Supplemental Online Appendix

The Productivity Advantage of Serial Entrepreneurs

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Construction of the Data Set

Organic Start-ups: In the *Statistics on New Enterprises*, Statistics Denmark identifies the organic start-ups of the Danish economy. Their scrutiny of firms has eliminated those that could be the result of spinoffs or restructurings or the result of organizing existing or additional activities into new enterprises. Consequently, a firm that appears in the data set must not only be newly registered for value-added taxation (VAT) at the business authorities but also not previously existing under a different name/company or with a different owner. The data are also cleaned for registrations that are due to re-starts of businesses after closure or changes in the firm-registration information. Thus, the set of start-ups used in this article is more likely to reflect true organic entrepreneurial start-ups than if we had used only all "new establishments" or all "new firms," as has been the common practice in the literature.

Entrepreneur and Firm Types: There are two main firm types: sole proprietorships, that is, unincorporated self-employed, and incorporated limited liability firms (LLCs). The former type constitutes almost two thirds of all new firms, whereas the latter type constitutes one third. In addition, approximately 2.5% of all firms are stock-based corporations.

For the sole proprietorships, identification is straightforward: The entrepreneur is simply identified as the owner of the firm.

For incorporated firms—LLCs and stock-based corporations—Statistics Denmark uses a prioritized list of criteria to identify the principal entrepreneur. If the information about a founder is available from the registration information, this person is identified as the principal entrepreneur. In the case of more than one founder, Statistics Denmark selects the one who has the highest salary—or if none of the founders are employed in the firm, they pick the founder who appears first in the registration database. If information about founders is not available, Statistics Denmark looks for a member of the board (or the executive board) who is also employed in the firm. Again, they pick the one with the highest salary if more than one board (or executive board) member is employed in the firm. If no board (or executive board) member is employed in the firm, they pick the board (or executive board) member who appears first in the registration database.

For approximately 15% of the cases, Statistics Denmark has not been able to identify the entrepreneur/founder behind the firm, so these firms have been dropped from our data.

Sole proprietorships: For the sole proprietorship the legal unit is the individual who owns the firm. Because of this, the owner has only one firm-ID for administrative purposes. This implies that an entrepreneur with a sole proprietorship will always have his firm registered under the same firm-ID and will report VAT, accounting data, and so on, to the tax and other authorities under this firm-ID.

There are two important implications of this for our analysis. First, a sole proprietorship can have several projects ("firms") that are all registered under one firm-ID. In this sense, we may undervalue the number of portfolio serial entrepreneurs who cannot be observed in the data. What can be observed, however, is the number of establishments. If a firm has more than one establishment this can be an indication for a number of different projects in the firm; projects that may have been placed in a different LLC if incorporated. The number of establishments is, however, not a perfect substitute for the number of projects/firms as one project of a certain magnitude may be operated under more than one establishment. That being said, a sole proprietorship with two ongoing projects may have separated these activities into two establishments. However, in the data set we find very few sole proprietorships with multiple establishments, which suggests that the number of portfolio serial entrepreneurs using sole proprietorships is not a problem (see Appendix Table A.3).

Second, a sole proprietorship will always have the same firm-ID, which can result in mismeasurement of sequential serial entrepreneurs. Imagine that a sole proprietorship opens his first firm in 2001 and closes it in 2003, and opens a new firm as a sole proprietorship in 2007. Our data would suggest that this is the same firm even though it may be two different projects/firms and that the entrepreneur is in fact a sequential serial entrepreneur. Only few sole proprietorships have multiple spells in the data, however, which suggests that the number of sequential serial entrepreneurs using sole proprietorships is not a problem.

Incorporated limited liability firms (LLCs): The legal unit in LLCs is the firm. Specifically, the capital belongs to the firm, not the owners, which implies that the owner must have either a salary or a dividend in order to receive payments. Moreover, the owners have limited liability for the debt of the firm and are only liable for their deposits in the firm. The required minimum deposit was approximately $12,000 (USD) in 2010. By contrast, unincorporated sole proprietorships do not have to tie up capital in the firm. The administrative burdens are also larger for LLCs than for sole proprietorships with requirements for accounting, auditing, and disclosures, among others. Unincorporated sole proprietorships do not face such requirements.

Truly active firms: Firm data in the Statistics Denmark registers include only firms that are labelled "truly active," defined as firms that have wage hours for employees of at least 0.5 full-time equivalent employees during the year *or* have sales above a defined threshold, which varies across industries. In industries such as wholesale trade, the threshold of annual sales equals approximately $75,000 (USD), whereas for manufacturing firms the sales are in the range of $22,000 to $30,000. In this sense, firms are considered to start activities when they become "truly active" and to stop activities when they are no longer "truly active."

Types of serial entrepreneurs: We define sequential and portfolio serial entrepreneurs according to "truly active" firms. Sequential entrepreneurs close their first "truly active" firm in a year prior to the year they open the second "truly active" firm, whereas portfolio entrepreneurs close their first "truly active" firm in the same year or later as their second "truly active" firm opens.

Industries: Statistics Denmark restricts the data to industries they categorize as "private urban functions," thereby excluding the primary and public sectors and some activities that are not liable to VAT, such as dentists, transportation of persons, banking, and so on. These industries are not included because the basis for the *Statistics on New Enterprises* is firms that register for VAT. Hence, we do not have information on new firms that are not liable to VAT. Private-sector service firms that are excluded from our analysis for this reason are firms within the following service sectors: child day-care activities, primary education, general secondary education, higher education, nursing homes, activities of household employers, other service activities, general

medical practice activities including dentists, hospital activities, real estate agencies, and mortgage credit institutions. In the data set, firms are grouped into 88 industries.

Sales: Sales data originate from the *Purchase and Sales of Danish Firms*. Firms report VAT on a monthly, quarterly, or bi-annual basis dependent on sales size. To make all data comparable, all sales data used in the article are for bi-annually measured sales, though larger firms would have sales measured more frequently. The *Balance Sheet* data (including sales data) would have been an alternative source that exists back to 1994. But it is annual data, which does not permit our learning curve analysis. Moreover, there is an important data break in 1999 when a uniform firm-ID was introduced for Danish firms. Prior to 1999, it is very difficult to merge data sets on firm-ID. Moreover, the industry coverage was expanded from 1994 to 1999. In 1994, firms in construction and retail were included. Manufacturing firms are included in 1995, wholesale trade was included in 1998, and other private-sector industries (without the primary sector) were included in 1999. See Xi He and le Maire (2018) for use of this data.

Capital and Employment data: 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. Both variables are measured annually. We use interpolation to obtain bi-annual measures using the STATA command "ipolate."

Moreover, Statistics Denmark interpolates fixed assets if firms miss information on annual fixed assets for some years. This implies that part of the raw capital data is interpolated. More precisely, 10% of firms have interpolated capital data only, whereas 33% of all firm × firm-experience observations are interpolated. We have estimated Table 2 without the Statistics Denmark interpolated capital data. The point estimates without interpolated capital are close to those with interpolated capital; if anything, the estimates for serial dummy and firm experience are higher without the Statistics Denmark interpolated capital data. Results can be obtained upon request.

Merging individuals to firms: The *Firm Integrated Database* (FIDA) identifies all the individuals working in a given firm in the last week of November each year. With this data set, we are able to connect worker characteristics to firms.

Workforce education: Specifically, we use Statistics Denmark's *Education Database*, which provides information on all employees' educational backgrounds. This information is used to construct one variable, Workforce Education, measuring the average years of education to characterize the educational level of the firms' employees. In the analysis, six education groups enter the Workforce Education variable. The groups are: primary schooling (9 years); vocational training (12 years); high school (12 years); short further education (14 years); medium further education (16 years); and long further education (18 years).

Estimation sample: The starting point for the data set used in the empirical analysis is the *Statistics on New Enterprises*. In the database, there are between approximately 14,000 (2009) and 20,000 (2007) firm start-ups with identified founder. This results in a total population of 215,645 firms, which ultimately is reduced to an estimation sample of 128,537 firms. The explanations for this reduction are:

- **Sales data:** The sample size declines to 200,851 firms after the data is restricted to firms with sales data that cover the period 2001 to 2013.
- **Explanatory data:** The sample size declines to 147,080 firms after the sample is restricted to those firms with all the right-hand-side variables of Equation (1).

- **Solving left-censoring:** An important distinction in the analysis in our article is between novice and serial entrepreneurs. Since, we have only data from 2001 and forward in the *Statistics on New Enterprises*, an entrepreneur who we label novice in this data set can in fact be a serial entrepreneur if he or she founded a firm before 2001. In a similar manner, the firms of a serial entrepreneur may not be the first firm, second firm, etc., if the serial entrepreneur has opened firms prior to 2001. For example, if a serial entrepreneur opened two firms prior to 2001, it will instead be the third firm, fourth firm, etc., that enter the estimation data set. Both types of mismeasurement may bias the estimation results.

  Fortunately, creation of organic start-ups can be followed annually back in time to 1990 in an older database for entrepreneurial firms. We use this additional data on new firms to clean up our estimation sample. It should be emphasized that we still do not have semi-annual sales data prior to 2001 and therefore cannot use this older database in the empirical analysis of sales. The consequence of using this additional information is a reduction of 26,629 new firms—from 215,645 to 189,016 new firms. Similarly, entrepreneurs are reduced by 21,552—from 190,834 to 169,282 entrepreneurs.

  More precisely, we exclude entrepreneurs who have established firms during 1990–2000 *and* during 2001–2013. If an entrepreneur identified by the 2001–2013 data set has also established firms during 1990–2000, he or she is indeed a serial entrepreneur. However, because we lack (early) sales data for the early firms, we drop these serial entrepreneurs from the estimation data. The reason is that the objective of our article is to study entrepreneurs as they found their firms, and to identify the learning that occurs in the first few years of the firm's operation—so the firms for which we do not observe their initial sales that occur before 2001 are dropped.

  Another reason for excluding serial entrepreneurs who have established firms during 1990–2000 is that we want to compare performance of serial to novice entrepreneurs. To obtain the cleanest comparison, we compare the average performance of the first, second, and so on, firm of the serial entrepreneur to the performance of the novice entrepreneur. If we did not exclude serial entrepreneurs who have established firms during 1990–2000, we would measure only sales in the second firm, third firm, and forward. Consequently, estimated performance differences would likely be biased by the more experienced serial entrepreneurs who also opened firms during 1990–2000.

Online Appendix Reference

Xi He, Alex, and Daniel le Maire. 2018. Mergers and managers: Wage premiums and rent extraction in M&A's. MIT Sloan School Working Paper.

Online Appendix Tables

Table A.1. Probability of Becoming a Serial Entrepreneur: Linear Probability Model

	(1)	(2)	(3)
Married	0.011***	0.012***	0.006***
	(0.002)	(0.002)	(0.002)
Education	0.004***	0.004***	0.002***
	(0.000)	(0.000)	(0.000)
Male	0.073***	0.074***	0.062***
	(0.002)	(0.002)	(0.002)
Age	0.010***	0.010***	0.014***
	(0.001)	(0.001)	(0.001)
Age-squared	−0.000***	−0.000***	−0.000***
	(0.000)	(0.000)	(0.000)
Prior business experience	−0.001***	−0.002***	0.003***
	(0.000)	(0.000)	(0.000)
Prior business experience–squared	−0.000*	−0.000	−0.000*
	(0.000)	(0.000)	(0.000)
Immigrant	−0.055***	−0.055***	−0.054***
	(0.003)	(0.003)	(0.004)
Descendant	0.003	0.003	0.017**
	(0.007)	(0.008)	(0.008)
Years of full-time employment			−0.010***
			(0.000)
Number of different jobs			−0.020***
			(0.000)
First year on labor market			−0.006***
			(0.000)
Experience as manager			0.065***
			(0.004)
log(Wage income in previous year)			0.062***
			(0.002)
log(Degree of unemployment)			−0.004***
			(0.000)
R-squared	0.016	0.016	0.063
Number of observations	118,671	115,798	115,798

Notes: Variables for labor market experience: **Years of full-time employment:** Number of years with full-time employment until the year the first firm is established. From 1980 and forward; **Number of different jobs:** One job is added to the number of different jobs if employment is changed between workplaces. Count until the year the first firm is established. From 1980 and forward; **First year on labor market:** First calendar year on labor market. From 1980 and forward (i.e., a person who starts in 1970 is registered with a value of 1980); **Experience as manager:** Equal to 1 if individual has had a job as manager before opening first firm, 0 otherwise. From 1980 and forward; **Wage income in previous year:** Average annual wage income over the labor market carrier up until opening of first firm. Average from 1980 and forward. Use the inverse hyperbolic sine in place of log; **Degree of unemployment:** Aggregate degree of unemployment over the labor market carrier up until opening of first firm. A value of 1,000 implies that the individual has been unemployed for 1 year during the carrier. Measured from 1980 and forward. Use the inverse hyperbolic sine in place of the log. Column (1) presents the probability of being a serial entrepreneur versus a novice. Number of entrepreneurs, 118,671; novice entrepreneurs, 105,203; serial entrepreneurs, 13,468. The 118,671 entrepreneurs open the 128,537 new firms in the estimation sample used in the article's main text. Column (3) includes variables for labor market experience. Due to non-availability of observations the number of entrepreneurs fall to, 115,798 entrepreneurs; novice entrepreneurs, 102,499; serial entrepreneurs, 13,299. Column (2) is similar to column (1) but is estimated for the sample used in column (3).
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.2. Variable Means, for Serial and Novice Entrepreneurs

Panel A: Characteristics of entrepreneurs; across types of entrepreneur

		Serial entrepreneur			Novice entrepreneur		
		#firms	Percent	Cum %	#firms	Percent	Cum %
Persons	Total	15,537			153,745		
Education of entrepreneur	Elementary	2,384	15.3	15.3	30,655	19.9	19.9
	High-school	1,592	10.2	25.6	12,777	8.3	28.2
	Vocational	6,188	39.8	65.4	59,584	38.8	67.0
	2-year college	1,057	6.8	72.2	8,154	5.3	72.3
	4-year college	2,075	13.4	85.6	19,782	12.9	85.2
	University	1,773	11.4	97.0	15,341	10.0	95.2
Marital status	Married	7,980	51.4	51.4	77,676	50.5	50.5
	Single	7,340	47.2	98.6	73,073	47.5	98.1
Gender	Man	13,096	84.3	84.3	103,680	67.4	67.4
	Woman	2,229	14.4	98.6	47,435	30.9	98.3
Age		37.3	98.6	98.6	38.7	98.3	98.3
		NA	1.4	100.0	NA	1.7	100.0
Prior business experience (from wage work)		10.9	98.6	98.6	10.9	98.1	98.1
		NA	1.4	100.0	NA	1.9	100.0

Panel B: Characteristics of entrepreneurial firms; across types of entrepreneur

		#firms	Percent	Cum %	#firms	Percent	Cum %
All Firms	Total Number	35,271	100.0	100.0	153,745	100.0	100.0
Firm Type	Sole proprietorship	9,709	27.5	27.5	116,519	75.8	75.8
	Stock-based corporation	1,844	5.2	32.8	2,668	1.7	77.5
	Limited Liability Corporation (LLC)	23,630	67.0	99.8	34,476	22.4	99.9
	Other	88	0.2	100.0	82	0.1	100.0
Sectors	Manufacturing	1,813	5.1	5.1	6,719	4.4	4.4
	Service	15,578	44.2	49.3	77,224	50.2	54.6
	High-tech knowledge	3,262	9.3	58.6	10,600	6.9	61.5
	Retail	8,300	23.5	82.1	35,362	23.0	84.5
	Construction	4,590	13.0	95.1	19,735	12.8	97.3
	Other	1,728	4.9	100.0	4,105	2.7	100.0

Table A.3. Characteristics of Entrepreneurial Firms; Across Types of Entrepreneur

	Serial Entrepreneur			Novice Entrepreneur		
	#firms	**Mean**	**Std dev**	**#firms**	**Mean**	**Std dev**
Sales (average monthly $1,000 US dollars)	23,334	54.8	503.5	105,203	24.6	178.6
Employment	23,334	2.9	8.6	105,203	1.8	5.8
Labor productivity	23,334	24.3	267.4	105,203	12.0	52.3
Capital stock	23,334	436.4	9881.0	105,203	132.0	2784.1
Capital intensity (K/L)	23,334	318.5	25597.9	105,203	80.0	1443.9
Workforce education	15,128	11.8	2.0	40,853	11.4	2.0
Average # of establishments	21,555	1.0	0.3	99,278	1.0	0.2
Months in business of firm[1]	23,334	47.0	35.1	105,203	47.3	37.9

Notes: Based on firms' first six years of semi-annual data. The averages are based on 416,690 annual observations; 76,951 observations for serial entrepreneurs and 339,739 for novice entrepreneurs.

[1] "Months in business" uses the available data in months, not truncated to their first six years in business. The variable is not used in the regressions because sales data are not available on a monthly basis. However, the firm's start date is available to calculate the months in business in this table. The median months in business are 36 for serial and 35 for novice entrepreneurs.

Table A.4. Distributions of Sales, Employment, and Productivity: by Employer versus Non-Employer

Panel A: Distribution of productivity by employer type ($1,000 USD)

Percentiles	1	5	10	50	90	95	99	#observations
Employer	0.6	2.3	3.9	11	34	53	145	313,913
Non-employer	0.3	1.1	1.7	5.8	18	26	67	443,228
All	0.4	1.3	2.2	7.7	25	39	104	757,139

Panel B: Distribution of sales by employer type ($1,000 USD)

Percentiles	1	5	10	50	90	95	99	#observations
Employer	0.7	2.8	4.9	23	107	176	480	313,913
Non-employer	0.3	1.1	1.7	6.0	21	34	100	443,228
All	0.4	1.4	2.2	10	59	102	301	757,139

Notes: The percentiles are presented for averages of 5 firms around the specific percentile. This is done to fulfill Statistics Denmark's regulations on anonymity. "Employer" is a firm that opened with employees; "Non-employer" is a firm that opened with no employees (but could have hired them after they opened).

Table A.5. Sales Regressions Comparing Novice and Serial Entrepreneurs, by Education Group

	Vocational and Below				College and Above			
	OLS	OLS	OLS	FE	OLS	OLS	OLS	FE
Serial	0.688***	0.691***	0.426***		0.642***	0.576***	0.327***	
	(0.011)	(0.014)	(0.012)		(0.018)	(0.023)	(0.019)	
Firm experience		0.381***	0.090***	0.235***		0.314***	0.016**	0.137***
		(0.004)	(0.003)	(0.004)		(0.008)	(0.007)	(0.007)
Firm experience-squared		−0.036***	−0.007***	−0.023***		−0.025***	0.004***	−0.012***
		(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)
Firm experience of SE		−0.014	−0.121***	0.043***		0.008	−0.070***	0.087***
		(0.011)	(0.009)	(0.010)		(0.018)	(0.015)	(0.016)
Firm experience of SE-squared		0.001	0.014***	−0.005***		−0.002	0.007***	−0.010***
		(0.002)	(0.001)	(0.001)		(0.003)	(0.003)	(0.002)
Married		0.153***	0.054***			0.142***	0.050***	
		(0.008)	(0.005)			(0.014)	(0.009)	
Education		0.019***	0.007***			0.034***	0.009***	
		(0.002)	(0.001)			(0.005)	(0.003)	
Male		0.243***	0.152***			0.311***	0.164***	
		(0.010)	(0.006)			(0.015)	(0.010)	
Prior business experience		0.000	0.005***			0.004***	0.006***	
		(0.001)	(0.000)			(0.001)	(0.001)	
Age		0.002***	−0.003***			−0.009***	−0.007***	
		(0.001)	(0.000)			(0.001)	(0.001)	
log(Capital)			0.236***				0.263***	
			(0.003)				(0.005)	
log(Employment)			0.698***				0.670***	
			(0.005)				(0.008)	
Workforce education			0.029***				0.009***	
			(0.002)				(0.003)	
R-squared	0.198	0.256	0.600	0.840	0.167	0.217	0.552	0.820
Number of observations	552,633	552,633	552,633	552,633	204,510	204,510	204,510	204,510

Notes: See note to Table 2 in the main text. Based on up to six years of semi-annual data for each firm. Educational attainment is split into vocational education and below and college education and above. Number of firms vocational and below: all firms, 92,500; novice entrepreneur, 76,664; serial entrepreneur, 15,836. Number of firms college and above: all firms, 36,037; novice entrepreneur, 28,539; serial entrepreneur, 7,498. FE, fixed effects; OLS, ordinary least squares; SE, serial entrepreneur.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.6. Employment Regressions Comparing Novice and Serial Entrepreneurs, by Education Group

	Vocational and Below				College and Above			
	OLS	OLS	OLS	FE	OLS	OLS	OLS	FE
Serial	0.234***	–0.175***	–0.316***		0.170***	–0.225***	–0.351***	
	(0.008)	(0.011)	(0.011)		(0.012)	(0.017)	(0.016)	
Firm experience		0.231***	0.141***	0.211***		0.205***	0.112***	0.204***
		(0.003)	(0.003)	(0.003)		(0.005)	(0.005)	(0.005)
Firm experience-squared		–0.021***	–0.010***	–0.021***		–0.016***	–0.006***	–0.020***
		(0.000)	(0.000)	(0.000)		(0.001)	(0.001)	(0.001)
Firm experience of SE		0.243***	0.260***	0.271***		0.222***	0.247***	0.236***
		(0.009)	(0.008)	(0.009)		(0.013)	(0.013)	(0.014)
Firm experience of SE-squared		–0.026***	–0.028***	–0.031***		–0.024***	–0.026***	–0.026***
		(0.001)	(0.001)	(0.001)		(0.002)	(0.002)	(0.002)
Married		0.067***	0.045***			0.048***	0.028***	
		(0.005)	(0.004)			(0.008)	(0.008)	
Education		0.009***	0.006***			0.010***	0.002	
		(0.001)	(0.001)			(0.003)	(0.003)	
Male		0.050***	0.007			0.078***	0.038***	
		(0.006)	(0.005)			(0.008)	(0.008)	
Prior business experience		–0.003***	–0.002***			–0.001	–0.001*	
		(0.000)	(0.000)			(0.001)	(0.001)	
Age		0.002***	0.001***			–0.002***	–0.003***	
		(0.000)	(0.000)			(0.001)	(0.001)	
log(Capital)			0.194***				0.177***	
			(0.002)				(0.004)	
R-squared	0.073	0.152	0.292	0.815	0.079	0.147	0.260	0.821
Number of observations	303,324	303,324	303,324	303,324	113,366	113,366	113,366	113,366

Notes: See note to Table 6 in the main text. Based on up to six years of annual data for each firm. Educational attainment is split into vocational education and below and college education and above. Number of firms vocational and below: all firms, 92,500; novice entrepreneur, 76,664; serial entrepreneur, 15,836. Number of firms college and above: all firms, 36,037; novice entrepreneur, 28,539; serial entrepreneur, 7,498. FE, fixed effects; OLS, ordinary least squares; SE, serial entrepreneur.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.7. Sales Regressions Comparing Novice and Serial Entrepreneurs, by Industry

	MANU	MANU	SERV	SERV	RETA	RETA	CONS	CONS
Serial	0.629***	0.467***	0.670***	0.368***	0.618***	0.427***	0.741***	0.499***
	(0.040)	(0.041)	(0.011)	(0.012)	(0.018)	(0.020)	(0.020)	(0.020)
Firm experience		0.152***		0.047***		0.109***		0.132***
		(0.013)		(0.004)		(0.006)		(0.006)
Firm experience-squared		−0.014***		−0.001		−0.010***		−0.014***
		(0.002)		(0.001)		(0.001)		(0.001)
Firm experience of SE		−0.157***		−0.099***		−0.163***		−0.135***
		(0.030)		(0.010)		(0.015)		(0.015)
Firm experience of SE-squared		0.017***		0.012***		0.021***		0.014***
		(0.005)		(0.002)		(0.002)		(0.002)
Married		0.225***		0.258***		0.220***		0.193***
		(0.010)		(0.003)		(0.004)		(0.004)
Education		0.702***		0.680***		0.735***		0.743***
		(0.015)		(0.005)		(0.008)		(0.007)
Male		0.012		0.019***		0.014***		0.049***
		(0.009)		(0.002)		(0.003)		(0.004)
Prior business experience		0.056***		0.041***		0.029***		0.099***
		(0.019)		(0.006)		(0.009)		(0.009)
Age		0.001		0.009***		0.005***		0.014***
		(0.004)		(0.001)		(0.002)		(0.002)
log(Capital)		−0.002**		−0.004***		−0.005***		−0.004***
		(0.001)		(0.000)		(0.001)		(0.001)
log(Employment)		−0.055		−0.024***		−0.059***		−0.094***
		(0.043)		(0.008)		(0.012)		(0.025)
Workforce education		0.003		0.024		−0.000		0.062
		(0.099)		(0.019)		(0.027)		(0.055)
R-squared	0.118	0.613	0.208	0.581	0.106	0.573	0.087	0.595
Number of observations	45,181	45,181	547,682	547,682	202,241	202,241	138,755	138,755

Notes: See note to Table 2 in main text. Based on up to six years of data for each firm. MANU: Manufacturing covers all manufacturing industries, SERV: Service covers all service industries, CONS: Construction: 43: Specialized construction activities, Retail: RETA is 45–47 and 55–56. Numbers refer to 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of firms: MANU: all firms, 7,046; novice entrepreneur, 5,659; serial entrepreneur, 1,387. SERV: all firms, 95,671; novice entrepreneur, 78,726; serial entrepreneur, 16,945. RETA: all firms, 34,714; novice entrepreneur, 28,425; serial entrepreneur, 6,289. CONS: all firms, 21,711; novice entrepreneur, 17,760; serial entrepreneur, 3,951. SE, serial entrepreneur.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.8. Employment Regression Comparing Novice and Serial Entrepreneurs, by Industry

	MANU	MANU	SERV	SERV	RETA	RETA	CONS	CONS
Serial	0.207***	−0.294***	0.197***	−0.330***	0.217***	−0.322***	0.289***	−0.274***
	(0.029)	(0.039)	(0.007)	(0.011)	(0.012)	(0.017)	(0.015)	(0.020)
Firm experience		0.195***		0.115***		0.208***		0.186***
		(0.012)		(0.003)		(0.005)		(0.006)
Firm experience-squared		−0.015***		−0.008***		−0.017***		−0.014***
		(0.002)		(0.000)		(0.001)		(0.001)
Firm experience of SE		0.225***		0.247***		0.232***		0.264***
		(0.028)		(0.008)		(0.013)		(0.016)
Firm experience of SE-squared		−0.028***		−0.026***		−0.024***		−0.029***
		(0.004)		(0.001)		(0.002)		(0.002)
Married		0.267***		0.174***		0.228***		0.219***
		(0.010)		(0.002)		(0.003)		(0.004)
Education		0.041**		0.032***		0.042***		0.071***
		(0.017)		(0.004)		(0.007)		(0.009)
Male		0.013***		0.006***		0.005***		0.009***
		(0.004)		(0.001)		(0.001)		(0.002)
Prior business experience		−0.016		0.030***		0.056***		−0.087***
		(0.025)		(0.005)		(0.008)		(0.018)
Age		−0.000		−0.001***		0.001**		−0.005***
		(0.001)		(0.000)		(0.001)		(0.001)
log(Capital)		0.035		−0.094***		−0.152***		−0.089*
		(0.169)		(0.013)		(0.018)		(0.049)
R-squared	0.089	0.394	0.081	0.270	0.030	0.330	0.035	0.296
Number of observations	24,645	24,645	302,357	302,357	110,968	110,968	75,634	75,634

Notes: See note to Table 6 in main text. MANU: Manufacturing covers all manufacturing industries, SERV: Service covers all service industries, CONS: Construction: 43: Specialized construction activities, Retail: RETA is 45–47 and 55–56. Numbers refer to 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of firms: MANU: all firms, 7,046; novice entrepreneur, 5,659; serial entrepreneur, 1,387. SERV: all firms, 95,671; novice entrepreneur, 78,726; serial entrepreneur, 16,945. RETA: all firms, 34,714; novice entrepreneur, 28,425; serial entrepreneur, 6,289. CONS: all firms, 21,711; novice entrepreneur, 17,760; serial entrepreneur, 3,951. SE, serial entrepreneur.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.9. Employment Regressions Comparing Novice and Serial Entrepreneurs, by Industry: Firm-Fixed Effects Estimation

	MANU	MANU	SERV	SERV	RETA	RETA	CONS	CONS
Firm experience	0.274***	0.247***	0.195***	0.169***	0.285***	0.260***	0.231***	0.213***
	(0.011)	(0.011)	(0.003)	(0.003)	(0.005)	(0.005)	(0.006)	(0.006)
Firm experience-squared	−0.028***	−0.024***	−0.019***	−0.016***	−0.029***	−0.026***	−0.023***	−0.021***
	(0.002)	(0.002)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Firm experience of SE	0.227***	0.225***	0.259***	0.260***	0.262***	0.254***	0.269***	0.269***
	(0.032)	(0.030)	(0.009)	(0.009)	(0.015)	(0.014)	(0.018)	(0.018)
Firm experience of SE-squared	−0.025***	−0.026***	−0.029***	−0.029***	−0.029***	−0.028***	−0.031***	−0.031***
	(0.004)	(0.004)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)
log(Capital)		0.099***		0.068***		0.093***		0.078***
		(0.009)		(0.002)		(0.003)		(0.003)
R-squared	0.841	0.850	0.820	0.825	0.821	0.831	0.804	0.812
Number of observations	24,645	24,645	302,357	302,357	110,968	110,968	75,634	75,634

Notes: See note to Table 6 in main text. MANU: Manufacturing covers all manufacturing industries, SERV: Service covers all service industries, CONS: Construction: 43: Specialized construction activities, Retail: RETA is 45-47 and 55-56. Numbers refer to 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of firms: MANU: all firms, 7,046; novice entrepreneur, 5,659; serial entrepreneur, 1,387. SERV: all firms, 95,671; novice entrepreneur, 78,726; serial entrepreneur, 16,945. RETA: all firms, 34,714; novice entrepreneur, 28,425; serial entrepreneur, 6,289. CONS: all firms, 21,711; novice entrepreneur, 17,760; serial entrepreneur, 3,951. SE, serial entrepreneur.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.10. Sales and Employment Regressions Comparing Novice and Serial Entrepreneurs for High-tech Knowledge-Intensive Services (HKIS)

	Sales		Employment	
Serial	0.611***	0.286***	0.162***	–0.395***
	(0.031)	(0.036)	(0.020)	(0.029)
Firm experience		–0.038***		0.044***
		(0.013)		(0.010)
Firm experience-squared		0.015***		0.001
		(0.002)		(0.001)
Firm experience of SE		–0.043		0.239***
		(0.030)		(0.024)
Firm experience of SE-squared		0.004		–0.021***
		(0.005)		(0.004)
log(Capital)		0.295***		0.188***
		(0.012)		(0.009)
log(Employment)		0.601***		
		(0.017)		
Workforce education		–0.005		
		(0.006)		
Married		0.079***		0.008
		(0.017)		(0.013)
Education		0.019***		0.008***
		(0.003)		(0.002)
Male		0.053**		0.035**
		(0.025)		(0.016)
Prior business experience		0.009***		–0.001
		(0.001)		(0.001)
Age		–0.003**		–0.002**
		(0.001)		(0.001)
R-squared	0.070	0.480	0.026	0.245
Number of observations	56,842	56,842	31,787	31,787

Notes: See note to Table 2 in main text. High-tech knowledge-intensive services (HKIS): 59: Motion picture, video and television program production, 60: sound recording and music publish activities; 61: Programming and broadcasting activities; 62: Telecommunications; computer programming, consultancy and related activities; 63: Information service activities; 72: Scientific research and development. Numbers refer to 2-digit Nomenclature of Economic Activities (NACE Rev. 2), the statistical classification of economic activities in the European Community. Number of HKIS firms: all firms, 11,061; novice entrepreneur, 8,657; serial entrepreneur, 2,404. SE, serial entrepreneur.

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.11. Firm Fixed Effect of Novice and Serial Entrepreneurs

	OLS	OLS	OLS	OLS
Serial	0.576***	0.551***	0.343***	0.331***
	(0.007)	(0.007)	(0.006)	(0.006)
Married		0.089***		0.038***
		(0.005)		(0.005)
Education		0.018***		0.012***
		(0.001)		(0.001)
Male		0.182***		0.128***
		(0.006)		(0.006)
Prior business experience		0.005***		0.005***
		(0.000)		(0.000)
Age		−0.000		−0.002***
		(0.000)		(0.000)
log(Capital)			0.264***	0.258***
			(0.003)	(0.003)
log(Employment)			0.055***	0.054***
			(0.006)	(0.006)
Workforce education			0.018***	0.018***
			(0.001)	(0.001)
R-squared	0.128	0.143	0.302	0.309
Number of observations	128,537	128,537	128,537	128,537

Notes: Based on firms' first six years of semi-annual data. Dependent variable is the firm fixed effect that originates from the estimation of log(sales) on entrepreneur characteristics (serial dummy, married, education, gender, prior business experience, age, and immigrant status) and on characteristics of entrepreneurial firms (capital stock, employment, workforce education, and firm experience). The estimation is carried out using the STATA command "areg" with absorb(firm-id) and prediction of fixed effects. "Serial" is a dummy variable equal to 1 if the firm is established by a founder who is a serial entrepreneur; 0 otherwise. Robust standard errors in parentheses clustered on firm-entrepreneur. All regressions 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. Rev. 2 refers to the major revision of NACE that was launched in 2002. NACE groups organizations according to their business activities. Time dummies for each bi-annual time period are also included. Number of firms: all firms, 128,537; novice entrepreneur, 105,203; serial entrepreneur, 23,334. OLS, ordinary least squares.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A.12. Employment in Different Types of Firms: Median and Mean Increase in Employment, by Year Since the Firm Opened, by Firm Type

	Year opened	First	Second	Third	Fourth	Fifth	Sixth
Non-employer							
Novice entrepreneur	Median	1.0	1.0	1.0	1.0	1.0	1.0
	Mean	1.0	1.1	1.2	1.3	1.4	1.5
	# firms	63,357	50,679	34,549	25,992	20,579	16,503
Serial entrepreneur	Median	1.0	1.0	1.0	1.0	1.0	1.0
	Mean	0.8	1.2	1.7	1.9	2.2	2.4
	# firms	6,969	6,063	4,614	3,447	2,580	1,930
Employer							
Novice entrepreneur	Median	1.3	2.0	2.1	2.2	2.4	2.5
	Mean	2.0	3.0	3.5	3.7	4.0	4.4
	# firms	29,219	26,218	20,423	16,309	13,387	10,946
Serial entrepreneur	Median	1.1	2.0	2.5	2.6	2.9	3.0
	Mean	2.2	3.6	4.2	4.5	5.1	5.6
	# firms	12,382	11,260	8,569	6,592	5,155	3,988

Notes: To fulfill Statistics Denmark's regulations on anonymity, the percentiles are presented for averages of five firms around the specific percentile.