





Discussion Paper Series - CRC TR 224

Discussion Paper No. 693 Project B 04

Successful Entrepreneurs Come From the Top of the Earned Income Distribution

Niklas Garnadt¹ Lena Füner² Konrad Stahl³ Joacim Tag⁴

June 2025

¹ Goldman Sachs. Email: niklas.garnadt@gcee.de
² ZEW, TUM, and IAB. Email: lena.fuener@zew.de
³ University of Mannheim, CEPR, CESifo and ZEW. Email: konrad.stahl@uni-mannheim.de
⁴ IFN and Hanken School of Economics. Email: joacim.tag@ifn.se

Support by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) through CRC TR 224 is gratefully acknowledged.

Successful Entrepreneurs Come From the Top of the Earned Income Distribution*

Niklas Garnadt Goldman Sachs

Lena Füner Centre for European Economic Research (ZEW), TUM, and IAB

> Konrad Stahl University of Mannheim, CEPR, CESifo and ZEW

> > Joacim Tåg
> > IFN and Hanken School of Economics

June 2025

ABSTRACT

Identifying high growth startups ex-ante and fostering their success is an important policy challenge. Using Swedish registry data, we show that previous labor market earnings of entrepreneurs is a simple observable that is strongly correlated with entrepreneurship success. Entrepreneurs from the top decile of income from dependent employment are four times more likely to succeed than those from the lowest decile. Their firms are larger and more productive from the outset, and this effect intensifies over time. This correlation is virtually unaffected by variations in the entrepreneurs' personal traits. It does also not vary across the business cycle.

Keywords: Entrepreneurship, high-growth startups, labor income, unemployment.

JEL Codes: L26, L35, L53, J24, E32.

^{*}The authors can be reached under niklas.garnadt@gcee.de, lena.fuener@zew.de, konrad.stahl@uni-mannheim.de and joacim.tag@ifn.se. Konrad Stahl gratefully acknowledges support by the Deutsche Forschungsgemeinschaft through CRC TR 224 (project B04). Joacim Tåg is grateful to the Marianne and Marcus Wallenberg Foundation (2020.0049), Jan Wallanders och Tom Hedelius stiftelse samt Tore Browaldhs stiftelse (P23-0186), and the Kamprad Family Foundation for Entrepreneurship, Research & Charity (P20240030) for financial support.

1 Introduction

At any point in time, the distribution of firm sizes is heavily skewed. Most firms start small and remain small. Only a few startups exhibit high growth and sustantially contribute to employment growth and the growth of the economy (Hurst and Pugsley, 2011; Decker, Haltiwanger, Jarmin and Miranda, 2016; Guzman and Stern, 2020). It is of obvious importance for industrial and labor market policy to identify, and to help potentially successful startups and foster them. However, identifying high growth startups ex-ante and fostering both their creation and their growth is a big challenge.

In this paper we employ a uniquely detailed dataset to show impressive regularities between prior labor market earnings and status and the creation of successful firms, regardless of whether success is measured by survival, employment, company assets or labor productivity. While dependent employees with income below the median decile of the income distribution are more inclined to found a firm than those above the median decile, the former top decile job holders are 2.5 times more likely than those from its fifth decile to start a successful firm, i.e., a firm that still exists three years after foundation and employs five or more employees; and 4 times more likely than entrepreneurs remunerated at the bottom decile. These leading starts are larger, involve more assets and are more productive already in the year of firm creation, with the effect increasing over time.

We are clearly not the first to relate entrepreneurship to previous employment status. However, we are arguably the first to show that the income earned in dependent employment dominates literally all correlates used heretofore. With our result that the best paid dependent employees tend to become the most successful entrepreneurs, our paper relates all the way back to Lucas (1978) who posited that the individuals with the most "managerial" abilities—perhaps those highest paid in the labor market—should start and run the most potent firms in the economy. In addition to these abilities, prior labor market status may embed other factors contributing to success, that are highlighted by theoretical and empirical research. We thus leverage the detailed registry data in Sweden to investigate whether the correlation remains after conditioning on a set of important observables, and whether these observables contribute separately to the prediction of successful

entry into entrepreneurship. The rich data we have at hand allow us to observe wealth (Evans and Jovanovic, 1989; Hurst and Lusardi, 2004), risk aversion (Kihlstrom and Laffont, 1979; Vereshchagina and Hopenhayn, 2009; Hvide and Panos, 2014), ability and previous managerial/entrepreneurship experience (Lucas, 1978; Levine and Rubinstein, 2017; Gendron-Carrier, 2025), as well as parental experience with entrepreneurship (Dunn and Holtz-Eakin, 2000; Lindquist, Sol and Van Praag, 2015).

Strikingly, we document that the correlation between prior labor market status and success in entrepreneurship remains essentially unchanged after we control for all these other potential contributors to the relevant prediction. Thus, prior labor market status appears orders of magnitude more important in predicting successful entrepreneurship than other key factors focused on in the theoretical and empirical literature. Future empirical and theoretical research may determine the reasons for that.

We also investigate whether the pattern varies over the business cycle. There are many reasons invoked in the literature for variations in entry into entrepreneurship between booms and busts, and for hysteresis effects associated with in either. By comparing entry in the years 2007 and 2009, where the former clearly was a boom, and the latter as clearly a bust year, we do not find any significant difference between the two years—neither in the entry pattern nor in the resulting growth pattern we associate with success, and this neither without, nor with our many controls.

Our paper obviously relates to the literature on who becomes an entrepreneur. With respect to prior labor market status, Astebro, Chen and Thompson (2011) show with Korean data that entrepreneurs are drawn from the tails of the prior earnings distribution. Fairlie and Fossen (2020) distinguish essentially only between business creation out of unemployment and out of dependent employment to show that business creation out of the latter is more successful. Choi (2018) provides more detail by showing that dependent workers with higher outside options take greater risks in creating a new firm and thus exhibit a more up-orout firm dynamics, but doesn't relate this back to easy-to-observe aggregates as we do. Guzman and Stern (2020), Levine and Rubinstein (2017) and Astebro and Tåg (2017) are similar to our approach by arguing for another aggregate proxy for success, namely incorporation. In support of this, Levine and Rubinstein

¹Guzman and Stern (2020) show that characteristics founders decide on at the time of firm creation such as the legal form of an enterprise, the firm name and trademark or patent applications are related to the firm's quality as indicated by the probability of an

(2017) carefully demonstrate that in their data this legal form reflects the nature of the planned business activity, and not simply the ex post success of the business. They do not, however, go into much detail w.r.t. post-entry indicators of success. Gendron-Carrier (2025) focuses on young entrepreneurs and micro-aspects. We do not discriminate by age. Furthermore, the micro-aspects considered by him are not easy to observe. Harju, Juuti and Matikka (2024) also documents a similar pattern as we do, but does not have as comprehensive controls for other determinants of entrepreneurship. As to business cycle effects, we relate mainly to Sedláček and Sterk (2017) who, contrasting our results, argue for positive hysteresis effects on firm growth due to product portfolio selection when firms are born in the boom. The difference may be due to the fact that the selection into *successful* entrepreneurship is so much determined by previous employment status, at least by inference from our data.

Summarizing, beyond much of the literature, we focus on successful entry, with success identified by survival, firm size, firm assets, and firm productivity. Our contribution to that literature is to document that prior labor market status—primarily income received as dependent employee—dominates many of the factors considered relevant in that literature for successful entry into entrepreneurship. Thus, prior labor market status appears to be an excellent proxy for ability, a latent variable, and an aggregator of other factors contributing to successful firm creation.

That prior labor market status is an important factor correlated with selection into successful entrepreneurship has clear policy implications. Employment status and position in the income distribution prior to starting a firm are predictors that are not only easily observable relative to most other potential alternatives, but also not easily manipulable by the potential entrepreneur. Thus it is much easier to condition policies to foster entrepreneurship on these easily observable rather than other potentially relevant entrepreneurial characteristics such as talent (however observed), wealth, risk aversion or other personality traits. Other proxies, such as the legal status of a firm, may be manipulable ex ante in anticipation of supporting state activity based on this proxy. Our results suggest that targeting entrepreneurship policies to support entrepreneurs that already perform well in the labor market could help to foster high growth entrepreneurship—and this

independently of the business cycle.

2 Data

2.1 Data sources

We leverage administrative data procured from various databases maintained by Statistics Sweden, the institution responsible for national official statistical data. We combine selected data sets by using unique individual, household-, firm- and establishment-level identifiers. This combination enables us to trace in unique detail the individuals' employment history together with their characteristics correlating with entrepreneurship at the individual level and entrepreneurial success at the firm level.

We extract *individual founders* and their characteristics primarily from the Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA), which amalgamates data from government registers, such as tax records, population registers, and comprehensive surveys. It encapsulates annual information at the individual level for the universe of people registered in Sweden who are at least 15 years old.

The data spans from 1990 to 2017. They provide granular individual-level information on a myriad of variables, amongst them variables on employment details like wages and other income, unemployment days, and entrepreneurship identifiers. In addition, demographic information such as age, gender, educational attainment, current student status at a university level, immigration status, and municipality of residence are reported.

We complement these data with information procured from Statistics Sweden's Wealth Register. Covering the period from 1999 to 2007, this register includes information on individual total wealth, holdings of risky assets, cash balances, and outstanding debt. We further add the employment history of parents, as well as data from military records. The latter include the Swedish military enlistment tests, asking the enlisted questions evaluating their cognitive and non-cognitive ability. Unfortunately, the latter data cover only males.

For the *entrance of firms*, we extend the LISA data set with performance-related data from the Structural Business Statistics (FEK) database. The FEK database comprehensively covers all active firms with employees within Sweden's jurisdiction, including data on sector, ownership status, productivity metrics (measured in terms of value added per employee), and total assets. This data is available for the years 1997 to 2017. Our sample thus covers the 8 252 756 male Swedish population aged 20 to 55 living between 1999 and 2007 in Sweden, and 74 083 firms created by them. The period reflects the intersection of all datasets w.r.t. time period covered, that include the relevant indicators.

2.2 Definitions

Our definition of an *entrepreneur*, also called *founder* is that of Statistics Sweden, which is based on asset ownership and firm income. An individual is registered as an entrepreneur according to Statistics Sweden in year t but not in year t-1 if entrepreneurial activity in t is his main source of income, but this was not the case in t-1.

A new *firm*, characterized as sole proprietorship or limited liability company, is considered an *entrant* in year t if each establishment within this firm has not been registered before and each establishment has registered employees for the first time in year t. An entrant is called successful if still existing in year t + 3 with at least five employees, including the firm's founder. *Entry* and *successful entry* are binary and our main dependent variables. Additionally, we use *firm size* measured as the number of employees, including the firm's founder, the firm's *total assets*, and *labor productivity* as dependent variables. Labor productivity is measured as value added per employee, with value added being the difference between production value and production cost winsorized at the 95th/5th percentile. These additional firm success indicators are continuous variables.

We investigate the probability of becoming a (successful) entrepreneur in year t from employment status in year t-1, as differentiated into 13 mutually exclusive segments:

- 1. people out of the labor force in year t-1
- 2. people with at least one unemployment day in year t-1

- 3. people working and never registering for unemployment in year t-1, partitioned into deciles by current labor income. The decile boundaries are specified for all individuals with positive income from dependent employment living in Sweden from 1990 to 2017.
- 4. people who are entrepreneurs in year t-1. We call them *serial entrepreneurs* if founding a firm in year t.

The unit of observation is the individual founder. If a team starts a firm, each founder is classified into a segment according to his/her current labor market status.

It is well known that entering entrepreneurship and entrepreneurial success are strongly related to individual characteristics and resource access. Therefore, we evaluate prior labor market status in the context of other characteristics for success determinants, namely

- Age (squared): a continuous measure of the entrepreneur's age and age squared at firm birth.
- Entrepreneurial Experience: a binary measure specifying whether an individual previously has been categorized by Statistics Sweden as an entrepreneur involving a different firm (measured from 1990 onwards).
- Management Experience: a binary measure for previous managerial positions based on Swedish SSYK/ISCO codes (measured from 2001 onwards).
- Entrepreneurial Parents: a binary measure capturing whether at least one parent was previously categorized as an entrepreneur (measured from 1990 onwards).
- (Non-)cognitive skills: cohort-standardized scores of cognitive and non-cognitive skills from the Swedish military draft.
- Net wealth: a continuous measure of net wealth in SEK from the wealth register.
- Risky share of assets: a continuous measure on capturing the risky share of the stock portfolio. Risky
 assets are defined as financial assets minus cash and the risky share is set to zero for people with no
 risky assets or cash.

We cluster standard errors at the firm level to account for firms founded by a team, and thus appearing multiple times in the data. As our observation period from 1999 to 2007 covers economic turmoil, we include year-fixed effects.

2.3 Sample descriptives

Table 1 Panel A contains descriptives at the firm level and Panel B and C at the individual level. In Panel A we report on firm entry and exit and success indicators used here: number of employees, total assets, and labor productivity.² More than 73.000 firms entered in the relevant time interval, with on average 1.83 employees including the founder, almost 1.5 million SEK in total assets, and a labor productivity of about 450.000 SEK per employee (Column 1). The later exitors entered with on average less employees and assets, but slightly higher labor productivity (Column 2). This pattern is shared by the surviving but, by our criterion, unsuccessful firms (Columns 3). Their status improved slightly three years later (Column 4). Note, however, the substantive increase in labor productivity. In stark contrast, the successfully surviving firms started with 5.2 employees and in three years more than doubled their employment. They started with almost 2.5 fold the assets of all entrants, and increased these assets to 4-fold (close to 6.0 million SEK). Somewhat surprisingly, however, their initial labor productivity was slightly below average; but it increased to 25 % above the average after three years (Columns 5 and 6).

Panel B of Table 1 refers to the potential and actual entrepreneurs. The potential consists of our entire sample involving more than 8.257 m individuals, summarized over all observation years. 87.5 % of these individuals remain dependent employees, 11.5 % are already entrepreneurs, and .95 % are founders. In turn, of these founders, about 87 % are unsuccessful, and only 12 % are successful. The latter are the focal ones here.

In the rows below we differentiate these cohorts by labor market status in the year before firm birth. We distinguish between the standard categories *Out of Labor Force*, *Unemployed* and *Entrepreneurs* (self-employed), but differentiate the dependent employees by decile of income received. From the mean income

²Means on total assets and labor productivity for all firms for which information was available (missing information concentrating on small firms).

decile the share of founders increases monotonically, and the subset of successful ones increases monotonically from the very lowest income decile. Interestingly, the share of (successful) founders from the top income decile is *not* topped by the founders out of entrepreneurship.

In Panel C we summarize aggregates of individual traits that typically are thought of as determinants of (successful) entrepreneurship. When comparing, e.g., the very first and last columns showing averages involving all sample individuals and successful founders, respectively, we see that the successful founders are younger, much more entrepreneurially and also more managerially experienced, have a slightly larger share of entrepreneurial parents, and exhibit substantively higher cognitive and especially higher non-cognitive skills, but surprisingly are endowed with 10 % lower net wealth and a 2.5 % smaller share of risky assets.

Amongst the descriptives in between the two extreme columns, notice that the proportion of founders exhibiting entrepreneurial experience is not much higher than that of dependent employees. Still, the entrepreneurial experience amongst the successful founders is higher more than twice. Unsurprisingly, net wealth at t-1, i.e., one year before firm was founded, concentrates amongst the then entrepreneurs. What is surprising, however, that both the population average net wealth and that of the unsuccessful entrepreneurs is higher than that of the successful ones. The founders seem also not to be particularly risk-prone, as indicated by a lower than average share of risky assets.

3 Analysis

3.1 Prior labor market status and entrepreneurship

Following and extending the last column of Table 1, Figure 1 visualizes, with entering firms rather than individuals as a basis, that prior labor market status of new entrepreneurs is a strong correlate of subsequent firm success. Panel A gives the success rate, Panel B firm size, Panel C assets and Panel D labor productivity per labor market status of potential entrepreneurs.

Panel A indicates that entrepreneurs from the top income decile are about four times as likely to start successful firms, relative to entrepreneurs from the bottom three income deciles. The increase in success-

fulness is also reflected in the ensuing Panels B, C and D, by the correlation with our other measures of firm success. Firms started by entrepreneurs from higher income deciles are larger at the outset regarding employment and assets (Panels B and C). The monotonic increase by income decile is reinforced in the top cohort deciles. Indeed, the top decile firms in each cohort drive much of the effects, and in particular the very successful firms in this group. Even within the top decile it is the top firms that drive up the average. No matter how we slice the data within this decile, the firm size/success distribution is heavily skewed even within narrow groups. This is reflected in the observation that median employment in the year *t* the firm was created remains essentially the same across all prior employment status categories at slightly above one, and three years later it continues to stay unchanged in the bottom eight income cohorts, but moves up to two employees only in the top two income cohorts. By contrast, the growth in the median volume of assets in the three year period is monotonic. Turning to Panel D, the mean productivity of firms by unit labor employed is not increasing quite as strongly, but almost monotonically. And the median is close to the mean, implying that the distributions per cohort and their moves across time are not as strongly driven by the top decile.

The picture is not much distorted by the successful founders from out of labor force and the unemployed. It is not surprising to see that the experience reflected in serial entreprenourship contributes to entry being successful (last entry Panel A), but that does not carry over to firm size and growth, nor to assets or labor productivity.

3.2 Accounting for other characteristics

We next investigate the additional contribution to predicting (successful) entrepreneurship of the individual characteristics exhibited in Panel C in Table 1, controlling for the cohorts indicating labor market status. Table 2 contains OLS regressions involving the probability of founding a firm and the probability of being successful conditional on founding it, first as dependent on labor market status (Columns 1 and 4); then as dependent on the individuals' characteristics (Columns 2 and 5); and third, as dependent on both (Columns 3 and 6). As to the relative impact of labor market status, we take the 5th income decile as the reference category. For example, the inclination of an individual belonging to the 10th income decile to become a

founder shrinks by almost 5.2 % relative to that of a member of the 5th decile. That inclination shrinks for all income deciles above, and increases for all income decile below the 5th decile.

It is most interesting to see that in Column 4, the signs are inverted throughout when it comes to the success of these newborn firms. While the inclination to become an entrepreneur decreases in the upper half of the income cohorts relative to that in the lower half, the success rate increases in the upper half. It is only topped by the success rate of serial entrepreneurs. This very clear picture remains undistorted by the addition of potential founder characteristics in the first set, and of actual founder characteristics in the second set of regressions. The only "distortion" of the picture due to the addition of the personal traits is the enhancement in the serial entrepreneurs dummy in the success regression.

In Figure 2, we display this pattern graphically. In Panel A we show the coefficient plots for Columns 1 and 3, and in Panel B those for Columns 4 and 6. Relative to our reference category, we see for individuals from out of the labor force a .5 % higher probability of entering into entrepreneurship, a close to 1 % higher one for formerly unemployed individuals, a sightly smaller increase for for individuals formerly employed in the first income decile, and about a .4 % increase for those in the second to the fourth income decile. In contrast, individuals from the upper tail of the distribution and entrepreneurs are up to almost 1% less likely to be entrants into entrepreneurship. Panels C-E show results for our other successful entrepreneurship outcomes measured by number of employees, total assets, and labor productivity. The pattern remains the same.

The individual characteristics such as age, educational attainment, managerial experience, ability, wealth, and risk aversion that have been found elswhere to predict entrepreneurial success (and that feature in key theory contributions) are likely directly related to the wage premia. Given the high correlation between labor market status and entrant success, however, a central question remains whether labor market status *per se* correlates firm success, or labor market status is just correlated with these other characteristics found to influence that success.

We can directly investigate this question by regressing the various measures of entrepreneurial success on labor market status and other entrepreneurial characteristics. If the correlation between labor market status and entrepreneurial success would capture the effect of other characteristics, we should expect the coefficients on labor market status to move towards zero, and become insignificant once we include the other characteristics in the regression. From Figure 2, we can infer that this appears not to be the case. Panels A-E show that estimates with and without individual controls are closely overlapping, indicating that labor market status itself is a significant and strong predictor of entrepreneurial success.

We also investigate whether the pattern we have found varies across the business cycle. We identify 2007 as a typical boom, and 2009 as a typical bust year. For these regressions, we need to exclude wealth and risk aversion since data is not available on these variables for the year 2009. Figure 3 is organized as Figure 1, with Panels E and F added that are related to founding individuals rather than entering firms. It displays coefficients from a regression interacting the prior labor market status dummies with a bust dummy: by this we can infer the difference in the relevant magnitudes between boom and bust years for each prior labor market status. We observe no significant difference between boom and bust periods.

4 Concluding summary

By combining and analyzing a wealth of Swedish microdata at both the individual and the firm level, we have shown that potential entrepreneurs' success as dependent employees is strongly correlated with their success as entrepreneurs, measured by a combination of survival and growth indicators. Dependent employees with earnings in the top deciles of the income distribution are multiple times more likely to create successful firms than those from the lowest deciles. Their firms are larger and more productive at the outset, and this effect intensifies over time.

This correlation remains unaffected by including the entrepreneurs' age, wealth, risk aversion, ability, management experience, and entrepreneurial experience (own and parents) in the analysis. And it does not vary across the business cycle. This suggests increased attention to policies to that support entrepreneurship among individuals that are already successful as dependent employees.

References

- **Astebro, Thomas and Joacim Tåg**, "Gross, net, and new job creation by entrepreneurs," *Journal of Business Venturing Insights*, 2017, 8, 64–70.
- _ , **Jing Chen, and Peter Thompson**, "Stars and Misfits: Self-employment and Labor Market Frictions," *Management Science*, 2011, *57* (1), 1999–2017.
- **Choi, Joonkyu**, "Entrepreneurial Risk-Taking, Young Firm Dynamics, and Aggregate Implications," *Working Paper*, 2018.
- **Decker, Ryan A, John Haltiwanger, Ron S Jarmin, and Javier Miranda**, "Where has all the skewness gone? The decline in high-growth (young) firms in the US," *European Economic Review*, 2016, 86, 4–23.
- **Dunn, Thomas and Douglas Holtz-Eakin**, "Financial Capital, Human Capital, and the Transition to Self-Employment: Evidence from Intergenerational Links," *Journal of Labor Economics*, April 2000, *18* (2), 282–305.
- **Evans, David S. and Boyan Jovanovic**, "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," *Journal of Political Economy*, 1989, 97 (4), 808–827.
- **Fairlie, Robert W and Frank M Fossen**, "Opportunity versus Necessity Entrepreneurship: Two Components of Business Creation," in "Change at Home, in the Labor Market, and On the Job" Research in Labor Economics, Bingley: Emerald Publishing Limited, 2020, pp. 253–289.
- **Gendron-Carrier, Nicolas**, "Prior Work Experience and Entrepreneurship: The Careers of Young Entrepreneurs," *Journal of Labor Economics*, January 2025, p. 734527.
- **Guzman, Jorge and Scott Stern**, "The State of American Entrepreneurship: New Estimates of the Quantity and Quality of Entrepreneurship for 32 US States, 19882014," *American Economic Journal: Economic Policy*, November 2020, *12* (4), 212–43.

- Harju, Jarkko, Toni Juuti, and Tuomas Matikka, "Stairway to Heaven? Selection into Entrepreneurship, Income Mobility and Firm Performance," Technical Report FIT Working Paper 17 2024.
- Hurst, Erik and Annamaria Lusardi, "Liquidity Constraints, Household Wealth, and Entrepreneurship,"
 Journal of Political Economy, April 2004, 112 (2), 319–347.
- _ and Benjamin Wild Pugsley, "What do small businesses do?," Brookings Papers on Economic Activity, 2011, pp. 73–143.
- **Hvide, Hans K. and Georgios A. Panos**, "Risk Tolerance and Entrepreneurship," *Journal of Financial Economics*, January 2014, *111* (1), 200–223.
- **Kihlstrom, Richard E. and Jean-Jacques Laffont**, "A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion," *Journal of Political Economy*, August 1979, 87 (4), 719–748.
- **Levine, Ross and Yona Rubinstein**, "Smart and Illicit: Who Becomes an Entrepreneur and Do They Earn More?," *The Quarterly Journal of Economics*, 2017, *132* (2), 963–1018.
- **Lindquist, Matthew J., Joeri Sol, and Mirjam Van Praag**, "Why Do Entrepreneurial Parents Have Entrepreneurial Children?," *Journal of Labor Economics*, April 2015, *33* (2), 269–296.
- **Lucas, Robert E.**, "On the Size Distribution of Business Firms," *The Bell Journal of Economics*, 1978, 9 (2), 508.
- **Sedláček, Petr and Vincent Sterk**, "The Growth Potential of Startups over the Business Cycle," *American Economic Review*, 2017, 107 (10), 3182–3210.
- **Vereshchagina, Galina and Hugo A Hopenhayn**, "Risk-taking by Entrepreneurs," *American Economic Review*, 2009, 99 (5), 1808–30.

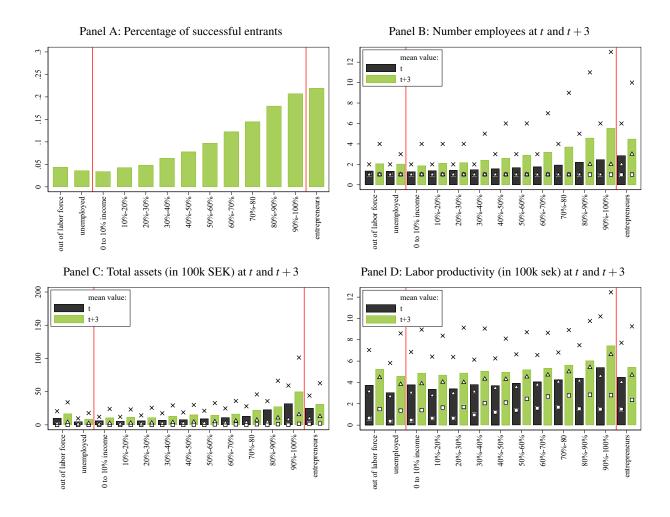


Figure 1: Entrants by previous labor market status

This figure displays entrants by previous labor market status. In Panels B-D, the black bars provide the means at t, while the green bars provide means at t+3. Squares (\square) provide values at the 10th percentile, triangles (\triangle) at the 50th percentile, and crosses (\times) at the 90th percentile of the distribution.

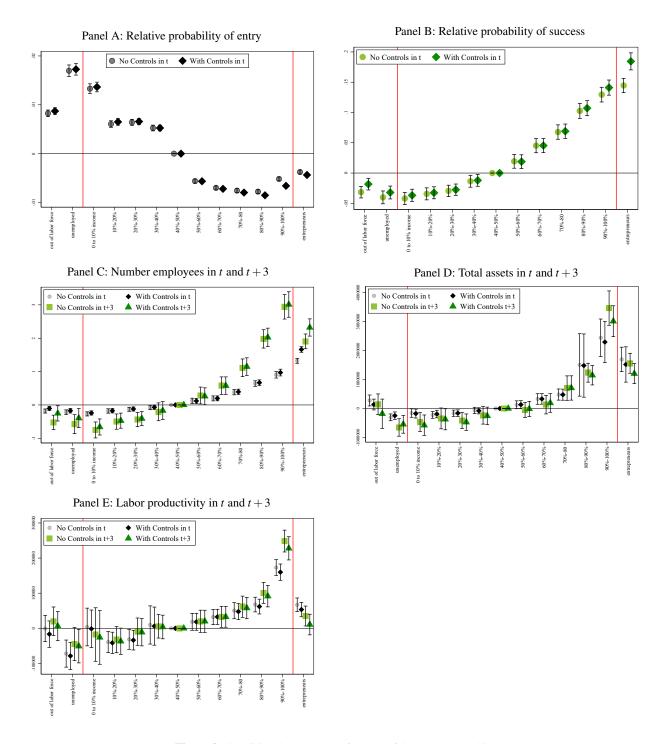


Figure 2: Conditional percentage of (successful) entrepreneurship

This figure displays regression coefficient plots for various outcomes of successful entrepreneurship. Panel A displays coefficients corresponding to Table 2 Columns 1 and 4, Panel B corresponds to columns 3 and 6, Panel C uses number of employees as an outcome, Panel D total assets in 10,000 SEK, and Panel E labor productivity, but othervise the regression specification is identical to that in Table 2 Columns 3 and 6.

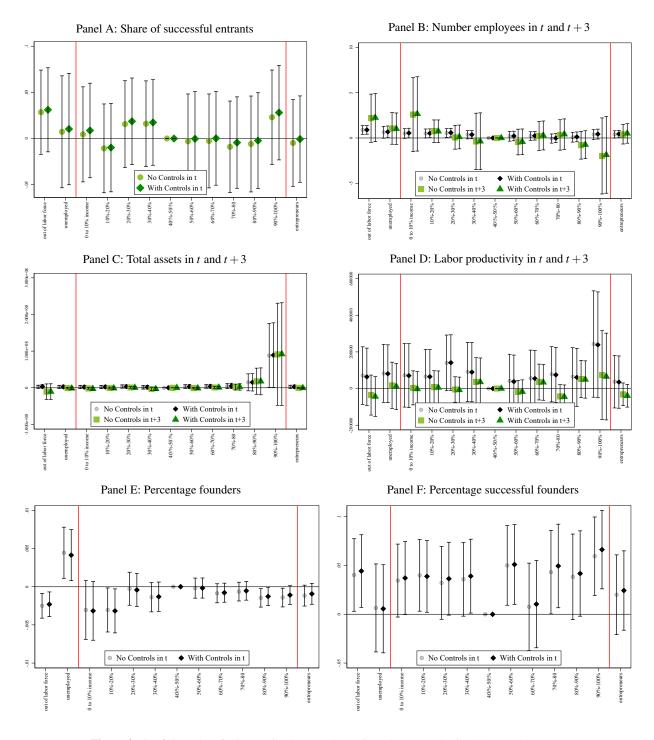


Figure 3: Coeficient plots for interaction between boom/bust dummy and prior labor market status

This figure displays coefficient plots of the interaction term of boom (one if year is 2007 and zero if year is 2009) with prior employment status with either including or not including the set of individual characteristics as controls. We only include the years 2007 and 2009 in the sample. All coefficient plots are in relation to individuals from 40% to 50% income distribution. The figure shows that there is no clear variation across the business cycle in terms of entry from different parts of the prior labor market status distribution.

Table 1: Characteristics of entering firms and potential entrepreneurs

This table provides descriptives on our sample. Panel A describes characteristics of entering (new) firms. Panel B describes the prior labor market status of the entire individual level sample. The non-entrepreneurs are all individuals that are not entrepreneurs in t-1 nor become entrepreneurs in t, whereas the entrepreneurs are all entrepreneurs in t-1 that do not become entrepreneurs in t with a new venture, and founders are all individuals that become entrepreneurs in t. Panel C describes the key characteristics of the individuals in our sample.

Panel A: Entering Firms	Entrants At t	Exitors Before t+3	Surviving but I Status at t	Unsuccessful Status at t+3	Surviving and Successful Status at t Status at t+3		
	1111	Beloic	Status at t	outus ut 115	Status at t	buttus ut 115	
Number Employees/Firm	1.83	1.39	1.4	1.52	5.18	11.3	
	(2.05)	(1.35)	(1.15)	(.882)	(3.77)	(12.6)	
	73265	20475	65068	37415	8197	8197	
Total Assets (100 tsd. SEK)	14.8	11.6	11.9	13.9	36.5	59.1	
Total Assets (100 tsd. SEK)	(181)	(330)	(185)	(89.2)	(152)	(134)	
	65571	17009	57755	35759	7816	8079	
T. I. D. I							
Labor Productivity (100 tsd. SEK)	4.46	4.57	4.59	5.98	4.17	5.55	
	(4.71)	(5.18)	(4.92)	(4.98)	(4.18)	(3.61)	
	23270	2909	16200	14999	7070	8014	
Number of Firms	73265	20475	65068	37415	8197	8197	
Share of Observations	100	27.9	88.8	51.1	11.2	11.2	
Panel B: Potential Entrepreneurs	All	Non-Founders	Entrepreneurs	Founders	Unsuccessful Founders	Successful Founders	
Number Potential Founders	8257070	7226054	952619	78397	68516	9881	
Share of Observations	100	87.5	11.5	.949	.83	.12	
	100	01.3	11.3	.747	.03	.12	
Labor Market Status		0.00		00054#	000515	000000	
Out of Labor Force	.0287	.028	0	.000645	.000617	.000028	
	(.167)	(.165)	(0)	(.0254)	(.0248)	(.00529)	
Unemployed	.0105	.0102	0	.000319	.000308	.0000116	
	(.102)	(.1)	(0)	(.0179)	(.0175)	(.00341)	
0 to 10% Income	.0135	.0132	0	.000367	.000354	.0000126	
	(.116)	(.114)	(0)	(.0192)	(.0188)	(.00355)	
100/ 200/	.0269	.0264	0	.000517	.000494	.0000223	
10%-20%							
	(.162)	(.16)	(0)	(.0227)	(.0222)	(.00472)	
20%-30%	.0337	.033	0	.000662	.00063	.000032	
30%-40%	(.18)	(.179)	(0)	(.0257)	(.0251)	(.00565)	
	.0377	.037	0	.000697	.000652	.0000447	
	(.19)	(.189)	(0)	(.0264)	(.0255)	(.00668)	
40%-50%	.0459	.0453	0	.000605	.000557	.0000471	
	(.209)	(.208)	(0)	(.0246)	(.0236)	(.00686)	
50%-60%	.0762	.0756	0	.000573	.000517	.0000557	
60%-70%	(.265)	(.264)	(0)	(.0239)	(.0227)	(.00746)	
	.112	.112	0	.00069	.000605	.0000847	
	(.316)	(.315)	(0)	(.0263)	(.0246)	(.0092)	
70%-80%	.14	.139	0	.000781	.000667	.000113	
	(.347)	(.346)	(0)	(.0279)	(.0258)	(.0106)	
80%-90%	.163	.163	0	.00088	.000722	.000158	
	(.37)	(.369)	(0)	(.0297)	(.0269)	(.0126)	
90%-100%	.195	.193	0	.00156	.00123	.000323	
	(.396)	(.395)	(0)	(.0394)	(.0351)	(.018)	
Entrepreneurs	.117	0	.115	.0012	.000939	.000264	
	(.321)	(0)	(.319)	(.0347)	(.0306)	(.0162)	
Panel C: Individual Characteristics							
Age	38.4	38.1	41.2	37.2	37.3	36.3	
<i>6</i> -	(8.17)	(8.22)	(7.29)	(7.69)	(7.76)	(7.07)	
Entrepreneurial Experience	.00415	0	.0305	.00458	.00375	.0103	
	(.0643)	(0)	(.172)	(.0675)	(.0611)	(.101)	
Management Experience							
	.0464	.05	.0232	.0436	.0402	.0673	
	(.21)	(.218)	(.15)	(.204)	(.196)	(.251)	
Entrepreneurial Parents	.0881	.0878	.0901	.0876	.0872	.0902	
	(.283)	(.283)	(.286)	(.283)	(.282)	(.286)	
Cognitive Skills	.119	.122	.0845	.171	.167	.198	
	(.971)	(.976)	(.936)	(.959)	(.961)	(.941)	
Non-Cognitive Skills	.115	.106	.173	.186	.169	.305	
11011 COGINGIVE SKINS							
NY . WY 1.1	(.957)	(.958)	(.939)	(.978)	(.983)	(.937)	
NI - 4 XVI - Idl	572227			678653	702544	512990	
Net Wealth	572337	474761	1212736				
	(4648167)	(4102049)	(6190056)	(2791891)	(2841031)	(2417542)	
Net Wealth Share of Risky Assets							

Table 2: Percentage (successful) founders per employment status

This table reports OLS regressions explaining entry (Columns 1-3) and successful entry (Columns 4-6). Successful entry corresponds to the firm surviving until t+3 and having at least five employees. The standard errors are clustered at the firm level.

	Relative probability of entry			Relative probability of success			
	(1)	(2)	(3)	(4)	(5)	(6)	
Prior Labor Market Status							
Out of labor force	.00825		.00871	0315		0182	
	(.000348)		(.000348)	(.00477)		(.00481)	
Unemployed	.017		.0173	0402		0321	
1 2	(.000607)		(.000606)	(.00529)		(.00532)	
0 to 10% income	.0133		.0136	042		0367	
	(.000507)		(.000507)	(.00504)		(.00507)	
10%-20%	.00606		.0065	0343		0325	
	(.000343)		(.000347)	(.00491)		(.00494)	
20%-30%	.00641		.00657	0294		0275	
	(.00032)		(.00032)	(.00478)		(.00478)	
30%-40%	.00525		.00525	0135		012	
	(.000303)		(.000303)	(.00499)		(.00498)	
40%-50%	Reference		Reference	Reference		Reference	
	category		category	category		category	
50%-60%	00562		00565	.0194		.0188	
	(.000215)		(.000215)	(.00574)		(.00573)	
60%-70%	007		0072	.0453		.0454	
	(.000202)		(.000203)	(.00577)		(.00576)	
70%-80%	00757		00796	.0677		.0692	
	(.000198)		(.000199)	(.0058)		(.00579)	
80%-90%	00777		00852	.103		.107	
	(.000195)		(.000198)	(.00589)		(.0059)	
90%-100%	00518		00659	.13		.142	
	(.000198)		(.000208)	(.00521)		(.00539)	
Entrepreneurs	00376		00436	.145		.154	
•	(.000207)		(.000213)	(.00563)		(.0057)	
Individual Characteristics							
Cognitive Skills		.000295	.000469		00161	00998	
		(.0000371)	(.0000384)		(.00129)	(.00129)	
Non-Cognitive Skills		.000619	.00115		.0154	.00796	
		(.0000389)	(.0000398)		(.00125)	(.00123)	
Age		.000701	.00185		.0148	.00468	
		(.0000365)	(.0000394)		(.00137)	(.00135)	
Age squared		0000118	0000254		00022	000106	
		(4.67e-07)	(4.99e-07)		(.0000177)	(.0000175	
Entrepreneurial Experience		.000838	.000524		.169	.0696	
		(.00055)	(.000557)		(.0237)	(.024)	
Entrepreneurial Parents		0000949	0000997		.00466	.00624	
		(.000119)	(.000118)		(.00421)	(.00412)	
Management Experience		000619	.000808		.0814	.0435	
		(.000159)	(.000165)		(.00698)	(.007)	
Net Wealth		6.36e-11	5.82e-11		-2.11e-09	-2.57e-09	
G1		(2.56e-11)	(2.39e-11)		(5.35e-10)	(6.03e-10	
Share of Risky Assets		00214	00236		.00876	.0115	
G	0121	(.0000887)	(.0000889)	110	(.0029)	(.00284)	
Constant	.0121	.000858	0181	.112	0879	.0695	
37 PE	(.000209)	(.000691)	(.000761)	(.00542)	(.0258)	(.0258)	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	8382409	8382409	8382409	78397	78397	78397	
LHS mean	.00935	.00935	.00935	.126	.126	.126	
R^2	.00323	.000606	.00389	.0456	.0114	.0541	