Individual entrepreneurial exit and earnings in subsequent paid employment

Abstract

We study earnings of individuals who exit entrepreneurship for paid employment. We find mean (median) positive rewards from entrepreneurship in subsequent paid employment relative to matched employees. Rewards are higher for former entrepreneurs hired in highly innovative sectors. We also find that the performance of the exited firm is a strong predictor of the earnings premium for former entrepreneurs when the firm performed well, while we do not find median discounts for entrepreneurs exiting low performing firms. We use registry data that encompass the population of firms and individuals in the Norwegian economy.

Keywords: entrepreneurship; individual entrepreneurial exit; rewards to entrepreneurship

INTRODUCTION

Despite working longer hours and being exposed to more financial, social and psychological costs (Hessels, Grilo, Thurik, & van der Zwan, 2011), entrepreneurs earn lower median incomes than employees in paid employment (Hamilton, 2000; Hyytinen, Ilmakunnas, & Toivanen, 2013).[1] Entrepreneurs are also more likely to earn exceptionally low or high incomes compared to paid employees (Rosen, 1981). The extant literature focuses extensively on rewards or discounts available during the entrepreneurial experience, comparing earnings of active entrepreneurs and non-entrepreneurs. Focusing on entrepreneurs' (re-)entry into paid employment, this paper contributes to the less developed literature on post-entrepreneurial rewards or discounts in subsequent paid employment.

Post-entrepreneurship earnings comparisons can substantially add to our understanding of entrepreneurship rewards and career dynamics for two main reasons. First, there is a stream of literature, starting with Knight (1921), which suggests that individuals

[1] This 'entrepreneurial earnings puzzle' has been recently challenged in Åstebro and Chen (2014) and Tergiman (2013).

pursuing entrepreneurship have not only peculiar traits and abilities (e.g., Lazear, 2004; Åstebro & Thompson, 2011) but also peculiar motivations and preferences that make them choose entrepreneurship (e.g., Hamilton, 2000; Taylor, 1996). These peculiarities might explain why such individuals persist in entrepreneurship despite low returns (Hamilton, 2000), while also raising the issue of such individuals' suitability for paid employment at the post-entrepreneurship period. Second, the analysis of entrepreneurship rewards should incorporate the estimation of potential premiums or discounts experienced after entrepreneurial exit through engagement in other types of economic activities. This has the potential to amend prevailing insights of negative returns from entrepreneurship (e.g., Hamilton, 2000).

Individual exit from entrepreneurship does not suggest failure because entrepreneurs exit both financially distressed and well performing firms (Gimeno, Folta, Cooper, & Woo, 1997; Wennberg, Wiklund, DeTienne, & Cardon, 2010). Subsequent paid employment is the most common post-entrepreneurship career path (Hessels et al., 2011). About half of new entrepreneurs *return* to paid employment within seven years, and the probability of exiting decreases with duration in entrepreneurship falling from 10% to 0% by the 11^{th} year (Evans & Leighton, 1989).

Results from empirical contributions on the effect of entrepreneurial experience on earnings after exit are mixed. Evans and Leighton (1989) find a positive but not significant difference between the return to self-employment experience and the return to wage experience in wage work, proposing that 'workers who fail at self-employment return to wage work at roughly the same wages they would have received had they not tried self-employment'. Williams (2000) finds similar results for men but shows that the return to self-employment experience is lower than the return to paid employment experience for women. Hamilton (2000) indicates a positive and significant difference in the *median* wage for former self-employed individuals returning to paid employment and employees with the same level

of total labor market experience, although the entry wage premium is lower for individuals with longer tenure in entrepreneurship. He proposes that this is consistent with no 'stigma' attached to self-employed individuals who wish to return to paid employment and with a positive signal of abilities for potential employers.

Kaiser and Malchow-Møller (2011) find that negative effects on wages in subsequent paid employment only arise if the individual experienced self-employment in a sector different from the subsequent wage-employment sector. Moreover, individuals who hired at least one worker or who enjoyed high income in self-employment do not face wage discounts in subsequent paid employment. Baptista, Lima, and Preto (2012) show that the overall return to business ownership experience is lower than the return to wage employment experience but former entrepreneurs enter firms at higher job levels and progress faster in the hierarchy than wage employees. Campbell (2013) provides evidence of positive effects of a start-up experience on future earnings outside of the entrepreneurial firm. To isolate the startup experience treatment effect from a selection effect, he focuses on employees in the California Semiconductor Industry and matches them based on whether they worked at the same firm and earned similar wages before one of them left to join a startup. Campbell's analysis thus focuses on a high tech sector's employees who join a startup coming from a former experience in paid employment. Moreover, it focuses on any individual joining a startup and not necessarily on entrepreneurs as business owners.

In the present study, we analyze post-entrepreneurship earnings rewards focusing on the unconditional set of entrepreneurs as business owners moving or returning to paid employment, thus observing former entrepreneurs along the whole unobserved ability distribution. To do this, we combine matching estimators - where we match former entrepreneurs and counterfactuals based on observable individual and firm characteristics - with a regression model that allows for correlation between the unobservables that affect the

earnings in paid employment (outcome) and the unobservables that affect the selection in the entrepreneurial experience (treatment). Our study further contributes to our understanding of post-entrepreneurship rewards by analyzing whether some industries pay a higher reward on entrepreneurial experience and whether the performance of the entrepreneurial firm affects post-entrepreneurship rewards.

We use longitudinal data on Norwegian entrepreneurs and employees from 2006 to 2012. We employ a recently established register of any shareholding of all Norwegian registered limited liability firms. We complement these data with firms' and individuals' life histories using registry data administered by Statistics Norway that encompass the population of firms and individuals in the Norwegian economy. These databases offer a unique ground for studying rewards (discounts) in paid employment at the post-entrepreneurial period.

We find (1) mean (median) rewards from entrepreneurship upon entry into subsequent paid employment; (2) higher premiums for former entrepreneurs hired in industries characterized by changing, dynamic environments such as highly innovative industries; (3) that the exited firm's performance is a strong predictor of the former entrepreneurs' earnings premium in cases in which the firm performed well, while we do not find a mean (median) discount for entrepreneurs exiting low performing firms.

The rest of the paper proceeds as follows. Next section reviews theoretical perspectives that contribute to predict post-entrepreneurial rewards or discounts in paid employment. The following sections illustrate our research methodology, describe our data and measures, and present our empirical results. The concluding sections discuss the implications of our findings and the limitations of our analysis.

ENTREPRENEURIAL EXIT AND REWARDS FROM ENTREPRENEURSHIP

Different theoretical perspectives provide mechanisms and predictions for the effect of entrepreneurial exit on earning rewards in subsequent paid employment. These are the 'Jack-of-all-trades' and 'stars' and 'misfits' theories, the 'un-employability' of entrepreneurs perspective, the resource based view of entrepreneurship, and attribution of success and individual's quality signaling perspective.

The 'Jack of all trades' and 'Stars' and 'Misfits' theories

Recent literature suggests that entrepreneurs possess different skills than individuals in paid employment (Hamilton, 2000; Lazear, 2004; Åstebro & Thompson, 2011). Lazear (2004, p. 208) argues that while paid employees are 'specialists', entrepreneurs must be 'jacks of all trades' or multi-skilled to succeed. Individuals who choose to engage in entrepreneurship are more likely to have this set of balanced skills, innately or by educational choices (e.g., Wagner, 2003), or they further acquire them through the entrepreneurial experience. Another strand of literature proposes that variations in abilities suggest which individuals become entrepreneurs. While according to Rosen (1981) the upper tail of the entrepreneur earnings distribution is populated by 'superstars' who enjoy significant wage premiums compared to wage employees, according to Min (1984) many entrepreneurs are 'misfits', 'unable to work productively with others', who earn less than paid employees within the same percentile of the earnings distribution. The view that misfits are pushed into entrepreneurship is empirically supported for example in Evans and Leighton (1989) and Åstebro, Chen, and Thompson (2011) propose a model consistent with the fact that entrepreneurs are likely to be drawn from the tails of the ability distribution.

The jack of all trades and the stars and misfits perspectives contribute to predict rewards from entrepreneurship in subsequent paid employment. On the one hand, to the extent that the entrepreneur's jack of all trades abilities are transferable outside of the entrepreneurial

firm and in demand, there will be a good matching, in terms of tasks and firm, between former entrepreneur and employer in subsequent paid employment, which implies positive rewards from entrepreneurship. Indeed, these are more likely to be either high abilities entrepreneurs drawn from the top tail of the earnings distribution (the 'stars' in Rosen, 1981) or median abilities entrepreneurs who might still need to be rewarded for their balanced skills outside of their entrepreneurial firms.

On the other hand, the jack of all trades/specialist distinction might imply some degree of incongruence or 'misfit' between entrepreneurs who have balanced/non specialized skills and employers who seek specialists, which might lead to observe earning discounts for former entrepreneurs. To the extent that misfits and lowest abilities entrepreneurs are less likely to go to paid employment (Min, 1984; Åstebro et al., 2011), we should consistently expect a positive *median* reward from entrepreneurship in subsequent paid employment earnings.

The 'un-employability' of entrepreneurs

Recent literature suggests that entrepreneurs also have different preferences than paid employees. Seeking independence (e.g. being own boss) positively affects the likelihood of entering entrepreneurship (Taylor, 1996) and entrepreneurs trade lower earnings for the non-pecuniary benefits of business ownership (Hamilton, 2000). The pursuit of independence/autonomy and the desire to exploit own skills are ranked first among the determinants of new firm formation while profit expectations are ranked below personal/psychological motivations (Santarelli & Vivarelli, 2007). Taste for variety theory states that entrepreneurs are willing to forgo income in order to benefit from variety (Åstebro & Thompson, 2011, p. 638). Entrepreneurs who prefer variety, independence, flexibility and job satisfaction, may therefore not match with the structured, routinized and hierarchical nature of paid employment.

On the one hand, the mismatch between "hard to tame" entrepreneurs and employers' tasks implies that these individuals will be rewarded to forgo independence to go to paid employment when their skills are in demand. On the other hand, varied employment - prefered by the entrepreneurial type (Åstebro & Thompson, 2011) - is associated with lower earnings (Hachen, 1992). Therefore, to the extent that entrepreneurial moves to paid employment simply reflect a higher taste for variety than for individuals in paid employment, we can observe discounts for former entrepreneurs in subsequent paid employment.

The resource based view of entrepreneurship

Entrepreneurs possess valuable, rare, and inimitable resources and capabilities (Alvarez & Busenitz, 2001). Busenitz and Barney (1997) found that entrepreneurs use heuristics decision-making more frequently than managers do and more frequently advance 'innovative ideas that are not always very linear and factually based' (Alvarez & Busenitz, 2001, p. 758). The entrepreneurial alertness perspective (Kirzner, 1979; Shane & Venkataraman, 2000) argues that some individuals are more alert to opportunities resulting from price, quantity and qualities which diverge from equilibrium (Foss & Klein, 2010) and entrepreneurial alertness defined as 'the ability to see where products (or services) do not exit or have unsuspectedly emerged as valuable' is a distinguishable characteristic of entrepreneurs (Alvarez & Busenitz, 2001, p. 760). Finally, Alvarez and Busenitz (2001: 762) argue that entrepreneurial knowledge, 'the ability to take conceptual abstract information of where and how to obtain undervalued resource, explicit and tacit, and how to deploy and exploit these resources' is a valuable capability of entrepreneurs.

An entrepreneurial experience thus reveals the individual's proclivity to use heuristic based decision-making, alertness to opportunities (Kirzner, 1979) and ability to coordinate diverse knowledge (Alvarez & Busenitz, 2001), representing a signal for otherwise unobservable human capital characteristics. Under conditions of environmental uncertainty,

heuristics based decision-making can outperform the more factual-based decision-making practiced by managers. This view implies that to the extent that entrepreneurial decision making is a sought after commodity in contemporary rapidly changing markets, those who have the entrepreneurial mindset will be positively remunerated when those resources and capabilities are in demand. Moreover, to the extent that highly innovative industries are more dynamic and uncertain, heuristics based decision making, alertness to opportunities and ability to coordinate knowledge become even more valuable resulting in amplified premiums.

Attribution of success and individual quality signals

Whether an individual moves from a well or bad performing firm might affect her job market value. Other things equal, the stronger the new employer's or stakeholders' attribution of responsibility for firm's performance to the individual, the more we should expect the individual to receive better or worse job offers and payments. The attribution of responsibility for firm performance to the individual is for example the underlying logic in top managers' pay-for-performance remuneration mechanisms (Jensen & Meckling, 1976) and CEO turnover (Jenter & Kanaan, 2015).

Several scholars have noticed that attributions of managerial ability are noisy because firm performance is strongly affected by industry and organizational systemic risk factors (Holmstrom, 1982) and managers only have limited impact on firm performance (Lieberson & O'Connor, 1972). Nevertheless, *good* performance in particular tends to be credited to managers' quality (e.g., Bettman & Barton, 1983), and stakeholders tend to overweight external signals of a CEO's reputation when evaluating her talent (Khurana, 2002). As a consequence, CEOs who are recognized as "stars" tend to earn compensation premiums and are better able to negotiate future compensation contracts with boards (Wade, Porac, Pollock, & Graffin, 2006). Their higher status will imply higher rewards for performing similar tasks (Matthew effect (Merton, 1968)). Attribution of responsibility also operates when a firm

performs poorly. For example, Jenter and Kanaan (2015) report a 3 percent probability of forced CEO turnover when firm stock return is at the lowest 25th percentile, 3 times higher than at the 75th percentile.

Attribution of responsibility for outcomes is likely to similarly apply to entrepreneurs and might even be more direct for entrepreneurial, relatively smaller firms, than for listed firms. Although factors external to the entrepreneur's control are likely to affect the performance of the entrepreneurial firm, there might be a strong social perception that success is mostly due to the excellence of the entrepreneur's quality. Therefore, showing entrepreneurial success, an entrepreneur might be validating claims of superior accomplishments, inducing newly employing firms to pay a higher premium compared to what they would pay to someone with otherwise similar characteristics. Similarly, poor firm performance may reinforce suspicions of an entrepreneur's low quality. To the extent that employers attribute responsibility for firm performance to the entrepreneur, former entrepreneurs' rewards in subsequent paid employment should vary with the success of the entrepreneurial firm.

RESEARCH METHODOLOGY

Data and Measurement of Entrepreneurship

We use four unique registry data sources maintained by Statistics Norway, the Norwegian Tax Administration and the Norwegian register of companies (The Brønnøysund Register Centre) that encompass the entire population of individual employees, firms and owners in Norway for the years 2006-2012. We link the databases through distinct and constant employee and employer identifiers.

For identifying entrepreneurs, we use the Ownership database (2006-2012) compiled by the Norwegian Tax Administration, which covers all private and public firms, all possible

ownership stakes (i.e., from one share to all shares) and all owner types (i.e., individual, foreign, for-profit and non-profit organizations). Because Norway charges a wealth tax, and individual wealth is partially invested in equity markets and in non-listed firms, the Norwegian Tax Administration gathers data on the number and value of shares for all firms. Firms report the number of shares owned by each owner and their value, and the Norwegian Tax Administration prepares a share-ownership tax statement which is thereafter verified by individual owners.

We use the Norwegian Tax Administration individual level Tax Filing database (1999-2012) to examine individuals' earnings in paid employment. Tax filings contain a breakdown of the various sources of both annual income (e.g., remuneration, dividend and interest income) and wealth (e.g., cash holding and real estate). To identify individual work mobility we use the Employee-Employer matched database (2000-2012) compiled by Statistics Norway. The database includes individual-level annual data of the employment history of all employees in the country. It also includes socio-demographic data for all individuals including age, gender, nationality, civil status, location, education and profession.

Finally, to control for firm specific variables, we use the Firm Accounting database (2000-2012) provided by the Norwegian register of companies. This database includes audited accounts for all limited liability firms registered in Norway. Failure to submit firm accounts eventually results in deletion from the register of companies and forced liquidation.

The rich data described above allow us to advance a fine-grained operationalization of an entrepreneur and entrepreneurial exit. Similarly to Hurst and Lusardi (2004) and Wennberg et al. (2010)[2], we define an entrepreneur as an individual employed in a limited liability firm

[2] Some studies that use business ownership to define entrepreneurship restrict entrepreneurs to those with a minimum amount of equity in their business, e.g. $5,000 (see Hurst & Lusardi, 2004). In the period under study, Norwegian law has demanded a minimum equity of 100,000 NOK ($17,986 at a 2008 yearly average exchange rate) to start a limited liability firm while maintaining provisions that would allow for negative equity thereafter.

who maintains ownership in excess of thirty percent.[3] We restrict the percentage of ownership to a minimum of thirty percent to avoid confounding investors with entrepreneurs. For similar reasons, we require that an owner's full-time employment earnings come from the same firm.[4]

Samples

Individuals exiting entrepreneurship for paid employment (former entrepreneurs)

To identify individuals exiting entrepreneurship for paid employment, we focus on those who are entrepreneurs at time t-2 and exit entrepreneurship to enter full-time employment at t-1 in a different firm. Since we use annual earnings as our outcome variable and we observe individual employment at November every year while we cannot identify when exactly an employee moves between November t-2 and November t-1, we restrict our analysis to individuals who remain employed at the same firm also at time t. This restriction ensures that individual earnings in paid employment at time t correspond to a full calendar year of employment at the same firm.

Given our focus on individual entrepreneurial exit and subsequent paid employment earnings, we exclude entrepreneurs who take a paid employment position at t-1 but maintain ownership of the entrepreneurial firm and individuals who return to an entrepreneurial activity at t-1, i.e., serial entrepreneurs. Similarly, we exclude individuals who dilute their ownership share to an amount higher than 1 percent remaining employed at the same firm. The sample consists of 6,663 former entrepreneurs.

An equity-based restriction would imply the omission of a large number of firms which experienced financial difficulties resulting in an oversampling of successful entrepreneurial exits.

[3] We track the degree of *ultimate* ownership so that if an individual owns at least thirty percent of firm A directly or indirectly through ownership of firm B, which holds an ownership stake of firm A, this will be captured in our data. We run robustness checks for twenty and ten percent ownership.

[4] Several studies use self-employment to define entrepreneurship (e.g., Fairlie, 1999). In Norway, Berglann, Moen, Røed, and Skogstrøm (2011) argue that this can be a rather restrictive measure showing that the inclusion of employed owners raises the number of entrepreneurs by 81 percent as compared to a definition based on administratively registered business income from self-employment.

Control group: Individuals switching between paid employments (switching employees)

To ensure that the control sample is as similar as possible to the sample of former entrepreneurs, we focus on individuals who were not entrepreneurs during the observed period and impose the same selection criteria as above, picking only paid employees who switch jobs between t-2 and t-1 and maintain the same employment position in t. Since an entrepreneur moving to paid employment enters the new job with no tenure, comparing paid employment entry earnings for former entrepreneurs with earnings of regular employees with tenure would be misleading.[5] The sample consists of 458,818 switching employees.

Statistical Analysis

Matching estimators

We perform matching estimators to estimate the premium (or discount) in subsequent paid employment earnings originating from entrepreneurial exit. More specifically, we estimate the differences in subsequent paid employment earnings ("outcome") for former entrepreneurs ("treated") relative to job switching employees ("controls"), conditional on matching several characteristics at the individual and at the new employing and exited firm level.

For each former entrepreneur we find exact matches based on gender, age, citizenship, marital status, education level and profession, CEO position at the newly employing firm, industry and year. Moreover, we use nearest-neighbor matching to identify counterfactuals who are similar to the former entrepreneur based on continuous controls. In particular, we find the nearest-neighbor in terms of the individual's labor market experience, the size of the employing firm, the percentage of employees with university degree in the employing firm,

[5] Sensitivity analyses that utilize the population of employees, not merely switching employees, as the control group confirm the findings reported in the results section.

the size of the exited firm and its performance. Since the nearest-neighbor matching estimators are not consistent when matching on more than one continuous variable, we also apply the bias-corrected heteroskedasticity-consistent estimator in (Abadie & Imbens, 2011).

Linear regression with endogenous treatment effect

In addition to matching estimators, we perform a regression analysis with endogenous treatment effect (ETreg), a two-equation model where the main equation estimates earnings in paid employment as a function of the endogenous binary-treatment variable (Entrepreneurial Exit) and a series of controls and the treatment equation is a binary model that estimates the probability of the endogenous treatment. Controls and exclusion restrictions for economic identification are explained in the controls section. We estimate ETreg using full maximum likelihood.

ETreg adds to the analysis based on matching estimators in three ways. First, it addresses unobserved heterogeneity. In the context of our study, we take into account that unobservables both at the individual and at the firm level might explain both the likelihood of experiencing (and exiting) entrepreneurship and remuneration in subsequent paid employment. If unobservables that raise subsequent paid employment earnings tend to occur with unobservables that lower exit from entrepreneurship compared to exit/job switch from paid employment, the actual average premium (or discount) might differ substantially from the one estimated with matching estimators.

Second, while matching estimators do a better job at isolating the effect of former entrepreneurship on subsequent paid employment earnings from *observable* individual and firm characteristics, ETreg adds information about the dimensions across which former entrepreneurs significantly differ from switching employees. Combining matching with regression methods thus allows for a more comprehensive analysis. Third, ETreg allows us to estimate the effect of specific variables on the magnitude of the premium within individuals

who exited entrepreneurship and within counterfactuals. For example, how does the effect of the exited firm performance differ for former entrepreneurs and paid employees moving to another firm?

Measures

Outcome variable

Our outcome variable in the matching estimators is the individual's annual remuneration from full-time paid employment. This measure has a number of advantages. It includes payments auxiliary to regular salary, including bonuses and the tax value of benefits such as vehicles, mobile communication, and insurance. The measure does not confound remuneration with other types of income. It excludes dividend income, business income (e.g., from consulting), interest income (e.g., from bank deposits) and added value from sold securities (capital gains). To explore if our findings are sensitive to the exclusion of these additional sources of income, we run sensitivity analyses with individual total income.

The reported remuneration value follows a triple scrutiny process. First, since employer tax is a function of payroll expenditure, firms must report to the tax authority each employee's remuneration during each calendar year and are accountable for failing to report accurate values. Second, employees receive an end-of-the-year payroll statement from their employer and it is their responsibility to ensure that this value is identical to the one reported by firms to the tax authority and to their real income. This value automatically appears in the individual's tax return statement. Third, the tax authority checks firm's and employee's tax submissions for consistency and provides an annual in depth review of a small number of firms and individuals. Accounting variables are winsorized at the 1 percent level and CPI adjusted to 2008 NOK values (1 USD was equivalent to 5.56 NOK).

Controls

We control for individuals' human capital through formal education, profession and experience. We divide an individual´s highest Education Level into five categories: Secondary school or below, High school, Bachelor, Master and PhD. We use Profession dummies for Engineering, Science, Business Administration and Economics. We measure Experience as: individual age - years of education – 6 (Hamilton, 2000). As a robustness check, we also proxy for experience using the total number of years in employment within our observed period. We also control for the eventual CEO position of the individual in the newly employing firm. The variable CEO (t-1) equals 1 if the individual is appointed CEO at the newly employing firm and 0 otherwise. We control for gender, citizenship and marital status. The variable Female is assigned value 1 for females and 0 for males. Foreign Citizen is assigned value 1 for non-Norwegian passport holders and 0 for Norwegian citizens. The variable Married is assigned value 1 for married or cohabiting individuals and 0 otherwise. These represent standard controls, widely used in studies analyzing remuneration equations (e.g., Berglann et al., 2011).

We control for individuals' net wealth for two reasons. First, an individual's wealth is positively correlated with the likelihood of becoming an entrepreneur (Quadrini, 2000). Second, entrepreneurs face potentially higher rates of return than paid employees but are financially constrained, and therefore forced to keep savings. This in turn increases their wealth making entrepreneurs wealthier than individuals in paid employment (Cagetti & De Nardi, 2006). In the binary-treatment equation in ETreg, we therefore control for the individual's net wealth at the time of exit (Net Wealth (t-2)). In the earnings main equation in ETreg we control instead for current Net Wealth of the individual (Net Wealth (t)). We calculate Net Wealth as the market value of individual assets minus the value of debt. Individual assets include the estimated market value of an individual's real estate ownership and vehicles, cash holdings, the market value of traded stocks and bond holdings and the book

value of shares in non-traded firms. Notice that net wealth is measured at different time periods in the two equations, thus effectively working as an exclusion restriction in our binary-treatment equation.

At the firm level, we control for age of exited and newly employing firm. Employing firms which have been in business for a long time have developed reputation and stability in the market and may pay less on average than young firms, which need to pay more to attract employees. Firm Age is measured as the number of years a firm has been operating. We further control for the size of the newly employing and exited firm. Larger firms are likely to have larger profits and liquid assets and, thus, pay higher salaries to their employees (Currie & McConnell, 1992). Firm Size is measured as one plus the natural logarithm of annual sales expressed in 2008 NOK. As a robustness check, we also perform our analysis using the log of the number of employees. The size of the exited firm indicates its market penetration and serves as a signal of quality for future employers. Since former entrepreneurs are more likely to exit smaller firms, we run our ETreg model for both the entire sample and restricting to observations in the control group for which Firm Size (t-2) does not exceed the 99% percentile of the entrepreneurial firms' size.

We control for Firm Solvency measured with quick ratio, the ratio of current assets less inventory to current liabilities. Low values indicate a risky position whereby the firm may be unable to pay its short term obligations while high values indicate slack resources (Derfus, Maggitti, Grimm, & Smith, 2008). Employing firms with more available assets are able to be more lenient with remuneration policies. For similar reasons, we control for Firm Performance, the ratio of operating profit to total assets. Firms with a highly educated workforce tend to pay higher remuneration than those with a less educated workforce. We thus control for Firm Human Capital (t), which is the percent of employees who hold University degrees.

We examine the firm's life history to identify firm closure. Individuals moving away from a closed firm are likely to be willing to accept lower salaries on average than individuals moving from a surviving firm. We code Firm Closure (t-2) as 1 if an individual exited from a firm which existed in year (t-2) but ceased operations in (t-1) and 0 otherwise. Due to the fact that firms are assigned a unique identifying organization number through their lifetime, the measure is insensitive to changes in firm name, product, and location or other. Moreover, to avoid confounding firm closure with mergers or acquisitions, we assign the value of 0 to Firm Closure (t-2) when at least 33 percent of the employees simultaneously move to another firm.

We use Capital Intensity of the exited firm as our main exclusion restriction for economic identification in the ETreg. A high investment in physical capital might indeed work as a deterrent for an entrepreneur to quit entrepreneurship and switch to paid employment, while firm capital intensity does not affect a paid employee's decision to switch to another firm. Neither capital intensity of the newly employing firm, nor capital intensity of the exited firm explain earnings in paid employment, making our variable a good exclusion restriction. We measure Firm Capital Intensity (t-2) as the ratio of firm fixed assets to total assets. Higher values indicate that the firm has a large portion of its assets as land, property, vehicles and equipment.

We control for industry and regional differences through two digits industry codes and 19 county dummies. Regional and Industry dummies are different in the two equations in the ETreg, referring to the newly employing firm in the outcome equation and to the exited firm in the treatment equation. The latter thus work as a further exclusion restriction for economic identification. Finally, Year dummies control for macro-economic fluctuations, for example, for the financial crisis.

RESULTS

Table 1 reports descriptive statistics for our samples of former entrepreneurs and switching employees. Relative to switching employees, there are more non foreign, male, married and experienced individuals former entrepreneurs. Former entrepreneurs are wealthier and leave significantly smaller, younger and less capital-intensive firms. The firms they exit exhibit lower mean performance, with a mean return on assets of merely 0.2 percent compared to 3 percent for firms exited by switching employees. Former entrepreneurs move to smaller, less capital intensive and slightly less economically successful firms. They are more likely to move due to firm cessation of activities. Former entrepreneurs and switching employees are more similar in terms of education level and employing firms' human capital.

Insert Table 1 here

Table 2 reports results from matching estimators. We report both average treatment effects and statistics on the overall distribution of treatment effects to emphasize likelihood and magnitude of premiums and discounts. The average treatment effect in Table 2, row 1, column 1, is 88,893 NOK, suggesting that a former entrepreneur earns 19 percent more on average than a switching employee. The median premium is 46,888 NOK, which amounts to 10 percent of average earnings.

The positive ATT and median reward is consistent with the resource based view of entrepreneurship. Individuals that engage in an entrepreneurial experience signal human capital and resources such as alertness to opportunities or ability to coordinate knowledge among others that would otherwise be unobservable or difficult to observe. Similarly, the entrepreneurial experience carries the balanced skills signal. To the extent that these resources are transferable outside of the entrepreneurial experience and valuable in another firm, the

newly employing firm will be willing to pay a premium to a former entrepreneur compared to an individual who does not carry this signal.

Consistent with the un-employability of entrepreneurs perspective, these arguments are reinforced by the fact that if these individuals are "hard to tame" and have different preferences for non- pecuniary rewards, they will be rewarded to forgo independence to go to paid employment when their skills are in demand. Finally, relying on the predictions of the stars and misfits theory and on Åstebro et al. (2011) prediction that entrepreneurs tend to be drawn from the tails of the unconditional abilities distribution, the positive median reward in post-entrepreneurial earnings is also consistent with a lower propensity of lowest ability entrepreneurs to move to paid employment compared to higher ability entrepreneurs. To the extent that misfits or lower ability entrepreneurs moving to paid employment would face a discount compared to individuals from paid employment – who are less likely to be drawn from the tails of the ability distribution - these discounts seem to be outcompensated by the rewards gained by higher abilities entrepreneurs.

Consistent with Alvarez and Busenitz' (2001) suggestion that entrepreneurial resources and capabilities are more valuable in dynamic environments, we find an amplified entrepreneurial effect in newly employing innovative sectors. Reve and Sasson (2012) show in particular that the Oil and Gas, Health and IT industries report significantly higher levels of product and service innovations than the Construction and Retail industries in Norway. Using a distinction between highly innovative and low innovative sectors based on the findings of Reve and Sasson (2012), our data show that the medium earning premium in the highly innovative industries ranges from 63,000 to 103,000 NOK and from only 36,000 to 37,000 NOK in the less innovative industries.

Insert Table 2 here

Row 2 in Table 2 reports the average treatment effects following the winsorization at the bottom and top one percent of the remuneration distribution. The average and median treatment effect of 85,177 NOK and 45,928 NOK respectively indicate that outliers only marginally affect our estimates.

Insert Figure 1 here

To test how performance of the entrepreneurial firm affects rewards, we conduct matching estimators for deciles of the entrepreneurial firm performance distribution. Figure 1 depicts the level of the premium and discount for each decile of the return on assets (ROA) distribution of the exited entrepreneurial firm. We also estimate premium and discount within the highest and lowest five percent of the distribution. Consistent with the attribution of success and individuals quality signaling perspective, we find that the premium level increases almost monotonically with firm performance. Within the top 30 percent of the distribution, i.e., for individuals who left well-performing firms, the premium for former entrepreneurs increases from 76,353 NOK for the 75^{th} percentile to 107,934 NOK for the 95^{th} percentile.

However, we do not find discounts for former entrepreneurs who exit poorly performing firms. Even when firm performance is negative (ROA at the 30^{th} percentile is -0.052), the medians of the matching estimators are positive, increasing from 23,951 NOK (insignificant) for the lowest fifth percentile to 43,592 NOK (significant) for the 30^{th} percentile. We conduct the same procedure by deciles of the entrepreneurial firm size distribution. The findings are similar, with median values increasing from 18,000 NOK to 94,000 NOK.

In the regression analysis with endogenous treatment effect, the estimated coefficient of Entrepreneurial Exit at the top of Table 3 indicates the average earnings premium or discount for former entrepreneurs in subsequent paid employment. The positive and significant coefficient of Entrepreneurial Exit in, Table 3, Model 1 provides support for an average earning premium. Former entrepreneurs leave much smaller firms on average biasing the estimate of the earnings premium in model 2, where we control for size of the exited firm. Model 3 in Table 3 thus reports the same estimates using only observations in the control group for which Firm Size (t-2) does not exceed the 99^{th} percentile of the entrepreneurial firms' size. Results are similar to those in Model 1.

Insert Tables 3 and 4 here

Table 4 provides the results of interacting Entrepreneurial Exit with the performance of the exited firm and the individual's education level. For brevity's sake, we only report results obtained by augmenting with interaction terms the complete Model 2 of Table 3 and we only report interacted terms (other results are not affected). Model 4 in Table 4 shows that the performance of the firm that a switching employee leaves slightly affects remuneration in the new job while the performance of the entrepreneurial firm that an entrepreneur exits from plays a much more important role in determining remuneration in subsequent paid employment. The estimated coefficient within former entrepreneurs is 9 times larger indicating that entrepreneurs that leave better performing firms enjoy – all else equal – significantly higher earnings in subsequent job offers. These findings are consistent with the argument that there is a strong attribution of responsibility for firm performance to the entrepreneur.

We find the opposite effect for formal human capital. The highest achieved education level is more predictive of remuneration in subsequent paid employment for individuals who switch between paid employments than for former entrepreneurs. These findings are consistent with the resource based view of entrepreneurship, i.e. earnings in subsequent paid employment are less sensitive to formal education *per se* while the entrepreneurial experience reveals unobservable aspects of human capital.

Model 5 of Table 4 reports the results of three way interactions between entrepreneurial exit, firm performance and education. We find that for the highly educated switching employees, the effect of the exited firm's performance on future remuneration is insignificant. For low educated switching employees, we find that those leaving well-performing firms will earn merely one percent more than those leaving poorly performing firms. For former entrepreneurs, we find substantial earnings differences. If we calculate the marginal increase in remuneration for low educated former entrepreneurs exiting well-performing as opposed to poorly performing firms, we obtain 9,795 NOK or 2 percent of average remuneration. The corresponding value for highly educated former entrepreneurs is 23,106 NOK or 5 percent of average remuneration. Hence, the performance of the exited entrepreneurial firm matters more for highly educated former entrepreneurs than for low educated former entrepreneurs, for whom remuneration variability is lower.

Robustness checks

Our findings are insensitive to different definitions of an entrepreneur. In our initial definition, we impose a 30 percent firm ownership criterion. Our estimates are consistent if we impose 20 or 10 percent ownership criteria. The median premium estimated with matching estimators, for example, only marginally varies between 46,888 NOK with 30 percent ownership and 46,393 NOK with10 percent ownership.

The findings are also insensitive to career choices which may vary by gender. When we replicate matching estimators within gender, we find a median treatment reward of 41,376 NOK for female former entrepreneurs relative to female switching employees, which is slightly higher than the median reward for former male entrepreneurs of 38,847 NOK. Results from the regression analysis are also similar.

As presented above, we find no significant earning discounts for former entrepreneurs exiting low performing entrepreneurial firms (see Figure 1 and Table 4). Similarly, we find non-significant earning discounts for former entrepreneurs who are absent from the labor market for one year and subsequently enter paid employment. In this case, we find that the median treatment effect is -11,757 NOK (t = 1.540, p = 0.125). The mean performance of the exited firm for former entrepreneurs who are absent from the labor market for one year is -0.234 (i.e., poorly performing firms), significantly lower than for switching employees and for former entrepreneurs who immediately joined the workforce. Even though this group of former entrepreneurs is both poorly performing and absent from the workforce for one year, we do not find a significant median remuneration discount relative to switching employees. This further supports that the attribution of responsibility for firm performance to former entrepreneurs only applies to well-performing entrepreneurial firms.

DISCUSSION

This paper provides evidence of a mean/median earnings premium for former entrepreneurs in subsequent paid employment relative to similar paid employees. Premiums are higher for former entrepreneurs hired in highly innovative sectors. Our results are consistent with the idea that the entrepreneurial experience plays a signaling role for future employers making entrepreneurs more valuable on the job market due to their otherwise unobservable traits and abilities. The signaling effect will be particularly strong in highly

dynamic and innovative sectors in which entrepreneurial resources may be exceptionally valuable (Alvarez & Busenitz, 2001). These individuals choose entrepreneurship also due to non-monetary benefits (Hamilton, 2000; Santarelli & Vivarelli, 2007; Taylor, 1996). Our results are thus also consistent with the fact that new employers will need to further compensate these individuals in order to make them 'employable'.

Since we look at the *unconditional* earnings distribution of former entrepreneurs who move to paid employment, our results are also consistent with a lower propensity of entrepreneurs in the lowest bins of the abilities distribution to move or return to paid employment (Evans & Leighton, 1989; Åstebro et al., 2011). This argument further reinforces the prediction in the literature that entrepreneurs tend to be drawn from the tails of the overall abilities distribution. While high abilities entrepreneurs might eventually be attracted to paid employment, 'misfits' are not only pushed into entrepreneurship but are also more likely to remain in entrepreneurship. While we find a significant median reward of about 10 percent for former entrepreneurs upon entering paid employment, we find no significant mean/median discount for former entrepreneurs who remain unemployed for one year after exiting entrepreneurship.

Our study further contributes to the post-entrepreneurship rewards evidence showing that the performance of the exited firm is a strong predictor of the earnings premium for former entrepreneurs in subsequent paid employment when the firm performed well, while there is no significant mean/median discount for entrepreneurs exiting low performing firms. Not only the entrepreneurial experience is a strong signal of unobservable human capital for a new employer but there seems to also be a strong attribution of responsibility for firm's performance to the entrepreneur's abilities.

As far as empirical studies are regarded, our results are consistent with Campbell (2013)'s positive reward from start-up experience outside of the entrepreneurial firm and with

Hamilton (2000)'s argument that no 'stigma' is attached to individuals who experience entrepreneurship but an actually positive signal of abilities for future employers. Our study documents no stigma effects even for entrepreneurs who experience one unemployment year before entering paid employment and for entrepreneurs exiting low performing firms.

LIMITATIONS AND FUTURE RESEARCH AVENUES

Recent studies (DeTienne, McKelvie, & Chandler, 2014) on firm level entrepreneurial exit show that different exit routes, like financial harvest, stewardship or voluntary cessation for example, have different antecedents such as founder's characteristics and motivations. Future research should combine individuals' entrepreneurial exit effects with firm entrepreneurial exit routes. Our research provides some indications on the expected effects. We find that the performance of the entrepreneurial firm substantially affects remuneration in subsequent paid employment. We also provide indication that a firm's cessation of activities is detrimental to individuals' future remuneration (Table 3). Future research should distinguish more clearly between firms' exit strategies and examine how each one affects former entrepreneurs' future earnings.

Berglann et al. (2011) distinguish between the following ex-post routes for entrepreneurs: employment, education, unemployment, pension and disability. We confine this study to earnings in subsequent full-time paid employment. To reach a conclusion on the overall value of former entrepreneurship, future research is encouraged to compare former entrepreneurs and individuals taking other career routes. One interesting avenue for future research is the examination of the likelihood for former entrepreneurs to become unemployed, and - even more importantly - of the longevity of unemployment relative to paid employees.

Our study has some further limitations, which provide avenues for future research. If former entrepreneurs that move to paid employment are more productive relative to switching

employees at an earlier stage, for example, before entering entrepreneurship, they would earn higher remuneration even without the entrepreneurial experience. Our research neither follows individuals prior to their entry into entrepreneurship nor relies on a random process that sorts individuals into entrepreneurship and paid employment. Hence, we do not resolve the issue of whether entrepreneurs acquired decision-making, coordinative or alertness resources and capabilities (Alvarez & Busenitz, 2001) during the entrepreneurial period, or whether they had those resources and capabilities prior to entering entrepreneurship. Both explanations are consistent with the argument that entrepreneurship reveals that the individual is likely to possess such resources and capabilities which can be valuable in subsequent paid employment.

We study an institutional context, Norway, in which we are less likely to find strong remuneration differences since income inequality measured by the GINI coefficient is one of the lowest in the world (26.8 in 2010 compared to for example 41.1 in the U.S.A. and 38 in the U.K.). [6] Future research in countries with larger income inequalities might find even larger post-entrepreneurial remuneration effects. More in general, the post-entrepreneurship rewards research agenda can shed new light on returns from entrepreneurship, significantly adding to the "entrepreneurial earning puzzle" debate.

CONCLUSION

This study contributes to the understanding of post- entrepreneurship rewards in subsequent paid employment showing (1) mean (median) rewards for former entrepreneurs compared to matched paid employees; (2) higher premiums for former entrepreneurs hired in highly innovative industries, (3) that the performance of the exited firm is a strong predictor of earnings premiums in subsequent paid employment when the firm performed well, while there is no average discount for entrepreneurs exiting low performing firms. Our results are

[6] http://data.worldbank.org/indicator/SI.POV.GINI

consistent with a significant human capital signal attached to former entrepreneurs, with a strong attribution of responsibility for well-performing entrepreneurial firms to the individual entrepreneur and with a lower propensity of the lowest ability entrepreneurs to (re)enter paid employment.

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TABLE 1

Descriptive Statistics

	Former Entrepreneurs		Switching Employees	
	Mean	**St. Dev.**	**Mean**	**St. Dev.**
Remuneration (t)	557,461	233,683	458,891	192,802
Education Level	2.291	0.813	2.259	0.888
Female	0.166	0.372	0.336	0.472
Foreign Citizen	0.027	0.163	0.059	0.235
Married	0.624	0.484	0.400	0.490
Net Wealth (t) (millions)	2.894	3.231	0.883	1.716
Experience	26.775	9.954	18.531	11.096
Firm age (t)	8.799	3.171	8.239	3.671
Firm size (log) (t)	17.708	2.470	19.339	2.496
Capital intensity (t)	0.299	0.266	0.378	0.293
Firm Human Capital (t)	0.342	0.275	0.315	0.301
Firm Solvency (t)	1.228	1.106	1.138	0.959
Firm Performance (t)	0.034	0.182	0.041	0.141
CEO (t-1)	0.209	0.407	0.002	0.045
Firm Closure (t-2)	0.351	0.477	0.077	0.266
Net Wealth (t-2) (millions)	2.376	2.829	0.676	1.493
Firm age (t-2)	6.159	2.940	7.328	2.626
Firm size (log) (t-2)	15.156	1.376	18.872	2.385
Firm Capital intensity (t-2)	0.228	0.250	0.362	0.290
Firm Solvency (t-2)	1.374	1.280	1.119	0.906
Firm Performance (t-2)	0.002	0.303	0.032	0.177

The sample contains 6,663 treated individuals (former entrepreneurs) and 458,818 employees in the control group (switching employees). Individual remuneration in paid employment is in NOK (1 USD equivalent to 5.56 NOK in 2008). Variables at time (t) and (t-1) refer to the newly employing firm while variables at time (t-2) refer to the firm employing the individual before the job switch.

TABLE 2

Matching estimators. Effect of Former Entrepreneurship on Earnings in Subsequent Paid Employment (Average Treatment Effects (ATT) and overall distribution of earnings differentials)

Entrepreneurial exit	Bias corrected Abadie-Imbens	Abadie-Imbens								
	ATT	ATT	S.e,	p1	p10	p25	p50	p75	p90	p99
Not Winsorized Outcome	88,893***	61,024***	5,285	-944,493	-213,585	-64,097	46,888	179,892	370,411	1,052,81
Winsorized Outcome	85,177***	60,665***	3,560	-655,729	-208,519	-63,060	45,928	178,812	364,211	741,440

The treated group is the sample of former entrepreneurs (N=6,663). These are individuals who are in entrepreneurial status at time t-2 and move to paid employment between t-2 and at t-1. The control group is a sample of individuals in paid employment who have not been entrepreneurs in the observed period and change employer between time t-2 and t-1 (N=458,818) . Outcome variable, annual remuneration in paid employment, is measured at time t to ensure that the individual annual earnings cover only payments from the newly employing firm. Individuals are matched based on individual and firm characteristics described in the methodology section.

TABLE 3

Effect of Individual Entrepreneurial Exit on Earnings in Subsequent Paid Employment. Linear Regression with Endogenous Treatment Effect

	Model 1	Model 2	Model 3
Entrepreneurial Exit (t-1)	0.030 (0.007)	-0.024 (0.005)	0.039 (0.006)
Female	-0.210 (0.000)	-0.210 (0.000)	-0.199 (0.000)
Foreign Citizen	-0.087 (0.001)	-0.087 (0.001)	-0.099 (0.002)
Married	0.040 (0.000)	0.040 (0.000)	0.034 (0.000)
Education Level	0.125 (0.000)	0.125 (0.000)	0.101 (0.000)
Net Wealth (t)	0.017 (0.000)	0.017 (0.000)	0.014 (0.000)
Experience	0.006 (0.000)	0.006 (0.000)	0.006 (0.000)
Firm Closure (t-2)	-0.006 (0.002)	-0.004 (0.002)	0.011 (0.001)
Firm age (t)	-0.002 (0.000)	-0.002 (0.000)	-0.002 (0.000)
Firm size (log) (t)	0.010 (0.000)	0.010 (0.000)	0.014 (0.000)
Capital intensity (t)	0.001 (0.002)	0.001 (0.002)	-0.011 (0.002)
Firm Solvency (t)	0.012 (0.000)	0.012 (0.000)	0.014 (0.000)
Firm Performance (t)	0.000 (0.003)	0.000 (0.003)	0.014 (0.003)
Firm Human Capital (t)	0.241 (0.002)	0.241 (0.002)	0.215 (0.003)
CEO (t-1)	0.126 (0.006)	0.125 (0.006)	0.107 (0.006)
Firm age (t-2)	-0.001(0.000)	-0.001 (0.000)	-0.000 (0.000)
Firm size (log) (t-2)	0.009 (0.000)	0.009 (0.000)	0.015 (0.000)
Firm Solvency (t-2)	0.016 (0.000)	0.016 (0.000)	0.016 (0.000)
Firm Performance (t-2)	0.016 (0.002)	0.017 (0.002)	-0.004 (0.002)
Constant	12.051 (0.041)	12.066 (0.041)	11.955 (0.047)
Entrepreneurial Exit (t-1)			
Education Level	0.042 (0.009)	0.134 (0.011)	0.115 (0.011)
Female	-0.325 (0.014)	-0.450 (0.017)	-0.455 (0.017)
Foreign Citizen	-0.250 (0.032)	-0.369 (0.032)	-0.378 (0.038)
Married	0.145 (0.013)	0.198 (0.015)	0.194 (0.015)
Net Wealth (t-2)	0.128 (0.003)	0.154 (0.003)	0.152 (0.003)
Experience	0.019 (0.000)	0.027 (0.000)	0.027 (0.000)
Firm Closure (t-2)	0.676 (0.013)	0.263 (0.016)	0.295 (0.016)
Firm age (t-2)	-0.074 (0.002)	-0.018 (0.002)	-0.020 (0.002)
Firm size (log) (t-2)		-0.491 (0.005)	-0.482 (0.005)
Firm Solvency (t-2)	0.011 (0.005)	-0.121 (0.005)	-0.120 (0.006)
Firm Performance (t-2)	-0.295 (0.024)	-0.315 (0.025)	-0.303 (0.026)
Firm Capital intensity (t-2)	-0.640 (0.024)	-0.537 (0.028)	-0.514 (0.029)
Constant	-3.292 (0.208)	-3.713 (0.208)	-3.609 (0.261)
Number of obs.	465,481	465,481	223,692
rho	0.074	0.215	0.127
Wald test ind. eqs (rho=0): Pr>chi2 =	0.000	0.000	0.000
Log likelihood	-83,862	-76,658	-32,218

Standard errors are in parenthesis. Outcome variable is log of individual annual remuneration in paid employment. Entrepreneurial Exit (treatment variable) takes the value of 1 for former entrepreneurs and 0 for switching employees. The sample contains 6,663 former entrepreneurs and 455,818 switching employees. All models include industry, region, year and profession dummies. Model 3 restricts to observations for which Firm Size (t-2) does not exceed the 99th percentile of the entrepreneurial firms' size. All variables except capital intensity (t) and firm performance (t) are significant at the 0.05 level.

TABLE 4

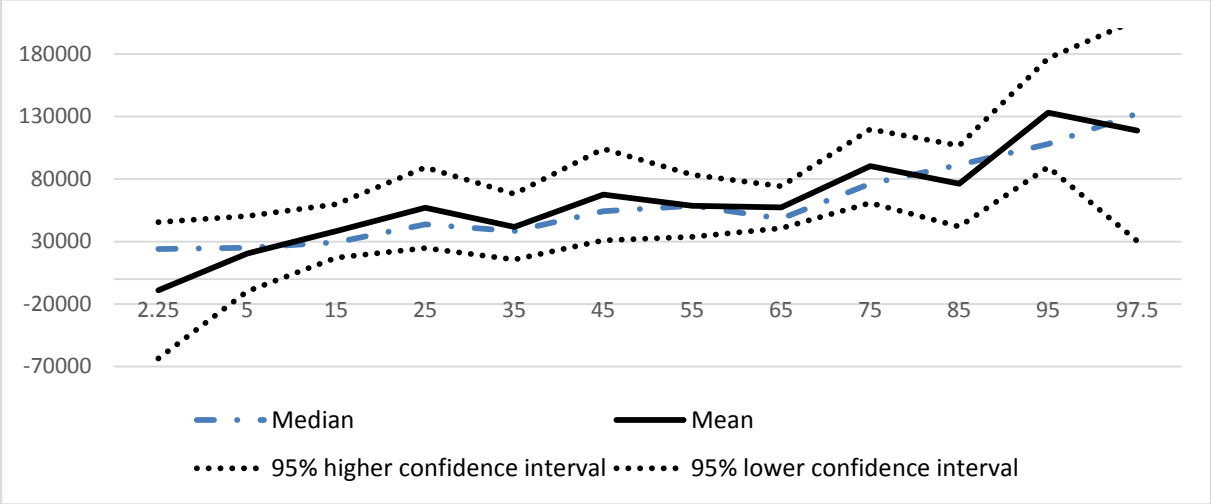
Remuneration in subsequent paid employment, performance of the exited firm and individual's education level

	Model 4	Model 5
No Exit x Firm Performance (t-2)	0.013 (0.002)	0.041 (0.006)
Exit x Firm Performance (t-2)	0.120 (0.011)	0.054 (0.032)
No Exit x Education Level	0.126 (0.001)	0.126 (0.000)
Exit x Education Level	0.089 (0.004)	0.088 (0.004)
No Exit x Firm Performance (t-2) x Education Level		-0.012 (0.002)
Exit x Firm Performance (t-2) x Education Level		0.029 (0.013)
Constant	12.066 (0.041)	12.065 (0.041)
Number of obs.	465,481	465,481
rho	0.215	0.215
Wald test ind.eqs. (rho=0): Pr>chi2 =	0.000	0.000
Log likelihood	-76,596	-76,567

Models 4 and 5 are estimated with specification in Model 2 of Table 3. Similar results are obtain with specification in Model 3 of Table 3. Only interaction terms are reported in this table. Standard errors are in parenthesis.

FIGURE 1

Mean and Median Reward for former entrepreneurs in subsequent paid employment (at t) by Percentiles of Firm Performance of the exited entrepreneurial firm (at t-2)



The figure depicts the level of earning premium or discount as measured by matched estimators (see Table 2) for each decile as well as for the lowest and highest fifth percentiles of the return on assets distribution of the exited entrepreneurial firm.