



Institute for Strategy and Business Economics
University of Zurich

Working Paper Series
ISSN 1660-1157

Working Paper No. 23

Closing the gap or enlarging the pool:

How venture capitalists differ in their syndication motives

Carola Jungwirth and Petra Moog

Februar 2004

Closing the gap or enlarging the pool:

How venture capitalists differ in their
syndication motives

Carola Jungwirth and Petra Moog

University of Zurich

ABSTRACT

The question why venture capitalists syndicate their deals has been attracting growing attention. The paper analyses how the motives of two types of venture capitalists do differ. Focusing on information costs it expects that venture capitalists with the standard basic know-how in founding and financing new enterprises syndicate to get access to specific knowledge while venture capitalists with specific knowledge concerning a certain industry or financing stage syndicate to get access to deal flow. Hypotheses are tested via a dataset of 103 venture capitalists in Austria, Germany, and Switzerland.

CORRESPONDING AUTHOR

Carola Jungwirth, Chair of Strategic Management and Business Policy,
Plattenstrasse 14, 8032 Zurich, Switzerland.
E-mail: carola.jungwirth@isu.unizh.ch

1. Introduction

The question why venture capitalists syndicate their deals has been attracting growing attention. The venture capital industry can be seen as a lottery where just one investment out of ten is an outstanding success (Zider 1998, 136, Sahlman 1990, 484). Why should venture capitalists be willing to share these gains if they are able to diversify the risk within their own portfolio (Ruhnka/Young 1991)? They not only lose a share of their gain but also have to incur coordination costs for syndication (Brander/Amit/ Antweiler 2002, 425).

Nevertheless, some papers discuss risk diversification as a relevant motive for syndication (Chiplin/Robbie/Wright 1997, Lockett/Wright 2001): Considering the trade-off between portfolio size and time to control (Kanniainen/Keuschnigg 2003, Jääskeläinen/Maula/Seppä 2002) it becomes clear that venture capitalists are limited in diversifying their risk. Syndication allows spreading capital across a greater number of investments without abandoning control, given that the lead investor of each syndicate performs the control function. Along with this risk diversification argument Lerner (1994) proposed that venture capitalists have strong incentives to syndicate because of the urge not to under-perform their peers. Less successful venture capitalists buy small and expensive shares of outstanding enterprises and present these “high flyers” when limited partners assess portfolios at the end of the investment period. Successful venture capitalists are willing to syndicate because they expect to get the same courtesy the other way around (Sorenson/Stuart 2001, 1560, FN 8).

Another important motive for syndication is to mitigate the adverse selection risk by dual or multi control (Lerner 1994, Lockett/Wright 2001). Know-how and information of other venture capitalists supplements their own information and reduces the risk of picking out a “lemon”. However, Brander, Amit and Antweiler (2002) argue that not risk mitigating is the most important motive for syndication but the value added to the investments that get endowed with complementary know-how of one or more other venture capitalists. Only in the case of doubtful investments would venture capitalists ask for a second opinion. Expecting substantial profits there would be no reason to share the potential gain. Therefore, if avoiding adverse selection is the relevant motive, syndicated investments should perform worse than stand-alone investments. Lehmann and Boschker (2003) tested this assumption for the German venture capital market but could not provide evidence that the performance of stand-alone investments differs from that of syndicated investments.

Another relevant motive is access to deal flow (Chiplin/Robbie/Wright 1997, Lockett/Wright 2001, Sorenson/Stuart 2001, 1580). Syndication raises the number of deals available for each venture capitalist and allows picking out investments that meet their requirements at best.

All of the motives presented above seem to be plausible. Therefore, it is not astonishing that previous research has not been successful in singling out the "main" syndication motive. However, some authors called attention to the heterogeneity of venture capitalists and its affect on their syndication behavior. Lockett and Wright (2001) refer to investment stages influencing the attitudes towards syndication and show that syndication is more important for venture capitalists investing in early stages than for late stage investors. Lerner (1994) differentiates between well-established and non-established venture capitalists and shows that well-established venture capitalist can gain profits from their lead position while non-established venture capitalists have to accept lower profits but also have to bear lower risk by being followers¹. Manigart et al. (2002a) support Lerner's result showing that non-lead investors are more interested in knowledge and information than lead investors who are driven by finance considerations. Bygrave (1987, 1988) claims that venture capitalists specialized in low-tech investments are less active in networking and syndicating than venture capitalists specialized in high tech investments. The reason is that low-tech investments are much easier to assess. Therefore, the importance of getting information weighs less than the coordination costs for syndication.

A bit different is the study of Fiet (1995) who compares the information-seeking behavior of business angels and venture capitalists. He assumes that business angels are less experienced and more concerned about agency risks than venture capitalists, who are more concerned about market risks. Expectations concerning their information seeking behavior are drawn from this difference. In order to get market information, venture capitalists rely basically upon information of other venture capitalists. Business angels, however, basically rely upon information of friends and long experienced companions.

This paper is closely related to the second strand of analysis. While Fiet (1995) talks cautiously about differences in experience we explicitly discuss differences in knowledge. However, differences in knowledge not only exist between venture capitalists and business angels but also within the group of venture capitalists. In previous research Jungwirth and Moog (2003) showed that venture capitalists owning industry specific knowledge (so called specialists) embark on different selection and support strategies than venture capitalists who do not have any industry specific knowledge (so called generalists). Therefore, we expect that generalists and specialists also differ in their syndication motives. We claim that specialists syndicate for getting access to deal flow while generalists need complementary information and know-how - at least if they expand their investment activities in fields where special knowledge is indispensable. Evidence from 103 venture capital firms (a 47,46% response rate)

¹ For a further explanation see also Sorenson/Stuart 2001, 1577.

supplemented by 9 expert interviews is analyzed. Overall it seems to be a seminal approach to build different types of venture capitalists and to work out the most relevant syndication motive for each type.

In what follows, the framework is presented. Jensen and Meckling (1995) pointed out that managerial activity causes knowledge transfer- and agency costs. We add that it also causes opportunity costs. These costs are depending on the individual's endowment with knowledge. However, we assume that syndication motives are determined by the way how syndication can help to lower costs and, therefore, to raise the opportunity set of an individual. Based on this framework we derive our hypotheses. In the next section data and methodology are introduced. Finally, results are discussed. Overall, our results invite further research on differences in venture capitalists' behavior as explained by differences in knowledge.

2. The Syndication Motives of Specialists and Generalists

2.1 The Framework

The discussion above gives the important hint that the strategic position (lead or non-lead, established or not) as well as the investment behavior (early stage or late stage, high-tech or low-tech portfolio enterprises) influences the syndication motives of venture capitalists. The authors assume that both strategic position as well as investment behavior are strongly linked to the venture capitalists' knowledge. Therefore, knowledge is taken as the starting point to analyze syndication behavior. Though knowledge can differ in many ways only its degree of specialization is focused on. If venture capitalists enjoyed an education and collected practical experience concerning a certain industry and thus own specific knowledge, we call them "specialists".² If they own only the standard venture capitalists' basic know-how in founding and financing new enterprises we call them "generalists". Defined this way, general knowledge is simply common knowledge in the market where new enterprises are financed.³

2 Whether or not education is specific knowledge is discussed differently by v. Hayek (1945, 521) and Jensen and Meckling (1995, 7). V. Hayek argues that scientific knowledge can be bought from the market, while Jensen and Meckling claim that purchased knowledge such as advice or a book does not enable per se to decide oneself. In order for that to happen, knowledge has to be internalized and cannot be bought. Therefore, it is specific.

3 Jensen and Meckling (1995, 7) only refer to prices and quantities as examples of general knowledge. This classification seems too narrow. Most types of knowledge would be specific. However, we think that within a group (in our case the group of venture capitalists) a certain basic knowledge exists that is shared by all group members.

The authors assume that knowledge and strategy are linked by (1) agency costs, (2) knowledge transfer costs, and (3) opportunity costs. Agency costs arise if a principal⁴ delegates a decision to an agent⁵: different interests along with asymmetric information make it probable that the agent will pursue self interests on behalf of the principal. Therefore, the principal has to monitor the agent and to bear the damages caused by the agent's lapse. Agency costs are assumed to be high if the agent possesses the relevant specific knowledge to decide on a certain issue but the principal does not. From the venture capitalist's point of view, one has invested capital in the portfolio enterprise but cannot be sure that the enterprise's management works as hard as possible to maximize returns on the investment. On the other hand, the principal who decides to fulfill the task him- or herself must consider knowledge transfer costs.⁶ These costs arise because the principal has to acquire information about time and place (idiosyncratic knowledge), specific skills, know-how, and experience, in order to be able to decide correctly. These knowledge transfer costs are defined explicitly as the costs of acquiring the knowledge to perform a task oneself. They are low if the principal possesses the relevant specific knowledge or if "only" general knowledge is needed to decide. Opportunity costs, at last, represent the value of the foregone benefits from the next best alternative. They are high if the venture capitalist spends time and money for a relatively unprofitable project if he could attend a more profitable one (Gifford 1997).

Venture capitalists can influence these costs by choosing portfolio enterprises that fit a certain type of knowledge. Bygrave's (1987, 88) research showed that low-tech enterprises are much easier to assess than high-tech enterprises, but they also deliver lower returns on investment (Manigart et al. 2002b). That way Jungwirth and Moog (2003) could provide evidence that generalists attend to a significantly larger share of low-techs than high-techs in their portfolios. Starting from this rationale it follows that generalists and specialists have to embark on different selection strategies caused by their different agency-, knowledge transfer-, and opportunity costs. A specialist for biotechnology for example who considers selecting and supporting an innovative fast food home delivery service does not have to expect high knowledge transfer costs because she can understand the business idea easily. She also does not need to take into account high agency costs because the enterprise discretion-

4 Here: the venture capitalist.

5 Here: the portfolio enterprise.

6 „Knowledge transfer costs include out of pocket costs of transmitting the knowledge to the person with the decision rights, losses that arise from delays in this transmission process, and the loss that occurs because the decision maker does not understand the knowledge well enough to act on it in a timely manner.” Christie et al. 2003, 5.

ary is small. But she has high opportunity costs because she does not exploit the investments in specific knowledge. A generalist on the other hand could be willing to extract higher profits from attending a biotech enterprise but has to incur prohibitive agency and knowledge transfer costs.

2.2 Syndication Motives

Obviously every type of endowment with knowledge has its own limitations: Generalists are not able to assess investment projects that exceed a certain level of complexity, whereas specialists have a limited access to deal flow. Referring to the opening question why venture capitalists should be willing to share their gains, one general motive could exist indeed: syndication can be interpreted as division of labor between generalists and specialists both needing access to the other's resources, namely access to specific knowledge and access to deal flow.

It seems clear why specialists can offer specific knowledge but it is less obvious why generalists can offer access to deal flow. Previous research permits the conclusion that generalists have different strategic options concerning their portfolio running (Jungwirth/Moog 2003). First, they can invest at an early stage at a low-tech level and attend enterprises actively because selection and monitoring does not require specific knowledge so that agency- and knowledge transfer costs remain acceptable. Here, syndication is possible but not necessary. Second, they can enter high-tech projects in a later round just providing money but let specialists have the selection and monitoring function. Here generalists are well accepted as money providers but only play a passive role within the syndicate⁷. However, both strategies allow to diversify broadly and to get access to the different subgroups within the venture capital market. Therefore, we assume that generalists have superior access to deal flow.

Competition within the market for financing low techs and higher returns on investment within the high-tech segment provide good reasons for generalists to shift activities toward early stage investments in high-tech projects. However, this requires an active role as investor because selection and monitoring is much more acute at an early stage high-tech project (Manigart et al. 2002a, Lockett et al. 2002 and Murray/Marriott 1998). Generalists who wish to exceed their investment activities but do not wish to bear prohibitive knowledge transfer- and agency costs therefore need partners who close their knowledge gap. One could argue that cooperating with a specialist for that reason

⁷ See Gorman and Sahlman 1989, 235: The lead investor will invest 10 times more hours than the non lead investors. This finding underlines the active role of the lead investor who bears the supporting and monitoring function as well as the more passive role of non-lead investors who primarily provide capital.

just shifts the moral hazard problem from one party, namely the portfolio enterprise, to another, namely the specialist. But in this case the moral hazard problem is relatively weak because generalists and specialists have the same interest: to increase their profits by leading an investment project to success. Therefore, from the generalist's perspective trading access to deal flow for access to knowledge seems to be a good deal. It is important to say that access to knowledge does not mean a knowledge transfer even if syndication in the long run increases experience and knowledge, or at least absorptive capacity (Cohen/Levinthal 1990).

Specialists on the other hand are very limited in selecting projects available on the market because the project must fit their knowledge exactly in order to generate competitive advantages. Therefore, a share from the potential gain out of specialization is destroyed by the screening costs. Syndication could be interesting, if it extends his or her access to deal flow. In this case the specialist's calculus is assumed as follows: Finding the portfolio enterprise that matches his requirement exactly has the maximum expected value but incurs high screening costs. Therefore, departing from this ideal project lowers expected returns on investment but also reduces screening costs. Accepting a project that needs his specific skills but does not meet his requirements exactly could be profitable. For example, a specialist for research and development of a certain type of drugs, e.g. cancer drugs, gets an offer to syndicate a certain software project: software is installed in hospitals to collect the results of different cancer therapies and to transfer it to an international database. He estimates this project not to become a "high-flyer" but expects serious results. Joining the project he trades gains from specific knowledge for screening costs.

If the motives worked out above are correct, corresponding differences in syndication behavior between generalists and specialists should be observable. Therefore, within the syndication network generalists are expected to take actions that close their knowledge gap. As pointed out before, closing the knowledge gap does not include a (complete) knowledge transfer. Generalists rather search for partners who deliver credible information about deals. In consequence their syndication behavior will be about activating personal contacts and collecting information from different sources, and they use the network very broadly. Specialists are expected to take actions that enlarge the pool from where they can fish well fitting deal flows. They will be more focused on searching-for-deal-activities and will use the network less broadly than generalists.

To sum up, the following hypotheses are derived:

1. *Specialists' motive for syndication is access to deal flow.*
2. *Generalists' motive for syndication is access to knowledge that allows assessing a deal.*

3 Methodology.

3.1 The data

To test these hypotheses, we generated a dataset based on addresses from the German Venture Capital Association (BVK), the Austrian Private Equity and Venture Capital Organization (AVCO), and the Swiss Private Equity and Corporate Finance Association (SECA). All three organizations have full and associated members.⁸ Focusing the survey on the data of the full members we have a basic number of venture capitalists in Austria, Germany, and Switzerland comprised of 276 companies. Calling the companies first we found that 59 of them had ceased to exist or were not willing to answer. Finally, we sent out 217 questionnaires and developed a database of 103 venture capitalist companies, which had well answered our questionnaire. The return rate adds up to 47.5 %.⁹

Table 1: Dataset and Returns

	Sent Outs	Returns	Return Rate
Germany	167	79	47.30 %
Austria	20	13	65.00 %
Switzerland	30	11	36.70 %
Total	217	103	47.47 %

Own data, 2003

Additionally, we conducted nine expert interviews for the limited purpose of getting information about syndication strategies and syndication motives. Selecting interview partners we used questionnaire information to pick out generalists as well as specialists.

To test our hypotheses we collected information on:

-
- 8 The BVK counts 201 full and 61 associated members, the AVCO 22 regular and 23 associated members, and the SECA 53 full members and 36 associates.
 - 9 The returns are representative of the population of venture capitalists in Austria, Germany, and Switzerland, as shown by a comparison of our data with the data of BVK (<http://www.bvk-ev.de/index.php/aid/50>, 9.4.2003). We compared average data concerning the portfolio volume and the number of portfolio investments, the industry or investment stage orientation, and the geographical activities.

(1) *the knowledge* to which the venture capital firm has access: The survey comprised information about education (the kinds of study subject, the kinds of university degrees they had obtained) and experiences of the employees and partners of the venture capital companies (industries in which they had obtained working experience).

(2) *the generation of deal flow*: We asked for information on how the venture capitalist becomes aware of potential deals such as unsolicited applications, business plan contests, recommendations of third parties etc.

(3) *the assessment of deals*: We asked how the venture capitalists assesses the quality of potential deals (e.g. personal impression, recommendation, CV and certificates of the founder, track record etc).

(4) *the syndication behavior*: We asked if venture capitalists cooperate at all, if they syndicate in particular, with whom they cooperate/syndicate, what the main activity is (exchanging information, gaining co-investors or lead-investors, organizing meetings) and how information within the syndication network is assessed (Is valid information available and is the available information credible?).

(5) *the firm structure and its investment focus*: We asked for data that reflects the size of the company (measured in numbers of employees, number of portfolio companies, and the volume of the portfolio), the spatial focus of the company (acting regional, nationwide, or international), and the governance structure (being an independent business or not). Concerning the investment focus of the venture capitalist, we asked to what degree the venture capitalist is specialized in an industry.

The interviews followed the structure of the questionnaire. However, two aspects were discussed in addition: the situation within the Swiss venture capital market and the meaning of implicit rules within the network. The interviews were conducted within the scope of a diploma thesis between July 8 and October 10 in 2003.¹⁰ The length of interviews was between 31 and 51 minutes. Interview language was Swiss dialect but interviews were transliterated in German.

3.2. Operationalization

To generate support for our hypothesis the variables entering our analysis have to be specified. Concerning the internal knowledge structure of the venture capitalists, they were labeled to be more like a specialist or like a generalist. Therefore, education and experience within the company was valued by counting the skills of partners and employees. We measured the kind of knowl-

¹⁰ We are grateful to Jeanine Hotz for her dedicated support.

edge in percentages. For instance, having two MBAs and four biotechnologists within the team of a venture capitalist resulted in a 2.0 ratio that defines him as a specialist. On the other hand, having two MBAs and one lawyer but no natural or technical scientist within the team yielded a 0.3 ratio that defines him as generalist.¹¹ The higher the ratio turns out the higher is the share of specific knowledge in a venture capital company. Categorizing generalists and specialists we draw a line at a 56/44 specific to general knowledge ratio. 41.8 % of the venture capitalists in our sample are above the line and therefore can be defined as specialists, while 58.2 % are below the line and therefore can be defined as generalists. This differentiation is taken to explain differences in venture capitalists' motives to syndicate.¹²

Concerning the syndication behavior we found that nearly all venture capitalists do cooperate, respectively syndicate, in their daily business (87.1 %). Differentiating between generalists and specialists we cannot find differences in their general syndication intensity.¹³ This is an important hint to confirm that our question "which type of venture capitalist syndicates for what reasons?" leads into the right direction. Analyzing syndication behavior more in depth we can show in a first step that generalists and specialists significantly differ in their syndication behavior. From that we draw conclusions about their syndication motives.

Regarding our first hypothesis that claims the specialists' syndication motive in generating deal flow we find evidence for the following points (see table 2). Venture capitalists with a high level of specific knowledge have significantly higher screening costs - measured as the time spent in selecting new investments - than venture capitalists with more general knowledge. On average, specialists spend significantly more than double of their working time than generalists on selecting new investments (Jungwirth and Moog 2003). Supporting this result other t-tests indicate that specialists take more independent actions than generalists to generate new deals. Asking the venture capitalists how they generate new deals - assessing unsolicited applications or unknown

11 The questionnaire asks in another question particularly if venture capitalists label themselves as generalists or specialists. However, this label is not based on their knowledge but on the number of industries their projects are spread out. Nevertheless, a strong correlation is found between owning special knowledge and focusing on one or two industries and not owning special knowledge and spreading projects over several industries. Therefore, our definition of generalists and specialists is quite congruent with that of e.g. Norton/Tenenbaum 1993.

12 This is the main independent variable that will be used also in the regression models.

13 For all of the following results we carried out means tests comparing the syndication behaviour of generalists and specialists. Only results with a significant difference in the venture capitalists' behaviour are discussed, that is, results with a significant t-ratio ($> 1,645$) and p-value (≤ 0.1 respectively ≤ 0.05).

business plans, contacting successful founders of start-ups, organizing or being a juror at business plan competitions, following a recommendation of a third party, supporting and/or contacting universities and start-up events as well as exploiting personal contacts to a founder - a first correlation analysis revealed that specialists are significantly more involved in university contacts and business plan competition activities. These activities are defined as independent and direct screening activities. For example: Reviewing unsolicited applications of newly founded companies is significantly more (three times more) used by specialists than by generalists. Another t-statistic shows that business plan competitions are more often organized by specialists (two times more) than by generalists. And deals coming out of universities or from inventions in research labs are three times more often generated by specialists than by generalists.

To get more specific information on the behavior of venture capitalists concerning how they generate their deals, we performed an explanatory factor analysis. Examining factor structures of the seven items concerning deal generation three factors resulted. Items loading highly on factor 1 consisted of issues such as generating deals by personal contact to founders or by personal contacts in general. So the factor lying behind these activities could be personal contact. Items loading highly in factor 2 were generating deals through university contact as well as organizing and working for business plan competitions. These items depict a synergy dimension where the focus is on active external deal generating. The last factor points out checking deals by checking out unsolicited applications and recommendations, and thus we call this factor checking out.¹⁴ Here we focus on the factor variable active deal generation. The t-test concerning active deal generating and the ratio of knowledge in a venture capital company turns out highly significant: Specialist are much more active to generate deals directly and independently than generalists. We got the same significant result when we correlated the factor variable 'active deal generating' and 'ratio of knowledge': The more specific knowledge a venture capitalist has the more he or she generates deals actively.

Overall, we can show that specialists are much more concerned with independent and direct screening activities than generalists, and that information exchange activities seem to be less important. However, we cannot deliver additional evidence for our hypothesis 1 which holds that specialists syndicate to get access to deal flow. Showing that specialist have higher screening costs and take more actions to generate direct deals we can only present evidence for the negative pattern of the hypothesis. Specialists feel a bottleneck in having ac-

¹⁴ The Kayser-Meyer-Olkin measure of sampling adequacy for the factor structure was appropriate. We used item factor scores for each factor as independent variables in our statistical models to ensure accurate representation and to prevent factor intercorrelation.

Closing the gap or enlarging the pool

cess to deal flow and, therefore, become active to get access to deal flow. To solidify this idea we will carry out a regression later on.

Table 2: T-Tests

	Specialized	General HC	<i>t</i> -ratio
Unsolicited application	11.008	4.2383	8.002
n	69	28	(0.028)
Business plan	12.878	7.083	3.875
n	64	33	(0.052)
University activities	16.015	7.083	8.121
n	70	27	(0.005)
Generating deals	7.519	22.131	7.154
n	10	76	(0.009)

Own data, 2004

Concerning the second hypothesis which claims that generalists cooperate to get access to knowledge we present some descriptive results. Overall, generating and assessing new deals generalists obviously count a lot on external recommendations and personal contacts. Furthermore, we present some insights on how generalists cooperate and syndicate, and how they differ from specialists concerning their syndication behavior.

The results of t-tests deliver a first support for the second hypothesis: Generalists generate significantly many more new deals by personal contact to founders than specialists (see table 3). To evaluate a new deal generalists also use significantly more personal contacts to banks, consultants, lawyers and association member than specialists. And generalists focus more on recommendations and personal contacts.

Carrying out first means tests, the results also show that generalists cooperate more often with consultants (financing, taxes) and other non-venture capitalists. In sum, we find evidence that cooperation and syndication activities of generalists are concerned with generating all kinds of information: Generalists cooperate more often than specialists to get information (concerning financing possibilities, checking new deals and generating investor-partners for new deals). This result holds, when the cooperation/syndication behavior is measured as independent variable of item factor scores for each factor.¹⁵ Correlating

¹⁵ Based on Aminger (1979) suggestions for using explanatory factor analysis when examining factor structures of survey questionnaire measures, we perform a factor analysis on the cooperation strategies of venture capitalists to reduce the dimension of the 17 items. Five factors result. Items loading highly on factor 1 consist of issues such as information on financing possibilities, new financing partners and deals. These items depict a synergy dimension with a focus on information. Items loading highly in factor 2 refer to general syndication as well as looking for lead- and/or co-investors, so we believe this factor indicates co-financing activities. We singled out three more factors, cooperation in generating deals, in organizing events, and in

the factor variable ‘information’ with the variable ‘ratio of specific and general human capital’ we found a significant relationship: the more a venture capitalist tend to be a generalist the more he or she syndicates in view of generating information.

Additionally, correlating the ratio of a venture capitalists’ knowledge and his or her valuation of the information available within the network¹⁶ we can show that generalists value the information significantly higher than specialists.

Table 3: T-Tests

	Specialized	General HC	<i>t</i> -ratio
Deals founder contact	1.361	12.667	20.409
n	31	66	(0.000)
Deals personal info	6.705	14.115	6.001
n	30	66	(0.016)
Cooperation consultant	4.017	11.642	6.309
n	30	66	(0.014)
Cooperation all other	1.111	12.987	19.116
n	29	57	(0.000)
Coop info finance	7.009	11.001	1.945
n	29	60	(0.167)
Coop info check deals	8.434	18.938	6.835
n	11	57	(0.012)
Coop info invest deals	5.560	10.204	2.805
n	32	44	(0.98)

Own data, 2004

3.3 Methodology

Dependent variables

Two hypotheses test the idea that venture capitalists’ knowledge influences his or her syndication behavior, namely trying to get access to deal flow

miscellaneous activities. Referring to the factor structure the Kayser-Meyer-Olkin measure of sampling adequacy is appropriate. We use item factor scores for each factor as independent variables in our statistical models to ensure accurate representation and to prevent factor interclass correlation. Here we look especially at the factor variable ‘information’.

¹⁶ Information concerning the quality of a project or of a founder.

(enlarging the pool) or trying to get information that helps to assess new deals (closing the gap).

The first hypothesis tests the relationship between the degree of specific knowledge and direct and independent deal generating activities. This hypothesis delivers the negative pattern for hypothesis I. Showing that specialists have a strong imperative for generating deal flow might support the syndication motive ‘access to deal flow’.

$$f(\text{activity}) = \beta_0 + \beta_1(\text{knowledge}) + \beta_2$$

We expect that venture capitalist with a high degree of specific knowledge will take more and more intense actions in generating deal flow than generalists. The reason is that specific knowledge limits the pool out of which deals can be fished. Therefore, we test the impact of the specificity of knowledge on deal generating activities.

To test our hypothesis directly we will examine whether specialists focus on deal generating when they cooperate with a third party.

$$f(\text{deal coop}) = \beta_0 + \beta_1(\text{knowledge}) + \beta_2$$

Our second hypothesis explores the link between the specificity of knowledge and the importance of information gathering within the scope of cooperation/syndication behavior.

$$f(\text{info coop}) = \beta_0 + \beta_1(\text{knowledge}) + \beta_2$$

All three dependent variables result from factor analysis and are representing item factor scores. The values of these variables range from minus four up to plus eight. Thus, all three dependent variables are quasi-metric.

The variable DEALACTIV specifies venture capitalists’ involvement in organizing university contacts and business plan competitions in view of generating new deals. The higher the value of this variable the higher is the activity of the venture capitalist in this field.

The variable COOPDEAL represents the cooperating strategy of venture capitalists concerning deal generation by working together with partners. The higher the value of this variable the higher is the venture capitalist’s cooperation activity in deal generating.

The variable COOPINFO defines the cooperation behavior of venture capitalists concerning information gathering. The higher the value of this variable the higher is the cooperation activity of the venture capital firm in information gathering.

Our data are employed in an ordinary least square analysis (OLS regression) because we expect the method to deliver a robust estimate when testing our hypotheses.¹⁷

Independent variable

We refer to the venture capitalist's knowledge as the key-explaining variable, described already in section 3.2. We created the variable HCSPECGEN, which measures the ratio of specialized and general knowledge found in the venture capital firm.¹⁸ This is our main independent variable. It determines what benefits the venture capitalist can expect from syndicating.

Control variables

We do not know whether other variables than the explaining variable HCSPECGEN influence syndication behavior. Therefore, we have to control for certain issues c.p., because their effects might be not explained by our basic model (Wooldridge 2003). To control for other potential influences resulting from former studies, facts or theoretical ideas several control variables are included. Lockett and Wright (2001) showed that investment stages influence the attitudes towards syndication. They show that syndication is much more important for venture capitalists investing in early stages than for late stage investors. The variable (FINSTAG) differentiates early-stage investors (negative values) and late-stage investors (positive values) and measures the potential influence of investment stage on syndication behavior. Bygrave (1987, 1988) shows that venture capitalists investing in low-tech companies are less active in networking and syndicating than companies investing in high-tech ideas. The reason is that low-tech investments are much easier to assess. Therefore, the importance to get information weighs less than the coordination costs for syndication. We control for this aspect by using the variable HIGHTECH that measures the percentage of investments in high-techs. Further, we use the dummy variable VCSTATUS to insert information about the governance status of venture capitalists into our model. Being dependent (like a corporate venture capitalist) or independent could cause different attitudes toward syndication. In order to control whether the structure of the venture company might have an influence on the dependent variables, we also control for the geographical aspects: In the regression, we added information on whether a venture capitalist invests more regionally (REGION) or nationwide (NATION). In cases of na-

¹⁷ This kind of regression is appropriate because we have quasi-metric dependent variables.

¹⁸ We use the percentage of specific knowledge in a venture capitalist company divided by the percentage of general knowledge to create the proportion of knowledge in the venture capitalist firm.

tion- or regional-wide investment, measured as dummy variables, international investments stand as the reference category for these dummies.¹⁹

Table 4: Definition of variables and descriptive statistics

Variable	n	Min	Max	Mean	Std.-D.	Meaning
DealGenerat	102	-1.363	1.961	0.00	1.0	Activity of deal generating (metric)
CoopDeal	103	-2.570	1.749	0.00	1.0	Cooperating to generate deals (metric)
CoopInfo	103	-2.690	1.633	0.00	1.0	Cooperating to generate info (metric)
HKSpecGen	98	0.01	99.0	8.974	27.002	Relation of specific and general human capital in a Venture Capital firm (metric)
FinStag	103	-1.00	2.00	0.271	0.876	Financing Stage (metric)
VCStatus	102	0.00	1.00	0.519	0.502	VC is dependent or not (bivariate 0/1)
HighTech	93	0.00	100	41.559	34.095	Investment in high-tech (bivariate 0/1)
Region	102	0.00	1.00	0.313	0.466	VC with regional focus (bivariate 0/1)
Nation	102	0.00	1.00	0.333	0.473	VC with national focus (bivariate 0/1)

Own data, 2004

4. Empirical results

Results from testing the first hypothesis are presented in table 5, regression 1 as well as in table 6, regression 2. Results testing the second hypothesis are found in table 7, regression 3. The first column provides the results concerning the Beta-coefficients, the second column the T-values. Overall, our findings show that specialists are much more concerned with deal flow than about information generating activities. Generalists on the other hand use cooperation/syndication much more to gain information.

¹⁹ Lerner (1994) differentiates between well-established and non-established venture capitalists and shows that well-established venture capitalist can gain profits from their lead position while non-established venture capitalists have to accept lower profits but also have to bear lower risk by being followers. Unfortunately, we cannot control for this issue.

First Hypothesis

Tabele 5: Regression 1 – Deal Generating

Variables	β -coef.	t-value
Independen Variable		
HCSPECGEN	0.001	1.611+
Control Variables		
FINSTAG	-0.234	-1.926*
VCSTATUS	0.093	0.471
HIGHTECH	0.008	0.011
REGIONAL	0.536	2.145**
NATIONAL	0.0044	0.041

N = 91; R² (corr.) = 19.1; F = 3.350***

Own data, 2004. ***- significant on a 0% level, **-significant on a 1 % level, *- significant on a 5 % level, + significant on a 10 % level.

Regression 1 reveals first evidence that venture capitalists with a higher amount of specific knowledge generate deals more actively by working together with universities and business plan competitions. If the venture capitalist owns one more unit of specific knowledge he or she will increase his activity by 0.001 units (low significance level). At a highly significant level results reveal that late stage investors generate less deals that way. And a venture capitalist who invests more percentage of his portfolio in high-tech ideas is more involved within these activities. This seems plausible because they get more innovative ideas out of universities and business plan competitions than out of elsewhere. These results strengthen the first hypothesis.

Tabele 6: Regression 2 – Cooperation to generate deals

Variables	β -coef.	t-value
Independent Variable		
HCSPECGEN	-0.002	-1.943*
Control Variables		
FINSTAG	-0.071	-1.793+
VCSTATUS	-0.117	-1.749+
HIGHTECH	0.001	0.678
REGIONAL	-0.141	-1.596
NATIONAL	-0.061	-0.771

$N = 80$; R^2 (corr.) = 16.1; $F = 2.366^{**}$

Own data, 2004. ***- significant on a 0% level, **-significant on a 1 % level, *- significant on a 5 % level, + significant on a 10 % level.

However, we have difficulties to show that a relationship exists between specific knowledge and syndication in view of deal generation. The problem seems to be that the items we asked for within the questionnaire are not clearly enough referring to the syndication motive 'having access to deal flow'. We asked "Do you cooperate to generate deal flow?" but - as we have to admit now - the question is too unspecified so that specialists and generalists do not differ significantly in their answers. However, we see that late stage investing as well as being independent decreases cooperation to generate deals significantly. While the late stage investing result is not surprising, the being independent result is. A late stage investment is characterized by the fact that the business idea has transformed already from an intangible to a tangible asset. Therefore, it is much easier "to fish". Independent venture capitalists on the other hand are expected to be generalists or specialists. Therefore, the effect should be balanced. However, this result can be interpreted in the way that venture capitalists do not like to cooperate but cooperate if they have to. They might prefer working alone because it is more comfortable not to incur costs for syndication and not to share the gains.

Second Hypothesis

Tabele 7: Regression 3 – Cooperation to generate information

Variables	β -coef.	t-value
Independen Variable		
HCSPECGEN	-0.006	-1.617+
Control Variables		
FINSTAG	-0.279	-2.209**
VCSTATUS	-0.137	-0.663
HIGHTECH	-0.008	-2.455**
REGIONAL	0.061	0.233
NATIONAL	0.017	0.069

N = 92; R² (corr.) = 13.5; F = 2.230**

Own data, 2004. ***- significant on a 0% level, **-significant on a 1 % level, *-significant on a 5 % level, + significant on a 10 % level.

Testing our second hypothesis concerning the syndication motives of generalists we can show that specialists are significantly less interested in gathering information than generalists. Generalists on the other hand seem to syndicate in view of gaining information. If a venture capitalist obtains one more unit of specific knowledge in relation to general knowledge, the cooperation concerning information decreases significantly by 0.006 units, all other variables c.p. Again, the financing stage influences the syndication behavior. The more a venture capitalist is involved in a later stage investment, the less he cooperates to get information. And a venture capitalist who invests more in high-tech projects is not so concerned about information gathering as a venture capitalist who invests more in low-tech projects. This fact meets our expectations because a proven relationship exists between investing in high-techs and owning specific knowledge (Jungwirth/Moog 2003). To sum up, support is found for the second hypothesis, since the estimated coefficient on knowledge is negative, as predicted.

The interviews also support our predictions. Some typical comments that the interviewees generated are given below.

1. A venture capitalists specialized in semiconductor and medical technologies states: "Deal flow and money. These are the motives to syndicate." Later he is asked about information generating motive: "There might be many people who are willing to syndicate if we participate in a deal, too. The other way around it is not important. There are only a few others in the market having as much experience

as we have.” Another question is whether he feels that others are free riding on his knowledge: “No, we need them. I would rather say, if the other is no expert, he will let me work quietly. However, silly are those that are no experts but want to lead the investment, too. We don’t like them.”

2. A generalist investing in low-techs without an industry focus answers on the question why and how he syndicates: “If you are unsure you feel the need to hear a second opinion on the project. ... We need specialists to assess projects that are sort of esoteric for an economist and a lawyer. ... If you know two or more venture capitalists, chances improve that another one was involved within the same kind of project before.”

5. Discussion and conclusion

Our study provides evidence that syndication behavior differs with regard to the knowledge of a venture capitalist. Generalists are more concerned with gathering information and specialists are more concerned with generating deals. Interestingly, we can find direct support for the syndication motive of generalists to close their knowledge gap but only indirect support for the specialist’s motive to enlarge the pool. We find that specialists are less interested in information exchange within the network and very interested in generating deals. However, our data do not reveal access to deal flow as a syndication motive. Therefore, more work has to be done to test the probability of different syndication behaviors. We will do this with help of a logit regression. Additionally, another questionnaire could be developed to ask for syndication motives using the results that are generated within the present study.

At last, the question remains how our study fits previous results. Given that studies are different and therefore hard to compare we try to estimate the fit. Analyzing the results of Lockett and Wright (2001), Lerner (1994), and Manigart et al. (2002a) within our “knowledge framework” information exchange seems to be the less important the more specific knowledge a venture capitalist is expected to own. Here, our results are completely in line with other studies. However, the rationale of Bygrave (1987, 1988) is different. He shows that venture capitalists who attend high-techs syndicate more intensively than others. This syndication intensity is caused by the complexity of high-tech projects that require a lot of information. Low-techs on the other side are much easier to assess. Therefore, venture capitalists are not willing to incur the cooperation costs of syndication. This rationale seems to be plausible, too. However, we cannot find it within our data.

Closing the gap or enlarging the pool

We interpret this contradiction cautiously. First, the level of complexity of investment projects might have been increased considerably during the last 15 years. If former high-tech projects had had the level of today's low-tech projects an intensive information exchange might have been helpful to assess the deal. However, this is speculative. Second, contradictions could result from other influence factors that are not tested neither in our study nor in Bygrave's (1987, 1988) study. Again, much work remains to be done. Nevertheless, analyzing venture capitalists' behavior on the basis of their knowledge seems to be a seminal approach that is opening avenues for future research.

References

- Arminger, G. 1979 Faktorenanalyse. Stuttgart: Teubner.
- Brander, J.A., Amit, R. and Antweiler, W. 2002 Venture capital syndication: Improved venture selection vs. the value-added hypothesis. *Journal of Economics & Management Strategy*, 11, 423-452.
- Bygrave, W.D. 1987 Syndicated investments by venture capital firms: A networking perspective. *Journal of Business Venturing*, 2, 139-154.
- Bygrave, W.D. 1988 The structure of the investment networks of venture capital firms. *Journal of Business Venturing*, 3, 137-157.
- Chiplin, B., Robbie, K. and Wright, W. 1997 The syndication of venture capital deals: Buy-outs and buy-ins, *Frontiers of Entrepreneurship Research 1997 Edition*, <http://www.babson.edu/entrep/fer/papers97/chiplin/chip1.htm>.
- Christie, A.A., Joye, M.P., Ross, L.W. 2003 Decentralization of the firm: theory and evidence. *Journal of Corporate Finance*, 9, 3-36.
- Cohen W., and Levinthal, D. 1990 Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 35, 128-152.
- Fiet, J.O. 1995 Reliance upon informants in the venture capital industry. *Journal of Business Venturing*, 10, 195-223.
- Gifford, S. 1997 Limited attention and the role of the venture capitalist. *Journal of Business Venturing*, 12, 459-482.
- Gorman, M. and Sahlman, W.A. 1989 What do venture capitalists do? *Journal of Business Venturing*, 4, 231-248
- Jääskeläinen/Maula/Seppä 2002 the optimal portfolio of start-up-firms in venture capital finance: The moderating effect of syndication and an empirical test, *Frontiers of Entrepreneurship Research 2002 Edition*, http://www.babson.edu/entrep/fer/Babson2002/XIII/XIII_P3/XIII_P3.htm
- Jensen, M.C. and Meckling, W.H. 1995 Specific and general knowledge and organizational structure. *Journal of Applied Corporate Finance*, 8, 4-18.
- Jungwirth, C. and Moog, P. 2003 Support strategies in venture capital financing: Nurturing or Selection. *Chair of Strategic Management and Business Policy, Working Paper Series*, #18.
- Kanniainen, V. and Keuschnigg, Ch. 2003, The optimal portfolio of start-up firms in venture capital finance. *Journal of Corporate Finance*, 9, 521-534.
- Lehmann, E.E. and Boschker, K. 2003 Venture capital syndication in Germany: Evidence from IPO data. *GEABA Discussion Paper 03-02*.
- Lerner, J. 1994 The syndication of venture capital investments. *Financial Management*, 23, 16-27.

- Lockett, A., Murray, G. and Wright, M. 2002 Do UK venture capitalists still have a bias against investment in new technology firms? *Research Policy*, 31, 1009-1030.
- Lockett, A. and Wright, M. 2001 The syndication of venture capital investments. *Omega International Journal of Management Science*, 29, 375-390.
- Manigart, S., Lockett, A., Meuleman, M., Wright, M., Landström, H., Bruining, H., Desbrieres, P. and Hommel, U. 2002a, Why do European Venture Capital Companies syndicate? *Vlerick Leuven Gent Management School Working Paper Series* 2002-20.
- Manigart, S., De Waele, K., Wriqth, M., Robbie, K., Desbriere, P., Sapienza, H.J. and Beekman, A. 2002b Determinants of required return in venture capital investments: a five-country study. *Journal of Business Venturing*, 17, 291-312.
- Murray, G.C. and Marriott, R. 1998 Why has investment performance of technology-specialist, European venture capital funds been so poor? *Research Policy*, 27, 947-976.
- Ruhnka, J.C. and Young, J.E. 1991, Some Hypotheses about Risk in Venture Capital Investing. *Journal of Business Venturing*, 6, 115-133.
- Sahlman, W.A. 1990 The structure and governance of venture-capital organizations. *Journal of Financial Economics*, 27, 473-521.
- Sorenson, O. and Stuart, T.E. 2001 syndication of networks and the spatial distribution of venture capital investments. *American Journal of Sociology*, 6, 1546-1588.
- v. Hayek, F.A. 1945 The use of knowledge in society. *American Economic Review*, 35, 519-530.
- Wooldridge, J.M. 2003 Introductory econometrics. A modern approach. Mason: Thomson/South Western.
- Zider, B. 1998 How venture capital works. *Harvard Business Review*, November-December 1998, 131-139.