How Well Does Venture Capital Perform in France?

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ABSTRACT

The main objective of this article is to examine the financing of venture capital in France, and in particular, the performance of Mutual Funds for Investment in Innovative Enterprises (FCPIs) which represent around 50% of venture capital funds raised. After a review of the literature, we assess the performance of FCPIs based on the study of 127 funds launched between 1997 and 2005. We show that their performance is characterized on the one hand by a 'J curve' that we validate empirically and, on the other hand, by an average profitability which remains low considering the risks incurred. The attraction of these funds, except for a few rare exceptions, comes from the tax incentives which they provide.

JEL Classifications: G24, G31

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I.   INTRODUCTION

The difficulties faced in financing the creation and development of innovative SMEs is due to the nature of these innovative projects: their future is uncertain and the process is lengthy, often spread over several years. This type of company often has difficulty securing bank loans due to the rules governing their allocation and thus has to resort to alternative sources of funding. Consequently, private equity, and venture capital in particular, has become the main instrument for financing innovation in most countries although it is often too limited to cover all funding needs. Without this type of funding, an essential link in the development of this type of innovative industry, many current giants in the field, such as Amazon, Google or eBay, could not have emerged. All the big players above are of American origin which brings us to question how unlisted innovative companies with strong growth potential are funded in France.

The objective of this article is to question the future of the venture capital industry in France by studying its performance. Considering the risks incurred, it must reach a certain level of performance to attract investors or may risk disappearing. We will study in particular the performance of FCPIs to gain a better understanding of how the performance of this type of fund has evolved over time, how it has been strongly affected by the bursting of the dot.com bubble (in particular the Internet, e-commerce and telecommunications sectors) in March 2000, and the impact of tax incentives available to FCPI investors.

II.   VENTURE CAPITAL FUNDING

There are few works covering the performance of Private Equity funds and they can be classified into two categories. The first category concentrates on studying their performance per investment. The second category examines the question of how the funds, as a whole, perform. This second approach is much more developed than the first one because data is more easily accessible and accurate.

A.   Performance of Investments

In order to evaluate performance of investments, Woodward & Hall (2003) and Hwang *et al.* (2005) built an index which they use to calculate correlation between their index and a market index. It is based on new funding rounds, IPOs, and acquisitions. The common problem with all these studies is that the authors only take into account successful exits. Moreover, in most cases the observations are quarterly. The leading study on the subject is that of Cochrane (2005) which uses an original approach to correct selection bias. He supposes that the change in the logarithm of the investment value follows Log-normal distribution and that the probability of observing a new funding round follows a logic which depends on the firm's value. He uses the maximum likelihood approach to calculate the alpha and beta of firms. The data is provided by the VentureOne database, giving the valuation of 7,765 American companies during the period from January 1987 to June 2000, for 16,613 funding rounds totalling 112 billion dollars. This database is supplemented by other statistics on the financial results of IPOs and Mergers & Acquisitions operations, which show the projects have made successful exits. The return is calculated by measuring the value

created between a financing round and the exit of the venture capital, whether successful (IPO, trade sales) or unsuccessful (gone out of business). Excluding the returns between intermediary rounds makes it possible to have a more reliable measurement of value creation from venture capital. However, this increased reliability is offset by the existence of a powerful selection bias, since the exit of the VC is overwhelmingly associated with success.

The return distribution of these VC exits is however spectacular: calculated from 3,595 observations, the arithmetic mean return over the period is 698% with a high standard deviation. This distribution is described well by a Log-normal distribution, with a mean log return of 108% and a 135% standard deviation. The distribution of the non-annualized log returns depends little on the project's age, thus testifying to the exit strategy used by the funds. A successful exit occurs when the multiple value creation exceeds a threshold. This "multiple rule" is used by Cochrane (2005) to correct selection bias, and to thus obtain an estimate of the distribution of (log-) returns on all projects. The distribution, after being corrected for selection bias, of log-returns is more reasonable. The mean annualized log return is 15%, which brings it more in line with the 15.9% of annualized log-return from the S&P 500 index. Idiosyncratic volatility (among projects) is high: the standard deviation of log-returns reaches 89%, far above that of the S&P 500 (14.9%). The high idiosyncratic volatility pushes the mean annualized arithmetic return to an elevated level of 59%, far higher than the mean return of the S&P 500 over the same period. The "VC funded project" asset is unlike average listed assets as it has a slight chance of generating a huge return. The author finds a beta of 1.7 and an alpha of 32% net of management fees. He concludes that the rates of return are very volatile and that investments nearing exit have a lower volatility than investments which are at the early stage.

B.   Performance of Funds

In this second category, researchers look for of how the funds, as a whole, perform. Gompers and Lerner (1997) examine the performance of a sample of 78 Private Equity funds. They adjust the performance of each fund in relation to the market and to each investment. All the portfolio values are then regressed in relation to a series of factors to calculate the fund's performance.

Jones and Rhodes-Kropf (2003) introduce and test a model in which the principal-agent problem results in excess returns from funds which increase with systematic risk. The authors find an alpha which is positive, but statistically non significant. Although the results of the study on systematic risk are interesting, the alpha estimates are skewed because they are calculated on quarterly data. Residual values are also determined at the discretion of the General Partner (Blaydon & Horvath, 2003), referred to as GP[1], and are mainly equal to the sums invested.

Kaplan and Schoar (2005) show that in the United States, the average net profitability of Private Equity funds is 5% higher than the average profitability of the S&P 500 index over the period 1980-2001. The profitability of these Private Equity funds is calculated after fund managers have been compensated (approximately 20% of carried interest and 1.5% to 2.5% of the managed funds in management fees), which shows a brut performance well above that of funds invested in listed shares.

Ljungqvist and Richardson (2003) analyze the process of investment from the perspective of the GP by concentrating the study on the sums invested versus sums distributed. They find that Private Equity funds perform better than the market. However their sample is relatively small. Moreover, they have left out venture capital funds from their sample which generally has an average performance which is much lower than Private Equity funds according to Kaplan and Schoar (2005).

The study by Kaplan and Schoar (2005) is considered the leading article on the subject. The authors try to assess the net return investors receive over the fund's lifespan. The authors use a broad sample of mature American funds, set up during the period 1980-1997. The data comes from Venture Economics and covers 746 funds operating in the venture capital (VC) and buyout (BO) segments, which have an identified GP.

For each of these funds, Kaplan and Schoar have cash-flow records between Limited Partners (LPs) and General Partners (GPs) up until 2001, as well as the residual value of the funds when the latter is inactive. For liquidated funds, the return is calculated on the basis of payments made during its investment horizon. For inactive funds, the residual value is regarded as a cash-flow from the last date. Rather than use an internal rate of return (IRR), Kaplan and Schoar measure the net performance by a profitability index or PME (public market equivalent). This index compares the fund's performance with that resulting from an investment, using a time-table of equivalent cash-flows, in an S&P 500 index-linked asset. The average index (weighted by the funds' committed capital) calculated on all the funds is 1.05 which shows that Private Equity outperforms the market. For funds with identical lifespans, investing 1 euro in a private equity fund would, on average, be as profitable as investing 1.05 euro in an asset listed on the S&P 500 index. The average profitability from the VC segment would be appreciably higher than that of the BO segment with a PME index of 1.21 against 0.93.

In annual terms, the gap between the average net return from private equity and the return from listed investments is positive but small. This result is rather surprising when taking into account the specific features of the private equity asset: risks linked to the agency relationship between LPs and GP, the nature of the projects funded, the level of debt leverage/equities of BO transactions and the illiquidity of the investment. This small yield gap contradicts the often more flattering level of returns announced by the media or the industry.

Artus (2008) analyzes the comparative returns of private and the public equity on the US and European markets, over the periods 1995-2006 and 1996-2006 respectively. Using a different method from Kaplan and Schoar the aggregated returns from private equity are calculated quarter after quarter taking into account the balance of cash-flows during the period and the differences in net asset value (NAV) of the funds between the beginning and the end of the period. The evaluation of the NAVs, reported by the funds, is an approximate accounting procedure, which could be thought to "smooth" changes to the true fund value. With this method, the net yield gap in favour of private equity over listed assets reaches 6.99% per year in the United States and 8.29% per year in Europe. Taking into account the volatilities and correlation between the returns of the two categories of assets, Artus (2008) estimates that the level of private equity held by investors is below the optimal level resulting from a model of portfolio choice.

Artus (2008), on the one hand, and Kaplan and Schoar (2005), on the other, reach opposite conclusions about the aggregate performance of private equity assets. Artus calculates a short-term return calculated period after period starting from accounting valuations (NAV) of the fund assets. Kaplan and Schoar concentrate on the long-term returns, over the fund's horizon, taken from actual cash-flow operations.

Artus and Teïletche (2004) show that the accounting measurement of the return, known as TWR (time weighted return) based on the funds' NAV report, used by the industry, is affected by a 'smoothing' bias resulting from the methods used by the funds to value their net assets. The results from Kaplan and Schoar (2005), or Kaserer and Diller (2004) on European data, seem to show that this bias affects not only the temporal profile of a fund's returns but also the level of the pooled weighted return, which is calculated for each period.

A short-term return from private equity has little sense when the illiquidity of the asset is taken into account. From an investor's point of view, the decision to add private equity to his portfolio involves making a commitment, and is therefore based on the examination of the long-term returns from the fund. Only an approach, such as that of Kaplan and Schoar (2005) based on the records of actual cash-flows offers solid information on the level of returns. As an investment realization is a rare event, one can understand both the difficulty for the analyst and the prudence of the investor.

Gottschalg and Phalippou (2009) show that the measurement of average net return is affected by various biases. The observation made by these two authors is therefore difficult to contest: the average performance (net of remunerations) of private equity is noticeably lower than that obtained by an equivalent investment in listed shares.

The data used comes from Thomson Venture Economics (TVE) and resembles that of Kaplan and Schoar (2005): 852 American and non-American mature funds, set up between 1980 and 1993, which cover 57% of amounts invested in the world, and for which there is cash-flow data until 2003. In this sample, the average IRR (weighted by the size of the funds e.g. committed capital) given to investors is 15.2%, and the average profitability index (still weighted by committed capital) is 1.01.

The authors make a correction of aggregation by calculating weightings in terms of amounts actually invested (discounted value of payments made by investors), which makes the aggregation of the profitability indexes more 'transparent'. The aggregate profitability index is then 0.99.

The data collected by TVE from the funds has a double defect. Firstly, the sample contains funds described as "living dead", having exceeded the age of liquidation, not showing any sign of activity, but which have nevertheless been given a 'residual' positive net value (29). If one no longer considers this residual value as a final cash-flow the PME index drops from 0.99 to 0.92. Secondly, by comparing the TVE data with the larger VentureXpert sample, Gottschalg and Phalippou (2009) notice that the funds having experienced "profitable" investment exits (IPO or trade sales) are overrepresented in the sample, as these funds are also the best performers. By exploiting the relationship between performance and rate of profitable exits in the core sample, Gottschalg and Phalippou (2009) extrapolate the performance using a widened sample, which further lowers the PME by 0.04 to 0.88. After correcting this bias, and adding it to an annual yield gap, the difference private equity/public equity would be

around 3% against private equity. This constitutes a significant under-performance, which might be considered as the first ingredient of an enigma of private equity returns.

Phalippou and Zollo (2005) find an IRR of 16% and a profitability index of 1.05. The sample is made up of 983 American Private Equity funds between 1980 and 1996. Not taking into account the funds which have not yet been liquidated boosts the results. Moreover, the funds which have a weak performance will be tempted to artificially increase their IRR. The decision to liquidate is therefore endogenous and influenced by successful investments.

The results given by professional studies on the performance of Private Equity funds are influenced by leading market indexes published by Thomson Venture Economics. The methodology used to assess the performance of these assets over-estimates the funds' performance. On the one hand, the method of assessment which consists in aggregating the funds' internal rates of return does not take into account the fact that the funds have variable lifespans. Funds which have a long lifespan have greater weight compared to other funds. On the other hand, the characteristics of the database used for the statistics present a problem on two levels. Firstly, the performance is inflated by the residual values (investments which have not been realized but kept in the portfolio) which are treated as future cash flows. Secondly, the standards used for the publication of statistics over represent the best performing funds.

Gottschalg and Phalippou (2009) note that the samples chosen as industry benchmarks included assets with above average performance. Following the methodology used by Thomson Venture Economics, the average performance of the 1,328 funds studied attained an IRR of 15.2%. However, this rate only vaguely reflects the reality of the true return on investment. The authors advise using a more reliable assessment method by using the profitability index (current value of the cash-flows received by investors divided by the current value of the capital paid by the investors). They then correct the bias relating to the type of sample, the performance levels prove to be on average 3% higher than those of the stock markets. Moreover, the fees received by the managers sharply reduce investors' profits. Thus, with an average rate of annual management fee at 6%, Private Equity funds offer a performance 3% lower than stock markets.

The following section studies the main private equity investment vehicles on the French market. We explain the operating process and the characteristics of each type of fund. In the following section, we examine the performance of the Mutual Funds for Investment in Innovative Enterprises (FCPIs) in order to better understand how the performance of this type of fund has changed over time; a performance which was badly affected by the bursting of the dot.com bubble in March 2000.

C.   The Persistence of the Funds' Performance

The persistence of the funds' net returns obtained by Kaplan and Schoar (2005) may reveal a lack of competition, giving an advantage to investors with longer experience, who, by having priority access to the most profitable investments, put up barriers against new GPs entering the market. On this point, the empirical evidence presented by Kaplan and Schoar (2005) is ambiguous: the arrival of new funds effectively lowers the performance of funds which are already present, more especially if the latter are 'young'.

More established funds therefore seem to be less sensitive to the entry of competitors, especially in the VC segment. Above all, it is disconcerting that persistence relates to the funds' net performance. Indeed, unhindered competition between GPs in relation to investors should lead to the disappearance of differences in anticipated net returns (by taking into account the observation of track records).

The GP's remuneration should include systematic compensation due to his talent and decreasing returns. Persistence should thus affect only gross returns, not net returns. Due to lack of data on remunerations, Kaplan and Schoar (2005) are not able to examine the way in which compensation is divided between the GP and LPs. However, heterogeneity and persistence characterizing the distribution of net returns indicate that the relationship which is formed between the GP and LPs at the time of the constitution of a fund concern more a process of frictional matching than a transaction in a perfect competition market.

This point is confirmed by the study by Lerner, Schoar and Wong (2007). These authors cross data on returns from LPs and GPs. They show that the net return obtained by the investor depends on the nature of the latter. Over the two last decades, universities and foundations (endowments) obtain an annual rate of return on their investments of 14% over than that of the average investor. Banks and investment advisers have the lowest performance among investors. The presence of a high quality investor in a fund thus increases its net performance. The authors show that the LPs level of market experience is a determining factor of performance. Lerner, Schoar and Wong (2007) conclude that the behaviour of LPs, their ability to use their previous experience to select not only the funds but also the funds' investment plans, is an essential component of performance. They also note that when inexperienced LPs enter the industry during a boom, the industry's cycle is accentuated. It therefore seems that the match between LPs and GP is frictional, which justifies a process of sharing of compensation between the two sides of the match.

It may also be that an investment in private equity is made for other reasons than realizing a direct return from the operation. A bank can gain extra income by taking part in syndication and debt management operations linked to the BO. The nature of competition, and the adjustment between return and quantity, is also subject matter for a vast amount of writing on the cyclical character of the industry. How do the intrinsic characteristics of the industry and of the competition which takes place there contribute to accentuate the cycle?

Gompers and Lerner (2000) have highlighted the phenomenon of the "money chasing deal" to show that during boom times the surge of capital runs up against the restricted number of investment opportunities, which increases the value of these opportunities, and is likely to reduce the returns obtained.

Kaplan and Schoar (2005) show that, with time, high net performances attract new GPs entering the market who raise large funds. These first funds, created after a "boom", do not perform well and are thus unlikely to be followed by a second fund from the same GP. Remembering that the best performing GPs limit the growth of their funds, Kaplan and Schoar (2005) conclude that the marginal dollar invested during a boom mainly goes to the new GPs, who will be less able to create new funds. The growth of the industry is accompanied by a decrease in average performances of the funds, which progressively deflates the "boom" and propels the cycle.

III.   ANALYSIS OF THE PERFORMANCE OF FCPIS IN FRANCE

A.   Characteristics of FCPIs and Data-Gathering

FCPIs were created in 1997 to support the development of unlisted innovative firms. Compared to other Venture Capital Investment Funds, they were given an additional tax incentive; a tax reduction at the time of the subscription in addition to exemption from capital gains tax[2]. As opposed to investments in other types of funds, an investment in a FCPI is generally blocked for at least five years and sometimes for the whole lifespan of the fund (between 7 and 10 years). The investment is unlocked through a form of distribution (with possible capital gains) operated by the fund manager before breaking up the fund. Indeed, purchase and transfer operations are rare before the fund matures due to the tax incentives and the relative illiquidity of this type of investment. The transfer of FCPI *s*hares can only be carried out by mutual agreement to a new subscriber. But any transfer during the first 5 years of FCPI's existence involves the cancellation of the tax incentives. The purchase of FCPI shares can be requested, before the date of the fund's maturity, only in the cases of disability, loss of employment or the death of the shareholder or spouse (if they make joint tax declarations). In the latter case, the tax breaks are not affected.

In return for tax incentives, the FCPIs are committed to invest at least 60% of their assets in shares of unlisted innovative firms[3]. However, regulations have been softened as FCPIs can include in this quota 1/3 of listed companies if their stock market capitalization is less than 150 million euros. The remainder of their assets can be invested freely (monetary investments, shares, bonds, etc.). Consequently, the performance of a FCPI will depend on the investment strategy both in the innovative firms (what proportion of assets should be consecrated and the choice of company) and also on the remainder of the assets. Three types of strategy can be identified:

- highly aggressive: over 60% invested in innovative firms, even up to 100% in this category of asset,
- aggressive: 60% invested in innovative companies and 40% in shares (or mutual fund shares), and
- defensive: investment of 60% in innovative firms and 40% in bonds (or monetary products).

Our sample of FCPIs was selected using Boursorama and SicavOnline databases. The performance of this type of fund is less likely to be followed by fund managers and consequently by data providers such as Thomson Financial. Moreover, FCPIs do not always respect their obligations to publish their net asset value, which makes data collection difficult and requires the cross-referencing of databases in order to check their validity. Each time a dissonance appeared between these two databases, we looked for another information source by either contacting the funds in question directly or the securities commission (AMF).

Our initial sample included 152 FCPIs over the period 1997-2005. We stopped at 2005 even though the funds are still in their phase of investment. The measurement of their performance may therefore be unrepresentative. After eliminating the funds for which we did not have the complete series, our sample is made up of 127 FCPIs launched between 1997 and 2005.

B.   Performance and "J curve" Effect

As we have already mentioned, the performance of a fund depends on the strategy of its manager and in particular on the proportion of the assets invested in unlisted companies. The higher this proportion is, the more the fund will experience a "J curve" effect in the first years.

This phenomenon characterises funds investing in unlisted companies as the process of managing such funds is broken down into two phases: the investment phase (finding and investing in the companies), and the realization phase reselling the portfolio of companies (by industrial transfer, IPO, etc.). The first phrase can last over 5 years for funds which have a lifespan of 10 years. Their performance is generally negative for the first years, and then grows exponentially once the capital gains released by the portfolio cover the management costs. By comparison, a fund which invests the major part of its assets in listed companies (fund which is 100% listed) does not experience this "J curve" but it is exposed to the variations of the market throughout its lifespan. If we assume that the market is bullish and that the investment in the unlisted companies achieves a return above that of the market, the performance of the 100% listed funds will be higher in the short-term, but lower in the long term than the 100% unlisted funds. Mixed funds with 60% unlisted companies (including 60% listed companies and 40% unlisted companies) have an intermediate performance profile, and are less influenced by the "J curve" effect.

Figure 1
J curve effect
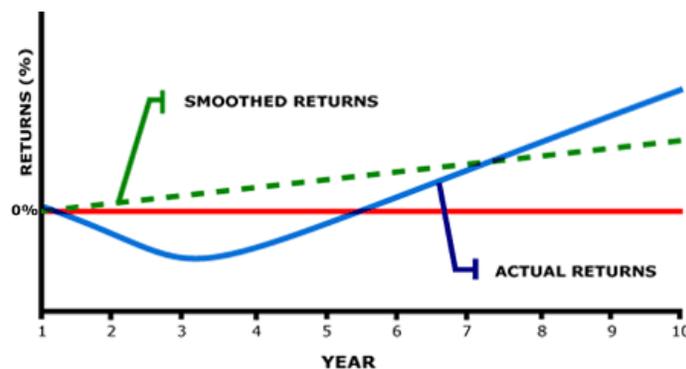
In our sample, this "J curve" effect shows many disparities for two reasons. Firstly, many funds invest just the legal minimum (60%) of the capital raised in unlisted companies and the remainder in traditional savings vehicles (shares, bonds, monetary products). Secondly, this effect is much less discernible for funds launched in 1998 and 1999 because of presence of the "dot.com bubble" from 1998 to March 2000. The method of comparables used to value the investments and possible exits onto stock markets led to an overvaluation of funds' values. For example, FCPIs launched at the end of 1998 increased on average by 23% over the first 18 months of their activity. However, this effect is much more visible from 2001. As for the overall performance of the funds, strong disparities can be observed that we will study in the following section.

Figure 2
Changes in the performance of FCPIs
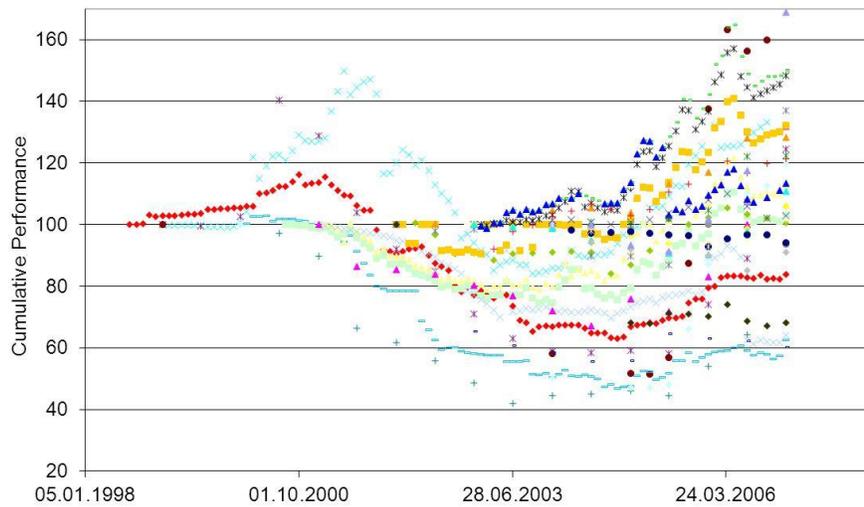
C.   Performance and IRR

Studying the performance of FCPIs strongly depends on tax incentives, and should be compared with an index of reference. We chose the CAC 40 because of its status but also because it is strongly influenced by changes in high value technology assets (cf. evolution of the CAC 40 compared to Dow Jones[4]). However, the cumulated performance is too imprecise an indicator because this type of calculation does not take time into account. This is why we resort to using the funds' IRR calculation.

Table 1
Descriptive statistics

	IRR without tax incentive	IRR with tax incentive
Mean	0.028822766	0.120149717
Min	-0.146448423	-0.107831135
Max	0.191230092	0.323665199
Standard deviation	0.063074009	0.08920215
Kurtosis	0.46	-0.01
Coefficient of asymmetry	-0.14	-0.08
Number of data	127	127

In Figure 3 below, we have represented the cumulated performance of the FCPI*s* in June 2006 according to their launch year. The blue curve represents the average performance, and the red points give the performance of an investment in the CAC40 index.

We calculated the correlation with the market, the R^2 and the beta of FCPIs which were over five years old at the time of the study. We notice that all the funds follow the same trend (both when rising and falling). In other words, all the funds drop at the same time and according to the same trend. One can deduce that these funds are strongly correlated between each other. They are also strongly correlated with the key market indicator of the Paris Bourse, the CAC 40, even if the latter is not the most representative. The average correlation of our sample with the CAC 40 is 0.25 and more than 20% of the funds present a high correlation (over 40%) with the CAC 40 index. According to a study carried out by Cambridge Associates, venture capital shows a correlation of -17% compared to American bonds and a correlation of 38% with the S&P 500 index.

The average performance is positive except for FCPIs launched in 1999 and 2000 which could not catch up with the losses resulting from investments carried out during the dot.com bubble. The performance of the FCPIs set up in 2004 and 2005 is completely normal because they are in phase of building their investment portfolio in innovative firms ("J curve" effect). But the average performance of the FCPIs is still lower (or equal in 2001) to that of the CAC 40. In fact, some funds boost the average performance whereas the majority is only attractive because of their tax break entitlement.

The tax incentive (possible tax reduction of 25% on the totality of the funds invested without ceiling) makes it possible to considerably improve the average performance of the FCPIs and, up until 2002, made it possible to achieve a higher performance than that of the CAC 40 which consequently regained the advantage.

The disparity of the performances between funds is very high but shows relative stability. Indeed, if one looks at the management teams, there is a strong correlation of the performance of fund they manage. Moreover, when one ranks the funds in quartiles according to their performance, one generally finds the same teams in the various quartiles. This shows a consistency in their performance whether good or bad. Moreover, specialized "small teams", on average, perform better that those dependant on large banks or financial firms.

Similarly, it is not the funds which raise the most capital which perform the best. It seems that an effect of diseconomy of scale sets in once a certain size has been reached. Moreover, the importance the general public places on performance when making investment decisions is reduced by the impact of tax breaks and the weight of marketing networks where high street banks have a competitive advantage over independent funds.

Figure 3
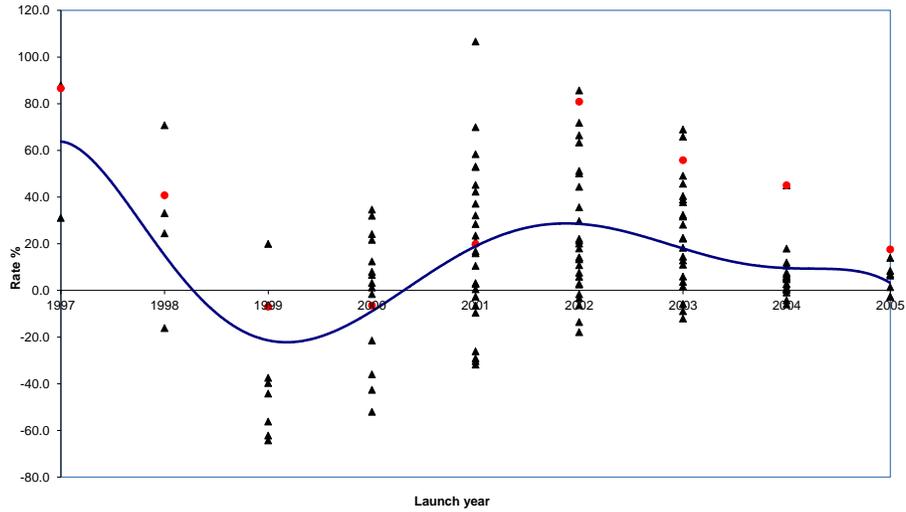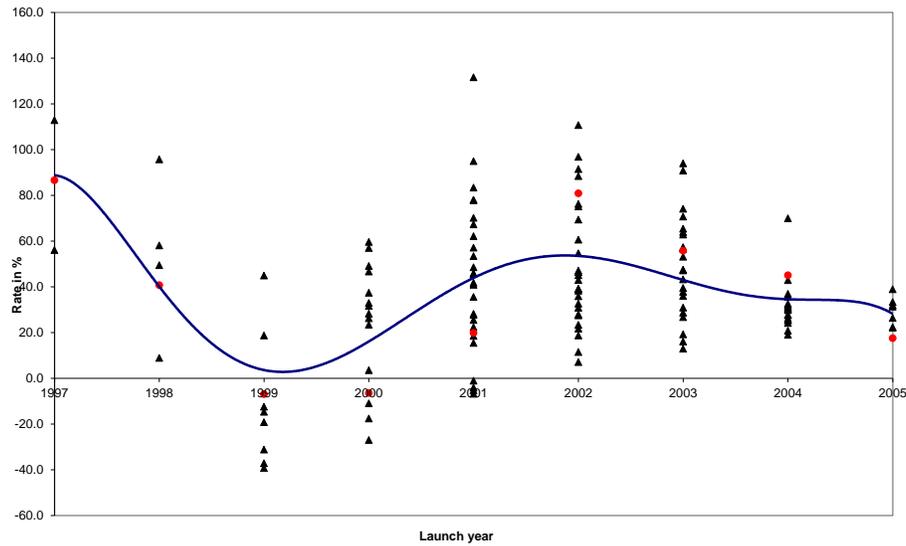Cumulated performance of FCPIs without tax incentive

Figure 4
Cumulated performance of the FCPI with tax incentive

With regards to average IRR, it is worst for older vintages from 1998 to 2000 (negative for FCPIs from 1999 and 2000 and equal to 0% for FCPIs from 1998). It then improves but stays at a level just above the risk-free interest rate (estimated at 4% at the

end of 2006) for the other periods. On the other hand, the IRR of the top quartile (green points on the graph) are always positive with peaks at 12.44 and 13.46% respectively for funds launched in 2002 and 2003. The weak average IRRs from 2004 and 2005 are logical when taking into account the youth of the FCPIs in question. They are still in the phase of making up their investment portfolio. The average remuneration from this type of investment is therefore low when taking into account the higher risk involved and their relative illiquidity until the fund is broken up. However, the remuneration from the top quartile shows that after the dot.com bubble burst there is a much higher profitability (approx. 12% for the funds from 2001 to 2003) and it is comparable to the average profitability of private equity funds in France (12.1% over the period 1988-2006)[5].

This study shows that it is difficult to assess and compare the performance of FCPIs especially as there are strong disparities between the funds.

In brief, the attraction of FCPIs remains mainly the tax incentive and its suppression or its reduction[6] could have a significant impact on funds raised. Thus, the higher level of fund raising experienced in 2005 by FCPIs in spite of competition from FIPs (local investment funds) would be mainly due to asset managers' anticipation of the introduction of a tax incentive ceiling in France.

Figure 5
IRR of FCPIs compared to that of the top quartile (in green)
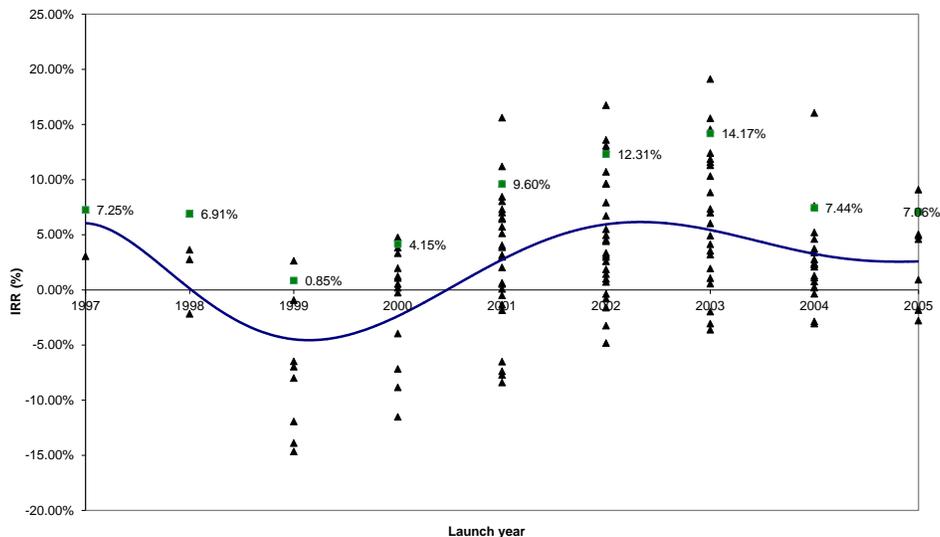
D.   International Comparisons of Venture Capital Funds

Finally, we compare the performance of FCPIs per launch year compared to a sample of American VC funds obtained from American CalPERS pension funds, (pension fund

of the employees of California). CalPERS manages funds totalling 190 billion dollars that they invest in shares, bonds, real estate and private equity funds. We chose a sample of 164 funds launched between 1997 and 2004 divided as follows: 71 funds with a lifespan exceeding 5 years, 36 in existence for 5 years, 14 funds in existence for 4 years, 17 funds in existence for 3 years and 26 funds with a 2 year lifespan.

The French FCPIs show much lower performance than the American funds before taking into account the tax incentive (bef. TI) whichever year is considered. On the other hand, the integration of the tax incentive gives the advantage to the French funds. This advantage is all the more marked for the most recent dates since it is granted at the time of the subscription of the funds. Indeed, without a tax incentive, the differential of performance between the French and American funds is less favourable to the French funds in 2004 than in 2003 but the trend is reversed when the tax incentive is added. The latter undergoes, via the calculation of the IRR, an additional year of discounting in 2003 compared to 2004.

This analysis highlights the significant impact of the tax incentive on FCPIs which explains most of the performance of this investment vehicle, in particular compared to the American funds.

Table 2
Comparison between FCPI and USA funds

	FCPI			USA Funds		Differential FCPI/USA funds	
	N° of funds	IRR bef. TI	IRR after TI	N° of funds	IRR	Diff. bef. TI	Diff. after TI
Before 2000	14	-3%	1%	43	2%	-5%	-1%
2000	15	-1%	4%	26	4%	-5%	0%
2001	26	3%	9%	36	7%	-4%	2%
2002	27	5%	13%	14	8%	-3%	5%
2003	23	6%	17%	17	10%	-4%	7%
2004	18	3%	18%	26	9%	-6%	9%

IV.   CONCLUSION

The objective of this article was to question the financing of venture capital in France and the profitability of FCPIs which is the main investment vehicle.

The venture capital industry seems globally to have come out of the crisis but convalescence has been shorter or longer depending on the country and the possibility of relapse is strong, particularly in France.

Among the problems mentioned, the limited capacity to raise funds from the public, weak possibilities of exit by IPO, and the low profitability of FCPIs are the principal points of weakness. These risk factors should encourage the public authorities as well as private actors to continue reforms and action aimed at increasing the competitiveness of this industry because the competition is increasingly global as the growing diversification of the VC funds shows.

Our analysis of the performance of FCPIs launched between 1997 and 2005 shows that their performance is characterized by, on the one hand, a "J curve", and, on the other hand, a low average profitability when the risks incurred are taken into account. The average IRR is the worst for the oldest vintages from 1998 to 2000. It improves thereafter but stays at a level just above the risk-free interest rate. The attraction of these funds, except for a few rare exceptions, comes from the tax incentives which they provide. This situation thus justifies the indirect intervention of the State which supports the development of innovative firms as, in France at least, the market alone cannot.

ENDNOTES

1. From a legal perspective, the funds are organized as a limited partnership bringing together investors whose responsibility is limited to the provision of funds (limited partners – LPs) and a fund manager (general partner – GP), who has full responsibility and whose capital provision is reduced. The partnership vehicle allows for complete tax transparency: the fund revenue is taxed at the level of individual partners who may have specific tax regimes.
2. An immediate income tax reduction for individuals equal to 25% of the total investment, with a ceiling of 3000 € for a single person and 6000 € for a married couple.
3. A company is considered innovative if it meets the following criteria (source : http://www.alter-invest.fr/):
   - to have received the ANVAR label (*Agence Nationale de Valorisation de la Recherche*) either by justifying the creation of products, techniques or processes of an innovative character and whose potential for economic development are recognised, either by having consecrated at least one third of their turnover during 3 years to research,
   - to have less than 500 employees, and
   - to have their head office in a country which is part of the European Union.
4. http://www.vernimmen.net/lettre/html/lettre_52.html
5. http://www.afic.asso.fr/Images/Upload/DOCUMENTS/cp_stats_perf_180907.pdf
6. The finance law (budget) for 2006 initially anticipated a ceiling for tax incentives at 8 000 € per person in order to reduce the number of tax loopholes. However, the *Conseil Constitutionnel* decided on the 29th December 2005 to cancel the 8000 € ceiling introduced by the finance law for 2006 and to bring the measure known as the 'tax shield'. The council considered that the "complexity of clause 78 of the finance law for 2006 was both excessive and unjustified for reasons of sufficient general interest".

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