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A Gender Perspective on Self-Employment Entry and Performance as Self-Employed

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ABSTRACT

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Research on self-employment has increased during recent years and particular attention has been paid to self-employment dynamics and the factors influencing entry and exit rates from self-employment. Using a large panel data set for Sweden, this paper investigates variations in recruitment to self-employment and in self-employment performance by gender and by employment status prior to entering self-employment. As performance measures we use income from self-employment, number of employees, exit rates and destination after self-employment. We find that the probability of becoming self-employed is highest among men who are economically inactive and lowest among women who are wage-earners. Analysing self-employment performance, we find that men have higher incomes than women. Self-employed women more often than self-employed men have employees. For both men and women those who enter from unemployment or inactivity are less successful in terms of income and the probability of having employees than those who enter from paid employment. When exits are divided into paid employment and other employment status, we find that those who entered from unemployment or inactivity face a higher risk of returning to one of these states.

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1. Introduction[1]

There is a relatively large literature on the determinants of self-employment and the interest has increased during recent years (see Parker, 2004, for an overview). One aspect that has received attention is why one often finds a gender gap in both the propensity to become self-employed and in self-employment performance (see for example Du Rietz and Henrekson, 2000; Boden, 2001; Hundley, 2001; Cowling and Taylor, 2004; Wagner, 2005).

Another aspect that has been discussed is to what extent self-employment is a way of escaping unemployment and economic inactivity. Several studies have found that the unemployed and the inactive are more likely than wage-earners to become self-employed (Evans and Leighton, 1989; Carrasco, 1999; Martinez-Granado, 2002; Caliendo and Uhlendorff, 2007). These studies lend support for the idea that self-employment for some people is a way of escaping unemployment and economic inactivity.[2]

Using unique Swedish register data, we investigate recruitment to self-employment and self-employment performance by gender and employment status before entering self-employment and the interaction between these two factors. Three forms of employment status are considered: paid employment, unemployment and economic inactivity. As performance measures we use income from self-employment, number of employees, exit rate and destination after self-employment.

We use data from 1998, 1999 and 2002. In the 1998 data, a 33 per cent random sample of Swedish-born persons, 20 to 60 years of age, who either were wage-earners, unemployed or economically inactive is used. In 1999 some of them had become self-employed. For this population of newly self-employed we have a panel with information also in 1999 and 2002

[2] We have in two earlier studies dealt with the entry of self-employed from different employment states; see Andersson and Wadensjö (2006, 2007).

which allows us to investigate the self-employment performance during the first and the fourth year in business.

The differences in labour force participation and employment rates between men and women in Sweden are small in an international comparison. Men have higher wages than women, however, even if we control for education and experience and, more important, occupational and industrial segregation according to gender is large. One important difference is that men are self-employed much more often than women. We study two aspects of this form of occupational segregation: Differences in the inflow into self-employment between men and women and differences in the situation of the new male and female self-employed after one year and four years.

There may be several explanations to why men and women become self-employed to a different extent:

1. To be self-employed is generally more risky than being an employee. The variation in income is larger. Different studies have shown that women are more risk-averse then men. This may contribute to explain a lower inflow into self-employment among women than among men (See Verheul, Thurik and Grilo, 2008).

2. Self-employment means in different respects higher flexibility regarding working hours, and also greater possibilities to combine work and responsibility for a household.[3] Self-employment could be a substitute for a part-time job (Georgellis and Wall, 2005). As women on average take on a larger part of household work, this could explain a higher inflow into self-employment of women than of men (Boden, 1999; Wellington, 2006).

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[3] The importance of this factor may have declined over time with the changes of gender roles, see Bennett and Dann (2000).

3. Self-employment is in many cases an activity which requires a large work-load. Flexibility often equates to long working hours. This may make it more difficult for women to be self-employed, especially for those with young children. This is a factor which could explain a smaller inflow and a larger outflow to and from self-employment among women than among men.

4. Some forms of social capital may be of importance for success as self-employed and men may for some reason invest more in such capital than women do. This could contribute to explain a lower propensity among women than among men to become self-employed (Moog and Backes-Gellner, forthcoming).

5. The alternatives as wage-earner may influence the propensity to become self-employed. If it is easier for women than for men to get a job it may be a factor explaining why fewer women than men enter self-employment and the other way around if women have more difficulties than men to get paid employment.

An international comparison of six countries including Sweden (Lohmann, 2001) shows that men are more overrepresented among the self-employed in Sweden than in the other countries included in the study.

In this paper we also study the economic outcome of self-employment. The self-employed are a selected group. It is possible that the selection is stronger among women than among men contributing to higher incomes among female than among male self-employed. Other factors may go in another direction. Men may work more hours than women and by that get a higher income both in the short run and in the long run – long working hours may mean investment in the growth of the firm. Short working hours are most frequent among women with small children (Hundley, 2000). Women may also meet liquidity constraints to a higher extent than men (Eastough and Miller, 2004), they may experience consumer discrimination (Leung, 2006) and they may have less of the type of social capital which is of value as a self-

employed (Moog and Backes-Gellner, forthcoming). Self-employed women may also be concentrated in some sectors leading to crowding and by that to lower incomes.

2. Data and Empirical Strategy

2.1. The Data

The data used in this study is annual register data from Statistics Sweden covering 1998, 1999, and 2002. The data for 1998 includes a 33 per cent sample of all Swedish-born wage-earners, unemployed and economically inactive between 20 and 60 years of age. Immigrants are excluded to reduce the problem of unobserved heterogeneity.[4] In the data we can identify the individuals who became self-employed in 1999 and observe the self-employed in 1999 and 2002. This means that we can investigate how successful they are in their first year in business, and for those who are still self-employed in 2002, how they perform after four years in business. Since we know their employment status in 1998 we have a unique opportunity to compare the outcomes between self-employed who entered from unemployment, inactivity, and paid employment.

An individual is defined as a wage-earner if he or she (i) was employed in November 1998, (ii) has not been registered as a student during the year, (iii) has not been registered as unemployed or received unemployment benefits anytime during the year, (iv) has not done military service during the year, (v) has not received a disability pension, (vi) has not received social security payments equal to or greater than his labour income, (vii) has not been self-employed in 1998 or received any income from self-employment[5], (viii) was not employed in agriculture or fishing, and (ix) had an annual labour income in 1998 of at least 20 000 SEK

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[4] In other papers we especially study the self-employed immigrants.
[5] Some individuals who are not classified as self-employed in one year may have received some income from self-employment in spite of that. This can happen if an individual is a wage-earner in November and receives his largest income in this month from that but has a smaller income from self-employment.

(approximately €2 240). In the data there is no information on working time or for how many months or weeks during the year an individual has worked. Variations in annual income can then both be attributed to variation in hourly wage and variation in working time during the year. By adopting an income restriction we avoid including people who have been wage-earners for only a very short period during the year.

An individual is defined as unemployed if he or she (i) has been registered as unemployed at least one day during the year, (ii) is not defined as a wage-earner, (iii) has not been registered as student during the year, (iv) has not done military service during the year, (v) has not received a disability pension, and (vi) has not been self-employed in 1998 or received any income from self-employment.

An individual is defined as economically inactive if he or she (i) is not defined as a wage-earner, (ii) has not been registered as unemployed or received unemployment benefits any time during the year, (iii) has not been registered as a student during the year, (iv) has not done military service during the year, (v) has not received a disability pension, and (vi) has not been self-employed in 1998 or received any income from self-employment.

An individual is defined as being self-employed if he or she has received an income from self-employment and if the monthly income from self-employment multiplied by a factor of 1.6 exceeds the income from wage or salary work in November.[6] This is the definition used by Statistics Sweden in the annual employment register which the data used in this paper is based on. Adopting this definition means that some of the self-employed in 1999 may have worked part-time or part-year as a wage-earner, for example in the same firm as in 1998.[7] One reason for why we have chosen this "loose" definition of being self-employed is that we

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[6] When comparing wage income and self-employment income the income from self-employment is multiplied by the factor 1.6 since the incomes of the self-employed in general are underestimated according to Statistics Sweden. To get the monthly income from self-employment, the annual income is divided by 12. The population studied in this paper includes both firms registered as a limited liability company and private firms.

[7] We have adopted a more restrictive definition of being self-employed in a sensitivity analysis. According to this definition the self-employed have not been unemployed during the year, not been enrolled in school and not received any income from paid employment. The main results are the same independent of the definition used.

believe that those who recently have become self-employed more often combine different activities. It can for example be wage-earners who want to get started with their firm before they decide to quit their wage or salary job. A second reason is that we use annual data. So for example if a person is unemployed for some months during the year but has started a firm and receives an income from it in November, we define him or her as self-employed. Adopting a more restrictive definition (see footnote 3) will mean that this person is not defined as self-employed. The definition of self-employment is not conditional upon that the firm started in 1999. Some of those who became self-employed may have taken over an already existing firm.

2.2. Empirical strategy

We estimate three models for each outcome (becoming self-employed; performance as self-employed). The first model only includes controls for earlier employment status and gender, the second model adds an interaction term between gender and employment status. The third model includes other covariates. The full model can be written as

$$y_t = \alpha + \beta_1 Female + \beta_2 Unemployed_{-98} + \beta_3 Inactive_{-98} + \beta_4 Female * Unemployed_{-98} + \beta_5 Female * Inactive_{-98} + \beta_6 Young\_children_t + \beta_7 Female * Young\_children + \delta X_{it} + \varepsilon_{it}$$

where X is a vector of control variables – age, education, marital status, place of residence, and if the parents are immigrants. Since women often are the main caretakers of young children, we add an interaction term between women and having young children. In the performance models we also control for industry.

The reference group in the probit estimations is wage earners or male wage earners. The reference group in the performance estimations is those who have entered self-employment from paid employment, either both men and women or only men. β_1 measures the average difference between wage-earning men and women, β_2 measures the difference between wage-

earning and unemployed men, and β_3 measures the difference between wage-earning and inactive men. To get the effect for unemployed women we add β_1, β_2 and β_4, and to get the effect for inactive women we add β_1, β_3 and β_5. The effect for men of having young children is measured by β_6 and to get the effect for women of having young children we add β_1, β_6 and β_7.

3. Results

3.1. Descriptive statistics

Appendix table A1 presents summary statistics for 1998 according to gender and employment status. The unemployed are younger than the other two groups. Women are slightly older than men among wage earners and inactive, and three years younger on average than their male counterparts among the inactive. Women have higher education than men and wage-earners have higher education than the other two groups. Over 40 per cent of the inactive women have children under the age of seven compared to only 12 per cent among the inactive men. Many of the inactive women are probably on parental leave while men are inactive mainly for other reasons. It is also interesting to note that fewer wage-earning women than wage-earning men have young children. This difference is most likely related to that the male population is 1.5 years younger on average.

Table 1 shows summary statistics for the dependent variables. If we order the groups according to the share that become self-employed the ranking is: inactive men, unemployed men, inactive women, unemployed women, wage-earning men and wage-earning women.

The first performance measure is income as self-employed. Among those who become self-employed, men and women who entered from paid employment report the highest incomes in 1999. The incomes of the other groups are considerably lower. The incomes had increased for all groups among those who were still self-employed in 2002.

The second performance measure is number of employees. The pattern we find here is a

bit surprising. Almost 45 per cent among women who entered from paid employment had at least one employee compared to only 36 per cent among men who entered from paid employment. In fact, all three groups of women are more likely to have employees than their respective male counterparts. This is probably related to differences in the types of industries that men and women choose. Another explanation may be that women work fewer hours and need to employ someone to achieve the opening hours necessary for the business. For those who still were self-employed in 2002 the difference between men and women who entered from paid employment has almost disappeared. Women who have entered from unemployment or inactivity more often have employees than their male counterparts also in 2002, however.

The third performance measure is the share exiting from self-employment. The exit rate is highest among women who entered from unemployment and lowest among men who entered from paid employment. The exit rate is generally higher among women than among men.

A fourth performance measure is the destination after exit. When dividing exits into paid employment and other employment status we see that women who entered from paid employment return to paid employment more often than men in the same group. We are not studying the future wage of those who become wage-earners after a period of self-employment. A study of the US experience shows that there is substantial wage penalty for women after a spell of self-employment but little or no impact for men (Williams, 2000).

[TABLE 1 ABOUT HERE]

3.2. Regression analysis

To be able to compare our results with those of earlier studies, we first estimate the probability among wage-earners, unemployed and inactive in 1998, to become self-employed in 1999. All interaction terms are significantly different from zero so we focus our discussion

on models 2 and 3. The reference group is male wage-earners. From model 2 we find that female wage-earners are 0.2 percentage points less likely than male wage-earners to become self-employed, unemployed women are 0.5 percentage points more likely to become self-employed, inactive women are 0.9 percentage points more likely to become self-employed, unemployed men are 1.0 percentage points more likely to become self-employed, and inactive men are 4.1 percentage points more likely to become self-employed.

In model 3 where all additional controls are included (age, education, marital status, place of residence, and if the parents are immigrants), we get the same pattern as in model 2. Women less often become self-employed. The probability is lowest among female wage-earners. It is more common among unemployed and inactive women to become self-employed, but it is less common than among men in the corresponding employment states. Inactive men are the group that most often becomes self-employed. The coefficient for "young children" and the interaction between "young children" and "female" show that men with young children more often become self-employed than men without young children, but that women with young children less often become self-employed than women without young children.

These results show that it is people currently without a job who are the most likely to become self-employed. This is in line with the idea that many people are pushed into self-employment due to lack of other alternatives. The pattern is the same for men and women, but in all groups women less often become self-employed. Explanations could be that women avoid self-employment because of the long working hours and that unemployed and inactive women more easily find jobs than unemployed or inactive men.

[TABLE 2 ABOUT HERE]

We continue by analysing the performance of the self-employed. From now on the

sample only includes individuals who were self-employed in 1999. A part of them are self-employed also in 2002. We use self-employment income, number of employees, exit rate, and exit destination as performance measures.

Model 1 gives an average difference between men and women of approximately 30 per cent. The difference between those who entered self-employment from paid employment and those who entered from unemployment is 63 per cent, and between those who entered self-employment from paid employment and those who entered from inactivity 64 per cent. Model 2 includes interaction terms between gender and employment status. The coefficient for female changes quite a bit, while the coefficient for earlier occupation status only decreases slightly. Women who entered self-employment from paid employment have on average 14 per cent lower incomes than men who entered from the same employment status. The coefficients for the interaction terms are negative and significant and by adding the relevant coefficients together, we can calculate that women who entered from paid employment have on average approximately 70 per cent higher annual incomes from self-employment than women who entered from unemployment or inactivity. The income difference between men who entered self-employment from paid employment and those who entered from unemployment or inactivity is 58 and 62 per cent, respectively.

In model 3 we include controls for individual characteristics (age, education, marital status, place of residence, industry and if the parents are immigrants) and the interaction term between female and having young children. The coefficient for female is now to be interpreted as the average difference in self-employment income between women and men without young children who entered self-employment from paid employment. This difference is approximately 10 per cent. Having young children does not affect the self-employment income for men but decreases the self-employment income for women by 16 per cent.

All things considered, men who entered self-employment from paid employment

performed best in 1999 in terms of self-employment income. Women who entered from inactivity and who have young children had the lowest incomes. Women without young children have on average 10 per cent lower incomes than men who entered from the same employment status. However, women who entered from paid employment outperform men who entered from unemployment or inactivity. Hundley (2001) suggests that one explanation for why women earn less than men in self-employment is that they work shorter hours as self-employed. He finds evidence of this and concludes that "A significant part of the male/female difference in annual earnings is attributable to the longer hours that men devote to their business" (p. 827). Our finding that the earnings gap between men and women is smaller among those without young children is in line with Hundley's findings.

Part of the explanation for these large differences by earlier employment status is that there is a selection of individuals into paid employment, unemployment and inactivity. Those who are more established in the labour market and in society in general also have the advantage of having a larger network, more acquaintances and former colleagues which can be of help when one chooses to become self-employed. Those with a weaker connection to the labour market might have more difficulties in attracting customers and getting good prices from suppliers.

Another explanation for the large income differentials is that the inactive and the unemployed are likely to have a lower reservation wage. The expected income from self-employment does not have to be very high in order for self-employment to become a more attractive alternative than unemployment or inactivity. Also, it is not only the expected income from self-employment that matters. To create a job for oneself and avoid being dependent on benefits is probably important for many people without work.

In table 4, the results from the income regressions for 2002 are presented. None of the interaction terms between employment status and gender are significantly different from zero

in model 3 where we control for individual covariates and industry. The gender gap is larger in 2002 than in 1999 while the differences between those who entered from paid employment and those who have entered from unemployment and inactivity have decreased. One possible explanation for the increase in the gender gap is that self-employed men strive for economic growth of the firm to a higher extent than self-employed women do.

[TABLE 3 AND 4 ABOUT HERE]

The second measure of self-employment performance is the number of employees. This measure is in the regressions transformed into a dummy variable that equals one if the self-employed have at least one employee and zero otherwise. None of the interaction terms are significantly different from zero and hence it is enough to interpret the average effect of gender and earlier employment status. Women have a 10 percentage point higher probability of having employees even when we control for industry in model 3. In model 3, however, industry is controlled for on a rather aggregate level. As a test we have estimated a model where industry is divided into more than 300 subcategories, but we still get as result that women more often have employees. One explanation may be that as women are working fewer hours, they more often have to employ people to be able to have the business open the required hours. Self-employed who have entered from unemployment and inactivity are less likely to have employees than those who have entered from paid employment. One explanation may be that those entering from unemployment or inactivity to a higher extent than those entering from paid employment are doing it only to secure a job for themselves and not for establishing and developing a new business.

For those who still are self-employed in 2002, the difference between the groups has decreased. From the descriptive statistics we learnt that the share among self-employed men

who have employees increased between 1999 and 2002 while the share is fairly constant among self-employed women. This result gives some support to the idea that self-employed men more often strive for growth in order to stay in business. Women might be more likely to accept that the firm does not experience growth in terms of income and number of employees.

[TABLE 5 AND 6 ABOUT HERE]

The remaining two measures of self-employment performance are exit propensity and exit destination. Survival in self-employment is often seen as a measure of success but exiting self-employment does not have to be evidence of business failure. Some people might choose self-employment as a way of escaping unemployment and if they after some time as self-employed are offered a wage-earning job they will accept it. It is important to look at exits not only at an aggregate level but also according to destination after self-employment. Here we only look at two destinations after self-employment: paid employment (i.e. becoming a wage-earner), and other status which includes both unemployment and inactivity.

According to the results from model 3, women who entered self-employment from paid employment and who do not have any young children are about 4 percentage points more likely to exit self-employment within the first four years than a similar group of men. This estimate is however only significant at the 10 per cent level of significance. Self-employed who entered from unemployment or inactivity are 8 and 6 percentage points more likely to exit self-employment than those who entered from paid employment. There is no additional (interaction) effect of being a woman and having entered from unemployment or inactivity.

[TABLE 7 ABOUT HERE]

To study exits to different destinations after self-employment, we estimate a multinomial logit model. Table 8 presents the odds ratios. In the full model, column 3 and 4, only a few significant differences are found. There is no gender difference between the probability of exiting self-employment for paid employment and staying in self-employment. Those who entered from inactivity have a significantly lower probability to exit for paid employment.

Comparing the probability of exiting self-employment for something else than paid employment and staying self-employed shows that there are large differences between the groups. The odds for the formerly unemployed and inactive to exit for something else than paid employment, is much higher than for those who entered from paid employment. The odds for women with young children to exit for other employment status is quite high. It is likely that many women in this group temporarily leave the labour force to take care of their children. We cannot tell, however, whether this is voluntarily or due to business failure.

[TABLE 8 ABOUT HERE]

4. Growth in income and number of employees

We have seen a tendency that the income gap between men and women increases over time spent in self-employment while the female advantage in the probability of having employees decreases between 1999 and 2002.

Since we have data on people who are self-employed both in 1999 and 2002 we can calculate the increase in self-employment income after expressing the 1999 incomes in 2002 prices, and also the change in number of employees. We can then run the same type of regressions as before and investigate the gender difference in growth but also compare groups with different earlier employment status. If the female entrepreneurs' firms have grown less than those of their male counterparts one explanation could be differences in preferences for

growth, but it could also be that female entrepreneurs have greater difficulties in achieving economic growth, perhaps due to barriers on the credit market.

The change in income between 1999 and 2002 is expressed in euros and the dependent variable has not been transformed into loglinear form. This is because the change varies from a decrease of 284 000 SEK to an increase of 180 000 SEK and we cannot take the log of a negative number. In the income regression we also control for the income that was earned in 1999 to account for differences in starting value between the groups.

From the results presented in table A2, we conclude that self-employed women experience a lower growth in self-employment income than men and that this is the case independent of employment status before they entered self-employment. The growth rates differ however depending on earlier employment status. The incomes increased on average 3 500 euro less for those who entered from inactivity and on average 2 500 euro less for those who entered from unemployment than for self-employed who entered from paid employment.

The number of employees of the self-employed has a skewed distribution where a majority either have no employees or one employee. Growth in the number of employees often means an increase from zero to one employee. To investigate the change in number of employees we create a dummy variable that equals one if there has been an increase in the number of employees and zero otherwise. We then estimate a linear probability model. In model 1 in table A3 we see that there is no significant difference between male and female self-employed but self-employed who entered from unemployment or inactivity have 10 and 14 percentage units lower probability of increasing the number of employees, respectively. When interaction terms between female and earlier employment status are included (model 2), we find that women who entered from paid employment have 4 percentage points lower probability of employing more people in 2002 than in 1999 than their male counterparts. The coefficient for inactive women is positive and significant and when adding the relevant

coefficients we find that the predicted probability of having more employees in 2002 than 1999 is 10 per cent for men who entered from inactivity compared to 12 per cent for women in the same group. In the full model (model 3), however, only the coefficients for being unemployed or inactive in 1998 are significantly different from zero. The sizes of the coefficients are similar to those in model 1.

5. Summary and Conclusion

In this paper we have especially studied gender differences in the inflow to self-employment and in the proceeds from self-employment. In both cases we have related the outcomes to the employment status before becoming self-employed.

From each employment status (paid employment, unemployment, inactivity) women enter self-employment to a lower extent than men. In the first year of self-employment men's incomes are higher than those of women. The income difference according to employment status are much larger, however, than those according to gender. The income gap between male and female self-employed who entered from paid employment and who do not have young children is "only" 11 per cent. This is a rather small difference considering the large variations in self-employment income.

An unexpected result is that female self-employed more often than male self-employed have employees. Female self-employed who entered from paid employment is the group that most often has employees. This result still holds when we control for industry at a very detailed level.

Women are more likely to exit self-employment than men and those who entered from unemployment or inactivity are more likely to exit than those who entered from paid employment. The exit rate among self-employed women without young children and who entered from paid employment is barely significantly different, however, from the exit rate among comparable males.

Estimating income regressions for those who are still self-employed after four years, we find, a bit surprisingly, that the gender income gap has increased. One hypothesis is that male entrepreneurs have larger aspirations for economic growth than do their female counterparts. The finding that the difference in the probability of having employees between women and men decreases between 1999 and 2002 is in line with this hypothesis.

Tables

Table 1. Summary statistics of dependent variables

	Women			Men		
	Wage-earners	Unemployed	Inactive	Wage-earners	Unemployed	Inactive
Self-employed in 1999, per cent	0.3	0.9	1.3	0.5	1.5	4.6
Income from self-employment in 1999 (SEK)	140 100	58 280	58 710	169 000	77 600	87 600
Share with employees in 1999	44.8	17.1	25.3	36.0	10.9	15.5
Still self-employed in 2002, per cent	58.8	46.6	54.0	64.1	55. 6	58.0
Income from self-employment in 2002 (SEK)	187 300	128 200	104 400	239 400	152 900	138 800
Share with employees in 2002	46.1	24.0	26.7	45.5	19.0	17.8
Exits self-employment before 2002	41.2	53.4	46.0	35.9	44.4	42.0
Destination after self-employment						
Wage-earner	26.2	18.7	16.5	23.4	21.1	14.0
Other	15.0	34.7	29.5	12.5	23.3	28.0
Number of observations	908	726	1 013	2 030	1 260	1 573

Table 2. Linear probability models for the probability of becoming self-employed in 1998.

	(1) Pr(self-employed, 1999)	(2) Pr(self-employed, 1999)	(3) Pr(self-employed, 1999)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	-0.0057	-0.0023	-0.0020
	(0.0002)**	(0.0001)**	(0.0002)**
Unemployed, 1998 (β_2)	0.0083	0.0097	0.0112
	(0.0003)**	(0.0004)**	(0.0004)**
Inactive, 1998 (β_3)	0.0208	0.0410	0.0419
	(0.0005)**	(0.0011)**	(0.0011)**
Unemployed female, 1998 (β_4)		-0.0030	-0.0030
		(0.0006)**	(0.0006)**
Inactive female, 1998 (β_5)		-0.0303	-0.0304
		(0.0012)**	(0.0012)**
Young children			0.0016
			(0.0004)**
Woman with young children			-0.0027
			(0.0004)**
Constant	0.0065	0.0050	-0.0001
	(0.0001)**	(0.0001)**	(0.0003)
Other controls	No	No	Yes
Number of observations	1 028 148	1 028 148	1 028 148

Notes: Robust standard errors in parentheses. * significant at 5%; ** significant at 1%. Model 3 includes controls for age, education, marital status, place of residence, and if the parents are immigrants.

Table 3. Income from self-employment in 1999. Linear regression.

	(1) Ln(income, 1999)	(2) Ln(income, 1999)	(3) Ln(income, 1999)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	-0.303	-0.140	-0.105
	(0.035)***	(0.048)***	(0.050)**
Unemployed, 1998 (β_2)	-0.983	-0.881	-0.802
	(0.040)***	(0.049)***	(0.049)***
Inactive, 1998 (β_3)	-1.035	-0.960	-0.743
	(0.039)***	(0.051)***	(0.049)***
Unemployed female, 1998 (β_4)		-0.304	-0.289
		(0.085)***	(0.084)***
Inactive female, 1998 (β_5)		-0.224	-0.266
		(0.080)***	(0.078)***
Young children (β_6)			-0.040
			(0.056)
Woman with young children (β_7)			-0.155
			(0.078)**
Constant	11.620	11.570	10.419
	(0.026)***	(0.028)***	(0.110)***
Other controls	No	No	Yes
Number of observations	7 484	7 484	7 484
R^2(adj)	0.12	0.12	0.18

Notes: Robust standard errors in parentheses. * significant at 5%; ** significant at 1%. Model 3 includes controls for age, education, marital status, place of residence, if the parents are immigrants, and industry.

Table 4. Income from self-employment in 2002 for individuals who are self-employed both in 1999 and 2002. Linear regression.

	(1) Ln(income, 2002)	(2) Ln(income, 2002)	(3) Ln(income, 2002)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	-0.275	-0.354	-0.300
	(0.038)***	(0.055)***	(0.055)***
Unemployed, 1998 (β_2)	-0.500	-0.526	-0.500
	(0.039)***	(0.045)***	(0.045)***
Inactive, 1998 (β_3)	-0.856	-0.909	-0.683
	(0.044)***	(0.054)***	(0.054)***
Unemployed female, 1998 (β_4)		0.089	0.116
		(0.090)	(0.089)
Inactive female, 1998 (β_5)		0.161	0.074
		(0.092)*	(0.089)
Young children (β_6)			0.054
			(0.049)
Woman with young children (β_7)			-0.137
			(0.090)
Constant	12.132	12.155	11.368
	(0.023)***	(0.023)***	(0.141)***
Other controls	No	No	Yes
Number of observations	4317	4317	4317
R^2(adj)	0.11	0.11	0.18

Table 5. Probability of having employees in 1999. Linear probability models

	(1) Pr(employees, 1999)	(2) Pr(employees, 1999)	(3) Pr(employees, 1999)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	0.085	0.088	0.098
	(0.010)***	(0.020)***	(0.018)***
Unemployed, 1998 (β_2)	-0.261	-0.251	-0.219
	(0.012)***	(0.014)***	(0.013)***
Inactive, 1998 (β_3)	-0.201	-0.205	-0.168
	(0.012)***	(0.014)***	(0.014)***
Unemployed female, 1998 (β_4)		-0.026	-0.023
		(0.026)	(0.024)
Inactive female, 1998 (β_5)		0.009	-0.019
		(0.026)	(0.023)
Young children (β_6)			-0.011
			(0.017)
Woman with young children (β_7)			0.035
			(0.023)
Constant	0.361	0.360	0.276
	(0.009)***	(0.011)***	(0.026)***
Other controls	No	No	Yes
Number of observations	7 510	7 510	7 510

Notes: All covariates are measured in 1999.

Table 6. Probability of having employees in 2002 for those who are still self-employed. Linear probability models.

	(1) Pr(employees, 1999)	(2) Pr(employees, 1999)	(3) Pr(employees, 1999)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	0.047	0.006	0.058
	(0.015)***	(0.026)	(0.023)**
Unemployed, 1998 (β_2)	-0.252	-0.265	-0.225
	(0.017)***	(0.020)***	(0.020)***
Inactive, 1998 (β_3)	-0.249	-0.277	-0.202
	(0.016)***	(0.019)***	(0.019)***
Unemployed female, 1998 (β_4)		0.044	0.040
		(0.038)	(0.034)
Inactive female, 1998 (β_5)		0.083	0.026
		(0.034)**	(0.030)
Young children (β_6)			-0.007
			(0.024)
Woman with young children (β_7)			-0.008
			(0.033)
Constant	0.443	0.455	0.393
	(0.012)***	(0.014)***	(0.044)***
Other controls	No	No	Yes
Number of observations	4 331	4 331	4 331

Notes: All covariates are measured in 1999.

Table 7. Probability of exiting self-employment before 2002. Linear probability model

	(1) Pr(exit 2002)	(2) Pr(exit 2002)	(3) Pr(exit 2002)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	0.058	0.053	0.039
	(0.012)***	(0.020)***	(0.021)*
Unemployed, 1998 (β_2)	0.099	0.085	0.084
	(0.014)***	(0.018)***	(0.018)***
Inactive, 1998 (β_3)	0.055	0.061	0.057
	(0.013)***	(0.016)***	(0.017)***
Unemployed female, 1998 (β_4)		0.037	0.028
		(0.030)	(0.030)
Inactive female, 1998 (β_5)		-0.013	-0.013
		(0.028)	(0.028)
Young children (β_6)			-0.037
			(0.021)*
Woman with young children (β_7)			0.060
			(0.028)**
Constant	0.358	0.359	0.351
	(0.010)***	(0.011)***	(0.033)***
Other controls	No	No	Yes
Number of observations	7 509	7 509	7 509

Table 8. Probability of exiting self-employment before 2002 for different alternatives. Multinomial logit model. Odds ratios. Reference category is "self-employed"

	Pr(exit 2002) Paid employment	Pr(exit 2002) Other	Pr(exit 2002) Paid employment	Pr(exit 2002) Other
Wage-earner, 1998 (α)	ref.		ref.	
Male wage-earner, 1998 (α)		ref.		ref.
Female (β_1)	1.179	1.356	1.174	1.189
	(0.074)***	(0.082)***	(0.123)	(0.148)
Unemployed, 1998 (β_2)	0.988	2.437	1.052	2.153
	(0.073)	(0.187)***	(0.097)	(0.214)***
Inactive, 1998 (β_3)	0.676	2.327	0.744	2.189
	(0.049)***	(0.168)***	(0.072)***	(0.204)***
Unemployed female, 1998 (β_4)			0.852	1.302
			(0.136)	(0.213)
Inactive female, 1998 (β_5)			0.974	0.910
			(0.149)	(0.141)
Young children (β_6)			0.901	0.736
			(0.099)	(0.090)**
Woman with young children (β_7)			1.146	1.616
			(0.167)	(0.247)***
Other controls	No	No	Yes	Yes
Number of observations	7 509	7 509	7 509	7 509

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Appendix

Table A1. Summary statistics according to gender and employment status. All variables measured in 1998

	Women			Men		
	Wage-earners	Unemployed	Inactive	Wage-earners	Unemployed	Inactive
Age (years)	42.6	37.9	37.9	41.1	35.9	41.2
Education (%)						
Primary school less than 9 years	5.8	7.0	7.0	7.9	7.2	10.8
Primary school 9(10) years	9.6	14.2	14.2	11.9	19.4	18.3
Upper secondary 2 years or less	36.1	39.5	39.5	32.8	39.8	33.6
Upper secondary more than 2 years	13.5	17.6	17.6	17.7	20.7	17.9
Higher education less than 3 years	18.3	13.5	13.5	14.7	8.4	10.4
Higher education 3 years or more	16.2	8.0	8.0	13.9	4.2	8.5
Post graduate education	0.4	0.1	0.1	1.2	0.2	0.5
Marital status (%)						
Married	53.0	29.5	44.3	47.7	21.7	32.0
Cohabiting with children	9.8	13.4	19.9	11.3	9.9	7.6
Other	37.2	57.1	35.8	41.0	68.4	60.4
Small children (%)	17.9	27.8	40.1	20.8	14.0	12.0
Place of residence (%)						
Metropolitan areas (Stockholm, Gothenburg, Malmoe)	35.5	27.8	28.1	33.1	25.2	34.5
Family background (%)						
Both parents born abroad	2.8	4.6	3.7	2.9	4.6	4.7
One parent born abroad	10.9	11.7	11.3	10.7	12.4	13.8
Number of observations	341 835	77 984	77 053	409 901	86 679	34 696

Table A2. Change in self-employment income between 2002 and 1999 in Euros. Linear regression.

	(1) Change in income, euros	(2) Change in income, euros	(3) Change in income, euros
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	-2 152	-2 892	-2 604
	(403)***	(736)***	(780)***
Unemployed, 1998 (β_2)	-1 894	-2 421	-2 528
	(927)**	(1,007)**	(971)***
Inactive, 1998 (β_3)	-4 087	-4 381	-3 491
	(1040)***	(1206)***	(1144)***
Unemployed female, 1998 (β_4)		1 676	1 863
		(933)*	(926)**
Inactive female, 1998 (β_5)		931	649
		(936)	(915)
Young children (β_6)			1 200
			(775)
Women with young children (β_7)			-1 682
			(864)*
Constant	12 698	12 926	11 140
	(1632)***	(1690)***	(1441)***
Income in 1999	Yes	Yes	Yes
Other controls	No	No	Yes
Observations	4 331	4 331	4 331

Notes: Robust standard errors in parentheses. * significant at 5%; ** significant at 1%. Model 3 include controls for age, education, marital status, place of residence, if the parents are immigrants, and industry.

Table A3. Probability of employing more people in 2002 than in 1999. Linear probability model

	(1) Pr(increase in the number of employees)	(2) Pr(increase in the number of employees)	(3) Pr(increase in the number of employees)
Wage-earner, 1998 (α)	ref.		
Male wage-earner, 1998 (α)		ref.	ref.
Female (β_1)	-0.004	-0.039	-0.014
	(0.012)	(0.021)*	(0.022)
Unemployed, 1998 (β_2)	-0.099	-0.112	-0.108
	(0.015)***	(0.018)***	(0.018)***
Inactive, 1998 (β_3)	-0.136	-0.158	-0.122
	(0.013)***	(0.015)***	(0.016)***
Unemployed female, 1998 (β_4)		0.046	0.050
		(0.032)	(0.031)
Inactive female, 1998 (β_5)		0.067	0.041
		(0.027)**	(0.026)
Young children (β_6)			0.035
			(0.022)
Women with young children (β_7)			-0.011
			(0.029)
Constant	0.241	0.251	0.229
	(0.011)***	(0.012)***	(0.031)***
Other controls	No	No	Yes
Observations	4 331	4 331	4 331

Notes: Robust standard errors in parentheses. * significant at 5%; ** significant at 1%. Model 3 include controls for age, education, marital status, place of residence, if the parents are immigrants, and industry.