lagging regions bridge the financial and competence gap with more advanced localities.

Conclusions: towards an understanding of VC determinants

In this working paper we have begun to illustrate that at least three factors may be shaping the intensity of venture capital flows in a given economy, within the European context.

An **institutional factor** that may ease the channelling of public resources in the attempt to solve market failures and equity gaps.

A **country factor** linked with the maturity of the equity industry and the level of technological and sectoral specialisation.

A **regional factor** that points to a still higher concentration of VC in core regions but to a potential role in correcting regional disparities in terms of innovation and development.

The discussion launched by Antares is open to further contributions and comments.

¹⁰ Fritsch and Shielder, The Regional Supply of Venture Capital: Can Syndication Overcome Bottlenecks? Economic Geography, 88, 1, 2011; Achleitner et al., Geographic location of a new venture and the likelihood of a venture capital investment, CEFS working paper series 2010-02



If institutions, specialisation and place-based policy contribute to shape VC intensity and flows, as suggested in this paper, there is indeed room for recommendations that put VC high on the agenda of smart specialisation and give a greater role to the public sector in directing a VC strategy. More considerations on risk taking and returns from VC investment, from a regional stance, may be the object of further exploration.