You Said Successful? Actual and Perceived Performance of Venture Capital in France

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Abstract

Using a theoretical financial model depicting a typical venture capital fund specialized in start-up companies (seed / early stage financing), we have invited professional investors and entrepreneurs to suggest an estimated internal rate of return (IRR) to characterize three portfolio outcomes: “success”, “average” and “failure”. Our findings reveal a perception that is disconnected from reality, namely a strong propensity to overestimate the notion of success and to underestimate that of failure. The causes of this overoptimistic perception arguably include an element of pure risk aversion as well as a dose of fantasy, but this is probably not the whole story. In a subsequent phase, we intend to use a broader sample to determine if, and to what extent, this is a European bias that calls for a European response.

JEL Classifications: G24, G11

Keywords: Venture capital; Portfolio analysis; Perception biases; Entrepreneurship; Behavioral finance; Performance
I. INTRODUCTION

Legendary venture capital successes include Apple, Oracle, Cisco Systems, PayPal, Yahoo!... More recently, the acquisition of YouTube by Google enabled the fund Sequoia Capital to recoup 43 times its investment in less than 2 years... While exceptional, such returns sustain the myth of an Eldorado-like Silicon Valley (Eckhardt, Shane, and Delmar, 2006; Gompers and Lerner, 2001).

The financial performance of a venture capital portfolio is typically measured over a 10-year period to mitigate cyclical fluctuations, using a net internal rate of return formula (IRR) representing the portfolio’s annual return upon the sale of its various equity stakes.

When applied to the US venture capital market, this rate reveals a contrasted landscape. With start-up companies – that is the seed / early stage investment segment – U.S funds achieve a flattering 34.5% IRR. With more mature companies, however – that is the capital investment / LBO segments – they barely reach 8.6% (NVCA, 2008-2011).

On average, the net IRR of the entire private equity investment in the U.S is 10.6%, that is, below the 13.9% achieved in France over the same period (AFIC, 2008-2011). Does this make France as appealing a market for venture capitalists (Brav and Gompers, 1997; Cochrane, 2005)? In fact, the French and the US venture capital markets are symmetric: over the same period, French funds obtained a negative IRR of -0.8% with start-up companies but achieved 20.8% with LBOs.

In short, even when taking into account factors such as tax variations, investors’ risks are compensated quite differently from one segment to another across the Atlantic.

We present below the main findings of a research we conducted to determine the extent to which these differences are reflected in the perception of success and failure by the French actors of venture capital with respect to the seed / early stage segment, i.e. the area where the relative underperformance of French venture capital is the most striking (Sahut and Mnejja, 2011).

This article is divided in four parts. In the first part, we describe the samples and the hypothetical model we used in our research. In the second part, we present results that clearly indicate that both the French professional investors and the French entrepreneurs have a totally unrealistic perception of what should be the performance of a standard venture capital fund. In the third part, we discuss the likely implications of this phenomenon. We conclude in the last part.

II. RESEARCH FRAMEWORK

A. Sample

If it was logical to interview professional venture capitalists, we felt that a comparison of their perception with that of the entrepreneurs themselves could be enlightening. The questionnaire was thus sent to two different samples.

In the sample of venture capitalists, we targeted funds involved in seed and early stage in the usual high tech domains: information technology, biotechnology, energy, chemistry and new materials. We contacted by mail 50 executives in 35 different funds.
The 30 investors who responded were employed in 22 funds whose respective sizes were consistent with the French venture capital market in general, where 65% of the funds are smaller than 50 M€.

For the second sample, 200 entrepreneurs were contacted, also resulting in 30 usable questionnaires. As for the sample of venture capitalists, several channels were used to achieve as diversified a sample as possible, including the alumni networks of HEC Paris, the Ecole des Mines ParisTech and the HEC Challenge+ program dedicated to start-ups.

B. The Model

We developed a hypothetical fund, operated in accordance with the venture capital standard practices described in Figure 1 below:

![Figure 1](image)

For a standard fund of € 40 million with a 10-year duration, the management fee is 2% per year, that is € 8 million. The amount available to invest in start-ups in a seed / early stage is therefore € 32 million, or 16 investments of € 2 million each.

Our questionnaire (summarized below) specified the characteristics of our hypothetical fund:
With these characteristics in mind, respondents were invited to illustrate three portfolio outcomes: "success", "average", and "failure" (see Figure 3).

For each portfolio, the IRR was obtained using two factors: an estimated IRR and an actual IRR. The estimated IRR was the gross IRR resulting from the question "What do you think is the annual yield of such a portfolio?". The actual IRR was the net IRR obtained after deduction of the management fees and of the potential success fee (carried interest). In the example in Figure 4, two investments yield five times the initial investment, two investments yield 3 times the initial investment, four investments yield two times the initial investment, five investments just recoup the initial investment and three investments result in a loss. This induces a portfolio gain of €18 million compared to €40 million contributed by the investors, which represents an estimated IRR of 7.7%. Since this IRR is below 8%, the management team and the sponsors of the fund are not entitled to a success fee. Accordingly, the actual IRR here equals the estimated IRR.

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**Figure 2**

Summary of the questionnaire

| [...] Consider a fund with €32m to invest at venture stage. This fund makes one deal for 100 business plans submitted. Such a ratio is the average of this industry. 
| During its existence, this fund will finance 16 deals, each one for €2m. The duration of this fund is 10 years. All the €32m are to be invested during the first 4 years: 4 yearly deals. The average holding period of the corresponding shares is 5 years. 
| The capital gain is measured through a multiple of the initial investment, e.g. factor 2 ("coefficient 2") for a deal where the venture capital fund doubles the investment amount. A deal leading to a full loss therefore corresponds to a zero-multiple. 
| The management team is entitled to a success fee ("carried interest") corresponding to 20% of the capital gains beyond a yearly threshold of 8% ("hurdle rate"). [...] Management fees are already deducted. 
| For each scenario, please indicate your estimate of the financial performance (money multiple) of the 16 investments. You can also modify the five multiplying factors ("coeff") corresponding to the forecasted money multiples. For each scenario, please also fill in the cells signaled with arrows, as well as your estimate of each portfolio’s return. [...]
Figure 3
The 3 scenarios of the questionnaire

1) "Success" Scenario

**Successful** Portfolio [Favorable Case]

<table>
<thead>
<tr>
<th>Deals</th>
<th>coeff.</th>
<th>Forecast Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>5</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>3</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>2</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>1</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>0</td>
<td>?</td>
<td>operation(s) with a net loss i.e. Ox</td>
</tr>
</tbody>
</table>

Total: 16

What is, according to you, the yearly return of such portfolio (in %)?:

2) "Medium" Scenario

**Medium** Portfolio [Median Case]

<table>
<thead>
<tr>
<th>Deals</th>
<th>coeff.</th>
<th>Forecast Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>5</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>3</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>2</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>1</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>0</td>
<td>?</td>
<td>operation(s) with a net loss i.e. Ox</td>
</tr>
</tbody>
</table>

Total: 16

What is, according to you, the yearly return of such portfolio (in %)?:

3) "Failure" Scenario

**Failed** Portfolio [Unfavorable Case]

<table>
<thead>
<tr>
<th>Deals</th>
<th>coeff.</th>
<th>Forecast Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>5</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>3</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>2</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>1</td>
<td>?</td>
<td>operation(s) with a Xx money-multiple</td>
</tr>
<tr>
<td>0</td>
<td>?</td>
<td>operation(s) with a net loss i.e. Ox</td>
</tr>
</tbody>
</table>

Total: 16

What is, according to you, the yearly return of such portfolio (in %)?:

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C. Validation of Questionnaire and Establishment of A Benchmark

Prior to its circulation, the questionnaire was submitted to several entrepreneurs and professional venture capitalists to validate the key parameters, including the size of the fund, the average amount invested and the average holding period before selling a company’s stock.

Beyond the French, European and U.S. statistics on IRR available respectively through the AFIC, EVCA and NVCA, we also wished to further standardize our three portfolios model to facilitate future comparisons. We thus validated a benchmark for each type of portfolio with executives of CDC Entreprises and Chausson Finance, who have access to prime indicators for venture capital in France.

This benchmark is shown below, with the corresponding net IRR. Its main interest is to measure the differences between these three standard portfolios and the estimates given by our samples of entrepreneurs and investors.
It is noteworthy that this benchmark generates, for the medium scenario, a net IRR of 7.7%, which significantly exceeds the actual performance of the French venture capital.

### III. MAIN RESULTS

#### A. Standard Portfolio according to Professional Investors

The responses of the venture capitalists for the three portfolios are consolidated below. Given our stated assumptions (16 investments of €2 million each), the actual IRR is 0.3% for the “failure” portfolio, 10.9% for the “average” portfolio and 18.2% for the “success” portfolio.

The estimated yield for investors in our sample ranges from 0.1% for the “failure” portfolio to 24.5% for the “success” portfolio, with 12.2% for “medium” portfolio. This shows that the difference between estimated IRR and actual IRR is quite small, with the notable exception of the “success” portfolio, where the estimated yield is greatly overestimated.
Figure 6
Typical investment portfolios for venture capitalists (VC)

<table>
<thead>
<tr>
<th>Investors (VCs)</th>
<th>&quot;Failure&quot;</th>
<th>&quot;Medium&quot;</th>
<th>&quot;Success&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coeff.</td>
<td>Expected Performance</td>
<td>Number of deals</td>
<td>Number of deals</td>
</tr>
<tr>
<td>10</td>
<td>Number of deals with 10 x money-multiple</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>5</td>
<td>Number of deals with 5 x money-multiple</td>
<td>0.9</td>
<td>1.7</td>
</tr>
<tr>
<td>3</td>
<td>Number of deals with 3 x money-multiple</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>2</td>
<td>Number of deals with 2 x money-multiple</td>
<td>2.9</td>
<td>3.5</td>
</tr>
<tr>
<td>1</td>
<td>Number of deals with 1 x money-multiple</td>
<td>4</td>
<td>3.6</td>
</tr>
<tr>
<td>0</td>
<td>Number of no losses: zero money multiple</td>
<td>6.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Gross IRR of each Portfolio (%)</td>
<td>0.3%</td>
<td>11.3%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Computed net IRR, after carried interest (%)</td>
<td>0.3%</td>
<td>10.9%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Estimated IRR by respondents (%)</td>
<td>0.1%</td>
<td>12.2%</td>
<td>24.5%</td>
</tr>
</tbody>
</table>

Figure 7
Differences between actual IRR and IRR as estimated by the venture capitalists

B. Standard Portfolio according to the Entrepreneurs

Turning to the 30 responses from the sample of entrepreneurs, actual IRR ranges from 3.2% for the “failure” portfolio to 19.1% for the “success” portfolio, with 11.8% for “medium” portfolio.
The estimated yield for entrepreneurs in our sample ranges from 3.9% for the “failure” portfolio to 29.3% for the “success” portfolio, with 14.7% for “medium” portfolio. We see again that the difference between estimated IRR and actual IRR is small, with the exception of the “success” portfolio where the overestimation of the yield is even higher than in the sample of professional venture capitalists, since the gap is almost 10%.

Differences between actual IRR and IRR as estimated by the entrepreneurs
C. Differences between Two Samples and Comparison with Our Benchmark

Comparing for each of the three scenarios, the venture capitalists’ standard portfolio, the entrepreneurs’ standard portfolio and the benchmark established with the assistance of the two experts interviewed, we obtain the following plots:

**Figure 10**
Comparison of the different portfolios

In terms of portfolio composition, differences in estimates are quite small, with the entrepreneurs being only slightly more optimistic than the venture capitalists. This results in actual IRR of respectively 3.2% against 0.3% for the “failure” portfolio of 11.8% against 10.9% for the “average” portfolio and of 19.1% against 18.2% for the “success” portfolio. However, the gap widens for the estimated IRR, that is, the rate to be specified by each respondent as an estimate of the respective performance of the three portfolios. As shown in Figures 6 and 8, the perceived performance (estimated IRR) for the respective portfolios is systematically higher than their actual performance (actual IRR), especially in the “success” scenario.

The same bias is found when comparing the portfolios of our two samples with the benchmark established for each of the three scenarios: both performances (actual and estimated IRR) are systematically higher than that of our benchmark. This gap between actual performance and perceived performance appears at three different levels.

First, neither the venture capitalists nor the entrepreneurs envisage a “failure” portfolio with a negative return, although the benchmark indicates a net IRR of -5.6%. We shall return later to this apparent reluctance to consider a failure. For now, simply note that even the negative return shown in our benchmark for the “failure” portfolio is optimistic in light of the actual performance of the lower quartile of French venture capital funds or even of the entire private equity sector (average net IRR of -11.2%).
Second, the “medium” portfolio’s performance is also overestimated, albeit less than that of the other two portfolios. This overestimation is particularly important, considering that the 7.7% yield which is the benchmark of our “medium” portfolio is already fairly optimistic in light of the actual performance of French venture capital (average net IRR of -0.8%). Currently, the average profitability of the French venture capital is thus less than what venture capitalists themselves regard as a failure!

Finally, it is on the “success” portfolio that the gap is the widest, with venture capitalists and entrepreneurs surpassing our 16.9% benchmark by 7.6% and 12.4%, respectively. If we compare the portfolio composition proposed by the two samples with that of our benchmark, we see both an overestimation of the number of highly-profitable investments (ten times the initial investment) and an underestimation of the number of instances resulting in a net loss (see Figures 6 and 8).

IV. ANALYSIS OF THE PERCEPTION BIAS

A. The Overestimation of the Potential Success

The systematic overestimation of the performance of French venture capital culminates in the “success” portfolio, as if the respondents had more or less consciously chosen to remember only the most legendary landmarks in the history of American venture capital.

It is the entrepreneurs who are the most optimistic, as they set the performance of a “success” portfolio at 29.3%. This erroneous belief can be attributed, at least in part, to their limited knowledge of the realities of venture capital and it is arguably positive, since it can only stimulate entrepreneurship.

More worrying is the IRR of 24.5% retained by the venture capitalists. This percentage, albeit slightly lower, is also totally disconnected from reality and cannot this time be explained by an ignorance of the reality of French venture capital. Only a handful of French start-ups have managed to date to create sufficient value in a 5-year timeframe to provide a significant added value and a reasonable degree of liquidity. The reality of the sector is even less attractive in the post start-up phase, for subsequent growth phases typically require new rounds of funding that tend to reduce significantly the relative share of the early investors and hence, the potential leverage of their investments (Gerasymenko, 2008).

Responses from professional venture capitalists thus reflect a disturbing internet bubble-like vision, as if in their world, the so-called “home runs”, i.e. those mythical operations that generate with a single investment a gain greater than the size of the fund, were commonplace.

This phenomenon is not recent. More than a decade ago, we were already reporting that the French venture capitalists had produced a fantasized frame of reference, riddled with North-American landmarks that could be found even in their jargon and procedures (Krieger and Medjad, 2005).

This fantasy having survived the last financial crisis, its resilience is now a fact. Some authors consider that it may even grow stronger, due to the “illusion of control” arising as the French venture capitalists increasingly diversify their activities (Duhaime and Schwenk, 1985; Durand, 2003; Gerasymenko, 2008).
B. The Underestimation of the Potential Failure

If the chances of success are overstated, the risk of failure is, in turn, largely undervalued. The very possibility that a venture capital fund may return to its investors less money than they have invested is apparently inconceivable in our two samples.

In addition to an estimated IRR of 3.9% for entrepreneurs and 0.1% for venture capitalists, the estimated number of investment losses is also limited to 6 cases in 16 for the two samples against 9 cases in 16 for our benchmark portfolio. The estimated failure is thus significant less than what is actually experienced by the worst performing quartile of French venture capital.

Again, it is necessary to distinguish the two samples, not so much because of the - minor - difference between their respective assessments but because in this case also, the same error has different implications, depending on whether it is attributable to one or the other.

Indeed, entrepreneurs still have the excuse of their ignorance of the sector in question, even if their inability to assess the risk or predict windfall gains (Allais, 1953; Kahneman et al., 1982) is probably not sufficient here to explain the full extent of their evaluation bias. Most importantly, we must recognize that their lack of realism in this regard, just as their exaggeration of the potential gains, is potentially beneficial to business creation.

Among venture capitalists, however, optimism seems to be more a matter of plain denial than of misjudgment. Several venture capitalist interviewed on this matter confirmed that the topic of failure was a taboo, despite the fact that the risk of negative IRR is inherent to their activity. These investors acknowledged their ambivalence about the notion of failure, but also sought to rationalize it. One of them stated: “In a portfolio, the failure is frowned upon. If it is a serious failure, there will be no new investor in the venture capital fund. Because, even if the past is no guarantee of the future, it gives a good idea of the quality of the venture capital company and the people who constitute it”.

This paradox of a risky sector characterized by a high degree of risk aversion of its players may explain, at least in part, the poor performance of French venture capital. The risk aversion of these venture capitalists could curb their ability to invest in other ventures than those offering products and services that have already passed the “home run” test in the U.S. Because of this more or less conscious tendency to follow the herd, French venture capitalists find themselves deprived of the first-mover premium enjoyed by their U.S. counterparts, while being fully exposed to the effects of the bubbles triggered by the “home runs”.

Unlike in the case of the entrepreneurs, the idyllic vision that French venture capitalists have of their own activity is therefore ultimately devastating because their quest for mythical targets inevitably carries a risk of rejecting young companies whose only drawback would be to be truly innovative.

V. CONCLUSION

We have shown in this study that while the investment practices of professional venture capitalists are largely global, the strategies and the actual performances of the funds remain surprisingly local (Gottschalg and Phalippou, 2009).
Without questioning the fact that structural factors probably come into play, we argue that the underperformance of the French venture capital is inevitably compounded by a gross misconception of success and failure by its actors as well as by the propensity of the French venture capitalists to mimic their American counterparts.

Due to its limited scope, this study did not enable us to measure precisely the extent to which this puzzling myopia is detrimental to innovation, nor for that matter, to fully explore its - probably complex - causes. It would thus be useful to extend this research to other samples such as business angels and bankers (Certhoux and Redis, 2010), to other stages of venture capital and to other countries, in order to compare several types of investment portfolios.

At this point of our research, three claims stand out however. First, French venture capital cannot, under the present conditions, meet the demand of start-ups in the seed and early stages. Second, unlike in the downstream segments (development capital and LBO), this sector is so much less profitable in France than in the U.S, that the normal operation of the market is unlikely to create, in the foreseeable future, the conditions to convince the French venture capitalists to migrate to the upstream segment. Third, the risk aversion of the venture capitalists currently observed with respect to the seed and early stages seems difficult to overcome, since this state of mind is as much the result of a misconception of success as of a fear of failure.

Thus, beyond the debate on the local roots of these two phenomena, all conditions seem to be met in France to justify greater intervention of the public authority in the seed and early stages segments of the French venture capital industry. Indeed, if, as the literature generally argues, it is true that the creation of innovative companies favorably impacts the economic performance of an entire country, then it is a public policy matter to ensure that the risk inherent to any new innovative business is not less compensated in France than in the Silicon Valley.

Accordingly, the central question is not so much the principle of a public intervention than the nature and scale of such intervention, a matter that requires a prior clarification of the apparent similarity of the French venture capital with its European counterparts: with a net IRR over 10 years of +1.8% for the seed / early stage segment (EVCA, 2008), the European Union also achieves a result well below the U.S 34.5%.

A more precise breakdown is necessary to ascertain the reality of a European venture capital culture and in turn, the relevance and the feasibility of a European public response. This shall be the focus of our subsequent research.

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