

Returns to Skills in Self-Employment: Entrepreneurs as "Jack-of-all-Trades"*

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Abstract

[Preliminary and incomplete - Do not quote]

This paper provides strong empirical support for the hypothesis that entrepreneurs are "Jack-of-all-Trades". We measure entrepreneurs as self-employed and as managers. In both cases, we find that returns to schooling increase significantly with previous experience in wage employment, which we use as a proxy for skills accumulated through learning-by-doing. Without experience from wage work, the returns to schooling are virtually non-existing. The applied measure of experience is "actual experience"; not "potential experience" which is typically relied on in the literature.

Keywords: Education, experience, complementarity, entrepreneurs
JEL: I21, J24, J4

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1 Introduction

This paper deals with return to skills in entrepreneurship. The main idea is that general skills – not specific skills – are required for economic success as an entrepreneur. More precisely, it is investigated whether entrepreneurs have higher income if they have a balanced set of skills compared to an unbalanced set. The set of skills is measured by two skills types: Skills generated through formal schooling and skills generated through learning-by-doing.

We find substantial empirical support for the hypothesis that a balanced set of skills is important for success in entrepreneurship; not an unbalanced set of skills. More precisely, the interaction term between the applied proxies for the two skill types enters positively and significantly in explaining income. Without the interaction term, the effects of formal schooling are found to be negligible.

The hypothesis that a balanced set of skills is important for economic success in entrepreneurship was suggested by Lazear (2004):

"Entrepreneurs perform many tasks. Consider the founder of a new small restaurant. In addition to being a good cook, the founder must be able to obtain funds, hire workers, choose location and decor, obtain food supplies at a reasonable cost, keep books and market the restaurant. Being a good cook is insufficient for success. In order to hire someone to perform the other tasks, it is necessary to have at least some basic knowledge of the outsourced area so that the right vendor decisions are made. As a consequence, entrepreneurs must be jacks-of-all-trades to some extent. Although they need not be expert in any single skill, they must be sufficiently good at a wide variety to make sure that the business does not fail. There is a "weakest link" feature to running a successful business, which means that entrepreneurs must be multi-skilled."

To investigate this hypothesis, we need some measure of skills. In our theoretical analysis, we think of total skills as a combination of two skill types: Skills obtained through formal schooling and skills acquired through learning-by-doing. In the empirical analysis, we use years of education as a proxy for skills acquired in formal schooling and job experience as a proxy for

skills generated through learning-by-doing. The former proxy is the standard measure applied in the literature, see for example Card (1999). The latter proxy is usually not included in this literature.

Using job experience as a proxy for skills acquired through learning-by-doing is motivated by the idea that individuals can learn a wide variety of skills by performing new tasks on the job. Especially, it seems plausible that potential entrepreneurs can acquire new skills in wage employment under supervision or by observing how other individuals perform tasks. The cook, for example, who wants to found a new small restaurant may gain important insight into the operation of a restaurant by being employed in a similar restaurant before going independent.

Danish data are well suited for addressing this issue. The reason is that measures of labour experience at the individual level can be constructed as measures of "actual" experience; not "potential" experience calculated as age minus education length minus 6 years. Due to data limitations, "potential" experience is the typical measure used in the literature.

In the Danish labor accounts, information on employment status is recorded for the individual such that we know whether individuals are engaged in wage-employment or self-employment each year. This implies that we can construct measures of total experience, experience in wage work, and experience in self-employment. These experience measures are then used as proxies for skills acquired through learning-by-doing. In addition to using experience in wage work and self-employment, we also have information about the type of job when wage employed. Finally, we also have information on whether self-employed individuals have employees.

Using job experience as a proxy for skills obtained through learning-by-doing is related to a measure used by Lazear (2005), who uses the number of occupations held by individuals between graduation and entry into entrepreneurship as a proxy for skills acquired in learning-by-doing.¹

Another empirical challenge is to identify the entrepreneurs. As our first measure, we use self-employed individuals. This is a standard measure of entrepreneurs used in the literature. The measure can be criticized for not capturing the owners/managers of incorporated firms; see Iversen, Jørgensen and Malchow-Møller (2008). To accommodate this weakness, we also apply an

¹Lazear (2005) studies the hypothesis that Stanford MBA's are more likely to become entrepreneurs if they have general on-the-job training. We do not focus on the choice of becoming an entrepreneur but rather on the success of entrepreneurs as measured by income.

alternative measure of entrepreneurs, namely the managers in firms. Lazear (2005) also argues that self-employed and managers possess the same types of skills, see for example Lazear (2005). Another advantage of the manager measure of entrepreneurs is that income is more easily measured for this group as they are formally wage employed.

The rest of the paper is structured as follows. In Section 2, we briefly review the existing literature, while Section 3 presents the theoretical model. The data and the empirical strategy are presented in Section 4. Section 5 contains the empirical results and Section 6 concludes.

2 Literature

A number of studies have previously analysed returns to schooling in self-employment and entrepreneurship. These studies have recently been summarized in a meta analysis by van der Sluis et al. (2008), who find an average return of 6.1% for those studies using years of education as the measure of educational attainment. This return is found using standard Mincer regressions with a linear term to capture the effects of education and corresponds well with the return to education found in wage work. In a recent study, van der Sluis et al. (2007) even find that returns to education are almost twice as high for entrepreneurs as for wage workers.

Iversen, Malchow-Møller, and Sørensen (2008), however, challenges the idea that returns to schooling in self-employment are similar to (or larger than) the returns to schooling in wage employment using detailed data from the Danish labor market. They show that an estimated average return to schooling of 6.5% per year hides substantial differences across different educations. Specifically, they find a highly non-linear relationship with very low returns to most educations in self-employment. The exceptions are a few specialized graduate levels of education (doctors and lawyers).

Wagner (2003) have previously tested the jacks-of-all-trades hypothesis on German data using the number of different kinds of professional training as well as the number of changes of profession as measures of the generality of skills. He finds that these measures increase the probability of self-employment. However, more recently, Silva (2007) finds that gathering expertise across various subjects does not increase the chances of becoming entrepreneur.

To our knowledge, the present paper is the first to test whether jacks-of-

all-trades have higher returns in entrepreneurship.

3 Model

Lazear (2004, 2005) argues that entrepreneurs are generalists in the sense that it is the weakest qualification that determines the earnings potential. Wage workers, on the other hand, are specialists in the sense that the strongest qualification determines their earnings potential. Following Lazear (2005), the income of entrepreneurs, r , is determined by:

$$\ln r = \min(S, X) \tag{1}$$

where S and X are two types of skills. Income for wage workers are determined by a similar specification:

$$\ln w = \max(S, X) \tag{2}$$

where w is the wage.

The consequence of these specifications is that the two skill types are complements for entrepreneurs, whereas they are competing factors in wage work. This is illustrated in Figure 1 below that graphs the evolution of earnings for an entrepreneur (upper panel) and wage worker, in the formal-schooling (x_1) and leaning-by-doing (x_2) skills space.

<Figure 1 about here>

The figure shows that the earnings of an entrepreneur (y) increases with learning-by-doing skills until $x_1 = x_2$, while the wage workers earnings are constant ($y = x_1$) until $x_1 = x_2$.

4 The Empirical Framework

4.1 The General Specification

In the empirical analysis below, we use more flexible functional forms of (1) and (2) and estimate the return to education using a standard functional

form with an interaction term:²

$$\ln y = \beta_0 + \beta_1 S + \beta_3 X + \beta_4 X^2 + \beta_5 SX + \mathbf{W}\boldsymbol{\gamma}' + e, \quad y \in (r, w) \quad (3)$$

where \mathbf{W} is a vector of socio-demographic variables.

We also use a more flexible form for estimation purposes, namely, the translog formulation of the returns to skills:

$$\ln y = \beta_0 + \beta_1 S + \beta_2 S^2 + \beta_3 X + \beta_4 X^2 + \beta_5 SX + \mathbf{W}\boldsymbol{\gamma}', \quad y \in (r, w) \quad (4)$$

The coefficient of main interest is β_5 . According to (1), experience and schooling are expected to be complements for entrepreneurs, which will result in a positive β_5 . The coefficient will be negative if X and S are competing factors and it will equal zero if X and S are perfect substitutes.

4.2 Data and Measurement Issues

There are a number of sampling and measurement issues related to the estimation of (3) and (4). In this section, we provide a brief review of potential problems and indicate how we deal with each of these in the present paper.

The data we use in this study come from the Integrated Data Base for Labor Market Research (“IDA”) compiled by Statistics Denmark. It contains register data for all individuals with Danish residency since 1980. The data provide detailed information on labor market performance, such as past and present occupation, earnings and experience, as well as a wide range of background characteristics like educational background and family characteristics.

First, there is the question of how to measure qualifications, *i.e.*, S and X . S is measured by years of education. The Danish educational system includes a high variety of formal educations, including vocational educations as well as short, medium and long further educations. Vocational educations are a mix of schooling and training in firms. The typical duration is 3 years,

²In the literature on returns to education for wage earners the standard functional form applied for the log of individual earnings (y) can be decomposed into an additive function of a linear education term and a quadratic experience term, *i.e.*, $\log y = a + bS + cX + dX^2 + e$, where e is an error term. For a discussion of this formulation, see Card (1999). An important question is whether this formulation can be used for entrepreneurs as well as for wage earners. The answer would be in the affirmative if important interaction effects between experience and schooling are absent.

and results in a total of 12 years of education. Both high-school and vocational educations are managed by the public sector which sets the standards and requirements for these educations. This mean that the quality and content of the educations are harmonised across schools assuring that individuals with this kind of education have achieved educations of comparable qualities. Long further education corresponds to the Ph.D. or the master level (18+ years of total education). Medium further education corresponds to the bachelor level (16 years), whereas short further educations (14 years) are shorter and more practical than the bachelor level. Primary and lower secondary school corresponds to 9 and 10 years where 9 years is the mandatory level in Denmark, and high school corresponds to 12 years.

X is measured by job experience. It should be emphasized that experience is measured by *actual* experience and not potential experience (calculated as age minus the sum of years of education and 6 years) which is typically used in the literature. Measures of experience are constructed from register information on individuals labor market status in a given year. Each year, we know whether individuals are wage-employed, self-employed, non-employed, or unemployed. We use this information to construct measures of years in wage employment and self-employment, respectively, since 1980. For wage employment experience, we also use an alternative measure which converts years of wage work experience into full-time equivalents.

Since 1980 is the first year with register data on individuals' labor market status, we sample our data to include only individuals that were younger than 20 years in 1980. This choice excludes individuals with (extensive) job experience in 1980. Consequently, we exclude individuals older than 41 years in 2002 – the last year in our data set and the year for which we estimate the returns to education. In other words, our sample consists of relatively young individuals.

Moreover, we only include individuals active in the private sectors of the economy. As is standard in the literature, we also exclude farmers from the estimations.

Second, there is the question of how to identify the entrepreneurs. We use two definitions of entrepreneurs: Self-employed and managers. The former measure is often used in the literature, but does not include the managers/owners of incorporated firm. As a consequence, we use these (the managers) as our alternative measure of entrepreneurs. Our choice is guided by the Knightian theory of entrepreneurship (see *e.g.* Knight, 1971), that argues that entrepreneurs are individuals that bear the consequences of un-

certainty in the business environment thereby shielding other stakeholders. It seems straight forward that both self-employed and managers are examples of such individuals.

With respect to the self-employed there are at least two data problems: (i) some individuals are both self-employed and wage workers at the same time; and (ii) a number of individuals change status during the year, and given that we rely on annual observations, we have to determine whether these individuals should be included in the group of self-employed. Our preferred definition of self-employed is based on the primary occupation at a given date of the year; more precisely the last week of November. This is the approach used by Statistics Denmark to define the primary labour market status of an individual. As alternative definitions of self-employed, we select the subset who have employees. These are less likely to have switched in and out of self-employment and less likely to hold additional jobs.

Using the above sampling requirements, we obtain two samples with 34,485 self-employed and 13,088 managers; see Table 1.

<Table 1 about here>

It is seen that the majority of both self-employed and managers have 12 years of education and that the distributions over years of education differ across the two samples with years of education biased towards shorter educations for self-employed and towards longer educations for managers.

Third, there is the question of how to measure the returns. For managers, the solution is straightforward since we have detailed data on wages for all employed workers. For self-employed, the problem with measuring returns stems from the fact that we typically have different measures of the reported income, and the fact that the reported income need not perfectly reflect the generated income. To get around this issue, Hamilton (2000) uses three different measures of entrepreneurial returns, ranging from *net profit* to *equity adjusted draw*, defined as the amount withdrawn for consumption plus the change in the equity of the company. We rely on a measure of the *annual surplus* from self-employment activities, which can be compared to the net profit of the company. As Hamilton (2000) notes, this amount is the one reported to the tax authorities but need not equal the amount withdrawn for

personal consumption.³

The use of annual surplus implies that our preferred measure of experience or qualifications accumulated through learning-by-doing should be experience in wage-employment. The reason is that we must expect self-employed to invest in the firm when the firm age is low and disinvest later on. This behavior implies that individuals with low experience in self-employment have a low annual surplus, whereas the annual surplus is higher later on, and this will be picked-up as high returns to experience in self-employment. However, this is not related to returns to qualifications but rather to the investment behavior of the self-employed.

As further controls, we use a range of socio-demographic variables, including age, gender, marital status, regional dummies, immigrant dummies and a dummy for whether the spouse assists in the firm.

5 Empirical Results

5.1 Potential vs. Actual Experience

The availability of actual experience is important for two reasons. First, it is possible to decompose experience into experience in wage employment and experience in self-employment. This split is especially important for the present analysis of returns to schooling in self-employment because of the investment behavior of self-employed as discussed above.

Second, there are large deviations between the two measures of experience, which potentially lead to different results in the regression analysis below. To see this, define the deviation of actual experience from potential experience as:

$$dev = \frac{\text{experience}}{\text{potential experience}}$$

This deviation is presented in the histogram in Figure 2 together with a normal density.

³None of these measures include non-pecuniary benefits. Hamilton (2000) argues that non-pecuniary benefits are likely to be important. But – like most other studies – we have no possibilities to control for this aspect. However, if these unmeasured benefits can be assumed to be proportional to the self-employment income, it will not bias the estimates of the returns to education, as we – as opposed to Hamilton (2000) – are not trying to compare returns to self-employment and wage work.

<Figure 2 about here>

The main impression of the histogram is that actual experience differs strikingly from potential experience with a mean around 1. For self-employed the mean equals 1.01 with a standard deviation of 0.35, whereas the mean equals 1.2 for managers with a standard deviation of 0.35. For this reason a comparison of results based on potential and actual experience is of interest by itself.

5.2 Regression Analysis

In the following we estimate returns to qualifications for three groups: *(i)* self-employed individuals, *(ii)* managers, and *(iii)* individuals in wage-employment excluding managers. The last group is used for comparison purposes. As a starting point, we estimate (3) with and without the interaction term using *potential experience* defined as the age of the individual minus the sum of years of education and 6 years of age.

<Table 2 about here>

It is evident from Table 2 that the interaction term between years of schooling and experience is insignificant for self-employed and negative and significantly different from zero for managers. Consequently, the results provide no support for the hypothesis that entrepreneurs are "Jacks-of-all-trades" since qualifications accumulated in schooling and in learning-by-doing are not complements. Moreover, the interaction term has a negative and significant coefficient for wage workers excluding managers suggesting that schooling and experience are competing qualifications.

<Table 3 about here>

Next, we turn to actual experience as the proxy for qualifications acquired through learning-by-doing. The results presented in Table 3 are strikingly different from those presented in Table 2. It is clear from Regressions *1b*, *1d*, and *2b*, that the interaction term enters positively and significantly in the

return to qualifications. This indeed suggests that S and X are complements for entrepreneurs. For comparison the results for wage workers are presented in Regression 3*b*. Again, different qualifications seem to be competing factors for this group.

The positive interaction term between education and experience implies that one cannot interpret β_1 as the return to education as is the case in standard Mincer regressions. Instead, the return to an extra year in formal schooling also depends on experience, i.e., the returns to education equals $\beta_1 + \beta_5 X$ according to (3) and $\beta_1 + 2\beta_2 S + \beta_5 X$ according to (4). To get an impression of the return to schooling, we present the return to different years of education given that experience in wage employment equals 10 years. In the case of self-employed this means that individuals have accumulated 10 years of experience in wage-employment before going independent. The choice of 10 years follows the observed average for self-employed in the applied sample; see Table 1. Figure 3 are based on (4) to allow for a more flexible return to education.

In Panels *a* and *b* of Figure 3, we present the return to education of self-employed and managers, respectively. The reference category is individuals with 9 years of schooling and no experience in wage-employment.

<Figure 3 about here>

The figure presents a number of interesting results. First, it is seen that there is virtually no direct returns to education, i.e., $\beta_1 S + \beta_2 S^2 - (\beta_1 9 + \beta_2 9^2)$ is close to zero. Compared to 9 years of education, additional years in schooling carry no extra return. This is consistent with the findings in Iversen, Malchow-Møller, and Sørensen (2008). If anything the return to additional years of schooling is negative when compared to 9 years of education. Second, it is evident that the returns to education materializes through individuals gaining experience. With 10 years of experience in wage-work, income has increased by 31% for self-employed and 28% for managers with 9 years of schooling, whereas income has increased by 62% for self-employed and 65% for managers with 18 years of schooling. Third, the similarity between the estimated returns for self-employed and managers is quite substantial.

The returns to a given number of years of schooling is presented for different experience levels in Figure 4. The chosen education category is 12 years of schooling.

<Figure 4 about here>

As before we present the returns to education of self-employed and managers in Panels *a* and *b*, respectively. The reference category is individuals with 9 years of education and no wage-work experience. The figure shows how the returns to schooling kicks in for individuals with experience in wage employment.

5.3 Robustness

In the following, we check whether the main result of a positive and significant interaction term between years of schooling and experience in wage-employment is robust to a number of changes. These are:

- More flexible functional forms than (4): Even when we include linear, squared and cubic terms of years of schooling, experience in wage-employment, and experience in self-employment; and interaction terms between the three variables, the interaction term between years of schooling and experience in wage work remains positive and significant. The size of the term is relatively unaffected by the change in functional form.
- Alternative measures of experience in wage-employment: A potential problem of *expwe* is that part-time employment in a year counts as one year of experience. It can be argued that experience should be calculated as full-time equivalent units such that a part-time position is weighted with weights below one. We are able to construct experience in wage employment in full-time equivalent units from data on pension payments, i.e., wage earners' supplementary pension schemes. These payments follows individuals working week, which can be used to scale experience in wage employment. The main result of the paper is also robust to the use of the alternative measure of experience in wage employment.
- Group self-employed after employers and non-employers. Interaction term is positive and significant for both groups.
- Experience in wage employment: Is it important to distinguish "roles" of wage employment? [TBA]

6 Conclusion

The main message of this paper is that entrepreneurs are "Jacks-of-all-trades". We establish strong empirical support for this hypotheses when entrepreneurs are proxied by self-employed or managers of firms. It should be emphasized that we do not aim at estimating the precise magnitude of the returns to education in entrepreneurship. What we conclude is that the return to skills depends on the set of skills held by the entrepreneur. When this set is balanced the return will be higher compared to an unbalanced set of skills. This conclusion is reached by measuring two skill types using years of schooling and experience in wage employment, which enable us to study whether skill types are complements. We do not claim that the full set of skills possessed by the entrepreneur is measured. Propably more skill types have to be included in the set of skills for an exhaustive measurement of skills and thereby the possibility to estimate the returns to schooling.

References

- [1] Card, D. (1999): "The Causal Effect of Education on Earnings", *Handbook of Labor Economics*, ch. 30, pp. 1801-1863, North Holland, Amsterdam
- [2] Hamilton, B.H. (2000): "Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-Employment", *Journal of Political Economy*, vol. 108, pp. 604-631
- [3] Iversen, J., R. Jørgensen and N. Malchow-Møller: "Defining and Measuring Entrepreneurship", *Foundations and Trends in Entrepreneurship*, vol. 4, pp. 1-63
- [4] Iversen, J., N. Malchow-Møller and A. Sørensen (2008), "Returns to Schooling in Self-Employment", *CEBR Discussion Paper*, No. 2006-19
- [5] Knight, F. (1971): *Risk, Uncertainty and Profit*, University of Chicago Press, Chicago, (first edition 1921)
- [6] Lazear, E. P. (2004): "Balanced Skills and Entrepreneurship", *American Economic Review*, vol. 94, pp. 208-211
- [7] Lazear, E. P. (2005): "Entrepreneurship", *Journal of Labor Economics*, vol. 23, pp. 649-680
- [8] Parker, S. C. and M. van Praag (2007): "Schooling, Capital Constraints and Entrepreneurial Performance: the Endogenous Triangle", *Journal of Business & Economic Statistics*, forthcoming
- [9] Silva, O. (2007): "The Jack-of-All-Trades entrepreneur: Innate talent or acquired skill?", *Economics Letters*, vol. 97, pp. 118-123
- [10] van der Sluis, J., M. van Praag and A. van Witteloostuijn (2007): "Why are the Returns to Education Higher for Entrepreneurs than for Employees?", *IZA Working paper*, No. 3058
- [11] van der Sluis, J., M. van Praag and W. Vijverberg (2008): "Education and Entrepreneurship in Industrialized Countries: A Meta-Analysis", *Journal of Economic Surveys*, forthcoming

- [12] Wagner, J. (2003): "Are nascent entrepreneurs 'Jacks-of-all-trades'? A test of Lazear's theory of entrepreneurship with German data", *Applied Economics*, vol. 38, pp 2415-2419

Appendix

Table 1: Years of Education and Experience for Self-employed and Managing Directors, 2002

Self-employed				
Education		Experience		
Years of education:	Individuals	Years of experience	Wage-work	Self-employed
9	14.6%	13.9	8.5	5.4
10	9.8%	14.5	9.2	5.4
12	59.7%	16.6	11.2	5.4
14	5.6%	15.5	10.9	4.6
16	6.6%	13.9	9.7	4.2
18	3.6%	14.6	10.2	4.4
All	34,485	15.7	10.5	5.2

Managers				
Education		Experience		
Years of education:	Individuals	Years of experience	Wage-work	Self-employed
9	2.7%	17.1	17.1	0
10	3.8%	16.6	16.6	0
12	52.2%	17.4	17.4	0
14	9%	17	17	0
16	17.8%	18	18	0
18	14.6%	16.7	16.7	0
All	13,088	17.3	17.3	0

Notes: The sample includes all self-employed and managers that were younger than 20 years in 1980 and active in the private sector excluding primary industries.

Table 2: Returns to Qualifications, Potential Experience

	Self-employment		Managers		Wage-employment	
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Years of Education	0.039 (0.003)	0.041 (0.012)	-0.026 (0.006)	-0.032 (0.006)	0.108 (0.000)	0.191 (0.001)
Experience	0.191 (0.007)	0.193 (0.014)	0.111 (0.005)	0.135 (0.010)	0.190 (0.000)	0.290 (0.001)
Experience squared	-0.005 (0.000)	-0.005 (0.000)	-0.002 (0.000)	-0.003 (0.000)	-0.005 (0.000)	-0.006 (0.000)
(Years of Education) *(Experience)		0.000 (0.001)		-0.001 (0.000)		-0.008 (0.000)
N	34485	34485	13088	13088	708160	708160
R ²	0.1288	0.1288	0.3707	0.3714	0.5362	0.5511

Notes: Parameter estimates for additional explanatory variables are excluded. The list of explanatory variables also includes age, gender, married, dummy for address in city, immigrant, and assisting spouse.

Table 3: Returns to Qualifications, Actual Experience

	Self-employment				Managers		Wage-employment	
	(1a)	(1b)	(1c)	(1d)	(2a)	(2b)	(3a)	(3b)
	exp	exp	expwe	expwe	exp	exp	exp	exp
Years of Education	0.011 (0.003)	-0.036 (0.010)	0.019 (0.003)	<i>-0.012</i> (0.007)	0.0521 (0.002)	0.005 (0.008)	0.064 (0.000)	0.094 (0.001)
Experience	0.153 (0.007)	0.115 (0.009)	0.128 (0.005)	0.091 (0.008)	0.0835 (0.007)	0.048 (0.009)	0.186 (0.001)	0.209 (0.001)
Experience squared	-0.002 (0.000)	-0.002 (0.000)	-0.003 (0.000)	-0.003 (0.000)	-0.002 (0.000)	-0.002 (0.000)	-0.005 (0.000)	-0.005 (0.000)
(Years of Education) *(Experience)		0.003 (0.001)		0.003 (0.001)		0.003 (0.000)		-0.002 (0.000)
N	34485	34485	34485	34485	13088	13088	708160	708160
R ²	0.174	0.175	0.1899	0.1908	0.3763	0.3797	0.5565	0.5576

Notes: Parameter estimates for additional explanatory variables are excluded. The list of explanatory variables also includes age, gender, married, dummy for address in city, immigrant, and assisting spouse.

Figure 1: Income and Skills for Entrepreneurs and Wage-workers.

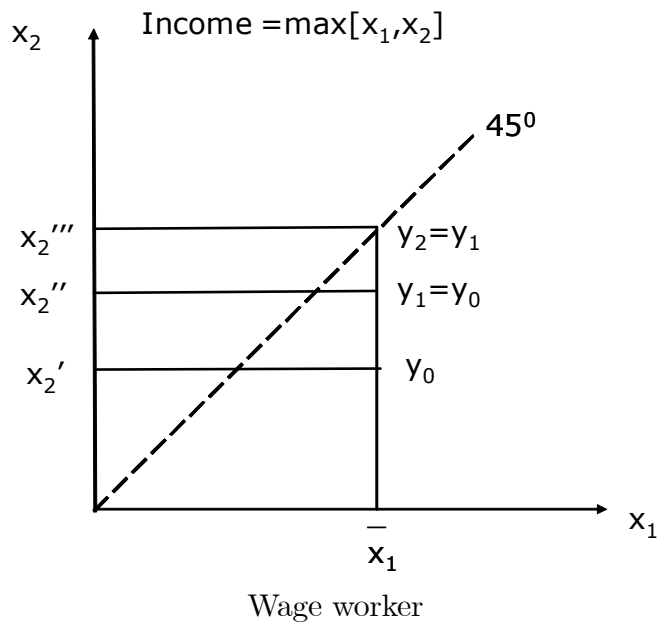
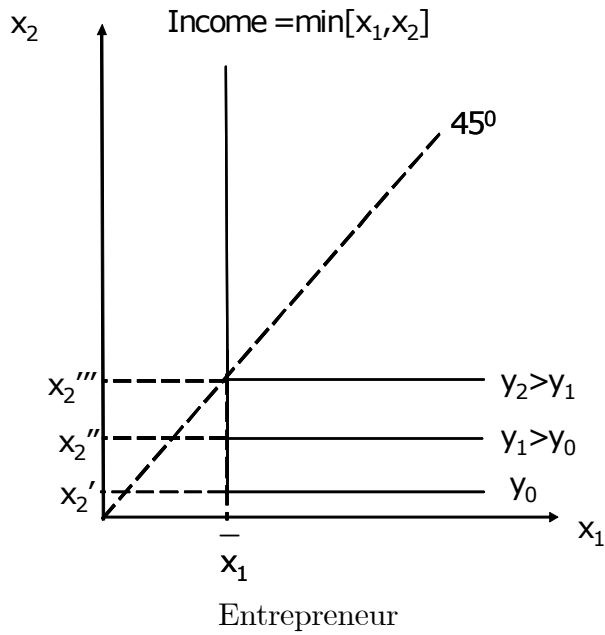
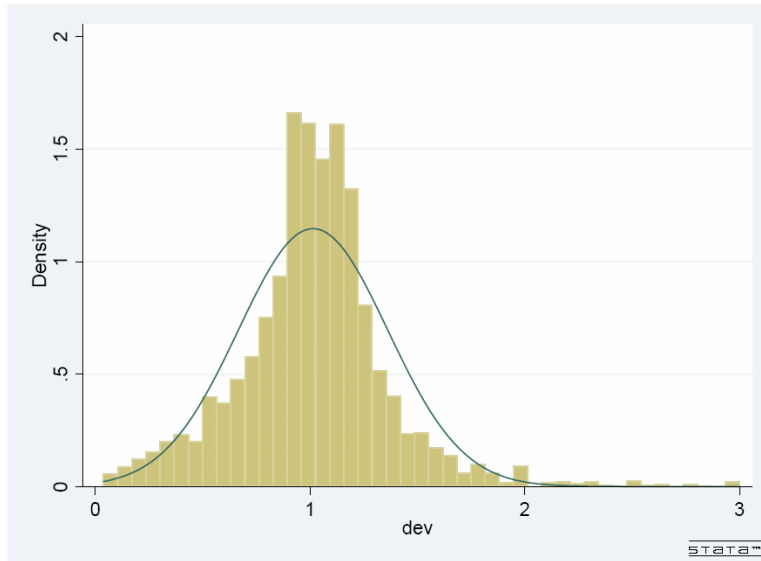
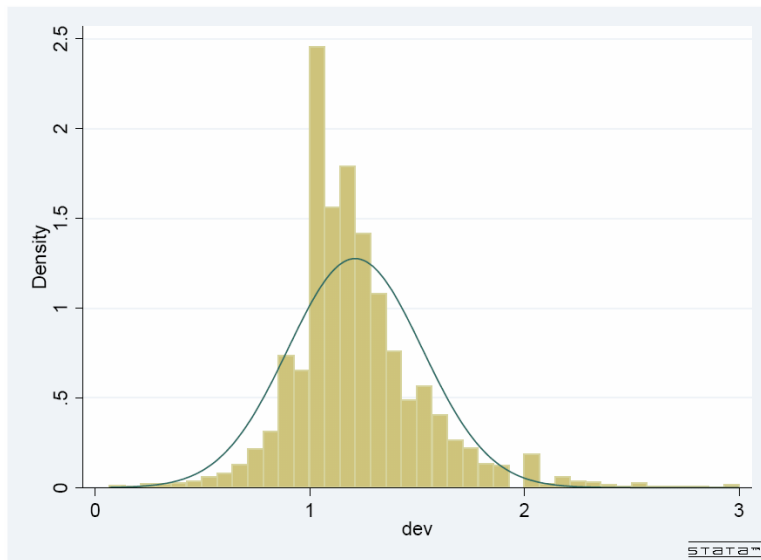


Figure 2: Histogram of $dev = (\text{actual experience}) / (\text{potential experience})$



Self-employed



Managers

Figure 3: Returns to Formal Schooling; 10 Years of Experience in Wage Work

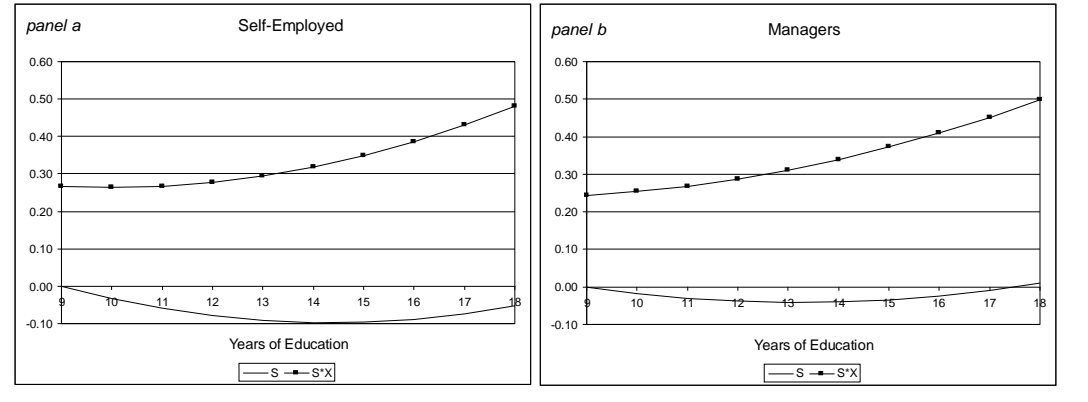


Figure 4: Returns to Formal Schooling; 12 Years of Education

