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Private equity market developments in central and Eastern Europe

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Abstract. *This paper discusses the current state of the private equity industry in terms of size of investment, funds raised, disinvestment mechanisms practiced and their trends in the CEE region in comparison with other European countries. The low level and limited success in developing venture capital industry in Europe, particularly in the Central and Eastern European countries raises concerns, given the numerous evidences, which show the positive role of venture capital investment in supporting innovation. We believe that the lack of supply of venture capital is one of the hampering factors to demand of funds came from entrepreneurs in the CEE states, including in Romania, which we show to be one of the countries with a systemic lack of venture capital funding in early-stages of business.*

Keywords: venture capital, private equity, Central and Eastern Europe (CEE), Romania.

JEL Classification: G23, G24, M13.

1. Introduction

Private equity funds fill the gap between internal financing and “traditional” market sources (public equity and bank loans). There are two main types of private equity (PE) funds. Venture capital (VC) funds refer to equity investments made for the launch, early development, or expansion of business and they tend to be provided to young and start up companies with high growth potential. Buyout funds specialize in acquiring large public firms, restructuring and reselling them in a relatively short period of time. The distinctive feature of these funds is their active involvement in monitoring, the development strategy of firms they finance related to research activities, product development and commercialization, as well as assisting divestments, mergers and acquisitions.

Although the need of funding is lower in early-stages (seed and start-up) of firms than in the following ones, the former are critical for the business development. Many challenges make attracting of “traditional” funds to be difficult. Uncertainty that characterize innovative firms in seed and start-up stages, the lack of records and assets secured, limited ability to highlight the potential market for new products or services, high rates of obsolescence of their goods produced (mainly developed in the fields of science-intensive sectors), along with the issues associated with information asymmetry can lead to a higher perceived risk in firms, thus increasing the opportunity costs of their investments that often become prohibitive to their funding on the capital markets.

The value of innovative firm relies on its growing potential in the long-run, incorporating scientific knowledge, skills and intellectual property. Generally, these characteristics are associated with distinct patterns of cash inflows in firms such as their uncertainty and volatility, and long-term payback periods. In this context, “traditional” financing methods are irrelevant particularly for start-up firms, that confront themselves with investments in early-stages of life cycles, the low capacity to honour debt service and uncertainty associated with untested business models and business success.

Innovative firms raise many issues and uncertainties. In addressing informational problems, specialized firms introduce various mechanisms that appear critical for boosting innovation. It is known that early participation of specialized firms (venture capitalists) to the financing of firms, including monitoring and in shaping the managerial teams can support innovation and successful activities in the long-run.

Many benefits in the economy have been identified in the literature related to firms backed by venture capital. For instance, Kortum and Lerner (2000) show that venture capital has a strong positive impact in boosting inventions. Diffusing of technologies in the economy enhances, in turn, increased productivity and returns. Gottschalk et al. (2007) show that German firms that obtained funds from private investors, including from specialized firms registered higher growth rate, spent more funds in research and development, were more inventive and diffused technologies than other firms. Achleitner and Klöckner (2005) conclude that the average rate of employment is higher in firms backed by venture capital. Venture capital has been attracted much attention in practice and in the literature, given its positive impact on high growing potential firms that innovate by producing new technologies, being associated with growing sales, industrial development and better employment. Governments recognise the importance of funds raised and invested in high risk activities, admitting that firms' access to funding can be crucial for their research activities, obtaining profit and commercialization capacity. The low equity levels, including venture capital investments can be viewed as problematic, taking into account their important role in boosting innovation.

We discuss the current state of the private equity industry in terms of size of investment, funds raised, disinvestment mechanisms practiced and their trends in the CEE region in comparison with other European countries. CEE comprises the countries of Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine. The statistics we use are based solely on the "market approach", wherein information is compiled to show activity in a particular country, regardless of the origin or location of private equity fund managers. The analysis shows that additional sources of risk capital may be necessary to induce firms to carry out R&D activities and innovate. Some countries, including Romania, reveal a large equity-funding gap. This gap arises as a result of underdeveloped stock markets in the region, insufficient human capital which limit the flow of private equity funding into the region as well as reducing of public and private R&D spending.

Our paper is organised as follows: Section 2 unfolds a brief history of private equity market in CEE countries, in Section 3 we analyse the trend in fundraising and investment activities, as well as divestment mechanisms performed in the CEE countries in Section 4. One of the largest gaps in terms of private equity investments, mainly venture capital investments, displays Romania, in which recent private market developments are analysed in Section 5 and Section 6 concludes.

2. Brief history of private equity markets in the cee countries

Some articles analysed the development of PE markets in Europe, including in the CEE states. In this respect, a part of them focused on the role of specialised firms in privatizing state owned companies (e.g. Filatotchev et al., 199; Karsai et al., 1998, 1999), reflecting various investments decision making of regional investors in comparison with other investors that were operating on the global markets. Other studies analysed the features of the markets in the CEE area and the main obstacles to catching up with the developed markets. Although some similarities in investments practices are identified, the greater risk of the region is considered in explaining the investments trends and that the market development requires higher quality of projects and broader opportunities for divestment.

Iliev (2006) underlines the very small number of firms receiving financing in early stages, which can be explained by the low number of quality projects and the lack of infrastructure for related transactions. Another obstacle in early-stages firms trying to attract funds is identified by the low number of informal investors (Szerb et al., 2007). The total R&D intensity is found to be the main determinant of the venture capital invested in Romania, impacting both the supply and the demand of funds (Diaconu, 2012).

Focusing on the supply of funds from limited partners, Groh and Liechtenstein (2009) studied the attractiveness of the CEE countries for risk capital investors. Their study is based on questionnaires addressed to institutional investors, asking them about the importance of several emerging markets investment criteria, leading to a ranking of emerging countries' attractiveness for private equity investors. In this respect, the authors show that the CEE countries are less attractive than the EU-15 average. In this region, investors are attracted to a lower tax rate on corporate income, but they are discouraged by the low liquidity on the national capital markets.

Another attractiveness index of private equity by country is also published by EBRD (2014, p. 79), containing details of six different indicators measuring how far each country is from the United States in terms of attractiveness for equity financing. It is showed that the transition region is a long way from catching up with more developed economies. The lack of developed stock markets, the paucity of opportunities for initial public offerings and mergers and acquisitions, and the immature credit markets all serve to discourage PE/VC funds, for which viable exit strategies are crucial in order to realise financial returns. The region also scores less favourably in terms of its human and social environment, indicating that it does not have sufficient human capital to attract PE/VC investors. In addition, there is room for improvement both in terms of the ease of doing business and corporate R&D spending (in order to boost entrepreneurial opportunities) and in terms of investor protection and corporate governance rules. On a more positive note, the region's taxation system compares favourably with developed economies.

The EBRD (2006) study shows that the development of the private equity markets in the CEE states can be divided into four stages. The first stage lasts from the beginning of the transition period to the middle of the 1990s. During this period, country funds dominated and the typical sizes of funds were around USD 50 million, as the funds managers did not have much investment experience in the region yet. The investments derived from privatization had a major role among the business deals. They were mainly involved in the restructuring of the industry. In fact, in the 90', the private equity industry was characterized by significant growth in the region. However, the modest levels of investments in R&D were poor linked to commercial applications. A large number of firms were privatized. In firms sold to foreign strategic investors, the new owners took their responsibility to align governance, managerial and profitability practices to the global standards, but it was not always respected. In other cases, the property was transferred to employees or managers of enterprises, eventually through mass privatization programs, but firms were in excessive debt, having old technology and the lack of experience and capital for renewing their technologies and production to export. Specialised firms of risk capital that usually provide both expertise and financial resources for restructuring offered some solutions to those problems.

The second stage had finished by the end of the 1990s and it was characterised mainly by the regional fundraising. The typical fund size grew to USD 100-200 million and the financing of expansion stages became typical. According to EBRD (2006) study, the consolidation of the private equity market of the region had started.

The third stage had finishes by the end of the 2000' and it was characterised by a fast expansion. In this stage the regional funds still dominated, and the financing of technology became the focus of the investments. The typical size of capital managed by funds increased to the level of USD 250-300 million. The regional specialised investors, institutional investors as well as the investors operating at the Europe level were all present on the private equity market at that time. Venture capital investments to early-stage firms showed up, but the financing of expansion-stage firms maintained. Technology, IT and media were the main area of financing.

The fourth and last development stage lasted from 2001 till 2006, and it was characterised by the consolidation and rationalisation of the market. Only the successful fund managers were able to survive. Beside the regional and country funds, the specialised investors were also present in the market. The financing area already included buyouts.

The financial crisis started in the second half of 2007 focused the attention of VC&PE investors to the importance of their portfolios' diversification. Due to the economic slowdown and the increased levels of regulators pressure experienced in the developed markets, the VC&PE investors were looking for new geographical target areas, mainly the CEE region viewed less risky after joining the EU, which experienced relatively fast growing rates and was less influenced by the effects of the financial crisis in the short run. The CEE region became one of the focusing areas of the investors, the fundraising grew rapidly, and in 2007 and 2008 the fundraised were exceeding € 1 billion. The regional funds, which raised more and more capital from a growing group of investors, faced competition from other global and Pan-European funds that tried to compensate the lack of their local experience, by hiring the fund managers of the regional funds with comprehensive local market knowledge. The high growth rate of GDP, growing consumption, developing infrastructure, the possibility of regional expansion of local high-growth firms, the divisions of the consolidating conglomerates available for buyouts, were all promising attractive returns to the investors.

There have been considerable improvements in the private equity industry in CEE in recent years, as shown by easier exits from investments and higher returns. The industry has moved increasingly towards larger funds. Returns from investments dating back to the early 1990s have outperformed equivalent investments on the London Stock Exchange and have exceeded the average for private equity investments in Western Europe. Although the opportunities for private equity funds to exit from their investments have improved – due to the development of domestic stock markets and better access to foreign stock markets – the presence of a co-investor has helped funds to exit from some less successful investments.

Considerable challenges remain for the CEE countries. Despite rapid financial development, most firms in the region still rely on internally generated funds and contributions through informal channels – for example, loans from friends and relatives of the owner/entrepreneur. A large number of firms, even in some of the most developed CEE countries, have no link whatsoever to the formal financial system. Improving access to financial resources for these enterprises and for new businesses is still a fundamental challenge in the region.

3. Fundraising and investment activities in the CEE region

A large number of firms operate in the CEE countries and some of them are relatively recently established. Unfortunately, over the past decade, the CEE region has seen only modest levels of PE/VC financing, which has tended to remain focused on the Western Europe. Most specialized firms have started to focus on buyout and restructuring operations, having minor contributions in early stages of business. In general, institutional capital used in most OECD countries is not present or has reduced involvement in the CEE markets, and many active specialised companies in the region have been foreign subsidiaries. Viewed as a whole, the funds raised and invested in CEE show a similar trend to other countries in the European area, but the capital sizes have been much lower. In fact, the private equity (and venture capital) industry is still a young one in this area, knowing a continuous development from its formation to date.

The total amount of funds raised in the period 2000-2015 was the most significant in 2007 when it reached € 4.034 billion, followed by a massive reduction in the subsequent periods recording the lowest values in 2009 (€ 450 million) and 2013 (€ 409 million). According to EVCA (2015) data, both the annual levels of funds raised in 2015 (€ 418 million) and investments in 2009-2015 failed to reach the 2007 levels.

The CEE region accounted for less than 2% of all private equity fundraising in Europe in 2015, reflecting a year with a limited number of fund managers in the market, especially from the region's larger firms. The government agencies remained the main source of financing in 2015, including national, regional or local government agencies, and continue to be the leading source of capital for CEE. Their participation, along with other institution for developing (such as European Bank for Reconstructing and Development and European Investment Fund) was 42% in 2014 and 36% in 2015. The high proportion of the total funds raised in 2014 was due to the public funds came from

China. In absolute terms, the volume of funds from the government agencies increased more than three times in 2014 compared with 2013, and 2015 marked the forth consecutive year in which the government agencies were the main source of funds in CEE according to EVCA (2014, 2015). Compared to the rest of the European space, CEE has characteristics in fundraisings, in which the sovereign wealth funds represented the second major source of capital, 16%, followed by the pension funds, 11% etc.

The investment activity in the CEE region manifested also particularities concretised in a growth trend until 2009, but annual oscillations can be observed as well, registering in the period 2000-2015 maximal levels in 2008 and 2009 (€ 2.43 billiards). The private equity investments made grew since 2013, registering € 1.63 billiards in 2015.

Four countries (Serbia, Czech Republic, Poland and Romania) made investments that represented 80% of total investments made in the CEE space in 2014 (EVCA, 2014). Also, the main destinations of private equity financing in the CEE region in 2015 were Poland (54% of total value), Serbia (14% of total), Hungary (10% of total) and Romania (9% of total). These four countries made up 85% of total CEE investments by value in 2015 (EVCA, 2015).

Table 1 depicts the investment activity in some selected countries of CEE. As we can observe, the private equity investments manifested also large oscillations from one year to another in all countries. The investments made in 2015 increased in many countries, except Baltic countries, Czech Republic, Hungary etc.

Table 1. *Annual private equity investments in the CEE countries, 2007-2015, € millions*

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Baltic countries	216.98	88.00	6.69	33.47	53.40	29.55	65.38	112.72	102.32
Bulgaria	178.98	91.63	185.17	82.24	7.22	84.17	11.10	2.33	28.04
Czech Republic	181.07	422.98	1.357.98	22.84	143.93	105.87	134.44	299.45	13.83
Hungary	222.72	464.03	213.64	65.05	194.84	102.95	56.27	169.93	158.30
Poland	434.19	635.72	274.57	652.69	678.44	473.02	380.03	250.92	803.51
Romania	212.44	293.96	220.87	119.14	65.92	27.61	70.35	77.97	144.29
Other CEE*	163.75	82.48	128.29	47.43	28.86	138.01	49.35	393.27	261.51

*States from ex-Yugoslavia space and Slovakia comprise this group.

Source: European Private Equity Activity Data.

Poland incorporates one of the largest private equity markets in CEE. Moreover, the total number of Polish firms backed by venture capital (78 out of 290) was the largest in CEE in 2014. By number of companies financed, Poland, Hungary, the three Baltic countries and Slovakia made up 91% of the total companies receiving private equity financing in 2015.

Czech Republic, Hungary and Serbia also performed significant transactions in the region. However, Serbia recorded the highest level of investment activity in CEE in 2014 (€ 326 million) as a result of large buyout transactions (99% of total CEE investments in 2014). Buyouts account for most of the private equity investment in CEE in 2015, registering € 1.3 billion. Buyouts comprised 78% of total private equity investments in CEE, similar to the 77% level seen across all of Europe in 2015.

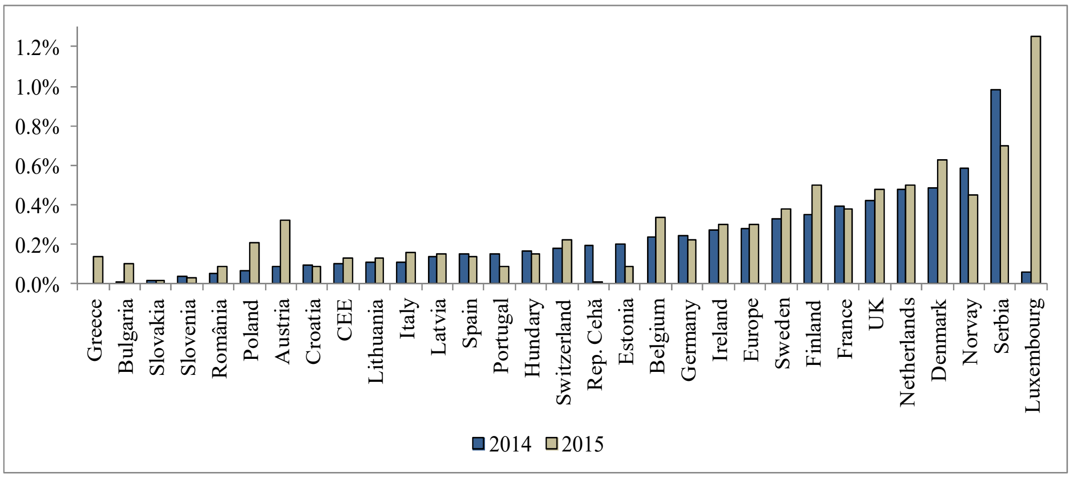
The private equity investments increased in Romania since 2012. However, the Romanian private equity investments remain modest since 2011, including the number of firms financed.

CEE private equity investment measured as a percentage of GDP was 0.127% on average for the region in 2015 and remained below the European average of 0.302%. 2015 was the third year of increased private equity intensity since 2013 (0.063%). However, private equity investments continued to be much lower in CEE than in the European average (0.277% – 2014; 0.302% – 2015). In other words, the private equity investments as a percentage of GDP was, on average, lower in CEE than 40% of the level in the European area, indicating underinvestment in the CEE region and a significant gap.

The gap continued to be significant, despite the impressive investment made in CEE in 2015. Notably, Serbia again ranked near the top end of Europe in this measure, reaching 0.696% of GDP invested, again driven by one large transaction in that market.

The gap between the CEE region and other European countries concerning the total private equity intensity is illustrated in Figure 1. It can be noted that while the equity capital intensity was increased in some CEE countries, most of them have the ratio under the regional average.

Figure 1. *Private equity investments in CEE, 2014-2015, % of GDP*



Source: EVCA (2014, 2015).

By sector, the energy and environment sector was the leading area of CEE investments in 2015, making up 32% of the total. This was followed by consumer goods and retail that comprised 29% of total investments. Communications, historically a leading sector in the region, made up only 5% of total investments in 2015. The main annual investment areas vary. For instance, communications sector was preferred to investment in 2014. Investments in computer and consumer electronics were ranked lower by their dimensions, attracting 19% of the total investments. The funds invested in energy and environment, as well as in consumer services reached 9% of the total investment, and 7% comprised life sciences and related fields in 2014.

Venture investments in CEE totalled € 84 million in 2015, some 16% below 2014, mainly because of less activity in the later-stage venture segment. The CEE share of total European venture investment value was 2.2% in 2015 compared with 2.7% in 2014. Meanwhile, the CEE region accounted for 7.8% of total European firms receiving venture capital financing in 2014 versus 6.5% the previous year.

According to EVCA (2015), the venture capital sector accounted for 5% of the CEE region's total private equity investments by value and 72% by number of firms. The average venture capital investment per company in CEE was €0.38 million in 2015. For comparison, the average venture capital investment per company across the whole of Europe in 2015 was €1.3 million. Start-up investments continued to make up the largest part of the CEE venture market in 2015, comprising 55% of investment value and 57% of companies financed in the total venture segment.

Data in Table 2 show the amount of venture capital invested by country in CEE. High variability of venture capital investments can be observed, having a strong rebound in 2009 in many countries. In some states, increased levels in the later years have not reached the higher level of investments made in 2007-2008 (except the Baltic countries and Hungary). Hungary and Poland are leaders in these investment segments, concentrating together 55% of the early stages investments made in CEE, registering the biggest increase in 2014. The most active venture market in CEE continued to be Hungary (attracting 30% of venture capital investments in 2015) and Poland (attracted € 20 million or 23% of the total). These two countries marked up also over half of the region's venture financed firms during 2015.

Table 2. *Annual venture capital investments in CEE, 2007-2015, € millions*

	2007	2008	2009	2010	2011	2012	2013	2014	215
Baltic countries	15.27	12.82	2,89	6.32	7.81	11.77	16.58	17.46	20.21
Bulgaria	3.32	8.32	4,04	1.33	0.42	0.09	5.10	2.33	1.10
Czech Republic	4.19	31.83	28,25	23.05	10.52	5.23	2.88	9.07	1.67
Hungary	10.50	12.84	1,26	17.90	40.02	65.49	16.71	32.15	24.95
Poland	39.11	50.44	1,15	3.31	26.46	9.08	15.63	22.01	19.58
Romania	33.79	41.99	4,17	5.09	4.00	3.06	2.98	5.31	1.83
Other CEE*	24.37	9.37	2,03	3.50	7.93	4.30	10.50	7.50	11.91

*States from ex-Yugoslavia space and Slovakia comprise this group.
Source: European Private Equity Activity Data.

The success of venture capital financing is ultimately subject to the way of exit. That is adjusted to the nature of investment, of which the method and timing is already planned by the investors at the time of investment. Apart from carefully selecting firms to be included in the portfolio, profit to be realized greatly depends upon choosing the time and method of divestments. PE investors always participate in the financing of selected firms for a temporary period. Profits realized during exits basically influence the investors' potentials for future fundraising.

4. Divestment mechanisms performed in the CEE countries

Divestment activity in the CEE region showed also significant oscillation in the period 2000-2015. In this sense, the values of exits were the highest starting with 2011. The structure of divestment mechanisms in the last years shows similar patterns in other European states. The table below shows the amounts resulting from practicing various divestment mechanisms and the percentages of the total funds obtained, with regard to the states of Europe as a whole and in the CEE countries:

Table 3. *Divestments in CEE, 2014-2015, € millions*

Divestment mechanisms (*exit*)	Total CEE	% CEE	Total Europe	% Europe	Year
Divestment by trade sale	634,198	51.28	11,607,727	28.70	2015
	367,598	29.00	10,157,303	26.30	2014
Divestment by public offering	205,813	16.64	9,359,003	7.50	2015
	67,852	5.40	7,129,297	18.40	2014
- Divestment on flotation (IPO)	34,273	2.78	2,681,158	6.60	2015
	48,422	3.80	3,330,562	9.80	2014
- Sale of quoted equity	171,540	13.87	6,677,845	16.50	2015
	19,430	1.5	3,798,735	9.80	2014
Divestment by write-off	7,050	0.57	1,838,994	4.50	2015
	104.746	8.30	2,709,244	7.00	2014
Repayment of silent partnerships	0	0	201,271	0.50	2015
	0	0	131,143	0.30	2014
Repayment of principal loans	6,414	0.52	1,671,537	4.10	2015
	25.441	2.00	3,04,665	7.90	2014
Sale to another private equity house	278,005	22.48	10,797,626	26.70	2015
	271.746	21.40	9,273,950	24.00	2014
Sale to financial institution	37,084	3.00	4,092,767	10.10	2015
	337,685	26.70	2,455,911	6.40	2014
Sale to management (MBO)	16,623	1.34	642,462	1.60	2015
	61,010	4.80	1,249,393	3.20	2014
Divestment by other means	51,438	4.16	247,367	0.60	2015
	30,964	2.40	2.517.818	6.60	2014
Total 2015	1,236,625	100.00	40,458,754	100,00	2015
Total 2014	1,267,043	100.00	38,667,725	100.00	2014
Total 2013	958,430	-	34.392.893	-	-

Source: EVCA (2014, 2015), investment costs.

Divestment by trade sale was the most prominent route, particularly for venture capital invested in early stages in CEE, totalising 60% of the funds obtained through divestments from these stages in 2014. 51% of total divestment value (at historical cost) was performed through trade sales in 2015, and they were also the leading exit route across all of Europe but accounted for just 29% of total divestments.

Although it is not common on the CEE markets (bit more practiced in other European countries), sale to another private equity house (the so-called “secondary” sale) was the second most used exit route in CEE, with 22% of total divestment value in 2015 and 21% in 2014 at historical cost. Together with trade sale, the two exit routes accounted for more than 50% of the total divestment funds.

Generally, divestments by public offering are not largely practiced in the CEE countries. For instance, divestments by public offering accounted only 5.4% of exits in 2014, compared to the level (19%) obtained in all European states. The amounts resulted were lower than expected, despite of the use of divestment by public offering practiced by some funds administrators. Public market exits made a strong showing across CEE in 2015, comprising 17% of total exit value at cost, a significant increase from the levels seen in prior years in the region.

The amounts resulting from sales to various financial institutions showed a significant and untypical percentage for CEE, 27% of the region's disinvestment funds in 2014, as opposed to the total registered in other European countries (5%). The preference of specialised firms for this divestment mechanism is often influenced by the amount of capital to be unlocked; for example, only one source of capital resulting from divestment totalised 62% of the funds obtained from sale to financial institutions in 2014 (EVCA, 2014).

5. Private equity market developments in Romania

The private equity market in Romania shows similar aspects found on the entire regional CEE market, but also has particularities in terms of investments levels made and their structure as well.

The structure of private equity investments by stage is depicted in Table 4. In this framework, private equity investments concentrated toward growth and buyouts which characterise the Romanian market in the period 2000-2014 can be observed. Also, the investments made in early stages were sporadic and maintained at low levels (0-5% of the total investment, 15% being registered in 2002). Venture capitals were not invested in seed stage (except the small amount registered in 2015), and the financing of other early stages was extremely modest (in years in which they were practiced). Since 2008, venture capital investments in seed and start-up were insignificant. Firms in those stages were adversely affected by the lack of funds in innovation processes as a result of the absence of (visible) market segment of individual investors (business angels) and venture capital invested by specialised firms.

Table 4. *Annual private equity investments in Romania, 2007-2015, € millions*

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Seed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Start-up	32.46	5.43	4.17	1.91	0.00	0.00	0.00	1.83	0.00
Later stage venture	1.33	36.56	0.00	3.18	4.00	3.06	2.98	3.48	1.37
Total venture	33.79	41.99	4.17	5.09	4.00	3.06	2.98	5.31	1.82
Growth	52.36	49.66	89.93	52.05	31.76	7.85	10.08	22.43	2.66
Rescue/Turnaround	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00
Replacement capital	14.50	5.00	22.04	12.00	18.50	0.00	9.46	0.00	0.00
Buyout	111.80	197.31	104.73	50.00	11.65	16.70	47.84	49.18	140.20
Total investments	212.44	293.96	220.87	119.14	65.92	27.61	70.35	77.97	144.29

Source: European Private Equity Activity Data.

The percentages of investments made in growth and buyouts are the highest, but irregular evolution of the amounts invested and their volatile character are maintained. Investments made mainly in growth and buyouts demonstrate higher returns obtained for investors at a lower risk in these stages than in early stages of businesses. The low levels of all private equity, while allocating the largest percentage of funds to the latest stages, and their volatile character determined irregular annual concentration of investments.

Table 5 display the percentage of private equity investments in Romania by sector. In the period 2007-2015, we can observe that domains such as communications, computer goods and retail, and life sciences were the main beneficiaries of funds invested. Other significant investments were concentrated in consumer services and energy and environment in certain years. In those domains specialised firms are oriented as well, not only in Romania, but in the entire space of CEE. However, the Romanian market differs from the whole CEE market by investing large amounts of funds to financial services (between 2007 and 2011), which are not of much interest to the economy. In the CEE space, the investments made in financial services did not exceed 6% of the total equity investments in 2007-20015. At the same time, the high-tech domains registered sporadic and insignificant investments compared to the total investments made in the CEE region, reflecting effects of industrial structure in Romania. Also, funds invested to industrial production ate quasi-inexistent.

Table 5. *Private equity investments in Romania by sector (%)*

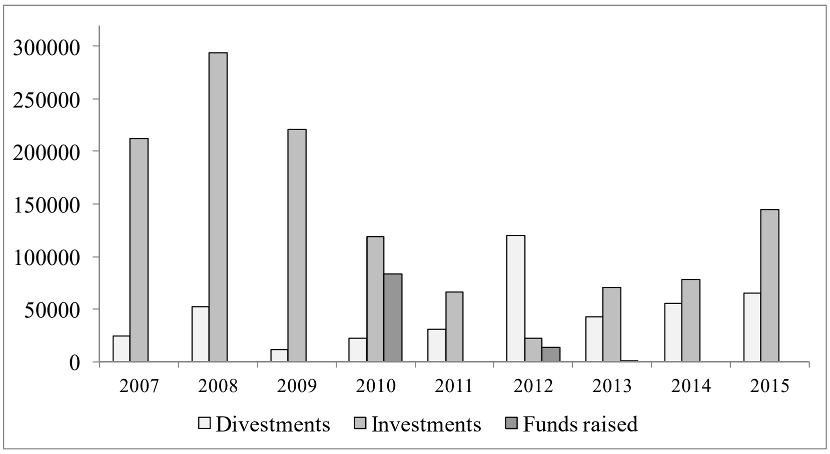
Domain	2007	2008	2009	2010	2011	2012	2013	2014	2015
Agriculture	0.0	6.8	0.0	7.8	0.0	0.0	3.6	0.0	0.0
Business & ind. products	8.2	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Business & ind. services	8.2	5.4	1.2	2.5	7.8	0.9	0.7	0.5	0.0
Chemicals & materials	0.0	15.8	2.8	0.6	3.9	3.2	17.8	0.0	0.0
Communications	21.2	0.4	2.0	11.7	0.0	14.3	17.1	7.3	18.2
Computer goods & retail	0.5	0.0	11.6	0.0	6.1	0.0	6.6	18.8	36.4
Construction	1.7	13.2	1.0	2.6	11.5	7.0	1.2	0.9	0.0
Consumer goods & retail	1.7	5.4	29.9	5.3	15.2	1.1	0.3	1.4	18.2
Consumer services	21.7	3.4	10.0	0.0	28.1	0.0	2.9	23.4	9.1
Energy & environment	0.0	0.8	7.8	14.2	9.0	72.4	21.1	15.0	0.0
Financial services	8.5	6.5	8.4	10.6	13.9	1.0	0.0	1.4	9.1
Life sciences	11.3	29.3	24.8	33.6	0.0	0.0	0.0	9.0	9.1
Real estate	16.9	11.3	0.6	2.7	0.0	0.0	0.0	0.0	0.0
Transportation	0.0	0.0	0.0	8.4	4.6	0.0	28.8	22.4	0.0
Unclassified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total investments	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subtotal high-tech	0.0	2.3	2.7	0.0	16.7	0.0	9.5	0.4	18.2

Source: European Private Equity Activity Data.

Venture capitals invested were extremely low and they were made in a few domains only, according with European Private Equity Activity Data (% of venture investments): real estates (96.1%), computer goods and retail (3.3%), consumer goods and retail (0.6%) in 2007; real estate (77.6%), business and industrial services (9.5%), energy and environment (5.7%), business and industrial products (4.7%), communications (2.5%) in 2008; communications (73.6%), real estate (13.8%), energy and environment (12.6%) in 2009; real estate (62.6%), communications (37.4%) in 2010; computer goods and retail (100%) in 2011; communications (100%) in 2012; communications (100%) in 2013; consumer goods and retail (51.2%), communications (24.3%), consumer goods and retail (18.9%) in 2014; communications (50%), computer goods and retail (25%%), consumer goods and retail (25%) in 2015. Often, the percentages associated to a particular domain correspond to the capitals invested at the level of one firm, and the annual number of early-stage backed firms was between 1 and 4 in the period 2007-2015.

The funds raised (incremental amounts raised during the year) were also low in the years in which they were collected (in 2010 and 2011 only) in the period 2007-2015. Total investments and funds obtained by divestments were modest, and all shaped annual large variations (Figure 2), highlighting the fragility of the private equity market in Romania, particularly in the venture capital segment, which cannot be developed in an environment of low share of small and medium sized innovative firms. This feature is also evident when we analyse the source of funds raised in the period 2006-2015. Over 90% of the funds raised came from the external government agencies, while the pension funds, funds of funds, insurance companies and banks were all missing investors in the area of capital suppliers. Among others, this is the consequence of insufficient regulatory framework adapted to perform high-risk investments (Diaconu, 2012).

Figure 2. *Private equity investments, funds raised and divestments in Romania, € thousands*



Source: European Private Equity Activity Data.

Exits are mainly performed by sales to another private equity house and sales to financial institutions and not by public offering which is the form considered of success (via obtainable returns) for specialised firms. In the period 2007-2015, exits by public offering were practiced in 2007 and 2011by sales of quoted equity (over 50%).

The yield obtainable at the end of the investment process, and the stock market development are factors that can affect investment decision, the time of investment and the disinvestment mechanism practiced by specialized firms.

6. Discussion

The development of private equity market in the CEE countries is far away from its potential. That can be reflected starting with the lower level of private equity investments than in developed market economies. To some extent, this is due to a number of constraints, which are specific to the CEE region, particularly the lack of local investors, high risk perceived by foreign investors and insufficient loan finance for private equity transactions. The shortage of experienced local management teams is also an obstacle. Legal, regulatory and tax issues pose further difficulties. Investors often complain about slow legal and regulatory processes, an inexperienced and understaffed judiciary and bureaucracy.

The common impediments that prevent domestic capital from investing in private equity funds are bureaucracy, lack of market opportunities, a weak bankruptcy framework and obstacles to starting a business. In some countries, this list also includes predatory officials, shareholder abuse, weak licensing and uncertain law enforcement. Policymakers across the region still need to pay more attention to the specific needs of the private equity industry and to address barriers to its further development (EBRD, 2006).

The magnitude of these constraints varies across the CEE countries. Romania is one of the countries with the lowest level of private equity investments, particularly in early stages. The modest proportion of innovative SMEs, the reduced R&D spending both in the private and public sector, the market dominance by stabilized companies affect all the demand for venture capital which, in turn, decreases the capital supply. Also, the absence of individual investors and favourable disinvestment opportunities affect de supply of funds.

Bank financing remains the dominant source of external capital for firms across CEE. Additional sources of risk capital are necessary to induce firms to carry out R&D. In particular, private equity and venture capital industries reveal a large equity-funding gap. This gap arises as a result of underdeveloped stock markets in the region, as well as insufficient human capital, which limit the flow of private equity funding into the region.

Financial systems across the CEE region continue to be dominated by banks, with little public or private equity available. To what extent can financing by these banks help firms to innovate? The EBRD (2014) study shows that where banks ease credit constraints, firms tend to innovate more by introducing products and processes that have not previously been available in their local or national markets. However, there is little evidence that bank credit also stimulates in-house research and development. This suggests that while banks can facilitate the spread of technology within the markets, their role in pushing back the technological frontier remains limited.

Funding constraints may limit the adoption of technology, as external inventions are costly to integrate into a firm's production structure. Firms therefore need sufficient financial resources to properly adapt external technologies, products and processes to their local circumstances. If insufficient funding is available, businesses may be unable to fully exploit the easy option of R&D that has been carried out elsewhere. Such firms remain stuck in low-productivity activities, and this may, at country level, contribute to the persistence of divergent growth patterns around the world.

Firm-level innovation – and private-sector dynamism more generally – may pose challenges to banks and other financial intermediaries that need to decide which entrepreneurs deserve funding and which do not. The more quickly technologies evolve, the more difficult it is for banks to distinguish between creditworthy loan applicants and firms that are too risky. To some extent, this is simply because business plans that involve new and untested products or processes are more difficult to evaluate. It may also be complicated to value collateral that involves new technologies. Consequently, if they are to continue lending to innovative firms, banks will have to constantly update their screening processes.

The future of private equity market in CEE is determined by the extent in which the individual investors and institutions will consent to assume the risk of their investments on the market.

References

Achleitner, A. and Klöckner, O., 2005. Employment Contribution of Private Equity and Venture Capital in Europe, *EVCA* Research Paper. <//www.evca.eu/uploadedFiles/Home/KnowledgeCenter/EVCAResearch/EconomicalImpact/evca>

Diaconu, M., 2012. Characteristics and drivers of venture capital investments activity in Romania. *Theoretical and Applied Economics*, Vol. XIX, No. 7 (572), pp. 93-114.

EBRD, 2014. Transition Report 2014. European Bank for Reconstruction and Development. pp. 95-81.

EBRD, 2006. Transition report 2006: Finance in Transition. European Bank for Reconstruction and Development. pp. 70-80.

EVCA, 2015. Central and Eastern Europe Statistics 2015. Brussels: EVCA.

EVCA, 2014. Central and Eastern Europe Statistics 2014. Brussels: EVCA.

Filatotchev, I., Hoskisson, R., Buck, E. and Wright, M., 1996. Corporate restructuring in Russian privatizations – implications for US investors. *California Management Review*, Vol. 38, pp. 87-105.

Gottschalk, S., Fryges, H., Metzger, G., Heger, D. and Licht, G., 2007. Start-ups Zwischen Forschung und Finanzierung: Hightech-Gründungen in Deutschland. *ZEW Working Paper*.

Groh, A. and Liechtenstein, H., 2009. How attractive is Central Eastern Europe for risk capital investors?. *Journal of International Money and Finance,* 28, pp. 625-647.

Iliev, I.P., 2006. Barriers to Venture Capital Investment in Innovative Small and Medium Enterprises in Central and Eastern Europe: Causes and Policy Implications. In: Piech, K. and Radosevic, S. (eds.). *The knowledge-based economy in central and eastern Europe. Countries and industries in a process of change,* Palgrave MacMillan, pp. 127-144.

Karsai, J., Wright, M., Dudzinski, Z. and Morovic, J., 1999. Venture capital in transition economies - the cases of Hungary, Poland and Slovakia. In: Wright, M. and Robbie, K. (eds.). *Management Buy-outs and Venture Capital into the Next Millennium.* Cheltenham: Edward Elgar. pp. 81-114.

Karsai, J., Wright, M., Dudzinski, Z. and Morovic, J., 1998. Screening and valuing venture capital investments: evidence from Hungary, Poland and Slovakia. *Entrepreneurship & Regional Development*, Vol. 10, pp. 203-224.

Kortum, S. and Lerner, J., 2000. Assessing the contribution of venture capital to innovation. *RAND Journal of Economics* 31, pp. 674-692.

Szerb, L., Rappai, G., Makra, Z.S. and Terjesen, S., 2007. Informal Investment in Transition Economies: Individual Characteristics and Clusters. *Small Business Economics*, 28, pp. 257-271.