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RESEARCH ARTICLE

# Are Good Managers Also Good Investors? Common Factors of Managerial and Investment Performance of Majority Owners of SICAVs

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Abstract: This research explores and tests the existence of common factors of success in both managerial and investment activities performed by the same individual, defined as 'manager-investor.' After reviewing the existing theoretical literature, we identified theoretical developments and evidence that emphasize the role of individual-related characteristics as determinants of the performance of managerial actions as well as investment decisions. We test the resulting hypothesis using a database comprising information from managerial and investment decisions of 147 entrepreneurs-investors. Panel models and simultaneous equation models (estimated by 3SLS) are proposed as empirical methods in order to assure a proper treatment of the potential unobserved heterogeneity and endogeneity issues.

Keywords: *Managerial resources, Skills, Investment capabilities, SICAV, Panel data estimation, Three-stage least square method.*

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## Introduction

The role of individual characteristics of managers as a determinant of their performance at different levels has received an increasing attention from different research fields in management such as strategic management, organizational behaviour, human resource management, and entrepreneurship. Personal-related characteristics of top managers such as education and in-job experience [1], personality traits [2-3], past experience and career profile [4] and social networks [5-6] have received attention as majors determinants of business success.

This increasing concern on the importance of individual characteristics is also shared by recent research in finance when finding that the performance of professional investors is positively related to superior skills and more qualified education [7-8]. Also, the behavioral perspective of financial research (i.e. "behavioral finance") suggests that decisions and outcomes of investors in the stock markets can be better understood after considering subjective characteristics such as perceptions, attitudes and emotions rather than solely taking into account objective, market-based information (i.e. investment risk and return). This convergence between management and finance research suggests an interesting question about if there are some common factors that could affect both the performance of the individual as a manager of a real business and also her performance as an investor in stock markets.

To the best of our knowledge, this question remains unanswered and this paper is aimed to fill this gap. In this vein, this research is a novel exploratory attempt aimed to identify and test potential synergies between seemingly unrelated economic decisions made by the individuals in their simultaneous roles as entrepreneurs/managers and as investors in stock markets.

By examining the co-variation between managerial and investor performance, we would provide answers to some key questions in managerial and finance research such as whether better managers are also better investors.

In addition, testing the co-variation between the performances in these two roles can help us to assess the degree of specifity versus redeploy ability of the underlying factors. In particular, a positive co-variation would imply that some of these factors can be redeploying able (i.e. valuable for both managing and investing) whilst a negative or non-significant co-variation would lead to assure that these individual-related characteristics are specific because they are not valuable when applied to a different domain.

Our research can also raise interesting avenues for future research aimed at identifying the sources of interactions between managerial and investing decisions. The paper is organized as follows. Section 2 reviews theory and evidence in order to elaborate our hypothesis about the existence of common factors of performance. The empirical methods that we employed are presented in section 3. Section 4 shows the results. Finally, we devoted section 5 to discuss the implications, limitations and future extensions of our findings.

**Antecedent Literature and Hypothesis**

We have focused our search for relevant literature in theory and evidence that attributes a preeminent role to individual-related characteristics as main determinants of performance in managerial actions and investing decisions considered as different domains of the decision making process of a given individual. At this point, we have found a wide literature on how individual-related characteristics impact on the performance of a manager of a real business on one side and the outcomes of a specialized and professional investor on other but we are not aware of previous attempts of identifying how these characteristics could simultaneously affect the outcomes of an individual who performs both activities.

Given the lack of previous research on this issue, our review is aimed at identifying and testing the relevance of individual-related characteristics on managers' performance as well as on investors' outcomes. From this view, we drew on the literature to review a number of individual-related determinants as potential common factors that could justify a significant co-variation between managerial and investing activities. Individual resources in terms of managers' skills and abilities are commonly viewed as key resources for a firm to generate superior rents [9]. Managers' expertise, innate or acquired skills, and knowledge can be major determinants of business success [10-11]. Because these capabilities are acquired and deployed essentially through firm-specific and complex routines [12-13-14], they prove to be harder to imitate by outsiders than other resources [15] and hence they contribute strongly to long-lasting business success [15].

In essence, managerial characteristics fulfill the requirement of a resource bundle to be a source of a sustainable competitive advantage [16-17]. Although examination of the impact of the individual characteristics of decision-makers in business success is a relevant topic in management research, this issue has received much less attention in finance research. Early research in financial economics [18-19] ignored the role of individual characteristics on the performance of investing activities. However, more recent studies have identified a set of individual factors that can help to improve investing performance.

The underlying decision process of such activities is clearly influenced by the personal background, skills and resources of the decision-maker, and hence these play a major role as explanatory factors of managed portfolio performance [20]. Clearly, the individual characteristics of the investor do matter in generating portfolio returns, even though they have been largely ignored by researchers [21]. Some recent studies have helped to fill this gap by exploring-empirically- the effect of investors' characteristics in the performance of financial firms such as hedge funds [22] and mutual funds [21].

Conversely, practitioners have commonly acknowledged the relevance of individual characteristics in professional investors' success. As stated by K. Daniel Libby, from "Vantage Point Partners," "hedge fund managers need a combination of investment and business skills to be successful" [23]. There is a number of studies exploring the link between business success and managerial skills [24], attitudes [25] and managerial roles [26] but, as claimed by Kaplan et al. [27] neither theoretical nor empirical studies provide much guidance

concerning which particular characteristics and abilities are correlated with higher performance. For the purposes of this research we propose a set of potential common factors able to support a positive co-variation for both business and investment performance. We have summarized these factors in the following categories of individual-related features: human capital, attitudes, skills and personal resources.

## Human Capital

Prior in-job learning and experience contributes to the effectiveness of the management team and specific experience within an industry is useful for entrepreneurs to identify new business opportunities [28]. Prior experience allows entrepreneurs to better assess future business opportunities and encourages them to undertake future projects [29]. Yusuf [30], using a random sample of 220 entrepreneurs from the South Pacific and their perceptions about success factors for small businesses, concluded that education and prior experience in business are critical factors of success.

Also, Topel [31], using job tenure of males 18-60 years old from the Panel Study of Income Dynamics (PSID), corroborated that the accumulation of specific expertise in terms of in-job training is a major component of value creation due to the resulting increased productivity. Past empirical research has shown that the graduate and postgraduate education of investors is an individual-related determinant of superior performance. In particular, investors who have earned an MBA degree achieve, on average, better outcomes than others lacking such an educational background [21-32].

Moreover, the quality of academic institutions can pose significant differences. Risk-adjusted excess returns from investors with a graduate degree from the top US business schools outperform returns from graduates from low-ranked universities [7], and especially those who earned degrees in specific business-related subjects, such as economics, and investors with previous experience as traders or research analysts exhibit higher performance [8]. Following the classical theory of human capital in economics [33], there are two types of human capital: generic and specific. Generic human capital is accumulated by individuals through both formal education and professional experience. Alternatively, specific human capital consists of the capabilities of individuals that can directly be applied to the entrepreneurial job in the newly created firm; it is very much related to the industry-specific skills that founders learned in the organization by which they were formerly employed and to the "leadership experience" gained either through a managerial position in another firm or in prior self-employment episodes [34].

From this vies, academic education is mainly aimed at nurturing the generic (more redeploy able) skills of managers, while in-job training is a main source of specific knowledge and experience, which can be highly productive but only valuable for a restricted set of tasks developed in a particular business or industry.

Through formal training in the fields of business and economics, managers would acquire redeploy able knowledge that improves the effective use of their inherent skills in a broad set of domains. This investment in knowledge acquisition can undoubtedly be useful in running a successful business, but it can also provide advantages in other decision-making activities characterized by a high degree of uncertainty, such as investing in financial markets.

## Age: Experience and Risk Attitude

There is evidence supporting the notion that age is a personal trait that positively influences both managerial and investment performance. In this sense, evidence from Sinha [35] confirmed that successful entrepreneurs were relatively younger in age. The empirical results also appear to confirm the idea that the age of the investors is negatively correlated with their performance.

The results of Golec [36] reveal that younger managers of investment funds achieve better risk-adjusted performance than their older counterparts. Also consistent with this finding, Li et al. [22], using a database from the manager characteristics of hedge funds, estimated a negative relationship between hedge fund performance and experience, concluding that managers with a

consolidated and acknowledged position may have less incentive to exert themselves than those who are still starting their professional career. We are aware that the age of individuals is an observable 'proxy' variable of several underlying unobservable factors that can operate in a complex way. Older investors are likely to have more experience as a result of their longer professional activity, although they may also be less willing or committed to choices that might undermine their reputation.

Along this line, in their meta-analysis study Kanfer et al. [37] show that a manager's age is negatively related to a 'proactive attitude'. A greater risk-taking attitude is likely to be seen in younger or new entrepreneurs seeking to achieve a better position in the market and earn managerial reputation, since younger entrepreneurs have "less to lose" and/or more time to correct poor decisions made in the past. Thus, younger analyst investors are more prone to assuming riskier investment strategies in order to achieve the reputation that more experienced managers already have.

**Skills**

Analytical skills defined as the individual's ability to use the available information efficiently and quickly, can play a key role in the success of managerial decision-making [16]. For example, entrepreneurs with a well-proven market timing skill (i.e. the component of success that stems from starting a company at an opportune time and place) are also more likely to outperform industry peers in their subsequent ventures [38].

From this point of view, we may consider analytical skills as generic skills, to the extent that successful investors can use this ability for better interpreting the available information and identifying the most valuable investment opportunities in a diverse set of businesses and industries.

There are also some individual traits, attitudes or skills that have a more limited focus (namely, they are more specific) in the sense that they have a limited ability to add value to both managerial and investing decisions. For instance, interpersonal skills, such as those related to the ability to manage human teams, motivate employees and promote effective and efficient communication within the organization, are particularly relevant for a successful manager, but they are less valuable in the case of an investor. In real business management, this type of skill can be a key aspect of success and such skills have become even more important over time [24], although they add little to the good prospects of a professional investor. In this sense, using a database with CEO candidates for companies involved in buyout and venture capital, Kaplan et al. [27] showed that investment performance was related to general ability (efficiency, organization, commitments, persistence, proactiveness, high standards, and accountability), but not with communication and interpersonal skills.

**Social and knowledge-Based Resources**

The information acquired by the entrepreneur when managing a business can also be valuable for assessing the value of certain financial assets, which may result in a privileged position of the entrepreneur as an investor. Good quality and timely information about changes in regulation, competitors' strategies or technological advances in an industry are clear examples of knowledge that managers can obtain when running their businesses that can also account for a better investing performance.

This information may come from the social networks that managers have built along their academic and professional careers. Gelatkanycz and Hambrick [39] stated that the social networks of a manager can contribute to better performance in two ways: first, by improving access to external resources (funding), and second by acquiring information about the management methods used in other companies. From the above discussion, it may be concluded that there are common factors that can explain a positive covariation between the higher performance of entrepreneurs in their real businesses and a better outcome of their financial investments.

To sum up, potential synergic effects between the investing and managerial activities of an entrepreneur are likely to exist due to a higher level of formal training, long previous experience, proactiveness, a less risk-averse attitude, effective analytical skills, and information. Following this logic, we propose the following hypothesis:

**H1**

There is a positive relationship between the performance of the main real business of entrepreneurs and the return of their personal financial portfolios. As we claimed at the beginning of this section, we develop our hypothesis under the assumption that the individual-related characteristics that partially determines her performance in a given area of decision-making (e.g. managing a business) can also explain her outcomes in seemingly unrelated arena (e.g. investing in stock markets).

Our empirical framework (described below) is unable to identify the straightforward effects of the personal characteristics of the managers-investors since we lack of such information. Alternatively, we opt for formulating a hypothesis that we can properly test *under the assumption* that the validation of our hypothesis must be associated to the characteristics on the individual rather than to environmental or contextual factors.

## Methodology

In order to test our hypothesis, we collected data from managerial and investment outcomes from a set of individuals that we designated as "entrepreneur-investors." Individuals were required to meet two criteria for inclusion in our sample: (1) they had to be a Chief Executive or a Senior Manager and majority owner of a company with activity in real markets and, (2) they had to be Chairperson of the Board and own a majority share of a company investing in public financial markets by means of a "Sociedad de Inversion de Capital Variable" (hereafter SICAV), namely an "Investment Company of Variable Capital".

We decided to gather data from this type of companies because they are a privileged tool for wealthy individuals to carry out their investing activities in financial markets. A major advantage of SICAVs is reflected in their tax benefits since they are taxed at the reduced rate of 1% of profits, while the general tax rate for limited-liability Spanish companies ranges from 10% to 35% [40-41].

The legal requirements for SICAV application are as follows: (1) there must be a minimum of 100 shareholders, (2) the minimum amount of equity is €2,400,000, (3) a SICAV cannot hold more than 5% of the equity of any other company, (4) 90% of the SICAV assets must correspond to securities listed on official and public markets, and (5) at least 3% of the total equity of the SICAV must be held in liquid assets (e.g. current accounts). We are aware that an entrepreneur may opt for investment tools other than a SICAV to operate as an investor in public markets. However, given its tax advantages this instrument has become a very popular means for wealthy investors to operate in official capital markets.

In addition, the data available and collected from the Spanish SEC counterpart (namely, "Comisión Nacional del Mercado de Valores" or CNMV) offered a desirable level of homogeneity and verification of data on SICAVs. Investment companies analogous to SICAVs are also available in other countries of the EU (France, Italy, and Luxembourg) as well as in Switzerland, but limited access to these data, along with the potential heterogeneity in accounting and registering issues, led us to consider only the SICAVs registered in Spain.

To build our database we accessed information about the 3,083 SICAVs registered in Spain in 2011. We identified the chairperson of the board and majority owner of the listed SICAVs and then searched for correspondences among the CEOs of the 5,000 largest Spanish companies in 2010 in the directory published by the Spanish specialized journal "Actualidad Económica" on a yearly basis. Finally, for empirical purposes our sample consisted of the set of individuals that met the following two criteria: (1) They had to appear as the Chairperson of the Board of at least one SICAV and (2) They also had to be registered as CEO or Chairperson of the Board in one or more of the 5,000 largest Spanish firms in 2010.

Accounting data and other information at company level were acquired from "Axesor, S.A.," a consulting company that collects these data from the official register ("Registro Mercantil"). Information on SICAVs was gathered from the CNMV files. Our data corresponded to an eight-year period (2003 to 2010) and the final number of entrepreneur-investors was 147, with a total sample size (individual-year) of 777 observations. Our proposal of using SICAV to approximate the performance of managers as investors relies

on the assumption that the manager, as majority owner and chairperson of the SICAV, is highly involved in the decision making process related to investment choices adopted by the SICAV. However it could be argued that the management of these companies relies heavily in the professional staffs of banks and other financial who actually takes charge of the SICAV management.

From our view, this criticism makes little sense in our case due to several reasons. A large majority of SICAVS represent a substantial part of their owners' wealth given the minimum requirement on equity and the extremely high levels of ownership concentration (the median value of the share of the first majority owner is 97.3%). Thus, the idea that these owners could have a negligible involvement in monitoring and managing activities of a substantial part of their wealth appears to be unlikely.

We also consulted two executives in charge of private banking services who confirmed us that SICAVs are commonly strongly monitored by chairperson who usually plays an active role in designing the investment strategy (maximum and minimum quantities/price of each type of financial assets, and limit orders) and she/he normally reserves the right to approve any substantial depart from these guidelines.

## Variables of Interest

To test our hypothesis, we must first measure the performance of both the SICAV and the real business owned and managed by "entrepreneur-investors" that we have identified. These performance indicators are "Portfolio profitability", approximated by the ratio between the total return of a SICAV in a given year and the total value of investment at the end of the previous year.

The returns of SICAVs include dividend yields and variations in the market value of SICAV assets. As indicator of the real business performance we computed the "Business ROA" as the ratio between the total earnings after interests and taxes over the total value of net assets. This measure has been widely used in the empirical literature since it seems to capture business return consistently with other measures of performance [42].

## Control Variables

In order to control for omitted variable bias, we considered a set of variables related to the real business of the entrepreneur as control variables. The set of control variables comprises two types of variables depending upon their role as potential determinants of each one of our two variables of interest. In particular, control variables associated to SICAV profitability are portfolio risk, share of the first majority owner in the SICAV, liquidity and portfolio size.

The subset of control variables that we propose as potential determinant of the business ROA includes business solvency, working capital, firm size, export sales as well sales and assets growth. These control variables are defined as follows. SICAV-related controls: The level of financial risk of the SICAV ("Portfolio Risk") is approximated by the standard deviation of the quaterly returns of the SICAV portfolio during the previous year. This indicator has been proposed in previous empirical studies as a reasonable and observable approximation to the historical risk of a bundle of financial assets.

From the classical approach in finance theory, risk and return of an efficient portfolio should be positively related and, hence, we expect the sign of risk on portfolio profitability to be positive. We have taken into account agency theory implications as a determinant of portfolio profitability and, consequently, we considered the share of the majority owner of the SICAV ("Majority Owner"). High levels of ownership concentration are likely to be associated with better monitoring and lower agency costs which would justify a positive effect of this variable.

Holding a large share of liquid assets (current accounts) imposes a clear limit to the potential return of a portfolio and, therefore, the proportion of liquid assets over total investment of the SICAV ("Portfolio liquidity") is also added as a control variable.

This subset of control variables is finally completed with "Portfolio Size" calculated as the natural logarithm of total investment of the SICAV in the previous year.

*Business-related controls:* Variables included in this category are the solvency ratio, working capital, business size, firm age, export sales, sales growth and assets growth. These variables represent of a number of firm-specific traits, market conditions and strategic choices that have been usually proposed in previous research as potential determinants of the firm's profitability.

"Firm solvency" is computed as the ratio of equity to total firm assets. We define "Working capital" as the difference between current assets and current liabilities over total firm assets. "Firm size" is measured as the natural logarithm of the assets of the firm, following previous work [43-44]. "Firm Age" is computed as the difference between the current year and the one in which the company was founded. "Export sales" is the ratio of exports to total sales. We also considered the annual change in the amount of total sales ("Sales Growth") and total assets ("Assets Growth").

**Descriptive statistics in Table 1: Insert Table 1 about Here**

**Estimated Models**

In order to test our hypothesis we should find out the sign and statistical significance of the co-variation between our two variables of interest (i.e. Portfolio profitability and business ROA). Bi-variate tests based on the correlation between SICAV and business ROA do not take into account that these variables are endogenously and partially determined by other relevant constructs that we should consider as controls to prevent the so called "omitted-variable bias".

Conversely, the use multivariate models solve this problem but they require rather restrictive assumptions on the causality relationship and the endogenous/exogenous nature of the variables included in the model. In order to test the robustness of our results, we estimated three alternative specifications: the ordinary least squares model (OLS), the panel data model with fixed effects and heteroscedastic error terms, and the simultaneous equation model by three-stage least squares (3SLS). Their corresponding specification follows:

**OLS Linear Specification**

Portfolio Profitability $_{it}$ = $\beta_0$ + $\beta_1$ Business ROA $_{it}$ + $\beta_2$ Portfolio Risk + $\beta_3$ Portfolio Majority owner+ $\beta_4$ Liquidity +$\beta_5$ Portfolio Size +$\beta_6$ Firm Solvency + $\beta_7$ Working Capital + $\beta_8$ Firm Size + $\beta_9$ Firm Age $_{it}$ + $\beta_{10}$ Firm Sales Growth $_{it}$ + $\beta_{11}$ Firm Assets Growth $_{it}$ + $\beta_{12}$ Export Sales + $\varepsilon_{it}$

**Panel Data Specification**

Portfolio Profitability $_{it}$ = $\beta_0$ + $\beta_1$ Business ROA $_{it}$ + $\beta_2$ Portfolio Risk + $\beta_3$ Portfolio Majority owner+ $\beta_4$ Liquidity +$\beta_5$ Portfolio Size +$\beta_6$ Firm Solvency + $\beta_7$ Working Capital + $\beta_8$ Firm Size + $\beta_9$ Firm Age $_{it}$ + $\beta_{10}$ Firm Sales Growth $_{it}$ + $\beta_{11}$ Firm Assets Growth $_{it}$ + $\beta_{12}$ Export Sales + $\lambda_i$ + U $_{it}$

**Simultaneous Equations Specification (Bi-Equational Model)**

**Equation 1**

Portfolio Profitability $_{it}$ = $\beta_0$ + $\beta_1$ Business ROA $_{it}$ + $\beta_2$ Portfolio Risk + $\beta_3$ Portfolio Majority owner+ $\beta_4$ Liquidity +$\beta_5$ Portfolio Size +V $_{it}$

**Equation 2**

Business ROA $_{it}$ =$\theta_0$ + $\theta_1$ Firm Solvency + $\theta_2$ Working Capital + $\theta_3$ Firm Size + $\theta_4$ Firm Age $_{it}$ + $\theta_5$ Firm Sales Growth $_{it}$ + $\theta_6$ Firm Assets Growth $_{it}$ + $\theta$7 Export Sales + W$_{it}$

Given the nature of our data, panel data is favoured as opposed to OLS estimation since the former minimizes the risk of inconsistent estimates due to individual unmeasured effects and the heteroscedastic nature of the error term. Thus, panel data specification provides a more flexible specification, capable of offering consistent estimates in the presence of unmeasured individual effects and time-varying variance of the perturbations.

In any case, we include OLS estimation outcomes for the sake of comparison. However, single-equation models (e.g. OLS and panel data) are less informative on the assumed relationship pattern between the variables included in the model. To solve this problem, we propose a bi-equation model estimated by the 3SLS method [45].

This method has been widely applied in economics [46-47-48] and it has two major advantages given our empirical framework as opposed to single-equation models. First, our variables of interest (SICAV profitability and business ROA) are likely to be endogenously determined by different sets of control variables. For instance, all control variables related to the SICAV characteristics (risk,

liquidity, size, and the share of the majority owner) are more likely to exhibit straightforward effects on SICAV profitability rather than on the business ROA. Alternatively, potential firm-related determinants of the business ROA as control variables (firm solvency, working capital, firm size, sales/assets growth, and export sales) are more directly linked to business performance. Thus, we can conclude that the estimation of a bi-equational model is a priori a more accurate representation of the underlying pattern of relationship.

Second, 3 SLS method accounts for both endogeneity (like in two-stage least square or 2SLS estimation) and the covariance structure of the error terms across equations in the system (like in "Seemingly Unrelated Equation System" or SURE estimation). These properties of 3SLS method allow us to examine the robustness of our findings against alternative assumptions on the endogeneity of our control variables. For instance, from finance theory it is claimed that risk and return of an asset portfolio are simultaneously determined and, therefore, including the risk of the SICAV as an exogenous control variable in explaining SICAV profitability could imply biased estimates. The 3SLS method helps to solve this issue by providing a consistent endogeneity test for our control variables.

## Results

Some preliminary evidence can be found by looking at the positive correlation between SICAV profitability and the ROA (Table 2), even though this evidence seems to be weak (significant only at a 90% confidence level). Estimates from multivariate models (Tables 3 and 4) are roughly supportive of the hypothesis formulated as they exhibit a positive and statistically significant co-variation between business ROA and SICAV profitability.

In any case, we find remarkable differences in the significance levels of the estimated effect of ROA between empirical models. Panel data and the simultaneous equation models provide stronger support to our hypothesis (99% confidence level) than OLS estimates (90%) and better fit as well. Overall, this finding reflects a poor performance of the classical linear regression model against more flexible specifications.

**Insert Table 2 about Here**

Conversely, panel data (Table 3) and 3SLS (Table 4) estimates are fully consistent with regard to the estimated effect of ROA as it remains positive and highly significant. Furthermore, we find no meaningful divergences in the signs and significance levels of the control variables between both specifications.

This lack of conflicting evidence corroborates the robustness of our findings in validating the positive relationship between the performance of individuals when they manage their own real business and when they in act as an investors in financial markets. At this point, the comparison between panel data and 3SLS models becomes complicated (and, to some extent, unnecessary).

In any case, we considered other relevant aspects in order to assess the relative performance of one model against the other. In this vein, the evidence from panel data estimates supports the relevance of individual effects (at a 95% level of confidence) that are ignored in the 3SLS model but it also fails to account for the endogenous nature of business ROA which is accepted in 3SLS (at a 95% confidence level). We also performed a number of endogeneity tests for the control variables in the 3SLS model with positive results.

In particular, the ratio of liquid assets over total assets ("Liquidity") and "Working capital" were rejected to be exogenous at a 95% and a 90% confidence level, respectively. Consequently, we carried out additional 3SLS estimations considering these variables as endogenous with no contradictory findings (business ROA estimate remained positive and significant at a 99% confidence level).

**Insert Table 3 and Table 4 about Here**

All control variables that achieve statistical significance also exhibit the expected effects. Finally, four control variables ("Portfolio Size","Majority owner", "Firm Size", and "Export Sales") fail to be significant in all models estimated.

## Discussion

Our evidence of the relationship between the business management performance and the investment activities of the "entrepreneur-

investor" offers one major finding and has several implications for further research. We have explored, and empirically detected, a positive link between the performances of individuals who act in the real sector as entrepreneurs, and in the financial sector as investors. This finding is strongly supported after considering alternative methods able to deal successfully with potential endogeneity problems (3SLS models) and the existence of individual unobserved heterogeneity (panel data models with fixed effects and heteroscedastic error terms).

These results are consistent with the logic that certain managerial or entrepreneurial resources, capabilities and traits that can enhance the performance in both economic activities at a individual level. Critical common factors such as knowledge acquired through education and experience, proactiveness, risk-taking behavior, analytical skills and valuable information from social ties are likely to play a crucial role in the broad catalogue of actions deployed by an entrepreneur.

Moreover, some of these underlying resources and skills appear to be redeploy able in several domains of decision making (i.e. they are not non-specific) since they can be applied successfully in seemingly non-related activities. Looking into the link between managerial and investing decisions of individual decision-makers also sheds light on several key questions in the management field. First, from a research standpoint there is an evident interest in determining the degree of specificity of the key determinant factors of business success for an entrepreneur [49].

Assuming that some of the individual resources and traits of the entrepreneur are highly specific (e.g. knowledge about the market and technology, long-term relationships with customers/suppliers), this would imply that better outcomes are expected as entrepreneurs deploy their resources in a narrower set of decisions. By contrast, generic or redeploy able individual traits and resources can be successfully applied to multiple business opportunities both within and outside the entrepreneur's main business [50-51]. Clearly, evidence regarding this question would help researchers concerned with assessing the real scope of potential managerial-related traits and resources as sources of rents. Our results also open some avenues for further research.

Data limitations of our study preclude any further attempt of identifying and assessing the relevance of the particular resources, skills and attitudes that could explain the co-variation of managerial and investing performance. Further research on this issue would help managers and professional investors to better develop their global performance by fostering those individual-related factors that can be successfully applied to different domains.

The identification of such individual factors should also be a matter of concern for policy makers and other stake holders. For instance, exploiting a privileged social network and/or the control of some private information can be a legitimate source of rents in managerial and investing activities. However, these resources may also cover several unlawful or unethical behaviors such as insider trading or traffic of influences.

Thus, verification of the long-lived high performance of a real business and the financial portfolio controlled by the same individual can serve as an observable signal to identify potential irregular practices that could deserve further investigation. Our research would also benefit from future extensions based on the inherent limitations of the available data. From our view, the empirical framework is aimed at testing the existence of some common individual-based factors of success in seemingly unrelated activities but our findings also raises new and interesting questions.

Additional information about observable characteristics of decision makers (age, formal training, experience, personality traits) and personal resources (information, social networks) of the entrepreneur could allow us to identify the ultimate underlying common factors that justify our evidence.

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