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Beyond market failure: rationales for regional governmental venture capital

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ABSTRACT

Why do regional governments establish venture capital funds? Government intervention in venture capital markets is traditionally legitimised by market failure rationales. In this paper, we analyse the supply of public and private venture capital in Dutch regions, which reveals a multiplicity of rationales for government intervention in the regional economy. We ground this in the policy diffusion literature and distinguish four rationales for government intervention: economic competition, coercion, imitation and learning. The findings enrich the analysis of regional government interventions and challenge the rhetoric that regional policies seeking to foster venture capital markets are solely implemented to address market failures.

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Venture capital; market failure; regional funding gaps; public venture capital; governmental venture capital funds; policy diffusion

1. Introduction

The significance of venture capital as an important source of funding for innovative and entrepreneurial firms (Gompers and Lerner 2001) has not gone unnoticed in policy circles. Governments worldwide increasingly intervene in venture capital markets. Governmental venture capital (GVC) funds¹ emerge as a popular policy instrument in particular (Colombo, Cumming, and Vismara 2016; Cumming 2007; Cumming and Johan 2009; Guerini and Quas 2016; Lerner 2002).

Government intervention in the economy is traditionally legitimised by market failures. In the case of venture capital markets, those failures are oftentimes referred to as equity or funding gaps (Martin et al. 2005). However, the effectiveness of GVCs in actually addressing these gaps is controversial (Lerner 2002, 2009; Mason and Harrison 2003). The controversy is firstly fuelled by concerns about the ability of GVCs to make the right investment decisions. GVCs are said to lack investment skills, business knowledge, or make biased investment decisions due to political interests (Brander, Egan, and Hellmann 2008; Colombo, Cumming, and Vismara 2016; Lerner 2002, 2009). These concerns resemble the traditional government failure critique. Government intervention to correct market failures is only justified if government is capable of effectively addressing those failures (Le Grand 1991). Concerns related to the complexity of venture capital markets (Martin et al. 2005) emerge as a second concern. Finally, concerns have been raised about the “clear economic rationales” of, related, local policies for high-employment growth

enterprises (Bosma and Stam 2012). In their critique, Bosma and Stam (2012) stress the potential explanatory value of policy diffusion mechanisms for understanding why governments intervene in the regional economy. The growing body of policy diffusion literature (Dobbin, Simmons, and Garrett 2007; Gilardi 2016; Graham, Shipan, and Volden 2013) explains why policies diffuse and may provide insight into alternative rationales for government intervention in the regional economy.

This paper aims to provide new insight into the rationales for government intervention in the regional economy by studying the motivations of governments to intervene in venture capital markets. The paper studies which rationales explain why Dutch provinces are involved in GVCs. To answer this question we first trace empirically whether there are regional equity gaps in the Netherlands by performing a supply-side analysis of private venture capital (PVC) investment. To get a grasp of whether market failure rationales explain why governments intervene in the regional venture capital market, we relate this to the relative amount of GVC investment in regions. Building on insights from the broader public policy literature (e.g. Cohen, March, and Olsen 1972; Lindblom 1959) and the theory of policy diffusion (Dobbin, Simmons, and Garrett 2007; Gilardi 2016; Graham, Shipan, and Volden 2013), we examine other motives for government intervention in interviews with key actors. This paper concentrates on rationales of governments to intervene in venture capital markets (Guerini and Quas 2016; Lerner 2002, 2009), but ultimately its objective is to contribute to a wider discussion about government rationales for entrepreneurship policy.

Multiple studies have concentrated on the ex-post study of the effectiveness of government initiatives to advance (regional) venture capital markets (Alperovych, Hübner, and Lobet 2015; Alperovych, Groh, and Quas 2016; Brander, Egan, and Hellmann 2008; Cumming and Johan 2019; Dubovik and Steegmans 2017; Lerner 2009). This paper, in contrast, combines a supply-side analysis of venture capital investment data with semi-structured interviews with key actors to ex-ante evaluate why governments intervene in the regional venture capital market in the first place. Existing studies examining government venture capital programmes, have mainly considered market failure rationales in understanding why governments would want to intervene in the venture capital market (Colombo, Cumming, and Vismara 2016; Lerner 2002, 2009). The novelty of this paper lies in challenging this dominant rhetoric, by applying the concept of policy diffusion on regional venture capital policies. Scholars from various social science disciplines have studied the diffusion of policies (e.g. Dobbin, Simmons, and Garrett 2007). Yet, the explanatory power of these theories has hitherto not been utilised to understand why governments are involved in entrepreneurship policy in general and establish GVCs in particular. Herewith, this paper serves as a first step to better understand rationales for venture capital policy from a process-based perspective.

The main contribution of this paper is challenging the dominant view that regional policies to promote venture capital markets are solely implemented to address market failures. The empirical analysis of governmental and private venture capital investment data reveal that, in the Netherlands, both types of venture capital investment are unevenly distributed over space. There appears to be a negative relationship between the prevalence of PVC investment and the prevalence of GVC investment. From a traditional market failure perspective, this could be understood as to indicate that GVCs in general address regional funding gaps and, thus, that market failure

considerations are an important rationale for governments to intervene in the regional venture capital market through the establishment of GVCs. Interviews with key actors suggest that this is a superficial conclusion. The interview data reveal that, besides traditional market failure rationales, three other rationales explain why Dutch provinces intervene in the regional venture capital market. Governments emulate other governments, may learn from experiences of other governments, and are coerced to establish GVCs.

For future studies, the findings imply that assuming market failure rationales explain government efforts to promote venture capital is likely to be too parochial. Alternative rationales are worth considering when explaining government (in)action in venture capital markets. Building on this notion, the literature on venture capital policy would benefit from more studies adopting a process-based perspective to better understand why venture capital policies are initiated, terminated or adjusted. This will not only help to understand why venture capital policies are introduced *ex ante*, but may also contribute to our understanding of why certain government programmes have succeeded in crowding in private venture capital investments while others have not. For policymakers, the findings reiterate the need to carefully *ex-ante* evaluate the appropriateness of government interventions seeking to advance venture capital markets.

The remainder of this paper is organised as follows. The second section reviews the literature on market failure theory and policy diffusion, in the context of GVCs. In the third section the methodology is discussed. Thereafter, in the fourth section, we empirically examine the regional dimension of venture capital investment in the Netherlands. Next, in interviews with key actors in the Netherlands, we explore alternative rationales for government intervention in the Dutch venture capital market. In the final section we answer the central research question and discuss the implications of our findings for both theory and practice.

2. Rationales for government intervention

2.1. *Traditional rationale for government intervention: fixing market failures*

Government intervention in venture capital markets is often justified by perceived funding gaps, here defined as “(…) the difference between the amount of (risk) capital that would be invested under conditions of well-informed and competitive markets and the amount of capital actually invested.” (Wilson, Wright, and Kacer 2018, 626). Traditionally, the intervention logic is that as a consequence of market failures, such as information-asymmetries between investors and entrepreneurs (Colombo, Cumming, and Vismara 2016), investors are unwilling to fund firms in certain development stages, industries or localities (Martin et al. 2005). Even though venture capitalists are said to be particularly skilled in overcoming, or at least alleviating, this uncertainty with extensive due diligence processes (Gompers and Lerner 2001), for certain investments the costs of due diligence may not outweigh the potential returns of a successful investment (Colombo, Cumming, and Vismara 2016; Martin et al. 2005).

From a market failure perspective identifying an equity gap is necessary, but insufficient to legitimise government intervention (Karlson, Sandström, and Wennberg 2020; Le Grand 1991). According to the traditional market failure logic, government intervention is

only justified when governments are capable of effectively addressing the market failure. Accordingly, government intervention is illegitimate when governments fail in fixing the failures of the market (Le Grand 1991).

Scholars have questioned government's ability to address funding gaps (Lerner 2002, 2009). Among other things, questions have been raised about the ability of GVCs to make the right investment decisions, due to lacking investment skills and business knowledge (Lerner 2002). One particular concern is that political interest may lead to biased investment decisions (Colombo, Cumming, and Vismara 2016; Lerner 2009). The critiques on GVCs cast doubt on the dominant rhetoric that GVCs are introduced to address funding gaps. The complexity of venture capital markets poses a second source for scepticism towards the dominance of market failure rationales in venture capital policy. The simple notion of a funding gap suggests clarity and measurability, but is in fact a simplification of reality (Martin et al. 2005).

Notwithstanding concerns about the soundness of the market failure arguments that often underly interventions in venture capital markets, governments increasingly intervene through the establishment of GVCs (Colombo, Cumming, and Vismara 2016). This supports the idea, put forward by Bosma and Stam (2012), that alternative rationales may also explain why governments intervene in (regional) venture capital markets. This paper aims to approach the question of why governments intervene in the venture capital market more comprehensively, by also deriving insights from the public policy literature.

2.2. Understanding how policies are made

Public policy literature examining the process of how policies are made, has taught us that the policymaking process is oftentimes neither rational nor linear (e.g. Cohen, March, and Olsen 1972; Lindblom 1959). Problems are sought for solutions and actors in decision-making processes are selective in which numbers they present and to whom (e.g. Lindblom 1959; Stone 2012). In his famous work, Lindblom (1959) challenges the idea of a linear policy cycle by theorizing the science of muddling through. Looking at entrepreneurship policy in general, and GVC programmes in particular, from a public policy angle may help us to comprehend why market failure rationales are unlikely to explain all government efforts to contribute to an entrepreneurial economy.

A recent paper to approach entrepreneurship policy from a public policy angle is the paper by Arshed, Carter, and Mason (2014), which studies how the process of enterprise policy formulation works in the United Kingdom. Concerns raised about the effectiveness of entrepreneurship policy, such as by Shane (2009), serve as the starting point for their explorative work. By interviewing and observing policymakers in the United Kingdom, Arshed, Carter, and Mason (2014) do a first attempt to unravel the blackbox of entrepreneurship policy formulation. They provide a compelling account of how policymakers involved agree that how policy formulation should ideally work is often quite far from reality. From an idealistic view, policymakers should want to define a problem first. In practice, however, it often starts with an interest in a certain policy approach. They document how different factors in the phases of a realistic policy formulation process, may eventually contribute to ineffective government intervention.

Generalisations from the findings of the Arshed, Carter, and Mason (2014) case study should be made with caution. Nevertheless, the paper does highlight that assuming that

the formulation of entrepreneurship policy in general, and the establishment of GVC programmes in particular, is a rational policymaking process is likely to be inadequate. Pushing this line of thinking one step further, it is not unlikely that market failure rationales are insufficient to explain why governments design venture capital programmes. An idealistic view (Lindblom 1959) suggests a rational process where government identifies a market failure and, if it finds itself capable of assessing the failure, proceeds with making a policy to fix the failure. Such a view is likely to be unrealistic. Alternative rationales may explain why governments introduce venture capital policies.

2.3. Alternative rationales for government intervention: policy diffusion

One commonly researched phenomenon which can provide insight into alternative rationales underlying government initiatives in the venture capital market is policy diffusion (Dobbin, Simmons, and Garrett 2007; Gilardi 2016; Graham, Shipan, and Volden 2013). The policy diffusion literature approaches the study of why policies spread by understanding the adoption of a policy in one jurisdiction in the light of the adoption of the same or a similar policy by another jurisdiction (Maggetti and Gilardi 2016). This paper adopts the common definition of policy diffusion of Simmons, Dobbin, and Garrett (2006) with slight adjustments to tailor it to the specific circumstances of the study: “Policy diffusion occurs when government policy decisions in a given province are systematically conditioned by prior policy choices made in other provinces.” (Simmons, Dobbin, and Garrett 2006, 787).

This definition highlights an important aspect of the concept of policy diffusion, namely that governments do not implement policies independently. Rather, policy adoption is characterised by a degree of interdependence between jurisdictions (Maggetti and Gilardi 2016; Schmitt 2014). In the context of this study, this interdependence implies that the decision of one government to intervene in the venture capital market through the establishment of a GVC is influenced by previous decisions or actions of other governments. The aspect of interdependence is of significance, as it differentiates policy diffusion from policy convergence: “While convergence can be caused by interdependence, it can also result from units reacting to similar, independent pressures, like people opening umbrellas when it starts to rain. By contrast, interdependence is the key, defining component of diffusion.” (Maggetti and Gilardi 2016, 4).

A growing body of academic research has tried to understand the different forms this interdependence may take. Four, not necessarily mutually exclusive, policy diffusion mechanisms have emerged from the literature: economic competition, coercion, imitation and learning (Dobbin, Simmons, and Garrett 2007).

2.3.1. Economic competition

Competition is one of the cornerstones of market failure theory. According to market failure theory, governments should intervene in situations in which competition for resources and between economic actors is constrained, which leads to a suboptimal allocation of resources in the economy, and thus to suboptimal levels of welfare. The implication is that governments have little choice but to choose market-friendly policies, also to keep up with improved market conditions in other jurisdictions (Dobbin, Simmons, and Garrett 2007). These policies focus on short-term market effects, such as capital

account liberalization and tax breaks (Rodrik 1998; Simmons and Elkins 2004). Particularly in the economic policy sphere, there are abundant examples of how policy diffuses as a consequence of economic competition (Dobbin, Simmons, and Garrett 2007; Gilardi 2016; Graham, Shipan, and Volden 2013).

2.3.2. *Coercion*

Coercion emerges as a second mechanism through which policies diffuse. The coercion process is defined by one jurisdiction attempting to impose the policy of their preference on another jurisdiction (Graham, Shipan, and Volden 2013). Coercion is characterised by asymmetric power relationships between the jurisdictions in question. Hence, unlike the other mechanisms, coercion is described as an involuntary engagement (Dobbin, Simmons, and Garrett 2007). Coercion can take place through vertical and horizontal relations. An example of a vertical coercive relation is national governments forcing local governments to intervene in a particular way. Coercion can also be applied horizontally, for example when one country forces its preference on another country exploiting an asymmetric power relationship between the two (Graham, Shipan, and Volden 2013). In the venture capital policy sphere, an occurrence of vertical coercion would be a national government offering regional governments funds for regional development, on the condition that the funds are used to establish GVCs. To what extent coercion among governments takes place is likely to be closely associated with the way the governance of a country, or countries in case of horizontal coercion between countries, is organised. Shipan and Volden (2008, 843) discuss how horizontal coercion in the context of states in the U.S. is limited, because: "Coercion was such a major concern to the founders of the U.S. Constitution that they established the commerce clause to minimize trade barriers and other coercive mechanisms across the states."

2.3.3. *Imitation*

The imitation mechanism, also referred to as emulation or constructivism, implies that the jurisdiction which adopts the diffusing policy, is oriented towards the perceived leader instead of being genuinely interested in the causal structure of the policy itself (Dobbin, Simmons, and Garrett 2007; Shipan and Volden 2008; Wavre 2016). For emulators: "It is the symbolic rather than the informative value of a particular experience that attracts the attention (...)" (Meseguer and Gilardi 2009, 531). From the perspective of an imitation theorist, then, rather than which policies work, understanding why a certain policy gets accepted is crucial in understanding why policies spread (Gilardi 2016).

A risk of policy diffusion as a result of governments imitating each other, is the spread of policies that are socially accepted but ineffective. When over time a policy gets more and more socially accepted, challenging its appropriateness becomes increasingly difficult: "(...) the 'burden of proof' changes over time as a function of social acceptance. When considering a radical policy innovation, the burden of proof rests on its advocates, but when it becomes widely accepted, it is the opponents of the policy who have to make their case compellingly to prevent its adoption." (Gilardi 2016, 10). The imitation mechanism is closely related to the concept of isomorphism (DiMaggio and Powell 1983). According to DiMaggio and Powell (1983) an important reason for organisations to

mimic each other is, simply, to cope with uncertainty. If a policy that is widely accepted turns out a failure, who is there to blame?

Though perhaps not explicitly labelled as emulation, examples of policies diffusing without clear evidence for their effectiveness are well documented in the regional development and entrepreneurship policy literature. Multiple scholars have labelled influential concepts in regional development as “fuzzy”, because of unclear definitions and ill-operationalisations (e.g. Lovering 1999; Markusen 2003; Martin and Sunley 2003). Martin and Sunley (2003, 7) document how the “(. . .) rush to employ ‘cluster ideas’ has run ahead of many fundamental conceptual, theoretical and empirical questions.” Lovering (1999) carefully describes the flaws of the “New Regionalism” paradigm, which despite fundamental empirical and conceptual questions gained momentum: “The New Regionalism tells an attractive and persuasive story, but it is largely a fiction. It fails to explain contemporary regional economic development in general and correspondingly it is a poor general guide to regional policy formation. The analytical, practical and moral advances claimed for it – that it reveals important new dynamics and that it can help empower the peoples of the regions to which it is applied – are spurious. However, it has the big battalions on its side.” (Lovering 1999, 380).

The examples highlight that how well a paradigm, concept or policy intervention is received by the policy community should not be considered a proxy for its theoretical rigour (Lovering 1999; Martin and Sunley 2003). In fact, ill-defined concepts may travel faster, as they can be understood in ways that fit any policy context.

2.3.4. Learning

Learning occurs when a jurisdiction adopts a policy because it has reason to believe the policy has been successful in another jurisdiction (Dobbin, Simmons, and Garrett 2007; Gilardi 2016; Graham, Shipan, and Volden 2013). Evidence of the policy’s success elsewhere is, thus, a central component of learning. According to Gilardi (2016), policy success can be defined on different levels: policy goals can be successful, challenges of policy implementation can be overcome and policies can succeed in gaining political support. Learning requires jurisdictions to explicitly assess the outcomes of a policy elsewhere in the light of their domestic context: “The result of the learning mechanism is an adapted model, sometimes originating from different sources, to best suit the domestic context. Thus, learning includes a notion of involvement of the policymaker with several models, where the policy abroad is assessed in terms of its potential for domestic success.” (Wavre 2016, 54).

One example of “institutionalised policy learning” is the open method of co-ordination (OMC): an institution that established processes of generating and spreading new knowledge about appropriate public policies between European jurisdictions (Kerber and Eckardt 2007). In the context of venture capital, learning at the very least requires a sound understanding of the supply of and demand for venture capital in a regional economy prior to the establishment of a GVC.

3. Methodology and data

To get a sense of the extent to which regional funding gaps occur in the Netherlands and to understand whether market failure rationales explain why Dutch provinces intervene in

the regional economy, we have scrutinized the spatial distribution of PVC investment over Dutch provinces. Dutch provinces serve as an instructive unit of analysis because provinces in the Netherlands have traditionally been a dominant government layer in advancing (regional) venture capital markets, mostly via regional development agencies.

3.1. The use of location quotients to estimate funding gaps

To get an impression of the extent to which regional funding gaps occur in the Netherlands we adopt an approach similar to Martin et al. (2005). We have calculated location quotients to get an impression of the relative amount of venture capital investment per province. That is, the “Region’s actual amount of invested venture capital investment is compared with that ‘expected’- for example, on the basis of its share of firms, new firms or GDP.” (Martin et al. 2005, 1218). Location quotients give an indication of the relative amount of the supply of venture capital. A location quotient higher than unity indicates that the supply of venture capital per firm in a province is higher than the national average. Accordingly, a location quotient lower than unity indicates that the supply of venture capital in a region is lower than the national average. In this paper, we assume that a PVC investment location quotient lower than unity reflects a funding gap and, thus, justifies government intervention through the supply of GVC. This is based on the assumption that, on average, equity markets work sufficiently in the Netherlands, but that regional dysfunctional markets exist, that deviate substantially from the overall national situation. This assumption about the functioning of equity markets might be (too) bold; however, lacking a better indicator of the degree of market failure this may be the least worst estimate.

To perform this analysis we use investment data from the Dutch Private Equity and Venture Capital Association (Nederlandse Vereniging van Participatiemaatschappijen 2018). The dataset distinguishes between private and governmental venture capital investment per province. The allocation of an investment to a province is based on the headquarter’s location of the investee. GVC investment entails investments from venture capital funds with governmental shareholders. One limitation of this selection is that investments from PVCs that are partially backed by government funding, for instance by having received a low-interest-loan through the Dutch Seed Capital Scheme, are not counted as GVC investments. As a consequence, some of the investments by PVCs are, in fact, partially government-funded as well. An overview of PVC and GVC funds included in the calculation of the total amount of PVC and GVC funding per province can be found in [Table A1 in Appendix 1](#).

Despite these limitations, the distinction between GVC and PVC funding allows us to add an additional dimension to the analysis of Martin et al. (2005), by also calculating location quotients for GVC investment. This gives an impression of the relative amount of GVC investment per province. Relating the relative amount of PVC investment to the relative amount of GVC investment, gives us some idea of the dominance of traditional market failure rationales in setting up GVCs. If market failure rationales are indeed the dominant motivation for governments to intervene in the regional venture capital market, provinces facing little PVC investment, indicated by a location quotient below unity, are expected to, again relatively, intervene more in the venture capital market by increasing the supply of GVC.

Although this approach gives some idea of the rationales for government intervention, it does not fully respect the complex relationship between governmental and private venture capital investment. The approach assumes GVC funding to be a mere response to a situation in the private venture capital market. For at least two reasons, this relationship is likely to be much more complex in reality. Firstly, PVC investment may in certain instances follow on GVC investment, rather than the other way around (see the discussion about crowding in or crowding out PVC investment in, Colombo, Cumming, and Vismara 2016). A related complicating factor is that most GVCs in the Netherlands are only allowed to invest in syndicate with PVCs. Secondly, in line with the public policy literature on this topic (Niskanen 1975), GVCs may, even when introduced after carefully assessing the state of the venture capital market at that time, be difficult to shut down. Resulting in some GVC investment activity being a result of institutional path dependencies, rather than a response to the current state of the venture capital market.

We have summarised this thinking in a simple two-dimensional conceptual model for understanding legitimate government intervention in (regional) venture capital markets from a market failure perspective (Figure 1). The x-axis and the y-axis respectively represent the relative amount of PVC and GVC available in a region. The framework distinguishes four classifications of government intervention in the regional venture capital market. A regional capital market characterised by a relatively low amount of GVC investment and a relatively high amount of PVC investment, is labelled an *effective private venture capital market*. In this case we assume there are no funding gaps, so government intervention is considered unnecessary. A regional capital market facing both a relatively low amount of GVC investment and a relatively low amount of PVC investment, is considered an *ineffective private venture capital market*. In the latter case,

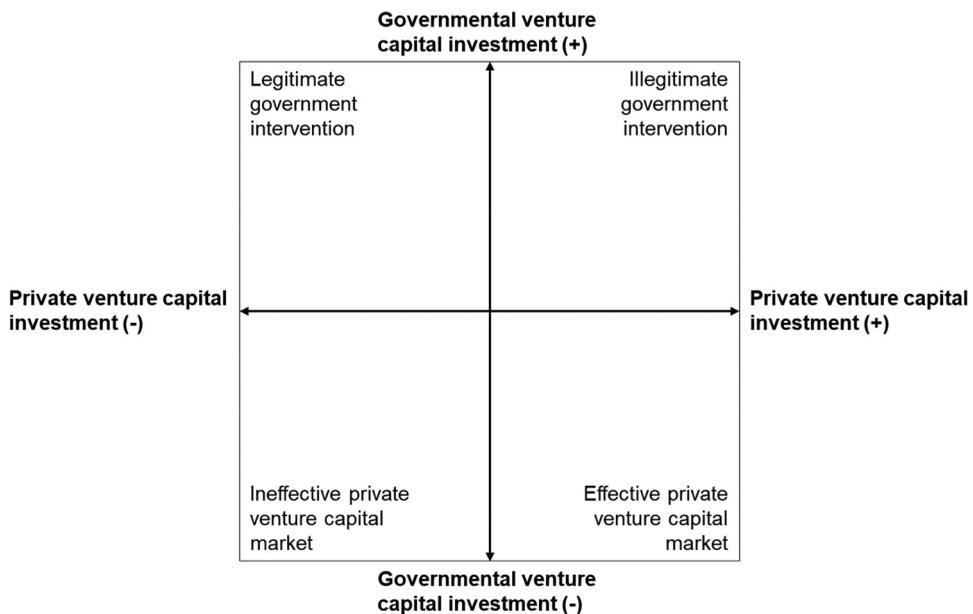


Figure 1. A simple conceptual model for understanding legitimate government intervention in the (regional) venture capital market from a market failure perspective.

government intervention is needed to address the existing funding gap. In a regional capital market characterised by a relatively low amount of PVC investment, but a high amount of GVC investment, the government attempts to fix a regional capital market failure or “fill the gap”. This is labelled *legitimate government intervention*. Finally, when a capital market faces a relatively high amount of both PVC investment and GVC investment, the government is assumed to intervene in a private capital market that would have also been successful without government intervention. This is considered *illegitimate government intervention*. In light of this study, if market failure is indeed the dominant rationale for government intervention in the regional venture capital market, we would expect Dutch provinces to cluster in either the upper left or lower right square.

Note that the model does by no means fully respect the complex nature of regional venture capital markets. The figure only takes the supply of venture capital into account, but any rigorous attempt to estimate funding gaps, let alone assessing the appropriateness of government intervention, would also consider the demand for venture capital (Wilson, Wright, and Kacer 2018). Moreover, the “market failure perspective” does not consider the possibility of ineffective government intervention. As we have discussed in paragraph 2.1., however, assuming that government intervention in the venture capital market is on average effective might be bold (Le Grand 1991; Lerner 2009; Mason and Harrison 2003). Finally, the model does not reflect the potential specific characteristics of different GVCs. GVCs may, for example, be directed towards specific sectors or have limitations in terms of the total deal size. Despite its limitations, the model serves as a first useful tool for comparing regional venture capital markets and regional policy regimes at a glance and, in this study, served as a useful tool for the variation sampling strategy that will be discussed in paragraph 3.4.

3.2. Calculating location quotients

In this paper we have calculated location quotients on the basis of the provincial share of firms (Statistics Netherlands n.d.). Although calculating location quotients based on the provincial share of firms is a fairly common approach (Martin et al. 2005; Mason 2007; Mason and Harrison 2003; Sunley et al. 2005), it is not without limitations: “Regional shares of firms tell us nothing about the nature of those firms, in terms of their need for risk capital, their expansion plans, sectoral specialisation, and so on.” (Martin et al. 2005, 1220).

Similar disclaimers apply to the use of location quotients in general. While commonly used, location quotients are a quite unsophisticated way to detect regional funding gaps. To name one limitation, location quotients do not tell us anything about whether a low location quotient is a consequence of constraints in venture capital demand or supply (Martin et al. 2005; Mason and Harrison 2003). In other words, location quotients do not reflect whether there is indeed a funding gap, or just a lack of viable business plans or skilled entrepreneurs. Furthermore, location quotients are relative scores. This implies that even when a province has a low PVC investment location quotient, due to a relatively low amount of PVC investment compared to the average in the Netherlands, the province may in reality perform fine in terms of meeting the demand for venture capital. For example because the

firms located in the province have, on average, a lower demand for venture capital. The same applies vice versa.

The dataset (Nederlandse Vereniging van Participatiemaatschappijen 2018) distinguishes between venture capital and growth capital:

- Venture capital: Funding provided to support the pre-launch, launch and early stage development phases of a business.
- Growth capital: Funding provided to expand an existing company.

In accordance with this definition, the provincial PVC and GVC location quotients have been calculated for: 1) venture capital, 2) growth capital and 3) the total (the sum of venture and growth capital). The formulas for calculating the location quotients are as follows:

Location quotient PVC investment =	$\frac{\text{Total amount of PVC (venture, growth or total) investment (€) in province X in period Y}}{\text{number of firms in province X in period Y}}$
	$\frac{\text{Total amount of PVC (venture, growth or total investment) (€) in the Netherlands in period Y}}{\text{Total number of firms in the Netherlands in period Y}}$

Location quotient GVC investment =	$\frac{\text{Total amount of GVC (venture, growth or total) investment (€) in province X in period Y}}{\text{number of firms in province X in period Y}}$
	$\frac{\text{Total amount of GVC (venture, growth or total) investment (€) in the Netherlands in period Y}}{\text{Total number of firms in the Netherlands in period Y}}$

Location quotients have been calculated for two different time periods of five years: 2008–2012 and 2013–2017. Calculating location quotients over a period of at least four years is recommended, as the provincial investments may fluctuate greatly from year to year (Martin et al. 2005). In the case of the Netherlands it is particularly relevant to calculate the location quotients over a period of at least 5 years, because in some Dutch provinces there were no investments at all for a continuous period of up to three years.

3.3. Limitations of the dataset

The dataset has several limitations that deserve scrutiny. First, the location quotients are calculated based on the effective supply of venture capital, that is the total amount of venture capital that was invested in a region. This is, however, not the ideal indicator for estimating the supply of venture capital. Calculating location quotients based on how much venture capital funding was available to invest would more accurately reflect the supply of venture capital in a region. Unfortunately, these data were not available on a regional level. A second noteworthy restriction, is that private venture and growth capital, may in some cases still be partly funded by the Dutch national government or the European Union. Both institutions have several financial policy instruments in place to support PVCs (European Investment Fund n.d.; Ministry of Economic Affairs and Climate Policy 2016). With the Seed Capital Scheme the Dutch government provides low-interest-loans to PVCs. This blurs the line between PVC and GVC investment. The dataset does

not reflect potential sectoral differences, which poses a third limitation. Finally, other studies have stressed the importance of taking into account informal venture capital investment too (e.g. Mason and Harrison 1995, 2002), but sound data for the Netherlands are not available.

3.4. Interviews

In addition to the empirical supply-side analysis of the geography of PVC and GVC investment in the Netherlands, semi-structured interviews have been conducted with 14 key actors. Rather than generating a representative picture or assessing the weight of different rationales, the objective of the interviews was to explore what alternative rationales may explain why provinces in the Netherlands have initiated GVCs in recent years.

The semi-structured interviews were organised around a number of topics, using a topic list that was refined throughout the study. This allowed the researchers to systematically discuss specific topics, including the policy diffusion mechanisms grounded in the literature, and validating statements of other interviewees, whilst leaving the door open for perspectives and topics not included in the topic list (Bryman 2016). To prevent the actors from rationalising their reasons for intervention *ex post* in ways that are in line with the interview topics, the interviewees were initially asked the open question why governments establish GVCs and why governments do so on a regional level.

Note that, although the policy diffusion mechanisms are discussed independently in [section 2.3.](#), empirically it can be hard to disentangle the four mechanisms. The mechanisms overlap and may occur simultaneously, which "(...) makes the specification and the interpretation of empirical tests a fairly arduous exercise." (Meseguer and Gilardi 2009, 531). The learning and imitation mechanism are particularly hard to unwind. To distinguish between the two in the interviews, we have explicitly asked respondents to what extent they assessed the outcomes of a GVC elsewhere in light of their domestic economic context (Wavre 2016). However, given the qualitative nature of the interviews, classifying a motivation as imitation or learning remains a result of the respondent's answers and the interpretation of the researchers.

The pool of interviewees consisted of both experts and practitioners. Practitioners were or had been, at time of the interview, actively involved in the decision-making process concerning the establishment of one or more GVCs. The practitioners were selected from four provinces: Gelderland, Utrecht, Zeeland and Zuid-Holland. This selection was not random, but motivated by the results of the supply-side analysis of venture capital investment, which indicated that those provinces faced considerable differences in terms of PVC and GVC investment. This variation sampling fits the explorative nature of the study well and contributed to a more comprehensive understanding of the research context. Experts, in contrast, were not directly involved in designing GVC interventions and were thus expected to be able to reflect more critically on government intervention in regional venture capital markets. The majority of interviews were conducted face-to-face, in May and June 2018. [Table 1](#) provides an overview of the background of the interviewed respondents.

Table 1. Overview of respondents.

Background	Number of respondents
<i>Practitioners (9 in total)</i>	
Member States Deputed	1
Director of Regional Development Agency	4
Policymaker	4
<i>Experts (5 in total)</i>	
Professor economics of sub-national governments	1
Policymaker Ministry of Economic Affairs and Climate Policy	1
Consultant	3

4. The regional distribution of venture capital investments

4.1 The regional distribution of private venture capital investment

Tables 2 and Tables 3 indicate that, in absolute numbers, PVC investment has a considerable regional dimension. Both in the 2008–2012 and the 2013–2017 period, over two-thirds of all PVC investment concentrated in the three highly urbanized provinces: Utrecht, Noord-Holland and Zuid-Holland (together referred to as the “Randstad”). Also in terms of location quotients, the Randstad provinces outperform the more rural

Table 2. Regional distribution of PVC investment by stage in the Netherlands, 2008–2012.

Province	Percentage			Location quotient		
	Venture	Growth	Total	Venture	Growth	Total
Netherlands	100.00%	100.00%	100.00%	1.00	1.00	1.00
Drenthe	0.38%	0.00%	0.13%	0.14	0.00	0.05
Flevoland	0.64%	1.78%	1.37%	0.29	0.81	0.62
Friesland	0.13%	0.22%	0.19%	0.03	0.06	0.05
Gelderland	1.20%	8.63%	5.98%	0.10	0.74	0.51
Groningen	1.65%	2.84%	2.41%	0.56	0.96	0.82
Limburg	0.60%	2.99%	2.14%	0.10	0.51	0.37
Noord-Brabant	17.56%	8.80%	11.92%	1.14	0.57	0.77
Noord-Holland	30.56%	24.68%	26.78%	1.60	1.29	1.40
Overijssel	2.79%	7.51%	5.83%	0.46	1.24	0.96
Utrecht	16.16%	10.12%	12.28%	2.04	1.28	1.55
Zeeland	1.18%	0.18%	0.54%	0.54	0.08	0.25
Zuid-Holland	27.15%	32.25%	30.43%	1.35	1.60	1.51

Table 3. Regional distribution of PVC investment by stage in the Netherlands, 2013–2017.

Province	Percentage			Location quotient		
	Venture	Growth	Total	Venture	Growth	Total
Netherlands	100.00%	100.00%	100.00%	1.00	1.00	1.00
Drenthe	1.55%	2.76%	2.35%	0.61	1.08	0.92
Flevoland	0.61%	0.15%	0.30%	0.27	0.07	0.14
Friesland	0.08%	0.20%	0.16%	0.02	0.05	0.04
Gelderland	3.41%	4.63%	4.22%	0.29	0.40	0.36
Groningen	0.78%	0.00%	0.27%	0.27	0.00	0.09
Limburg	1.84%	0.34%	0.85%	0.33	0.06	0.15
Noord-Brabant	6.79%	11.72%	10.05%	0.45	0.78	0.66
Noord-Holland	41.79%	42.43%	42.21%	2.12	2.15	2.14
Overijssel	1.74%	2.03%	1.93%	0.29	0.34	0.32
Utrecht	20.63%	5.72%	10.79%	2.52	0.70	1.32
Zeeland	1.54%	1.74%	1.68%	0.72	0.82	0.78
Zuid-Holland	19.23%	28.28%	25.21%	0.95	1.40	1.25

provinces. In both periods, the three Randstad provinces emerge with PVC location quotients well above unity. The more rural provinces, like Drenthe, Friesland, Groningen, Limburg and Zeeland, lag behind in terms of venture capital investment activity. Over time, the location quotients of some of these provinces turn out to be more volatile than the location quotients of the Randstad provinces. This goes for Groningen in particular.

The concentration of PVC investment in the Randstad, both in absolute and in relative terms, may be a result of the previously discussed limitations of location quotients. It is not impossible that certain sectors with a higher demand for venture capital are over-represented in the Randstad provinces. These sectoral differences are not reflected in the location quotients which have been calculated on the basis of the total share of firms. Furthermore, as venture capitalists have been found to be spatially biased (Mason 2007; Zook 2008), the higher PVC location quotients in the Randstad provinces could be partially explained by concentration of private venture capital funds in this part of the Netherlands (Vrolijk and Wester 2012).

Furthermore, considerable differences per stage (venture and growth) per province exist. Some provinces have a fairly high PVC venture location quotient, while at the same time having a PVC growth location quotient far below unity or vice versa. In Noord-Brabant, for instance, the total amount of venture investment appears to be relatively high compared to the province's share of firms (location quotient of 1.14), while the total amount of growth investment is relatively low (location quotient of 0.57) in the 2008–2012 period.

4.2. The regional distribution of governmental venture capital investment

As is the case for PVC investment, in absolute numbers, considerable regional disparities in GVC investment exist in both time periods (Tables 4 and Tables 5). In contrast to PVC investment, which appears to be Randstad oriented, GVC investment concentrates in four rural provinces. In the 2008–2012 period Gelderland, Limburg, Noord-Brabant and Overijssel account for 71.6% of all GVC investment. In the 2013–2017 period, this percentage is 53.3%, which is substantially lower, but still a considerable percentage. The GVC location quotients tell a slightly different story. GVC investment is found to be distributed

Table 4. Regional distribution of GVC investment by stage in the Netherlands, 2008–2012.

Region	Percentage			Location quotient		
	Venture	Growth	Total	Venture	Growth	Total
Netherlands	100.00%	100.00%	100.00%	1.00	1.00	1.00
Drenthe	2.82%	0.83%	2.14%	1.06	0.31	0.80
Flevoland	6.88%	1.08%	4.89%	3.11	0.49	2.22
Friesland	2.00%	2.11%	2.04%	0.53	0.56	0.54
Gelderland	30.85%	23.84%	28.45%	2.63	2.03	2.42
Groningen	5.01%	2.94%	4.30%	1.70	0.99	1.46
Limburg	17.71%	27.85%	21.18%	3.05	4.80	3.65
Noord-Brabant	12.73%	4.15%	9.80%	0.82	0.27	0.63
Noord-Holland	1.69%	8.52%	4.02%	0.09	0.45	0.21
Overijssel	11.87%	12.76%	12.17%	1.95	2.10	2.01
Utrecht	3.99%	14.77%	7.67%	0.50	1.86	0.97
Zeeland	0.00%	0.00%	0.00%	0.00	0.00	0.00
Zuid-Holland	4.46%	1.15%	3.33%	0.22	0.06	0.17

Table 5. Regional distribution of GVC investment by stage in the Netherlands, 2013–2017.

Region	Percentage			Location quotient		
	Venture	Growth	Total	Venture	Growth	Total
Netherlands	100.00%	100.00%	100.00%	1.00	1.00	1.00
Drenthe	2.37%	15.83%	7.25%	0.92	6.17	2.83
Flevoland	2.68%	4.05%	3.18%	1.20	1.81	1.42
Friesland	3.96%	4.47%	4.15%	1.07	1.20	1.12
Gelderland	18.86%	6.99%	14.55%	1.62	0.60	1.25
Groningen	6.31%	9.44%	7.45%	2.18	3.26	2.57
Limburg	11.94%	3.96%	9.04%	2.17	0.72	1.64
Noord-Brabant	11.11%	8.27%	10.08%	0.73	0.55	0.67
Noord-Holland	6.92%	2.97%	5.49%	0.35	0.15	0.28
Overijssel	13.02%	31.15%	19.60%	2.16	5.16	3.25
Utrecht	6.20%	5.71%	6.02%	0.76	0.70	0.74
Zeeland	0.42%	0.00%	0.27%	0.20	0.00	0.13
Zuid-Holland	16.21%	7.17%	12.93%	0.80	0.35	0.64

unevenly across regions and tends to concentrate in rural provinces. Looking at the GVC total location quotients of both time periods, five provinces emerge with particularly high location quotients: Flevoland, Gelderland, Groningen, Limburg and Overijssel.

The disparities in terms of GVC investment, both in absolute and relative terms, are even higher when considering the two stages of investment independently. In the 2013–2017 period, for example, Drenthe and Overijssel have an extraordinary high GVC growth investment location quotient of over 5. These location quotients are substantially higher than in the previous period. This goes for Drenthe in particular, which has a GVC growth location quotient of 0.31 in the 2008–2012 period. The GVC location quotient emerges to be particularly low in two contrasting provinces: Zeeland and Noord-Holland.

4.3. Market failure rationales in the establishment of GVCs

As we have shown in the previous section, considerable regional disparities exist in terms of both governmental and private venture capital investment in the Netherlands. By relating the relative amount of PVC investment to the relative amount of GVC investment per province, we can get a sense of to what extent market failure rationales explain why Dutch provinces have established GVCs. The conceptual model for understanding legitimate government intervention in the (regional) venture capital market from a market failure perspective (Figure 1) serves as a starting point for this analysis. On the basis of both the GVC and PVC total location quotients for the periods 2008–2012 and 2013–2017, two regional venture capital quadrants have been constructed (Figures 2 and 3).

Both regional venture capital quadrants (Figures 2 and 3) demonstrate a similar trend. The relative amount of PVC investments and the relative amount of GVC investment are negatively associated. On average, when the relative amount of PVC investment increases, the relative amount of GVC investment decreases. From a market failure perspective, this may suggest that governments, at least partially, intervene in accordance with their specific regional economic circumstances. Also, it suggests that government intervention is, again from a market failure perspective, in general legitimate. Furthermore, according to the classifications in the conceptual framework, the regional venture capital quadrants indicate that most provinces either intervene legitimately in

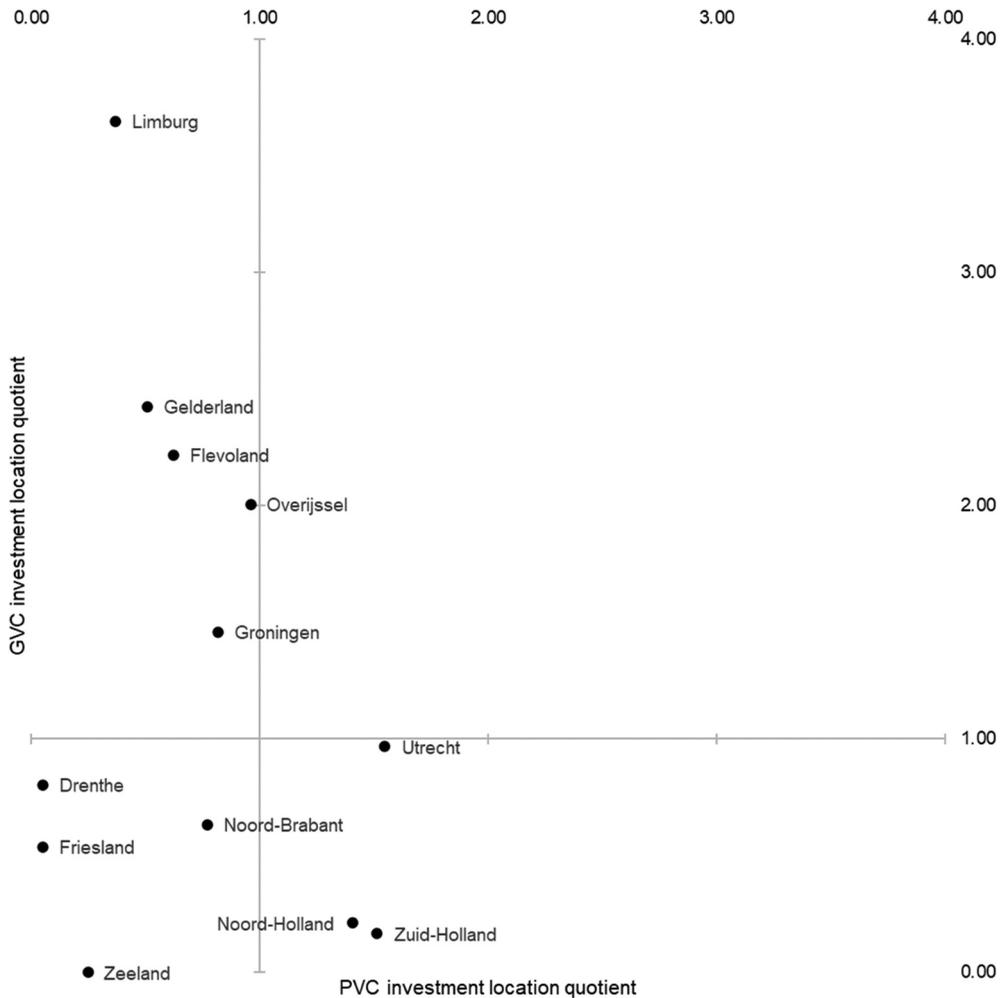


Figure 2. Regional venture capital quadrant total investment, 2008–2012. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.

a not well-functioning regional venture capital market (a PVC total location quotient below unity), or have a regional PVC market that is effective in itself.

Besides these general findings, the position of some individual provinces is remarkable. In contrast to the findings, but in line with the trend, one would expect the relative amount of GVC investment in Zeeland to be higher than in Utrecht. After all, Utrecht’s PVC location quotient is much higher than Zeeland’s. Zeeland itself is a noteworthy case too, facing low levels of both GVC and PVC investment. The venture capital investment data do not indicate what causes this. Some of these from an economic perspective remarkable cases, might be explained due to other, not necessarily economic, factors.

In addition, the regional venture capital quadrants have been constructed per stage (venture and growth) and period (2008–2012 and 2013–2017), resulting in four additional regional venture capital quadrants (see [Figures A1–A4](#) in [Appendix 2](#)). Those four quadrants will not be discussed in detail, but to give an impression of the strength and

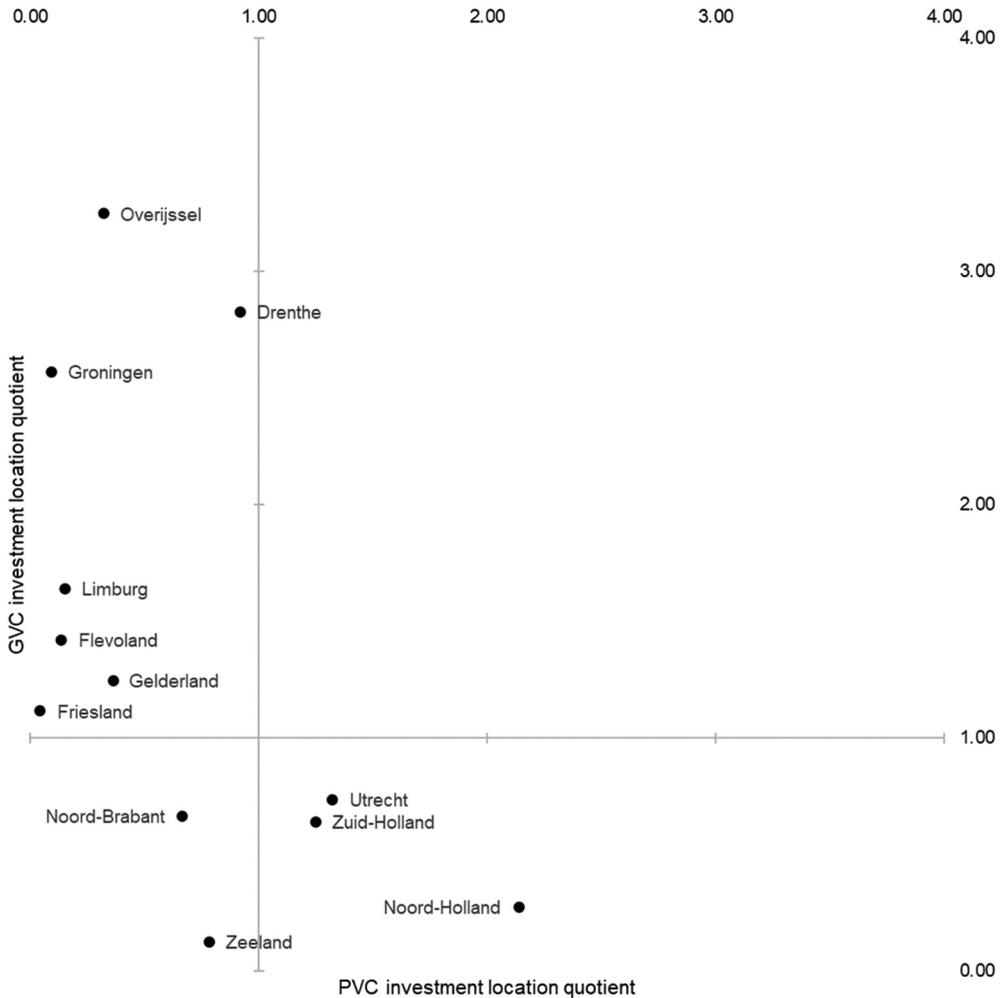


Figure 3. Regional venture capital quadrant total investment, 2013–2017. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.

direction of the relationship between the relative amount of GVC and PVC investment the slope gradients of the trend lines have been summarised in Table 6. A positive slope gradient indicates that, on average, an increase of the relative amount of GVC investment is associated with an increase of the relative amount of PVC investment. Accordingly, a negative slope gradient indicates that the relative amount of GVC investment is negatively associated with an increase of the relative amount of PVC investment. The height of the slope gradient indicates how much the relative amount of GVC investment

Table 6. Overview of slope gradients of trend lines of the different regional venture capital quadrants.

	Venture	Growth	Total
2008–2012	-1.01	0.17	-0.46
2013–2017	-0.48	-0.62	-0.79

increases or decreases in relation to the increase or decrease of the relative amount of PVC investment.

The results indicate that five out of six regional venture capital quadrants, including the two total capital regional venture capital quadrants discussed in this paragraph, exhibit a negative relationship between the relative amount of PVC investment and the relative amount of GVC investment. From a market failure perspective, one way of understanding this is that when the availability of PVC increases, governments intervene less through GVCs. In contrast to these five regional venture capital quadrants, the regional venture capital quadrant for growth capital in the 2008–2012 period (Figures A3) shows a slightly positive trend: the relative amount of GVC investment is positively associated with the relative amount of PVC investment. Following the classifications in Figure 1, two of the provinces end up in the “illegitimate government intervention” quarter of this quadrant.

4.4. Discussion: region-specific GVC funding supply shock

Before we draw conclusions from the data, one exogenous event that may have impacted the distribution of venture capital investment in the Netherlands cannot be left undiscussed. In 2009, several Dutch provinces sold their shares in the energy companies Nuon Energy and Essent, resulting in a total profit of over €13 billion. Some provinces had more shares than others, which resulted in substantial wealth differences between provinces (Table 7) (Statistics Netherlands 2015). Especially Gelderland, Noord-Brabant, Overijssel, Limburg and Friesland benefitted greatly from the sale of the energy companies.

The wealth differences might explain why some governments have intervened more than others. By and large, the wealth differences correspond to the story the GVC investment data tell. Tables 4 and Tables 5 indicate that, in absolute numbers, the wealthier provinces Gelderland, Limburg, Noord-Brabant and Overijssel account for over 70% of all GVC investment in the 2008–2012 period and over 50% of all GVC investment in the 2013–2017 period. Figures 2 and Figures 3 should also be seen in light of this exogenous event.

4.5. Conclusion

The data reveal that considerable regional disparities in terms of PVC and GVC investment exist in the Netherlands. Both PVC and GVC investment are unevenly distributed over

Table 7. Wealth per province in the Netherlands, 2014.

Province	Wealth in billion Euros
Gelderland	4.7
Noord-Brabant	3.0
Overijssel	1.8
Limburg	1.7
Friesland	1.5
Groningen	0.9
Noord-Holland	0.8
Zuid-Holland	0.5
Drenthe	0.4
Utrecht	0.4
Zeeland	0.1
Flevoland	0.1

space. The uneven distribution of venture capital investment in general, corresponds to the findings of previous studies in other countries which found similar uneven patterns (Martin, Sunley, and Turner 2002; Martin et al. 2005; Mason 2007; Mason and Pierrakis 2013; Zook 2008). PVC investment tends to concentrate in the highly urbanized Randstad provinces, whereas we find higher relative concentrations of GVC investment in some of the rural provinces. There appears to be a negative relationship between the relative amount of PVC investment and the relative amount of GVC investment. In five out of six regional venture capital quadrants, an increase of the relative amount of PVC investment is associated with a decrease in the relative amount of GVC investment.

From a traditional market failure perspective and following the classifications in Figure 1, this might be understood as to support the idea that GVCs in provinces in the Netherlands, to a great extent, address regional funding gaps. Pushing this line of thinking further, it could indicate that market failure considerations are an important rationale for governments to intervene in the regional venture capital market through the establishment of GVCs. Yet, as we have repeatedly argued, while instructive, making inferences from location quotients should always be done with caution. Moreover, the data reveal that certain provinces do, again from a market failure perspective, not intervene in accordance with what we would expect based on the PVC location quotient. This gives rise to the idea that alternative rationales might also explain why provinces in the Netherlands initiate GVCs.

5. Alternative rationales for government intervention in the regional venture capital market

The interview data² provide a compelling account of how, in addition to the traditional market failure argument, three other rationales explain why provinces in the Netherlands have established GVCs in recent years. Building on the policy diffusion literature and market failure theory, this section describes what rationales explain why Dutch provinces have intervened in the regional venture capital market. The objective of this section is to explore, rather than to definitively answer, what alternative rationales may have been.

5.1. Economic competition: addressing market failures

Market failure is, undoubtedly, the most frequently mentioned reason by practitioners to establish GVCs: “That is the only reason why government should intervene. Market failure.” – Policy advisor (P5). Many practitioners (P1, P2, P6, P8, P9) gave answers of a similar nature. One RDA director (P1) elaborates on how the market fails:

Because capital generally tends to focus on less risky segments, both in terms of sectors and in terms of financing phase. Thus, if you do not put public money into the system, many promising innovations cannot reach the stage of market introduction and cannot continue to grow.

To comprehend the gaps in the regional capital market and to support the point that market failures were the main driver behind the establishment of GVCs, many respondents point to the importance of ex-ante capital market assessments to demonstrate

market failures. Such analyses assess both venture capital supply and demand in a particular region. Ideally, an ex-ante capital market assessment provides insight into the funding gaps for different stages of firm development per sector. While capital market assessments are perhaps the best way for policymakers to get an impression of the needs of and failures in the regional capital market, they are no cure-all either. Demand for capital is usually estimated by analysing perceptions of entrepreneurs, but perceptions are not unbiased as they may: “(..) be partly a result of the poor quality of some investment proposals and their lack of ‘investment-readiness’.” (Martin et al. 2005, 1224).

Ex-ante capital market assessments can be initiated because policymakers genuinely want to understand to what extent regional funding gaps occur. Nevertheless, the interview data reveal how capital market assessments are, in some cases, carried out because they are a requirement for applying for funding from European institutions, such as the European Investment Fund: “Those capital market assessments were mainly introduced by the European Commission that wanted to utilise European funds to set up GVCs. Then, it is just a requirement that you have to meet.” – Expert (E2). Different practitioners confirm this view: “It was also a requirement from Europe. In order to receive ERDF funding, market failure has to be demonstrated.” – Policy advisor (P2).

Most practitioners are convinced that the GVCs in their province are addressing clear regional capital market failures. Still, different practitioners give examples of GVCs that have been set up in other provinces without carrying out proper ex-ante capital market assessments in advance:

In this, I’m a bit careful. Because I don’t want to give the impression that I comment on colleagues. But, if you look at the size of the funds of some of for instance [name RDA], (..) I don’t always have the impression that these funds are addressing actual market failures. – RDA director (P7).

Only one RDA director (P3) gives an example of a fund in his own province which was established as a result of, what he describes as political opportunism: “It was an example of political opportunism. Frankly speaking, our RDA had just started and we have neglected to assess whether we were indeed addressing a demand for capital.”

5.2. Economic competition: a competition for attracting businesses

In [section 2](#) of this paper, we have made the argument that economic competition, as defined in the policy diffusion literature, is a cornerstone of market failure theory. Economic competition involves creating a level playing field, that is creating comparable well-functioning markets. Yet, the interview data suggest that economic competition may not necessarily be driven by market failure considerations. In some cases, governments may adopt business-friendly policies in a competition for ventures, rather than as a means to fix market failures. This is best described by RDA director (P7): “I know the examples where this happened. Where companies decided to start in Groningen and not in this province, because Groningen provided a multi-million loan.”

Economic competition unrelated to addressing market failures, occurs when governments deliberately intervene in the venture capital to create a more favourable regional business climate. Scholars have referred to such tendencies as locational tournaments for the attraction of high-growth firms (Bosma and Stam 2012). This raises the question

whether regional differences in business climates and competition between regions, do encourage governments to set up GVCs. Several practitioners indicate this did not play a role in their region (e.g. P1, P7, P9), whereas according to some of the experts it has been a factor of influence in some provinces (E1, E2, E4):

Yes, the business climate between regions naturally also plays a role. (...) If you have such a government fund in your region, you have a competitive advantage over other regions. – Expert (E1).

Although more respondents confirm that the regional business climate might be a rationale for initiating GVCs, it is not considered an important factor. One of the policy advisors (P8) puts the importance of the contribution of availability of GVCs to the business climate into perspective. Access to venture capital is only one element of the regional entrepreneurial ecosystem, he argues:

Actually, we always consider innovation funding to be an element of an ecosystem. And that ecosystem, consists of more than just funding. (...) And, in that sense it is important that there is such an ecosystem in competition with other regions.

This statement not only highlights that it may be hard to exploit GVCs for attracting ventures, it also resembles the argument that, given the complexity of causal chains, designing effective entrepreneurship policies is arduous (Autio and Levie 2017; Stam 2015). The director of one of the RDAs (P7) adds to this that governments, due to state aid regulations, only have limited possibilities to utilise GVCs for creating an attractive regional business climate:

At the same time, it is also the case that if you provide funding it must be in conformity with the market, otherwise you will have problems with state aid rules. So, in that sense it can only be utilised as a competitive tool to a limited extent.

One of the RDA directors (P1) notes that the RDAs have what he describes as a “gentlemen’s agreement”: “(...) we have a gentlemen’s agreement with each other as RDAs that we do not invest in companies in other provinces. And, if a company from [province X] contacts us, we refer them to [name RDA in the particular province].”

In summary, two kinds of economic competition emerge from the data as possible rationales for the establishment of GVCs in the Netherlands. Economic competition by means of addressing market failures and economic competition in a locational tournament for ventures. What the data, however, also highlight is that it is by no means straightforward to disentangle the two. This tension is best illustrated by the comments of two practitioners:

A level playing field. If your region lacks it, your region is less relevant. – Policy advisor (P2).

In our province, the line of reasoning was that we saw companies leaving the province because they could not get funding here. And they did indeed go to Eindhoven, Wageningen or somewhere else. – RDA director (P1).

In itself, the comments are not sufficient to draw conclusions about the extent to which provinces are indeed addressing funding gaps. But, according to the respondents, fixing market failures is a much more dominant explanation than competition for ventures.

5.3. Coercion

The coercion mechanism is characterised by one jurisdiction attempting to impose their preferred policy on another jurisdiction (Dobbin, Simmons, and Garrett 2007). The interview data indicate that in the Dutch context the Ministry of Economic Affairs and Climate Policy, albeit unintentionally, to some extent coerces provinces in the Netherlands to establish GVCs.

When the empirical research for this study was conducted, the Dutch government had just announced its plan to establish Invest-NL, an investment organisation aiming to contribute to financing societal challenges, such as the energy transition. From the interview data it becomes apparent that the announcement of the establishment of this organisation has had a coercive effect on provinces in the Netherlands: “The first response of governments, also in this house [province], was: we want to access those [Invest-NL] funds.” – Policy advisor (P5). Other experts and practitioners confirm those dynamics. One of the RDA directors (P7) highlights the negative aspects of such mechanisms: “It is a fairly natural response of governments, to access the funds prior to deciding on what to do with it. (...) Unfortunately that is reality.”

Although many respondents recognise the coercive power of available funds in the near future, there is general consensus among all respondents that establishing a GVC fund for the sole purpose of wanting “a piece of the Invest-NL pie”, is a negative mechanism in itself: “Invest-NL is not a goal in itself, it’s a means.” – Policy advisor (P8). According to one expert, the coercive effect of the availability of funding is even further enhanced by the political system of Dutch provinces:

I think that the establishment of Invest-NL, and the announcement that they want to do a lot in cooperation with those regional organisations, will definitely have the effect on those players [provinces] which do not yet have a structure in place in which they can collaborate with Invest-NL. (...) it will definitely get on their nerves when there is this high amount of funding available, which they cannot access. There is not a single States Provincial [provincial parliament] that finds that acceptable. – Expert (E5).

When the conceivable coercive power of the establishment of investment institution Invest-NL is presented to other respondents in interviews, some practitioners relativise its coercive power. According to one of the policy advisors (P8) the prospect of the availability of Invest-NL funds, rather than coercing provinces to access the funds, stimulates provinces to carefully evaluate whether there are any latent ideas that may now be executed. In fact, the practitioner argues it stimulates governments to carefully assess whether there are any regional funding gaps.

Another factor that emerges to have a coercive effect, is the “Regeling Schatkistbankieren” for decentral governments. This regulation obliges Dutch provinces to store their undesignated liquid capital at the Dutch Ministry of Finance (Bijman et al. 2015). Different respondents state that the implementation of this regulation was an important driver of the establishment of GVCs, since the establishment of GVCs was quickly found to be a creative way of avoiding the fairly bad, according to different respondents, conditions of storing liquid capital at the Ministry of Finance: “(...) as a result of which many wealthy governments have started looking for alternatives. Well this was one of those alternatives, just to avoid The Hague.” – Expert (E2).

The in [section 4.4.](#) discussed sale of energy companies Nuon Energy and Essent reinforced the coercive effect of the “Regeling Schatkistbankieren”, since it significantly increased the wealth of some provinces (see [Table 7](#)). This process was best described by one of the experts (E5): “It is no coincidence that Gelderland, Overijssel and Noord-Brabant have the most extensive public investment fund structures in the Netherlands. These are the three provinces that benefitted most from selling their shares in the energy companies.”

In summary, two vertical coercive mechanisms seem to play a role in explaining why provinces in the Netherlands establish GVCs: the prospect of the establishment of investment institution Invest-NL and the “Regeling Schatkistbankieren”. Although those policy changes are specific to the Dutch context, it does highlight the possible coercive power policy changes on a central level may have on decentral governments. It also brings to light that this coercion does not necessarily need to be intentional. Policy changes at a central governmental level may have unintended coercive effects on decentral governments.

5.4. Imitation

Most experts (E1, E3, E4, E5) agree that the imitation mechanism, shortly put the adoption of a policy because it is increasingly socially accepted in surrounding jurisdictions (Gilardi 2016), is a factor in explaining why Dutch provinces establish GVCs. Two experts elaborate on their experiences:

These regions see each other in all kinds of IPO [interprovincial consultation] meetings. Moreover, the regions interact on all levels, the civil servants meet each other, the States Deputed meet each other, they see what the national government does, they see what Europe does. So yes, it’s a kind of virus that goes around. – Expert (E1).

(. . .) there is also the imitation effect. I was not even in for 5 minutes, and the provincial representative said: “everyone has it, except for us”. So, imitation also plays a role for sure. – Expert (E5).

In contrast to the experts, nearly all practitioners deny that the establishment of GVCs in their province has been driven by imitation mechanisms. Still, they do recognise that the support for GVCs is on the rise: “Yes. Apparently the time is right, whatever that may mean. Apparently, support for these kind of interventions has grown.” – RDA director (P7). From an imitation perspective, understanding why intervention through the establishment of GVCs is widely supported is crucial to understand why governments establish GVCs (Gilardi 2016). Two factors emerge as explanations for this social acceptance of GVCs: the appealing characteristics of GVCs for policymakers and imitation as a way of dealing with an uncertain environment.

A first factor explaining the appeal of GVCs on policymakers and politicians is its attractive characteristics. Other than with government subsidies, GVCs are meant to revolve: “Revolving means that at least part of the money can be reinvested.” – Policy advisor (P5). One policy advisor (P8) describes it is due to these characteristics that convincing the States Provincial [provincial parliament] to allocate funds for the establishment of a GVC, is easier: “(. . .) No one is against it. The starting points [principles] are easy

to accept and imitate: you have financial resources and if you organise it properly, those resources might revolve for hundred percent.”

Other respondents, both experts and practitioners, confirm this: “I understand that it helps for the sales pitch, so to say. – Expert (E1). Some of them acknowledge that this popularity is not without risks. One of the experts (E3) ironically summarises it as follows:

Of course it sounds like the goose with the golden eggs. (...) it does not cost you anything, you do not have to include it in the budget, which is also a big advantage if you want the States Provincial [provincial parliament] to approve it. (...) Someday it may go wrong. But, well, let's worry about that when we get there.

In line with this, one of the RDA directors (P1) stresses that due to its appealing characteristics, GVCs may seem a solution for everything:

On the political and policy side, revolving funds sometimes seem to be a solution for everything. This is of course not true at all. I mean, you have certain types of innovative developments that cannot be financed through revolving funds at all. In these cases you just need old-fashioned subsidies. But it seems popular at the moment to establish revolving funds.

One of the practitioners (P2) illustrates how the popularity of the policy might in itself become a legitimisation for the policy: “Well, I think, because the trend started ten or more years ago and, of course, as a government you don't continue working in a way that does not work.” This corresponds to what Gilardi (2016) describes as a changing burden of proof. Because the policy has been around for a while, it is assumed to be effective. No longer those who agree with the policy have to substantiate the policy's effectiveness, but its opponents have to make their case against the policy.

Secondly, according to one of the experts the imitation is driven by a desire for safety. This resembles the observation of DiMaggio and Powell (1983) that mimic behaviour is a way of coping with uncertainty. The most secure thing to do for organisations, is to mimic other organisations. If the effort fails, all are in the same boat and nobody is to blame:

If all provinces do it, except for yours, you have something to explain. This will raise questions. (...) The easiest thing to do is to simply do what everyone else does. Then you cannot go wrong. (...) Accordingly, you can conclude that they do not know what they are doing. Just the fact that everyone does the same. Because on the one hand they say: every region is unique. But in the end they all act the same. – Expert (E3).

5.5. Learning

If one government establishes a GVC fund due to its adequate functioning elsewhere, it can be considered a learning process. Gilardi (2016) distinguishes three dimensions of success: related to policy goals, challenges of its implementation and political support. The interviewees elaborate extensively on the first two. Learning in terms of achieving policy goals implies that if policy goals are achieved in one jurisdiction, the intervention might also work elsewhere. Straightforward as this may seem at first sight, numerous experts argue it is rather difficult to define whether the current GVCs have succeeded so far: “(...) for most of the instruments in the Netherlands we are still so

early in ‘the race’. You cannot really say something about the success of those funds.” – Expert (E5).

Since a large part of the current GVCs has been established in recent years, it is difficult to determine whether these funds are successful. This might pose the risk of over optimism (E4) and problematises learning in terms of policy goals (P8, E3, E4). One of the policy advisors (P8), speaks of “Excel wisdom” in this regard: “We are very frank about this, also to the States Deputed [provincial executives] and the States Provincial [provincial parliament]. We have presented them documents [about the progress of the GVCs], but with the disclaimer: yes, this is Excel wisdom.” Other practitioners disagree and emphasize the conclusions of recent evaluations that have been conducted: “[name RDA, managing multiple GVCs] has been evaluated several times already, also by several courts of auditors. (. . .) It functions properly.” – Policy advisor (P5).

The interview data furthermore indicate that even though practitioners may have the intention to learn, this may be bounded. Practitioners tend to look at perceived leaders or success stories in the learning process. One RDA director (P7) describes what the process prior to the establishment of a regional GVC looked like:

Of course, we go to Brainport, we go to Delft, I have been to San Francisco, I have been to Shanghai, to see what happens there. In order to see what instruments are used there and to see which instruments could be useful in light of our ecosystem and in what way.

This indicates that practitioners look for inspiration in other regions, but learning might be a too strong label here. One of the experts (E4) stresses that learning from perceived top-performers, like San Francisco and Brainport, bears risks: “They [practitioners] are mainly occupied with their own things and focus on the success stories.” Little evidence about the success of GVCs so far and challenges in defining their success may contribute to an environment in which bounded learning takes place. According to one of the experts the latter is likely to change when more is known about what factors determine the success of GVCs: “Learning will naturally play a much more central role in the coming years.” – Expert (E5).

Although learning in terms of policy success elsewhere may be complex, most practitioners (P2, P3, P6, P7, P8, P9) indicate that they actively try to learn from experiences in other provinces and share best practices with colleagues in other regions. Policymakers point out that they have consulted policymakers in other provinces prior to the establishment of GVCs in their own jurisdiction. For example, one of the practitioners (P6) considering to set up a regional development agency describes his plans to organise a site visit to the regional development agency in another Dutch province. This resembles the idea of learning in terms of policy implementation (Gilardi 2016). One of the consultants (E5) elaborates on how he believes consultants facilitate this process of learning in terms of policy implementation: “I have advised [province Y], I know how it works there, so let’s not come up with completely new ideas in [province Z].”

In summary, the accounts of practitioners appear to indicate that, as learning in terms of a GVC achieving policy goals elsewhere is not straightforward, learning mainly takes place along the lines of successful policy implementation.

6. Conclusion and discussion

Worldwide, policies to advance venture capital markets have drawn the attention of policymakers. GVCs to increase the supply of venture capital have emerged as a popular instrument in particular (Colombo, Cumming, and Vismara 2016; Lerner 2002, 2009). Traditionally, such government action is legitimised by funding gaps. Yet, effectiveness of GVCs in addressing these gaps is controversial. Scholars have raised concerns about government failures and the predominance of the market failure rationale, at the suppression of other rationales for public policy intervention.

This paper has studied the rationales of Dutch provinces to establish GVCs. The paper reveals multiple rationales for government intervention in the venture capital market. Building on insights derived from the policy diffusion literature (Dobbin, Simmons, and Garrett 2007), we find that, next to traditional market failure arguments, alternative rationales explain why governments intervene in the regional venture capital market. Coercion, learning, and imitation do also partially explain why governments introduce GVCs. These findings challenge the rhetoric that policies to advance regional venture capital markets are solely implemented to address market failures.

The findings should be seen in light of the study's limitations. It remains hard to draw conclusions about the weight and interdependence of the different rationales. The data illustrate what previous studies on policy diffusion have already found: rationales may overlap, boundaries may be blurred and multiple rationales may jointly make a government to decide to set up a GVC. By empirically exploring to what extent funding gaps occur in the Netherlands and by analysing if provinces intervene accordingly, we have attempted to partially overcome this. Although this analysis has provided new insight into the predominance of market failure rationales, our sole focus on the supply-side of venture capital investment, does not fully respect the complexity of regional venture capital markets. Moreover, and as discussed in various parts of the paper, utilising location quotients to detect funding gaps is by no means ideal (Martin et al. 2005). More rigorous approaches (see for instance Wilson, Wright, and Kacer 2018), taking into account both supply and demand, remain much needed.

This paper serves as a first step to better understand rationales underlying venture capital policy as a branch of entrepreneurship policy. Our findings suggest that future research on government (in)action in the venture capital market would benefit from adopting a process-based perspective on the relation between government programs and private venture capital funding. Understanding better why policies are initiated, terminated or adjusted may shed a different light on previous works that have evaluated the performance of GVCs and PVCs from a more comparative static perspective and contribute to the hitherto unsettled debate about whether government venture capital crowds in or crowds out private venture capital, and how this evolves over time. Following government venture capital initiatives over time to see whether rationales and interventions change when changes in the venture capital market occur is considered a fruitful direction for future research in particular. Such insights would not only contribute to the venture capital policy literature, but to the literature on effective entrepreneurship policies at large (Arshed, Carter, and Mason 2014; Arshed, Mason, and Carter 2016; Fotopoulos and Storey 2019; Shane 2009).

Finally, our findings encourage policymakers to reflect critically on their rationales for establishing GVCs. Not only because governments may not always succeed in addressing funding gaps (Colombo, Cumming, and Vismara 2016; Lerner 2009), but also because, in contrast to what is commonly argued, it is unlikely that market failure rationales are the sole rationale for government intervention in venture capital markets. It is recommended to carefully evaluate the appropriateness of policies seeking to promote venture capital prior to intervening.

Notes

1. Hereafter we will refer to governmental venture capital and private venture capital as GVC and PVC. Governmental venture capital funds and private venture capital funds will be referred to as GVCs and PVCs respectively.
2. The first named author of this paper conducted the interviews. The interviews were undertaken in Dutch. All quotes have been translated to English by the authors. The practitioners and experts are referred to as P1-9 and E1-5 respectively.
3. Note that given its relatively high GVC growth location quotient in this period (4.80), Limburg is off the charts.
4. Note that given its relatively high GVC growth location quotient in this period (6.17), Drenthe is off the charts.

Disclosure statement

We declare one potential conflict of interest with respect to the research. At writing, the first author is employed part-time by regional development agency InnovationQuarter. The director of InnovationQuarter was interviewed for this study. When the interviews were conducted, the first author was not employed by InnovationQuarter and had no reason to believe he would later join InnovationQuarter.

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Appendix 1. The dataset

Table A1. Overview of government funds included in the calculation of the total number of GVC investment per province.

Name fund	Location of headquarters
Beheer Flevoland Participaties BV	Flevoland
Brabantse Ontwikkelings Maatschappij/BOM	Noord-Brabant
Groei- en Ontwikkelingsfonds Noord-Holland B.V	Noord-Holland
InnovationQuarter	Zuid-Holland
NV Industriebank Liof	Limburg
NV NOM/NOM Finance	Groningen
ODENH	Noord-Holland
PPM Oost/Participatiemaatschappij Oost-Nederland	Gelderland
Wadinko CV	Overijssel
Van Reekum Participatie Fonds Beheer B.V	Gelderland
PDENH (Participatiefonds Duurzame Economie Noord-Holland)	Noord-Holland

The types of PVCs included in the dataset (Nederlandse Vereniging van Participatiemaatschappijen 2018) are:

- Private equity funds making direct private equity investments
- Mezzanine private equity funds
- Co-investment funds
- Rescue/turnaround funds.

The types of private investment funds excluded in the dataset are:

- Infrastructure funds
- Real estate funds
- Distressed debt funds
- Primary funds-of-funds
- Secondary funds-of-funds
- Investments of business angels.

Appendix 2. Additional quadrants

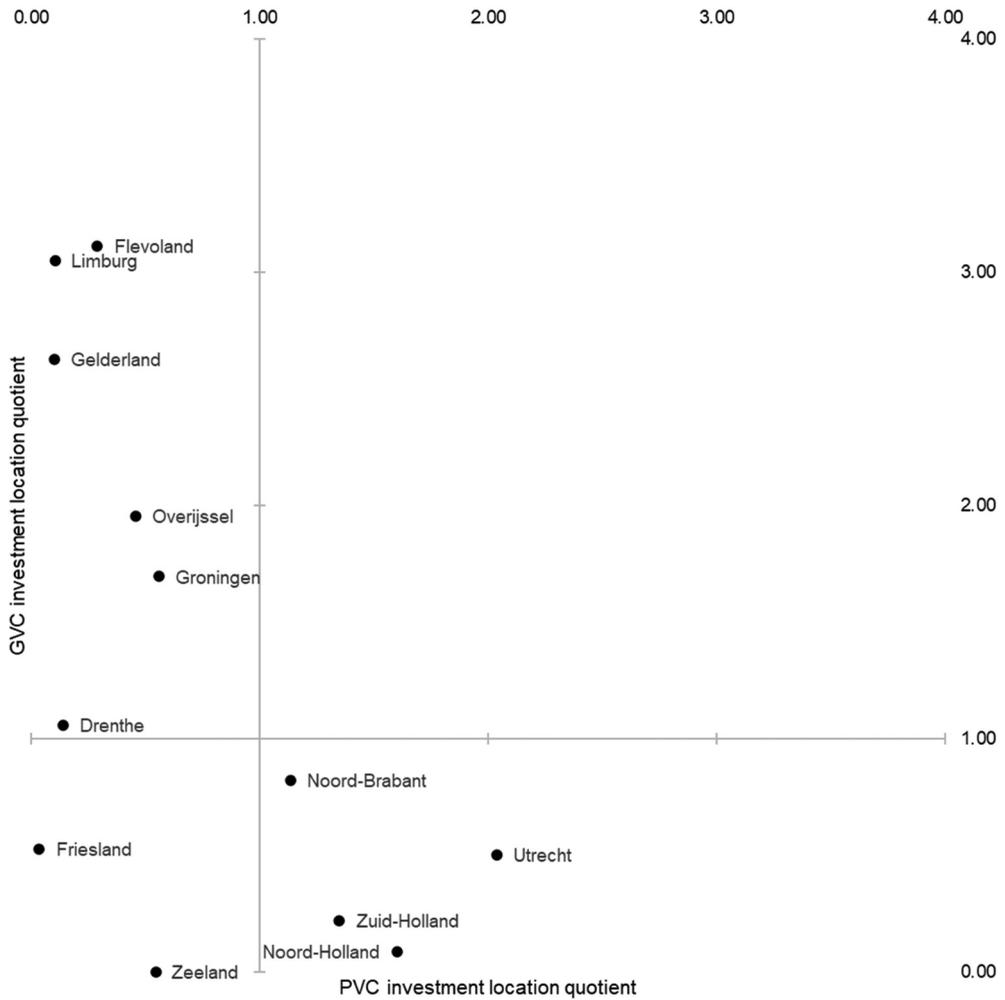


Figure A1. Regional venture capital quadrant total venture investment, 2008–2012. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.

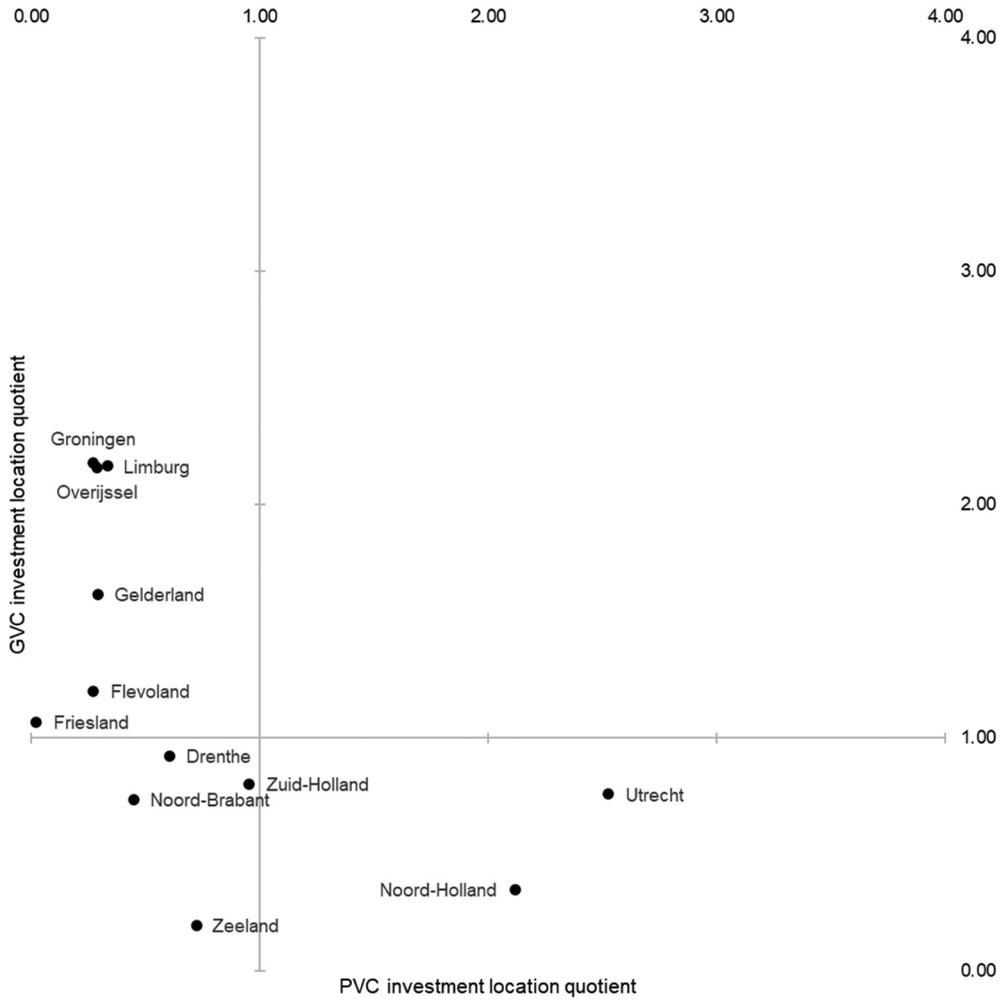


Figure A2. Regional venture capital quadrant total venture investment, 2013–2017. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.

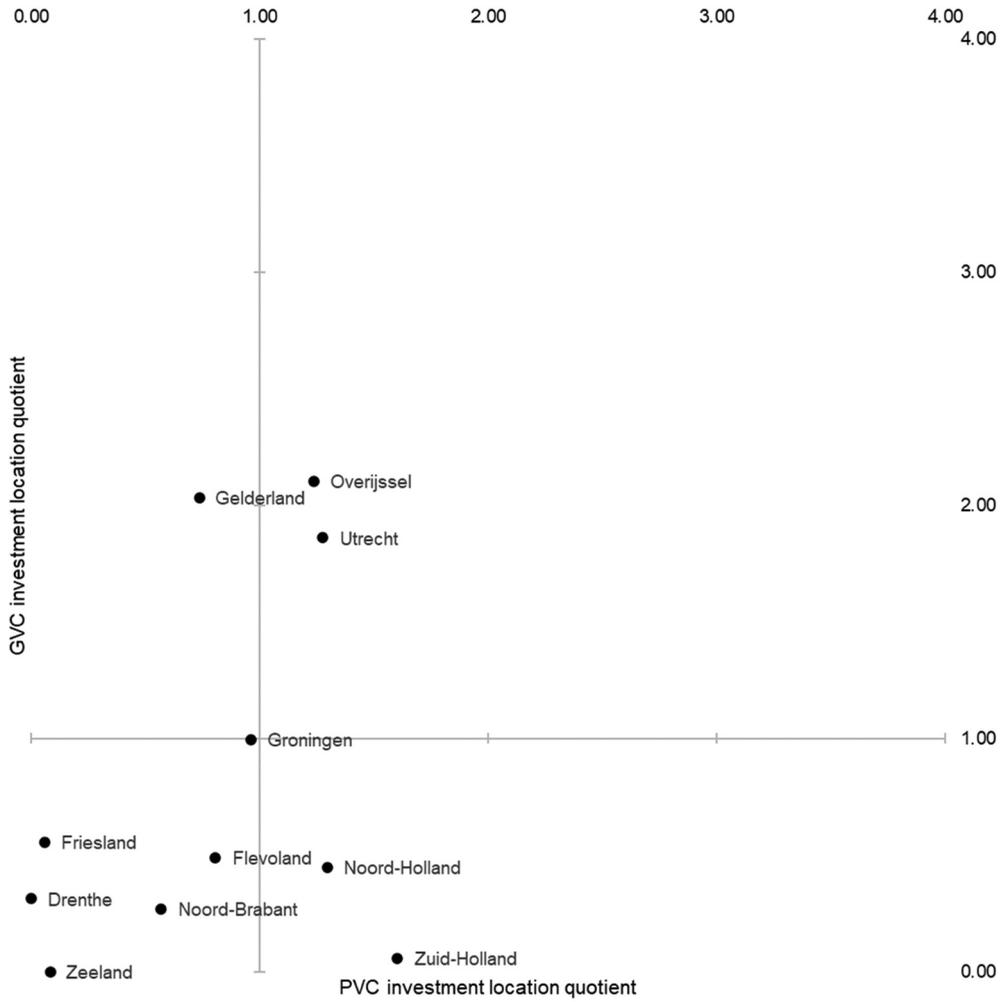


Figure A3. Regional venture capital quadrant total growth investment, 2008–2012. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.³

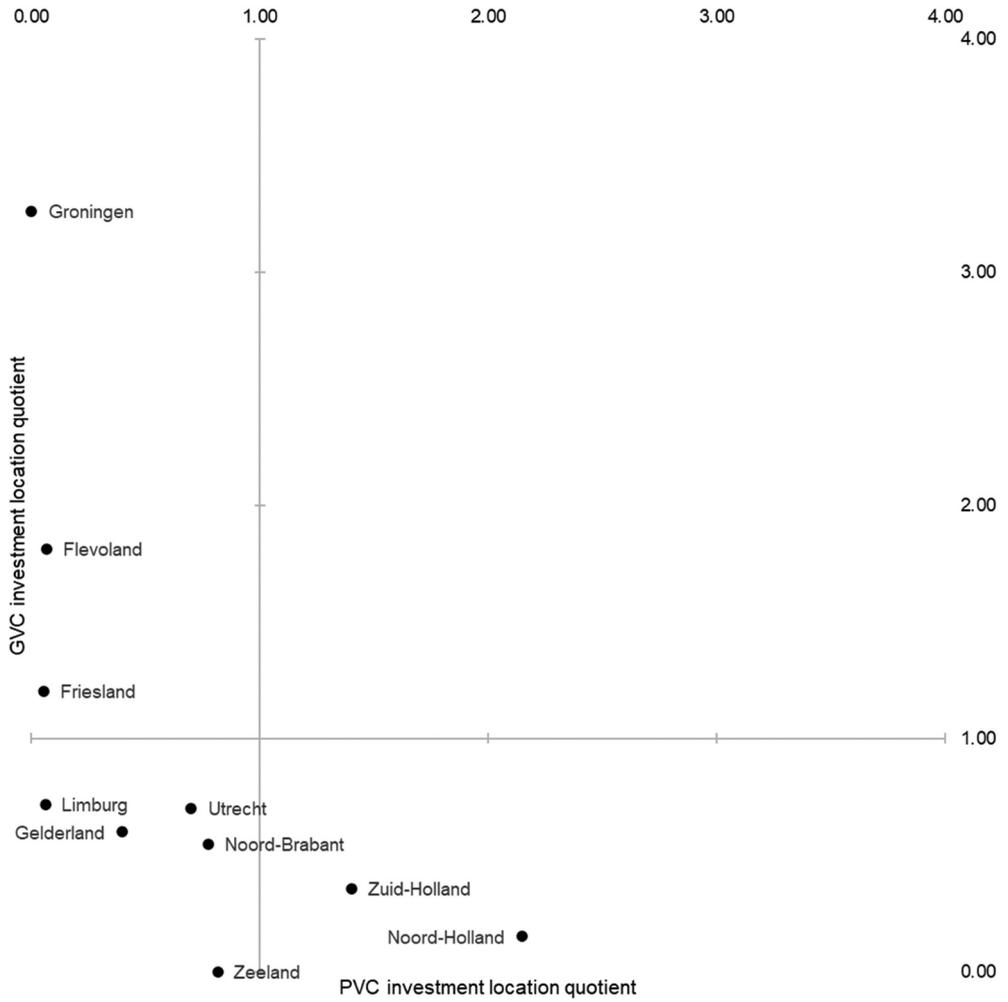


Figure A4. Regional venture capital quadrant total growth investment, 2013–2017. The x-axis and y-axis represent the PVC investment and the GVC investment location quotient respectively.⁴