

**Paper presented at the *EMNet 2009*-Conference  
School of Economics and Business, University of Sarajevo, Bosnia  
and Herzegovina, September 3 – 5, 2009  
(<http://emnet.univie.ac.at/>)**

**Adverse or self-selection? –  
The entry of new actors into existing clusters**

**Abstract**

Regional clusters can enhance their members' competitiveness due to positive externalities within the cluster, which are attributable to the contributions of already integrated, but also of newly incorporated companies. However, for the cluster it is unclear which kinds of firms are willing to enter. The paper attempts to contribute to the literature by developing a theoretical framework of cluster entry from an economic perspective. Because it is known that cluster-members can profit from the externalities existing in the cluster, asymmetric information could lead to an adverse selection of actors that are 'weak' and harmful for the cluster because they exploit the existing externalities without contributing anything themselves. One way to overcome asymmetric information is causing self-selection. The paper argues that cluster attributes like increased competition and transparency could discourage 'weak' firms from entering and thus lead to a self-selection of 'strong' actors. The proposed model integrates both mechanisms and thus helps to explain and predict the characteristics of potential cluster entrants.

**Keywords**

Cluster, cluster entry, newcomer, adverse selection, self-selection

**Corresponding author**

Daniel Grundgreif

University of Passau

Chair of International Management

Innstrasse 27

D – 94032 Passau

T 0049 851 509 3254

daniel.grundgreif@uni-passau.de

## 1. Introduction

Clusters have received a great deal of attention during the last two decades. The location in local clusters has developed towards a popular way for enhancing the competitiveness of the regions the clusters are located in as a whole, but also of the single companies operating within the cluster. Well known, large companies such as the car manufacturers Toyota and Ford locate themselves in regional clusters like in the area surrounding St. Petersburg, expecting to benefit from the location.<sup>1</sup> However, in the last years the critical voices regarding the cluster concept increased<sup>2</sup> and also reality shows, that clusters are not invariably viewed as a way to success. So for example the Daimler Group decided in June 2008 to open a new plant in Hungary that will be located outside of the existing Hungarian car-clusters.<sup>3</sup> To understand these contrarities, it is helpful to take a detailed look at the constitution of clusters and the processes and decisions that shape this constitution.

One of the factors influencing the constitution of a cluster is the entry of new, external actors. Few has been written so far explicitly about cluster entry, its premises, underlying mechanisms and its consequences.<sup>4</sup> One exception is constituted by Beaudry (2001), who examines the entry into clusters in the UK aerospace industry, by analyzing, to which extent the existing clusters in the industry are attractive for possible new entrants.<sup>5</sup> Another one is Pe'er and Keil's (2008) study about the survival rate of new ventures in existing clusters which, inter alia, finds that cluster structures directly influence the new ventures' survival rates.<sup>6</sup> As the former one examines the entry of newcomers from the perspective of the cluster and the latter one provides an ex-post examination of the new cluster-entrants, both can offer only limited contributions for answering the question, how cluster-inherent characteristics and mechanisms influence the single firm's decision whether it wants to locate within a cluster or not.

The present paper contributes to the analysis of those factors and the possible effects on the cluster- and firm-level. Based on economic theory, it integrates the effects that regional cluster structures can cause regarding a firm's strategic consideration about entering it, into a conceptual model of cluster entry. The model is based on the argumentation that the entry of a new actor into an existing cluster can be constituted as principal-agent relationship under asymmetric

---

<sup>1</sup> See Deubach (2009).

<sup>2</sup> See for example Martin/Sunley (2003), McDonald et al. (2007).

<sup>3</sup> See Weber (2008).

<sup>4</sup> See Hennessy (2005).

<sup>5</sup> See Beaudry (2001).

<sup>6</sup> See Pe'er/Keil (2008).

information in terms of the agent's (potential entrant) characteristics. Due to this asymmetric information and the existence of positive externalities within a cluster, an adverse selection of 'weak' or less competitive firms may be caused. These firms expect to profit from the existing spillover effects without having to anything contribute to the cluster themselves. However, the better endowed companies are aware of the hazard of being exploited by these firms and thus have a decreased incentive to enter such a cluster.<sup>7</sup> On the one hand, as the co-existence of direct rivals amplifies the competition within the cluster, companies that regard themselves as less competitive may be scared of not being able to survive in such an environment. Additionally, the possibilities of monitoring of the members' behaviour within a cluster may also discourage firms, actually aiming at exploiting the cluster. Subsequently they have less interest of entering the cluster. The consequence would be a self-selection of firms that are strong enough to operate successfully in the cluster. So, as only such firms enter the cluster, whose competitiveness is high anyway, subsequently also the strength of the cluster as a whole will be enhanced.

The paper will continue by illustrating the incentives, companies can have to enter an existing cluster, followed by a reflection of the theoretic foundations of the selection problem connected with by cluster entry, modelling the principal-agent relationship under asymmetric information, and examining in detail the mechanisms of adverse selection and self-selection. After that, as the result of the analysis, the theoretical components will be integrated into a conceptual model of cluster entry. Concluding, some limitations will be addressed, and then possible directions for future research will be proposed.

## **2. Definition and motives for cluster entry**

An analysis of the characteristics of clusters cannot work out without a common understanding of the term itself. Although numerous definitions of the term exist, in the following Porter's (2000) definition will be followed, as it is probably the one which most shaped the contemporary understanding of the phrase and the whole concept, and parts of the analysis are based on Porter's work. He defined clusters as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate"<sup>8</sup>.

---

<sup>7</sup> See Shaver/Flyer (2000).

<sup>8</sup> Porter (2000), p. 16.

As the attention in this article is on the characteristics of potential new entrants into existing clusters, in a first step it will be shown, why it can be desirable for companies to enter an existing cluster. As already mentioned above, clusters can improve the competitiveness of a firm located within. The three main reasons for this are the increase of the productivity and innovativeness of the cluster-companies, as well as an enhanced rate of business formation within the cluster. These advantages are to large parts caused by positive externalities that are triggered or at least amplified by the local concentration within the cluster.<sup>9</sup> Considering the described gains companies can derive from being located in the cluster, the willingness of external companies to enter such a competitiveness-enhancing cluster becomes obvious. However, while in some industries the decision of being located inside or outside possible existing clusters might be somewhat optional and just one of various existing ways to boost company performance, in others, being located in a cluster might be a necessary precondition for viability, or as Tallman et al. (2004) point out: "(...) in industries characterized by dominant regional clusters, membership in a cluster is essential for sustained strategic equality."<sup>10</sup>

An interesting point that Maskell (2001) adds to the analysis of the motivation of firms to enter a cluster is, that they base their decision not on the actual advantages they yield from the cluster, but on anticipated ones.<sup>11</sup> This is important for the further discussion insofar as it refers to the bounded rationality of the actors that decide whether they want to enter a cluster or not.<sup>12</sup> Ex ante, the actors, e.g. the firms' managers, cannot be sure if at all or to what extent they would benefit from the cluster. They can only anticipate their future gains from being located there, based on information about the performance of the cluster and its members they can acquire from various sources, like newspapers, databases, financial statements, etc. The perceived advantages are subsequently charged against actual and possible costs and disadvantages. These can range from easily quantifiable costs like the expenses from relocating the headquarter or plant into the cluster, to the more intangible, but not less important ones like the costs of the drain of critical know-how or qualified employees. If the net effect of this calculation turns out to be positive, the firm will decide to make an attempt to enter the existing cluster.<sup>13</sup>

However, the entry of new firms can not only have positive effects for the firm itself, but also for the cluster as a whole. The cluster can profit from new entrants

---

<sup>9</sup> Porter (2000), p. 21.

<sup>10</sup> Tallmann et al. (2004), p. 268.

<sup>11</sup> See Maskell (2001), p.932 f.

<sup>12</sup> See Furubotn/Richter (2005), p. 555 f.

<sup>13</sup> See Aharonson et al. (2007), p. 93.

in numerous ways. Rosenfeld (2003)<sup>14</sup>, as well as Falck and Helbich (2007)<sup>15</sup> emphasize the role of new knowledge, which is brought into the cluster from new companies, that are integrated into the existing structure. Aharonson et al. (2007) go one step further and talk about a “virtuous circle”, which develops because the increased innovative activity attracts new innovative entrants that again bring new innovations and know-how into the cluster.<sup>16</sup> Through this process the knowledge base of the cluster is continuously expanded.<sup>17</sup> While the acceptance of new entrants, as described so far, could be regarded as a strategic choice by the incumbents, analogously to the choice of companies of choosing to enter, other authors regard the absorption of newcomers as necessary for the cluster to maintain its competitiveness or even to survive. So Häußler and Zademach (2007) indicate, that for cluster-companies who operate on a global market, the openness for newcomers is especially important for keeping up with global innovation standards and for remaining able to build new cooperations for a commercialization of their products or services on new foreign markets.<sup>18</sup> However, this view overlooks the fact that in today’s globalized economy hardly any company operates solely on its national market (excluded industries which are naturally tied to their national or regional markets like for example some service industries). Following a more general approach, Porter (2000) clearly demonstrates the necessity for new, external inputs for an existing cluster by describing the possible drawbacks of a closed and therefore gridlocked cluster-structure: “When a cluster shares a uniform approach to competing, a sort of groupthink often reinforces old behaviours, suppresses new ideas, and creates rigidities that prevent adoption of improvements.”<sup>19</sup>

Grabher (1993) refers to this problem as “cognitive lock-in”. In his case-study about the descent of the German Ruhr area he identified this lock-in in combination with the already mentioned groupthink of the incumbents as being responsible for the companies in this industrial district<sup>20</sup> missing opportunities for shifting away from their old customs towards more promising markets.<sup>21</sup> This, or a very similar, effect is also described by Floysand and Jakobsen (2002)<sup>22</sup> in a more contemporary case study about two clusters in the fishing-industry in different regions of Norway. The case-study compares two clusters, one of which was

---

<sup>14</sup> See Rosenfeld (2003), p. 363.

<sup>15</sup> See Falck/Helbich (2007), p. 7.

<sup>16</sup> See Aharonson et al. (2007), p. 93.

<sup>17</sup> See Tallman et al. (2004), p. 261.

<sup>18</sup> See Häußler/Zademach (2007), p. 264.

<sup>19</sup> Porter (2000), p. 24.

<sup>20</sup> The term „industrial district“, with which Grabher describes the Ruhr area in his work, is used synonymic with the term “cluster” in the literature.

<sup>21</sup> See Grabher (1993), p. 262 ff.

<sup>22</sup> See Floysand/Jakobsen (2002), p. 35 ff.

characterized by the entry of external actors on a regularly basis. During the observation period, this cluster significantly enhanced its competitiveness compared to the other one, taking the opportunities for restructuring that appeared through the new entrants. In contrast, the other cluster which most widely isolated itself from newcomers, found itself “on the verge of rule-based lock-in of economic organization”.<sup>23</sup>

What becomes obvious is that the entry of newcomers, under certain circumstances, can be decisive for the survival of a cluster, or at least, even if the consequences are not that fundamental, it can offer considerable advantages for the entering firm as well as for the cluster as a whole. One point that has to be added here is that the separation in company- and cluster-specific advantages of entry was made for conceptual reasons. In practice, and also in the following sections, the difference between these categories is not that clear-cut. Everything that enhances the competitiveness of a cluster-member also has positive effects for the cluster. Also does every single company profit from cluster-spanning advantages, due to increased externalities. Porter (2000) concisely describes this relation with the finding that “the health of the cluster is important to the health of the company”.<sup>24</sup>

### **3. Theoretical foundations of cluster entry**

It has already been addressed that the incentives of firms to enter a cluster may be reasoned in the bounded rationality of the decision makers. As firms base their decision of entering a cluster on the anticipated gains of the entry, so does the cluster when weighing up if an interested newcomer should be incorporated into the cluster or not. The situation arising in the forefront of this decision can be explained by applying elements of the agency theory to the subject of clusters in general and cluster entry in particular. While the related theory of transaction costs has been frequently used in the context of clusters, mainly for explaining their emergence and existence, agency theory has only rarely made its way into the vibrant discussion about clusters.<sup>25</sup>

---

<sup>23</sup> *Ib.*, p.52.

<sup>24</sup> Porter (2000), p. 16.

<sup>25</sup> See for example Shaver/Flyer (2000).

### ***3.1 Asymmetric information***

Furubotn and Richter (2005) explain the underlying idea of the agency theory as follows: “The principal-agent approach deals with cases of asymmetric information between contractual parties before or/and after the conclusion of a contract. The party offering a contract (the “principal”) knows or observes less than the party accepting or rejecting the offer (the “agent”).”<sup>26</sup> Picot et al. present three types of asymmetric information, which basically can be differentiated to the moment of their existence, which means if they exist after or before the contract between principal and agent is concluded: hidden characteristics, hidden action/hidden information and hidden intention.<sup>27</sup>

The problem of hidden characteristics describes the ex-ante disability of the principal to know all of the agent’s immutable or at least hardly changeable characteristics. The danger arising is that the agent may turn out to be unsuitable for his functions or even harmful for the principal, but this becomes obvious only after the conclusion of the contract.<sup>28</sup> Two different ways exist by which the actors can reduce the extent of the information asymmetries. The agent can prove her positive characteristics to the potential principal by means of signalling, which means that she attests her abilities with certificates, awards, or the like. On the other side the principal can gain insights about the potential agent by means of screening. Thereby the principal looks for available information, for example by investigating available company data. Hidden action and hidden information are characterized by existing ex post, after the contract between principal and agent has been concluded. The former occurs when the principal cannot observe the agent’s actions directly and also indirect inference is not possible due to prohibitively high costs of control of the agent’s behaviour. Hidden information means that the principal is able to observe the agent’s actions, but can not evaluate it. The agent has gained information in the course of accomplishing its function that the principal has not. Thus the agent can far better estimate the success of its actions than the principal can. Hidden intention is also taking place ex post and denotes the situation when the principal, contrary to hidden action and hidden information, can detect opportunistic behaviour of the agent, but can not impede it due to so called sunk costs. Those are irreversible investments that would be lost in case of a cancellation of the principal-agent relation and cause a dependency of the principal on the decisions and actions of the agent.<sup>29</sup>

---

<sup>26</sup> Furubotn/Richter (2005), p. 564.

<sup>27</sup> See here and in the following paragraph: Picot et al. (2008), p. 88 ff.

<sup>28</sup> See also Jost (2001), p. 27 f.

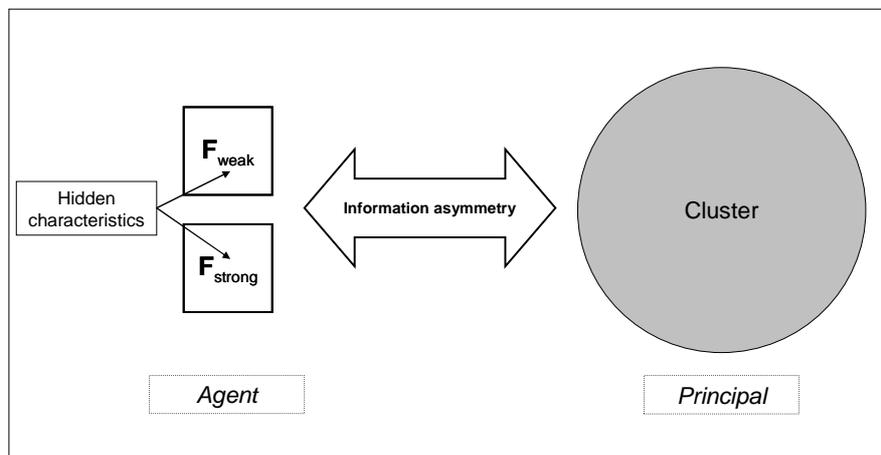
<sup>29</sup> See *ib.*, p. 30 f.

### 3.2 Cluster entry as principal-agent relationship

The entry of new companies into an existing cluster is now analyzed in the context of the theoretical framework explained above, which means that the situation is being modelled as principal-agent relationship. In the literature different kinds of cooperative arrangements, like corporate networks in general<sup>30</sup>, project-oriented value adding networks<sup>31</sup> or international joint ventures<sup>32</sup> have been modelled in this way. However, in the context of clusters, no such model exists so far.

In the case of cluster entry, the cluster shall be regarded as the principal, representing the “collective” of the cluster members<sup>33</sup> whose welfare is influenced by the characteristics and actions of the agent, which is the new company that wants to enter the cluster. What has to be noted at this point is the interchangeability of the roles of principal and agent. So the cluster will also act as an agent for its member companies for example in situations like bargaining for subsidies with government representatives, and so it would be an agent for the entering firm ex post, after the entry would have taken place. However, as the situation analyzed is the one ex ante, which means before the entry into the cluster, the relationship shall be determined as cluster (principal) – agent (new company).

Figure 1: Cluster entry as principal-agent relationship



<sup>30</sup> See Wohlgemut (2002).

<sup>31</sup> See Winkler et al. (2008).

<sup>32</sup> See Wolff (2005).

<sup>33</sup> See Wohlgemut (2002), p. 62.

A necessary consequence of the chosen ex ante-perspective is that hidden action, hidden information and hidden intention are not subject to the analysis, but the focus is solely on the issue of hidden characteristics. In the present analysis, those characteristics are information concerning the question, if the potential entrant is a “weak” or a “strong” company, compared to its competitors within and beyond the cluster. Figure 1 visualizes the principal-agent relationship between the cluster and potential entrants (labelled F for firm).

### ***3.3 The selection problem accompanying cluster entry***

The inherent selection problem for the cluster associated with a potential entry is, that it can not be sure about the effects that will be caused by the acceptance of the new entrant. As shown above, the admission of the newcomer could be very positive for the cluster, for example by expanding its knowledge base, but also negative, as the entrant may be anxious to exploit the incumbents through profiting from the cluster externalities without contributing anything to the cluster itself. How the consequences will eventually look like, is to large parts dependent from the characteristics of the potential entrant. However, as explained above, the cluster can not observe in advance.

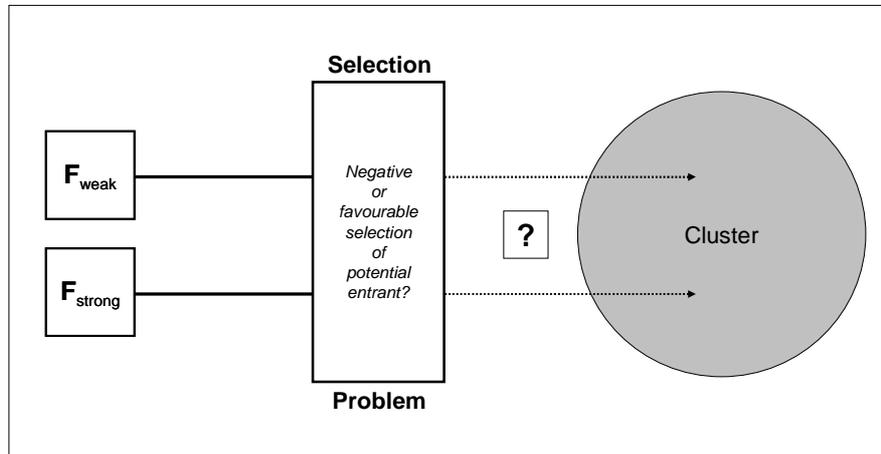
Admittedly, the cluster can procure some information about the potential entrant through the screening possibilities also described above, for example by investigating in newspapers, databases, annual reports or the like. In practice, intermediary institutions like network coordinators or cluster managers are deployed to increase the efficiency of such screening processes<sup>34</sup>. However, due to the conceptual nature of the present paper, for the actual analysis should be assumed that the cluster cannot gain enough information about the potential entrant through these channels to be able to sufficiently evaluate its characteristics. The cluster thus is at the mercy of the natural mechanisms associated with this situation. These mechanisms can work in different directions which are differently desirable for the cluster. On the one hand, the existing positive externalities existing in a cluster may lead to a negative selection of ‘weak’ firms that expect to profit from the cluster “for free” and a subsequent deterrence of firms having positive characteristics. On the other hand certain attributes of the cluster may cause a favourable selection<sup>35</sup> of ‘strong’ entrants which have positive effects of the well-being of the cluster and subsequently the competitiveness of its members. Both possibilities are described and discussed in greater detail in the following sections by applying further elements of the agency theory. Figure 2 depicts the selection problem in the context of cluster entry.

---

<sup>34</sup> See Wohlgemut (2002); Bühner et al. (2009).

<sup>35</sup> The term “favorable selection” was first used by Pe'er et al. (2008).

Figure 2: The selection problem accompanying cluster entry



### 3.3.1 Adverse selection of 'weak' firms

As stated above, the asymmetric distribution of information between the principal (cluster) and the agent (potential entrant) can lead to an adverse selection of 'weak' firms trying to enter the cluster<sup>36</sup>. Picot et al. (2008) explain the process and the consequences of adverse selection by using the example of an insurance agency: The agency doesn't know the risks of a certain potential insuree. If the insurer offers a policy based on statistical average values, it has to reckon that only those individuals will accept the contract that believe that their own risk is above average. Those individuals, whose risk is under average, will try to get a better contract from another insurance company, while the regarded insurer in the future has to offer contracts below the actual level, because the bad risks that chose the offered contract, lower the present average value.<sup>37</sup>

This mechanism can also be applied to the context of cluster entry. As the principal (cluster) cannot observe the agent's (potential entrant) characteristics, the principal ex ante is not able to separate out 'strong' agents that ex post would be beneficial, and 'weak' ones that ex post would be harmful for the cluster. The equivalent to the risk in the insurance example, in the cluster-context is constituted by the possible contributions a potential entrant could make to the whole cluster. Examples for contribution possibilities are valuable know-how, qualified employees and so forth, however, in an inverted way than in the insurance-

<sup>36</sup> The idea is based on the work of Shaver/Flyer (2000), which is discussed in greater detail below.

<sup>37</sup> See Picot et al. (2008), p. 88.

example (a high risk is equivalent to a low contribution-potential). Thereby it is argued that ‘strong’ firms contribute more to the cluster than ‘weak’ ones, a situation which should be denoted as “contribution asymmetry”. The analogon to the benefits of the insurance policy are the positive externalities existing in a cluster, from which the entrants can profit after being accepted. If now all potential entrants can profit from an average level of externalities, a “benefit asymmetry” arises, as the ‘weak’ firms have a lower starting level and thus gain relatively more from the externalities. Subsequently, only those firms have an incentive to really enter the cluster, whose possible contributions to the cluster are under average. These are the ‘weak’ firms already referred to above. The ‘strong’ firms, whose contribution capabilities are above average, will try to find another cluster, or will even lose interest in entering a cluster at all. As a consequence, the total extent of spillovers available in the cluster will diminish as the average level of externalities diminishes with every ‘weak’ firm entering the cluster. The worst-case consequence in the long run would be a degeneration of the cluster towards a reservoir of basket cases, sometime disappearing altogether, similarly as in Akerlof’s (1970) famous ‘market for lemons’<sup>38</sup>.

The first work that explicitly applied the concept of adverse selection to the question of cluster entry was the one of Shaver and Flyer (2000), which examined the consequences of firm heterogeneity in the context of agglomeration economies. The authors argue that first, the existence of agglomeration economies will keep many firms from clustering and secondly, the location outside of existing clusters will lead to better performance. Though they also constitute their propositions by showing that due to the asymmetric resource-endowment of companies, ‘weak’ firms have more to gain, though less to contribute, from a cluster than ‘strong’ firms and thus have more incentives to enter clusters, there is an important difference in the argumentation of the consequences of this adverse selection. They contend that, if a ‘weak’ firm, benefiting from the spillovers triggered by ‘strong’ firms, becomes more competitive and subsequently grows a bigger competition for the former ‘stronger’ firm, which therefore fades its own competitiveness<sup>39</sup> (which is contradictory to the rationale that increased competition in clusters leads to enhanced competitiveness of all concerned parties<sup>40</sup>). However, the study finds empirical evidence for unequally distributed contributions to externalities within clusters and the argument of adverse selection in firms agglomerating there.<sup>41</sup> Figure 3 shows the process of adverse selection of ‘weak’ firms due to “contribution asymmetries” and “benefit asymmetries.

---

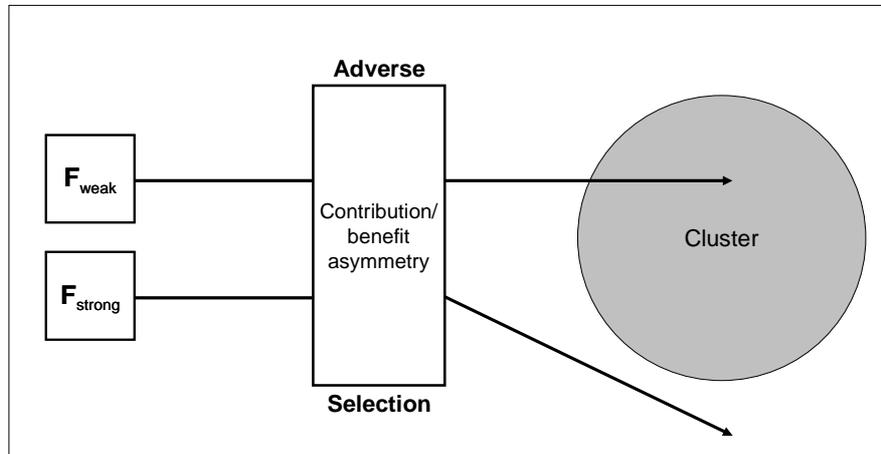
<sup>38</sup> See Akerlof (1970).

<sup>39</sup> See Shaver/Flyer (2000).

<sup>40</sup> See for example Porter (1998), (2000).

<sup>41</sup> See Shaver/Flyer (2000), p. 1191.

Figure 3: Adverse selection of 'weak' firms



Source: Based on Shaver/Flyer (2000).

### 3.3.2 Self-selection of 'strong' firms

A further element of the model developed in this paper is the assumption that cluster attributes like the high degree of competition within the cluster may cause a self-selection of firms that regard themselves as strong enough to profit from this situation, and a deterrence of companies with negative characteristics. Due to asymmetric distribution of information the selection of potential new entrants for the cluster can be compared to a market, in which the quality characteristics of the goods, respectively the actors, are not visible *ex ante*. One way to overcome asymmetric information and to prevail on the actors on manifesting their real characteristics is by causing self-selection<sup>42</sup>. Thereby the actors are offered differentiated contracts, from which some are more beneficial for 'strong' actors and some are more beneficial for 'weak' ones.<sup>43</sup> So for example the offering of fixed and variable reward contracts is one possibility to distinguish between more or less productive employees, because highly productive ones will tend to prefer a variable compensation model in contrast to the less productive ones who will decide in favour of the fixed wage alternative.<sup>44</sup> Jungwirth (2007) explains this procedure in the context of venture capitalists and their choices of support strategies. When the venture capitalist decides to chase a so called 'hands-off' strategy, which is characterized by a low intensity of supervision after the

<sup>42</sup> The subject of self-selection has first been addressed by Salop/Salop (1976) in the context of labour markets and has later also found a use in other areas like insurance markets (for example Sapelli/Bernardita, 2003) and the venture capital industry (for example Jungwirth 2006).

<sup>43</sup> See Picot et al. (2008), p. 92.

<sup>44</sup> See Backes-Gellner/Wolff (2001), p.395.

conclusion of the contract, the venture capitalist has to rely on the good characteristics of the entrepreneur. To find out the entrepreneur's characteristics, the venture capitalist can offer her a very performance-dependent contract, including for example strict budget restrictions or binding milestones. Due to the risk of losing their invested capital, only those entrepreneurs will accept the contract, that regard themselves as good enough to fulfil the requirements.<sup>45</sup> Transferred to the context of the characteristics of cluster entrants, the natural conditions within a cluster can be regarded as a challenging contract, disclosing the 'strong' and the 'weak' firms. There are two central conditions that determine the defying nature of the cluster: the transparency of each cluster-actor's behaviour and the increased competition between the actors.

One of the most fundamental features of a cluster is its regional concentration. Though no unity exists so far concerning the geographic scope of a cluster<sup>46</sup>, for the present analysis shall be assumed that in a cluster every member has the possibility to observe each other actors' behaviour. As already described above, some firms might want to enter a cluster because they want to exploit the existing externalities. However, such opportunistic behaviour becomes less presumable the bigger the chance of the principal is, to gain knowledge about it. The local concentration of actors serves as a means to increase this chance as the principal can observe the agent's actions, is easily informed about the properties of the goods and services, and about the costs of production factors.<sup>47</sup> Maskell (2001) denotes this circumstance as "the behavioural constraints imposed on co-localized firms by the knowledge of the unattractive consequences of misbehaving." Further he states: "In a cluster it will immediately be noticed if a firm attempts to overutilize asymmetrical information; or pass defective or substandard goods as first class; or create hold-ups in order to benefit at the expense of others in the local milieu."<sup>48</sup> But the structure of the cluster is not only helpful for identifying opportunistic behaviour and negative characteristics, but also for sanctioning it. Within the cluster formal as well as informal communication is promoted through the geographical proximity. The knowledge about the opportunistic behaviour of one certain actor will swiftly diffuse across the cluster. The actors thus can join forces and impose collective sanctions on the opportunistic firm, like for example the exclusion from regular meetings or the withdrawal of charged purchase orders.<sup>49</sup>

For a 'weak' company the prospect of such an amount of transparency, where opportunistic behaviour like the one-sided exploitation of cluster-externalities is

---

<sup>45</sup> See Jungwirth (2006), p. 49 f.

<sup>46</sup> See Martin/Sunley (2003), p. 11.

<sup>47</sup> See Bathelt et al. (2004), p. 36.

<sup>48</sup> Maskell (2001), p. 926.

<sup>49</sup> See Hite/Hesterly (2001), p. 280.

impossible or at least significantly aggravated from the outset, or associated with subsequent sanctions, the incentive to locate in the cluster diminishes significantly. The cluster-attribute of increased transparency thus works in the same way as the differentiated contract described above. Consequently, only those companies will be willing to enter the cluster that aren't dependent on exploiting the cluster because they are competitive anyway, which can be stated as a self-selection of 'strong' firms.

Another striking feature of clusters is the amplified competition due to the co-location of direct competitors. Though this property is one of the reasons for increased competitiveness of the cluster-members, the argument here is that this intense rivalry is apt to deter companies from entering the cluster. Gordon and McCann (2000) found empirical evidence for the fact that firms are aware and to some extent afraid of the increased competition, linked to the geographical concentration of companies in related activities.<sup>50</sup> As firms are aware of the increased competition in a cluster, the decision to enter despite this fact must, as far as it is a rational decision, be based on confidence in the own strength or competitiveness. In terms of industry analysis it is argued that the higher the rivalry within an industry, the less profitable it is and thus the less attractive for new entrants. So, only companies enter the regarded industry that have, or at least think that they have, at least one competitive advantage compared to their rivals.<sup>51</sup> Transferred to the context of clusters and following the traced argumentation, this means that because of the prospect of intense rivalry, only 'strong' companies will try to enter the cluster. 'Weak' companies will select themselves out because they don't expect to be able to survive in the cluster. Again a cluster-attribute, this time the increased competition, functions like a differentiated contract, causing self-selection. Figure 4 summarizes the argumentation by visualizing the self-selection of 'strong' firms into the cluster due to the cluster attributes of increased transparency and competition.

The pursued argumentation is supported by Arend (2006)<sup>52</sup>, who refers to the concept of self-selection in the context of upstream vertical alliances (UVA) of small and medium-sized enterprises (SMEs), using self-selection as control variable in the examination of the interrelation of UVA activity and SME performance, and states that "an SME that considers UVA activity more attractive should be a good performer even without UVA activity (...)"<sup>53</sup> Pe'er et al. (2008)<sup>54</sup>, in their study about the Canadian manufacturing sector, provide empirical evidence for an increased likeliness in agglomeration areas for "entrants

---

<sup>50</sup> See Gordon/McCann (2000), p. 523.

<sup>51</sup> See Porter (2008), p. 85 ff. and Pe'er et al. (2008), p. 125.

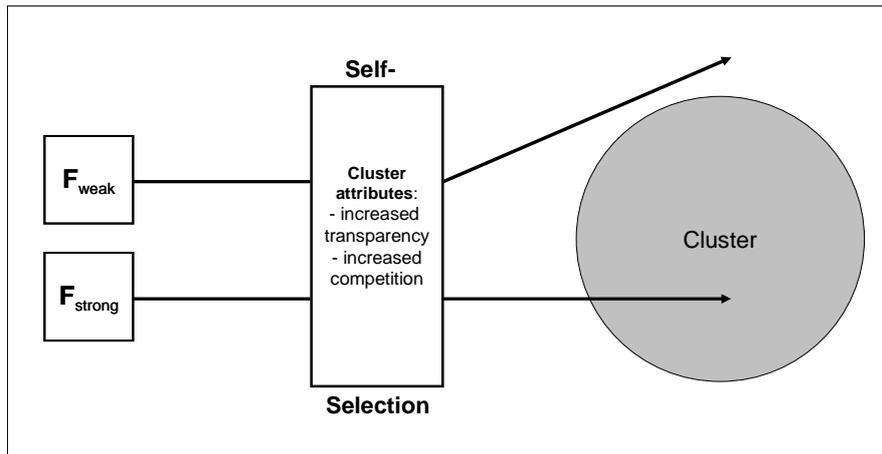
<sup>52</sup> See Arend (2006).

<sup>53</sup> See Arend (2006), p. 743.

<sup>54</sup> See Pe'er et al (2008).

with greater resource and capability endowments”<sup>55</sup>, but only up to a certain endowment level of the firms. However, it should be stated that the authors in their analysis do not explicitly refer to the term ‘self-selection’.

Figure 4: Self-selection of ‘strong’ firms

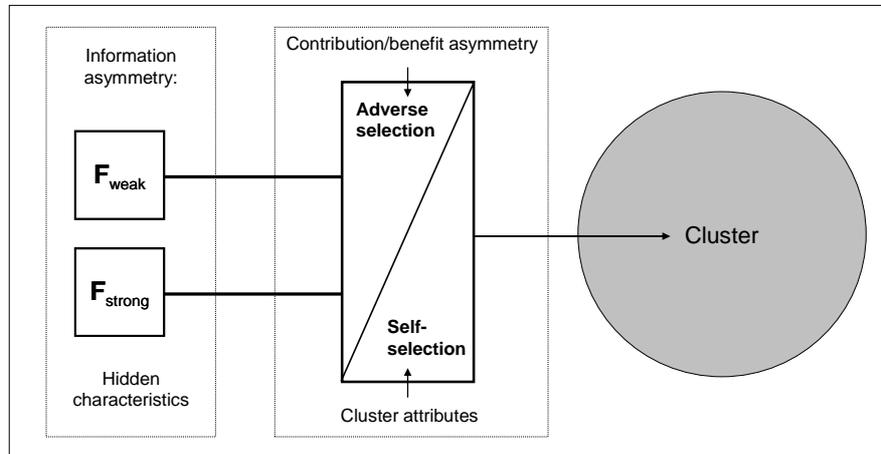


#### 4. Results

The goal of the present paper was to develop a conceptual model of cluster entry. For that, the previous pages examined the theoretical foundations underlying the situation of a new actor entering an existing regional cluster. Now these theoretic considerations are integrated into the model depicted in figure 5, which shows all relevant identified factors influencing the entry situation and the way they work: The constituting feature of the situation is the asymmetric information between the cluster and the firms willing to enter due to positive externalities in the cluster, regarding the firm’s relevant characteristics (which means if it is a ‘weak’ or a ‘strong’ firm). The consequence is the risk of an adverse selection of ‘weak’ firms as they can contribute less to but benefit more from the cluster than ‘strong’ firms. At the same time, the cluster attributes of increased transparency and competition can discourage ‘weak’ firms from entering the cluster and therefore a self-selection of ‘strong’ firms. The ultimate selection-result therefore is dependent on the strength of each of the both mechanisms.

<sup>55</sup> Ib., p. 119.

Figure 5: Conceptual model of cluster entry



## 5. Limitations and prospects

The present paper should constitute a foundation for answering the important question, which kind of companies are prone to locate in regional clusters, and contributes to the existing literature by providing a conceptual model of cluster entry, which in this form did not exist so far. However, its expressiveness is yet somewhat limited, first due to its purely theoretical nature. The most important open question is, if the effect of adverse selection or self-selection is stronger in reality. No uniform answer to this question is to expect, as examples of successful as well as unsuccessful clusters exist. First attempts to answer this question have already been undertaken, for example by Pe'er et al. (2008), who find empirical support for the assumption that the tendency for a favourable selection follows, dependent on the firm's resource endowment, an inverted, u-shaped curve, turning into adverse selection after a certain resource-level is reached<sup>56</sup>. However, further research regarding the factors influencing the strength of adverse selection and self-selection is necessary, both from a firm and a cluster perspective.

The second factor limiting the expressiveness of the present paper are the strong assumptions met, that are necessary for operating at a theoretical level. The first important assumption is that the cluster is treated as a single actor. In reality, however, this is hardly the case. A cluster consists of companies, universities, research facilities and several other institutions. So in practice one cannot say that 'the cluster' does not know about entrants' incentives and

<sup>56</sup> See Pe'er et al. 2008, p. 124.

characteristics, but it's always the single actors and their knowledge, which of course can differ significantly. Only if the coordination of cluster activities is bundled in one central institution, like for example a cluster initiative or cluster manager, the assumption gets closer to reality. So, to overcome the aforementioned limitation and gain further insights from the perspective of the cluster, semi-structured expert interviews with cluster managers will be conducted. The interviewees will be the full-time cluster managers from the Bavarian Cluster Offensive, a public initiative which encompasses 19 clusters from 19 different industries.<sup>57</sup> Cluster managers as interview partners and therefore sources of information are especially apt in the context of cluster entry, as in practice they usually are the first contact person for firms that are interested in entering the concerning cluster. So they should be able to provide valuable information about the characteristics of potential entrants. Furthermore, due to the industry heterogeneity within the cluster initiative, the expressiveness of the results will be further increased.

This second central limitation of the present work is the very general usage of the terms 'strong' and 'weak' in respect to the companies that want to enter a cluster. To overcome this limitation and get deeper insight into the characteristics of potentially entering firms, it is necessary to specify the terms and to find measures for the terms 'weak' and 'strong'. It has to be possible to compare the interesting companies with their competitors inside and outside the cluster, as well as the aggregate cluster capabilities. To achieve comparability between the actors, a resource-based view (RBV) should be taken. According to the RBV, the firm's unique resources, capabilities and competences are the sources of its competitiveness<sup>58</sup>. While numerous studies measuring firm resources in a vast variety of contexts<sup>59</sup>, it is useful to focus on resources that are especially important for cooperative arrangements, which means resources that are in some way transferable like knowledge or personnel. For example Das and Teng (2000), concerning partner attractiveness in strategic alliances, propose some relevant resource types on the firm-level, like patents, copyrights, employee skills.<sup>60</sup> Further indications regarding the relevance of certain resource types will be deduced from the interviews with the cluster-managers, who are expected to have a broad knowledge about the critical resources in their industry. Based on these considerations, a large-sample survey will be designed, allowing measuring and comparing the resource endowment of potential cluster entrants as well as incumbents.

---

<sup>57</sup> For more information see [www.cluster-bayern.de](http://www.cluster-bayern.de) and Bühner et al. (2009).

<sup>58</sup> See for example Barney (1986), (Prahalad/Hamel 1991).

<sup>59</sup> For an overview see Newbert (2007).

<sup>60</sup> See Das/Teng (2000), p. 54.

## References

- Aharonson, Barak, P.; Baum, Joel, A., C.; Feldman, Maryann, P. (2007), „Desperately seeking spillovers? Increasing returns, industrial organization and the location of new entrants in geographic and technological space”, in: *Industrial and Corporate Change*, Vol. 16, p. 89-130.
- Akerlof, George, A. (1970), „The market for lemons: Quality uncertainty and the market mechanism“, *Quarterly Journal of Economics*, Vol. 85, p. 488-500.
- Arend, Richard J. (2006), „SME-supplier alliance activity in manufacturing: contingent benefits and perceptions“, in: *Strategic Management Journal*, Vol. 27, p. 741-763.
- Backes-Gellner, Uschi; Wolff, Birgitta (2001), „Personalmanagement“, in: Jost, Peter-J. (ed.), „Die Prinzipal-Agenten-Theorie in der Betriebswirtschaftslehre“, Stuttgart, Schäffer-Poeschel Verlag, p. 395-437.
- Barney, Jay, B. (1986), „Organizational culture: Can it be a source of sustained competitive advantage?“, in: *Academy of Management Review*, Vol. 3, p. 656-665.
- Bathelt, Harald; Malmberg, Anders; Maskell, Peter (2004), „Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation“, in: *Progress in Human Geography*, Vol. 28, p. 31-56.
- Beaudry, Catherine (2001), „Entry, growth and patenting in industrial clusters: A study of the aerospace industry in the UK“, in: *International Journal of the Economics of Business*, Vol. 8, p. 405-436.
- Bührer, S.; Kroll, H.; Stahlecker, T.; Brandt, T.; Zimmermann, A.; Kulicke, M.; Koschatzky, K.; Baier, E. (2008), „Zwischen-Evaluation der Cluster-Offensive Bayern. Abschlussbericht, Fraunhofer Institut für System- und Innovationsforschung (ISI), Dezember 2008“, n.p.
- Das, T., K.; Teng, Bing-Sheng (2000), „A resource-based theory of strategic alliances“, in: *Journal of Management*, Vol. 26, p. 31-61.
- Deubach, Georg (2009), „Clusterpolitik in Russland – Das Automobilcluster in St. Petersburg“, Master Thesis, University of Passau.
- Falck, Oliver; Heblich, Stephan (2007), „Dynamic Clusters“, BGPE Discussion Paper No.16, Bavarian Graduate Program in Economics, [http://www.bgpe.de/texte/DP/016\\_falck\\_heblich.pdf](http://www.bgpe.de/texte/DP/016_falck_heblich.pdf), 08.09.2009.
- Floysand, Arnt; Jakobsen, Stig-Erik (2002), „Clusters, social fields and capabilities“, in: *International Studies of Management and Organization*, Vol. 31, p. 35-55.
- Furubotn, Eirik G.; Richter, Rudolf (2005), „Institutions & Economic Theory – The contribution of New Institutional Economics“, 2nd edition, Michigan, The University of Michigan Press.
- Gordon, Ian, R.; McCann, Philip (2000), „Industrial clusters: Complexes, agglomeration and/or social networks?“, in: *Urban Studies*, Vol. 37, p. 513-532.
- Grabher, Gernot (1993), „The weakness of strong ties – The lock-in of regional development in the Ruhr area“, in: Grabher, Gernot (ed.), „The embedded firm – On the socioeconomics of industrial networks“, London, Routledge, p. 255-277.
- Häussler, Carolin; Zademach, Hans-Martin (2007), „Cluster performance reconsidered: Structure, linkages and paths in the German biotechnology industry, 1996-2003“, in: *Schmalenbach Business Review*, Vol. 59, p. 261-281.
- Hennessy, Dean, A. (2005), „External entry and the evolution of clusters in the biotechnology industry in Canada“, *Academy of Management Best Conference Paper 2005 IM: S1*.
- Hervas-Oliver, Jose Luis; Albors-Garrigos, Jose (2007), „Do clusters capabilities matter? An empirical application of the resource-based view in clusters“, in: *Entrepreneurship and Regional Development*, Vol. 19, p. 113-136.
- Hite, Julie, M.; Hesterly, William, P. (2001), „The evolution of firm networks: From emergence to early growth of the firm“, in: *Strategic Management Journal*, Vol. 22, P. 275-286.

- Jost, Peter-J. (2001), „Die Prinzipal-Agenten-Theorie im Unternehmenskontext“, in: Jost, Peter-J. (ed.), „Die Prinzipal-Agenten-Theorie in der Betriebswirtschaftslehre“, Stuttgart, Schäffer-Poeschel Verlag, p. 11-43.
- Jungwirth, Carola (2006), „Wissensabhängige Strategiewahl in der Venture-Capital-Industrie“, Wiesbaden, Deutscher Universitäts-Verlag.
- Martin, Ron; Sunley, Peter (2003), „Deconstructing clusters: chaotic concept or political panacea?“, in: *Journal of Economic Geography*, Vol. 3, p. 5-35.
- Maskell, Peter (2001), „Towards a knowledge-based theory of the geographical cluster“, in: *Industrial and Corporate Change*, Vol. 10, p. 921-943.
- Macdonald, Frank; Huang, Qihai; Tsagdis, Dimitrios; Tüselmann, Heinz Josef (2007), „Is there evidence to support Porter-type cluster policies?“, in: *Regional Studies*, Vol. 41, p. 39-49.
- Newbert, Scott, L. (2007), „Empirical research on the resource-based view of the firm: An assessment and suggestions for further research“, in: *Strategic Management Journal*, Vol. 28, p. 121-146.
- Pe'er, Aviad; Keil, Thomas (2008), „What doesn't kill you makes you stronger – De novo entry in clusters“, in: *Academy of Management Proceedings*, 2008, p. 1-6.
- Pe'er, Aviad; Vertinsky Ilan; King, Andrew (2008), „Who enters, where and why? The influence of capabilities and initial resource endowments on the location choices of de novo enterprises“, in: *Strategic Organization*, Vol. 6, p. 119-149.
- Picot, Arnold; Dietl, Helmut; Franck, Egon (2008), „Organisation: eine ökonomische Perspektive“, Stuttgart, Schäffer-Poeschel Verlag.
- Porter, Michael, E. (1998), „Clusters and the new economics of competition“, in: *Harvard Business Review*, Vol. 76, p. 77-90.
- Porter, Michael, E. (2000), „Location, competition and economic development: Local clusters in a global economy“, in: *Economic Development Quarterly*, Vol. 14, p. 15-34.
- Porter, Michael, E. (2008), „The five competitive forces that shape strategy“, in: *Harvard Business Review*, Vol. 86, p. 78-93.
- Prahalad, Coimbatore, K.; Hamel, Gary (1991), „Nur Kernkompetenzen sichern das Überleben“, in: *Harvard Manager*, Vol. 2, p. 66-78.
- Rosenfeld, Stuart A. (2003), „Expanding opportunities: Cluster strategies that reach more people and more places“, in: *European Planning Studies*, Vol. 11, p. 359-377.
- Salop, Joanne; Salop, Steven (1976), „Self-Selection and Turnover in the Labor Market“, in: *The Quarterly Journal of Economics*, Vol. 91, p. 619-627.
- Sapelli, Claudio; Vial, Bernardita (2003), „Self-selection and moral hazard in Chilean health insurance“, in: *Journal of Health Economics*, Vol. 22, p. 459-476.
- Shaver, Myles, J.; Flyer, Fredrick (2000), „Agglomeration economies, firm heterogeneity, and foreign direct investment in the United States“, in: *Strategic Management Journal*, Vol. 21, p. 1175-1193.
- Tallman, Stephen; Jenkins, Mark; Henry, Nick; Pinch, Steven (2004), „Knowledge, clusters and competitive advantage“, in: *Academy of Management Review*, Vol. 29, p. 258-271.
- Weber (2008) *Börsenzeitung*, „Mehr Prozente“ Kommentar von Bernd Weber zur Entscheidung der Daimler AG, ein PKW-Werk in Ungarn zu bauen, [www.presseportal.de/meldungen/1213351/](http://www.presseportal.de/meldungen/1213351/), 01.03.2009.
- Winkler, Herwig, Schemitsch, Hubert, B.; Kaluza, Bernd (2008), „Principal-Agent-Probleme in projektorientierten Wertschöpfungsnetzwerken – Problemidentifikation und Lösungsansätze“, in: Becker, Jörg (ed.) „Wertschöpfungsnetzwerke - Konzepte für das Netzwerkmanagement und Potenziale aktueller Informationstechnologien“, Heidelberg: Physica-Verlag.
- Wohlgemut, Oliver (2002), „Management netzwerkartiger Kooperationen – Instrumente für die unternehmensübergreifende Steuerung“, Wiesbaden, Deutscher Universitäts-Verlag.
- Wolff, Brigitta (2005), „Internationales Management aus der Perspektive der Neuen Institutionenökonomik“, in: Schauenberg, Bernd, Schreyögg, Georg, Sydow, Jörg (ed.), „Institutionenökonomik als Managementlehre?“, Wiesbaden: Gabler.