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Coming of Age: Watching Young Entrepreneurs Become Successful

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Abstract

The primary goal of this paper is to show that a young entrepreneur, or one who first opens a firm in his or her mid-20s to early 30s, can learn and invest over time to run new, more successful firms with higher productivity and sales. It has been shown by other researchers that most entrepreneurs who are successful started firms in their mid-40s, but what about those founders who are under the age of 35 and are running 42% of all new firms? How successful do they become, and what factors are consistent with their success? Using newly available data from Denmark on firm sales from 2001 to 2016, this paper shows that young founders who become serial entrepreneurs see their sales revenues nearly double between their first and second firms. Commensurate with this sales increase are two underlying factors: (1) young founders become more inclined to register new firms as limited liability corporations (LLCs), which protects them from personal losses if the firm fails; and (2), young founders who are the most successful are portfolio founders, or those who keep their first firms open when they found their second firm. Furthermore, for small firms, the productivity of the firm is often also the productivity of the founder, so just as the personal productivity of wage earners rises with age over their lifecycles, so too does the personal productivity and implied income of young entrepreneurs.

JEL codes: L25, L26, M13, O311

Keywords: entrepreneurship, serial entrepreneurs, portfolio entrepreneurs, incorporation, sole proprietorship, young entrepreneurs

1. Introduction

Both policymakers and the general public are very interested in what makes for successful entrepreneurship. The general public hears and reads a great deal about entrepreneurship, following well-known figures like Elon Musk, Steve Jobs, Oprah Winfrey, and Sir Richard Branson as though they are inspirational and intellectual leaders. Policymakers follow entrepreneurs because, going beyond the general public, they wish to craft policy tools that foster entrepreneurial growth. And finally, it is important to note that entrepreneurs themselves, or those hoping to become entrepreneurs, are very interested in learning about what makes a great entrepreneur.

There is, not surprisingly, a voluminous literature on entrepreneurship, aimed at identifying the traits of successful entrepreneurs. Thus, one must ask, what will this paper add to that literature? The literature has focused largely on the personal traits of entrepreneurs and less so on the successes of their businesses.[1] That is, researchers have looked at who becomes an entrepreneur and his/her motivations for doing so, not so much at what accounts for their success. This latter omission was driven to a considerable degree by a lack of data in the past. By and large, good data on entrepreneurial success has only become available fairly recently.[2]

Our goal is to determine what factors are important in making a young person a successful entrepreneur. A founder is said to be successful when his or her firms have high sales, growing sales, or are highly productive. We use Danish data, which has been used previously to study other facets of entrepreneurship, but we focus on the sales of young firms over many years. We match to these sales data the personal traits of founders and their families. We will be following firms from all industries, not just high-tech firms, for 2001-2016. We also go back to 1990 to define who is a serial entrepreneur.

Our specific goals are to follow young entrepreneurs as they age, to compare the more successful entrepreneurs to their less successful counterparts, and to draw limited conclusions as to why some are much more successful. In anticipation of one key conclusion, one indicator of success is whether the young person becomes a serial entrepreneur, because serial entrepreneurs have higher sales than novice entrepreneurs, who are those who run only one firm. Our results are then interpreted, addressing whether serial entrepreneurs appear to be a select group of people, or whether the decision to open a second firm is endogenous to the first firm's success. In following young serial entrepreneurs, a second indicator of success is whether he or she evolves from running a first firm as a sole proprietorship (SP) to running a second firm that is an incorporated LLC firm. The LLC protects the founder from incurring personal debts and thus encourages

[1] Examples are Fairlie and Holleran (2012), Fairlie and Robb (2007). See Hurst and Pugsley (2011) and Vereshchagina, Galina, and Hopenhayn (2009) regarding risk-taking and other factors.

[2] For those using "register data" on firms from government statistical authorities, see Azoulay, et.al. (2020), Humphries (2017), Shaw and Sorensen (2019), Shaw and Sorensen (2021), Rocha, et. al, (2015), Chen (2016), and see Lafontaine and Shaw (2016) for tax data.

risk-taking. And with family background data, we test whether a family history of entrepreneurship leads to running LLC firms.

Our data is observational data – entrepreneurship is rarely studied in an experimental setting since it cannot be randomly imposed.[3] Therefore, we will make clear the econometric challenges that we face and the limitations of our conclusions. One methodology we use is person fixed effects to follow the success of serial firms, holding fixed the innate unobserved quality of the founder. We also have a rich set of firm and personal characteristics, to interpret our results. Finally, we introduce firm fixed effects to follow the growth of firms as founders age. For novices who run only one firm, the growth of that firm is their way of succeeding.

Given the focus on young entrepreneurs, we look to the literature on age and entrepreneurship, which is also quite large. Azoulay, et.al. (2020) most recently show that most successful entrepreneurs found their companies when they are in their mid-40s. The hypothesis that successful entrepreneurs start later in life has been addressed in the past, but Azoulay, et.al. (2020) have better data, using U.S. LBD data containing 2.7 million observations on founders for 2007-2014. Others who have looked at age effects have also pointed out that very young people found firms less often than those closer to age 40.[4] Even when the focus of a research paper is not on age, the age implications surface. For example, Chen (2016) has good data on serial entrepreneurship and shows a very clear quadratic pattern in the effects of age on success.

Though it has been shown elsewhere that the average age of founders is in their 40s, we show that the founder who starts young can achieve the same, or even greater, success because the young founder invests in himself and in his firms. This paper watches these young entrepreneurs grow and improve over time, even though the average successful entrepreneur is middle-aged.[5]

Since we aim to follow the evolution of young entrepreneurs as they age and as their firms grow, we want to permit small-firm entrepreneurs to enter our data, and therefore we require a broad definition of an entrepreneurial firm. We define an entrepreneur as a person who runs a firm that has a minimal level of revenue liable to the Value Added Tax (VAT). We include SPs but exclude "hobby firms" that don't have revenue or employees.

[3] See Fairlie, Karlan, and Zinman (2015) for an experimental study. See Shaw and Sorensen (2021) for a natural experiment. See Manso (2016) for an experiment.

[4] Regarding age effects, see the references in Azoulay, et.al. (2020) as well as Parker (2009). Kautonen, Down, and Minniti (2014) summarize the large literature on age that shows that the probability of becoming an entrepreneur increases with age and then declines. As summarized, one reason for this increase is that the opportunity to start a business increases with age (Blanchflower, et.al., 1998) because the entrepreneurial resources of financial capital, social capital, and industry experience accumulate. Parker (2009) emphasizes these age effects.

[5] See Rocha, et.al. (2015), Chen (2016) and Parker (2016) for a model of learning over time.

Another reason we use the broadest possible definition of entrepreneurship is that governments making policy decisions to support entrepreneurship, like in U.S. and Europe, care about the founders of small firms. For example, entrepreneurs who run small firms in the U.S. may sell their products through Etsy, which is a website that offers a huge range of products made by people who craft each product individually. Also, these small-firm entrepreneurs may be raising money for themselves through Kickstarter, which is a website that allows people to request and aggregate very small amounts of money from a lot of people.

From a traditional economics literature perspective, we are essentially estimating age-earnings profiles by following the implied earnings of young entrepreneurs as they age. Our measure of success is the revenue and productivity of their firms, not personal wage income, but the growing productivity of firms translates into growing incomes for their founders. Whether wage or entrepreneurial income, income is growing in a concave profile with age: wage-earners move to higher paying firms with age and entrepreneurs open second firms or grow their first firms. Also, the large and long-standing literature on traditional age-earnings profiles, based on wage income, has made clear the issues of selectivity and endogeneity that hamper clear conclusions, and those issues are relevant here. At the end of this paper, we will return to the traditional age-earnings literature to briefly draw analogies between what we have learned and what others learned.

The outline of the paper is as follows. Section 2 presents the theoretical and empirical frameworks for the regressions to be estimated. Section 3 describes the data and presents descriptive statistics. Section 4 displays data distributions of sales for different subgroups that we study later. Section 5 estimates the basic sales and productivity regressions, with Section 6 introducing tests for growing sales with age. Section 7 examines the gains to incorporation, and also the growing incorporation rates with age. Section 8 adds information on family background, to see how families might shape the success of the young. Section 9 shows that success in sales for all subgroups of firms depends on having a small number of firms with enormously high sales, an outcome that policymakers want when they encourage founders to start firms. The conclusion then follows.

2. Theoretical and empirical framework

Given the objective of watching young entrepreneurs grow their firms and looking for factors correlated with success, the dependent variable in the regressions will be the sales, or revenues, of entrepreneurial firms. To interpret why sales grow, we have a rich set of variables that describe both the firms and the personal background of the founders. For example, for firms, we know whether they are incorporated, whether they employ people, and whether their founder owns more than one firm (i.e., a serial entrepreneur). For founders, we know their labor market

background and their personal characteristics, such as gender, marital status, and family background.

With sales as the dependent variable, when we add data on the firms' labor and capital to the regression, it becomes a productivity regression. When sales is the dependent variable, economists find it most useful to begin by positing a Cobb-Douglas or CES production function.[6] The production function framework provides the structure for better interpreting the sales regressions. Our goal is to focus on age interactions in the sales regression in order to model how sales and productivity evolve with age.

2.1 Theoretical framework

Using the Cobb-Douglas production function, sales are

(1) $Y_{ijt} = A_{ijt}K_{ijt}{}^{\alpha}\ L_{ijt}{}^{1-\alpha}$
(2) $logY_{ijt} = logA_{ijt} + \alpha\ logK_{ijt} + (1-\alpha)\ logL_{ijt}$

where Y_{ijt} is the sales for firm j, firm founder i, and calendar time t. Entrepreneurs can invest in more capital and labor as they grow their firms, so the K_{ijt} and L_{ijt} are the measured capital and labor inputs.

In the production function, the A_{ijt} is the standard Total Factor Productivity (TFP). The A_{ijt} is specified to be a function of:

(3) $logA_{ijt} = \tilde{A}_{ijt} + aFirmExp_{ijt} + \Gamma X_{ijt} + £\,T_t + ¥Z_{ijt}$

where $FirmExp_{ijt}$ is the within-firm years of experience for each firm j at time t, X_{ijt} is a vector of firm or founder characteristics, T_t are time dummies, and Z_{ijt} are industry dummies. The $\tilde{A}_{ijt}$ is the autonomous technical change after controlling for other observables in (3).

The A_{ijt} that is the dependent variable in equation (3) represents the intangibles that raise firm sales and are the focus of this paper. The concept of "intangibles" in the production function is extremely important. There is a very large empirical literature on innovation in which economists use sales data to estimate equation (2) and seek proxies, such as patents or R&D expenditures, for the intangibles that elevate productivity or economic growth.[7] Our sales regression is doing exactly the same thing: the TFP of (3) has *FirmExp* as a proxy for the likelihood that founders are increasing their investments in intangibles, like a broader geographic

[6] See R. Decker, J. Haltiwanger, R. Jarmin and J. Miranda (2020), where they model production functions and TFP and J. Blackwood, L. Foster, C. Grim, J. Haltiwanger, and Z. Wolf (forthcoming) for a focus on small firms.

[7] Corrado, Hulten, and Sichel (2009).

spread for their firms. Because we do not have data on things like geographic spread, *FirmExp* and the *X* and *Z* variables of (3) will be interpreted as investments in these intangibles.

Our models are quite different for the following reason: for these new firms, the firm is the founder. That is, the traits of the founder will determine the intangible investments that improve the success of the firm. Therefore, when we don't have proxies for the firm's intangible investments, we use information on the founder's background or experience and label their effects as proxies for "intangibles." One intangible is entrepreneurial talent, or the learning over time of the founder, and by adding some variables to proxy for personal ability and entrepreneurial talent, we represent the ability to scale up a firm or change product design to meet local demand. Fundraising prowess and greater cash flow, assets, and/or family resources are a second set of intangibles, as more successful founders may get ideas and receive help from personal networks.

We also have some specific variables. We know if a founder was a manager in the past or if he earned high wages suggestive of higher personal ability. A past manager should be better able to choose the practices or details of running his young firm.[8] A founder may also have a special talent or enjoy taking risks. We find numerous ways of inferring risk-taking behavior in our results.

In sum, the personal and firm characteristics in X_{ijt} will be interpreted as proxies for intangibles. The variable $FirmExp_{ijt}$ represents the growth of these intangible assets as firms age, and thus as young entrepreneurs age.

2.2 Empirical framework

The next step is to combine equations (1)-(3) into a sales regression that focuses on serial entrepreneurs.[9] We have panel data over from 2001 to 2016 on the founders and their firms. Importantly, some founders run more than one firm, who we call serial entrepreneurs.

To introduce a founders' two serial firms into our sales regression, the regression becomes:

$$(4)\ logY_{ijt} = \beta_1 + \beta_{21}Serial_{ijt}^{first,t_0} + \beta_{22}Serial_{ijt}^{second,t_0} + \beta_3 FirmExp_{ijt} + \Gamma X_{ijt}^{t_0} + \alpha_1 logK_{ijt} + \alpha_2 logL_{ijt} + £\,T_j + ¥Z_{ijt}^{t_0} + \varepsilon_{ijt}$$

[8] See Bloom and Van Reenen (2007), Ichniowski, Shaw, and Prennushi (1997) and Lazear (2000).

[9] For well-known papers on serial entrepreneurs, see Gompers, Kovner, Lerner, and Scharfstein (2010) on high tech entrepreneurs, and Kerr, Nanda, and Rhodes-Kropf (2014), Parker (2016), and Ucbasaran, Wright, and Westhead (2003) on serial entrepreneurs. See LaFontaine and Shaw (2016) for a more complete literature review.

where Y_{ijt} is the average monthly log sales for firm j, founder i, and calendar time t. The change in equation (4) from equation (3) is that the t_0 superscripts are added to reflect the fact that many variables are measured only in the firm founding year t_0. The ε_{ijt} residuals will be clustered at the firm level but are otherwise i.i.d.

Among these founders, 98% of all serial entrepreneurs operate only two firms in the 13 years they are observed, so we use only their first two firms in this paper. The founders' two serial firm dummy variables are $Serial_{ij}^{first,t_0}$, when a serial entrepreneur is operating his first firm, and $Serial_{ij}^{secondt,t_0}$, when this same entrepreneur is operating his second firm. This equation emphasizes that the data follows firms and their founders.

The variable $FirmExp_{ijt}$, is the years of experience that firm j is in business, including fractional years. The sales data for Denmark is available in 6-month semi-annual intervals for 16 years. In regressions, the $FirmExp_{ijt}$ will be measured in years going from 0.5, 1, 1.5, 2, 2.5, etc., so the coefficient β_3 on $FirmExp_{ijt}$ represents the effects of annual firm experience on sales.

One purpose of developing equation (4) from the TFP productivity equation in (3) is as follows: if firm $Serial_{ijt}^{second,t_0}$ is a better performer than firm $Serial_{ijt}^{first,t_0}$, and thus $\beta_{22} > \beta_{21}$, then most likely there are intangible investments that are included in $\tilde{A}_{ijt}$ that cause that greater performance.

The $X_{ijt}^{t_0}$ variables are largely the age, years of schooling, gender, marital status, immigrant status, and past labor market variables measured for each entrepreneur on the day he/she opens each of his/her firms at time t_0. Therefore, these variables change over time because firms are opened at different times between 2001 and 2013, but the superscript t_0 refers to the day the business was opened.

To focus on the founder's growing success with age, and we add Age interactions with the $Serial_{ijt}^{first,t_0}$ and the $Serial_{ijt}^{secondt,t_0}$ dummy variables, as seen in equation (5).

$$(5)\quad logY_{ijt} = \beta_1 + \beta_{21}^{a} Age * Serial_{ijt}^{first,t_0} + \beta_{22}^{a} Age * Serial_{ijt}^{second,t_0} + \beta_3 FirmExp_{ijt} + \Gamma X_{ijt}^{t_0} + \alpha_1 logK_{ijt} + \alpha_2 logL_{ijt} + £T_j + ¥Z_{ijt}^{t_0} + \varepsilon_{ijt}$$

There are no other Age interactions because there will be no age effects identified in the sales regressions that emphasize the growth of sales with $FirmExp_{ijt}$.

3. Data and descriptive statistics

Five different datasets that are maintained by Statistics Denmark are linked together in order to estimate the hypotheses presented above. As each dataset is presented, the variables arising in that data are described. Details are in an online appendix.

3.1 Linking five datasets

The entrepreneurial firm: An entrepreneurial firm is an organic start-up that has newly registered for the VAT and has become "truly active." This includes both personally-owned and incorporated firms that fulfill a number of conditions that allow us to consider them as being organic new firms.

Data on firm sales: Sales are determined from the sales tax that VAT-registered businesses have reported on the VAT form for the Danish tax authorities in the *Purchase and Sales of Danish Firms*.

The founding entrepreneur: The *Statistics of New Enterprises* identifies all firm start-ups in Denmark from 2001 to 2013. For the majority of the new firms, Statistics Denmark has been able to identify the founder as the person who "establishes an organic startup." For sole proprietorships, identification is straightforward because the entrepreneur is simply identified as the owner of the firm. For incorporated firms, Statistics Denmark uses a prioritized list of criteria to identify the principal entrepreneur, wherein the firms must have either 0.5 employee (including the founder when his is a paid employee) or minimum annual sales of around $30,000 to $75,000, depending on the industry. Statistics Denmark has also undertaken extensive efforts to identify organic start-ups – their scrutiny of firms has eliminated those that could be the result of spinoffs or restructurings, and these data contain a very small number of mergers and acquisitions.

This results in between approximately 14,000 (2009) and 20,000 (2007) firm start-ups for a total population of 215,645 firms in Denmark from 2001-2013. However, the sample sizes fall as we require complete data on right-hand-side variables. Dropping incomplete data does not change the basic distribution of our sales data. Our sales regression results also don't change if we divide the regressions into pre-recession (2001-2008) and post-recession (2009-2013) (Appendix Table A2).

In the years that we have data, Statistics Denmark does not permit there to be more than one founder for a firm. (If there is more than one, the one with the highest salary is selected). Using the *Statistics of New Enterprises*, which provides personal characteristic variables, we can match

founder characteristics in this paper. From 2014 onwards, Statistics Denmark permits more than one founder, but it is still the case that 86% of new firms have only one founder.

Background data on the characteristics of founder: We obtain founders' labor market experience variables and wealth from additional data sources, including tax data. We also use information on the founder's family and use it in our regressions in Section 8. However, only 7% of all founders have a father who was an entrepreneur, so our founders are not operating as a family team.

Data on the employment, capital, and educational attainment of employees in these firms: Employment and capital are annual data in the *General Enterprise Statistics*. Employment is the total number of people working at the firm, including the entrepreneur. Capital is fixed assets from accounting data.

Each entrepreneurial firm is identified by a unique firm ID and the founder or entrepreneur of the entrepreneurial firm is identified by a unique person ID.

3.2 Creating the subset of data for the regression analysis

There is a total population of 215,645 firms in this database. However, this is ultimately reduced to an estimation sample of 131,451. The many restrictions to form this dataset are in the Data Appendix for the paper, but the primary reduction is due to the need for capital data. In regressions, the sample sizes fall when we add personal background characteristics, but the key regression results do not change.

An important feature of the Danish data is that the creation of organic start-ups can be followed annually back to 1990. The advantage of the 1990s data is that we can precisely define a serial entrepreneur using 23 years of data; the longer the panel period, the more accurate is the definition of serial.[10] If an entrepreneur identified in the 2001–2013 dataset has also established firms during 1990–2000, he or she is a serial entrepreneur. However, because we lack sales data for the 1990-2000 firms, we have to drop these firms from the sales regressions. Comparing variable means for variables available prior to 2000 and post 2000, dropping the firms lacking sales data does not change the average traits of our founders. Using new firm data back to 1990 helps us to define a "novice" as someone who established only one firm for the entire period, thus making our definitions much more accurate.

[10] The consequence of using the data going back to 1990 is that we drop 26,629 new serial-run firms that were founded in 1990-2000, but for which we don't have sales data, which is only available 2001 onwards. This reduces our number of firms from 215,645 to 189,016, and our number of entrepreneurs from 190,834 to 169,282. The means of our variables for which we have data back to 1990 versus only post-2000 do not change.

3.3 Right censoring of firms' duration in business

Because we are following firms over time, a key variable is the average $FirmExp$. However, firm duration numbers used to calculate $FirmExp$ are right-censored because all panel datasets have right censored spells. In our data, among novice firms, they go out of business quickly, so only 34% of their firms are in business still in 2016, and thus right censored. Among serial firms, only 22% of the first firms of serial entrepreneurs are still in business in 2016, but 50% of the second firms of serial entrepreneurs are still in business in 2016. The second firms were founded late in the 2001-2013 period, and therefore their duration in business is more often right censored.

Because we are studying new firms, we've made the decision to limit our data to the observations on our firms for their first six years in business. We are primarily interested in modelling growth in the firm's start-up phase, and these early years are critical. However, since we lack complete spells on second firms, we are likely to underestimate the average sales of second firms in these years. This is to be kept in mind in reading the results below, when we nevertheless find that second firms have very high sales in regressions.

3.4 Descriptive statistics and resulting dataset

Table 1 displays the definitions of the variables and their means. Many variable definitions are self-explanatory or were defined in the theory section above. There are two types of variables – Firm Characteristics and Personal Characteristics. In the interest of shortening Table 1, some basic background traits are shown in the Appendix online. However, our sample is typical for entrepreneurs -- the average age is 38.3, and they are 75% male, 51% married, and have 13.4 years of education.

In the full sample of entrepreneurs, 17.6% of firms are those of serial entrepreneurs. When we reduce the sample to have all the control variables, there are 17.7% of firms run by serial entrepreneurs, so this key variable doesn't change.

An important distinction between the two firm types is that the legal unit in SPs is the individual who owns the firm, whereas the legal unit in the LLC is the firm itself. This implies that the owner in SPs is personally liable for all debt and that LLC founders have limited liability. That is, they are only liable for the minimum capital required, or the amount due when establishing an incorporated firm. This amount of equity funding will be lost if the firm fails.

In using the Danish data, we have compared Denmark to other European countries and found that its level of entrepreneurship is similar to that of other European countries.[11] One key variable used below is the LLC dummy, which is equal to one when the firm is founded as an LLC rather than as a SP. Across all our Danish firms, the percent founded as LLC is 30%, compared to a very similar 36% in the U.S. data used Levine and Rubenstein (2017). One primary reason for the similarity between the Danish and U.S. data is that the concept of the LLC is very similar across countries. Note that many research papers include firms that are only incorporated, but we include the SP firms because we want to watch young entrepreneurs "come of age," as do Levine and Rubenstein.

4. Distributions of firm sales, by founder age and firm type

It is very useful to show figures displaying the distributions of sales, because our most successful firms are those in the long right tail in the sales distribution. Thus, Figure 1 shows sales distributions for different firm types.

Looking at serial entrepreneurs, it is very clear that the average sales of Serial Firm 2 are much greater than those of Serial Firm 1 and those of the novices (left side, Figure 1). As was explained in Section 3.3 above, the firms in the Serial Firm 2 group are more likely to have observations that are right censored than the Serial Firm 1 group, so it is important that we control for the *FirmExp* years in business in our regressions. *FirmExp* ends up being shorter for firm Serial Firm 2: mean duration is 51 months for Serial F1 and 42 months for Serial Firm 2.

The second "type" is the incorporated LLC firm. On the right side in Figure 1, the sales distributions make it very clear that the LLC firms are much larger than SP firms and have a much longer right tail than the SP firms. Looking first at the long right tail, the 95/50 ratio for the LLC firm is 8.13 and the 95/50 ratio for the SP firm is 5.85. The ratio of the mean to median sales is 2.77 for the LLC firms and is 1.21 for the SP firms. In Section 9, we focus on the long right tail of LLC firms, because the goal of registering the firm as LLC is to take more risks.

The exact levels of mean values of annual sales are also illuminating – the annual sales are $768,500 for LLC and $129,227 for SP. In their paper, Levine and Rubenstein (2017) make the important point that LLC firms are much bigger than SP firms; founder personal income from entrepreneurship is $93,411 for LLC and $45,716 for SP according to NLSY79 data. It is therefore not surprising that our LLC firms are much bigger than our SP firms, but when looking at sales revenue, the gap is much higher than the personal income gap displayed in Levine and

[11] As shown in Dahl and Sorenson (2012), per capita entrepreneurship is very similar for Denmark, Germany, and the Netherlands when the new firms are required to have at least one full-time employee. When firms are permitted to have only part-time employees, the rates for the UK and the U.S. are higher.

Rubenstein (2017). In Section 7.1's productivity regressions, the LLC effect is smaller on productivity than on sales. A firm's productivity translates typically into the founder's income, so our productivity results are very in-line with the Levine and Rubenstein (2017).

Finally, it is very important to note that the decision to found a firm as LLC is endogenous, and those who expect to run bigger firms are more likely to register as a LLC. The endogeneity of LLC status is explored in depth below, as it is a crucial point to understand the rising performance of young entrepreneurs with age: if the decision to open an LLC firm is endogenous, then the young can choose to open a second firm as LLC to take bigger risks. In most empirical work, we want differences in "treatments," like LLC status, to be exogenous in order to see if it has an effect. In this paper, we demonstrate that the endogeneity of choosing LLC is quite important in explaining how young people grow their firms as they age.[12]

5. Sales regression results – serial founders

Beginning first with serial entrepreneurship, and before introducing Age effects, three questions can be addressed by following the performance of firms opened by serial versus novice entrepreneurs. First, are serial entrepreneurs themselves higher performers than novice entrepreneurs, and if so, why? Second, are the sales and productivity of serial entrepreneurial second firms higher than their first, and if so, why? Third, do entrepreneurs elevate their sales as they gain experience within the firm, and do firms run by serial entrepreneurs have steeper within-firm experience profiles? These are the questions that arise when estimating equation (4). We estimate (5) in Section 6.

5.1 The performance of serial firms versus novice firms

It was clear in the section above that serial firms are more successful than novice firms (Figure 1). Here, we compare the first firm of the serial entrepreneur to the only firm of the novice, and in the next subsection we compare the first firm of the serial entrepreneur to his second firm. The results are presented in Table 2.

The first firm of the serial entrepreneur is 57% bigger (coefficient of .45) than the novice's firm on founding day. That is, after controlling for *FirmExp* in the OLS regression, the first serial firm is much bigger than the novice's. Why is that? Is it a combination of selection into serial entrepreneurship based on "talent", or is it endogeneity? We raise these questions now and provide more answers with the analysis of portfolio founders in Section 5.4.

[12] In a separate paper, we explore LLC status as a sort-of "treatment" because Denmark lowers the cost of registering as an LLC firm in 2010 (Shaw and Sorensen, 2021).

Consider the possibility that serial entrepreneurs make the decision to open a second firm, and thus become a serial entrepreneur, after they discover whether their first firm is successful. Their first firm can be successful for the many intangible reasons given in our theoretical framework: the founder may have invented a successful product or copied one; he may have gained customers through family friends; or he may have the cash flow or personal wealth that enables him to persist and try new ideas. Whatever the reasons are, success brings him the cash or the contacts needed to open a second firm. Thus, serial entrepreneurship can be endogenous.

The founder can also be talented at entrepreneurship. He can open a second firm because his talent made his first firm successful and he observes that success or because he knew all along that he would be good at running a firm. If it is the latter, then the success of his first firm relative to that of the novice's firm would be due to selection (talent) and not endogeneity.

Do we have some data to identify which it is? The regressions in Table 2, column 1, introduce labor market experience variables like prior wages when employed, personal wealth, and demographic variables.[13] The coefficient on log(wage income) shows that a doubling in past wage increases sales by 6.1%.[14] It is also true that past managerial experience ("Manager dummy") increases entrepreneurship sales by 10.5%. Male and Marriage also raise sales by large amounts. None of these variables, however, raise the R-squared: the distributions shown in Figure 1 are very wide for intangible reasons relating entrepreneurial skill.

Past authors have developed data targeting intangibles. For example, Lazear (2005) shows that entrepreneurs prepare by developing a wide range of knowledge of business fields. Levine and Rubenstein (2017) show that unusual risk-taking behavior when young predicts entrepreneurial success. We do not have data on variables such as these, and overall few variables would predict serial entrepreneurship, the focus of our paper. We do two things: we add person and firm fixed effects, and we have one strong variable, the founder's father's background as an entrepreneur, that we use to instrument LLC in sales regressions.

The sales regression becomes a productivity, or TFP, regression in columns 4 -6 when capital and labor are added.[15] The gains in productivity with serial entrepreneurship are half the size of the gains in sales (column 1 versus column 4). Serial entrepreneurs work with three times the amount of capital as novices (see Appendix Table A3 for the variable means by serial status). Thus, the use of capital or employees that accompany sales increases for serial entrepreneurs

[13] For papers that feature the importance of personal traits, see Kerr, Kerr, and Xu (2017) and Levine and Rubinstein (2018). For those focusing on wealth, see Cagetti and De Nardi (2006), Corradin and Popov (2015) and Kerr, Kerr, and Nanda (2015).

[14] $\ln\left(\frac{sales_1}{sales_0}\right) = 0.085 \ln\left(\frac{wage\ income_1}{wage\ income_0}\right) = 0.085 \ln 2 = 0.0589 => \frac{sales_1}{sales_0} = 1.061$

[15] We also have data on input "purchases." We don't use these because they may be double counting some capital stock data. But when we estimate a sales value-added regression, our results do not change (Appendix Table A4).

implies that productivity is not as high for the serial-run firms relative to the novice, mainly because novices spend less on capital. The clear conclusion remains that there are intangible performance gains from serial entrepreneurship.

5.2 The performance of Serial Firm 1 versus Serial Firm 2

Looking first at the returns to serial entrepreneurship in Table 2, there is a striking increase in the sales from Serial Firm 1 to Serial Firm 2, or as in regression (4), $\beta_{22} > \beta_{21}$. The sizeable coefficient increase between firms, going from .429 on Serial Firm 1 to .902 on Serial Firm 2, implies that the average second firm of the serial entrepreneur is 150% bigger than that of the novice and 54% bigger than the serial founder's first firm. Turning to the implied productivity gains between firms, in column 4, the productivity gains to serial entrepreneurship are only half as big relative to novices, at 28% and 55%, but again double between their firms.

Panel data on founders as they open more than one firm might provide a key glimpse at what matters in entrepreneurship. Thus, person fixed effects are added in columns 2 and 4 for the sales and for productivity regressions. The returns to running a second firm relative to a first firm do not change in the person fixed effects models relative to the OLS models. This is not surprising though: to be a serial entrepreneur, you must run two firms, so the OLS models are implicitly controlling for the person fixed. The person fixed effects do add to the R-squared, as fixed effects do in most regressions, but they do not change the estimated returns to serial entrepreneurship.[16]

5.3 The growth in sales as founders gain experience within firms

The coefficient on *FirmExp* in equation (3) is the growth in sales as founders gain experience running their firms. The OLS results in that table will be biased by sorting: the least successful founders successful will close their firms. How big is this sorting effect, and what are the true unbiased returns to *FirmExp*? In asking why sales grow between the first serial firm and the second, we introduced person fixed effects to hold constant the underlying capabilities of the founder. In asking now whether sales or productivity grow as the firm ages, the relevant fixed effects are the firm fixed effects. Columns 3 and 6 of Table 2 display the firm fixed effects.

The implied *FirmExp* coefficients in Table 2 by type of founder are:

[16] Person fixed effects are highly significant for the novices, but since each runs only one firm, they do not identify the returns to being a serial entrepreneur relative to a novice. Also, our person fixed effects regressions may have a high R-squared because we are overfitting the data – with only an average of 6.5 observations per firm and 13 observations per serial founder, the person-specific mean that is the person fixed effect will not have much within-person variance as it would with more years of data.

	Sales		Productivity	
	OLS	FirmFE	OLS	FirmFE
Coeff on *FirmExp*, Novice	.189	.092	.062	.045
Coeff on *FirmExp*, Serial Firm 1	.213	.124	.030	.041
Coeff on *FirmExp*, Serial Firm 2	.136	.087	.010	.007

The true returns to *FirmExp* (in the FirmFE columns above) are large, implying there are significant increases in the intangible assets of founders. They may be learning how to run a firm, finding customers, or expanding their products: annual sales are growing at 9% to 12% for sales, and productivity is growth at 4.5% to 4.1%, for novices and Serial Firm 1, respectively.

The OLS coefficients display a large amount of sorting. For novices and for the first firms of serial entrepreneurs, the OLS coefficients are twice that of the coefficients in the FirmFE regressions, implying that the most successful firms stay in business and the worst leave (for novices, the coefficient falls from .189 to .092). The productivity regression results tell us more about who exits. The *FirmExp* coefficients in the productivity regressions fall from .062 to .045 for novices, implying that that those firms that are closing in the sales regressions are those not able to raise capital.

These TFP results also tell us indirectly that founders' incomes are growing across firms for serial entrepreneurs and within firms for all entrepreneurs, as pure productivity gains largely go to the founders as income.

5.4. Portfolio Founders

There are two types of serial entrepreneurs – portfolio founders who hold a portfolio of two firms simultaneously (do not close the first firm before opening the second), and sequential founders, who close their first firm before opening their second.[17] The portfolio founders are by far the dominant group: they are 83% of all serial founders.

Much of what was said about serial founders is, in actuality, describing portfolio founders. However, making the distinction here between the two in Table 3 is valuable for interpreting our

[17] Recall that in Denmark, the second firm of the serial founder could be a second "project" that he thought about while running his first firm but has made the decision to open a new firm with a new tax identifier. For the portfolio founders, who are the majority of the serial entrepreneurs, it seems very likely that they have a different idea or wish to hire different people and run their second firm differently than they did their first firm.

serial results and answering why serial founders' firms perform better than novice founders' firms.[18]

The portfolio founders are the "stars" of serial founders. The average portfolio's first firm has opening day sales that are 72% (coefficient .54) larger than the novices' firms, and the portfolio's second firm has sales that are 133% (coefficient .85) larger than the novices' firms. In contrast, the average first firm of the sequential founder has sales that are smaller (coefficient of 0.10) than the novices' firms, but a sequential's second firm has sales that are 79% (coefficient of .586) greater.

The productivity results reinforce the sales results, and further emphasize that portfolio founders are those that achieve the greatest performance gains when running their serial firms. The productivity of the portfolios' first firm is 36% (coefficient of .311) greater than the novices' and his second firm is 57% (coefficient .450) greater. Sequential founders also increase the productivity of their second firm relative to their first, but the gains are more modest.

Productivity is important for two reasons: it is an increase in TFP and thus represents pure gains in performance. Sales increases may reflect the founder's scaling up his firm by adding more customers. But productivity is a pure performance increase, for intangible reasons.

In conclusion, we can use these results for the portfolio founders to infer that some founders succeed due to true entrepreneurial talent. Certainly, many portfolio founders may have opened their second firm because their first firm was successful, but if they had no talent, their second firms would fail. That is, if their first firm's success were due to luck, and these founders invested cash from their first firm into their second firm, but they had no good ideas or talent, their second firms would fail. The lesson here is that luck is not repeatable: if founders got lucky with their first firm and then opened a second firm, their average second firm would fail.[19] Instead, the data shows that it succeeds much more than their first firm. The inference must be that *part of* the success of serial entrepreneurs, relative to novices, is that they are intrinsically more talented or ambitious.

6. When does the young founder succeed as a serial entrepreneur or as a novice entrepreneur?

Section 5 was aimed at establishing some key patterns on founders and exhibiting the success and importance of portfolio founders. In this section, we turn to this paper's overall theme: does

[18] There is a literature that shows that portfolio founders have considerably larger firms, on average, compared to sequential founders, and we are extending that literature by using Danish high-quality sales data and LLC information that was not part of that literature. See Westhead and Wright (1998), Alsos, et. al. (2006), and the literature that follows from that.

[19] The origin of our conclusion on the role of "luck" is from Lazear (2004).

the data show evidence of young entrepreneurs' "coming of age," which means, how do young founders appear to prosper and succeed as they age?

We show our age results in two subsections. Section 6.1 is about serial entrepreneurs, and Section 6.2 is about novices.

6.1 The careers of young successful founders: serial entrepreneurs

The primary question to be tested, as modelled in regression (5), is do the returns to serial entrepreneurship differ by age? Table 4 duplicates Table 2 in that the regressions and columns are the same, but we've added the Age*Serial interactions.

What we find is that Age interactions are highly significant and reflect the hypotheses of Section 2. In the OLS regressions, the opening size of Serial Firm 1 grows with the age of the founder: the coefficient on Age*Serial Firm 1 is significantly positive.[20] The opposite is true for Serial Firm 2: the coefficient on Age*Serial Firm 2 is highly negative.

The productivity regressions show the same Age*Serial effects as sales (see columns 4-6). For young founders, the productivity gain between firms is smaller than the sales gain. Obtaining and using capital to run firms matters the most; after controlling for capital, the size gap between firms narrows. The number of employees, which is in the productivity regression controls, don't vary much across firms.

These coefficients on Age interactions are much better understood in figures. In Figure 2, we show the predicted productivity growth as founders age over the course of their careers. The career profiles of serial founders are shown for two age groups, those founding their first firm at age 25 and at age 40. To form the predicted values of Figure 2 and display the full implied age-earnings profiles, we make novices the base case. Thus, Figure 2 shows that the growth of firm productivity as a function of *FirmExp* with novices anchoring the profiles starting at zero log(productivity).

As is clear in Figure 2, our young serial founders have pronounced age-earnings profiles very comparable to the shapes of age-earnings profiles for wage earners. Wage earners increase their incomes through job changes; our young people do so by founding a second firm as their second job. The bottom half of Figure 2 shows that the older founder does not experience this income growth.

[20] The Age*Serial Firm 1 and Age*Serial Firm 2 interactions are identified relative to the Age effect for novices.

Switching to sales rather than productivity, Figure 3 shows the predicted log(sales) as a function of age for Serial Firm 1 and then for Serial Firm 2. It is striking that sales rise with age for Serial Firm 1, but fall with age for Serial Firm 2. Why is this, and what does it imply? For the first serial firm, an older person opens a much larger firm. But for the second serial firm, the young opens a larger firm. The implication is that a young person has a big jump in sales from his first to second firm, and the older person does not. This is clear when the predicted sales gains in Figure 3 are translated into dollar values of sales:

	Firm 1	Firm 2
Age 25	$92,750	$169,001
Age 40	$124,699	$150,199

The young person's sales grow 82% between his firms, and the older person's sales grow 20%. Thus, the young person's second firm is nearly twice as big as his first firm. In addition, the older founder never achieves the sales level of the young founder' second firm.

In sum, these numbers also make clear that our young serial founders are a select group of entrepreneurs: they have greater capabilities than our older founders. The absolute level of average sales and productivity for the older founders' second firm is lower than those of the second firm of the young founder.

These young serial founders are more capable for unobserved or intangible reasons: background controls in OLS regression column 1 do not change these predicted values relative to an OLS model with no control variables (not shown). Intangible factors must explain why older founders open large first firms, but younger founders open much larger second firms, and thus younger founders appear to be more "successful" than the older founders, or of higher unobserved capabilities.

A third way of examining the importance of founder quality in these age-based regressions is adding person fixed effects, as in column 3 and column 6 of Table 4. Holding constant unobserved person-specific ability or other factors, evidence of large sales and productivity gains between Serial Firm 1 and Serial Firm 2 are reinforced.

It is important to conclude this subsection by emphasizing that the young successful founders are largely portfolio founders. Those age 25 are 82% portfolio (versus sequential) and those age 40 are 85% portfolio. Young successful serial entrepreneurship is synonymous with portfolio entrepreneurship.

In sum, we know the young serial founder is a very capable entrepreneur: he is a portfolio entrepreneur; he obtains the capital his second firm needs; holding constant with person fixed

effects, the sales grow markedly between Firm 1 and Firm 2; and there is no difference across the ages in the size of Firm 2. Thus, a very clear conclusion for this paper is that those new entrepreneurs who "come of age" as serial entrepreneurs, which are the 9% of all founders, are truly exceptional.

6.2 The careers of young novice founders

One goal of this paper is to use these sales data to suggest what a young founder might do to succeed as he ages. So, is founding age correlated with success? The answer is that there is a quadratic effect of Age on sales.[21] Though not shown in the regressions of Table 4, in a comparable regression the effect is $0.0867\text{Age} - 0.0011\ \text{Age}^2$, implying that the age that maximizes sales is 40.8 years (Appendix Table A5). This quadratic effect implies several things. Entrepreneurial skill does rise with age, just as skills that determine personal wage growth rise with age. Moreover, because the opportunity cost of entrepreneurship should rise with alternative wages, sales should rise with age. This suggests that the decision to be a novice entrepreneur is endogenous to success, which we will show shortly is the case. One variable that should predict high sales, due to the endogeneity of the decision to be an entrepreneur, is personal wealth, but the prior wealth variable has no impact on sales or the decision to be an entrepreneur.

We also have a striking result that what novices learn as entrepreneurs does not transfer to wage employment. Using their wages prior to entrepreneurship and after entrepreneurship, their post-entrepreneurship wages are no greater than their pre-entrepreneurship wages (Appendix Table A6). This is likely a combination of the fact that these novices were not good at what they did as entrepreneurs, and that the skills of entrepreneurship are determined by intangibles that do not transfer to employment.

It is very important to point out now that none of these variables are "causal" – all are correlations in the OLS regressions. We cannot identify the causality of variables because we cannot add person fixed effects – each novice has only one observation, and that is his one firm. It seems likely that as wages rise with age, only the most talented become and remain entrepreneurs, but we cannot test that.

The returns to *FirmExp* can be estimated in both the OLS and the fixed effects models. In the OLS models, the returns to *FirmExp* appear to be very large – at 25% a year (or coefficient .19) in columns 1 and 2 of Table 4. However, the true returns to *FirmExp* are half that: in the fixed effects model, the coefficient on *FirmExp* falls to .098. These are still very sizable gains of 10% a year in the early years of a firm.

[21] This effect is not shown in Table 4, because it would necessitate that quadratic age be interacted with the two serial dummies, and these interactions are not possible when we add *FirmExp* – there are too many aging variables.

As pointed out earlier, there is clearly sorting into entrepreneurship – those that have high sales are those that stay in business. It could be that their success is talent or luck. With talent, novices could try out entrepreneurship and those with high sales stay in business because they have a knack for it. Or, it could be that they are lucky and find the right set of customers, enabling them to stay in business. For serial entrepreneurs, we could say that they must have some talent, because lacking talent, their second firm would fail. This cannot be said for novices.

Turning to the productivity regressions, the zero impact of *FirmExp* on productivity is important. The variable *FirmExp* is a proxy for intangible skills or assets that rise with experience. The fact that it has no effect for novices in the fixed effects model tells us that they are not increasing their intangibles with experience. Note that for serial entrepreneurs, productivity rises by only 2% a year while running their first firm. In contrast, sales do rise with *FirmExp* for all founders – sales rise 9 to 10% a year for novices and serial entrepreneurs. But once we add the capital and labor required to sustain and grow sales, there are no returns to *FirmExp* (results not shown).

What do these results say about "coming of age"? There is a subset of novice founders who do not go out of business as they age. We find that 24.1% of young novice founders (younger than 30 when they open their firms), will keep their firms open more than 5 years (rather than the average of 3.5). Among this small group, they stay in business because their firms are doing well, and their sales returns to *FirmExp* are about 10% per year.

Overall, these results further our conclusion that intangible skills matter. The average novice entrepreneur is not opening a firm because he finds an idea when employed, but rather is These someone opening their own dry-cleaning establishment or construction firm. It may be true for high-tech firms that some founders find their idea while employed, but this is not true for the average new entrepreneur.

7. Coming of Age: the rising founding, with age, of an LLC firm

We know from the distributions of sales for the LLC and SP firms that LLC firms are much larger than SP firms: mean sales are $768,500 for the LLC firms and $129,227 for the SP firms. The higher mean sales of LLC firms is because founders take greater risks, shown in the long right tail of the LLC sales distribution (the right side of Figure 1 above). The founder of an LLC firm should take more risks because he is protected on the downside of expected sales: he or she will plan to take more risks *ex ante*, prior to founding the firm, or *ex post*, after founding the firm and realizing the limited liability. For example, the LLC founder may be more ambitious and thus plan *ex ante* to take more risks.

This section delves into regressions aimed at understanding who is benefiting from LLC coverage. We seek to draw implications for young people. Young people may wish to register their new firms as LLC, which therefore allows the LLC status of new firms to contribute to and

reflect the growing success of young people as they age. In Section 9, we add family background information to instrument LLC and see if there is an *ex post* effect.

7.1 The effects of LLC registration on sales and productivity

In this subsection, we answer two questions: are LLC founders more talented or ambitious than SP founders; and do the firms of LLC founders grow substantially after they open? The answer to both is most likely in the affirmative, meaning that LLC founders are more talented and their firms have greater returns to firm experience.

The first set of key results are to be found in the comparison of the OLS and the person fixed effect models. The OLS model of column 1 in Table 5 show that personal background controls do not change the effect of LLC on sales; LLCs are 258% bigger than SPs (coefficient 1.275). Turning to the person fixed effects, looking within a person's career, people change registration status between serial firms, typically going from SP to LLC.[22] The LLC sales are 176% greater than the SP sales in the person fixed effects model, but in the OLS model, the LLC are 258% bigger. The much larger size of the LLC effect in the OLS shows that "better" people sort into being LLC and that LLCs stay in business longer than SPs – the mean years in business for LLC firms is 4.37 years and for SP firms it is 3.61 years.

All firms grow after they open, but LLC firms grow the most. After four years, the LLC firm has sales growth of 52%, and the SP firm has growth of 38%.[23] However, this very substantial growth occurs because the LLC firms add capital after they open; there is no growth in productivity for LLC firms after they open.

In sum, LLC founders open very large firms, and part of their greater size arises because the LLC founders are more talented, ambitious, or possess other assets like access to capital and customers. They also grow their firms, but this is due to adding capital after opening.

7.2 The role of LLC registration in facilitating the success of serial entrepreneurs

Does LLC registration facilitate gains to serial entrepreneurship? The answer appears to be yes. The percent of firms registered as LLC rises with serial entrepreneurship: the %LLC is 23% for all novice firms, then 43% for all first serial firms, and then 85% for all second serial firms.

[22] The share of serial founders who open their first firm as SP and their second as LLC is 64%; the share who open both firms as LLC is 25%, and the share who open as LLC and then SP is 11%.

[23] *FirmExp* coefficients are .111 and .084 for LLC and SP in firm fixed effects models.

Correspondingly, the sales gains are 57% for Serial Firm 1 relative to the novice and 150% for Serial Firm 2 relative to the novice (see Section 5.1)

Most importantly, LLC registration would appear to induce risk-taking for all types of firms that are registered as LLC. The LLC dummy interacted with the serial firm and novice dummies show that LLC registration raises sales for all firm types by almost exactly the same amount (column 3, Table 5).[24] Thus, LLC registration appears to be correlated with risk-taking for all founders, and when serial founders open larger firms than others, they are also registering as LLC more than others.

7.3 The increase in %LLC with age

The %LLC variable is very valuable for developing our "coming of age" story. Young people, Ages<35, have their %LLC rise from 35% to 89% from Serial Firm 1 to Serial Firm 2, wheras the older person, Ages>45, sees his %LLC rise from 56% to 79%. Thus, the young person's pronounced rising sales between his two serial firms are very much accompanied by his rising %LLC – this may well facilitate the rising sales.

The sizable increase in the %LLC for the young person, as he ages, suggests that he is learning on the job, as he opens one firm and then another. If he were not learning, he would have known to open his first firm as an LLC, unless the costs of opening as LLC were too large. These costs are the fees for registering firms and the need to prepare an annual report.

7.4 Portfolio Founders and the %LLC

As shown previously, the most successful serial entrepreneurs are the portfolio founders. As a partial explanation for this success, the portfolio founders are more likely to open their first firms as LLC.

Among serial entrepreneurs, portfolio founders anticipate that they want their first firm to be a success. The young portfolio founder's first firm has a 36% probability of being an LLC firm, whereas the young sequential founder's first firm has a 32% probability of being an LLC firm.[25] These numbers reinforce our prior conclusion that portfolio founders appear to be wiser than sequential founders: they don't wait for success to decide to be LLC, they anticipate success and register their firms as LLC.

[24] The coefficient for these LLC interactions in the OLS log(sales) regression are: 1.249 LLC*Novice; 1.374 LLC* Serial Firm 1; 1.398 LLC*Serial Firm 2.

[25] Across all ages, the portfolio founder's first firm has a 64% probability of being an LLC firm, whereas the sequential founder's first firm has a 58% probability of being an LLC firm.

8. The Effects of Parental Experience

There is a large literature showing that entrepreneurship runs in the family, so do some founders have an advantage by learning from father's background? The Danish data provides us with the entrepreneurial history of the father of entrepreneurs.[26] We create a dummy variable for whether the father of entrepreneurs was an entrepreneur himself and investigate if father's background directly increases the sales success of firms. We also investigate if it played a role for the child to become a LLC entrepreneur.

Table 6, column 1, shows that having a father who was an entrepreneur raises one's own sales. For all our founders, 7% have a father who was an entrepreneur. When they do, their sales are 5.9% higher.[27] Column 2 shows why: adding the LLC dummy eliminates the direct effect of the father on his children's firms' sales. Thus, the father appears to increase the probability of his children opening LLC firms, which is shown to be the case in column 3, where we estimate the probability of being an LLC entrepreneur versus a SP. Having a father who was an entrepreneur increases the child's probability of founding an LLC firm by 4.3 percentage points. This is sizable: the mean percent LLC is 30%.

Does registering as an LLC firm *causes* you to run a firm with higher sales. We expect this to be the case theoretically because LLC provides downside insurance for the entrepreneur. Because father's entrepreneurship dummy is highly correlated with the LLC-dummy, it can be used as an instrument for the LLC-dummy in the sales regression. When the LLC dummy is instrumented, LLC has a direct effect on sales of 266% (coefficient of 1.298, column 5), which is of similar magnitude to the OLS estimate of the LLC-dummy presented in column 4. This large effect may be truly causal; founders of LLCs are taking more risks and raising sales more than they would as SP.[28]

These results, showing LLC registration of new firms cause founders' to run bigger firms, is important to our "coming of age" story. In Section 6, it was shown that a young serial

[26] The definition of an entrepreneur is the same for the father as for the person: they must have started a truly active firm between 1990 and 2013, and they must have started their firm before the children started theirs, see Appendix Table A8.

[27] For regressions with Age*Serial effects and family background, see Appendix Table A9.

[28] It could also be that entrepreneurial talent runs in the family, even though Father Entrepreneur has no direct effect on his children's sales. Add a simple sales regression with LLC, $\log(Y_i) = \alpha + \rho LLC_i + u_i$. If F_i denotes Father Entrepreneur this will be a good instrument when $cov(LLC_i F_i) > 0$ and $cov(u_i F_i) = 0$. The obvious critique is that the child may inherit the entrepreneurial talent from the father, implying that $cov(a_i F_i) = 0$ may be violated.

entrepreneur has much higher sales when he opens his second firm as an LLC after running his first firm as SP. The IV results here suggest that the large relative increase in sales for a young founder's second firm is caused in part by the LLC protection that enables more risk-taking.

9. The importance of risk-taking

Having just concluded that LLC founders are likely taking more risks, it is useful to return to our firm sales distributions to pin down whether the sales data is consistent with the story of greater risk-taking. To what degree are serial entrepreneurs taking risks? Importantly, is there evidence that the firms of young people are successful because a small percent of their firms are highly successful?

To examine the probability of risk-taking, Table 7 drops the right tail from the sales distributions, and then calculates the mean value of sales for different firm types. For example, for the serial founder, dropping the firms that have sales in the top 1% results in mean sales falling from $691,691 to $441,513, a 40% decline (see column 4). Even though we have data only on firms sales for up to their first 6 years in business, the long right tails are important.

As emphasized throughout this paper, LLC founders appear to be risk-takers: the mean sales of LLC firms falls 30% when the right tail is dropped, and the mean sales of SP firms fall 13% (top two rows, Table 7). These results illustrate the conclusion of the previous section that LLC ownership causes risk-taking.

For serial entrepreneurs, we look only at first firms, since the second serial firm has its sales censored by the end of the panel period in 2016.[29] Dropping the right tail lowers mean sales of Serial Firm 1 by a very large 40% (row 3).[30] The focus of this paper is on young people, and we have shown that young serial entrepreneurs are a very successful subgroup. When the right tail of these young entrepreneurs is dropped, their mean sales fall 36%.

All of the sales regressions included the firms with the top 1% of sales in the regressions' data, so does dropping them change are regression results? We run median regressions for our key tables and show that the large magnitudes of the LLC effect and of the returns to serial entrepreneurship decline, but the overall results are unchanged (Appendix Tables A9 through A11). Column 2 of Table 7 shows median sales values for subgroups, and one can see that the patterns in the sales regressions remain in the median values for the sales distributions.

[29] If we compare the sales of serial firm two to serial firm 1, those opening second firms appear to be taking much greater risks. They should be: their %LLC rises from 43% to 85% from firm one to firm two. However, recall that serial firm 2 observations are right censored, so we cannot look carefully at the right tails for these firms. Among those firms with *FirmExp* less than 4, the variance of sales for firm two is greater than that of firm one.

[30] Recall that 83% of Serial Firm 1 are run by portfolio entrepreneurs, so their first firms will be in business longer than the firms of the sequential entrepreneurs.

Let's conclude by putting these results in the context of the broader literature. Table 7 shows that when young serial entrepreneurs found their first serial firm, a very small percent of these founders are highly successful, suggestive of risk-taking by some. The evidence of Levine and Rubenstein (2017), that the entrepreneurs with the highest incomes are those who undertook risky activities when young, implies also that our young founders are probably born risk-takers. However, Table 7 shows that the importance of the right tail of sales increases with age at the same rate as does LLC ownership: the drop of mean sales after cutting out the right tail rises from 36% to 46% (column 4) and the %LLC rises from 36% to 48% (column 5). Risk-taking is not entirely innate – it rises with age when founders increase their LLC status with age. This would be a natural extension of the Levine and Rubenstein results – LLC ownership induces risk-taking and encourages risk-takers to be entrepreneurs by reducing downside risk.

10. Conclusion

The primary goal of this paper is to show that a young founder who opens his first firm in his mid-20s to early 30s can evolve to become highly successful. We define success as the growth of firm sales or productivity, and we show some of the mechanisms by which a founder appears to achieve success. While it has been shown previously a successful entrepreneur is most likely to establish a firm in the mid-40s age range,[31] many entrepreneurs do open firms when they are young. How successful can they be, and why?

There are two alternative pictures of the careers of successful young founders. Using Danish data, we show first that a subset of about 9% of all young founders less than age 35 are highly successful serial entrepreneurs. Our evidence is that these serial entrepreneurs open a second firm that is 82% bigger than their first firm. They also grow their firms while running them, as the four-year within-firm sales growth is 68%. Thus, there is an age-earnings profile in the careers of young founder: they achieve income growth within the job and across jobs, where job means running a new company.

Young serial entrepreneurs are an important subgroup of all young founders. While only 9% of all young founders are serial entrepreneurs, they run 18% of all firms opened by young people because they run two firms. That means that 82% of all firms founded by young people are run by novices.

How do novice young entrepreneurs achieve success? For those young novices who keep their firms open more than five years, their within-firm sales growth is a pronounced 67% over four years after they open. Thus, our successful young novices grow their firms after they open the doors, and their age-earnings profiles are that they stick with one job and do it well.

[31] Azoulay, et. al. (2020).

Therefore, successful young founders are either serial founders or long-lasting novice entrepreneurs, but what additional mechanisms help them achieve their success? We infer that successful founders are making intangible investments in their firms, such as growing their customer base or developing new products, over time. We infer that there is growth in "intangible" investments because firms' sales grow even after we control for the tangible investments of capital, labor, and other input purchases. Also, serial entrepreneurs invest in more intangibles as they open more firms.

All successful founders also have unobserved personal traits that make them good at entrepreneurship, and unlike previous papers, we tie observed and unobserved personal traits to the success of firms using these sales data. Our founders either have key traits prior to starting a firm or develop them while running firms over time. When a firm is opened as an LLC, the founder is protected from any downside losses that it could incur, and thus the founder can take more risks. Looking at serial entrepreneurs, young people open their first firm as LLC only 36% of the time, but they open their second firm as LLC 89% of the time. These young people either learned the value of being an LLC or they become ambitious enough to open their second firm as such. Importantly, they become risk-takers, as evident in the higher variance of sales for their second compared to their first firms.

We have two pieces of evidence that the young person who succeeds at entrepreneurship possesses some kind of "secret sauce". The most successful serial entrepreneurs are those who are portfolio entrepreneurs – keeping their first firm in business when they open their second firm. The portfolio entrepreneurs are 83% of all young serial founders, and they open their first firms as LLC more often – thus, they bring to entrepreneurship the knowledge that they should be LLC. In addition, young founders are more likely to be successful if they have a father who was an entrepreneur, suggesting again that many unobservables matter for success.

Part of what makes for successful entrepreneurship, for a country as a whole, is that successful firms stay in business and unsuccessful firms exit. We show very clearly that there is sorting in our data: the firms that stay in business are the high-sales firms. Moreover, the first firm of the serial portfolio entrepreneur has 83% higher sales than the average novice's firm, so the most talented people are the portfolio entrepreneurs. The novices drop out of the data; leaving the serial entrepreneurs who stay.

In sum, we see young entrepreneurs come of age. We watch firms and people over time, showing that there is endogenous learning – with the growth in the %LLC with age as one indicator of that – and increasing investments in intangibles. However, these successful young people are a select group, possessing valuable capabilities before they open their first firm.

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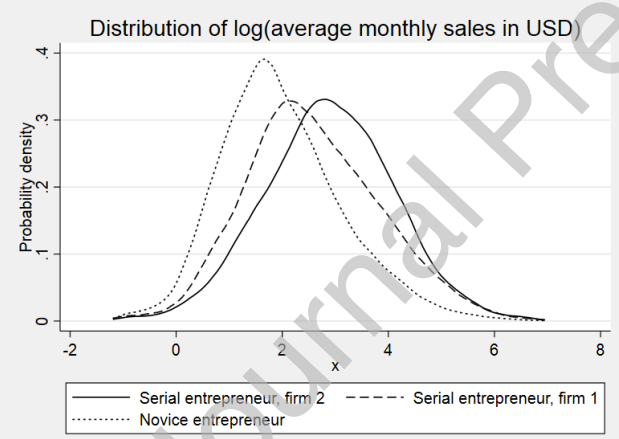
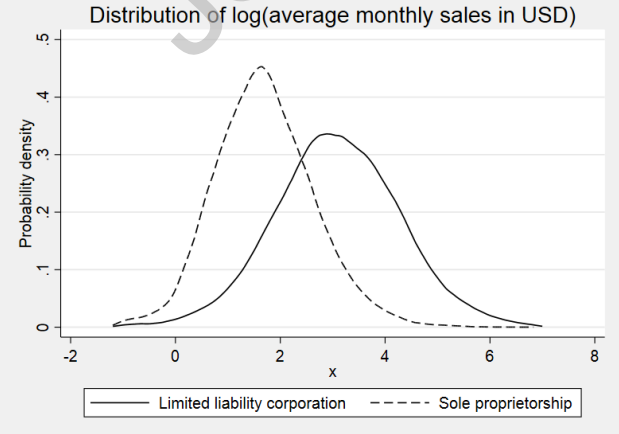
Figure 1: Distributions of Firms' Average Monthly Sales, in U.S. Dollars

Sales of Serial and Novice Entrepreneurs' Firms



Sales of LLC and SP Firms

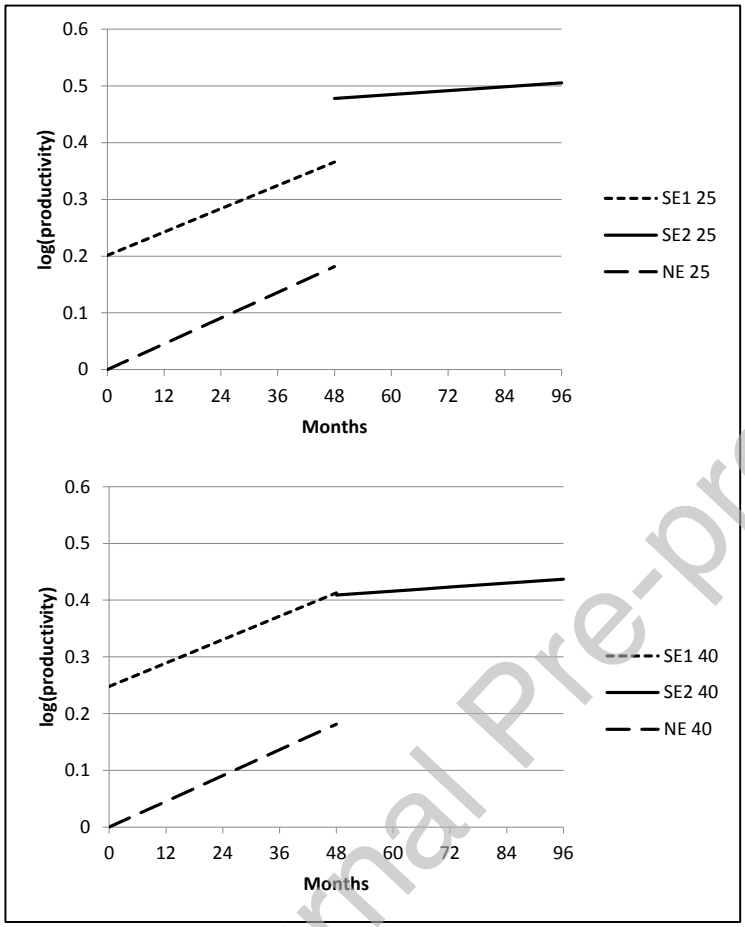


	Average monthly sales	
	Mean sales:	Median sales:
Serial F2	$46,387	$19,791
Serial F1	$57,641	$13,938
Novice	$23,941	$ 7,501

	Average monthly sales	
	Mean:	Median:
LLC	$64,042	$23,152
SP	$10,769	$ 8,874

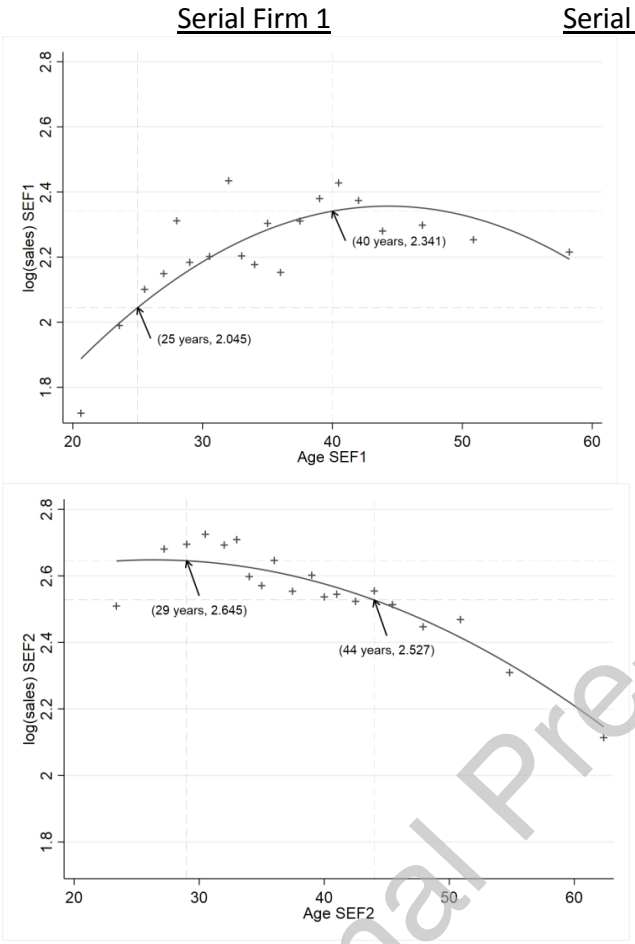
Figure 2: Predicted productivity profiles for young and older serial entrepreneurs, relative to novices

Top chart is Age 25; bottom chart is Age 40. Dotted line is Serial Firm 1, solid line is Serial Firm 2, dashed line is base case of novice. x-axis is months of *FirmExp* for each Firm



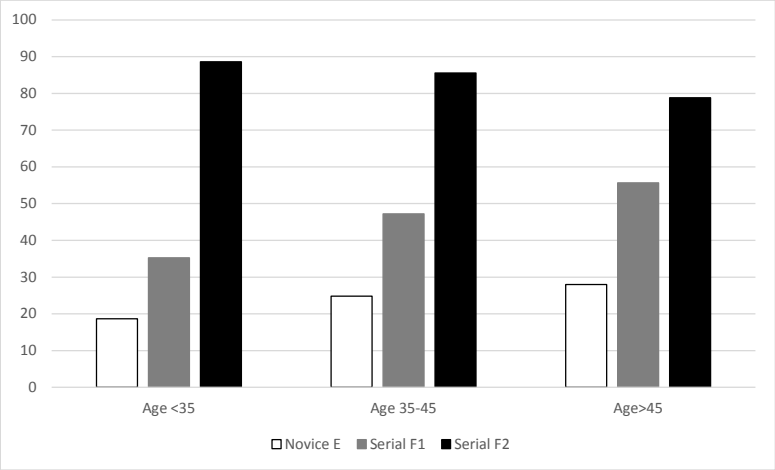
Note: Parameters to determine predicted log(productivity) across Firms are from the OLS regression in Table 4, column 4, and to predict log(productivity) within Firms are from fixed effects regression in Table 2, column 6.

Figure 3: Predicted log(sales) by Age, for Serial Firm 1 and Serial Firm 2



Notes: The predicted values for ages 25 and 40 on the left are compared to those of age 29 and 44 on the right, assuming there is a four year time period between opening the first and the second firm. The predicted values are from regression of log(sales) on Age and Age-squared, with binscatter plots using 20 bins. There are 7,259 annual observations for Serial Firm 1 and Serial Firm 2, so the bins include around 360 observations of average log sales each.

Figure 4: %LLC by Age and by Serial Status



Note: Exact values of %LLC are: Ages <35; 19%, 36%, 88%. Ages 35-45; 23%, 46%, 87%. Ages >45; 27%, 56%, 79%. For more detailed %LLC by age, see Appendix Table A6.

Table 1: Description of Variables and Means

Variable	Definition	Mean	SD
Firm variables			
Sales+	Average monthly sales in current US dollars, Thousands	28.4	264.6
FirmExp+	Years in business of firms	3.83	3.125
Serial	Dummy variable equal to one if number of firms owned by entrepreneur is two or more	0.17	
Serial Firm 1	Dummy variable equal to one if this is the first Firm of the serial entrepreneur	0.09	
Serial Firm 2	Dummy variable equal to one if this is the second Firm of the serial entrepreneur	0.08	
Portfolio	Dummy variable equal to one if the serial entrepreneur runs two firms simultaneous	0.14	
Sequential	Dummy variable equal to one if the serial entrepreneur runs two firms sequentially	0.03	
Capital+	Capital in firm measured in terms of fixed assets and obtained from accounting data in US dollars, Thousands.	187.8	5409.0
Employment+	Employment in firm is the quantity of employees measured in full time equivalent units. Including owner for Sole proprietorship	1.99	5.48
LLC	Dummy variable equal to one if firm opens registered as a limited liability corporation rather than a sole proprietorship	0.30	
Employer	Dummy variable equal to one if firm employees people in addition to the entrepreneur	0.35	
Workforce Education	Average years of schooling of employees in firm (excl. owner).	11.6	2.1
Personal variables			
Wage Work Exp	Number of years with full time wage work until the year the first Firm is established	14.2	7.96

Number of past jobs	One job is added to the number of different past jobs when changing workplaces. Count until the year the first Firm is established	4.94	2.88
Manager dummy	Equal to one if individual has had a past job as manager before opening first Firm. 0 otherwise	0.10	0.30
Wage income	Wage income year before first firm opening	23,564	17.430
Unemployment	Past weeks of unemployment prior to opening first firm	1.08	1.76
Initial wealth	Net-wealth (obtained from tax form) in the year before firm is established.	33,785	603,026
Mother Entrepreneur	Mother has founded a firm (SP or LLC) prior to the firms of the entrepreneurs in our data	0.04	
Father Entrepreneur	Father has founded a firm (SP or LLC) prior to the firms of the entrepreneurs in our data	0.07	

Variables are measured at two time intervals: continuous time, t, and when the firm is founded, at time t_0. Only the *Sales, FirmExp, Capital*, and *Employment* are measured in continuous time, as indicated with a " $^{+}$ " superscript. The sample size for the firm characteristics is 131,451 firms, and the sample for the personal characteristics is 114,876.

Table 2: Sales of Serial Entrepreneurs versus Novice Entrepreneurs

	OLS	Person FE	Firm FE	OLS	Person FE	Firm FE
Serial Firm 1	0.429***			0.234***		
	(0.016)			(0.011)		
Serial Firm 2	0.902***	0.468***		0.428***	0.289***	
	(0.016)	(0.030)		(0.012)	(0.021)	
FirmExp	0.189***	0.060***	0.092***	0.062***	0.001	0.045***
	(0.002)	(0.007)	(0.002)	(0.001)	(0.004)	(0.002)
(*FirmExp*)•(Serial Firm 1)	0.024***	0.074***	0.032***	-0.032***	0.019***	-0.004
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
(*FirmExp*)•(Serial Firm 2)	-0.053***	0.027***	-0.005	-0.052***	-0.017***	-0.038***
	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
Wage Work Exp	-0.002			-0.000		
	(0.001)			(0.001)		
Unemployment	-0.046***			-0.020***		
	(0.002)			(0.001)		
log(wage income)	0.057***			0.107***		
	(0.008)			(0.005)		
Manager dummy	0.123***			0.030***		
	(0.015)			(0.009)		
Number of past jobs	-0.005***			0.001		
	(0.002)			(0.001)		
Initial wealth	-0.000			0.000		
	(0.000)			(0.000)		
Married	0.152***			0.046***		
	(0.008)			(0.005)		
Years of Schooling	-0.020***			0.004***		
	(0.001)			(0.001)		
Male	0.195***			0.115***		
	(0.009)			(0.006)		
Experience	0.001			-0.002**		
	(0.001)			(0.001)		
Age	-0.005***			-0.001***		
	(0.001)			(0.000)		
Immigrant	-0.049***			-0.020**		
	(0.014)			(0.009)		
Descendent	-0.031			0.024		
	(0.032)			(0.020)		
log(Capital)				0.242***	0.128***	0.116***
				(0.002)	(0.002)	(0.002)
log(Employment)				0.728***	0.642***	0.608***
				(0.004)	(0.005)	(0.005)
Workforce education				0.014***	0.006***	-0.005**
				(0.002)	(0.002)	(0.002)
R-squared	0.110	0.762	0.795	0.550	0.806	0.821
Number of observations	748268	748268	748268	748268	748268	748268

Notes: Based on Firms' first six years of semi-annual data. Dependent variable is the log of semi-annual average monthly sales. Robust standard errors in parentheses clustered on Firm entrepreneur. All regressions include time dummies for each bi-annual time period. Columns 1, 2, 3, 4 include the 88 industry dummies for 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of firms: All firms: 114,876; Serial Firm 2: 9297; Serial Firm 1: 9955; Novice E: 95,624, * p<0.10, ** p<0.05, *** p<0.010

Table 3: Sales of Serial Entrepreneurs, with interactions for Portfolio and Sequential founder types

	OLS	OLS
Portfolio, Serial Firm 1	0.535***	0.311***
	(0.015)	(0.011)
Portfolio, Serial Firm 2	0.849***	0.450***
	(0.016)	(0.012)
Sequential, Serial Firm 1	-0.102**	-0.039
	(0.042)	(0.030)
Sequential, Serial Firm 2	0.586***	0.335***
	(0.036)	(0.028)
log(Capital)		0.242***
		(0.002)
log(Employment)		0.727***
		(0.004)
Workforce education		0.013***
		(0.002)
R-squared	0.238	0.551
Number of observations	748268	748268

Notes: Based on Firms' first six years of semi-annual data. Dependent variable is the log of semi-annual average monthly sales. "Portfolio" is a dummy variable equal to 1 if a serial entrepreneur opens his second Firm when his first Firm is still running; 0 otherwise. "Sequential" is a dummy variable equal to 1 if a serial entrepreneur opens his second Firm when his first Firm is closed; 0 otherwise. All regressions interact *FirmExp* with the five firm types of rows 1 through 5, but these results are very similar to those in Table 2. All regressions contain the background variables of Married, Years of Schooling, Experience, Age, Immigrant, and Descendent, as well as labor market variables Wage Work Exp, Number of past jobs, Manager dummy, log(Wage income), Unemployment, and Initial wealth. Standard errors in parentheses clustered on firm entrepreneur. Both regressions include time dummies for each bi-annual time period and the 88 industry dummies for 2-digit Nomenclature of Economic. Number of Firms: All: 114,876; Portfolio Firm: 15,769; Sequential Firm: 3,482; Novice E: 95,625. * p<0.10, ** p<0.05, *** p<0.010

Table 4: Sales of Serial Entrepreneurs with Age interactions

	OLS	OLS	Person FE	OLS	OLS	Person FE
Serial Firm 1	0.107*	0.117**		0.125***	0.123***	
	(0.056)	(0.056)		(0.033)	(0.033)	
Serial Firm 1 x Age	0.009***	0.009***	-0.007	0.003***	0.003***	-0.003
	(0.002)	(0.002)	(0.006)	(0.001)	(0.001)	(0.004)
Serial Firm 2	1.295***	1.281***	1.289***	0.617***	0.609***	0.796***
	(0.058)	(0.058)	(0.069)	(0.036)	(0.036)	(0.046)
Serial Firm 2 x Age	-0.009***	-0.010***	-0.028***	-0.004***	-0.005***	-0.016***
	(0.001)	(0.001)	(0.006)	(0.001)	(0.001)	(0.004)
FirmExp	0.194***	0.189***	0.049***	0.062***	0.062***	0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
(*FirmExp*)•(Serial Firm 1)	0.022***	0.023***	0.080***	-0.033***	-0.032***	0.022***
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
(*FirmExp*)•(Serial Firm 2)	-0.055***	-0.054***	0.016***	-0.053***	-0.052***	-0.024***
	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)
Age	-0.004***	-0.005***		-0.000	-0.001**	
	(0.001)	(0.001)		(0.000)	(0.000)	
log(wage income)	0.075***	0.056***		0.123***	0.106***	
	(0.007)	(0.008)		(0.005)	(0.005)	
log(Capital)				0.243***	0.242***	0.125***
				(0.002)	(0.002)	(0.002)
log(Employment)				0.728***	0.727***	0.639***
				(0.004)	(0.004)	(0.005)
Workforce education				0.015***	0.013***	0.006***
				(0.002)	(0.002)	(0.002)
R-squared	0.103	0.110	0.758	0.549	0.550	0.802
Number of observations	748268	748268	748268	748268	748268	748268

Notes: Based on Firms' first six years of semi-annual data. Dependent variable: log of semi-annual average monthly sales in columns 1, 2, 4 and 5; log of semi-annual average monthly sales is deflated with common deflator consumer price index in column 3 and 6, to better estimate the fixed effects regression. Robust standard errors in parentheses clustered on Firm entrepreneur. Regressions in columns 1,2,4,5 contain personal variables of Wage Work Exp, Unemployment, Manager dummy, Number of past jobs, Initial wealth, Married, Years of Schooling, Male, Experience, Immigrant, and Descendent: Their coefficients are not displayed because they are very similar to those in Table 2. All regressions include time dummies for each bi-annual time period. Columns 1,2,4, and 5 include the 88 industry dummies for 2-digit Nomenclature of Economic Activities. Number of Firms: All Firms: 114,876; Serial Firm 2: 9297; Serial Firm 1: 9955; Novice Firm: 95,624, * p<0.10, ** p<0.05, *** p<0.010

Table 5: Sales of LLC Corporations, by Serial Firm status - 6 years Semi-annual data

	OLS	Person FE	OLS	OLS	Person FE
LLC	1.275***	1.016***		0.692***	0.678***
	(0.009)	(0.019)		(0.007)	(0.014)
LLC=0, Serial Firm 1			0.281***		
			(0.018)		
LLC=0, Serial Firm 2			0.182***		
			(0.037)		
LLC=1, Serial Firm 1			1.374***		
			(0.024)		
LLC=1, Serial Firm 2			1.398***		
			(0.016)		
LLC=1, Novice Firm			1.249***		
			(0.011)		
FirmExp when LLC=0	0.180***	0.096***	0.178***	0.080***	0.029***
	(0.002)	(0.004)	(0.002)	(0.001)	(0.003)
FirmExp when LLC=1	0.161***	0.130***	0.163***	0.019***	-0.003
	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)
log(Capital)				0.221***	0.121***
				(0.002)	(0.002)
log(Employment)				0.733***	0.658***
				(0.004)	(0.005)
Workforce education				-0.001	0.001
				(0.002)	(0.002)
R-squared	0.251	0.770	0.254	0.570	0.808
Number of observations	748268	748268	748268	748268	748268

Notes: Based on Firms' first six years of semi-annual data. Dependent variable is the log of semi-annual average monthly sales. "LLC" is a dummy variable equal to 1 if the Firm is a limited liability corporation and 0 if the Firm is a sole proprietorship. Robust standard errors in parentheses clustered on firm entrepreneur. All regressions contain the background variables of Married, Years of Schooling, Experience, Age, Immigrant, and Descendent, as well as labor market variables Wage Work Exp, Number of past jobs, Manager dummy, log(Wage income), Unemployment, and Initial wealth. The regression in column 3 also contains All regressions include time dummies for each bi-annual time period. Columns 1, 3, 5 include the 88 industry dummies for 2-digit Nomenclature of Economic. Number of firms: All firms: 114,876; LLC: 34,609; Sole Proprietorship: 80,267, * p<0.10, ** p<0.05, *** p<0.010.

Table 6: Fathers' Effects on Sales and LLC - 6 years Semi-annual data

	OLS log(sales)	OLS log(sales)	OLS LLC	OLS log(sales)	IV log(sales)
Father Entrepreneur	0.059***	0.007	0.043***		
	(0.015)	(0.013)	(0.006)		
LLC		1.144***		1.144***	1.297***
		(0.008)		(0.008)	(0.294)
Semi-annual experience	0.084***	0.166***		0.166***	0.177***
	(0.004)	(0.003)		(0.003)	(0.021)
Married	0.158***	0.107***	0.042***	0.107***	0.100***
	(0.008)	(0.007)	(0.003)	(0.007)	(0.015)
Years of Schooling	0.029***	0.016***	0.011***	0.016***	0.014***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.004)
Male	0.334***	0.203***	0.105***	0.203***	0.185***
	(0.010)	(0.009)	(0.003)	(0.009)	(0.035)
Experience	0.004***	0.009***	-0.003***	0.009***	0.010***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Age	0.000	-0.005***	0.005***	-0.005***	-0.006***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Immigrant	-0.203***	-0.048**	-0.125***	-0.048**	-0.027
	(0.022)	(0.019)	(0.007)	(0.019)	(0.044)
Descendent	-0.093***	-0.047*	-0.058***	-0.046*	-0.041
	(0.028)	(0.025)	(0.009)	(0.025)	(0.028)
R-squared	0.212	0.339	0.104	0.339	0.337
Number of observations	686298	686298	98355	686298	686298

Notes: Dependent variable in columns 1, 2, 4 and 5 is the log of semi-annual average monthly sales. Based on firms' first six years of semi-annual data. Dependent variable in column 3: "LLC" is a dummy variable equal to 1 if the entrepreneur opens his (first) firm as a limited liability corporation and 0 if the firm is a sole proprietorship. Robust standard errors in parentheses clustered on Firm entrepreneur. All columns include the 88 industry dummies for 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of firms: All firms: 105,862; LLC: 32,190; Sole Proprietorship: 73,672. *** p<0.010 * p<0.10, ** p<0.05, *** p<0.01

Note: See Appendix Table A9, columns 1 and 2, for regressions with the variables of Age*Serial firm interactions added. The coefficients on Father Entrepreneur declines slightly.

Table 7: The Importance of the Long Right Tail of Sales

Annual Sales USD	Mean	Median	Mean Dropping Firms in Top 1% of Sales	% Decline in Mean Sales, After Dropping Top 1% of Sales	% LLC
LLC	768,500	227,827	541,624	30%	100%
SP	129,227	70,485	112,434	13%	0%
Serial Firm 1	691,691	167,254	441,513	40%	43%
Age <35	529,604	150,814	337,537	36%	36%
Age 35-45	847,361	183,407	460,479	46%	48%
Age >45	813,418	185,903	541,382	33%	58%
Novice Firm	287,288	90,015	202,203	23%	23%