Discussion Papers
Statistics Norway
Research department

No. 790
November 2014

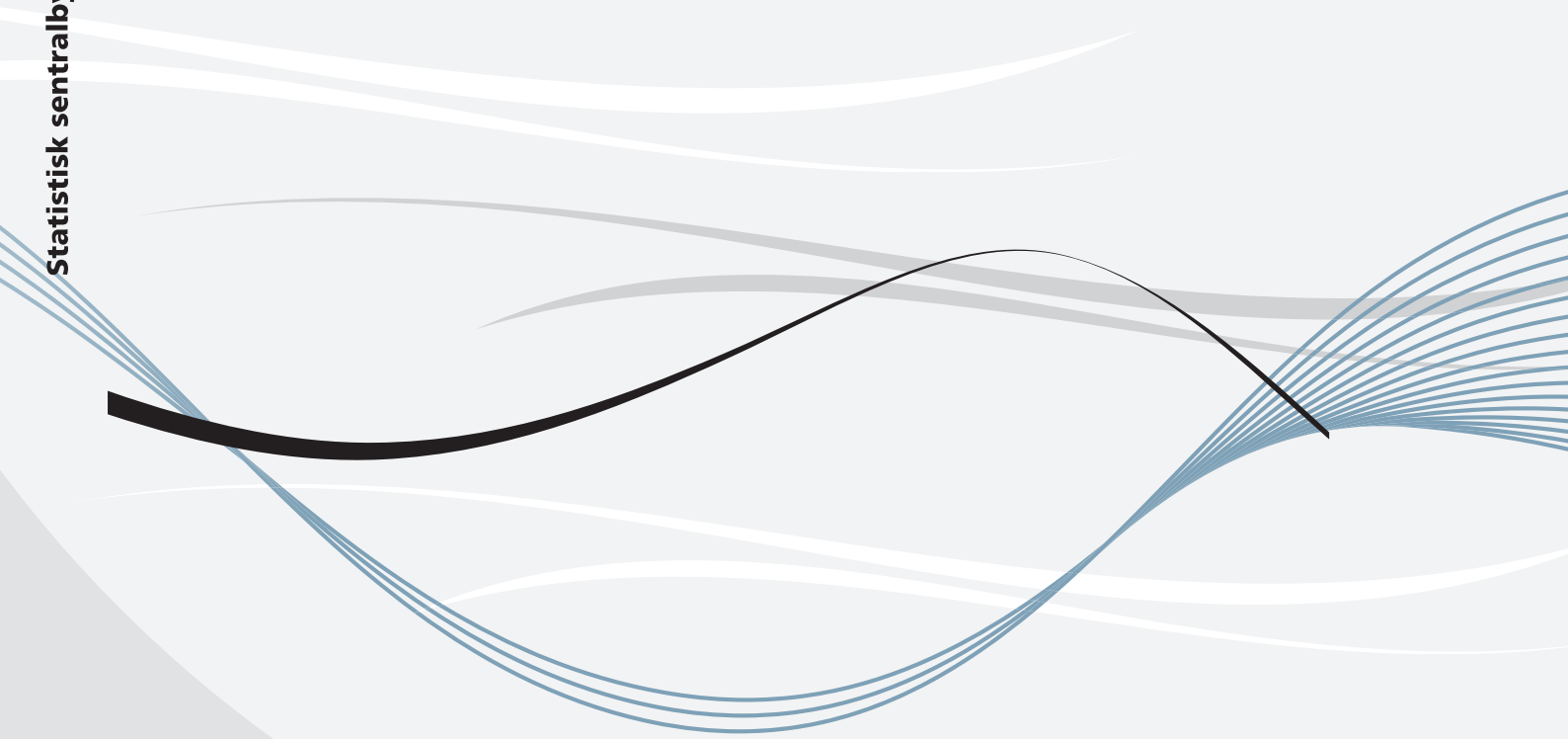
Statistics Norway

Statistisk sentralbyrå

Arvid Raknerud and Marit Rønsen

Why are there so few female entrepreneurs?

An examination of gender differences in entrepreneurship using Norwegian registry data



Discussion Papers No. 790, November 2014
Statistics Norway, Research Department

Arvid Raknerud and Marit Rønsen

Why are there so few female entrepreneurs?
An examination of gender differences in entrepreneurship using Norwegian registry data

Abstract: Women make up almost 50 percent of the employed population in Norway, but only about 25 percent of the entrepreneurs. Using registry data on the whole population we address gender differences in the propensity to become an entrepreneur. We do so by analysing transitions from ordinary wage employment into entrepreneurship, defined as either sole proprietorship or owner-managed incorporated entrepreneurship. We focus on the impact of the family and household situation and show that children are no barrier to female entrepreneurship. This result holds also when we look at the establishment of an incorporated business, which represents a bigger investment decision than mere self-employment. Moreover, we find that gender differences with regard to the impact of family and household characteristics are generally smaller for incorporated entrepreneurship than for self-employment. For example, while there is a clear positive effect on women's – but not men's – propensity to become self-employed if the partner is highly educated, the impact of the partner's education is ambiguous both for men and women in the case of incorporated entrepreneurship. The strongest predictor of entrepreneurship among the partner characteristics, both for men and women, is whether or not the partner is an entrepreneur. Although our results do not bring a clear answer to why there are so few female entrepreneurs in Norway, an important insight from our analyses is that the family and household situation can be ruled out as a major explanation.

Keywords: Entrepreneurship, gender, work and family, partner's characteristics, probit regression, linked registry data

JEL classification: L26, J13, J16, J22, C23

Acknowledgements: We appreciate useful comments from Elin Halvorsen, Torbjørn Hægeland, Diana Iancu and Terje Skjerpen. Financial support from the Norwegian Research Council through the program MER Entreprenørskap, grant no 201340, is gratefully acknowledged.

Address: Arvid Raknerud, Statistics Norway, Research Department. E-mail: rak@ssb.no.

Marit Rønsen, Statistics Norway, Research Department. E-mail: marit.ronsen@ssb.no

Discussion Papers	comprise research papers intended for international journals or books. A preprint of a Discussion Paper may be longer and more elaborate than a standard journal article, as it may include intermediate calculations and background material etc.

Abstracts with downloadable Discussion Papers
in PDF are available on the Internet:
http://www.ssb.no/en/forskning/discussion-papers
http://ideas.repec.org/s/ssb/dispap.html

ISSN 1892-753X (electronic)

Sammendrag

I denne analysen bruker vi registerdata for hele den norske sysselsatte befolkningen for å belyse årsakene til de store forskjellene i entreprenørskapsrater mellom menn og kvinner. Vi gjør det ved å estimere overgangssannsynligheter fra å være vanlig lønnstaker til å bli entreprenør. Vi definerer en entreprenør som en person som enten er innehaver av et nyetablert enkeltmannsforetak (selvstendig næringsdrivende), eller er aktiv eier i et nyetablert aksjeselskap (AS) – i det siste tilfellet har han/hun minst blokkerende mindretall (33 prosent eierandel) og er i tillegg enten ansatt i foretaket eller har en formell rolle som daglig leder, styreformann eller begge. I analysene fokuserer vi på betydningen av familie- og husholdningssituasjonen og viser at barn ikke er en barriere for entreprenørskap, verken for kvinner eller menn. Dette gjelder også når en ser på etablerere av AS, som innebærer en større investering enn det å starte opp enkeltmannsforetak. Vi finner videre at familie- og husholdningskarakteristika betyr mindre for etablering av AS enn for etablering av enkeltmannsforetak. For eksempel finner vi en klar positiv sammenheng mellom partnerens utdanningsnivå og kvinners – men ikke menns – sannsynlighet for å etablere enkeltmannsforetak, men ingen tilsvarende entydig sammenheng mht. etablering av AS. Den viktigste prediktoren for entreprenørskap – både når det gjelder kvinner og menn – er om partneren er entreprenør, dvs. om han/hun tidligere har etablert et (annet) foretak. Selv om våre analyser ikke gir et klart svar på hvorfor det er så få kvinnelige entreprenører i Norge, er en viktig lærdom fra våre analyser at familie- og husholdningssituasjonen ikke er en avgjørende forklaringsfaktor.

1. Introduction

A common characteristic of labour markets across countries and cultures is a large gender gap in entrepreneurship activity. According to OECD (2004) this represents a substantial untapped productive potential in the female part of the population that, if accessed, could make a significant additional contribution to new business formation, job creation and overall economic growth. Among its recommendations for policies to strengthen entrepreneurship among women, OECD has stressed the importance of women's ability to participate in the labour market by providing affordable childcare and equal treatment in the work place, and generally improving the position of women in society. One would therefore expect a country like Norway, with an almost equal male and female employment rate and a high general gender equality, to have comparatively high ratios of female to male entrepreneurship. Yet, women constituted only about 25 per cent of early-stage entrepreneurs in Norway in 2010, which is lower than in most other industrialised countries (Kelly et al. 2011).

The literature mentions many reasons for women's lower propensity to engage in entrepreneurial activities. Psychological and motivational factors have received a lot of attention since the very earliest research on female entrepreneurship, but their importance is still being debated. There is more of a consensus that dissimilar educational backgrounds and experience, and also differential access to capital may explain part of the gender gap. In Norway, however, even after controlling for these factors, most of the gender gap remains (Berglann, Golombek and Røed 2013; Rønsen 2012). More recently, social and cultural factors embedded in the family and household situation have been identified as needing further research (DAMVAD 2011). In spite of a high degree of gender equality in the society, the household division of labour in Norway has been nicknamed "gender equality light" (Skrede 2004). This characterizes a situation where almost half of mothers with children below age 16 still work part-time (Bø et al. 2008) and mothers with small children spend 1.5 hours more per day on housework than fathers (Vaage 2012). Since establishing and running a business typically requires attention and effort beyond standard hours of work, many women may find it difficult to combine entrepreneurial activity with family and children.

According to DAMVAD (2011) there are indications that the family and household situation influences male and female entrepreneurs differently, but they also emphasize that in order to shed further light on this issue robust studies based on large, representative datasets that control for other relevant variables are needed. The present study is a contribution in this respect. Using registry data on the whole employed population of Norway we address gender differences in the propensity to *become* an entrepreneur, i.e., we carry out a longitudinal analysis of transitions from ordinary wage

employment into entrepreneurship defined as either self-employment (sole proprietorship) or owner-managed incorporated entrepreneurship. We analyze the propensity to become an entrepreneur separately for men and women in order to determine gender differences. Furthermore, we do separate analyses of men and women in couples. This opens up for a more detailed investigation of the partial effect of the family and household situation such as the partner's characteristics (employment status, earnings, wealth and education) plus the number and age of children in the family.

The present analysis adds to the insights from a recent study of gender differences in the propensity to *be* an entrepreneur in Norway (Rønsen 2012; Rønsen 2014). Since this study was based on cross-sectional data it could not establish causal relationships, only associations between various characteristics and self-employment participation. The focus of the study was on the family and household situation, but being based on a survey data set (EU-SILC 2003-2009), entrepreneurship was defined as self-employment as is common in most of the entrepreneurship literature. However, the definition of an entrepreneur as a self-employed individual seems to be contrary to important characteristics of the entrepreneurship concept in the classical (Schumpeterian) sense. First, the highest self-employment rates are found in the primary industries, which are generally not considered to be particularly entrepreneurial. Second, self-employment is a close substitute for wage employment in professions where setting up a business requires little capital.[1] Finally, self-employment may be an alternative to unemployment or social benefits, rather than to employment (see Skogstrøm and Røed 2014). To address the limitations of the self-employment based definition of entrepreneurship, we will in this study distinguish between two types of entrepreneurship: self-employment and incorporated entrepreneurship, and analyse the propensity to become an entrepreneur separately for these two types of entrepreneurs.

Our results confirm previous findings from survey data (Rønsen 2014) that children are no barrier to female entrepreneurship. This result holds also when we look at the establishment of an incorporated business. Moreover, we find that gender differences with regard to the impact of family and household characteristics are smaller for incorporated entrepreneurship than for self-employment. For example, while we find a clear positive effect on women's – but not men's – propensity to become self-employed if the partner is highly educated, the impact of the partner's education is ambiguous both for men and women in the case of incorporated entrepreneurship. The strongest predictor of entrepreneurship among the partner characteristics – both for men and women – is whether or not the partner is an entrepreneur.

[1] Apart from the primary industries; the education groups with the highest self-employment rates are dentists, hairdressers, veterinaries and physiotherapists, see Berglann et al. (2011).

The remainder of the paper is organized as follows. In Section 2 and 3 we clarify the conceptual framework and review the previous literature. In Section 4 we present the data and in Section 5 the results. Section 6 concludes.

2. Conceptual framework

The focus of our empirical analysis is on the choice between self-employment/incorporated-entrepreneurship and ordinary wage-work among people who are already participating in the labour market. Both options bring monetary and non-monetary returns. Non-monetary returns reflect the individual's appreciation of the relevant characteristics of self-employment versus wage work such as personal autonomy, status and recognition, self-realisation and role expectations (e.g. continuing a family tradition).[2] The existing empirical literature indicates that entrepreneurship is primarily motivated by non-pecuniary factors (Hamilton 2000; Van Praag and Versloot 2007), but there is also evidence that self-employment does pay off economically. For Norway, Berglann et al. (2011), who also include incorporated owner-managers in their sample of entrepreneurs, have for example found that entrepreneurship is usually associated with a significant income premium, but it comes at the cost of higher income variability. Their findings are modified by van Praag and Raknerud (2014), who estimate a significantly negative average return to entrepreneurship for self-employed entrepreneurs (sole proprietors), but a positive average return for incorporated ones. Their study emphasizes the importance of not only including the incorporated entrepreneurs, but also analysing them *separately* from the self-employed. This is also the conclusion of Levine and Rubinstein (2013), who find that the incorporated entrepreneurs earn much more on average than both the self-employed and ordinary wage workers. However, it is not clear whether this can be interpreted as a causal relation, or primarily reflects self-selection; i.e., that individuals with high general income ability (regardless of the choice to start up a business or not) have a higher probability of founding incorporated firms.

Given his or her budget- and time constraint, the individual will choose entrepreneurship over wage-work if the expected utility from self-employment exceeds that of wage-work. If there are children in the household, the time available for children is an important element in these considerations. If we assume, along with some authors (e.g. Wellington 2006), that it is possible to combine some childcare with self-employment, whereas an hour spent on wage-work is an hour lost on childcare, childcare costs will be greater for mothers in paid employment than for mothers in self-employment. Mothers may also value their own time with children higher than formal childcare,

[2] See for example Shane et al. 1991; Benz and Frey 2008; Hamilton 2000; Parker and Van Praag 2010; Aastebro 2010; Aastebro and Chen 2014.

which will increase the attractiveness of self-employment as a means of balancing work and family. OECD (2004) argues that such factors may make women more prone to set up their own business and empirical evidence from the US support this notion (Boden 1999, 2001; Connelly 1992; Wellington 2006). In countries with a well-established provision of state-sponsored, formal childcare, such considerations may carry less weight. In addition, in Norway self-employed women, as well as men, generally have longer working hours than employees (Statistics Norway 2012). All else equal, one would therefore expect small children in the household to be more of a barrier to self-employment than to standard wage employment. Yet, recent studies find a similar positive relationship between having small children and female self-employment also in Norway and Sweden (Berglann et al. 2011; Rønsen 2014; Joona 2014).

A male partner's personal and labour market characteristics may impact his female partner's situation in several ways. According to New Household Economics (Becker 1991), the spouses specialize in the fields in which they have a comparative advantage in order to maximize the joint utility of the household. Consequently, it is expected that higher income and longer working hours for a husband would reduce the wife's labour market engagement. Sociological theories, by contrast, consider the male partners' labour market resources as a type of social capital that strengthens the employment involvement of his spouse (Bernardi 1999). Also, if education is seen as a proxy for norms and values, highly educated men may be assumed to have more modern attitudes towards gender roles and therefore be more supportive of their spouse's employment. Another strand of thought puts more emphasis on the central role that paid work continues to play for men's identity – the "doing gender" theory (Berk 1985). This may make men less supportive of their spouse's employment because they will not encourage their partner to work more than they do themselves.

The theories above render no clear predictions about the relationship between the male partner's characteristics and the female's choice of becoming entrepreneur in the sense of self-employment or incorporation, rather than remaining a wage employee. However, since entrepreneurship usually involves longer working hours than ordinary wage employment, at least in Norway, we would expect women to be less inclined to become entrepreneurs if the partner works very long hours. Higher financial resources should on the other hand make it less risky to set up a business, so our hypothesis is that there is a positive relationship between the male partner's income and wealth and the woman's propensity to start up a new firm as a sole proprietor or owner-manager. After controlling for the partner's working hours and income, educational level is believed to primarily reflect differences in social capital, norms and values. Given that highly educated men are more supportive of their partner's employment and have more social capital (network resources and skills) than men with lower education, we anticipate a positive association between the male partner's

educational level and women's likelihood of being self-employed. Since founding a new business often requires specific skills (perhaps even more so for incorporated businesses than for sole proprietorships), the knowledge and experience of a partner who himself/herself is a personal business owner may be of particular value. Hence, we expect women with a partner who is an (incorporated or self-employed) entrepreneur to be more inclined to choose entrepreneurship herself, as supported by previous research from the US (Bruce 1999).

3. Previous literature

In spite of mounting empirical evidence, the reasons for gender differences in entrepreneurship are still not well understood. Studies generally find that female entrepreneurs attract less capital and start businesses with fewer financial resources than their male counterparts, and that high-growth companies more often are run by male than by female entrepreneurs. Early entrepreneurship research suggested that female-owned firms underperform relative to firms owned by men (Boden and Nucci 2000; Gundry et al. 2002), but recent evidence on the relative performance of female entrepreneurs is more ambiguous. Large-scale studies from both the U.S. and Sweden have, for example, found no support for the so-called underperformance hypothesis (Hisrich et al. 1997; Du Rietz and Henrekson 2000). In Norway, entrepreneurial ventures have been shown to have equal chances of surviving the early growth phase, regardless of whether they are started by men or by women, but high-growth companies are primarily started, owned and run by men (Ljunggren 2008).

Since its beginning, researchers have sought to explain the underrepresentation of women in entrepreneurship by differences in psychological and motivational factors. For example, it has been suggested that women may be more risk averse than men (Masters and Meier 1988). The empirical evidence for this is mixed. Some studies conclude that there are more similarities than differences in male and female entrepreneurs' psychological and demographic characteristics (e.g. Birley 1989; Zapalska 1997), and others suggest that there may be greater differences among subgroups of female entrepreneurs than between the sexes (DAMVAD 2011). However, many of these analyses only study differences among self-employed and an increasing number of studies of women and men in general conclude that women are both more risk averse and less competitive than men (Bönte and Piegeler 2012; Croson and Gneezy 2009; Verheul et al. 2012, Wagner 2007). Others list lack of self-esteem and low self-perception as reasons for less entrepreneurship among women (e.g. Eastwood 2004). In Norway, for example, the fraction of women who believe they have the necessary capabilities to become an entrepreneur is consistently lower than the fraction of men with the same belief (Bullvåg et al. 2011). Moreover, a study of New Zealand, Great Britain and Norway found that men were more motivated by status of oneself and family in society, while women were more motivated by the idea of

achieving something and being recognized for it (Shane et al. 1991). However, when entrepreneurial growth aspirations are concerned, Kolvereid (1992) found no significant differences between male and female entrepreneurs in Norway.

A common finding from most countries is that women establish businesses in other and fewer sectors than men, and this is primarily linked to traditional choices of fields of education. Since private sector experience is likely to provide better knowledge of the market and experience in running a commercial business, this may give men an advantage over women in becoming entrepreneurs. Moreover, men tend to have more leadership and management experience. Fischer et al. (1993) conclude for example that female entrepreneurs have the appropriate education, but generally lack experience from the industry in which they hope to set up business and lack hands-on experience in managing employees. There is also growing evidence that women's work experience prior to becoming entrepreneurs may be a disadvantage in mobilising the appropriate resources to fund their ventures, and that this may help explain why women generally start businesses with less capital than their male counterparts (Carter et al. 2001; DAMVAD 2011).

Finally, several researchers have pointed to the family and household situation as a possible barrier to entrepreneurial activity among women (Eastwood 2004; Ljunggren 2008; OECD 2004; Stoner et al. 1990). This is based on the fact that women are still the main caregivers in most families and carry the primary responsibility for children and household tasks. Orser and Hogarth-Scott (2002) conclude for example that female entrepreneurs are more inhibited by personal demands than their male counterparts. Stoner et al. (1990) on the other hand find that marital status, number of children and hours worked are not significantly related to the perceived conflict between job and family, while business-related variables (job satisfaction, financial health) are clearly associated with work-family conflict. This suggests that there is considerable overlap between the business and personal dimensions of life for female small business owners.

OECD (2004) argues that such factors combine to make female entrepreneurs more prone to start home-based businesses and part-time businesses. Empirical evidence in support of this hypothesis is for example Eastwood (2004) who found that more than half of British female entrepreneurs work less than 30 hours per week and are more likely than men to use the home as their business base. A couple of studies from the US further report that women are more likely to switch to self-employment if they have at least one child under the age of six. Women, more often than men, state that family considerations and job flexibility are important reasons for being self-employed, and that a switch from wage-employment to self-employment substantially reduces the number of weeks and hours women work (Boden 1999, 2001). This seems at odds with the situation in Norway where self-employment generally involves longer working hours for both women and men (Statistics Norway

2012). Moreover other research on female employment indicates that self-employed women are more likely to work at least as much or more than their partner (Kitterød and Rønsen 2012), more likely to switch from part-time to full-time work (Kitterød, Rønsen and Seierstad 2013), and after the birth of a child, they return faster to work than other employed mothers (Rønsen and Kitterød 2014).

One area of the family and household situation that is vastly under-researched is the role of the partner. Usually, the presence of a spouse is just represented by a dummy variable for marital status in the empirical model (e.g. Hundley 2000; Moore 1990; Renzulli et al. 2000; Stoner et al. 1990) or his (her) income or wealth is included as a covariate (e.g. Boden 2001; Berglann et al. 2011). An exception is Bruce (1999) who found that women who were married to a self-employed man were about twice as likely as other women to become self-employed themselves. This could be due to assortative mating or jointly run family businesses, but robustness checks showed that these factors only partially explained the relatively large effect. Hence, Bruce suggests that intra-household transfers of human capital (husband's knowledge, supply channels, network etc.) and, to a lesser degree, financial capital (husband's economic resources) also play a role.

If lack of time is a barrier for female entrepreneurship, as suggested by several authors (e.g. OECD 2004; Orser and Hogarth-Scott 2002), the partner's working hours is a potential restricting factor. However, this has received little attention in existing research. Previous analyses of Norwegian couples show for example that the female partner almost always works shorter hours in the labour market than the male partner. Men who work long hours almost always have a partner who works less, whereas this is not the case for women (Kitterød 2007). This suggests that employed men and women have unequal support at home, and that the partner's labour market activity is an important area for further investigation.

In a recent study based on survey data we have examined more closely the role of family and household characteristics for women and men's propensity to *be* self-employed (Rønsen 2012; Rønsen 2014). As mentioned above, we found that having young children was positively related to women's self-employment propensity, but no such associations were found for men. Apart from that, most of the associations were fairly similar for married or cohabiting women and men. Somewhat surprisingly, the partner's education and income seemed more or less unrelated to the respondent's self-employment propensity, but there was a clear negative relationship between the partner's working hours and self-employment. Both women and men were more likely to be self-employed if the partner did not work at all than if he (she) worked up to 44 hours per week, but if the partner worked even longer, the negative association disappeared. It is hard to know the causal direction of this relationship, as we did not know which of the partners had adapted their hours to the other in the first place. Another characteristic that was strongly related to the self-employment propensity of the respondent

was whether or not the partner was self-employed himself (herself). This association was somewhat stronger for women than for men and could reflect both assortative mating ("like marries like") and jointly run family businesses, but also the advantage of having close access to specific skills and the experience of running a business. Last, but not least, access to capital seemed important. Both women and men were much more likely to be self-employed if the household's gross financial assets were high, and this relationship was stronger for men than for women. This aspect is even more relevant for the establishment of an incorporated firm, which is more costly both in terms of auditing and capital requirements.[3]

In the present analysis we explore these relationships further by addressing women's and men's propensity to *become* an entrepreneur rather than already *being* an entrepreneur based on an empirical definition of entrepreneurship that is presumably closer to the Schumpeterian meaning of the word than self-employment. By conditioning on personal and family- and household characteristics prior to the decision to become an entrepreneur, we may also be braver in interpreting the relationships as causal in the sense that the characteristics are measured in the past. However, some people may of course have had entrepreneurial intentions long before they are realised, so we should still be somewhat cautious in inferring causality.

4. Data, definitions and descriptive statistics

Data sources and definitions

Our definition of an incorporated entrepreneur is based on Berglann et al. (2011) and Hvide (2009). Similarly to them, we require that the entrepreneur at start-up (i.e., during the firm's first two years) has i) a blocking minority position (>33 percent ownership share), and ii) is either an employee or has a formal management role (CEO, chairman of the board, or both) in the firm. The choice of a threshold necessarily involves some arbitrariness, but our criteria ensure that the incorporate entrepreneur has a high level of personal control over the firm and that he/she is an active owner. For an unincorporated (self-employed) entrepreneur, we require that he runs his own business as a sole proprietor. For both entrepreneurship types, we require that the firm is *new*. Persons who become owner-managers or sole proprietors of already existing firms (e.g. family businesses) are not classified

[3] Owners of private limited liability companies in Norway were obliged to inject a minimum capital of NOK 100,000 at start-up until 2012. The minimum amount was then reduced to NOK 30,000. Also the auditing requirements of small incorporated businesses were lowered in 2012, in order to encourage incorporation.

as entrepreneurs. Moreover, firms without registered activity are not classified as being established until they eventually become active.[4]

We use data for the period 2001-2011 from different registers that cover the entire population of labor market participants and firm owners. The data sources are:

- The Household register; which is a register with a wealth of information about individuals and households obtained by merging several primary registers.[5] It contains annual information about income, wealth, education and demographic characteristics for all persons above the age of 18 with permanent residence in Norway.[6]
- The Directorship register, providing details for each individual appointment in positions such as general manager, chairman or member of the board for incorporated firms, as well as sole proprietors for 2001-2011.
- The Register of employers and employees, with data on employment contract duration, wage and contractual working hours for each employee between 2001 and 2011.
- The Shareholder register, containing information about owners (both individuals and firms) and their shareholdings between 2004 and 2011, as well as a set of data with similar information for the 2001-2003 period.
- The Central register of establishments and enterprises, with information about the establishment and termination of all registered firms. The register also includes information on the firm's industry (4-digit NACE), and firm type (incorporated, sole proprietorship, etc.).
- The Accounts statistics, containing data from the financial statements of private limited dependent companies (i.e. firms under the organizational form AS) between 2001 and 2011.

To identify entrepreneurs in the sense of sole proprietors we use the Directorship register and the Central register of establishments and enterprises to match the individual sole proprietor with the corresponding firm (which has the organizational form ENK[7]). Our procedure for identifying incorporated entrepreneurs follows Fjærli et al. (2013). It identifies the owners of private limited dependent companies (under the organizational form AS) established between 2001 and 2011, their ownership shares, whether they are employed in the firm or have an appointment in the firm as general manager, chairman or member of the board. An individual's ownership shares in a company include

[4] This classification is based on the Central register of establishments and enterprises, which includes a binary activity code (active or non-active) assigned by Statistics Norway. An active firm is required to have registered some form of economic activity, such as positive turnover (total sales income) or payments of value added tax.

[5] This is not formally a "register," but a data base obtained by linking register based information from several sources, including income and wealth information from tax records.

[6] Persons employed in military or foreign services, living in Svalbard, in prison or in psychiatric hospitals are not included.

[7] Enkeltmannsforetak/sole proprietorship

both direct and indirect ownership, covering complex ownership structures, such as ownership chains up to three levels (see Fjærli et al. 2013, for details).

For both types of entrepreneurship we exclude firm-owners that cannot be matched with the Household register. We also exclude firms in the sector Financial intermediation (mainly holding companies)[8] and self-employed individuals from the primary industries (Agriculture and Fishing), which is common in self-employment oriented analyses of entrepreneurship.

Sample selection and descriptive statistics

We analyse the choice to become entrepreneur among people who are already participating in the labour market. That is, we exclude persons who live on social benefits, disability- or retirement pensions, or are long-term unemployed (i.e., not included in the Register of employers and employees). The motivation for this is that we wish to concentrate on "offensive" entrepreneurship choices, rather than "necessity" or "defensive" entrepreneurship, as defined by Berglann et al. (2011).

The first two pairs of columns of Table 1 show the total number of employed individuals in 2001 who established unincorporated (ENK) or incorporated (AS) firms, respectively, in the *subsequent* period 2002-2011. The last pair of columns of the table displays total number of individuals (men vs women) with a registered employment relationship in 2001 according to the Register of employers and employees (including self-employed individuals). Hence the last pair of columns includes the first two: The individuals in the last pair of columns are those who potentially could make the transision from (initial) wage employment in 2001 to entrepreneurship during 2002-2011.

Since we analyse transitions from (initial) wage employment to entrepreneurship, we exclude individuals who are already entrepreneurs in 2001. That is, we exclude sole proprietors or personal owners of firms established in 2001 or earlier.[9] To avoid the complicating issues related to retirement decisions, we also exclude individuals older than 62 years in 2001,[10] or who obtained social security or retirement income. Finally, we exclude individuals with unknown labour market status in 2001. That is, individuals who are formally registered in the Register of employers and employees, but with no registered work-hours and wage income. The result of subsequently applying these sample restriction criteria are shown in the second to fourth rows of Table 1. The last pair of columns shows

[8] The latter is important due to the extensive use of holding companies after the 2006 tax reform, which led to the creation of many new firms in Norway solely for tax purposes. See Fjærli et al. (2013).

[9] That is, if their ownership share exceeds 33 percent in an exisiting firm.

[10] As shown by Berglann et al. (2011), after the age of 62 entrepreneurs' retirement decisions are markedly different from the rest of the employed population.

that the population of individuals who potentially could make the transition from wage-employment (in 2001) to entrepreneurship during (2002-2011) consists of 703,651 women and 748,961 men. This is the "Population" in Table 1. Our final sample consists of 24,324 incorporated entrepreneurs and 65,435 self-employed ones, i.e., the ones who make the transition from initial wage employment to entrepreneurship.

As seen in Table 1, there is a huge gender imbalance in the data. Only 20 percent of the incorporated entrepreneurs and 26 percent of the self-employed ones are women (compared to 48 percent in the population). The distribution of individuals according to education level is, however, quite similar for men vs women, and those who become entrepreneurs during 2002-2011 vs the population, as seen from Table 2. A noticeable exception is the larger share of entrepreneurs with higher tertiary education or PhD (18 years of education, or more). For incorporated entrepreneurs these shares are 12 percent vs 7 percent for men and women, respectively, compared to 10 percent vs 13 percent for self-employed entrepreneurs. In the population, the share of individuals with the highest education level is 8 percent for men and 5 percent for women. In Table 2 we see that self-employed women are generally more highly educated than self-employed men. On the other hand, among the incorporated entrepreneurs there are no noticeable gender differences with regard to education levels.

Table 1. **Sample selection: Number of entrepreneurs and individuals in the sample**

	Self-employed		Incorporated		Population	
	Women	Men	Women	Men	Women	Men
Initial sample size	38,366	83,961	7,561	38,225	1,039,098	1,159,838
Persons excluded because they are:						
- already entrepreneurs in 2001	12,786	23,627	1,675	17,456	93,961	273,081
- above 62 years, or recipients of disbaility or retirement penions	1,961	2,727	341	547	126,278	66,717
- with unknown employment status	5,962	9,829	541	902	115,208	71,079
Final sample size	17,657	47,778	5,004	19,320	703,651	748,961

Considering broad fields of education, the most noticeable difference between men and women are related to the shares of individuals with an education from natural sciences, vocational and technichal subjects: around 40 percent for men and 7 percent for women. However, neither men nor women in this category are over- or underrepresented compared to their corresponding shares in the population.

Table 2. **Educational attainments and industry background among entrepreneurs and in the population**

	Self-employed		Incorporated		Population	
	Women	Men	Women	Men	Women	Men
Level of education:						
Primary or lower secondary (7-10 years)	15 %	21 %	15 %	13 %	19 %	20 %
Post-secondary (11-13)	39 %	48 %	46 %	50 %	45 %	50 %
Lower tertiary (14-17)	31 %	18 %	32 %	25 %	30 %	20 %
Higher tertiary and Phd (18+)	13 %	10 %	7 %	12 %	5 %	8 %
Broad field of education:						
General programmes	27 %	29 %	28 %	22 %	33 %	29 %
Humanities and arts	12 %	5 %	8 %	2 %	6 %	3 %
Teacher training and pedagogy	8 %	3 %	7 %	2 %	10 %	4 %
Social science and law	6 %	3 %	3 %	3 %	2 %	2 %
Business and administration	15 %	9 %	27 %	19 %	18 %	10 %
Natural sciences, vocational and technical subjects	7 %	37 %	8 %	43 %	6 %	40 %
Health, welfare and sport	18 %	5 %	11 %	2 %	20 %	3 %
Primary industries	1 %	2 %	1 %	1 %	1 %	2 %
Transport storage and communications	5 %	4 %	5 %	4 %	2 %	5 %
Industry background:						
Mining and quarrying	0 %	2 %	1 %	3 %	1 %	3 %
Manufacturing	8 %	16 %	8 %	15 %	8 %	23 %
Electricity, gas and water supply	0 %	1 %	0 %	1 %	0 %	1 %
Construction	1 %	16 %	2 %	16 %	1 %	10 %
Wholesale and retail trade, repair of vehicles and motor cycles	15 %	15 %	26 %	21 %	13 %	14 %
Hotels and restaurants	5 %	3 %	6 %	3 %	4 %	2 %
Transportation, storage and communication	5 %	10 %	5 %	7 %	5 %	11 %
Financial intermediation	2 %	1 %	3 %	3 %	3 %	2 %
Real estate activities	16 %	16 %	17 %	21 %	10 %	11 %
Public administration and defence	21 %	9 %	14 %	4 %	33 %	13 %
Education	4 %	3 %	2 %	1 %	3 %	3 %
Health and social work	13 %	4 %	8 %	2 %	14 %	3 %
Other community and personal services	10 %	4 %	7 %	2 %	4 %	3 %

Table 2 also displays the distribution of individuals according to the industry in which they were employed in 2001. The most striking picture emerging from these figures is the high share of women in public administration, and the corresponding low share of the entrepreneurs in this industry. We see that public administration's shares of, respectively, incorporated and self-employed entrepreneurs constitute only about 1/3 and 2/3, respectively, of the industry's share of total employees. While there is no difference between men and women in this respect, the high share of women employed in public administration (33 percent) compared to men (13 percent), contributes to the overall much lower entrepreneurship rate among women, because of the extraordinary low propensity to become an entrepreneur in this industry. We deal with this effect in our analyses below by including a dummy variable for being a public administration employee in 2001.

5. Results

We now present estimates of (binary) probit models of the choice to become an incorporated or self-employed entrepreneur during 2002-2011, given the initial condition of wage employment in 2001. We focus on the distinction between the sexes, and estimate separate coefficients for men and women. Moreover, we estimate separate models for the propensity to become a self-employed vs incorporated entrepreneur, and for the subpopulation of individuals who live together with a partner (i.e., married couples, or non-married cohabitants with common children)[11]. The explanatory variables pertain to individual's initial condition in 2001, including such variables as age, financial wealth, educational attainments, labour market status and variables that characterize his/her family- and household situation. The latter include partner characteristics, which play a particularly prominent role in our analyses (see Tables 3-4 for a list of the variables).

The transition from employment to self-employment (sole proprietorship)

Table 3 reports the results for all women and men regardless of marital status, i.e. whether or not they are married, cohabiting or single. We find that having a partner affects women and men differently. Married or cohabiting women are less likely to become self-employed entrepreneurs than single women, while married or cohabiting men are more likely to enter self-employment than single men. Also when children are concerned, we observe a different pattern for women and men. Women with at least one child (regardless of its age) are more likely to become self-employed than childless women,

[11] Our data contain no information on cohabiting couples without common children.

while men whose youngest child is above 2 years old are less likely to become self-employed than childless men. This indicates that having children is more of a barrier for men's self-employment propensity than for women's – which is contrary to our a priori expectation. However, the number of additional children (in addition to the youngest one) increases men's likelihood of switching to self-employment, while this has no effect on women.

As expected we find several gender differences in self-employment entry related to educational field. Compared to those with general programs only (the reference group), both women and men are more likely to become self-employed if their education is within humanities and arts and less likely to become self-employed if they have teacher training education. This is consistent with Table 2. A more divergent pattern is found for educations within natural sciences, vocational and technical subjects which are negatively related to self-employment entry among women, but not for men (where there is no noticeable effect). Quite opposite gender patterns appear for educations within health, welfare and sports, and business and administration, where women and men are, respectively, less and more likely to become self-employed compared to those with general programs. For educations within transport, communication, safety and other services it is the other way around: women with this background are more likely and men less likely to switch to self-employment, compared to general programs.

A higher level of education is found to have a positive impact on both women's and men's self-employment propensity, but with a stronger effect for women. There is also a gender difference in the effect of age, which is positive for women and negative for men. Both effects declines with age, however (age squared contributes negatively).

For previous employment status there are both similarities and differences between the sexes. For women as well as men, self-employment entry is higher among those who are unemployed and higher among employees who work long part-time than among full-time employees. The positive relationship with long part-time work is stronger for men than for women, however. Men who work short part-time are also more likely to enter self-employment than full-time workers, while women are less likely to switch to self-employment if they work short part-time. Our interpretation is that unemployment is a factor that spurs alternative employment strategies such as self-employment among both sexes, while part-time work may have a different meaning for women and men. Since part-time work is relatively rare among men, they may be more rationed in the labour market and seek ways to work more. Long part-time work is often a personal choice for women, while short part-time is less common, and female employees who work such short hours may have health problems or other limitations that make self-employment no option.

Moving to women and men who are in a couple (either married or cohabiting) we find more or less the same patterns as reported above for the whole population, see Table 4. However, if the youngest child is above 6 years old, the self-employment propensity is no longer positively associated with having children. Hence, there is no difference between women in a couple who are childless and women in a couple with the youngest child above school-age. Moreover, there is no negative effect, regardless of the age of the youngest child, of having children for men in a couple. The number of additional children, on the other hand, still has a significantly positive effect on the self-employment propensity of married/cohabiting men.

In our analysis we are able to study several characteristics of the partner, which is of particular interest since this is an area that has been little researched before. One partner characteristic that is of great importance for the self-employment propensity among both women and men is whether or not the partner is self-employed himself/herself, which is in line with previous findings from both the U.S. (Bruce 1999) and cross-sectional analyses for Norway (Rønsen 2012, 2014). Since we only study *new* business establishments, we can rule out that the positive effect just reflects jointly run family businesses. Thus we expect that the special knowledge and resources of a self-employed partner plays a vital role when deciding to set up one's own business, although assortative mating (like marries like) may still play a part. When economic resources are concerned, the earnings of the partner have a positive impact on the self-employment propensity among both women and men, but the effect of the partner's wealth varies with gender. Somewhat surprisingly, it is negative for women, implying that those with wealthier partners are less likely to become self-employed, while men are not affected by the wealth of the partner.

Previously, we argued that long working hours of the partner could be a barrier for self-employment, and the results partly support this notion. However, the dividing line seems to be whether or not the partner works at all, as there is a negative effect for most working-hours categories (short part-time, long part-time and full-time). The pattern is similar for both women and men, except that women are less likely to enter self-employment even when the partner is unemployed, while this does not hold for men.

Table 3. **Probit regression estimates of the propensity to become a sole proprietor. Whole population**

Dependent variable: To become a sole proprietor (binary)	Women				Men			
	Coef.	z	[95% CI]		Coef.	z	[95% CI]	
Age in 2001	0.028	9.7	0.022	0.033	-0.017	-9.9	-0.020	-0.014
$(Age)^2$ in 2001	-0.001	-15.9	-0.001	-0.001	0.000	-2.2	0.000	0.000
Level of education (Ref: primary)								
Lower secondary (8-10)	0.033	0.4	-0.116	0.181	0.067	1.4	-0.030	0.164
Upper and post-secondary (11-13)	0.087	1.2	-0.061	0.235	0.047	1.0	-0.050	0.144
Lower tertiary (14-17)	0.167	2.2	0.018	0.315	-0.006	-0.1	-0.103	0.091
Higher tertiary and Phd (18+)	0.541	7.1	0.391	0.691	0.139	2.8	0.041	0.236
Married and cohabiting	-0.117	-13.8	-0.134	-0.101	0.045	7.8	0.034	0.057
Employment status (Ref: Full time (30+ h/w)								
Unemployed	0.136	10.4	0.111	0.162	0.122	14.2	0.105	0.139
Short part-time (<15 h/w)	-0.022	-2.8	-0.038	-0.007	0.033	5.5	0.021	0.045
Long part-time (15-30 h/w)	0.027	2.9	0.009	0.045	0.205	23.7	0.188	0.222
Log-wealth	0.019	10.5	0.015	0.022	0.013	10.5	0.010	0.015
Age of youngest child (Ref: no children):								
0-2 years	0.058	3.4	0.025	0.092	-0.013	-0.9	-0.041	0.015
3-6 years	0.059	3.6	0.027	0.091	-0.030	-2.2	-0.057	-0.003
7-12 years	0.038	2.5	0.008	0.069	-0.037	-2.9	-0.063	-0.012
13-17 years	0.041	2.7	0.011	0.071	-0.042	-3.5	-0.065	-0.018
18+ years	0.046	2.5	0.010	0.082	-0.029	-2.1	-0.056	-0.002
Number of previous children	0.010	1.6	-0.002	0.023	0.024	4.8	0.014	0.034
Broad field of education:								
General programmes	0	(ref.)						
Humanities and arts	0.258	15.3	0.225	0.291	0.218	13.8	0.187	0.248
Teacher training and pedagogy	-0.326	-15.4	-0.367	-0.284	-0.222	-11.2	-0.261	-0.183
Social science and law	0.116	4.8	0.068	0.163	0.118	6.4	0.082	0.154
Business and administration	-0.033	-2.5	-0.059	-0.007	0.029	2.6	0.007	0.051
Natural sciences, vocational and technical subjects	-0.054	-3.0	-0.089	-0.018	0.013	1.5	-0.004	0.031
Health, welfare and sport	-0.252	-16.6	-0.281	-0.222	0.053	3.1	0.020	0.086
Primary industries	-0.028	-0.7	-0.110	0.055	-0.082	-3.7	-0.125	-0.038
Communications, safety and security and other services	0.349	16.6	0.308	0.391	-0.091	-6.4	-0.119	-0.063
Unspecified broad field of education	-0.057	-1.2	-0.152	0.038	0.127	3.6	0.059	0.196

Note: Dummies for country-of-origin and being a public administration employee in 2001 are included in the estimation.

Table 4. **Probit regression estimates of the propensity to become a sole proprietor. Only married and cohabiting persons**

Dependent variable: To become a sole proprietor (binary)	Women				Men			
	Coef.	z	[95% CI]		Coef.	z	[95% CI]	
Level of education (Ref: Primary								
Lower secondary (8-10)	-0.063	-0.8	-0.226	0.100	0.022	0.4	-0.091	0.135
Upper and post-secondary	-0.032	-0.4	-0.195	0.130	0.007	0.1	-0.106	0.119
Lower tertiary (14-17)	0.024	0.3	-0.140	0.188	0.003	0.1	-0.110	0.116
Higher tertiary and Phd (18+)	0.422	5.0	0.255	0.588	0.047	0.8	-0.068	0.162
Employment status (Ref: Full time (30+ h/w)								
Unemployed	0.137	7.6	0.101	0.172	0.194	15.3	0.169	0.219
Short part-time (<15 h/w)	-0.031	-2.9	-0.052	-0.010	-0.060	-6.6	-0.078	-0.042
Long part-time (15-30 h/w)	-0.003	-0.3	-0.026	0.020	0.273	20.2	0.246	0.299
Log-wealth	0.023	9.4	0.018	0.028	0.014	6.9	0.010	0.018
Age of youngest child (Ref: no children):								
0-2 years	0.045	2.3	0.007	0.083	-0.005	-0.3	-0.032	0.023
3-6 years	0.058	3.1	0.021	0.094	-0.007	-0.6	-0.033	0.019
7-12 years	0.031	1.6	-0.007	0.068	0.009	0.7	-0.017	0.034
13-17 years	-0.023	-1.0	-0.067	0.021	-0.002	-0.1	-0.030	0.026
18+ years	-0.008	-0.3	-0.068	0.051	0.018	1.0	-0.019	0.056
Number of previous children	-0.016	-1.8	-0.033	0.002	0.025	4.2	0.013	0.037
Partner is an entrepreneur	0.210	19.2	0.189	0.232	0.210	16.5	0.185	0.235
Log-wealth of partner	-0.012	-4.9	-0.017	-0.007	0.000	0.1	-0.003	0.003
Log-earnings of partner	0.004	1.9	0.000	0.008	0.004	3.3	0.002	0.007
Level of schooling of partner (Ref: primary)								
Lower secondary (8-10)	0.155	4.2	0.083	0.227	-0.044	-2.2	-0.082	-0.005
Upper and post-secondary (11-13)	0.162	4.4	0.090	0.233	-0.016	-0.8	-0.054	0.023
Lower tertiary (14-17)	0.228	6.0	0.154	0.303	-0.021	-1.0	-0.062	0.020
Higher tertiary and Phd (18+)	0.260	6.5	0.182	0.338	-0.038	-1.4	-0.091	0.014
Unknown	0.281	5.6	0.183	0.379	0.020	0.7	-0.036	0.076
Employment status of partner (Ref: Unknown):								
Unemployed	-0.128	-4.3	-0.187	-0.069	-0.006	-0.3	-0.043	0.031
Short part-time (<15 h/w)	-0.107	-5.0	-0.149	-0.065	-0.067	-5.4	-0.092	-0.043
Long part-time (15-30 h/w)	-0.036	-1.3	-0.090	0.017	-0.077	-5.8	-0.104	-0.051
Full time (30+ h/w)	-0.113	-6.0	-0.150	-0.076	-0.072	-5.8	-0.097	-0.048

Note: The additional variables from Table 3 are also included in the estimation.

Having controlled for the partner's income and working hours, his or her educational level is believed to mainly reflect social capital and norms and values, including the degree to which the partner is supportive of the spouse's employment engagement. Interestingly, we find large gender differences in this area. There is a clear positive effect on the self-employment propensity of women if the partner is more highly educated, while the corresponding effect among men is mainly non-significant. This suggests that women are more sensitive than men to the positive support from a partner when setting up a new business.

The transition from employment to incorporated entrepreneurship

People who establish incorporated firms may come closer to being "true" entrepreneurs in the classical, Schumpeterian sense. One might therefore expect that there will be greater differences between women and men with regard to the propensity to found incorporated firms compared to becoming sole proprietors. Our results only partly support this hypothesis. When comparing the analyses across entrepreneurship type for all employees regardless of union status (Tables 3 and 5), the explanatory variable that most conspicuously contributes to a gender gap in both cases is the person's own wealth. The effect on becoming an entrepreneur – either self-employment or incorporated – is positive and significant for both sexes, but is stronger for incorporation than for self-employment. However, in the latter case the effect is slightly stronger for women than for men, while in the case of incorporation it is stronger for men. Moreover, the gender difference becomes larger when entrepreneurship is defined as incorporation instead of self-employment.

The initial employment status exhibits a somewhat mixed pattern for the two entrepreneurship types. While being unemployed has a positive impact on the self-employment propensity for both sexes, it impacts incorporation negatively among men and has no impact on women. The unemployment effect is thus more disparate for men and women in the incorporation case. For women, working short part-time has a negative effect both on the incorporation and self-employment propensity, while the effect is negative only in the latter case for men. The effect of working long part-time, on the other hand, becomes negative for women in the case of incorporation, while the effects are positive and significant for men regardless of entrepreneurship type. The gender difference related to long part-time work is thus also more dissimilar for incorporation than for self-employment.

Table 5. **Probit regression estimates of the propensity to become an incorporateed entrepreneur. Whole population**

Dependent variable: To become an incorporated entrepreneur (binary)	Women				Men			
	Coef.	Z	[95% CI]		Coef.	z	[95% CI]	
Age in 2001	0.026	5.4	0.016	0.035	-0.006	-2.3	-0.011	-0.001
$(Age)^2$ in 2001	-0.001	-9.5	-0.001	0.000	0.000	-7.9	0.000	0.000
Level of schooling (Ref: Primary):								
Lower secondary (8-10)	0.164	1.0	-0.171	0.499	0.180	1.5	-0.048	0.408
Upper and post-secondary	0.244	1.4	-0.092	0.580	0.352	3.0	0.124	0.579
Lower tertiary (14-17)	0.316	1.8	-0.021	0.654	0.475	4.1	0.248	0.703
Higher tertiary and Phd (18+)	0.398	2.3	0.058	0.738	0.537	4.6	0.309	0.766
Unknown	0.120	0.6	-0.278	0.518	0.255	2.1	0.015	0.495
Cohabiting	0.015	1.1	-0.012	0.042	0.090	10.5	0.073	0.107
Employment status (Ref: full-time):								
Unemployed	0.007	0.3	-0.036	0.049	-0.063	-4.3	-0.091	-0.035
Short part-time (<15 h/w)	-0.174	-13.0	-0.201	-0.148	-0.110	-12.2	-0.128	-0.093
Long part-time (15-30 h/w)	-0.069	-4.7	-0.098	-0.040	0.078	5.9	0.052	0.103
Log-wealth	0.073	14.9	0.063	0.083	0.116	27.1	0.108	0.125
Age of youngest child (Ref: no children) :								
0-2 years	0.024	0.9	-0.028	0.076	0.007	0.3	-0.031	0.044
3-6 years	0.011	0.4	-0.040	0.062	0.024	1.3	-0.012	0.061
7-12 years	0.022	0.9	-0.026	0.071	-0.004	-0.3	-0.039	0.031
13-17 years	0.037	1.5	-0.011	0.085	-0.003	-0.2	-0.036	0.029
18+ years	-0.027	-0.8	-0.090	0.037	0.013	0.6	-0.026	0.052
Number of previous children	0.020	2.0	0.001	0.039	0.030	4.4	0.016	0.043
Broad field of education (Ref: General programmes)								
Humanities and arts	0.053	1.9	-0.003	0.109	-0.105	-4.1	-0.156	-0.054
Teacher training and pedagogy	0.057	1.7	-0.008	0.123	-0.127	-3.9	-0.191	-0.063
Social science and law	-0.064	-1.5	-0.145	0.018	-0.056	-2.1	-0.109	-0.003
Business and administration	0.013	0.7	-0.025	0.051	0.101	6.9	0.072	0.129
Natural sciences, vocational and technical subjects	-0.162	-5.8	-0.218	-0.107	-0.128	-10.5	-0.152	-0.104
Health, welfare and sport	-0.078	-3.2	-0.126	-0.031	0.011	0.4	-0.042	0.064
Primary industries	0.076	1.3	-0.043	0.195	-0.087	-2.8	-0.147	-0.027
Communications, safety and security and other services	0.277	8.5	0.213	0.341	-0.120	-6.2	-0.158	-0.082

Note: Dummies for country-of-origin and being a public administration employee in 2001 are also included in the estimation.

Table 6. P**robit regression estimates of the propensity to become an incorporated entrepreneneur. Only married and cohabiting persons**

Dependent variable: To become an incorporated entrepreneur (binary)	Women				Men			
	Coef.	z	[95% CI]		Coef.	z	[95% CI]	
Level of schooling (Ref: Prima-ry):								
Lower secondary (8-10)	0.612	2.0	0.020	1.204	0.231	1.7	-0.035	0.497
Upper and post-secondary (11-13)	0.664	2.2	0.073	1.256	0.426	3.1	0.160	0.691
Lower tertiary (14-17)	0.755	2.5	0.163	1.347	0.548	4.0	0.282	0.814
Higher tertiary and Phd (18+)	0.860	2.8	0.264	1.455	0.607	4.5	0.340	0.873
Employment status (Ref: Full time (30+ h/w):								
Unemployed	0.041	1.5	-0.013	0.095	0.000	0.0	-0.041	0.041
Short part-time (<15 h/w)	-0.170	-9.9	-0.204	-0.136	-0.124	-10.5	-0.147	-0.101
Long part-time (15-30 h/w)	-0.088	-4.9	-0.123	-0.053	0.139	7.6	0.103	0.176
Log-wealth	0.075	12.1	0.063	0.087	0.140	17.5	0.124	0.155
Age of youngest child (Ref: no children):								
0-2 years	0.018	0.6	-0.037	0.073	-0.014	-0.8	-0.051	0.023
3-6 years	-0.002	-0.1	-0.056	0.052	0.010	0.6	-0.024	0.044
7-12 years	0.033	1.2	-0.023	0.088	0.001	0.1	-0.033	0.035
13-17 years	0.054	1.6	-0.011	0.119	0.018	0.9	-0.020	0.056
18+ years	0.003	0.1	-0.092	0.098	0.033	1.3	-0.019	0.086
Number of previous children	0.032	2.6	0.008	0.057	0.031	4.3	0.017	0.046
Partner is an entrepreneur	0.280	16.6	0.247	0.313	0.265	16.4	0.234	0.297
Log-wealth of partner	0.006	1.3	-0.003	0.015	0.012	6.0	0.008	0.016
Log-earnings of partner	0.008	2.3	0.001	0.014	0.000	-0.2	-0.004	0.003
Level of schooling of partner (Ref: Primary):								
Lower secondary (8-10)	-0.211	-3.2	-0.340	-0.083	-0.160	-5.7	-0.215	-0.105
Upper and post-secondary (11-13)	-0.158	-2.4	-0.286	-0.030	-0.087	-3.1	-0.142	-0.033
Lower tertiary (14-17)	-0.131	-2.0	-0.263	0.001	-0.044	-1.5	-0.102	0.013
Higher tertiary and Phd (18+)	-0.146	-2.1	-0.284	-0.008	-0.095	-2.7	-0.165	-0.025
Unknown	-0.250	-2.4	-0.453	-0.047	-0.128	-2.8	-0.219	-0.037
Employment status of partner (Ref: Unknown):								
Unemployed	-0.063	-1.3	-0.157	0.032	-0.042	-1.7	-0.092	0.007
Short part-time (<15 h/w)	-0.061	-1.7	-0.130	0.008	-0.079	-4.9	-0.110	-0.047
Long part-time (15-30 h/w)	0.021	0.5	-0.063	0.106	-0.044	-2.6	-0.077	-0.010
Full-time (30+ h/w)	-0.037	-1.2	-0.096	0.023	-0.042	-2.6	-0.073	-0.011

Note: The additional variables from Table 5 are also included in the estimation.

For women, being married or cohabiting has no effect on the probability of incorporation, while the effect is negative in the case of self-employment. For men, the effect is significantly positive in both cases. Somewhat surprisingly, and contrary to the case of self-employment, there are no gender differences with regard to the impact of having a child – regardless of the age of the youngest one. Having additional children has a significant positive effect also on women with regard to incorporated entrepreneurship, but there is also a stronger positive impact for men, rendering the gender difference about the same. When the human capital variables, age and educational level are concerned, there are smaller gender differences with regard to incorporation than self-employment. For example, we estimate a more positive effect of higher education for men.

Our main impression when comparing the effects of various partner characteristics across entrepreneurship type for those who are married and cohabiting (Tables 4 and 6) is that the gender differences are smaller for incorporated entrepreneurship than for self-employment. While there was a positive gradient of partner's higher education among women and a non-significant one among men with regard to self-employment, the corresponding effects for incorporation are negative for both sexes.

Similar to the results for self-employment, we find that the strongest predictor of incorporation among the partner characteristics is whether or not the partner himself/herself is an entrepreneur. In this respect there is no difference between the sexes. With regard to the effects of the partner's earnings, the gender differences are not significant at conventional levels, neither in the case of self-employment nor incorporation.

To summarize our results numerically, we used the estimated probit models of Tables 3-6 to derive average (marginal) probabilities to become an entrepreneur for given person- and household characteristics. These probabilities are obtained by predicting probabilities for each individual and then averaging over all the individuals in the given category. This can be seen as a bivariate analysis where one only conditions on one explanatory variable at a time, in addition to gender, and compares transition probabilities for different values of the explanatory variable. The resulting differences in transition probabilities do not represent causal effects unless the omitted variables are uncorrelated with both gender and the included explanatory variable. Nevertheless, this numerical exercise is interesting in order to identify variables that may have a particularly large statistical association with the gender gap in entrepreneurship rates. For example, if the gender gap can be attributed mainly to differences in women's and men's educational attainments, the difference in average transition probabilities between men and women within each education level or -field should be small.

In Table A1 (in the Appendix) we generally observe huge differences in the propensity to become entrepreneur across fields of education, gender and type of entrepreneurship. Some noticeable findings are summarized below: i) The probability that an employed man becomes self-employed is more than twice as high as for a woman: 6.2 percent vs 2.5 percent. Moreover, the average probability of becoming an incorporated entrepreneur is 2.5 percent for men and 0.7 percent for women. Thus men have, on average, three and a half times higher probability of making the transition from employment to incorporated entrepreneurship than women. ii) To have a partner increases, on average, a woman's probability of becoming a self-employed entrepreneur from 2.1 percent to 3.1 percent, and a man's probability from 5.7 percent to 7.0 percent. The corresponding effects are much smaller with regard to incorporated entrepreneurship, although they are clearly positive. iii) The probability that a public administration employee becomes an entrepreneur is about half the probability of the rest of the employed population, regardless of entrepreneurship type. Nevertheless, even if we exclude public administration employees from the sample, this has almost no impact on the aggregate entrepreneurship probabilities – neither for men nor for women. iv) Children do not matter much for entry into entrepreneurship, except for men with children less than two years old; then the probability that he becomes an incorporated entrepreneur increases from 2.1 percent to 4.1 percent on average. v) As a general rule, the probability of becoming entrepreneur is increasing with the partner's level of education, except for a high probability among persons with partners with primary schooling. vi) Regarding *narrow* fields of education, the highest entrepreneurship probabilities are within quite different fields for self-employed and incorporated entrepreneurs – except for the fields Medicine and Therapy. Different forms of arts, psychology and social anthropology stand out in the case of self-employment, whereas the three education fields among incorporated entrepreneurs with the highest entrepreneurship rates are: Therapy (18 percent), Dental health (11.5 percent) and Medicine (9.8 percent), for men, and Medicine (6.9 percent), Forestry (4.5 percent) and Agriculture (4.4 percent), for women. vii) The only education field where women have nearly the same entrepreneurship rate as men is within Medicine. From these figures it is clear that the gender gap cannot be explained by differences in educational attainments between men and women, despite the fact that such differences exist and are large (see Table 2).

6. Summary and conclusion

The question of why there are so few female entrepreneurs has long been in the forefront of entrepreneurial research, but remains a puzzle even today. Most authors point to dissimilar educational backgrounds and experience, and also differential access to capital as potential explanations of the gender gap, and empirical research supports these notions. However, even after

controlling for such factors most of the gender gap remains. Another popular explanation is psychological and motivational differences, which has received a lot of attention since the very beginning of female entrepreneurship research. The relevance of this explanation is more debated, however, although an increasing number of studies conclude that women are both more risk-averse and less competitive than men, and that men are more motivated by status attainment, while women are more motivated by achievement and recognition.

Explanatory factors that have received little attention so far are differences between women and men in their response to the family and household situation. Since women are still the main care-givers in most families and carry the primary responsibility for children and household tasks, children could be more of a barrier for female than for male entrepreneurship. Likewise, women may be more dependent on the support from a partner, both in terms of economic resources and backing at home. The role of the partner is, in particular, an area that is vastly under-researched.

The main contribution of this paper has been to cast more light on the role of the family and household situation with regard to determinants of gender differences in entrepreneurship. Thus we have added to recent findings from Norway indicating that children are no barrier to self-employment among women, and that most of the associations with other household- and partner characteristics are fairly similar for women and men (Rønsen 2014). This study was based on survey data, and explored gender differences in the propensity to *be* self-employed, which is a definition of entrepreneurship commonly used in entrepreneurship research. The present study, on the other hand, is based on linked registry data and is an analysis of gender differences in the propensity to *become* an entrepreneur. This approach allows for more causal interpretations, although not without reservation. Moreover, we used a more refined definition of entrepreneurship which comes closer to the classical "Schumpeterian" meaning of the word, distinguishing between those who enter entrepreneurship as sole proprietors (self-employed) and those who enter as incorporated owner-managers.

Somewhat surprising, we found that children are no barrier to entrepreneurship entry even when we look at the establishment of an incorporated business, which presumably represents a bigger decision than mere self-employment or sole proprietorship. Also in line with previous international and national research we find that the most influential partner characteristic is whether or not the partner is an entrepreneur himself/herself. Since the present analysis only studied *new* establishments, we can rule out that the positive association merely reflects jointly run family businesses, and that the special entrepreneurial knowledge and resources of the partner is likely to play a vital role when setting up one's own business. Another finding which corroborates our previous cross-sectional analysis is that entrepreneurship is negatively associated with the partner's working hours, but the dividing line is primarily between those with a partner who does not work at all and those with a

working partner. A novel finding related to the partner's employment status is that women are less likely to enter self-employment as sole proprietors if the partner is unemployed, but this is not the case for men.

Other partner characteristics that have a divergent impact on sole proprietorship among women and men are his/her educational level and wealth. For women, there is a clear positive effect on self-employment entry if the partner is more highly educated, while the corresponding effect among men is mainly non-significant. Since we controlled for the partner's income and working hours, this suggests that women are more sensitive than men to the positive support from a partner in other areas when setting up a new business. Concerning the partner's wealth, we found, somewhat surprisingly, that women with wealthier partners are less likely to become self-employed, while men are not affected by the wealth of the partner.

At the outset we had expected greater gender differences in the impact of family- and household characteristics on the propensity to become an incorporated business owner than on the propensity to become a sole proprietor. However, our main impression is that the gender differences are smaller for incorporated entrepreneurship than for self-employment. For example, there is no difference between the sexes with regard to the impact of the partner's education – which is negative also for women in the case of incorporated entrepreneurship. Moreover, there is no longer a significant difference in the effect of the partner's wealth. However, similar to the results for sole proprietorship, we found that the strongest predictor of incorporation entry among the partner characteristics is whether or not the partner is an entrepreneur himself /herself, and – as in the case of self-employment – we found no difference between the sexes in this respect.

To sum up, the present study did not bring us much closer to revealing the secrets as to why there are so few female entrepreneurs. What we have contributed to, however, is to rule out that the family and household situation is a major explanation. Moreover, since van Praag and Raknerud (2014) have shown that there may not be much to gain in economic terms by setting up one's own small-scale business (at least not on the individual level),[12] what the gains are for the society as a whole remains to be discussed. Along with OECD one may argue that the gender gap in entrepreneurship represents an untapped female labor reserve that could make a significant contribution to new business formation, job creation and overall economic growth. On the other hand, when female employment is as high and unemployment as low as in Norway, there may be less to gain also for the society as a whole. Besides, politicians and policy-makers probably face a hard task in promoting more female entrepreneurship as there are many options available in the ordinary (wage)

[12] Van Praag and Raknerud (2014) use the same data and entrepreneurship definitions as in this paper.

labor market, which may be just as attractive and pay off just as well – at much less risk – than managing one's own business.

References

Aastebro, T. (2012): *The returns to entrepreneurship*. In D. Cumming (ed.): The Oxford Handbook of Entrepreneurial Finance, Oxford: Oxford University Press.

Aastebro, T. and J. Chen (2014): The Entrepreneurial Earnings Puzzle : Mismeasurement or Real? *Journal of Business Venturing*, 29(1): 88-105.

Alsos, G. A. (2006): *Barrierer for kvinners entreprenørskap*: Diskusjonsnotat. Arbeidsnotat nr. 1009/2006. Bodø: Nordlandsforskning.

Becker, G.S. (1991): *A treatise on the family*, enlarged edition. Cambridge, Mass.: Harvard University Press.

Benz, M. and B. Frey (2008): Being independent is a great thing: Subjective evaluations of self-employment and hierarchy. *Economica* 75(298): 362-383.

Berglann, H., E. R. Moen, K. Røed and J. S. Skogstrøm (2011): Entrepreneurship: Origins and returns. *Labour Economics* 18: 180-193.

Berglann, H., R. Golombek and K. Røed (2012): "Entreprenørskap i Norge – Mest for menn? *Søkelys på Arbeidslivet* 01-02/2013: 3-19.

Berk, S. F. (1985): *The Gender Factory: The Apportionment of Work in American Households*. New York: Plenum Press.

Bernardi, F. (1999): Does the husband matter? Married women and employment in Italy. *European Sociological Review* 15 (3): 285-300.

Birley, S. (1989): Female entrepreneurs: Are they really any different? *Journal of Small Business Management* 27(1): 7-31.

Boden, R. J. (1999): Flexible working hours, family responsibilities, and female self-employment. Gender differences in self-employment selection. *American Journal of Economics and Sociology* 58(1) : 71-83.

Boden, R. J. (2001): Gender and self-employment selection: An empirical assessment. *Journal of Socio-Economics* 25(6): 671-682.

Boden, R. J. and A. R. Nucci (2000): On the survival prospects of men's and women's new business ventures. *Journal of Business Venturing* 15(4): 347-362.

Bruce, D. (1999): Do husbands matter? Married women entering self-employment. *Small Business Economics* 13: 317-329.

Bullvåg, E., L. Kolvereid and B. W. Åmo (2011). *Entreprenørskap i Norge 2010, Global Entrepreneurship Monitor*. Bodø: Bodø Graduate School of Business.

Bø, T. P., R. H. Kitterød, T. Køber, S. M. Nerland and T. Skoglund (2008): *Arbeidstiden – mønstre og utviklingstrekk.* Reports 2008/12. Oslo-Kongsvinger: Statistics Norway.

Bönte, W. and M. Piegeler (2012): Gender differences in competitiveness, risk tolerance, and other personality traits: Do they contribute to the gender gap in entrepreneurship? Paper presented at IZA Workshop: New Directions in the Economics of Entrepreneurship, Potsdam, June 2012.

Carter, S., S. Anderson and E. Shaw (2001): *Women's business ownership: A review of the academic, popular and internet Literature. 2001.* Report to the U.K. Small Business Service.
Glasgow: University of Strathclyde.

Connelly, R. (1992): Self-employment and providing child care. *Demography* 29(1): 17-29.

Croson, R. and U. Gneezy (2009): Gender differences in preferences. *Journal of Economic Literature* 47(2): 448-474.

DAMVAD (in collaboration with René Chester Goduscheit) (2011). *State of the Art in Entrepreneurship Research. A Policy-Oriented Review with Particular Emphasis on the Gender Perspective and the Norwegian Context*. DAMVAD and University of Southern Denmark. Available at http://www.damvad.com/media/11159/21778-mer_program_-_policyoriented_review_february_2011.pdf

Du Rietz A. and M. Henrekson (2000): Testing the female underperformance hypothesis. *Small Business Economics* 14(1): 1-10.

Eastwood, T. (2004): *Women Entrepreneurs: Issues and Barriers. A Regional, National and International Perspective.* St Albans: Exemplas Ltd.

Fischer, E. M., A. R. Reuber and L. S. Dyke (1993): A theoretical overview and extensions of research on sex, gender, and entrepreneurship. *Journal of Business Venturing* 8: 151-168.

Fjærli, E., D. Iancu and A. Raknerud (2013): Facts about entrepreneurship in Norway. Who become entrepreneurs and how do they perform? Reports, 52/2013, Statistisk sentralbyrå.

Gundry L. K., M. Ben-Yoseph and M. Posig (2002): Contemporary perspectives on women's entrepreneurship: a review and strategic recommend *iza*dations. *Journal of Enterprising Culture* 10(1): 67.

Hamilton, B. (2000): Does entrepreneurship pay? An empirical analysis of the returns to self-employment. *Journal of Political Economy* 108(3): 604-631.

Hisrich, R. D., C. G. Brush, D. Good and G. DeSouza (1997): *Performance in Entrepreneurial Ventures: Does Gender matter?* Frontiers of Entrepreneurship Research. Wellesley, MA: Babson College.

Hundley, G. (2000): Male/female earnings differences in self-employment: The effects of marriage, children, and the household division of labor. *Industrial and Labor Relations Review* 54(1): 95-114.

Hvide, H.K. (2009): The Quality of Entrepreneurs. *Economic Journal*, 119, 1010-1035.

Joona, P. A. (2014): Female self-employment and children: The case of Sweden. IZA DP No. 8486. Bonn: The Institute for the Study of Labor.

Kelly, D. J., C. G. Brush, P. G. Greene and Y. Litovsky (2011): *Global Entrepreneurship Monitor – 2010 Women's Report.* Babson Park, MA: Babson College.

Kitterød, R. H. (2007). Far jobber nesten alltid mest. Arbeidstid blant par av foreldre. In E. Kvande and B. Rasmussen (eds.): *Arbeidslivets klemmer. Paradokser i det nye arbeidslivet*. Bergen: Fagbok-forlaget.

Kitterød, R. H. and M. Rønsen (2012): Untraditional dual-earners in Norway: when does she work at least as much as he? *Work, Employment and Society* 26(4) 657 – 675.

Kitterød, R. H., M. Rønsen and A. Seierstad (2013): Mobilizing female labour market reserves: What promotes women's transitions between part-time and full-time work? *Acta Sociologica* 56(2): 155-171.

Kolvereid, L. (1992): Growth aspiration among Norwegian entrepreneurs. *Journal of Business Venturing* 7: 209-222.

Levine, R. and Y. Rubinstein (2013): Smart and illicit: Who becomes an entrepreneur and does it pay? NBER Working Pap No. 19276. National Bureau of Economic Research, Cambridge, MA.

Ljunggren, E. (2008): *Kunnskapsbehov om entreprenørskap og kjønn i Norge.* NF-Arbeidsnotat nr. 1031/2008. In Norwegian. Bodø: Nordlandsforskning.

Masters, R. and R. Meier (1988): Sex differences and risk-taking propensity of entrepreneurs. *Journal of Small Business Management* 26(1): 31-35.

Moore, G. (1990): Structural determinants of men's and women's personal networks. *American Sociological Review* 55: 726-735.

OECD (2003) *The Sources of Economic Growth in OECD Countries.* Paris: OECD.

OECD (2004): *Women's entrepreneurship: Issues and policies*. Paris: OECD.

OECD (2005): *Understanding Economic Growth.* Paris: OECD.

Orser, B. and S. Hogarth-Scott (2002): Opting for growth: Gender dimensions of choosing enterprise development. *Canadian Journal of Administrative Sciences* 19: 284-300.

Parker, S. C. and M. van Praag (2010): Group status and entrepreneurship. *Journal of Economics and Management Strategy* 19(4): 919-945.

van Praag, M. and A. Raknerud (2014): The entrepreneurial earnings puzzle: Evidence from matched person--firm data. Discussion Papers No. 789, Statistics Norway, Research Department.

Renzulli, L. A., H. Aldrich and J. Moody (2000): Family matters: Gender, networks, and entrepreneurial outcomes. *Social Forces* 79(2): 523-546.

Rønsen, M. (2012): The family – a barrier or motivation for female entrepreneurship? Discussion Papers No. 727, Statistics Norway, Research Department.

Rønsen, M. (2014): Children and family: A barrier or an incentive to female self-employment in Norway. *International Labour Review* 153(2): 337-349.

Rønsen, M. and R. H. Kitterød (2014): Gender-equalizing family policies and mothers' entry into paid work: Recent evidence from Norway. *Feminist Economics*. DOI: 10.1080/13545701.2014.927584.

Shane S., L. Kolvereid and P. Westhead (1991): An exploratory examination of the reasons leading to new firm formation across country and gender. *Journal of Business Venturing* 6(6): 431-446.

Skogstrøm, J. S. and K. Røed (2014): Job Loss and Entrepreneurship. *Oxford Bulletin of Economics and Statistics*, 76 (5): 727-744.

Skrede, K. (2004): "Familiepolitikkens Grense – ved 'Likestilling Light'?" Pp. 160-96. *Velferdsstaten og Familien – Utfordringer og Dilemmaer*. In Norwegian. A. L. Ellingsæter and A. Leira, editors. Oslo: Gyldendal Akademisk.

Spilling, O. R. (2005): *Women entrepreneurship, management and ownership in Norway 2004: A statistical update*. Arbeidsnotat 2/2005, Oslo: NIFU STEP.

Statistics Norway (2012): Labour Force Survey Q2 2012, Table 13. Available at: http://www.ssb.no/english/subjects/06/01/aku_en/tab-2012-08-02-13-en.html

Stoner, C. R., R. I. Hartman and R. Arora (1990): Work-home role conflict in female owners of small businesses: An exploratory study. *Journal of Small Business Management* 29(1): 30-38.

Vaage, O. F. (2012): *Tidene skifter. Tidsbruk 1971-2010*. Statistiske Analyser 125, Statistics Norway.

Van Praag, M. C. and P. H. Versloot (2007): What is the value of entrepreneurship? A review of recent research. *Small Business Economics* 29: 351-382.

Verheul, I., Thurik, R., Grilo, I. and van der Zwan, P. (2012): Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality. *Journal of Economic Pshychology* 33: 325-341.

Wagner, J. (2007): What a difference a Y makes – Female and male nascent entrepreneurs in Germany. *Small Business Economics* 28: 1-21.

Wellington, A. J. (2006): Self-employment: the new solution for balancing family and career? *Labour Economics* 13: 357-386.

Zapalska, A. (1997): A profile of women entrepreneurs and enterprises in Poland. *Journal of Small Business Management* 35(4): 76-82.

Appendix: Supplementary results

Table A1: **Average estimated entrepreneurship probabilities by education level and field (eight most popular narrow fields), initial wealth and demographic characteristics. Derived from the estimated probit models**

	Self-employed		Incorprated	
	Women	Men	Women	Men
All	2.49 %	6.23 %	0.71 %	2.52 %
Level of schooling:				
Primary	2.2 %	8.0 %	0.3 %	0.7 %
Lower secondary (8-10)	1.9 %	6.5 %	0.5 %	1.6 %
Upper and post-secondary (11-13)	2.1 %	6.0 %	0.7 %	2.5 %
Lower tertiary (14-17)	2.6 %	5.7 %	0.8 %	3.2 %
Higher tertiary and Phd (18+)	6.6 %	7.5 %	1.1 %	3.4 %
Employment status:				
Unemployed	3.5 %	7.9 %	0.9 %	1.7 %
Short part-time (<15 h/w)	2.3 %	6.3 %	0.5 %	1.9 %
Long part-time (15-30 h/w)	2.5 %	10.1 %	0.7 %	3.1 %
Full-time (30+ h/w)	2.5 %	5.6 %	0.9 %	2.7 %
Public administration employee:				
Yes	1.4 %	3.3 %	0.3 %	1.0 %
No	2.5 %	6.0 %	0.8 %	2.8 %
Cohabiting:				
Yes	2.1 %	5.7 %	0.7 %	2.1 %
No	3.1 %	7.0 %	0.8 %	2.6 %
Age of youngest child:				
No children	2.2 %	6.1 %	0.6 %	2.1 %
0-2 years	3.6 %	8.1 %	1.1 %	4.1 %
3-6 years	3.2 %	7.0 %	1.0 %	3.8 %
7-12 years	2.6 %	6.0 %	0.8 %	2.8 %
13-17 years	2.2 %	5.6 %	0.6 %	2.2 %
18+ years	2.0 %	5.5 %	0.5 %	2.1 %
Partner is an entrepreneur:				
Yes	2.6 %	7.7 %	1.0 %	4.6 %
No	2.5 %	6.2 %	0.7 %	2.4 %
Level of schooling of partner:				
Primary	3.1 %	7.1 %	0.8 %	2.5 %
Lower secondary (8-10)	1.6 %	4.6 %	0.5 %	1.7 %
Upper and post-secondary (11-13)	1.7 %	4.9 %	0.6 %	2.4 %
Lower tertiary (14-17)	2.4 %	5.8 %	0.8 %	3.3 %
Higher tertiary and Phd (18+)	3.2 %	7.3 %	0.8 %	3.6 %

Table A.1 continued

	Self-employed		Incorprated	
	Women	Men	Women	Men
Employment status of partner:				
Unknown	2.9 %	6.9 %	0.7 %	2.5 %
Unemployed	2.0 %	6.2 %	0.6 %	2.6 %
Short part-time (<15 h/w)	2.0 %	5.0 %	0.5 %	2.3 %
Long part-time (15-30 h/w)	2.7 %	4.8 %	0.8 %	2.6 %
Full-time (30+ h/w)	2.0 %	4.9 %	0.7 %	2.6 %
Education field (narrow):				
Economics				6.1 %
Law			3.0 %	8.4 %
Business and administration		12.7 %		7.2 %
Wholesale and retail sales and marketing			2.6 %	6.1 %
Medicine	24.3 %	25.8 %	6.9 %	9.8 %
Horticulture				5.6 %
Dental health			2.9 %	11.5 %
Therapy	8.9 %	32.6 %		18.0 %
Sport and physical education			2.8 %	
Agriculture			4.4 %	
Fisheries and aquaculture			2.7 %	
Forestry			4.5 %	
Other services	10.0 %			
Music, dance and drama		22.3 %		
Psychology	15.0 %	21.0 %		
Literature and librarianship		16.9 %		
Social anthropology	12.4 %	16.6 %		
Visual arts and craft		14.3 %		
Media and information	10.0 %			
History and philosophy	8.7 %			
Sociology	8.5 %			

Statistics Norway

Postal address:
PO Box 8131 Dept
NO-0033 Oslo

Office address:
Akersveien 26, Oslo
Oterveien 23, Kongsvinger

E-mail: ssb@ssb.no
Internet: www.ssb.no
Telephone: + 47 62 88 50 00

ISSN: 1892-753X

Statistisk sentralbyrå
Statistics Norway

Design: Siri Boquist