

## MULTIPLIERS OF VENTURE CAPITAL AND PRIVATE EQUITY INVESTMENTS ON THE EXAMPLE OF POLISH IPO

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**Abstract:** The aim of the article is to analyze the investment multipliers achieved by funds in companies that successfully completed an initial public offering (IPO) on the Warsaw Stock Exchange in the years 2000-2023. Venture capital funds and private equity currently constitute an important asset class in the financial market. The goal of investors is to achieve superior returns, which inevitably translate into adequate economic performance of portfolio companies fueled by venture capital funds and private equity. This results in very dynamic growth in their value, in some cases reaching multipliers at ten times the invested funds over a period of 5-7 years. The level of the multiplier depends on the ability of the funds to complete the investment and sell their shares. One method of disinvestment commonly used by VC and PE funds is an initial public offering.

**Keywords:** private equity, value creation, venture capital

**JEL Classification:** O43, O16, E44

### Introduction

Venture capital and private equity funds have become an important segment of the financial market on a global scale. Many institutional investors, such as banks, pension funds, and insurance companies, have taken an interest in these rapidly developing funds and have become involved in their operations. The dynamic growth of these funds and the scale of capital they have raised have resulted in their investments reaching a global scope and experiencing a rapid increase in assets under management. In recent years, this has been the fastest-growing asset class in the global

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financial market. According to Ocorian's Global Asset Monitor (Ocorian, 2025) private equity grew from 1.4 trillion of USD in 2009 to 10.7 trillion USD in 2024. The rapid development of the real global economy is now driven by innovation, and financing innovation is a highly risky endeavor (Gompers & Lerner, 2001). Nevertheless, this asset class generates above-average returns for investors (Levis, 2011), especially over the long term, which encourages further capital allocation and fuels its continued growth. As a result, the impact of these funds on the rate of return of investment portfolios is mostly positive, which necessitates a deeper understanding of how they operate. A report from MSCI (2025) shows a downward trend in exit multiples: for the past three years, subsequent exits have been realized at lower multiples than those still in the funds' portfolios.

This asset class is characterized by a long investment horizon, complex investment goals that require in-depth analysis, intricate cash flow structures, and the use of many hybrid financial instruments. Managing such high-risk funds requires fairly advanced fund management techniques. To manage such institutions effectively, one must fully understand the specific risks involved in investing in this type of undertaking. Venture capital and private equity funds constitute a complex asset class that involves multiple layers of risk across various aspects of their operations. These risks must be properly identified, described, and managed. To adequately assess the risks associated with these investments, it is also necessary to identify the stakeholders who influence fund investments. It is worth noting that between 2000-2007 and 2011-2012, the median return rates of venture capital and private equity funds hovered around 0% or were negative, highlighting the critical importance of conducting thorough analyses and selecting the right fund that will generate an appropriate risk-adjusted return. This, in turn, contributes to building the value of portfolio companies. The primary strategy of the fund is to deliver a return on the invested capital to its investors. This profit depends on the efficiency of managing the portfolio of enterprises supported by the fund – that is, on building lasting value in its portfolio companies. In the literature, one can find data on the length of a fund's involvement in an enterprise, indicating a period of 3-7 years as the time devoted to investing and increasing the portfolio company's value (Sobańska & Sieradzan, 2013). During the 2008-2010 crisis, the period of VC fund involvement in an enterprise extended to about 8-10 years, and in some cases even reached 12 years (Basnet et al., 2025). There are several reasons for this. First, VC investments are illiquid and cannot be easily or quickly sold. Second, investors by principle commit to an enterprise for a long term; unlike hedge funds or mutual funds, they are not entitled to sell their shares before a specific event occurs within the company. Divestment – i.e. the exit and sale of shares in the portfolio company – and its conditions are often strictly defined and included in the investment agreement (Cumming, 2008). Before making an investment, funds conduct in-depth financial, legal, and due diligence of the potential investment target. A very important factor for fund investors is that they are called upon to contribute their capital to the fund only at the time investments are actually made. Unlike other types of funds, VC funds do not hold excess idle capital unnecessarily and do not collect the full amount of committed capital at the fund's

inception. The primary objective of a VC fund is to build value in its portfolio companies. Creating value within a VC portfolio company is a complex process influenced by many factors. The aggregated components and their mutual interactions contribute to the creation of added value. The fund's activity as an investor in a portfolio company is most evident in its involvement in shaping the company's medium- and long-term development strategy. Active participation in this area allows the precise definition of strategic objectives, the measurement and evaluation of progress, and adjustments in response to changing market conditions. Fund personnel typically have extensive contacts in financial institutions, are familiar with consulting firms and lawyers, and – most importantly – know potential future investors. Moreover, they monitor the company's operations, particularly its financial performance, which helps identify potential problems early and enables joint problem-solving. It is this combination of capital, experience, and long-term commitment that makes VC attractive.

The primary objective of this study is to analyze the investment performance of venture capital and private equity funds in Poland by examining cash-on-cash multiples realized through initial public offerings (IPOs) on the Warsaw Stock Exchange (WSE) during the period 2000-2023. The study further aims to benchmark these outcomes against international markets (US and EU) in order to evaluate the relative attractiveness of Polish exits and to identify factors influencing multiple variability across different market cycles. The study addresses the following research questions: (1) To what extent do venture capital and private equity funds generate attractive multiples at the time of exit by means of IPOs? (2) How do these outcomes compare with benchmark performance on international markets? (3) What factors influence the variability of multiples across different periods? To compare it with global performance, multiples for US and EU markets are presented. There are no extended studies on this issue on the global or Polish market. The lack of in-depth analyses of cash-on-cash multiples in the context of IPOs on the Warsaw Stock Exchange, compared to global trends, constitutes a scientific and practical gap. The aim of this paper is to fill this gap.

## **Literature review**

Academic literature reveals that venture capital funded companies show superior and much more advanced performance to regular companies that do not have venture capital support (Sobańska & Sieradzian, 2013). Those firms contribute in many ways to the development of economies by boosting turnover, innovation, creating jobs as well as enhancing growth. Their high levels of investment and returns also influence many different areas of the economy. However in general, in the macroeconomy the proportion of companies that receive venture capital funding is limited and very small. Despite that, there has been rapid growth in the availability of VC/PE funds over the years in different branches and economies. One can observe that there is still a lack of this kind of investors in many sectors. Researchers' conclusions have indicated that significant variance in performance between companies that are supported by VC/PE and regular firms can be attributed to the VC/PE investors (Fitza

et al., 2009). This outcome should then lead us to the important question – which capabilities of VC/PEs contribute to the performance variation of the supported companies. There is an abundance of research evidence indicating that the managerial and value addition capabilities of venture capital dominate the selection capabilities in explaining the performance variation (Chemmanur et al., 2009; Bayar & Chemmanur, 2011). The relationship between entrepreneur and investor is a broad area for VC/PE value added research. One of the most important things is the acceptance of the entrepreneur by the venture capital fund managers. Cable and Shane conclude that a cooperative relationship between entrepreneur and investor is even more important for the positive development of a company than the provision of money itself. They argue that the relationship between the two parties increases in its social complexity, and therefore becomes increasingly more difficult to imitate (Cable & Shane, 1997). This in turn leads to improvement in the company's performance.

At a certain period in the investment time span, venture capital funds should implement an effective divestment process. IPO as desirable exit for the funds is the outcome of that process. When a venture capital or private equity sponsor conducts an IPO of a portfolio firm, it does not often sell a significant stake of its investment, usually remaining a large block holder in the newly listed firm for a longer and much more extended period. This practice is consistent with the recognition that the retention of shares in an IPO is a signaling device that mitigates adverse selection intrinsic to equity issuance (Bayar & Chemmanur, 2011). There are clear benefits of a healthy IPO market. Research suggests that IPOs finance growth and stimulate innovation, productivity and job creation. After an IPO, venture capital funds generally block and hold their governance rights, maintain board representation, monitor managers, influence corporate decisions and sometimes are bound by regulations that restrict share trading. Because a sponsor influences a firm's operations until its ownership is sold (typically some years after an IPO), a venture capitalist is the type of block holder that researchers view as an effective corporate monitor. At the same time, the limited horizon intrinsic to the VC/PE business model creates pressure for sponsor divestment after an IPO, including the fact that a sponsor's limited partners pay high fees for managing the firm. Venture capital and private equity contracts govern long-term relations between entrepreneurs and their investors in a way that establishes a path for capital gain growth, cash flow, control rights and an exit horizon. The long-term nature of VC/PE-entrepreneur relationships leave entrepreneurs open to exploitation by VC/PE funds (Fried & Ganor, 2006) and VC/PE funds open to expropriation by entrepreneurs. It is natural to rely on the strength of a venture capital fund, which an entrepreneur accepts. Furthermore, as high-tech start-up entrepreneurial firms do not have sufficient cash flows to pay interest on debt or dividends on equity, contracts are established in a way that control rights are allocated over divestment decisions (Gilson & Black, 1998).

A successful divestment may involve an IPO, or a merger or acquisition (often referred to as a "trade sale"). There is a limited amount of research that covers ROE analysis for VC backed IPOs. Nonetheless, there are some studies showing that PE/VC backed IPOs companies have a lower leverage ratio in the first 5 years after

the IPO in comparison with those not financed by PE/VC. These companies, in addition to having more capital options, must return to the PE/VC funds the investments made by them. Carvalho et al. (2013) show that 25% of the exit from the investment of PE/VC funds between 2004 and 2009 were by means of IPO. In this sense, companies invested in by PE/VC are more likely to issue shares instead of debt. Further studies also found evidence that companies financed by PE/VC have a higher level of profitability – as measured by ROE – in the short term, i.e. in the first three years after the IPO. In the same direction, companies financed by PE/VC show a higher level of sales growth in the first 3 years after the IPO. With regard to the ROE variable, Tan and Morsfield (2006) argue that companies invested in by PE/VC funds tend to have on average, better performance in their investments when compared to those not invested in by PE/VC. Caselli et al. (2009) analyzed 804 investments made by 87 channels of investments of 58 PE/VC management organizations in Italy in the period of 1999-2005 and not divested before 2007. The authors also concluded that the high IRR is driven by sales growth, return on assets (ROA) and return on equity (ROE). In terms of profitability, the results indicate that these companies perform better, as measured by ROA, in the first 3 years after the IPO. These companies also presented superior results when considering sales growth as a variable of operational performance. In recent years, research on venture capital and private equity performance has expanded considerably. Studies from 2020 to 2025 emphasize the impact of market cycles, technological innovation, and macro-economic shocks on exit outcomes (Li et al., 2024). More recent empirical studies confirm that exit multiples are sensitive to monetary policy and geopolitical uncertainty (Korsah et al., 2024).

## **Research methodology**

In order to assess the sustainability of a company's value growth, venture capital funds and investors use a variety of specific methods. Return multiples are the most popular and simplest methods for evaluating the financial performance of venture capital and private equity funds. The aim of the paper is to estimate investment multiples that private equity funds achieved from their investments in Poland. We examine IPO transactions conducted on the Warsaw Stock Exchange in the period 2000-2023. Cash-on-cash multiples were used for that purpose. This paper contributes to the understanding of how financial sponsorship impacts IPO valuation and performance, providing crucial insights for investors and issuing companies aiming to navigate the IPO landscape effectively. The results highlight the nuanced role of PE in enhancing company value post-IPO, which challenges the conventional wisdom of market efficiency and suggests a strategic advantage in PE involvement.

Generally, the formula for calculating these multiples is the ratio of realized profits, the value of the fund's portfolio, or distributions to investors in relation to the original investment amount. These indicators are relatively easy to interpret but do not account for the time value of money. Some critics argue that their application is limited as the formulas are mathematically too simplistic.

The multiples used by National Venture Capital Association (NVCA, 2024) and Invest Europe (European Private Equity and Venture Capital Association) include:

- DPI (distributions to paid-in capital)
- RVPI (residual value to paid-in capital)
- TVPI (total value to paid-in capital).

The DPI multiple represents the ratio of profits distributed by the fund to its participants (the net of all settled fees) over a specific period relative to the paid-in capital. It can be expressed mathematically as:

$$DPI_n = \frac{\sum_{i=0}^n CIF_i}{\sum_{i=0}^n COF_i} \quad (1)$$

where:

- $CIF_i$  – positive cash flows from the fund to the investor in period  $i$
- $COF_i$  – negative cash flows from the investor to the fund in period  $i$
- $n$  – the number of periods.

The RVPI multiple is the ratio of the fund's residual value (the net asset value minus fees and interest) to the total capital paid in. Its mathematical formula is:

$$RVPI_n = \frac{NAV_n}{\sum_{i=0}^n COF_i} \quad (2)$$

The residual value ( $NAV_n$ ) represents the net asset value of the fund, reduced by fees and interest that the fund is obligated to pay to the managing entity or third parties not participating in the fund.

The TVPI multiple combines both DPI and RVPI (after adjusting for costs and interest) and measures the total value relative to the committed capital. It is calculated as:

$$Multiple = TVPI_n = \frac{\sum_{i=0}^n CIF_i + NAV_n}{\sum_{i=0}^n COF_i} \quad (3)$$

Additionally, the PICC (paid-in capital to committed capital) ratio is used to show what proportion of the committed capital has actually been contributed by investors to the fund. These indicators measure the net returns on invested capital but do not account for the time value of money. It is important to note that venture capital funds attempt to estimate NAV at the end of each quarter. The interim values for IRR, TVPI, and RVPI are based on these estimates. This estimation is one of the most problematic components of evaluating venture capital performance and highlights the need to supplement quantitative analysis with a qualitative assessment of fund operations. A more conventional approach to company valuation and investment profitability involves using the internal rate of return (IRR) as the primary performance metric. IRR takes into account both the timing and magnitude of cash inflows and outflows for a given investment, making it particularly well suited for VC investments, which are typically structured across multiple funding rounds. Another

approach to evaluating funds and comparing them with the returns of public market companies is the public market equivalent (PME or index method). This is a return metric based on a market index, adjusted to reflect the irregular cash flows typical of VC funds. It is related to a money-weighted return (similar to IRR) in such a way that the PME rate is the return an investor would achieve by investing in a public index during the periods when the VC fund calls capital, and selling the index when the fund distributes proceeds. This strategy is designed to replicate the irregular investment and divestment patterns of a venture capital fund as closely as possible in order to compare the achieved returns more accurately. The indicator answers a simple question: how much (in net present value terms) would an investor need to invest in a public market index to generate one monetary unit of return equivalent to that received from a VC or PE fund investment. This measure allows a direct comparison of returns from public market investments and those from VC or PE funds. In this way, we can obtain a comprehensive comparison of investment performance against an appropriate benchmark.

Mathematically, the model is represented as follows:

$$PME = \frac{\sum_{t=1}^T cf_t \prod_{i=t+1}^T (1+R_{fi})}{\prod_{t=1}^T (1+R_{ft})} \quad (4)$$

where:

- $R_{ft}$  – net return from the public market index over period  $t$
- $cf_t$  – normalized positive cash flow of the VC fund over period  $t$

As can be observed, public index return rates are gross returns that include management fees. An alternative definition of the PME indicator model presented by Kaplan and Strömberg (2003) states that the PME ratio is the quotient of the discounted fund distributions from realized investments to the discounted fund inflows (investor contributions), where discounting is based on the return rate of the chosen benchmark investment. Mathematically, the formula is as follows:

$$PME_i = \frac{\sum_{t=1}^T (CFO_{ti} \prod_{n=0}^t (1+r_{Bn})^{-1})}{\sum_{t=1}^T (CFI_{ti} \prod_{n=0}^t (1+r_{Bn})^{-1})} \quad (5)$$

where:

- $CFO_{ti}$  – fund distributions from investment  $i$  in period  $t$
- $CFI_{ti}$  – fund inflows for investment  $i$  in period  $t$
- $r_{Bn}$  – total return rate of benchmark index  $B$  in period  $t$

If the PME ratio exceeds 1, it indicates that investments in VC or PE funds outperform the benchmark and provide higher returns than the public market. Conversely, if PME is below 1, then public market investments are more effective than VC and PE investments. From the investor's perspective, it is important to determine whether investing in venture capital funds offers higher efficiency compared to public market investments.

Another commonly used and simple metric for evaluating investment effectiveness is the cash-on-cash multiple. This is simply the ratio of the disinvestment

amount to the invested capital by the VC fund. Like the other multiples, it also ignores the time value of money. While the aforementioned indicators reflect the total value of the entire investment portfolio – including the current value of ongoing investments – the cash-on-cash multiple focuses solely on the effectiveness of a single investment. IRR and cash-on-cash multiples are related, but often move in opposite directions when the time period changes. Different firms target different rates, and metrics are met by different stages of an investment. VC funds expect multipliers of 3-5 for early-stage investments, and for the best investments, the multiplier should be ten times the amount invested. PE or late stage investments may use IRR, which ideally should be at the level of around 20% and over. The multiple metric simply divides the total distribution to investors by the amount of paid-in capital. Like DPI, RVPI or TVPI, it is a cash-on-cash measure but does not account for the time value of money. The advantages are easy to understand and calculate, and are good for assessing the total amount of money made. The disadvantages of this method are: it does not account for the time value of money and offers no insight into the rate of return.

The mathematical formula for the multiple of money or cash-on-cash multiple is:

$$\text{Cash-on-cash (multiple of money)} = \frac{\text{total cash inflows}}{\text{total cash outflows}} = \frac{\sum_{t=1}^T CFO_t}{\sum_{t=1}^T CFI_t} \quad (6)$$

where:

- $CFO_{it}$  – total fund investment  $t$
- $CFI_{it}$  – total fund outflows in period  $t$

Choosing the right metric depends on what an investor wants to know. IRR is useful for rate-based comparisons, DPI for assessing cash returns, TVPI for understanding total value, and the cash-on-cash multiple for gauging absolute profitability. Wise investors will look at all these metrics in conjunction to get a full understanding of a venture capital fund's performance.

This paper will examine the cash-on-cash multiple that was observed for VC and PE backed IPOs and reported by the funds at the time of the divestment process in the period 2000-2023. The results of the analysis show that IPOs conducted on WSE by PE and VC funds exhibit relatively high performance and create the value for portfolio companies and the funds' investors.

There are some study limitations which are explained here. The analysis relies on cash-on-cash multiples as the primary performance measure. While this indicator is widely used, it does not fully capture the risk profile, time value of money, or interim cash flows, unlike the internal rate of return (IRR) or the public market equivalent (PME). The study focuses exclusively on IPO exits. Other exit channels (trade sales, secondary buyouts, write-offs) are excluded, which may bias the conclusions since IPOs often represent higher-quality or more successful exits compared to the overall population of investments. Publicly available data on Polish VC/PE exits is limited. The disclosure requirements of the Warsaw Stock Exchange are not as extensive as in the US or Western European markets, which may affect the completeness and

accuracy of the dataset. The period 2000-2023 includes several distinct market cycles (the dot-com aftermath, 2008-2010 financial crisis, COVID-19, recent geopolitical disruptions). The variability across these sub-periods may influence averages in ways that are difficult to fully isolate. When benchmarking against US and EU multiples, differences in market maturity, fund structures, and regulatory environments must be acknowledged. Cross-country comparisons may therefore have inherent limitations.

## Results

The performance of American (Table 1) and European (Table 2) funds differs only slightly, but the factors influencing their effectiveness are largely similar. When analyzing investment values and the volume of exit transactions, it becomes evident that this is a cyclical market segment influenced by stock market trends. The valuations of private assets held in fund portfolios are highly dependent on the valuations of publicly traded companies. As a result, funds established during bull markets tend to deliver relatively low returns, while those investments during bear markets often achieve above-average financial performance. This provides further evidence that venture capital and private equity market segments are subject to the phases of stock market cycles.

**Table 1. Performance of VC funds on US market 1998-2023**

Year	Median IRR	DPI	RVPI	TVPI
1998	-3.8%	1.45	0.05	1.5
1999	-2.29%	0.87	0.10	0.96
2000	-1.33%	0.82	0.23	1.05
2001	-1.650%	0.87	0.32	1.19
2002	-0.500%	0.72	0.30	1.02
2003	1.800%	1.07	0.59	1.66
2004	1.830%	0.89	0.69	1.58
2005	4.760%	0.51	0.89	1.40
2006	7.310%	0.52	1.01	1.53
2007	13.88%	0.62	1.17	1.79
2008	13.89%	0.32	1.27	1.59
2009	15.79%	0.23	1.41	1.64
2010	20.34%	0.22	1.55	1.77
2011	12.20%	0.04	1.40	1.44
2012	3.68%	0.01	1.24	1.25
2013	20.11%	0.22	1.34	1.55
2014	18.80%	0.10	1.24	1.34
2015	15.64%	0.04	1.22	1.26

Year	Median IRR	DPI	RVPI	TVPI
2016	15.85%	0.01	1.04	1.05
2017	16.27%	0.02	1.18	1.21
2018	16.58%	n/a	n/a	n/a
2019	10.44%	n/a	n/a	n/a
2020	9.11%	n/a	n/a	n/a
2021	4.520%	n/a	n/a	n/a
2022	-3.69%	n/a	n/a	n/a
2023	-12.00%	n/a	n/a	n/a

Source: Cambridge Associates Benchmark (2024), Bain and Company (2023)

What we could assess from data on the US market is that funds from the late 1990s and early 2000s experienced negative median IRRs, likely due to the dot-com bubble burst. Continued underperformance, with median IRRs remaining negative, possibly reflect the lingering effects of the early 2000s downturn. Starting with the 2009 vintage, median IRRs turned positive, peaking around 2014 with a median IRR of 20.11%. The 2021 vintage shows a median IRR of 4.52%, while the 2022 and 2023 vintages have negative median IRRs, indicating recent market challenges. When analyzing the performance of venture capital funds in the US, it should be noted that the median IRR during the 1998-2023 period was at a very low level. It is clearly visible that investments made during the dot-com downturn negatively affected fund performance. In contrast, funds that invested during the 2007-2009 financial crisis achieved higher return levels and recorded the highest average TVPI ratios. These results confirm the cyclical nature of venture capital investments and the impact that public company valuations have on the valuation of private companies held in fund portfolios.

**Table 2. Performance of European VC/PE funds**

Year	IRR	DPI	RVPI	TVPI
1980-1984	6.21	1.4	0.1	1.5
1985-1989	6.97	1.5	0.1	1.6
1990-1994	12.87	1.71	0.99	2.7
1995-1999	0.52	0.53	0.97	1.5
2000-2004	-2.21	0.35	1.25	1.6
2005-2009	2.75	0.15	1.45	1.6
2010-2013	-8.53	0.01	1.00	1.01
2014-2018	22.50	0.01	1.01	1.02
2018-2023	20.77	0.01	1.01	1.02

Source: Calculations based on EVCA (2025); NVCA (2024)

Analyzing the performance of European funds (Table 2), it can be stated that the level of achieved results is slightly lower than that of funds operating on the American market. The performance of European funds is also significantly influenced by the valuation levels of public companies (Diaconu, 2017). Starting with the Polish market between the years 2000 and 2023, 70 entities backed by VC and PE funds debuted on the Warsaw Stock Exchange (WSE). This accounts for 13.72% of all IPOs, which totaled 510 since 2000. Building company value by funds in the Polish market is quite complex but, on the other hand, is influenced by many positive factors. VC and PE funds are entities that attract stock market investors, which translates into the performance of companies listed on the WSE. The Polish market was not a mature market, so funds had to carefully choose the right moment for divestment to carry out an IPO. The Polish market confirms the rule that divestment transactions largely depend on stock market conditions. Over 37% of the IPOs of companies supported by VC funds took place during the bull market period of 2004-2007. We could observe only 37 IPOs in the period of 2020-2023 and only 9 of them were backed by VC and PE funds. The efficiency of funds that sold their shares to strategic investors – both domestic and foreign – was not as high but still provided good levels of returns. The average cash-on-cash multiple was lower for transactions selling to strategic investors compared to IPOs conducted by funds. Among the best transactions of share sales to strategic investors were the sales of Polcard (cash-on-cash multiple of 3.1), Lukas Bank (cash-on-cash multiple of 5.6), and Town&City (cash-on-cash multiple of 2.6). For comparison, the highest cash-on-cash multiples among IPO transactions were recorded by the following companies: One 2 One (10.2) – despite the highest costs of raising capital through the IPO, Comp Rzeszów (7.9), and Zetkama (6.9). For recent IPOs conducted by VC and PE funds, one could add to this list LPP, Dino and Żabka as most effective investments for VC and PE funds in Poland. For the period 1993-2011, the average multiple for IPOs was 3.5. For 1993-2004 it was 3.15, and for 2005-2011 it was 3.8. For the period of 2013-2023 the average multiple was also quite high and amounted to 3.12. This means that the funds tripled their investments in IPO transactions, taking advantage of favorable stock market conditions and carrying out IPOs during periods of increased activity on the WSE. This behaviour indicates that VC funds dynamically reduce both the value and number of divestments during market downturns.

**Table 3. Statistics of multiples achieved by VC/PE funds in IPO process on WSE**

Statistics	Mean	Median	Upper quartile	Lower quartile	Max.	Min.
Cash-on cash	3.2	2.7	5.6	1.3	12.2	0.3

Source: Author's own calculations

To sum up the research (Table 3) we could observe that the average for the period 2000-2023 was 3.2, and the median was 2.7. This indicates slightly better results for Polish funds compared to US and European funds; however, the scale of transactions

in the Polish market is entirely different compared to the previously discussed markets. Since 2014, bonds have become a very important financing instrument for large enterprises. The Catalyst bond market has provided Polish companies with an easy and transparent path to raise capital for growth, while also ensuring liquidity for trading these instruments on the Warsaw Stock Exchange. In 2025, approximately 600 different bonds were listed on the Warsaw Stock Exchange, and since 2017, their market capitalization has significantly exceeded the capitalization of the main stock market. This is one of the reasons why the number of IPO transactions is declining. This poses a challenge for venture capital and private equity investors, whose main objective is to increase the value of portfolio companies. One of the primary exit strategies is the stock exchange, which in the case of the Polish market is no longer functioning effectively, as since 2016, more delistings have been observed than IPO transactions.

## Conclusion

Value creation by venture capital and private equity funds is one of the key drivers of growth in major global economies. High-tech companies such as Apple or Google, which today are among the highest valued on stock markets, were once financed by venture capital funds. The Polish market is less developed than other markets; nevertheless, fund activity in terms of investments remains relatively high. VC/PE funds are also quite active in taking companies public on the Warsaw Stock Exchange. Hence, the main aim of the article was to analyze the performance of Polish private equity and venture capital funds in terms of the investment multipliers they achieved. Private equity backed IPOs were examined to present the cash-on-cash multiple.

The performance of venture capital and private equity funds across the US, Europe, and Poland demonstrates the cyclical nature of these investments, heavily influenced by public market trends. While US and European funds exhibit similar patterns (higher returns during bear markets and weaker results during bull markets), the Polish market, although smaller in scale, has achieved comparable or even slightly better average cash-on-cash returns through IPOs. Nonetheless, the growing importance of bond markets and the declining number of IPOs, especially in Poland, pose challenges to traditional VC/PE exit strategies. These trends emphasize the need for funds to adapt to shifting capital markets and to strategically time their investment and divestment decisions in alignment with broader economic cycles.

The results achieved by the funds in the IPO process should be considered positive. The average cash-on-cash multiple of 3.2 indicates that funds achieve their investment goals related to value creation in enterprises. This is possible thanks to a well-functioning stock market and its adequate liquidity. A further stage of analysis and research could be the assessment of company value sometime after the IPO, once the fund has already exited its stake in the business.

## References

- Bain & Company. (2023). *Global Private Equity Report 2023*. [https://www.bain.com/globalassets/noindex/2023/bain\\_report\\_global-private-equity-report-2023.pdf](https://www.bain.com/globalassets/noindex/2023/bain_report_global-private-equity-report-2023.pdf)
- Basnet, A., Punhtuanthong, K., Turtle, H., & Walker, T. (2025). VC ownership post-IPO: When, why, and how do VCs exit?. *The Journal of Financial Research*, 48(1), 73-102. DOI: 10.1111/jfir.12412
- Bayar, O., & Chemmanur, T. Ch. (2011). IPOs versus acquisitions and the valuation premium puzzle: A theory of exit choice by entrepreneurs and venture capitalists. *Journal of Financial and Quantitative Analysis*, 46(6), 1755-1793. <https://ssrn.com/abstract=966004>
- Cable, D. M., & Shane, S. (1997). A prisoner's dilemma approach to entrepreneur-venture capitalist relationships. *The Academy of Management Journal*, 22(1), 142-176. DOI: 10.2307/259227
- Cambridge Associates Benchmark. (2024). *US Venture Capital Report. Index and selected benchmark*.
- Carvalho, A., Netto, H., & Sampaio, J. (2013). Private equity and venture capital in Brazil: An analysis of its recent evolution. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.1996729
- Caselli, S., Garcia, A. E., & Ippolito, F. (2009). *Explaining returns in private equity investments* (Working Paper No. 15/09). Milan. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1600227](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1600227)
- Chemmanur, T. J., Krishnan, K., & Nandy, D. K. (2009). How does venture capital financing improve efficiency in private firms? A look beneath the surface. *Review of Financial Studies*, 24(12). DOI: 10.2139/ssrn.1025322
- Cumming, D. (2008). Contracts and exits in venture capital finance. *The Review of Financial Studies*, 21(5), 1947-1982. DOI: 10.2139/ssrn.302695
- Diaconu, M. (2017). Private equity market developments in Central and Eastern Europe. *Theoretical and Applied Economics*, 24(2(611)), 131-146.
- EVCA. (2025). *Yearbooks*. Invest Europe.
- Fitza, M., Matusi, S. F., & Mosakowski, E. (2009). Do VCs matter? The importance of owners on performance variance in startup firms. *Strategic Management Journal*, 30(4), 387-404. DOI: 10.1002/smj.748
- Fried, J. M., & Ganor, M. (2006). Agency costs of venture capitalist control in startups. *New York University Law Review*, 81, 967-1025. <https://ssrn.com/abstract=784610>
- Gilson, R. J., & Black, B. S. (1998). Venture capital and the structure of capital markets: Banks versus stock markets. *Journal of Financial Economics*, 47, 243-277. DOI: 10.2139/ssrn.46909
- Gompers, P., & Lerner, J. (2001). The venture capital revolution. *Journal of Economic Perspectives*, 15(2), 145-168. DOI: 10.1257/jep.15.2.145
- Kaplan, S. N., & Strömberg, P. (2003). Financial contracting theory meets the real world: An empirical analysis of venture capital contracts. *The Review of Economic Studies*, 70(2), 281-315. DOI: 10.1111/1467-937X.00245
- Korsah, D., Godfred, A., & Kofi Osei, A. (2024). The impact of geopolitical risks, financial stress, economic policy uncertainty on African stock markets returns and volatilities: Wavelet coherence analysis. *Journal of Humanities and Applied Social Sciences*, 6(5), 450-470. DOI: 10.1108/JHASS-12-2023-0172
- Levis, M. (2011). The performance of private equity-backed IPOs. *Financial Management*, 40(1), 253-277. DOI: 10.1111/j.1755-053X.2010.01141.x
- Li, Y., Chi, T., Lan, S., & Wang, Q. (2024). Venture capital exit after venture IPO. *Strategic Entrepreneurship Journal*, 19(1), 111-144. DOI: 10.1002/sej.1515
- MSCI. (2025). *Private-equity fund multiples under pressure*.
- NVCA. (2010). *The economic importance of venture capital-backed companies to the U.S. economy*. HIS Global Insight.
- NVCA. (2024). *Yearbooks 2000-2023*. National Venture Capital Association. <https://nvca.org/wp-content/uploads/2024/05/2024-NVCA-Yearbook.pdf>
- NVCA. (2025). *Yearbook 2025*. Invest Europe. <https://nvca.org/2025-yearbook/>
- Ocorian. (2025). *Global Asset Monitor 2025*. <https://www.ocorian.com/global-asset-monitor-2025-1>
- Sobańska, K., & Sieradzan, P. (2013). *Inwestycje private equity/venture capital*. KeyText.
- Tan, C., & Morsfield, S. G. (2006). Do venture capitalists influence the decision to manage earnings in initial public offerings?. *The Accounting Review*. <https://ssrn.com/abstract=904009>

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## **MNOŻNIKI WZROSTU WARTOŚCI PRZEDSIĘBIORSTWA FUNDUSZY VENTURE CAPITAL ORAZ PRIVATE EQUITY NA PRZYKŁADZIE POLSKIEGO RYNKU PIERWOTNEJ OFERTY PUBLICZNEJ**

**Streszczenie:** Celem artykułu jest analiza mnożników wartości zainwestowanych kapitałów przez fundusze w spółki, które zdołały przeprowadzić pierwotną ofertę publiczną na Giełdzie Papierów Wartościowych w Warszawie w latach 2000-2023. Wyniki mnożników osiągnięte przez fundusze wskazują na ponadprzeciętne mnożniki wartości inwestycji. Fundusze venture capital oraz private equity to obecnie ważna klasa aktywów na rynku finansowym. Celem inwestorów jest osiągnięcie ponadprzeciętnych stóp zwrotu, co musi przełożyć się na odpowiednie wyniki ekonomiczne spółek portfelowych zasilanych funduszami venture capital oraz private equity. Wiąże się to z bardzo dynamicznym przyrostem ich wartości sięgającym w niektórych przypadkach mnożników na poziomie dziesięciokrotności zainwestowanych środków w okresie 5-7 lat. Poziom mnożnika zależy również od możliwości zakończenia inwestycji przez fundusz i sprzedaży posiadanych udziałów lub akcji. Jednym ze sposobów dezinwestycji chętnie stosowanym przez fundusze jest transakcja pierwotnej oferty publicznej.

**Słowa kluczowe:** venture capital, mnożniki inwestycyjne, kreowanie wartości

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