Funds of Funds’ portfolio composition and its impact on performance: evidence from the Italian market

by

Alessandro Carretta
University of Rome “Tor Vergata”
Tel. 06-72595921
Fax 06-72595930
Address: Via Columbia 2 - 00133 Roma
e-mail: carretta@uniroma2.it

and

Gianluca Mattarocci
University of Rome “Tor Vergata”
Tel. 06-72595911
Fax 06-72595930
Address: Via Columbia 2 - 00133 Roma
e-mail: gianluca.mattarocci@uniroma2.it

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Alessandro Carretta* and Gianluca Mattarocci**

Abstract

Funds of Funds (FoF) are particular investment funds that use resources to buy units in mutual funds. This type of fund offers the opportunity of achieving greater diversification, compared to other instruments.

One of the main differences among the available FoFs is the strategy adopted by the manager to select the type and the number of investment funds to include in the portfolio. The fund selection process could be ‘naïve’ or based on some aspects related to the funds’ history, such as its past performance, investment style or the manager’s reputation.

This paper analyses the Italian FoF market and assesses whether the performance achieved is influenced by either the diversification strategy or the number of funds included in the portfolio. The analysis demonstrates that the best FoF performers are those which are less geographically or sectorally concentrated; there are significant differences following different criteria/constraints applied in the selection of the funds.

1. Introduction

Funds of Funds (FoF) are financial instruments traded in the American market since the 1980s. In the Nineties they featured a significant growth in the US, but only at the beginning of the new millennium did they become an actively traded financial instrument in Europe.¹

The fast growth registered in the last few years could be explained in the light of the high financial innovation that characterized these markets. In fact, new instruments proposed allow the achievement of higher performances, but they are more complex and investors are unable to evaluate the risk profile of these financial products. So, the choice of delegating the selection and management of these instruments represents an alternative frequently used by retail and institutional investors.²

The FoF manager selects investment funds using information and skills that investors probably do not have and this selection service is remunerated by the investor, who hopes to achieve higher results buying this type of advisory service.³ The paper is structured in two sections: the first explains the characteristics of the FoFs and the portfolio construction criteria while the second provides an assessment of the relationship between the funds’ diversification strategy and the results achieved.

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* Alessandro Carretta is full Professor of Banking at the University of Rome “Tor Vergata”.
** Gianluca Mattarocci is Ph.D. candidate in Banking and Finance at the University of Rome “Tor Vergata”.
¹ Davidson C. (2003), The fund of funds market: a global review, AltAsset research.
² Liang B. (2003), On the performance of alternative investments: CTAs, hedge funds and funds of funds, working paper.
2. Fund of Funds and the diversification strategies adopted

2.1 Definition of Funds of Funds

Mutual funds are complex financial instruments characterized by the complete, or partial, independence of the fund’s manager from the investor. Some instruments are developed to reduce the information gap between the manager and the investors, but it is impossible to say that investors know everything about a particular mutual fund and they can correctly select the funds that respond better to their objectives. The lack of transparency that characterizes FoF investments, and the difficulties related to the funds’ selection, are hypothesis that justifies the existence of this type of instrument.4

FoFs are open-end funds that differ from other mutual funds because they invest resources in individual managed funds.5 The FoF’s approach is founded on the principles presented in Markowitz’s work about benefits of diversification6 and represents an application of the theoretical results about the relationship between the size and variance of a portfolio.7 Earlier works consider the effect of diversification on a portfolio of stocks and/or bonds8 but, more recently, some authors have presented studies on the impact of diversification among different mutual funds.9 Higher benefits related to the portfolio’s diversification could be explained as an effect of the reduction of the unsystematic risk that characterized a well diversified portfolio10 and higher benefits are related to FoFs that invest in actively managed funds, where the opportunity to reduce active risks allows the extension of the potential subscriber base.11

The FoF offers the opportunity to diversify investment on different portfolios’ managers with different investment styles that select financial instruments considering different geographic areas or different industrial sectors.12 The main advantage of investing in a FoF must be identified in the possibility to increase the selection capability using a multi-manager approach: in fact good results could be more easily achieved if the FoF manager chooses to hire managers that are specialized in investing in particular assets and compose a portfolio with funds managed by these managers.13

This type of instrument represents a high risk investment opportunity, because the final composition of a portfolio is the result of choices realized by different managers that have different objectives and strategies. In fact, investors can select the FoF manager but they do not control the manager’s choices about the diversification level and criteria adopted in the selection of mutual funds.14 Furthermore, the FoF manager defines the portfolio’s composition selecting mutual funds

10 Lhabitant F.S. and Learned M. (2002), Hedge funds diversification: how much is enough?, FAME research paper.
14 Cardani A., Comi E. and Lazzari V. (2003), L’offerta dei fondi di fondi speculativi in Italia, LIUC papers.
but he does not control investments made by single portfolio managers, and it could be that expected strategies/performances of the mutual fund managers do not respond to the ex-post results.\textsuperscript{15}

FoF managers are remunerated for this selection service, like other mutual fund managers, according to different types of fees: a management fee that represents a fixed remuneration for the funds’ selection and an incentive fee that is calculated on the extra-performance on the benchmark.\textsuperscript{16} Investors thus pay a double commission for investing in FoFs, commissions to individual fund manager and fees to FoF managers, and so these instruments could be more expensive than a self-made portfolio of mutual funds.\textsuperscript{17} The higher level of commissions that characterized these funds could be acceptable only if the portfolio composition service gives an extra performance that the investor cannot achieve with other financial instruments.\textsuperscript{18}

\subsection*{2.2 Types of diversification strategies and portfolio’s heterogeneity constraints}

The main characteristics of a FoF can be identified in, (i) the number of funds included in the portfolio, (ii) the criteria adopted for the selection, and (iii) the selection constraints that managers are subject to.

The choice of the number of funds to include in the FoF portfolio must consider that benefits related to the introduction of a fund in a diversified funds’ portfolio are lower for higher diversified portfolios.\textsuperscript{19} The number of funds must be defined considering the pay-off between risk diversification and trading costs: a high number of funds determinate high performance stability but it also causes higher transaction costs and lower net gains.\textsuperscript{20} Empirical analysis show that greater benefits are obtained by portfolios that invest in ten or twenty funds, as a function of the correlation between single portfolios\textsuperscript{21}, but there is evidence that, in certain markets, the number of funds is significantly lower.\textsuperscript{22} The reduction of benefits related to the diversification could be explained analyzing the inefficiencies of multi-fund portfolios: a higher segmentation of wealth on different fund managers increases the probability of duplication of holdings and it’s also likely that strategies adopted by different fund managers are not tuned.\textsuperscript{23} The number of funds to include in a hypothetical portfolio depends on the risk profile of a typical subscriber, on the sectoral and geographical specialization and on the covariance between different sectors and geographical areas.\textsuperscript{24}

The FoF’s results are influenced by the criteria adopted to build the portfolio and investors select the FoF that best fits their risk-return preferences.\textsuperscript{25} The criteria adopted could be classified in four main strategies: the naïve approach, the style approach, the past performance analysis and the reputation approach.

\begin{flushleft}


\textsuperscript{17} Liang B. (2002), \textit{Hedge funds, funds of funds and commodity trading advisor}, CWRU working paper.

\textsuperscript{18} Brown S.J., Goetzmann W.N. and Liang B. (2004), \textit{Fees on fees on funds of funds}, Yale ICF working paper.


\textsuperscript{22} Brands S. and Gallagher D.R. (2003), \textit{A note on portfolio selection, diversification and Fund of Funds}, working paper.


\end{flushleft}
The naïve approach assumes that all the different investment opportunities have the same trend and the investment selection does not provide extra-performance. Portfolio managers that adopt this strategy don’t analyze different investment opportunities and are interested only in selecting the correct number of funds to include in the portfolio.\textsuperscript{26} This approach could be acceptable if the FoF manager assumes that the results achieved by fund managers are independent from the managers’ capabilities and so a random selection represents the best solution to minimize the impact of unpredictable events that could cause a negative performance for a single fund.\textsuperscript{27}

The style approach selects funds based on the style adopted by the fund manager and defines a portfolio that includes funds characterized by different investment styles.\textsuperscript{28} Empirical studies demonstrate that managers who adopt the same investment style achieve results that are highly correlated, and so a fund selection based on the investment style could be useful to construct a well diversified portfolio.\textsuperscript{29}

The assumption of the persistence in time of the results achieved by fund manager makes rationale to consider the past performance in selecting funds.\textsuperscript{30} FoF managers that adopt this approach analyze performances achieved in last years, and the risk related to the portfolio managed, and they try to identify best active managers.\textsuperscript{31} Higher results obtained by fund managers that previously realize positive performances could be explained considering the investors’ choices: in open-end funds investors are likely to disinvest from bad mutual funds\textsuperscript{32} and these choices could cause a lack of liquidity for the fund manager that had to change investment decisions made in order to take account of the less money available.\textsuperscript{33}

The analysis of past performance is strictly influenced by the time period analyzed and so some FoF managers prefer to integrate this approach considering other specific factors related to the manager’s characteristics. This approach, called the reputation approach, also analyzes other managers’ characteristics that could influence the performance achieved, such as experience\textsuperscript{34} or instruction.\textsuperscript{35} The analysis of qualitative and quantitative aspects is realized using the rating attributed to each fund:\textsuperscript{36} this instrument represents an useful tool to select investment opportunities especially when the results achieved by a manager are heavily influenced by a particular market trend, because past results do not represent a good proxy of future performances if the market conditions vary.\textsuperscript{37}

The FoF could be constituted selecting among all investment opportunities or only in a restricted pool of investment funds offered by the same investment company that creates the FoF, or by a company of the same group.\textsuperscript{38} These types of investment products are built considering a smaller set

\textsuperscript{29} Brands S. and Gallagher D.R. (2003), *Portfolio selection, diversification and Fund of Funds*, working paper.
\textsuperscript{32} Berk J.B. and Xu J. (2004), *Persistence and fund flows of the worst performing mutual funds*, NBER working paper.
\textsuperscript{38} Linciano N. and Marrocco E. (2002), *Fondi di fondi e accordi di retrocessione*, Quaderni di Finanza CONSOB.
of investment opportunities, and offer only partial diversification, which does not consider the opportunity of a diversification of judgment. Better results achieved by this strategy could be a consequence of lower fees applied by the investment companies of the group.

3. Research design

The proposed analysis considers the impact of the diversification level and funds’ selection strategy on the portfolio results. The study is released considering both the performance achieved and the risk exposure of the FoF portfolios using the standard RAP approach.

The choices of FoF managers in portfolio composition can impact on the performance and criteria adopted in the fund selection process and allow to the achievement of better results compared to other funds. The analysis proposed considers the main difference in FoF results that could be explained analyzing the different criteria adopted in portfolio composition. The analysis of the FoF is possible only for those funds that invest in standard financial instruments that are obliged to give information about investments released.

3.1 Data

The FoF analysis is released based on the instruments offered in Italy, a new market featuring a significant growth in the last year. The study considers all the FoF negotiated in the Italian market since the first issuing by Arca SGR in 2000. The complete database considers 137 funds offered by 25 different investment companies (fig.1)

![Fig 1.](image)

**Funds of Funds investment companies in the Italian market**

Source: Assogestioni data processed by Authors

The market is highly concentrated but products offered by each investment company are heterogeneous and so it is possible to verify whether the different criteria impact on the performance achieved.

The performance time series data are collected using the Morningstar database and the qualitative data relating to the FoF investment choices are collected from the Fund analyses issued by Bluerating for each FoF.


3.2 Methodology

The study analyses different aspects related to the remuneration mechanism and fund selection mechanism. The aspects considered in the paper are the management and incentive fee, the level of industrial and sectoral diversification of the funds selected and the criteria adopted for fund selection purposes by the FoF managers.

Firstly, the performance analysis is carried out using a descriptive approach that tries to point out if there is a relationship between gains and type of FoF remuneration. A more detailed analysis is proposed using the standard RAP approach and the persistence analysis of the results achieved; in this second analysis the main purpose is to identify the best criteria to construct a portfolio of mutual funds. For the analysis we use only RAPs that employ standard deviation or Beta as a measure of risk, because the main objective of the work is to study the relationship between portfolio composition and the FoF risk/return profile and so, as in Markowitz’s paper, we do not use alternative risk measures.

3.3 Results

The analysis of the FoF’s convenience for investors must consider returns of these types of instruments in the period concerned.

The simple analysis of the results achieved by the FoF highlights that the period concerned is characterized by both a bull and a bear market phase (table 1). The first two years (2001-2002) are the worst years for the FoF market and in the last two years there is clear evidence of a new up-trend of the market (2003-2004).

<table>
<thead>
<tr>
<th>Gross Gain (GG)</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-7.05%</td>
<td>-15.45%</td>
<td>6.39%</td>
<td>6.39%</td>
</tr>
<tr>
<td>Maximum</td>
<td>3.80%</td>
<td>20.60%</td>
<td>41.80%</td>
<td>13.40%</td>
</tr>
<tr>
<td>Minimum</td>
<td>-22.50%</td>
<td>-36.60%</td>
<td>-4.90%</td>
<td>-5.40%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management fee</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.00%</td>
<td>1.11%</td>
<td>1.11%</td>
<td>1.17%</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.60%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.75%</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incentive Fee</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.01%</td>
<td>0.31%</td>
<td>0.37%</td>
<td>0.18%</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.01%</td>
<td>5.6%</td>
<td>5.50%</td>
<td>2.80%</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Gain (NG)</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-8.05%</td>
<td>-16.87%</td>
<td>4.91%</td>
<td>2.34%</td>
</tr>
<tr>
<td>Maximum</td>
<td>2.879%</td>
<td>12.50%</td>
<td>39.71%</td>
<td>11.50%</td>
</tr>
<tr>
<td>Minimum</td>
<td>-23.48%</td>
<td>-36.60%</td>
<td>-5.60%</td>
<td>-7.50%</td>
</tr>
</tbody>
</table>

Source: Bluering data processed by Authors

Strategies adopted to remunerate FoF managers can influence results obtained by the FoFs. The choice to adopt a remuneration mechanism linking fees with results achieved could encourage managers to achieve better performance. The following table analyses separately the results achieved by FoFs that use an incentive fee and the results of those that do not apply this type of remuneration. (table 2)
The performance analysis highlights that the funds that incentivate fees cause positive extra-performances in the bull market (years 2003-2004), but determinate higher losses in the bear market (years 2001-2002).\textsuperscript{41} This result could be explained considering that a fund manager paid according to an incentive fee mechanism is liable to be more active in the market and this approach makes the best benefits when there are profitable opportunities, but is a failure when the high frequency of portfolio re-balances causes only higher transaction costs, due to the absence of good investment opportunities.\textsuperscript{42}

The analysis of the impact of portfolio characteristics on the results achieved by FoFs is a partial analysis because it considers only one of the aspects considered by investors to select investment opportunities. A more detailed analysis of the results achieved by the FoFs is issued using the RAP approach and analysing the extra-return per unit of risk exposure. RAPs considered in the study are a measure grounded on the same criteria adopted by Markowitz to define diversification benefits and, in particular, the RAP selected are the Sharpe ratio,\textsuperscript{43} the Information ratio,\textsuperscript{44} the Treynor index\textsuperscript{45} and the Jensen’s alpha.\textsuperscript{46}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
 & FoFs with & FoFs without \\
 & incentive fees & incentive fees \\
\hline
2001 & & \\
\hline
Mean GG & -13.03\% & -7.05\% \\
\hline
Mean NG & -11.05\% & -8.05\% \\
\hline
2002 & & \\
\hline
Mean GG & -20.86\% & -14.23\% \\
\hline
Mean NG & -23.83\% & -15.31\% \\
\hline
2003 & & \\
\hline
Mean GG & 10.56\% & 5.03\% \\
\hline
Mean NG & 7.88\% & 3.94\% \\
\hline
2004 & & \\
\hline
Mean GG & 4.43\% & 3.52\% \\
\hline
Mean NG & 2.29\% & 2.36\% \\
\hline
\end{tabular}
\caption{Performance of Funds of Funds and incentive fees}
\end{table}

Source: Bluerating data processed by Authors

Fund of Funds portfolio composition and its impact on the performance: evidence from the Italian market

Table 3

RAP for Funds of Funds using a standard segmentation

<table>
<thead>
<tr>
<th>Sample</th>
<th>Variables</th>
<th>$S_{2002}$</th>
<th>$\alpha_{2002}$</th>
<th>$TR_{2002}$</th>
<th>$IR_{2002}$</th>
<th>$S_{2003}$</th>
<th>$\alpha_{2003}$</th>
<th>$TR_{2003}$</th>
<th>$IR_{2003}$</th>
<th>$S_{2004}$</th>
<th>$\alpha_{2004}$</th>
<th>$TR_{2004}$</th>
<th>$IR_{2004}$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All</strong></td>
<td>Mean</td>
<td>-7.60</td>
<td>-1.93</td>
<td>-10.41</td>
<td>-1.33</td>
<td>1.67</td>
<td>0.31</td>
<td>5.82</td>
<td>-0.93</td>
<td>5.48</td>
<td>-0.62</td>
<td>4.75</td>
<td>-2.31</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0389</td>
<td>0.0402</td>
<td>0.2327</td>
<td>0.0661</td>
<td>0.0547</td>
<td>0.0521</td>
<td>0.2029</td>
<td>0.0733</td>
<td>0.0597</td>
<td>0.0406</td>
<td>0.0598</td>
<td>0.0884</td>
</tr>
<tr>
<td><strong>With incentive fees</strong></td>
<td>Mean</td>
<td>-8.82</td>
<td>-4.29</td>
<td>-14.59</td>
<td>-3.63</td>
<td>3.16</td>
<td>2.96</td>
<td>8.88</td>
<td>1.01</td>
<td>5.72</td>
<td>0.08</td>
<td>7.21</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0345</td>
<td>0.0627</td>
<td>0.0725</td>
<td>0.0641</td>
<td>0.0727</td>
<td>0.0878</td>
<td>0.1502</td>
<td>0.0876</td>
<td>0.0439</td>
<td>0.0689</td>
<td>0.0777</td>
<td>0.0797</td>
</tr>
<tr>
<td><strong>Specialized Stocks</strong></td>
<td>Mean</td>
<td>-1.38</td>
<td>-16.16</td>
<td>0.84</td>
<td>3.78</td>
<td>2.63</td>
<td>8.83</td>
<td>1.61</td>
<td>4.94</td>
<td>0.02</td>
<td>7.47</td>
<td>-0.36</td>
<td>-1.38</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0299</td>
<td>0.0553</td>
<td>0.0752</td>
<td>0.0403</td>
<td>0.0467</td>
<td>0.0680</td>
<td>0.1170</td>
<td>0.0570</td>
<td>0.0438</td>
<td>0.0581</td>
<td>0.0693</td>
<td>0.0667</td>
</tr>
<tr>
<td><strong>Specialized Obligations</strong></td>
<td>Mean</td>
<td>-1.43</td>
<td>9.79</td>
<td>-0.79</td>
<td>-1.33</td>
<td>-0.27</td>
<td>0.33</td>
<td>0.27</td>
<td>7.86</td>
<td>-0.19</td>
<td>2.95</td>
<td>-1.57</td>
<td>-1.43</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0631</td>
<td>0.0244</td>
<td>0.5084</td>
<td>0.0906</td>
<td>0.0915</td>
<td>0.0116</td>
<td>0.0669</td>
<td>0.1007</td>
<td>0.1038</td>
<td>0.0169</td>
<td>0.0672</td>
<td>0.1538</td>
</tr>
<tr>
<td><strong>Flexibles</strong></td>
<td>Mean</td>
<td>-4.33</td>
<td>-27.33</td>
<td>-3.67</td>
<td>-0.25</td>
<td>-2.13</td>
<td>25.38</td>
<td>-5.13</td>
<td>2.80</td>
<td>-0.90</td>
<td>1.10</td>
<td>-3.10</td>
<td>-4.33</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0423</td>
<td>0.0582</td>
<td>0.3629</td>
<td>0.0942</td>
<td>0.0757</td>
<td>0.0694</td>
<td>0.6847</td>
<td>0.0999</td>
<td>0.0808</td>
<td>0.0401</td>
<td>0.0728</td>
<td>0.0706</td>
</tr>
<tr>
<td><strong>Balanced</strong></td>
<td>Mean</td>
<td>-2.26</td>
<td>-10.53</td>
<td>-3.02</td>
<td>0.93</td>
<td>-1.28</td>
<td>1.30</td>
<td>-3.23</td>
<td>5.46</td>
<td>-1.28</td>
<td>3.80</td>
<td>-4.15</td>
<td>-2.26</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0288</td>
<td>0.0256</td>
<td>0.0469</td>
<td>0.0644</td>
<td>0.0292</td>
<td>0.0274</td>
<td>0.0290</td>
<td>0.0609</td>
<td>0.0402</td>
<td>0.0266</td>
<td>0.0316</td>
<td>0.0716</td>
</tr>
<tr>
<td><strong>Geographic concentrated</strong></td>
<td>Mean</td>
<td>-8.09</td>
<td>-1.91</td>
<td>-13.36</td>
<td>-1.15</td>
<td>0.18</td>
<td>-1.09</td>
<td>6.82</td>
<td>-2.88</td>
<td>6.09</td>
<td>-0.76</td>
<td>3.54</td>
<td>-3.57</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0419</td>
<td>0.0204</td>
<td>0.1689</td>
<td>0.0661</td>
<td>0.0473</td>
<td>0.0238</td>
<td>0.3379</td>
<td>0.0686</td>
<td>0.0728</td>
<td>0.0288</td>
<td>0.0477</td>
<td>0.1033</td>
</tr>
<tr>
<td><strong>Geographic non concentrated</strong></td>
<td>Mean</td>
<td>-7.35</td>
<td>-1.94</td>
<td>-8.86</td>
<td>-1.43</td>
<td>2.32</td>
<td>0.93</td>
<td>5.39</td>
<td>-0.07</td>
<td>5.16</td>
<td>-0.55</td>
<td>5.39</td>
<td>-1.64</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0373</td>
<td>0.0476</td>
<td>0.2598</td>
<td>0.0666</td>
<td>0.0568</td>
<td>0.0596</td>
<td>1.0044</td>
<td>0.0741</td>
<td>0.0516</td>
<td>0.0457</td>
<td>0.0646</td>
<td>0.0793</td>
</tr>
<tr>
<td><strong>Sectoral concentrated</strong></td>
<td>Mean</td>
<td>-6.69</td>
<td>-2.65</td>
<td>-10.73</td>
<td>-2.62</td>
<td>1.79</td>
<td>-1.10</td>
<td>3.41</td>
<td>-2.59</td>
<td>5.20</td>
<td>-1.77</td>
<td>4.89</td>
<td>-2.80</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0457</td>
<td>0.0579</td>
<td>0.0797</td>
<td>0.0741</td>
<td>0.0360</td>
<td>0.0315</td>
<td>0.0582</td>
<td>0.0597</td>
<td>0.0563</td>
<td>0.0511</td>
<td>0.0559</td>
<td>0.0902</td>
</tr>
<tr>
<td><strong>Sectoral non concentrated</strong></td>
<td>Mean</td>
<td>-7.94</td>
<td>-1.66</td>
<td>-10.29</td>
<td>-0.86</td>
<td>1.62</td>
<td>0.84</td>
<td>6.71</td>
<td>-0.32</td>
<td>5.58</td>
<td>-0.21</td>
<td>4.70</td>
<td>-2.13</td>
</tr>
<tr>
<td></td>
<td>St. Dev.</td>
<td>0.0358</td>
<td>0.0314</td>
<td>0.2687</td>
<td>0.0628</td>
<td>0.0604</td>
<td>0.0572</td>
<td>0.2344</td>
<td>0.0771</td>
<td>0.0611</td>
<td>0.0355</td>
<td>0.0614</td>
<td>0.0882</td>
</tr>
</tbody>
</table>

Source: Fondionline data processed by Authors
The analysis on the overall sample highlights that results achieved in the 2002 are, on average, lower than the results achieved in other years. This trend in the Italian FoF market is not strange because all the most important world financial markets achieved, in this year, low results and all investment products traded in Italy registered the same result.47

To make a more detailed study of the results achieved by FoFs, an analysis of the results achieved by some sub-samples, characterized by different remuneration mechanisms, different fund classification in the Assogestioni database and different exposure to geographical/sectoral risk has been issued.

The first interesting aspect that arises from the study is the relationship between the remuneration mechanism and the results achieved: FoFs that applied incentive fees, as demonstrated for other mutual funds,48 achieved higher results in terms of return per unit of risk, compared to the mean result obtained in the overall sample.

Another possible criteria used to select FoFs is the type of investment released and there some studies in literature that demonstrate that differences in the funds’ style influence the results achieved.49 FoFs are classified into four classes, based on the basis of the relative importance of risky and unrisky assets in the portfolio (stocks, obligations, flexible and balanced) and the RAP analysis points out some difference among these classes. The results obtained do not highlight that there is a best class of FoFs for all the time period considered and the unique result is that mean higher performances are obtained by the stock FoFs, but maximum results aren’t obtained by funds classified in this group.

The last aspect considered in the standard analysis of a mutual fund is the sectoral and geographic concentration.50 The importance of these two aspects is related to the traditional debate presented in literature about the useful criteria for maximizing portfolio diversification.51 RAP analysis highlighted that there is no clear superiority of one criteria of selection compared to the others, and the only one conclusion that can be drawn from the data is that the diversification benefits are higher in a bear market phase, where a well diversified portfolio minimizes losses.

The impossibility of defining suitable criteria for selecting FoFs, using the standard approach adopted to evaluate other investment funds, makes clear that other aspects are relevant in an FoF evaluation. A more detailed analysis is released using information collected by reports of each FoF and the focus is on aspects that seem to be more relevant in the Italian market.52

The first aspect considered in the analysis is the percentage of funds bought that are created by the same SGR, or by related investment companies, and the number of funds where the manager invests (Fig. 2). In fact, the analysis of information available reveals that FoF portfolios are very heterogeneous: less than 10% of the FoFs analysed could be considered non-concentrated and others feature a different level of concentration that indicates different strategies adopted by FoF managers.

Another difference can be identified in constraints applied to the portfolio selection. The Italian FoF market does not feature a clear prevalence of one type of FoF: less than half-a-percentage point of the available FoFs do not invest in funds issued by the same company, or by companies of the same group, and less than 5% invest only in related funds (Fig. 2).

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50 Potter M.E. (2001), What you see is not what you get: mutual fund tracking error and fund diversification properties, Babson College working paper.
52 Detailed data about FoF’s composition are collected using www.fondionline.it.
In the evaluation of FoFs, the strategy adopted for fund selection purposes is also relevant. The analysis of the diversification strategy is released analysing each FoF prospect and the selection strategy declared by the FOF manager. Clustering FoFs on the basis of four main strategies of selection analysed in the previous section, it becomes clear that there is no leading strategy adopted by the Italian FoF managers53 (Fig. 3).

This brief analysis clearly highlights that the FoF market is characterized by a high degree of heterogeneity, and it could be useful to check whether the different aspects analysed have a clear impact on the performance achieved. The analysis of the FoF managers’ choices reveals a relationship between the criteria adopted, the relevant constraints and the results achieved (tab. 4).

53 FoFs that adopt a naive diversification are all FoFs that do not declare a particular criteria in the selection of mutual funds.
Fund of Funds portfolio composition and its impact on the performance: evidence from the Italian market

Table 4

RAP for Funds of Funds based on the portfolio composition criteria

| Sample                  | Variables | $S_{2002}$ | $\alpha_{2002}$ | $TR_{2002}$ | $IR_{2002}$ | $S_{2003}$ | $\alpha_{2003}$ | $TR_{2003}$ | $IR_{2003}$ | $S_{2004}$ | $\alpha_{2004}$ | $TR_{2004}$ | $IR_{2004}$ |
|-------------------------|-----------|------------|-----------------|------------|-------------|------------|-----------------|------------|-------------|------------|-----------------|------------|-------------|            |
| Funds linked            | Mean      | -8.16      | -1.92           | -13.21     | -1.37       | 0.32       | -1.08           | 6.13       | -2.82       | 5.52       | -0.91          | 3.35       | -4.17       |
|                         | St. Dev.  | 0.0396     | 0.0196          | 0.1583     | 0.0649      | 0.0445     | 0.0225          | 0.3148     | 0.0640      | 0.0705     | 0.0274         | 0.0458     | 0.1005      |
| Funds not linked        | Mean      | -7.24      | -1.93           | -8.57      | -1.31       | 2.40       | 1.07            | 5.66       | 0.10        | 5.46       | -0.43          | 5.71       | -1.04       |
|                         | St. Dev.  | 0.0383     | 0.0494          | 0.2703     | 0.0675      | 0.0586     | 0.0615          | 0.1034     | 0.0763      | 0.0515     | 0.0476         | 0.0663     | 0.0773      |
| Concentrated            | Mean      | -6.06      | -1.06           | 3.59       | 0.88        | 2.94       | 0.88            | 4.18       | 3.00        | 8.33       | 0.33           | 7.19       | 3.33        |
|                         | St. Dev.  | 0.0358     | 0.0365          | 0.4738     | 0.0715      | 0.0412     | 0.0154          | 0.0622     | 0.0602      | 0.0651     | 0.0511         | 0.0711     | 0.0941      |
| Non-concentrated        | Mean      | -7.99      | -2.17           | -13.56     | -0.14       | -4.47      | 6.01            | 7.64       | 2.52        | 6.12       | -0.80          | 6.23       | -3.38       |
|                         | St. Dev.  | 0.0389     | 0.0409          | 0.1213     | 0.1718      | 0.5599     | 0.5582          | 0.2605     | 0.4170      | 0.1399     | 0.0383         | 0.2115     | 0.0840      |
| Naif diversification    | Mean      | -7.40      | -3.00           | -9.90      | -4.90       | 0.75       | -1.92           | 1.92       | -5.75       | 7.25       | -1.44          | 4.88       | -2.88       |
|                         | St. Dev.  | 0.0566     | 0.0298          | 0.0659     | 0.0980      | 0.0328     | 0.0332          | 0.0476     | 0.0739      | 0.0594     | 0.0324         | 0.0432     | 0.0852      |
| Performance diversification | Mean | -7.39 | -1.04 | -6.65 | 0.30 | 1.15 | -0.46 | 9.46 | -1.54 | 6.34 | -0.16 | 4.66 | -1.63 |
|                         | St. Dev.  | 0.0324     | 0.0310          | 0.4638     | 0.0498      | 0.0608     | 0.0286          | 0.3776     | 0.0605      | 0.0765     | 0.0385         | 0.0609     | 0.0969      |
| Style diversification   | Mean      | -7.30      | -1.68           | -11.41     | -1.41       | 3.20       | 1.84            | 6.55       | 0.57        | 5.51       | -0.55          | 5.18       | -1.98       |
|                         | St. Dev.  | 0.0404     | 0.0376          | 0.0766     | 0.0655      | 0.0551     | 0.0695          | 0.1197     | 0.0785      | 0.0464     | 0.0450         | 0.0605     | 0.0838      |
| Reputation diversification | Mean | -8.32 | -2.76 | -12.84 | -1.40 | -0.16 | -0.52 | 2.80 | -0.80 | 3.21 | -0.93 | 4.10 | -3.52 |
|                         | St. Dev.  | 0.0360     | 0.0534          | 0.0656     | 0.0647      | 0.0521     | 0.0360          | 0.0702     | 0.0699      | 0.0511     | 0.0411         | 0.0677     | 0.0910      |

Source: Fondionline data processed by Authors
The analysis of the constraints and strategies adopted for fund selection purposes highlights some interesting aspects that could be useful in the selection of a FoF. FoF managers investing a significant amount of the money managed in a small number of funds issued by the same investment company, or by related companies, achieve, in more than 80% of cases, a lower result than others FoFs. This result could be considered rational if the benefits related to lower fees are not sufficient to justify a selection realized on a restricted set of mutual funds, and this result is the same obtained by similar analyses carried out on the Italian market.55

Portfolio concentration is analysed using an unusual approach, compared to other studies in literature. Previous studies consider the number of funds included in the portfolio managed and they do not evaluate that it is possible to differentiate investments not only using a different set of funds, but also investing a higher/lower percentage of wealth in a particular fund. The analysis presented considers the percentage of wealth invested in the five most important funds and classifies as concentrated each FoF that invests more than the 70% of money managed in this set of funds. The results obtained highlight that more concentrated funds achieve higher results, on average, than less concentrated funds and so there is clear evidence that too much diversification does not achieve extra-performances.

The criteria adopted in the selection of funds influenced results achieved by the FoFs, and it is possible to identify a hierarchy in the criteria adopted. The performance analysis seem to be the best criteria to construct portfolio managed and there is clear evidence that the best performing ones are never those that adopt the simpler strategy of selection, the ‘naive’ strategy. These results make clear that a more detailed analysis of funds to include in the FoF portfolio determines a higher performance and/or lower risk, and so higher costs related to this type of FoF could be economic rationale.

The FoFs’ risk-return profile cannot be studied without considering the time persistence of the results achieved and the usefulness of the historical data to predict returns (table 5).

The incentive fees could be considered a reasonable criterion to select FoFs, because more than half-a-percentage point of these funds achieve results that are significantly higher with respect to the mean.

The analysis of fund classifications do not allow a differentiation between good and bad investment opportunities and there is no clear evidence, for the time period considered, of the relative superiority of a geographical or sectoral diversification.

The choice to buy FoFs that invest only in funds realized by the same investment company, or by companies of the same group, does not represent an efficient criterion to select investment opportunities, otherwise the choice to invest only in concentrated funds determines a higher probability to achieve the best results in the future.

The criteria adopted in the selection of funds seem to be a useful instrument for selecting investment funds. Worst performances are achieved by FoF managers who select funds using a naive strategy that allow them to minimize costs related to the selection process, but expose them to a risk of uncorrected funds picking. Selection processes that are characterized by a more detailed analysis of fund manager’s characteristics and strategies allow to achieve high results and the best one, for the time period considered, seems to be the historical performance selection criteria.58

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54 The threshold used in the analysis id the 50% of portfolio managed but the same results can be obtained using also lower threshold.

55 Ciquemani G. and Siciliano G. (2001), Quanto sono grandi i vantaggi della diversificazione? Un’applicazione alle gestioni patrimoniali in fondi e ai fondi di fondi, Quaderni di finanza della CONSOB n° 47.


58 In fact, other studies on Italian mutual funds demonstrate that historical performance is a useful tool to predict results achieved by funds’ manager. See Campanelli F. and Trovato G. (2001), Performance evaluation and classification of Italian equity mutual funds, EFMA paper, Lugano.
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**Table 5**

Persistence analysis for FoF

<table>
<thead>
<tr>
<th>Criteria segmentation</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1°</td>
<td>2°</td>
<td>3°</td>
</tr>
<tr>
<td>Incentive fee</td>
<td>40.63%</td>
<td>40.63%</td>
<td>15.63%</td>
</tr>
<tr>
<td>Specialized Stocks</td>
<td>21.43%</td>
<td>35.71%</td>
<td>14.29%</td>
</tr>
<tr>
<td>Specialized Obligations</td>
<td>16.67%</td>
<td>33.33%</td>
<td>33.33%</td>
</tr>
<tr>
<td>Flexibles</td>
<td>16.28%</td>
<td>25.58%</td>
<td>37.21%</td>
</tr>
<tr>
<td>Balanced</td>
<td>38.46%</td>
<td>19.23%</td>
<td>23.08%</td>
</tr>
<tr>
<td>Geographic concentrated</td>
<td>21.43%</td>
<td>37.14%</td>
<td>27.14%</td>
</tr>
<tr>
<td>Geographic non concentrated</td>
<td>24.24%</td>
<td>30.30%</td>
<td>36.36%</td>
</tr>
<tr>
<td>Sectorial concentrated</td>
<td>26.98%</td>
<td>33.33%</td>
<td>20.63%</td>
</tr>
<tr>
<td>Sectorial non concentrated</td>
<td>41.18%</td>
<td>35.29%</td>
<td>11.76%</td>
</tr>
<tr>
<td>Funds linked</td>
<td>21.52%</td>
<td>31.65%</td>
<td>29.11%</td>
</tr>
<tr>
<td>Funds not linked</td>
<td>21.05%</td>
<td>34.21%</td>
<td>34.21%</td>
</tr>
<tr>
<td>Concentrated</td>
<td>29.31%</td>
<td>31.03%</td>
<td>20.69%</td>
</tr>
<tr>
<td>Not concentrated</td>
<td>17.39%</td>
<td>52.17%</td>
<td>21.74%</td>
</tr>
<tr>
<td>Naif diversification</td>
<td>29.73%</td>
<td>27.03%</td>
<td>24.32%</td>
</tr>
<tr>
<td>Performance diversification</td>
<td>40.00%</td>
<td>0.00%</td>
<td>20.00%</td>
</tr>
<tr>
<td>Style diversification</td>
<td>40.63%</td>
<td>40.63%</td>
<td>15.63%</td>
</tr>
<tr>
<td>Reputation diversification</td>
<td>21.43%</td>
<td>35.71%</td>
<td>14.29%</td>
</tr>
</tbody>
</table>

Source: Fondionline data processed by Authors
4. Conclusions

FoFs are complex financial investments which offer the opportunity to achieve risk-return results that could not be obtained using other instruments. Results obtained in the past determine a significant diffusion of the instrument that in the last few years is beginning to be traded in new markets.

The popularity of the instrument makes it necessary to study the FoF’s distinctive characteristics to be in the assessment of its risk-return profile. The standard segmentation that considers geographical/sectoral concentration or type of fund, based on the Assogestioni classification, does not seem to be useful to identify the best investment opportunities.

Relevant aspects in the selection of FoFs are the number of funds included in the portfolio, the selection strategy adopted and the constraints in the selection of mutual funds. Best results are achieved by FoFs that do not have too fragmented a portfolio and are not obliged to invest in funds issued by related investment companies. Portfolio construction criteria are another factor affecting the results achieved by FoF managers and the empirical analysis makes clear that the resources invested in fund selection achieve higher results.

The analysis proposed in this paper could be completed considering also Funds of Hedge Funds (FoHF) that have been excluded from this analysis. To achieve that result it is necessary to collect information directly from the FoHF managers, because the transparency of the available information is lower for this type of funds. At this step, the proposed approach could not be applied for lack of information and so there is no clear evidence of the relationship between portfolio composition and performance achieved for this particular type of FoF. An empirical analysis for this type of instrument could be very interesting because it also had to take into account the fact that the returns’ distribution of hedge funds is not normal and it could be an opportunity to test new approaches for the assessment of FoHF portfolio construction criteria, which must be different from the standard RAP approach.

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