Equity Gap on the Venture Capital Market in the Czech Republic

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Venture capital has high possible impacts on growth of national economies. However, venture capital is rarely used in the Czech Republic. Particularly, early-stage venture capital financing is very low in the Czech Republic. Furthermore, business angels' networks do not adequately take the place of lacking early stage venture capital funds. The venture capital market in the Czech Republic concentrates on larger later-stage investments. These are, however, still insufficient in compare to some other EU countries. The causes of the equity gap discussed are as follows: in the Czech Republic, the participation of pension funds and insurance companies as limited partners in PE/VC is significantly restricted by law, entrepreneurs are not willing to share business with external investors and are often lacking of strategic management knowledge.

Keywords: venture capital, asset management, private equity, financial markets, investment banking

Introduction

This paper aims at description of characteristic features of venture capital market in the Czech Republic and identification of potential market failures. The main research question is whether there exists a possible equity gap on the Czech venture capital market with comparison to Central and Eastern Europe (CEE) and European markets. The basic hypothesis is that an equity gap is present in the Czech Republic.

Theoretical background focuses on the definitions of venture capital and equity gap and defines conditions for further research. Results show equity gap calculation, whereas discussion concentrates on conditions on private equity and venture capital market in the Czech Republic, which imply features of a market failure and cause the occurrence of equity gap. Conclusion formulates the level of satisfaction of the research question and the hypothesis.

Theoretical Background

Surprisingly, after decades of investing, there is still insufficient background of theoretical economics in the field of venture capital. Therefore, our *modus operandi* has to adapt to this situation and we have to deal with definitions of basic terms first. Despite there have been many attempts to describe the processes of venture capital, the terminology is still not unified.

The researched literature always considers Venture Capital as an asset class, mainly as a *subset* of Private Equity[19]. But, sometimes is Venture Capital perceived also as a *synonym* to Private Equity. Generally, the literature shows that there exist at least two stages of venture capital – early stage investments in developing businesses and later stage investments in mature companies.

Private equity means generally investing capital in unquoted businesses.[20] Private equity investors, mostly institutional, typically do not acquire businesses to realise take-overs, as strategic investors mostly do, but invest as financial investors and realise yields not in the form of regular dividends, but by exiting the investment in a period of usually 3-6 years.

[19] See for instance EVCA (2007).
[20] See for instance EVCA (2007).

http://www.iises.net ISSN 2336-2197

The term Risk Capital is often used as homonym to Venture Capital, but not always. For instance, Merton and Perold (1993) define risk capital as "the smallest amount that can be invested to insure the value of the firm's net assets against a loss in value relative to the risk-free investment of those net assets" (p. 17). This definition is very different and is related to risk management in financial institutions.

For the purpose of this paper, we will operate with terminology brought up by the European Private Equity and Venture Capital Association (EVCA), as the paper is oriented on Czech venture capital market and its comparison with other European markets and EVCA is the most important association in this field in Europe. Another important player in this field in Europe is the European Commission, which has presented its own definitions in the EC (2006). The Commission definitions for the purpose of state aid rules have to be taken into account particularly when public capital is invested beside private sources or other advantage (such as tax reliefs) is provided to private venture capital investors in the EU.

Besides its other tasks, EVCA is very active in statistics and its papers provide sufficient space for data survey. EVCA and some associated members (including the Czech Venture Capital and Private Equity Association – CVCA) have been collaborating in PEREP_Analytics project[21] to share recorded data on PE/VC throughout Europe. According to EVCA (2012), "the PEREP_Analytics database offers private equity firms the possibility to submit surveys and validate previously populated data captured from public sources at a later stage" (p. 2).

On the other hand, as regards accuracy, only EVCA members' data is included. It means that especially data on investments realised by Business Angels[22] recruiting from the High Net Worth Individuals (HNWIs[23]), is largely missing. Attempts have been made recently to record this data, though.[24]

Due to EVCA, venture capital has two stages – early-stage and later-stage. EVCA (2007) distinguishes venture capital as "a subset of PE, refers to equity investments made for the launch, early development or expansion of a business" (p. 6). However, the growth segment is not included, as EVCA (2012) refers to expansion of "relatively mature or developed companies" (p. 40). But, to make it even more complicated, "additionally, most investments made by buyout funds into venture stages would be defined as growth capital" (p. 40). This example shows how challenging it is to distinguish individual stages of PE/VC in practice.

It is evident that e.g. EUR 100 million transaction to buy an unlisted manufacturing company by its management with participation of a bridge loan would be definitely considered as a leveraged buyout (LBO). On the other hand, an investment of EUR 100 000 targeting an IT company operating for 10 months and not breaking even is definitely a venture capital. But there are many transactions that balance on the edge of definitions and may e.g. fall under both growth capital, which is not considered as venture capital, or under later-stage venture. The same problem is with distinction between early-stage venture (seed and start-up capital) and later-stage venture. In the light of this fact, significant inaccuracy is very likely to occur in statistics presented by EVCA and other associations. Furthermore, e.g. American and European data is incomparable due to above mentioned differences in definitions. Therefore, we have to keep in mind that the statistics provide rather indicative than accurate survey of venture capital market activity. This is very important

[21] PEREP Analytics is a „fully functional centralized non-commercial pan-European private equity database". More information: https://www.perepanalytics.eu/

[22] See EVCA (2007)

[23] HNWI: a classification used by the financial services industry to denote an individual or a family with high net worth. Although there is no precise definition of how rich somebody must be to fit into this category, high net worth is generally quoted in terms of liquid assets over a certain figure, e.g. USD 1 million, which is commonly used. The exact amount differs by financial institution and region. The categorization is relevant because high net worth individuals generally qualify for separately managed investment accounts instead of regular mutual funds. Visit http://www.investopedia.com/terms/h/hnwi.asp for more details.

[24] For instance, the Czech CVCA is active in this field.

finding for the purpose of identification of possible equity gap in the Czech Republic, as this inaccuracy should be at least partly bridged using aggregated data over longer time periods to ensure better results reliability.

At this point, we should focus on the main indicators of venture capital market activity derived from the stages of common venture capital transaction pipeline to select the right ones for the purpose of equity gap calculation. This pipeline is defined e.g. in Wright and Robbie (2003) as firm level of venture capital including deal generation, initial and second screening, valuation and due diligence, deal approval and structuring, post-contractual monitoring, investment realisation and entrepreneurs' exit and recontracting with venture capitalists followed by a review of the evidence on the performance of venture capital firms.

These processes are commonly aggregated into three main market activity indicator groups: fundraising activity, investment activity and divestment activity. For the purpose of equity gap calculation, we will work mainly with amount of investments in monetary terms per period of time.

The presentation of market activity data is usually twofold. The so called *market statistics* is data by country of investee company, whereas *industry statistics* means data by country of the PE/VC firm (investor). As our research focuses on venture capital invested <u>in</u> the Czech Republic, only market statistics should be of our concern.

Under these conditions, equity gap on the venture capital market in the Czech Republic is defined for the purpose of this paper as *a difference between amount of capital that would be invested under conditions of perfect competition and the amount of capital actually invested*. Classic perfect competition is defined as a state when no market participant has enough market power to influence the price of a homogeneous product and all participants have perfect information.

In the case of Czech Republic, which is one of the least performing countries in Europe as regards venture capital, we suppose that the European venture capital market is a perfect competition market in compare to the Czech Republic. However, in fact, European financial markets become increasingly regulated and taxation and other business environment conditions vary from country to country. But, PE/VC firms, who often act globally, are used to adapt to different law and taxation systems and can benefit from free movement of capital in the EU. Therefore, although the European venture capital market as a whole is in fact far from being perfectly competitive, it still has much better performance conditions in compare to the Czech Republic. We would then calculate a *primary equity gap* in terms of *output gap (gross fixed capital gap)* using mainly venture capital market statistics and data on current GDP (as data on investments are in current prices as well) in purchasing power parity.

Results

Recent development of European PE market

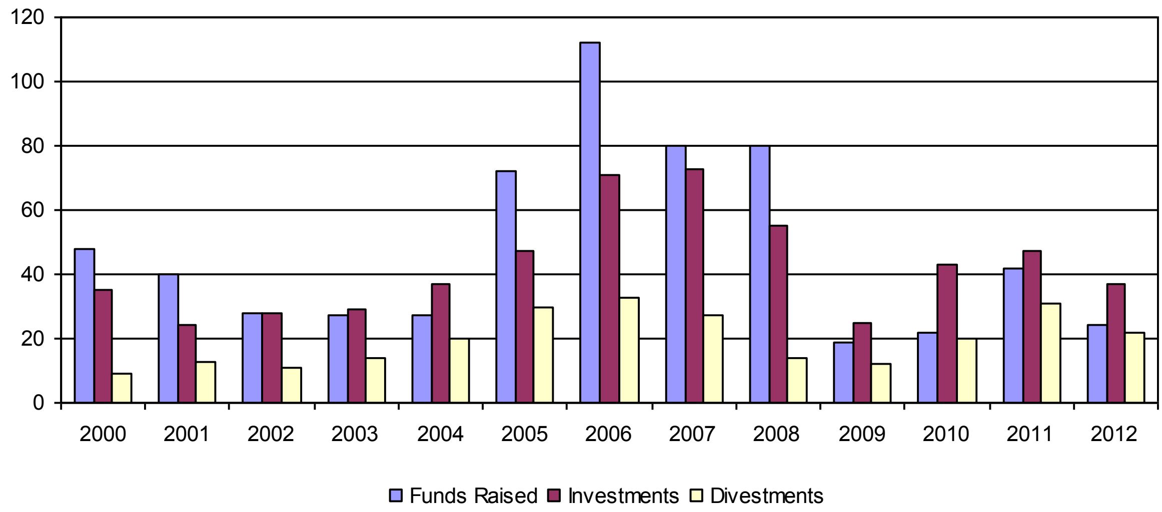
The financial crisis has caused serious harms to the PE market in 2009. The European PE market was pushed 10 years back after a long-term market growth peaked in 2006. The indicators of fundraising, investments and divestments slumped by 2/3 of the 2006-2008 values. The 2010-2012 data show certain further progress but not sufficient. Prognoses say that the PE market is not to fully recover within this decade. By contrast, The McKinsey Global Institute estimates that the PE share on global financial assets is about to lower from 28% in 2010 to 22% in 2020[25]. At the same time, the riskiness in PE funds' portfolios has substantially risen due to uncertain further global development – write-offs formed almost 50% of European divestments in 2009 due to EVCA. However 2010 was then the first year of recovery, write-offs were still 22.3% of total divestments

[25] See The McKinsey Global Institute (2011).

value[26]. More detailed information on yearly amounts of fundraising, investments and divestments is included in Chart 1.

The Central and Eastern Europe region (CEE), including the Czech Republic, has experienced similar development; only the slump in fundraising was even higher – the 2009 result was only 1/10 of the 2007 value. As regards investments, while for the rest of Europe 2009 was the worst year in decade and the market experienced certain recovery in 2010, the investments in the CEE region developed vice versa, with culmination in 2009 and halved in 2010. But, the 2009 extraordinary CEE investments peak was caused by one mega buyout transaction realised in the Czech Republic. However, the company's activities are spread throughout the CEE region, so the real impact of this investment was regional.

Chart 1: Private Equity fund-raising, investments and divestments in Europe by year, € billions, data source: EVCA



The Czech PE market

The PE/VC investments have been made in the Czech Republic since 1990s. An association bringing together private equity and venture capital investors (CVCA) has been in operation since 1997. Other investors who are not members of the CVCA also are active in the Czech Republic. These investors are not always typical venture capital funds, but their investments are similar to classic PE/VC investments in structure.

Specifically, the Czech PE market is characterized by unstable development, which is caused mainly by low total number of transactions – including all PE segments, only about 20 investments are realised in the Czech Republic per year. A vast majority of investments is concentrated on buyout, replacement and growth segments, venture capital represents minority. Under such conditions, the total value of investments is dependent on (non)existence of one or several mega/large buyout transactions in the given year.

On the contrary to venture capital, domestic investors are very active in the field of private equity in the Czech Republic. Czech and Slovak investment groups such as J&T, PENTA or PPF realise investments that can be considered as private equity. Some other domestic financial groups act as strategic investors and concentrate on sectorial consolidation to realise economies of scale and

[26] See EVCA (2010)

portfolio synergies, such as AGROFERT Holding in agriculture and food industry or EPH in the energy sector.

Thus, total PE investment value in the Czech Republic ranged from € 106 million to € 1,358 million in 2007-2012 due to EVCA figures, or 0.069% to 0.955% ratio to GDP. Such figures comprise fluctuation between being European champions and outsiders. Nevertheless, the 0.955% ratio of PE investments value to GDP in 2009 was rather exceptional and probably unrepeatable deviation from long-term trend.

The 2009 figures were influenced by one mega and one large buyout transactions of CVC Capital Partners, which represented more than 50 % of total 2009 investment values.[27]

For the purpose of international comparison of PE markets development, it is important to use such indicators that respect the different stage of development of the respective economies. Some differences between the PE market of Europe and CEE region or the Czech Republic may be supported by distinct level of overall economic activity and output. One of such reliable indicators, which are able to clear the economic performance influence from the data, is PE investments to GDP ratio[28]. In 2007-2012, the total value of private equity investments in the Czech Republic represented 0.280% GDP on average, whereas European average stood for 0.349%, as follows from the Chart 2. The 2009 deviation from long-term in the Czech Republic is caused by absolute values distorted by two outstanding buyout transactions. This upward leap is probably non-repeatable under the new conditions in the PE/VC market.[29]

The rise in the number of investments in recent years was also caused by the gradually expanding awareness of PE/VC investing in the Czech Republic among entrepreneurs and managers as well. Greater interest in investing was also recorded among funds investing in the CEE region as a result of the economies' maturing and their overall successful development. Nevertheless, the crisis has pulled the market indicators back to 2006-2007 values in 2010[30]. The activity on the market has slumped, even divestments have reached their top already in 2011.

[27] The mega buy-out mentioned in this sentence was a CVC Capital Partners investment targeting a multinational brewery StarBev (including Pivovary Staropramen). In 2012, CVC Capital Partners have sold their share for USD 3,54 bln. to Molson Coors.

[28] If due expressed in PPP and current prices.

[29] See Di Carlo, A., Kelly, R. (2010)

[30] See CVCA (2010)

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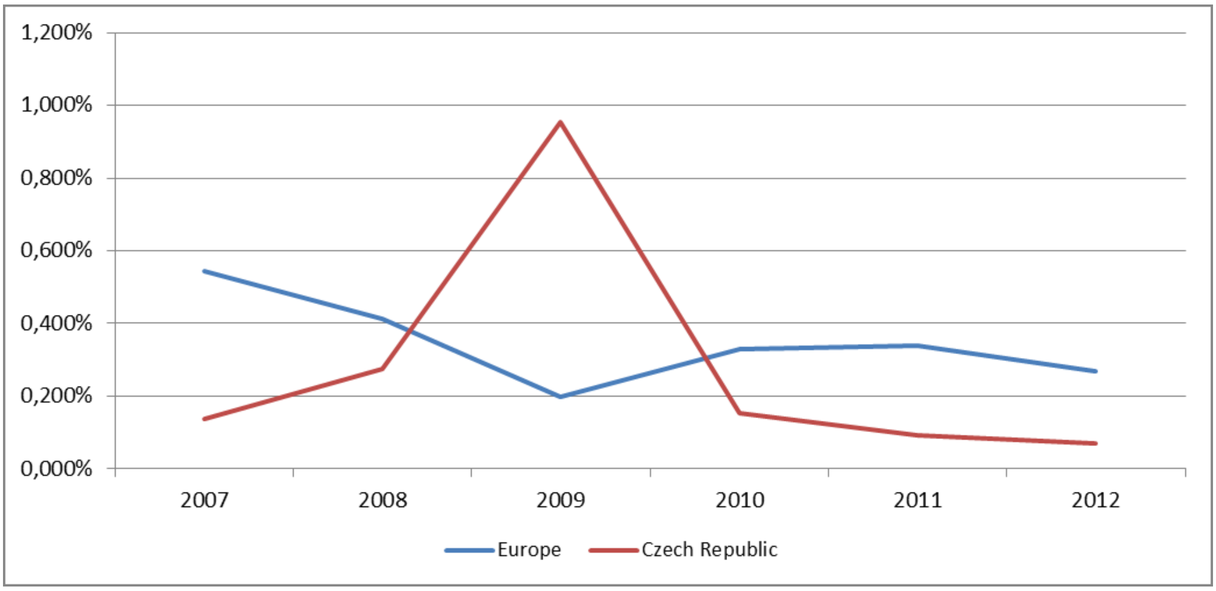
Chart 2: PE investments (EUR) as GDP (current prices, EUR) percentage in Europe[31] and Czech Republic by year, data source: EVCA, EUROSTAT



Czech position within the CEE region is very strong as 15.3% of total CEE PE investments value was realised in the Czech Republic in 2007-2012, but the position of the country has been declining since 2010. In 2005-2010, the share of the Czech Republic on total PE investments was over 30%.[32]

The latest data from 2011-2012 show certain changes that has been restructuring the regional view after crisis. As regards fundraising, government agencies become the most active fundraiser with 29% share in 2012. Domestic private investors still have only a little 4% share on fundraising. Venture capital is on its rise in CEE, as record 123 companies obtained total investments of € 103 million, 74 % of which in early stage, in 2012. This goes hand in hand with realisation of public sector incentives, namely through JEREMIE holding funds for instance in Poland, Hungary, Slovakia or Bulgaria. Most of these should be viable as their aim is not to compete with private investors but help the investee attract private venture capital, as the target groups of these interventions are small and medium sized enterprises (SMEs). In the Czech Republic, there is still no functional public sector scheme to help boost the venture capital market and therefore the Czech Republic did not catch the wave of venture capital investments as some other CEE countries did after 2009.

The Czech VC market

So, the situation in the venture capital does not observe similar trend as PE as a whole. Albeit, the development of investments value has been observing an upward trend since 2007 peaking in 2009 and decreasing in 2010 (as regards investments, the financial crisis has hit PE in the CEE region later than in the rest of Europe) and the position of the Czech VC market within the CEE region is still.[33]

[31] Europe: EU 28, Switzerland, FYRM, Serbia and Montenegro. Ukraine and Bosnia and Herzegovina, which are included in EVCA European statistics, are missing in the GDP data as EUROSTAT omits these countries in its database. Ukrainian data has been accordingly deducted from the PE/VC data then. As regards Bosnia and Herzegovina, the inaccuracy of including its data on PE/VC and omitting in GDP calculation should not substantially distort data quality.
[32] Compare EVCA (2010) and EVCA (2012).
[33] See EVCA (2010) and EVCA (2012).

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Table 1: Investments in PE segments (EUR) in the Czech Republic as GDP (current prices, EUR) percentage by year, data source: EVCA, EUROSTAT

	2007	2008	2009	2010	2011	2012	Average
Seed	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Start-Up	0.000%	0.000%	0.000%	0.009%	0.002%	0.000%	0.002%
Subtotal Early-Stage	**0.000%**	**0.000%**	**0.000%**	**0.009%**	**0.002%**	**0.000%**	**0.002%**
Later-Stage Venture	**0.003%**	**0.020%**	**0.020%**	**0.007%**	**0.005%**	**0.003%**	**0.010%**
Subtotal all VC	**0.003%**	**0.021%**	**0.020%**	**0.015%**	**0.007%**	**0.003%**	**0.012%**
Growth	0.088%	0.047%	0.135%	0.077%	0.005%	0.003%	0.059%
Rescue/Turnaround	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Replacement Capital	0.000%	0.097%	0.098%	0.000%	0.000%	0.000%	0.033%
Buyout	0.046%	0.110%	0.702%	0.060%	0.081%	0.063%	0.177%
Total PE	**0.137%**	**0.274%**	**0.955%**	**0.153%**	**0.093%**	**0.069%**	**0.280%**

But, share of amount of VC investments on total PE investments in the Czech Republic was only 5.7% on average in 2007-2012, which is far below the European level, although even in the Czech Republic significant progress have been made in venture capital in 2010-2012[34], but mainly as regards later-stage investments.[35] Due to EVCA findings, in 2007-2013, the venture capital investment to total PE investment ratio was 10.3% in Europe, almost two times higher, but, vice versa, declining from 12.2% in 2008-2010[36]. For more detailed information, see Table 2. Furthermore, because the CEE PE markets are still even more buyout oriented, the whole CEE region VC investments represent only 5.9% of the European VC market in 2007-2012[37]. However the Czech Republic ranks among regional champions in VC, it still represents a developing market in the European context.

Another good indicator suitable for measuring the differences in VC markets of the Czech Republic, CEE and Europe is ratio of VC investments value to GDP in current EUR. In 2012, this was 0.003% in the Czech Republic (see Table 1), 0.018% in the whole CEE region and 0.024% in Europe.

We can use both indicators mentioned above (share of VC investments value on total PE investments value and VC investments to GDP ratio) to look into the VC markets even in more detail later.

Early-stage venture capital financing is very low in the Czech Republic and is following a negative trend since 2001, as show the statistics.[38] Seed and start-up capital only amounted 4% of the EU 25 average in 2004 with the situation to worsen in the following years. In 2007-2012, no investments were located in seed stage in the Czech Republic compared to 67 companies invested in CEE region[39], see Table 2 and Table 3. However seed capital share ranks the least in PE markets around the world, in the CEE region, it is almost invisible, including Czech Republic. As the PE market of

[34] Due to EVCA (2010), the share was 3.5% in 2007-2010.
[35] See EVCA (2010) and EVCA (2012).
[36] But this may be caused by slump in buyouts by 2/3 in 2009 due to crisis. Venture capital investments went down by „only“ ½ between 2008 and 2009.
[37] But, the financial crisis has striked CEE PE/VC markets less then the rest of Europe, as this percentage is almost 3 times higher then in 2007-2010. Compare EVCA (2010) and EVCA (2012).
[38] See EVCA (2010) and EVCA (2012).
[39] Seed capital has 0.5% share on total PE investments, 3,5 times more than in 2007-2012.

the Czech Republic is otherwise very strong within the CEE region, this shows lack of interest of investors in this particular segment.

Table 2: PE investments by region, € x 1000, 2007-2012 totals, data source: EVCA

	Total Czech Rep.	% of total	Total CEE	% of total	Total Europe	% of total
Seed	0	0.00%	22 005	0.50%	1 030 201	0.40%
Start-up	16 760	1.35%	265 796	5.57%	12 089 052	4.83%
Subtotal Early-stage	**16 760**	**1.35%**	**287 800**	**6.07%**	**13 119 252**	**5.23%**
Later-stage venture	**86 305**	**4.36%**	**439 566**	**4.89%**	**13 564 725**	**5.08%**
Total venture	**103 065**	**5.71%**	**708 634**	**10.39%**	**26 683 977**	**10.31%**
Growth	507 801	25.91%	2 364 639	30.37%	31 406 288	12.80%
Rescue/Turnaround	475	0.01%	18 295	0.28%	2 799 031	1.22%
Replacement capital	289 965	7.63%	517 134	4.41%	9 329 771	3.88%
Buyout	1 539 369	60.75%	6 698 770	54.55%	200 544 333	71.79%
Total	2 445 367	100.00%	10 312 164	100.00%	270 763 400	100.00%

Table 3: Number of companies receiving venture capital, 2007-2012, data source: EVCA, CVCA

	Czech Republic	CEE
Seed	0	67
Start-up	8	281
Subtotal Early-stage	8	348
Later-stage venture	19	206
Total venture	**27**	**554**

The situation is similar in start-up stage. Only 1.35% of total PE capital invested over the years 2007-2012 in the Czech Republic falls within this segment compared to 5.57% in CEE and 4.83% in Europe (see Table 2). Compare total 281 start-up investments in CEE with only 8 investments in the Czech Republic.

In general terms, early-stage enterprises receive only a little venture capital in the Czech Republic. The legislation does not encourage PE investors enough to enter the venture capital market as well. This is particularly evident from Table 4, which shows the alignment of different PE/VC funds investing in the Czech Republic (full CVCA members). Only a few of them are oriented on early-stage investments and only one fund with total sources of only € 20 million prefers also investments under € 1 million. The total amount of funds managed in the Czech Republic is about € 4.5 billion and the average fund size is € 373 million. On average, the minimum deal size is € 6.5 million and maximum € 50 million.

http://www.iises.net ISSN 2336-2197

Table 4: CVCA full members, 2013, data source: CVCA

Fund name	Type of investment	Preferred amount of inv.	Volume funds under mgmt.	Sector preferences	Geograph. focus	Number of deals in the CR
3TS Capital Partners	Growth Capital, Expansion Capital, Buyouts	€ 3 million - 20 million	€ 230 million	Consumer & Services, M & M, ICT, Env. & Energy.	Czech Republic, CEE	5
Advent International	Buyouts, Expansion Capital, Sector Consolidation	min. € 30 million	€ 1 billion	None	CEE, Trukey	3
Amundi Private Equity Funds	Buyouts, Expansion Capital, Sector Consolidation	€ 5 - 15 million	€ 156 million	None	CEE	None
ARGUS Capital Group Limited	Buyouts, Sector Consolidation, Later Stage Expansion Capital	€ 10 - 40 million	€ 400 million	None	CEE, Turkey	6 (incl. regional deals)
ARX Equity Partners	Acquisitions, Buyouts, Expansion, Sector Consolidation	€ 5 - 50 million	Approx. € 200 million	None	CEE	7
Credo Ventures	Start–Up, Growth Capital, Expansion Capital	€ 0,25 - 2 million	€ 20 million	IT&Media, Mobile Communication, Healthcare	Czech Republic, Slovakia, central Europe	2
Enterprise Investors	Acquisition, Buyouts, Expansion Capital, Sector Consolidation	€ 1 - 100 million	€ 1,7 billion	None	CEE	6 (incl. regional deals)
Genesis Capital Limited	Buyouts, Consolidation, Growth, VC: Early Stage, Growth	€ 3 - 10 million	€ 70 million	None	Czech and Slovak Republics	20
Gimv	Growth/Expansion Capital, MBO, MBI, Sector Consolidation, Venture Capital	€ 3 - 15 million (equity)	€ 1,8 billion	none	CEE, other teams focus Belgium, Netherlands, France, Germany and Russia	5 (directly or via mgd. funds)
Mezzanine Capital Partners	Mezzanine Loans etc. for LBOs, Buyouts, Expansion, Add-On Acquisitions And Recapitalisations	€ 5-25 million	> € 500 million	All sectors (other than real estate, project finance, alcohol, tobacco and firearms)	CEE – offices in Vienna, Prague, Warsaw, Budapest, Bucharest and Kiev	3
MID Europa Partners	Acquisition, Buyouts, Expansion Capital,	€ 50 - 200 million	€ 3,2 billion	Telecom and Media, Healthcare and Pharma,	CEE	5

Fund name	Type of investment	Preferred amount of inv.	Volume funds under mgmt.	Sector preferences	Geograph. focus	Number of deals in the CR
	Consolidation			Energy, Other, Transportation, Retail, General Manufacturing		
PineBridge Investments	Buyouts, Expansion Capital, Sector Consolidation	€ 20 - 60 million	€ 522,5 million	none	CEE	none
Riverside Europe Partners	Buyouts, Later Stage Expansion	€ 15 - 150 million	€ 500 million	None	EU, Turkey, CH, Croatia	4
V4C Investment Advisers Limited	Buyouts, Expansion Capital	€ 15-25 million	€ 156 million	none – generalist fund	CEE especially Poland, Romania and Czech Republic	none

Furthermore, business angels' networks do not adequately take the place of lacking early stage venture capital funds due to CVCA findings. According to CVCA, there may be only a very limited amount of early-stage investments made off the statistics, restricted to investment agreements with individuals[40]. Ventures already having research and development results must still seek funds for their commercialization among friends and family or rely on bank loans and grants.

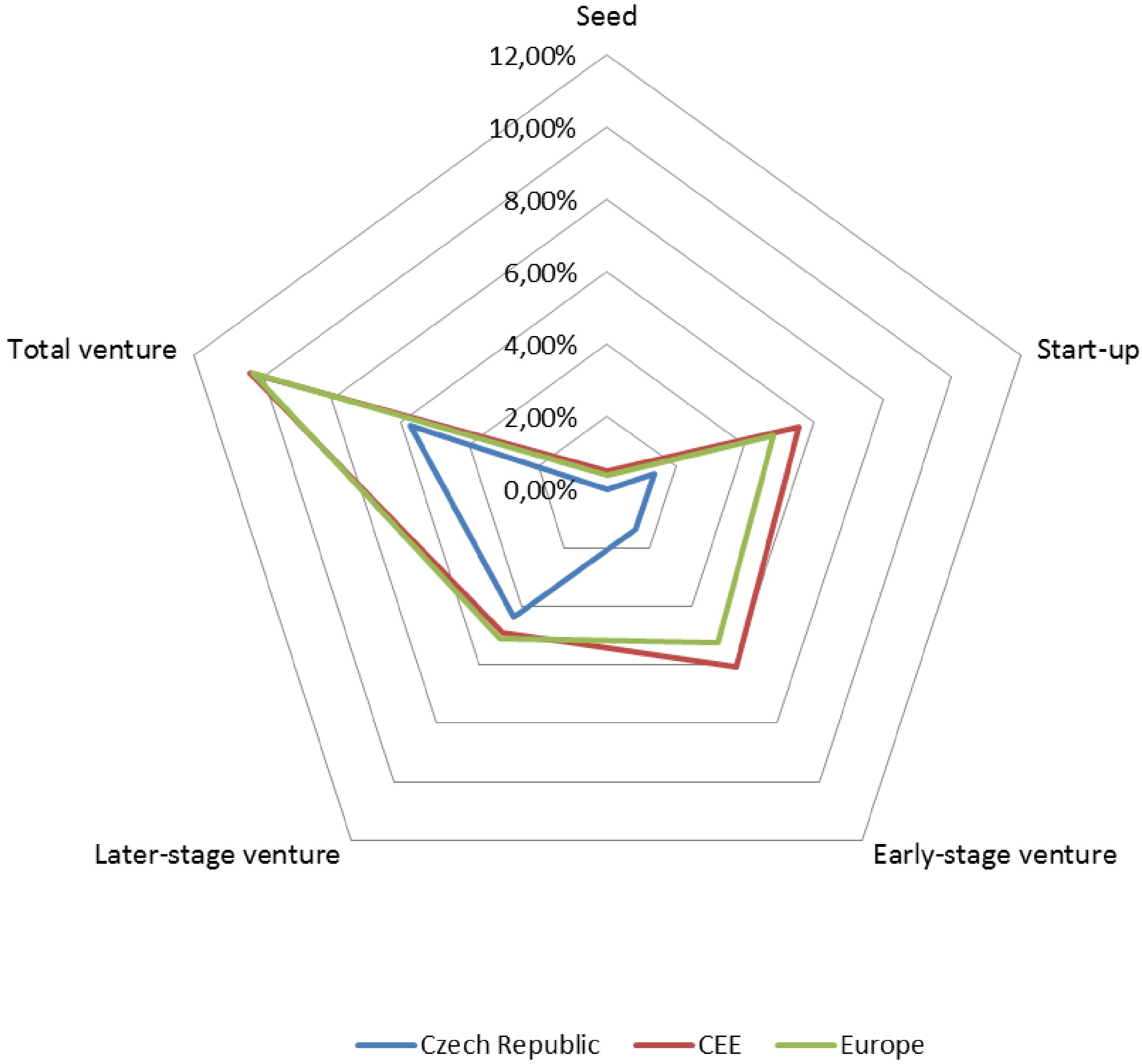
Specifically, in the CEE region, the VC investments hold only about 30% of total number of invested companies in 2010, whereas the European average is about 65%. The reason of such differences behind the figures is the major concentration of CEE PE market on later-stage, and therefore larger, investments. Stronger representation of early stage is lacking in the region. Early stage otherwise form the vast majority of companies financed through VC in pan-European statistics.[41]

Later-stage venture investments do not suffer from such large lack of interest of venture capitalists, as the average deal value is higher and generally exceeds the limit of € 1 million. Despite this, there is still a large gap in the comparison of European data, mainly as regards investments of lesser values. In 2007-2012, only 19 later-stage venture and 8 early-stage companies obtained VC investments in the Czech Republic totalling € 103 million, which represents an average of € 3.8 million. Compared to CEE data, the average value of investment per venture company is almost 3 times higher in the Czech Republic[42]. Thus, seed, start-up and even smaller later-stage venture projects cannot fulfil the threshold of minimum investment values required by VC funds investing in the Czech Republic.

The following chart 3 shows venture capital investments to PE investments ratio by stage and region in 2007-2012. The gap in both early stage and later stage venture is evident even in compare of Czech and CEE data, which may be quite surprising, as the Czech PE market is among regional leaders.

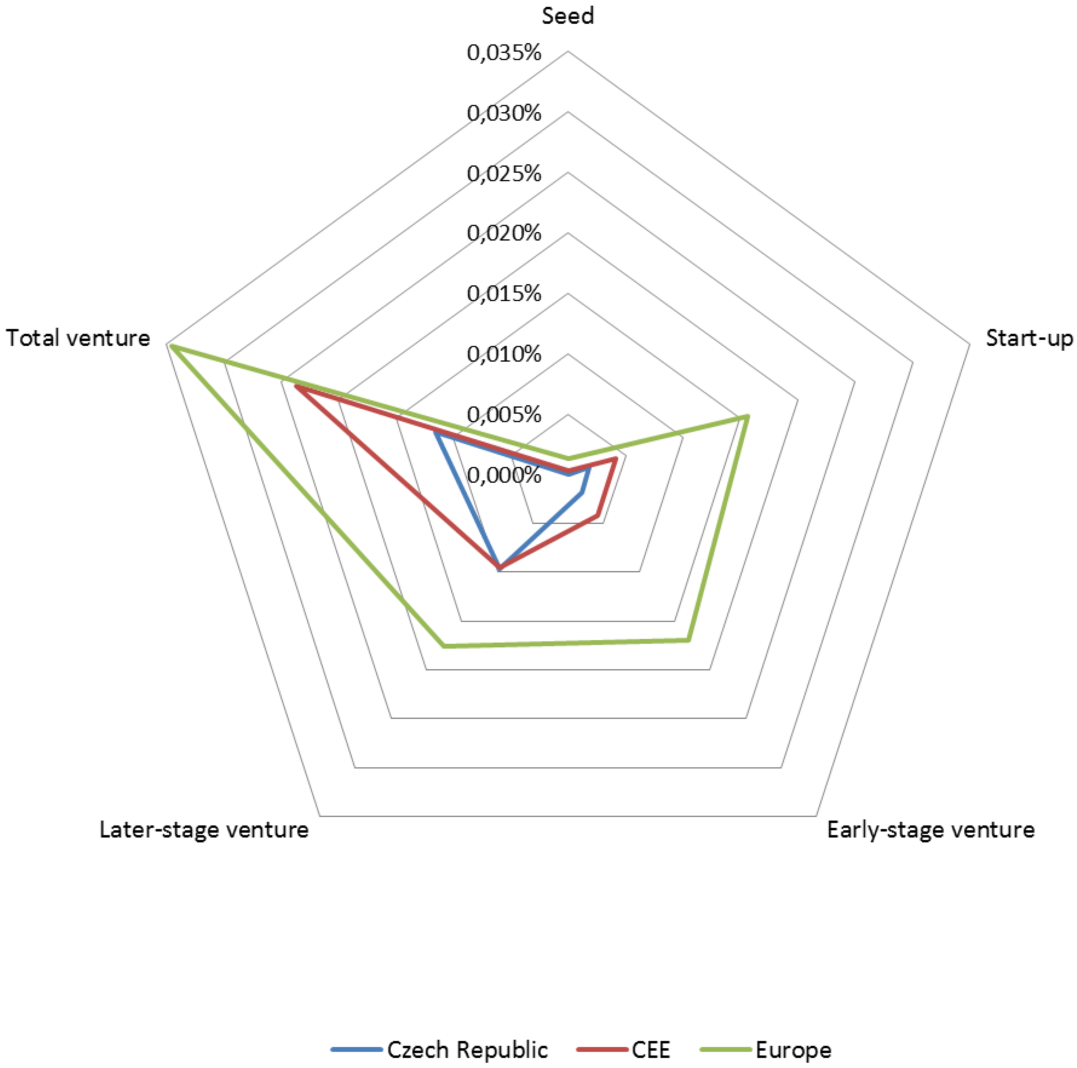
[40] See EVCA (2010) and EVCA (2012).
[41] See EVCA (2010) and EVCA (2012).
[42] See EVCA (2010) and EVCA (2012).

Chart 3: Venture capital investments to PE investments (EUR) percentage ratio by stage and region, 2007-2012 means, data source: EVCA



The following Chart 4 depicting investments value to GDP ratio confirms the results of the equity gap identification: as regards venture capital, the Czech market is underdeveloped in the European context. Early-stage deals do not even reach the CEE values in the Czech Republic. In this particular statistics, the influence of economic output differences on the market size is adjusted by using GDP PPP in current prices as denominator in the calculation.

Chart 4: Venture capital investments (PPP) to GDP PPP (current prices) percentage ratio by stage and region, 2007-2012 means, data source: EVCA, World Bank



The comparison of both charts 3 and 4 indicates that whereas the early-stage venture shows much lower investments to PE investments ratio in the Czech Republic than in the whole CEE region, the later-stage venture investments value to GDP ratio is quite similar in the Czech Republic, in CEE and in the rest of Europe. This is caused by the above cited feature of the venture capital market in the Czech Republic – average deal value is much higher in the Czech Republic than in the rest of the CEE region (or even in Europe as a whole as regards later-stage venture). Thus, this creates a burden for companies seeking equity financing of lesser values.

According to CVCA findings[43], PE/VC investing has not yet become a common investment method in the Czech Republic. Such funds are still regarded as alternative financing sources that entrepreneurs seek out only after they are rejected at a bank. One of the reasons for this is insufficiency of domestic sources of investment funds, upon which especially smaller venture capital oriented funds throughout Europe depend.

Discussion

Venture capital activities have been developing in the Czech Republic since the 1990s. The very first venture capital funds were assisted by USA and EU, such as Českoamerický podnikatelský

[43] See CVCA (2010).

fond, established in 1991. Later activities of the state included Regionální podnikatelský fond or Fond rizikového kapitálu assisted from the EU pre-accession fund PHARE. The first private based funds were Renaissance fund (est. 1994) or Czech Private Equity Fund (est. 1997). But, in the first half of the 1990s, it was mainly banks and investment companies who were taking risk assets and investments in unquoted companies, not specialised venture capital or private equity funds.

The Czech Republic is very similar to other countries as regards target industries of venture capital: ICT and new technology are the most common investee companies.

The accession of CEE countries to the EU has opened door to free flow of international private equity capital after 2004. At the same time, domestic business angels and private equity funds became more active after 2000, as more free capital occurred in the market due to rising sources from *first generation* divestments of businesses established and developed in the 1990s. Rejšek (2008) says, that the amount of fundraising was four times higher in CEE in 2006 than in 2004 (p. 38).

Specifically in the Czech Republic, the fundraising indicators reached its top in 2009 (EUR 41.4 mil.) and they have not returned to the pre-crisis amounts since[44]. There are many reasons for this, among them in particular settings of investment environment, particularly strict regulation of pension funds and insurance companies, or dysfunctional public venture capital support in contrast to the surrounding countries. Appropriate setting of state aid could help investors diversify risk and contribute to creation of new portfolios of investee companies, including challenging spun-off companies.

In this phase, it is crucial for the developing venture capital market to find success stories, which could attract more investors and investees. There are successful investments, although there is only a fistful of them. They include stories of AVG Technologies, AVAST or Y Soft.

Due to CVCA (2013), AVG Technologies, based in Prague, “was backed by a Czech private investor group in 2001 when AVG was known as Grisoft. By 2004 AVG had become an international leader and Benson Oak acquired the business. In 2005 AVG’s success attracted other backers, including Enterprise Investors, Intel Capital and Alpha Associates through its 5E Holding fund. By 2009 US private equity firm TA Associates had been attracted to the business and bought a minority stake. Early 2011 saw a recap to prepare the business for a listing and in early 2012 AVG’s flotation on the NYSE broke Europe’s 10-month dry-spell of private equity-backed IPOs. The flotation was the first of a Czech business in New York. Today AVG is a roughly USD 1 billion market cap business” (p. 3).

What should be done to help the market develop further and see other following success stories? Some issues emerge at the side of financing or fund raising respectively. Under the Czech legislation, potential losses of pension funds are borne by their shareholders. Therefore, pension funds do not raise capital to PE and VC funds in the Czech Republic. However, 18.3% of venture capital fundraising in Europe has its origin in partnership with pension funds (the highest share of all fundraisers) and 6.7% is backed by insurance companies due to EVCA. The result of this is quite obvious – due to lack of domestic fundraising is Czech venture capital very limited to a few funds and several HNWIs, who cannot cover a variety of possible investee companies, whereas the foreign venture capital funds target rather larger investments.[45] Thence it follows a lack of resources especially for starting companies on the Czech market that are financed by domestic venture capital and private equity funds abroad. Domestic investors in the Czech Republic are largely missing due to risk aversion and other obstacles, foreign investors are interested mainly in larger investments[46]. However no permanent or systematic changes in the sensitivity to market returns in relation to risk

[44] EUR 7,6 mil. in 2011, which is even less than in 2010.
[45] See Rejšek (2008).
[46] CVCA data shows that the threshold is about EUR 4-5 million.

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premiums have been generally detected in the Czech financial market after financial crisis,[47] the above mentioned private equity fundraising activity indicators (including venture capital) show less willingness to allocate capital to private equity and venture capital funds.

Another problem are certain taxation aspects like impossibility to offset capital gains and capital losses from the sale of equity investments in companies in most cases, fund management fee is not tax deductible, etc. A separate chapter are changes and complications with tax rates for investment funds in recent years. The reduced 5 % tax rate for investment funds is still valid, though.

Luxembourg, Ireland or United Kingdom offer investors a stable and attractive environment on the contrary to the Czech Republic. Furthermore, some neighbouring countries, like Austria, or some Nordic countries, namely Denmark, have experienced significant progress in this field.[48]

The result of this situation is that most entities that operate in the Czech Republic and use local managers are domiciled abroad. The situation started to change after the accession of the Czech Republic to the European Union in 2004 though, when the qualified investors' fund was introduced into Czech law on collective investment.

Rejšek (2008) very aptly names problems of internal environment of the Czech venture capital market, such as problems with the investments exits, long-term reluctance of owners to share participation in the management with external investors and, last but not least, the ineffectiveness of existing forms of public support.[49] The problems in the Czech Republic are also weak preparation of business plans and presentation skills of possible investee founders. Most Czech small companies have only a little idea what to expect from external investors. Negotiations often end unsuccessfully due to different expectations as regards equity sharing or because the founders do not want to give up any interest in the company and the founders are not willing to leave a place in management for the investors. Another limiting factor is a relative lack of experienced and qualified managers in venture capital.

These features of the Czech private equity and venture capital market contribute to the emergence of efficiency equity gap in the market, both on the supply side and the demand side.

Since the 1990s, the entire financial market in the Czech Republic has been primarily focused on bank products and bank service providers. The market offers debt products for small and medium sized enterprises, but these products cannot cover all needs, mainly because of their nature (debt products). Small- and medium-sized enterprises are not able to fulfil credit guarantees and they lack a portion of equity that cannot be replaced by debt. Equity resources bring another major benefit, the know-how and experience with the commercialization of ideas and projects, which cannot be replaced by debt products. Risk capital is also suitable for the purpose of commercialisation of research and development results of universities or research institutions through funding of spun-off companies.

Another reason still limiting expansion in PE/VC investments in the Czech Republic is that entrepreneurs are not prepared to accept a new partner with an equity share (the logic of *a smaller share of a much bigger pie*). To ensure a functional relationship between an investor and entrepreneur, it is essential that the two partners are in harmony and pursue the same goal as to the direction of the company. Only then will the invested funds be used to their best advantage and lead to a successful exit.

[47] See Pošta (2012).
[48] See Rejšek (2008).
[49] There have been attempts, such as the Fond rizikového kapitálu co-financed by the pre-accession EU PHARE fund or a designed CzechInvest agendy project in 2005, but these schemes have been abandoned. Since 2011, there have been a Seed Fund in preparation at the Ministry of Industry and Trade of the Czech Republic, but it still have not been launched, so as a support project CzechEkoSystem of the CzechInvest agency, which should help the starting entrepreneurs bridge their lack of business and management experience, skills and competence by means of providing free couching and consultancy services.

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On the contrary, we can expect quite a positive response to the new Act No. 240/2013 Coll., Investment Companies and Investment Funds Act, which came into force on 19 August 2013 and replaced the existing legislation on collective investment schemes and also the new Act No. 90/2012 Coll., on Business Corporations, which will replace the current Commercial Code on 1 January 2014. Establishing investment funds would have been simpler since 2014 and new possibilities will be present to choose from such as establishment of joint-stock company with variable capital enabling the existence of sub-funds without legal subjectivity.

Conclusion

Financing sources for PE/VC funds include in particular pension funds, insurance companies, banks, funds of funds, and government agencies. In the Czech Republic, the participation of pension funds and insurance companies in PE/ VC investing is significantly restricted by law. While large regional private equity funds are able to obtain funding from foreign institutions, smaller domestic funds oriented toward venture capital are too small and therefore uninteresting for such investors. Domestic sources for these funds are thus lacking. This is a problem throughout CEE region, though, as only 4% fundraising comes from domestic private investors. But, whereas in the rest of the CEE region, government agencies became very active after 2009 and belong to the most important fundraisers, this is not the case of the Czech Republic. This seems to be crucial for the growing differences between the Czech Republic and some other CEE countries, mainly as regards early-stage venture capital investments, which are still almost invisible in the Czech Republic. Another reason lies in legal barriers to establishing PE/VC funds within the Czech Republic. In the Czech Republic, we still encounter funds headquartered and based in foreign countries and which were established under different legal systems.

Furthermore, the future impact of current development in the financial markets on the Czech VC may not be very positive. The recent regulatory measures tend to influence negatively the capital available from the funds' LPs. Less new money in the global PE market should influence even the Czech capital market, as most of the PE investors in Czech companies are represented by foreign PE/VC funds[50]. This adds another risk and uncertainty to the future development of the so far poor performing Czech VC market, mainly as regards investments under € 1-3 million. Leastwise, there is a lot of space for positive changes in legislation in the Czech Republic.

Given the evidence in the previous chapters, the Czech PE market is not able to allocate resources effectively to its venture capital segments mainly due to[51]:

- Risk aversion on the supply side leading to high minimum investment threshold
- Imperfect information on the demand side

This paper has further approved results of our previous research. One of the main reasons is that the investment criteria applied by the VC funds operating in the Czech Republic actually exclude investments in the seed and start-up stages of SME development.[52] Even investments through the later-stage are limited given the minimum investment size of ca. € 1 million for most funds. Consequently, the majority of realized transactions are management buyouts or buy-ins and replacement or secondary purchase transactions.

The gap amount shall be calculated with regard to the real demand. There occurs imperfect information on the demand side, as the entrepreneurs are lacking practical knowledge on VC (including its indirect positive effects on business) and are usually not willing to share equity with external investors. This obstacle has to be removed as well, if the Czech market should fill-in the equity gap.

[50] Compare with The McKinsey Global Institute (2011) and Di Carlo (2010).
[51] compare with Pazour, Marek (2011)
[52] For instance due to higher expected IRR etc., compare with Zinecker, Rajchlová (2010)

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If the Czech Republic pursues reaching the European average as benchmark, it has to fill-in a yearly gap in VC investments values of about 0.023 % GDP according to 2007-2012 figures, which represents € 35.1 million yearly. Stage-by-stage, the possible yearly equity gap amount is about € 2 million in seed, € 21 million in start-up and € 12.1 million in later-stage venture. The following Table 5 shows the differences of investments in PPP relative to GDP PPP in current prices.

Our previous research has given almost exactly same results for the time series of 2008-2010. But, the results of this paper show that in the meanwhile, the CEE competitors of the Czech Republic have made a substantial progress in venture capital in 2010-2012. There is a thread that the future development would outcast the Czech Republic off the main stream in CEE, as Poland, Hungary or Slovakia have strengthened their positions very fast after financial crisis. On the other hand, success stories such as AVG Technologies IPO at NYSE in 2012 and suitable public sector intervention, such as the prepared but not yet functional Seed fund, could help the Czech venture capital market attract more private investors, fundraisers and also high quality business plans, which are largely missing as well.

The analysis of international data has approved the existence of an equity gap in the Czech Republic. This is in line with findings of other authors[53]. The perspective for future research is to analyse in more detail the causes of the situation on the market and to suggest steps that should help to bridge the equity gap and help prospective venture business plans to find financing to strengthen the competitiveness of the Czech Republic.

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[53] Compare with Pazour, Marek (2011)

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