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Dynamics**

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ABSTRACT

Tax Progressivity and Self-Employment Dynamics*

Analysis of the relationship between taxes and self-employment should account for the interplay between responses in self-employment and wage employment. To this end, we estimate a two-state multi-spell duration model which accounts for both observed and unobserved heterogeneity using a large longitudinal administrative dataset for Norway for 1993 to 2011. Our findings confirm theoretical predictions, and are robust to various changes to definitions and sample selections. A policy experiment simulating a flatter tax schedule in the year 2000 is found to encourage self-employment, delivering a net increase of predicted inflow into self-employment from 2.8% to 5.3%.

JEL Classification: H24, H25, J24, C41

Keywords: tax progressivity, income tax, self-employment, duration analysis

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1 Introduction

Models of choices facing wage earners typically neglect the fact that taxpayers may exit or enter self-employment because of differences in tax schedules. Since the interplay between the occupational choices is typically not considered in models of labour supply, these models are silent on how tax differences across occupational choice affect decisions.^{1,2} However in contrast, models of choice of the self-employed are dominated by perspectives where decisions are based on implicit or explicit comparisons to the wage sectors. One obvious reason for this asymmetry is the relative sizes of the sectors. For example, the self-employment rate (as a percentage of total employment) in Norway is 7%, while the European Union average is approximately 15% (OECD, 2018).

The relationship to the wage sector is not the only factor that complicates the assessment of the effects of taxation on self-employment. From a theoretical perspective, the tax effects are ambiguous. On the one hand, an increase in the tax rate may diminish the self-employment rate as it reduces expected returns. On the other hand, high taxes may encourage self-employment if loss-offsetting is allowed, since the government provides an implicit insurance by sharing the risk associated with self-employment (Domar and Musgrave, 1944).³

A large majority of empirical studies on the effect of taxes on the level of self-employment activity focuses on the United States. These studies examine the extensive margin in occupational choice models (see Bruce (2000, 2002), Gentry and Hubbard (2000, 2004), Schuetze (2000), Schuetze and Bruce (2004), Cullen and Gordon (2007), and Moore (2004)).⁴ Studies for other countries include, Hansson (2012) for Sweden; Fossen (2007, 2009), and Fossen and Steiner (2009), for Germany, and Wen and Gordon (2014), for Canada. Results from these

¹ See Blundell and MaCurdy (1999), and Keane (2011) for reviews of the literature on labour supply.

² ‘Occupational choice’ here means a choice between wage-employment and self-employment.

³ The role of loss-offsetting is less clear in the presence of a progressive tax schedule. If the tax rate is an increasing function of taxable income, the savings made because of the loss-offset are usually lower in magnitude than the taxes paid on profits (Gentry and Hubbard, 2000).

⁴ See Hansson (2012), Gale and Brown (2013), and Clingingsmith and Shane (2016), for surveys on taxation and self-employment.

studies are mixed. Results for the United States, for example, do not provide an unambiguous answer about the relationship between tax progressivity and self-employment. However, in other countries, tax progressivity is generally found to discourage self-employment.⁵

The representation of the tax schedule is important in any analysis of tax effects on self-employment. Some studies include measures of marginal and/or average taxes in a quasi-experimental or reduced-form analysis to investigate the effect of non-linearities in taxes on entrepreneurship.⁶ In other studies, authors have used measures of expected net-income differences and/or tax progressivity to capture the tax effects. For example, Gentry and Hubbard (2000, 2004) use the spread in the marginal (or average) tax rates faced by a self-employed individual at various levels of ‘success’, where success is defined as the observed distribution of the three-year real wage growth for entrants into self-employment.

In two recent studies (Fossen, 2009; Wen and Gordon, 2014), authors derive the tax variables within a structural framework where the decision making is based on the difference in expected utilities. Yet, the two papers differ in many aspects and draw different conclusions. The use of different utility functions and assumptions regarding the pre-tax income distribution of the individual result in different variables that capture the effects of nonlinearities in the tax schedule. They also use different statistical models (logit vs. probit).

Fossen (2009) models the transitions between wage and self-employment using data from the German Socio-Economic Panel (GSOEP) over the period 2002 to 2006, and a logit model

⁵ A positive correlation between taxes and self-employment may also partly be attributed to the higher tax evasion or avoidance possibilities in self-employment relative to wage employment (see, for instance, Schuetze and Bruce (2004)). Our data do not allow us to address this issue. Recent tax evasion estimates for Norway show that around 14% of the business income is not reported (Nygård, Slemrod and Thoresen, 2019). This estimate is lower than typical estimates for the U.S. but close to what is found among the self-employed in Finland (Johansson, 2005), and Denmark (Kleven et al., 2011). Slemrod (2007) estimates that around 57% of U.S. non-farm business income was not reported. The time and individual unobservable effects included in our model will partially mitigate this problem if the differential evasion possibilities are relatively constant over the time period under consideration. Another issue is the possibility of a tax-induced organisational shift. See Papini (2018) for a recent analysis of this issue. We treat a self-employed individual who decides to incorporate, and thus, decides to earn wages from the company, as a wage earner. We also include region fixed effects to partly control for this issue, as this organisational shift was more common in some regions and time periods (Papini, 2018).

⁶ For example, Bruce (2002), and Gurley-Calvez and Bruce (2008) use expected marginal tax rates, or, alternatively, average tax rates to capture non-linearities in the tax schedule. These authors do not include any measure of riskiness of income received.

in which agents are assumed to trade-off risks and returns. He uses a constant relative risk-aversion utility, and assumes normally distributed pre-tax income. The two relevant model-generated variables are: (i) the difference in net-of-tax incomes in the two occupations, and (ii) the variances of the individual's post-tax income distributions in the transition equation.

In contrast, Wen and Gordon (2014) use a pooled cross-sectional sample from the Canadian Survey of Labour and Income Dynamics over the years 1999 to 2005 to estimate the probability of self-employment in a probit model.⁷ They assume risk neutrality and a log-normal distribution for the pre-tax income. The relevant 'tax variables' are: (i) the difference in log net-of-tax incomes in the occupations (*netincdiff*), and (ii) a variable that they call *convexity*. The variable *convexity* has an intuitive interpretation as the 'increase in tax-liability taken on by the self-employed due to the volatility of their business income, expressed as a proportion of their disposable income'.

Both studies use selectivity-corrected income equations to predict individual pre-tax incomes, and then use a tax-transfer micro-simulation model to generate the relevant expected value and variance of after-tax incomes in wage employment and self-employment. The estimated models are subsequently used to simulate the effects of hypothetical tax policy scenarios that reduced progressivity. Fossen finds the 'flatter-tax' reforms considered discourage individuals from choosing self-employment;⁸ Wen and Gordon find a 'small' positive effect on the probability of finding someone in self-employment.⁹

Here we use the two variables *netincdiff* and *convexity* used by Wen and Gordon (2014). Although some of the tax effects in both studies are captured via net-income differences, the additional variable *convexity* in Wen and Gordon (2014) is an individual-specific measure that intuitively captures the interaction between the progressivity of the tax schedule and

⁷ Thus, the focus is on being in self-employment at the time of interview, and not on entering self-employment.

⁸ The interpretation given in Fossen (2009) is that a flatter tax schedule increases expected returns in self-employment, but at the same time it also increases the risk, since the variance of the net income distribution also increases. The second effect is found to dominate the first one and hence, a flatter tax schedule discourages self-employment.

⁹ The 'flatter-tax' reform considered is found to increase the probability of finding someone in self-employment by 0.04 percentage points, from the base model prediction of 5.76%.

the volatility of self-employment income relative to wage income.

Our work complements the existing empirical literature in a number of ways. First, our definitions of wage employment and self-employment are based on reported incomes from tax records, and not on survey responses. We use data drawn from various Norwegian population registers over the period 1993 to 2011. The data include rich socio-demographic information together with highly accurate income measures from the annual tax returns. Second, we model the evolution of employment spells using a two-state multi-spell duration model that controls for observed and unobserved heterogeneity correlated across spells, and accounts for left and right censoring in the observed spells. This contrasts with several previous contributions, which mainly focus on self-employment entries or exits using survey data with self-reported employment status and short panels of individuals.

We generally find significant effects of both *netincdiff* and *convexity* on the probability of exit from both types of employment spells, conforming to theoretical predictions as discussed in Section 5.1. The increase in *convexity* is found to increase the probability of exiting self-employment, and to decrease the probability of entry into self-employment, i.e., *convexity* has a discouraging effect on self-employment, *ceteris paribus*. On the other hand, an opposite effect is found for *netincdiff*: negative (positive) in the self-employment (wage-employment) equation. Additionally, in our base model, we find a larger effect of *convexity* relative to that of *netincdiff*, implying that small increases in *convexity* will require large increases in *netincdiff* to discourage the self-employed from quitting, and to encourage wage earners to enter self-employment.

Given the way the tax variables are constructed, a change in the progressivity of the tax schedule will have an impact on the *convexity* and on the *netincdiff* by changing the expected net income difference in self-employment and wage employment. From this, the total effect on the rate of self-employment of a decrease in the progressivity of the tax schedule is hard to predict. Hence, to better understand the net effect, we simulate a tax experiment that replaces the personal income tax structure in the year 2000 with a less

progressive, revenue-neutral tax schedule, as explained in Section 5.2. The overall estimated effect of this policy change is positive on the share of self-employment. The average exit rate from self-employment is estimated to go down by 0.018 (s.e 0.184) percentage points, while the estimated exit rate from wage-employment is estimated to increase by 0.119 (s.e 0.010) percentage points. This change results in a net increase of predicted inflow into self-employment changing from about 2.8% to 5.3%.

The rest of the paper is organised as follows. Section 2 describes the taxation of self-employment income and wages during our sample period. Section 3 sets out our econometric model. In Section 4 we provide details of the data and the sample selected for our analyses. We also present the procedure used for estimating the tax variables. The estimation results are discussed in Section 5, along with the results from our policy simulation and some sensitivity checks. Finally, Section 6 concludes the paper.

2 Taxation in Norway

Tax reforms undertaken in 1992 introduced a dual-income tax system in Norway. Under this regime, all types of capital income are taxed at a flat rate, but a progressive schedule applies to labour and pension income. Individuals pay income tax on two different tax bases: (i) *ordinary* income, and (ii) *personal* income.

Income from wages, self-employment, capital, transfers, and pensions, are first grouped as *ordinary* income. After deductions, individuals pay tax at a flat rate (28% during most of the sample period) on *ordinary* income.¹⁰ The other tax base - *personal* income - includes wage income, transfers and pension income, self-employment income due to active efforts, but not capital income. Individuals pay a surtax and social security contributions levied on the *personal* income.

As an example, consider a wage earner whose only source of income is from wages in the year 2005. The solid line in Figure 1 represents the marginal tax rates that apply to the wage

¹⁰ The deductions include a standard personal allowance, a deduction for expenses, including interest payments, and a basic allowance, which is a percentage (up to a maximum) of labour or pension income.

income. No taxes and contributions are paid for income below the tax-free threshold. This threshold was NOK 29,600 in 2005.¹¹ Above the threshold, a social security contribution of 25% (of the *personal* income above NOK 29,600) is due, up to the amount where the total amount is the same as one would get using the standard rate of 7.8% on all *personal* income. Thereafter the rate is 7.8%. The flat tax on *ordinary* income (28% in 2005), is paid on the part of income that exceeds the sum of the personal allowance and the basic allowance. The basic allowance is 31% of wage income with a lower limit of NOK 31,800 and an upper limit of NOK 57,400. The personal allowance is a standard deduction from *ordinary* income, set at NOK 34,200 in 2005. The last two steps in Figure 1 represent the two surtaxes that raise the marginal tax rates by 12 percentage points and 15.5 percentage points. The maximum marginal tax rate of 51.3% is reached after the two surtaxes become effective.

[Figure 1 here]

Taxation is more complicated for the self-employed because income represents the reward to the labour of the individual, as well as the returns to the capital invested in the firm. Given the lower tax rate on capital income, the decision about how to declare the income was not left to the discretion of the self-employed; rules were established to split the profits into labour and capital income.¹² The dashed line in Figure 1 represents the marginal tax rates that apply to self-employment income in the case where no capital is invested in the firm. The main differences to the wage income case are the lack of basic allowance, and the higher social security contribution (10.7% in 2005).

[Figures 2 and 3 here]

Tax progressivity is achieved through the tax-free allowances applied to ordinary income, and the surtaxes on personal income. However, during the years under consideration, the progressivity changed several times due to changes to the tax rates, to the number of surtaxes and to their thresholds. Overall, tax progressivity decreased during the period. Figures 2

¹¹ The exchange rate in 2005 was: 1 USD \equiv 6.45 NOK; 1 EUR \equiv 8.01 NOK).

¹² Capital income is calculated by multiplying the capital invested in the firm with a rate of return annually established by the government. The labour income is then estimated by subtracting the imputed capital income from the reported self-employment income net of expenses.

and 3 show the marginal tax rates and average tax rates in different years for an individual whose only source of income was wage income.¹³ Marginal tax rates in the year 2010 were overall lower than in the year 1995, and, for most part, they were also lower than in the year 2005. Similarly, the average tax rates in 1995 were in general higher than the rates in 2005 and 2010 (Figure 3).

3 Econometric model

Drawing heavily on the framework of Ham, Li and Shore-Sheppard (2016), we model employment transitions using a two-state multi-spell discrete duration model accounting for unobserved individual heterogeneity.¹⁴ The two employment states are self-employment and wage employment. The duration variable is measured in terms of the Norwegian financial year, which is the calendar year (January-December). Approximately 70% of individuals in our sample have a first spell that is left censored. Without dropping these individuals from the analysis sample, we include them and specify a different model of exit rates for them (Ham, Li and Shore-Sheppard, 2016). We check for sensitivity of our estimates to excluding the left-censored spells, which is equivalent to using an inflow sample.

With regard to the unobserved heterogeneity, we follow the literature and assume this to be distributed independently across individuals and of the covariates included but fixed over the same type of spell, but correlated across the two employment states and the type of spell (fresh vs left-censored). A discrete distribution is assumed for the unobserved heterogeneity.

As we closely follow the setup in Ham, Li and Shore-Sheppard (2016), we provide only the form of the hazard function used, and refer the readers to their paper for further details. For notational simplicity, we do not distinguish between duration time and calendar time, although the estimated model does. The duration time random variable is denoted as Υ .

¹³ Note that the thresholds account for wage growth.

¹⁴ Following the early pioneering work by Lancaster (1979), and Nickell (1979), the literature on modelling durations using survival analysis has developed very fast. Lancaster (1990) and Van den Berg (2001) provide a comprehensive discussion of theoretical issues as well as empirical examples that helped to develop this literature. See Carrasco and Garca-Prez (2015) for another recent application of a two-state multi-spell duration model with discretely distributed unobserved heterogeneity.

Let $j = \{sf, wf, sc, wc\}$ where the first letter denotes a self-employment (s) or a wage-employment (w) spell, and the second letter denotes a fresh (f) or a left-censored spell (c). The probability that individual i would leave the spell in spell type j at the *end* of duration time t , conditional on not having left in $t - 1$, is a discrete time hazard $\lambda(t)$ given by:

$$\begin{aligned} \lambda_{i,j}(t|x_{i,j}, \omega_{i,j}) &= \Pr(\Upsilon_{i,j} = t | \Upsilon_{i,j} > t - 1, \textit{taxation}_{i,j}(t), x_{i,j}(t), \omega_{i,j}) \\ &= F(h_j(t) + x_{i,j}(t)' \beta_j + \alpha'_j \textit{taxation}_{i,j}(t) + \omega_{i,j}) \end{aligned} \quad (1)$$

where h_j is the duration dependence function. $x_{i,j}(t)$ contains time-fixed and time-varying observed individual characteristics, $\textit{taxation}$ contains the tax variable(s), and $\omega_{i,j}$ is the unobserved heterogeneity. F is specified as the complementary log-log distribution function.¹⁵ To achieve convergence with stable parameter estimates, we restrict the duration dependence function to a log linear form, and model the unobserved heterogeneity to be discrete with two points of support.¹⁶ We keep the hazard-specific intercepts, and set $\omega_{sf} = \omega_{ef} = \omega_{sc} = \omega_{ec} = 0$ as a normalisation, and estimate the associated probability, p .

4 Data, sample, and variable definitions

4.1 Data and sample selection

The present study benefits from rich longitudinal Norwegian administrative data for the period 1993 to 2011. The main data source is the *Income and Wealth Statistics for Persons*

¹⁵ The distribution function is given by $F(z) = 1 - \exp[-\exp(z)]$. Some other popular distributions used are the standard normal and the logistic cdfs which are symmetric distributions. The distribution we employ is not a symmetric distribution. A discrete time hazard model derived from an underlying continuous time proportional hazard model can be written in this form. See Narendranathan and Stewart (1993) for an application.

¹⁶ Theoretical results exist for lack of non-parametric identification in hazard models when one or more of the following are present: duration dependence, time varying variables, time varying effects, and unobserved heterogeneity. For example, Baker and Melino (2000), using simulations, look at the behaviour of the non-parametric maximum likelihood estimator for a discrete duration model with unobserved heterogeneity and unknown duration effect, and find the estimator to be biased when both are non-parametrically specified. Unsurprisingly, empirical researchers have also found the model estimations to be unstable when most of the time effects are modelled in an unrestricted manner, and have thus imposed some functional form restrictions to identify the parameters. See Ham and Rea (1987) for a discussion of these issues in the context of an empirical application.

and Families (Statistics Norway, 2005). The data are drawn from the annual tax returns, and the education registers (years of education and fields of studies). The data also contain individual and family socio-demographic characteristics. Since our focus is on wage earners and the self-employed who have strong labour market attachment, we restrict our analysis to Norwegian citizens aged 25 to 61, and exclude those who have reported any income from agricultural, forestry or fishing activities.¹⁷

We use an income-based definition to identify periods or spells of self-employment and wage employment. In our main analysis, we classify an individual observation as ‘self-employed’ if the major source of income is self-employment income, i.e., if the reported self-employment income (net of expenses) is larger in absolute value than the wage income, and is also larger than government transfers (which include disability insurance, unemployment benefits and other types of pensions).¹⁸ Additionally, we restrict our sample to those who have been classified as either being in wage employment or self-employment during the observation period 1993 to 2011.¹⁹

[Figure 4 here]

The majority of individuals never experience any self-employment spells. For example, the average rate of self-employment over the sample period is around 5%, (see Figure 4). To reduce the computational burden of working with over 2 million individuals, we use a 50% random sample to generate our tax variables. From this sample, we next randomly select 2% of individuals who have never been categorised as self-employed, and 20% from the other group, which includes individuals with periods of self-employment spells only, and individuals with a mix of types of employment. This gives us a sample of 476,275 individual-year unweighted observations. All analyses presented use sample weights to account for this

¹⁷ Since immigrants are a group of ‘selected’ individuals, we exclude them.

¹⁸ We also exclude individuals who do not report any wage income or business income that is larger than the “Basic amount” during the observation period for at least 3 years. The “Basic amount” is the base for calculating many of the Norwegian social insurance scheme’s payments and was 78,024 NOK in 2011 (the approximate exchange rate in that year was: 1 USD \equiv 5.67 NOK; 1 EUR \equiv 7.79 NOK).

¹⁹ Around 18% of the individuals in the sample experienced at least one ‘third-state’ spell (periods of time that cannot be defined either as wage employment or as self-employment) and are omitted from the analysis.

endogenous sample selection, following Solon, Haider and Wooldridge (2015).

4.2 Defining and estimating the tax variables

Our analysis is based on the theoretical exposition of an expected utility maximisation approach discussed by Wen and Gordon (2014), who in turn base their model on the one developed by Rees and Shah (1986). Assuming risk neutrality, a convex tax schedule, and log-normally distributed pre-tax income, they show how the probability of self-employment can be written as a function of the tax schedule using two representations of the effects of taxation.²⁰ These are (i) *netindiff*, which is the difference in log of expected net incomes in self-employment and wage employment; and (ii) *convexity* which is a measure of how the expected tax liability changes due to the volatility of their self-employment income relative to the net income in wage employment (see online Appendix A.1 for further details).

The construction of the two tax variables requires net-income distributions for each individual. We use a tax simulator to generate these (see online Appendix A.2). The simulator considers the yearly rules for taxing self-employment income net of expenses, wages, and other sources of income. Other sources of income are taken to be exogenous; these are added to the predicted self-employment or wage income. The simulator also accounts for the main deductions and allowances, as well as for the system for taxation of the labour and capital parts of net self-employment income, see Section 2.

Our construction of the two tax variables closely follows Wen and Gordon (2014). Assuming pre-tax income to be log-normally distributed, $y_j \sim LN(\mu_j, \sigma_j)$, where $j = s$ for self-employment, and $j = e$ for wage employment, we have,

$$\bar{y}_j \equiv E(y_j) = \exp\left(\mu_j + \frac{1}{2}\sigma_j^2\right). \quad (2)$$

²⁰ Wen and Gordon (2014) represent the convex tax function specifying the after-tax income x_j as $(y_j)^{1-\tau}y_0^\tau$, where the tax parameters τ and y_0 are such that, $0 < \tau < 1$, and $y_0 > 0$ represents the income at which the tax liability is zero. $(1 - \tau)$ is the elasticity of post-tax income with respect to pre-tax income (also see Musgrave and Thin (1948) and Benabou (2000)).

The first tax variable, *netincdiff*, that enters the occupational choice probability is given by

$$netincdiff = [(1 - \tau_s) \ln(\bar{y}_s)] / [(1 - \tau_e) \ln(\bar{y}_e)] \simeq \ln [netincome_s / netincome_e] \quad (3)$$

where τ is a tax parameter from the tax function (see Footnote 20). For each individual, we first estimate the selectivity-corrected *expected* pre-tax income (\bar{y}_j) for each occupation in each time period.²¹ We then use the tax simulator to generate the individual specific net incomes in both occupations: *netincome_s* and *netincome_e*.

Next, we define the second individual specific tax variable representation: *convexity*. This variable is defined as the difference between the expected tax liability $E[T(y_s)]$, and the tax liability at the expected income $T(\bar{y}_s)$, relative to the expected net income $\bar{x}_s = (\bar{y}_s - T(\bar{y}_s))$.²² Wage employment is generally less riskier than self-employment. Hence, following Wen and Gordon (2014), we derive our *convexity* variable by setting the coefficient of variation for wage income equal to 0, so that *convexity* is associated with uncertainties in self-employment income only.

The *convexity* variable for each individual in each time period is calculated as:

$$convexity = \frac{E[T(y_s)] - T(\bar{y}_s)}{\bar{y}_s - T(\bar{y}_s)}. \quad (4)$$

4.3 Summary statistics

Summary statistics for the main estimation sample are provided in Table 1. On average, in the weighted sample, the proportion of individuals exiting out of a period of work and into a period of self-employment is less than 1%, whereas the average share of exits out of a period of self-employment is 11%. We next turn to our tax variables.

[Table 1 here]

²¹ Online Appendix A.3 contains the full set of estimates from the equations that were used to generate the income variables.

²² As shown in Wen and Gordon (2014), the tax liability function $T(y_j)$ in the theoretical model is given by $y_j(1 - (y_0/y_j)^\tau)$. This term is strictly convex and hence the use of the term *convexity*, see Wen and Gordon (2014, p. 472).

The overall distributions of the two tax variables are provided in Figures 5 and 6. *netincdiff* is predominantly negative, indicating that, for the majority of observations in the sample, the predicted net wage income is higher than the predicted net self-employment income.²³ *convexity* is as expected, estimated to be mostly positive.²⁴ The average value of predicted *netincdiff* of -0.448 implies that the *net* income in self-employment is about 64% of net income in wage employment. The average estimated value of *convexity* is 0.007 (s.d.= 0.008) which is lower than the *convexity* value of 0.011 (s.d. 0.16) reported by Wen and Gordon (2014) for Canada.

Box-and-whisker plots in Figures 7 and 8 show how these estimated tax variables change over time. The median *netincdiff* remains stable over time without experiencing a clear trend, and the spread decreases over time. A slightly declining trend is observed for *convexity* which complies with the reduced progressivity of the taxation during the sample period (Section 2). The temporary up-tick in the median and spread of *convexity* in 2000 is consistent with the fact that two surtaxes were introduced in that year, making the overall tax-schedule more progressive.²⁵ ²⁶

[Figures 5, 6, 7 and 8 here]

In addition to the two tax variables, the models also include time-varying and time-

²³ The paradox of self-employment being characterized by higher uncertainty and lower earnings than wage employment is a common finding in previous studies (see for example Hamilton (2000) and Hurst and Pugsley (2011), or Berglann et al. (2011) for the case of Norway). There are several possible explanations for this puzzle. Among them: (i) the relevance of unobserved non-pecuniary benefits; (ii) unobserved under-reporting of income by the self-employed; and (iii) over-estimation by the self-employed of their probability of success.

²⁴ Negative *convexity* values are possible if the tax function is not convex. Estimated *convexity* is 0 for about 1.5% of the observations and negative for about 5.5% of the observations.

²⁵ Another possible explanation for this is the increased uncertainty due to the early 2000s recession.

²⁶ We carried out an analysis of covariance to assess the contribution of various factors to the variation of the two tax variables. We included all the variables (sex, marital status, education, region, kids, family-head, year dummies, two selection correction terms, and the estimated variances), that were used in the predictions of these two tax variables along with the other tax variable (*convexity* or *netincdiff*). The model R-squared values were 29% and 49% respectively in the *netincdiff* and *convexity* equations. The top four largest contributors explained 46% of the model sum-of-squares (SS) in the *netincdiff* equation. These were Education, Selection into *SE*, and the regional and year dummies. With regard to the *convexity* variable, the top four largest contributors were the year effects, education, and the estimated heteroskedastic functions, which together explained 38% of the model SS. The *convexity* (*netincdiff*) variable in the *netincdiff* (*convexity*) equation explained less than 4%(2%) of the model variations. The largest contributions to the model SS came from the year effects.

invariant control variables. The time-invariant variables are: sex, age at the start of the spell, indicator variables for highest education level achieved, and regional dummies to account for local labour market conditions. Calendar time dummies control for macro effects. The data are an unbalanced panel, see descriptive information in Table 1. Self-employed individuals are on average older and less educated than individuals who are paid wages, and there is a lower proportion of females among the self-employed. Self-employment is also highly concentrated in the more densely populated areas of Eastern Norway (the Oslo region) and Western Norway (the Bergen region).

5 Results

5.1 Main Results

Before discussing the parametric model estimation results, we provide a plot of the empirical hazard in Figure 9.²⁷ The raw data self-employment (*SE*) hazard consistently lies above the wage-employment (*WE*) hazard, implying that the conditional exit rate from *SE* is higher relative to an exit from *WE*. The *WE* hazard is quite low and stable over the spell duration. The probability of exiting from *SE* into *WE* is around 0.23 in the first year of the spell compared to 0.02 from *WE* into *SE*.

[Figure 9 here]

Our base model estimates are presented in Table 2.²⁸ All four hazard functions are estimated simultaneously. Except for the left-censored *SE* hazard, the other three hazards show negative duration dependence, *ceteris paribus*. Insignificant duration dependence estimated for the left-censored *SE* spells is consistent with the observation that the probability of exiting is almost zero for high duration spells, and the sample of left-censored spells has a higher probability of containing large-duration spells.

²⁷ This is the number of individuals exiting during the year divided by the number of individuals in that state at the beginning of the year.

²⁸ The bootstrapped standard errors to account for the tax variables being ‘generated regressors’ did not change the significance of our variables compared to the usual maximum likelihood standard errors for our base model reported in Table 2. Hence, we only report the usual MLE standard errors in this table and subsequent tables.

[Table 2 here]

We focus our discussions on the interpretation of the estimated effects of the tax variables. The theory predicts a positive (negative) effect of the *netindiff* variable on the probability of exit from *WE* (*SE*). For example, the higher the proportionate increase in the net-income differential with respect to the net income from *WE*, the higher the exit rate from *WE* (Wen and Gordon, 2014; Taylor, 1996; Fossen, 2009). On the other hand, the theoretical prediction of the effect of *convexity* is negative on exit rate from *WE* since higher ‘*convexity*’ would be expected to discourage *SE*. The estimated effects of the two tax variables conform to these theoretical predictions.

These estimated coefficients are also found to be higher in absolute value for *WE* exit probabilities (Columns [2] and [4]). These results suggest that, compared to exits from *SE*, the probability of an exit from *WE* is more sensitive to changes in both expected net-income differences and tax progressivity. This is consistent with the fact that the *SE* tend to continue their business activities even if they experience lower earnings growth (Hamilton, 2000).

These estimates also indicate that a one percentage point increase in *convexity* requires an increase of approximately 9 to 14 percentage points in *netindiff* to keep these hazards unchanged. Note that increases in convexity in this calculation are assumed to take place via changes to the volatility of *SE* income (online Appendix A.1 equation (A.4)) as we assume no uncertainty in *WE* income in the calculation of this variable. Similarly, the increase in *netindiff* is assumed to work either via a reduction in the pre-tax income in *WE* or via an increase in the expected pre-tax *SE* income (not altering the variance of the *SE* income distribution). To further explore these effects accounting for the relationship between the two tax variables, we simulated a policy experiment. The results are presented below.

5.2 Results from a policy experiment

So far, we have looked at the effects of partial changes in the tax variables *netindiff* and *convexity*. Motivated by the analysis in Wen and Gordon (2014), to gain further understanding of how these related changes may be achieved through taxation, we consider a

hypothetical reform in the year 2000. We chose this year because the Norwegian government introduced two changes in the taxation of gross income from wage and self-employment in that year. The threshold for the 1999 surtax rate of 13.5% was increased from 269,100 NOK to 277,800 NOK. More importantly, an additional surtax was introduced for income exceeding 762,700 NOK (dashed line in Figure 10). These changes increased the overall progressivity of the Norwegian income tax system.²⁹

[Figure 10 here]

Our policy experiment is to replace two of the surtaxes applied to personal income with one surtax, to create a flatter tax schedule (solid line in Figure 10). The surtax value of 11% on gross income above 200,000 NOK is chosen to ensure revenue neutrality, given a ‘no behavioural reaction’ assumption. Other features of the taxation are held constant. New values of *netindiff* and *convexity* were generated under the hypothetical scenario using our tax simulator, and the transition rates predicted from the estimated models.

The average values of the *netindiff* and *convexity* variables in our weighted sample are -0.374 and 0.0071 under the new policy regime, compared to the original figures for the year 2000 of -0.382 and 0.0087 , respectively. As expected, the less-progressive tax schedule leads to a decrease of 0.16 percentage points in *convexity*. The hypothetical policy also leads to a small increase in the mean *netindiff*, so that average ratio of net income in *SE* to net income in *WE* changes from 68.2 % to 68.8%.

The predicted transition probabilities and the corresponding standard errors, under the old and the new tax regimes, are reported in Table 3.³⁰ In the benchmark year 2000, the model predicts that around 9.33% of self-employed individuals will transit out of *SE* to *WE* (Case [A]).³¹ However, the reform reduces this figure to 9.32% (Case [B]). Under the new regime, the predicted transitions from *WE* to *SE* are higher at 0.68% compared to 0.56% in the base model. Since a very large proportion of individuals are in *WE* compared to *SE*,

²⁹ According to exchange rates for 2000: 1 EUR \equiv 8.11 Norwegian kroner (NOK), and 1 USD \equiv 8.81 NOK.

³⁰ All predictions including the differences in predicted exit rate, and the associated standard errors, use all four hazards. These are calculated using STATA’s *margins* command.

³¹ The observed exit rates in 2000 were 9.813% and 0.595%.

even this small increase in the exit rates out of *WE* can generate a substantial net inflow into *SE*. The change in the exit rates induced by the policy reform is not significant for the self-employed.

[Table 3 here]

To further explore how the model predicts responses to separate changes in the two tax variables, we look at these effects separately. In Case [C], we hold the *convexity* variable fixed at a value that is the same as in the base case scenario, and let the *netincdiff* variable change. Conversely, in Case [D] there is a change in the *convexity* variable only. Table 3 shows that the partial effect of a change in *netincdiff* is an increase in transitions out of both *SE* and *WE*. This result is consistent with the fact that mean *netincdiff* experiences a decrease in the reform scenario for the self-employed, whereas it increases for wage earners. A possible explanation for this effect is that the reduced progressivity of the tax system would encourage a larger share of wage earners who expect to be successful in self-employment, to transit into *SE*. On the other hand, since a majority of self-employed individuals have been predicted to have a higher post-tax income in regular employment, a flatter tax scenario would increase the proportion of them leaving *SE* for *WE*. In contrast, the decrease in *convexity*, common to both *WE* and *SE* observations, reduces the transitions from *SE* and increases the exit from *WE*. In summary, the hypothetical tax scenario is found to encourage the net inflow into *SE*. Translating these estimates to numbers, we find that such a policy would have resulted in an increase from 2.76% to 5.34% in the net inflow into *SE*.³²

Finally, we briefly compare our results to the findings of Wen and Gordon (2014), given that the same variables are used to capture the effects of taxes and uncertainty. Wen and Gordon (2014) also simulated the effect of a flatter tax schedule in the year 2000 using Canadian data. Their policy reform implied decreases in the average values of (i) *netincdiff* and *convexity* from -22.5% to -23.3% (a decrease of 4%), and (ii) from 1.2% to 0.8% (a

³² Since the predicted probability of exit from *SE* in the reform scenario is not statistically significantly different from the base model, we use the base model predicted probability. With the reform scenario prediction, the predicted net inflow would rise to 5.36%.

reduction of 33%). The policy reform we considered increased the average values of *netincdiff* by around 2%, and reduced the average values of *convexity* by 18%. From the simulated policy reform, Wen and Gordon (2014) estimate an increase in the number of self-employed individuals of 0.78% (5.76 to 5.80%), which is substantially below our estimate of 2.6% (our experiment implies an increase of the self-employment share in 2001 from 4.56% to 4.68%). One should however note that Wen and Gordon (2014) do not model transitions.

5.3 Sensitivity checks

In this sub-section we present results of some of our investigations into key assumptions of our empirical approach. We consider the following: (i) re-definition of a self-employment spell; (ii) estimation based only on the inflow sample; (iii) trimming the *netincdiff* with respect to extreme values; (iv) controlling for local unemployment rates; (v) including a dummy variable for individuals receiving some unemployment insurance during the year, and (vi) allowing for the share of capital in *SE* income to be non-zero. Table 4 reports the results of these investigations. The estimated effects of the tax variables are qualitatively unchanged. The full set of results is available in the online Appendix A.3.

[Table 4 here]

Our first investigation examines the influence of the definition of an *SE* spell. In our base model we included individuals in the sample if they had at least 3 years of labour market attachment, i.e., if the net *SE* income or *WE* is larger in absolute value than the *basic amount* for at least 3 years over the years the individual is observed in data. We now redefine the sample requiring only one year of labour market attachment. The results using this new definition are presented in Panel [B] of Table 4. Individuals with less attachment to the labour market would be expected to be more sensitive to changes in the tax variables, and this is what we find when we include these individuals in the estimation sample. The results are qualitatively similar to the results from our base case (Panel [A]). However, the coefficient for *convexity* in the *SE* fresh spells hazard decreased substantially. Individuals with less attachment to the labour market with low predicted *SE* income might be expected

to be less sensitive to the progressivity of the tax system.

The base model was estimated using both the left-censored and fresh spells. We re-estimate our model using only the inflow sample. This reduces the total number of unweighted observations to 229,036. The definition of an *SE* spell is the same as the one used in our base model. The results are presented in Panel [C] of Table 4. The results are broadly similar to our base model results. As expected, dropping those spells for which we have no information about the length of time they had spent in a particular state prior to the sample start, slightly increases the estimates.

The third investigation involves omitting observations with extreme predicted values for the variable *netincdiff*. As shown in Figure 5, the distribution of *netincdiff* exhibits some lumpiness in the tails. To assess the effect of extreme values of *netincdiff*, we drop those individuals who have at least one occupation-specific *netincdiff* above the top 1% or below the 1% cut-off values.³³ Since individuals with very high or low *netincdiff* would be expected to be less sensitive than the others, we would expect the estimated effects of *netincdiff* to be higher in absolute values. This is what we see with the results reported in Panel [D]. In the base model (Panel[A]), we found the *WE* exits to be more sensitive than the *SE* exits and now we see that the effect of *netincdiff* goes up for the *WE* exits without much change for in *SE* exits.

The next investigation examines the influence of local labour market conditions. In the main specification we use regional dummies to partially control for labour market conditions. Perhaps a better control for local labour market conditions would be the use of local unemployment rates. Unfortunately, such information is only available from 1996, so we report two sets of results. In Panel [E], we substitute the regional dummies with regional unemployment rates. In Panel [F], we re-estimate our base model using the restricted sample

³³ To preserve a continuous series of observations, all observations belonging to an individual are dropped if there is at least one *netincdiff* that is either less than the first percentile or above the 99th percentile value for that individual resulting in a loss of more than 2% of the sample. We lose about 9% of the observations, resulting in 432,409 observations in our unweighted sample. The definition of a *SE* spell is the same as the one used in our base model.

of 1996 to 2011. The results are very similar to each other, and qualitatively similar to the baseline results.³⁴

As described in Section 4, in our base model, we drop individuals who received more in social security benefits than their self-employment income or wages in any year. However, it can be the case that individuals are unemployed for a short period and the unemployment insurance is small enough so that the individual is still defined as a self-employed or a wage earner. Individuals with an interruption to their work might behave differently from individuals transiting directly from *WE* to *SE*. We therefore include a dummy variable for those individuals who received unemployment insurance during the year. As Panel [G] shows, the results are similar to those from the base model.

In Norway, self-employed individuals have the option of having a share of the self-employed income declared as capital income, which is taxed at a lower rate than labour income, as explained in Section 2. Tax variables used in our main model are generated under the assumption that the share of capital income in total income is zero (see online Appendix A.2). We believe our assumption is reasonable for the following reasons. First, it is not clear what is an appropriate assumption regarding the proportion of capital income used in the generation of counter-factual *SE* income distributions for the wage earners, which are also exogenous. Second, during our sample period, the share declared as capital income is either 0 or very small (median value is 0.037). However, we check for sensitivity by re-generating our tax variables allowing for 3.7% of the predicted *SE* income to be reported as capital income instead of 0. The results are in Panel [H]. The effect of convexity is slightly stronger on the *SE* exit rates, while the rest of the estimated effects remain similar to the base model estimates.

³⁴ We made multiple attempts, but were unable to find significant unobserved heterogeneity in these models with the reduced number of years. We therefore report results from the model where we set the unobserved heterogeneity component to 0.

6 Conclusion

We look at the effect of taxation on self-employment and wage employment durations. Our work complements the existing literature on many dimensions. First, in contrast to many existing studies, our definitions of self-employment and wage employment are based on income reported in Norwegian tax returns. The rest of the variables used come from various other registry data. Norwegian registry data are considered to be exceptional in terms of coverage and reliability (Blundell, Graber and Mogstad, 2015). Second, we look at the evolution of self-employment and wage employment spells over a very long period, from 1993 to 2011. We model these transitions using a two-state multi-spell duration model allowing for correlated unobserved heterogeneity, and controlling for a rich set of socio-demographic characteristics.

We focus on the effects of two tax variables: *netincdiff* and *convexity*, obtained from Wen and Gordon (2014). *netincdiff* is defined as the difference in log net-of-tax income in the two occupations, and *convexity* is an individual-specific measure that captures the interaction between the progressivity of the tax schedule and the volatility of self-employment income relative to wage income. We use the model to predict the transitions under a simulated tax regime that reduced the progressivity of the tax schedule in the year 2000. We also provide some sensitivity checks with respect to the definition of self-employment, the selection of the estimation sample, etc. The estimated effects of our two tax variables of interest are qualitatively unchanged, and the quantitative differences are as expected.

The main finding is that, as predicted by theory, higher expected net earnings in self-employment relative to wage employment reduces the probability of exiting out of a self-employment spell. The entry into self-employment - or equivalently the exit out of wage employment - is found to be more sensitive to changes in the two variables than exit from self-employment. In our base model, the estimated effect of changes to *netincdiff* that are required when *convexity* changes by a percentage point, to encourage self-employment, is about 9 to 14 times larger in percentage point terms. To shed further light on this, we

carried out a policy experiment by implementing a flatter tax schedule in the year 2000 that resulted in reduced tax progressivity. The hypothetical scenario was found to encourage entry into self-employment but not significantly the exit from self-employment, with the estimated inflow into self-employment increasing to 5.34% from the base model prediction of 2.76%.

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Tables

Table 1: Summary statistics - mean (std deviation)

	<i>All</i>	<i>WE Sample</i>	<i>SE Sample</i>
Individual-specific variables			
Females	0.47 (0.50)	0.48 (0.50)	0.27 (0.44)
Lower secondary school and less	0.39 (0.49)	0.35 (0.49)	0.53 (0.50)
Upper secondary school	0.30 (0.46)	0.31 (0.46)	0.27 (0.45)
University	0.32 (0.47)	0.34 (0.47)	0.20 (0.40)
Time-varying variables			
Age at the start of the spell	35.06 (9.24)	34.84 (9.20)	39.80 (8.80)
Years 1993-1998	0.30 (0.49)	0.30 (0.46)	0.34 (0.47)
Years 1999-2002	0.22 (0.41)	0.22 (0.41)	0.21 (0.41)
Years 2003-2007	0.27 (0.44)	0.27 (0.44)	0.27 (0.44)
Years 2008-2011	0.21 (0.41)	0.21 (0.41)	0.18 (0.39)
Eastern Norway	0.50 (0.50)	0.49 (0.50)	0.55 (0.50)
Southern Norway	0.05 (0.22)	0.05 (0.22)	0.06 (0.24)
West Norway	0.26 (0.44)	0.26 (0.44)	0.24 (0.42)
Central Norway	0.09 (0.28)	0.09 (0.29)	0.07 (0.26)
Northern Norway	0.10 (0.30)	0.10 (0.30)	0.08 (0.27)
Local Unemployment Rate	2.73 (0.83)	2.73 (0.83)	2.78 (0.83)
<i>convexity</i>	0.007 (0.008)	0.007 (0.008)	0.012 (0.008)
<i>netindiff</i>	-0.448 (0.19)	-0.429 (0.17)	-0.825 (0.25)
Proportion of exits from		0.006	0.106

Notes: (i) Years covered in the analysis are 1993-2011. (ii) Definitions of wage employment and self-employment and the sample selection criteria used are provided in Section 4. (iii) All averages and proportions are based on the weighted sample (see Section 4 for further details). (iv) The number of unweighted observations is 476,275, of which 362,217 are classified as wage employment, and 114,058 as self-employment. (v) The number of unweighted individuals is 34,746.

Table 2: Hazard model estimates, main sample

	Fresh spells		Left censored spells	
	<i>SE</i> [1]	<i>WE</i> [2]	<i>SE</i> [3]	<i>WE</i> [4]
<i>netincdiff</i>	-0.429 (0.053)	1.685 (0.082)	-0.725 (0.109)	1.753 (0.087)
<i>convexity</i> *100	0.049 (0.015)	-0.246 (0.021)	-0.017 (0.030)	-0.163 (0.023)
Male	-0.024 (0.027)	0.602 (0.030)	0.191 (0.058)	0.776 (0.037)
Age at the start of the spell	-0.012 (0.001)	0.030 (0.002)	-0.034 (0.002)	-0.046 (0.002)
High School	-0.006 (0.029)	0.115 (0.035)	-0.131 (0.048)	-0.008 (0.038)
University	0.220 (0.028)	0.131 (0.037)	0.051 (0.051)	0.100 (0.038)
ln(duration)	-0.520 (0.016)	-0.490 (0.018)	-0.016 (0.037)	-0.234 (0.032)
Constant	-1.135 (0.092)	-3.11 (0.103)	-0.892 (0.192)	-1.930 (0.118)
Support points	-0.531 (0.049)	-3.042 (0.200)	-1.337 (0.072)	-1.839 (0.094)
Probability masses				
p1 (constants + support points)	0.805 (0.019)			
p2 (constants only)	0.195 (0.019)			
<i>N</i> obs (unweighted)	476,275			
<i>N</i> individuals (unweighted)	34,746			
Maximised log likelihood value	-105687.67			

Notes: (i) MLE standard errors in parentheses; (ii) The models are estimated using a random sample of individuals as detailed in Section 4 of the paper; (iii) Omitted education category is no-education/high-school drop-out. (iv) The model additionally includes region and time indicators, see Table 1. Complete sets of results are available in the online Appendix A.4.

Table 3: Average predicted exit probabilities (%) under the tax reform scenario

Case	Tax scenario	Probability of exit	
		from <i>SE</i> , %	from <i>WE</i> , %
[A]	Base model: year 2000, two surtaxes (s.e)	9.334 (0.227)	0.562 (0.011)
[B]	Reform Scenario: year 2000, one surtax (s.e)	9.316 (0.289)	0.682 (0.016)
	Change [A]- [B] (s.e)	0.018 (0.184)	-0.119 (0.010)
	Sample size in year 2000	6,043	130,019
[C]	<i>convexity</i> : unchanged from baseline <i>netincdiff</i> : reform (s.e)	9.622 (0.234)	0.571 (0.011)
[D]	<i>netincdiff</i> : unchanged from baseline <i>convexity</i> : reform (s.e)	9.034 (0.276)	0.673 (0.015)

Notes: (i) Actual exit rates in 2000 were 9.813% and 0.595%. (ii) Predicted exits are based on the estimated model from Table 2. (iii) The percentage exits are calculated with respect to the stocks in each of the occupational categories. (iv) Case [A] refers to the actual situation as it was in year 2000 with two surtaxes; Calculated *convexity* and *netincdiff* in this scenario were used in the estimation of the main model. (v) Case [B] refers to a hypothetical reform scenario that replaces two surtaxes with just one surtax. New values of *convexity* and *netincdiff* are recalculated given the new tax rules. (vi) Case [C] considers values of *convexity* from the baseline scenario and values of *netincdiff* from the reform scenario. (vii) Case [D] considers values of *netincdiff* from the baseline scenario and values of *convexity* from the reform scenario. (viii) The above predictions and the associated standard errors were calculated using the delta method in STATA's command *margins*. Average exit rates as well as the differenced average exit rates were all calculated using all four hazards. (ix) All calculations are based on the weighted sample.

Table 4: Sensitivity checks: Hazard model estimates

Variables	Fresh spells		Left-censored spells	
	<i>SE</i>	<i>WE</i>	<i>SE</i>	<i>WE</i>
	[1]	[2]	[3]	[4]
[A] - Base case				
<i>netincdiff</i>	-0.429 (0.053)	1.685 (0.082)	-0.725 (0.109)	1.753 (0.087)
<i>convexity*100</i>	0.049 (0.015)	-0.246 (0.021)	-0.017 (0.030)	-0.163 (0.023)
[B] - Changes to sample definition				
<i>netincdiff</i>	-0.493 (0.016)	1.734 (0.026)	-0.615 (0.034)	1.768 (0.028)
<i>convexity*100</i>	0.011 (0.005)	-0.277 (0.007)	0.016 (0.009)	-0.187 (0.007)
[C] - Excluding left censored spells				
<i>netincdiff</i>	-0.405 (0.053)	1.920 (0.083)		
<i>convexity*100</i>	0.055 (0.015)	-0.292 (0.022)		
[D] - Using trimmed <i>netincdiff</i>				
<i>netincdiff</i>	-0.333 (0.068)	2.281 (0.108)	-0.871 (0.138)	2.998 (0.134)
<i>convexity*100</i>	0.065 (0.017)	-0.222 (0.025)	-0.061 (0.032)	-0.237 (0.026)

[E] - Including regional unemployment rate 1996-2011

<i>netincdiff</i>	-0.531	1.709	-0.718	1.568
	(0.057)	(0.096)	(0.110)	(0.083)
<i>convexity*100</i>	0.045	-0.292	0.047	-0.115
	(0.018)	(0.026)	(0.029)	(0.025)

[F] - Including regional dummies 1996-2011

<i>netincdiff</i>	-0.519	1.762	-0.754	1.607
	(0.057)	(0.095)	(0.110)	(0.081)
<i>convexity*100</i>	0.036	-0.314	0.038	-0.140
	(0.018)	(0.026)	(0.030)	(0.024)

[G] - Including unemployment benefits dummy

<i>netincdiff</i>	-0.415	1.698	-0.694	1.763
	(0.053)	(0.082)	(0.109)	(0.087)
<i>convexity*100</i>	0.049	-0.252	-0.014	-0.165
	(0.015)	(0.022)	(0.030)	(0.023)

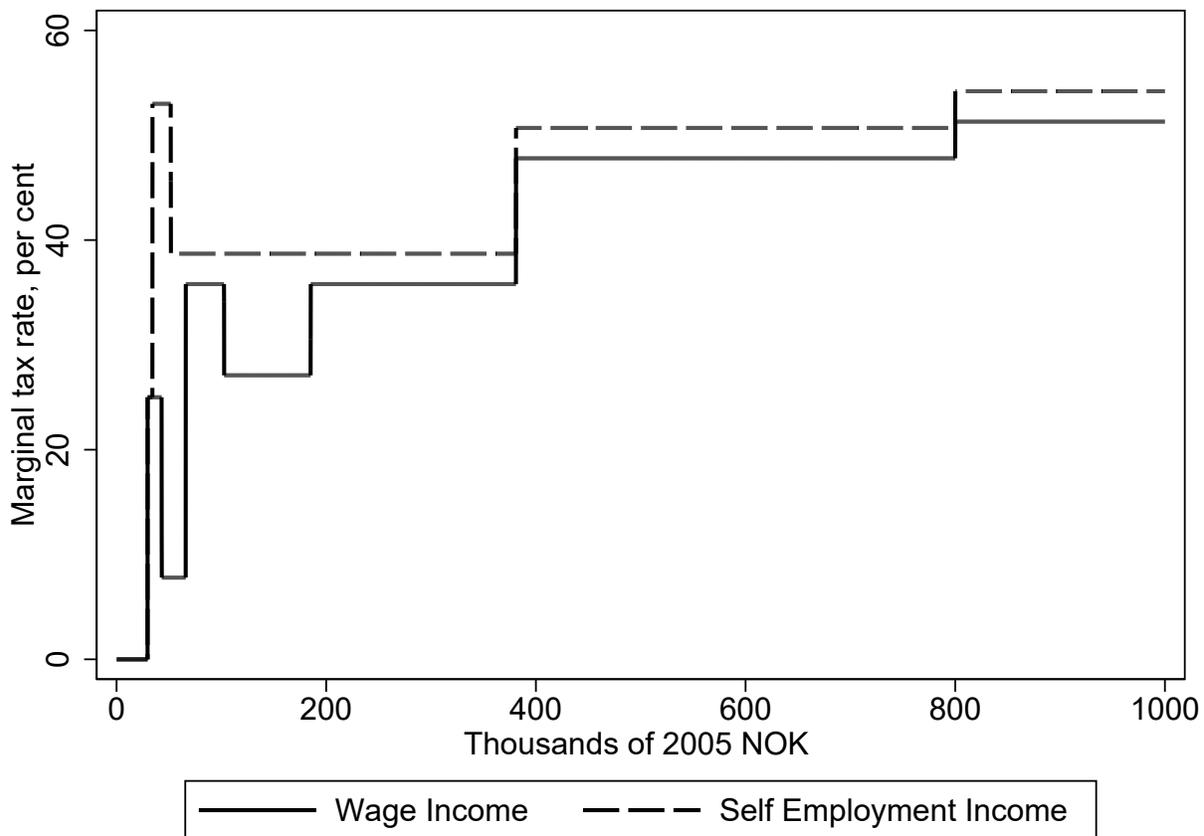
[H] - Using 3.7% capital income invested in SE

<i>netincdiff</i>	-0.434	1.712	-0.719	1.761
	(0.052)	(0.083)	(0.108)	(0.086)
<i>convexity*100</i>	0.058	-0.264	-0.008	-0.166
	(0.016)	(0.024)	(0.031)	(0.025)

Notes: (i) Standard errors in parenthesis. (ii) See Section 5.3 for further details; (iii) Panels [E] and [F] report results with no unobserved heterogeneity (see footnote 34); (iv) Also see notes to Table 2. (v) Full set of results are available in the online Appendix A.3.

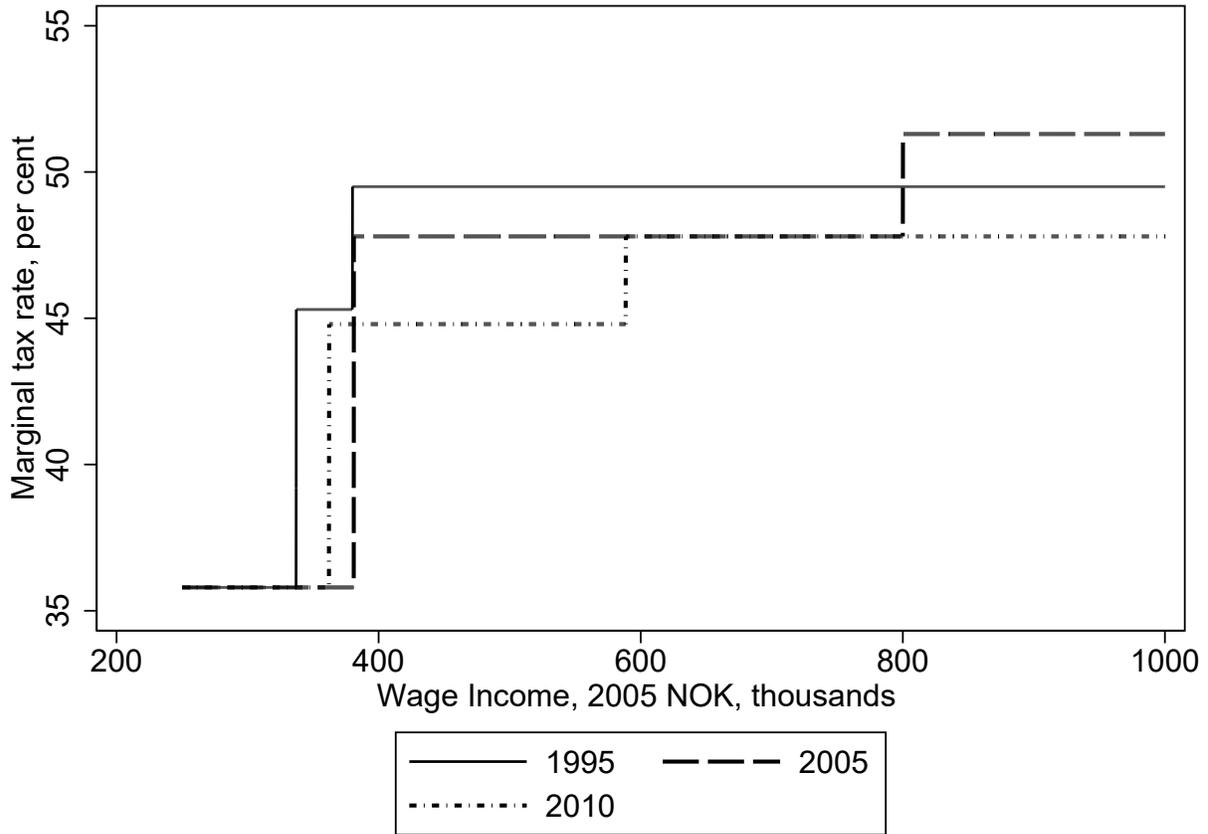
Figures

Figure 1: Marginal tax rate for wage and self-employment incomes, year 2005



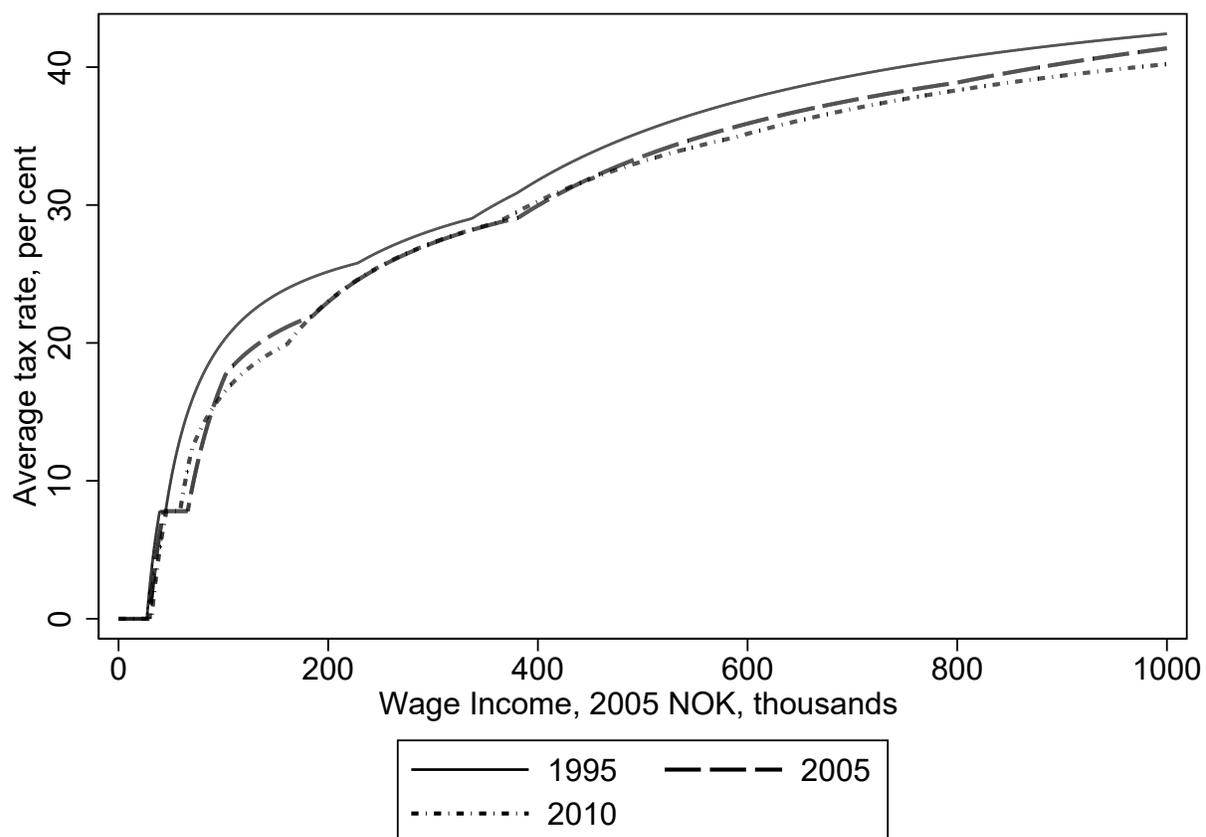
Notes: (i) Solid line: Marginal tax rate for a wage earner in tax class 1 (see online Appendix A.2 for the definition of tax class 1) with only wage income. Employer's social security contributions are excluded (ii) Dashed line: Marginal tax rate for a self-employed individual in tax class 1 with only self-employed income, and no capital invested in the firm.

Figure 2: Marginal tax rate for wage income, years 1995, 2005 and 2010



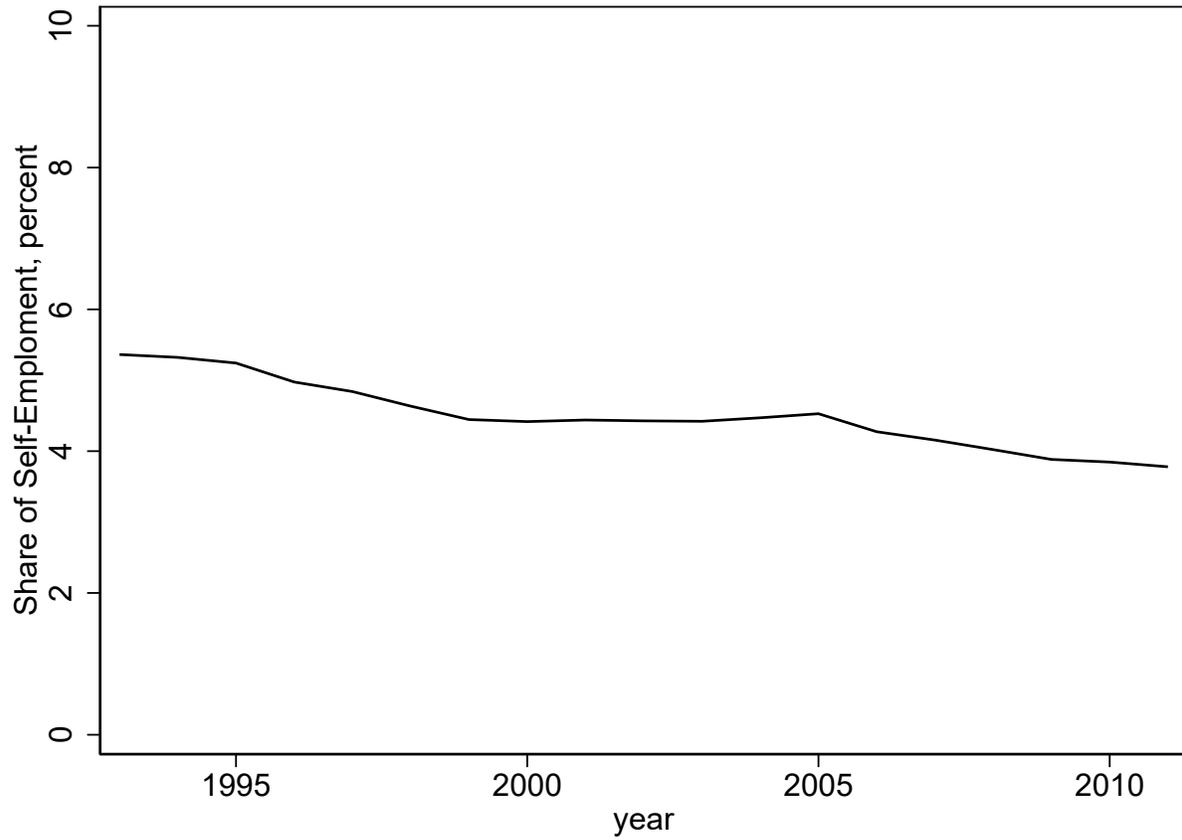
Notes:(i) Marginal tax rate for a wage earner in tax class 1 with only wage income in year 1995, 2005 and 2010. Employer’s social security contributions are excluded. Thresholds are adjusted to account for income growth during the period (base year is 2005). Marginal tax rate is reported only for income larger than 200,000 NOK. (ii) To improve readability, the case for self-employment income is not reported, as it would only imply a proportional vertical shift of each of the three curves presented, see Figure 1.

Figure 3: Average tax rate for wage income, years 1995, 2005 and 2010



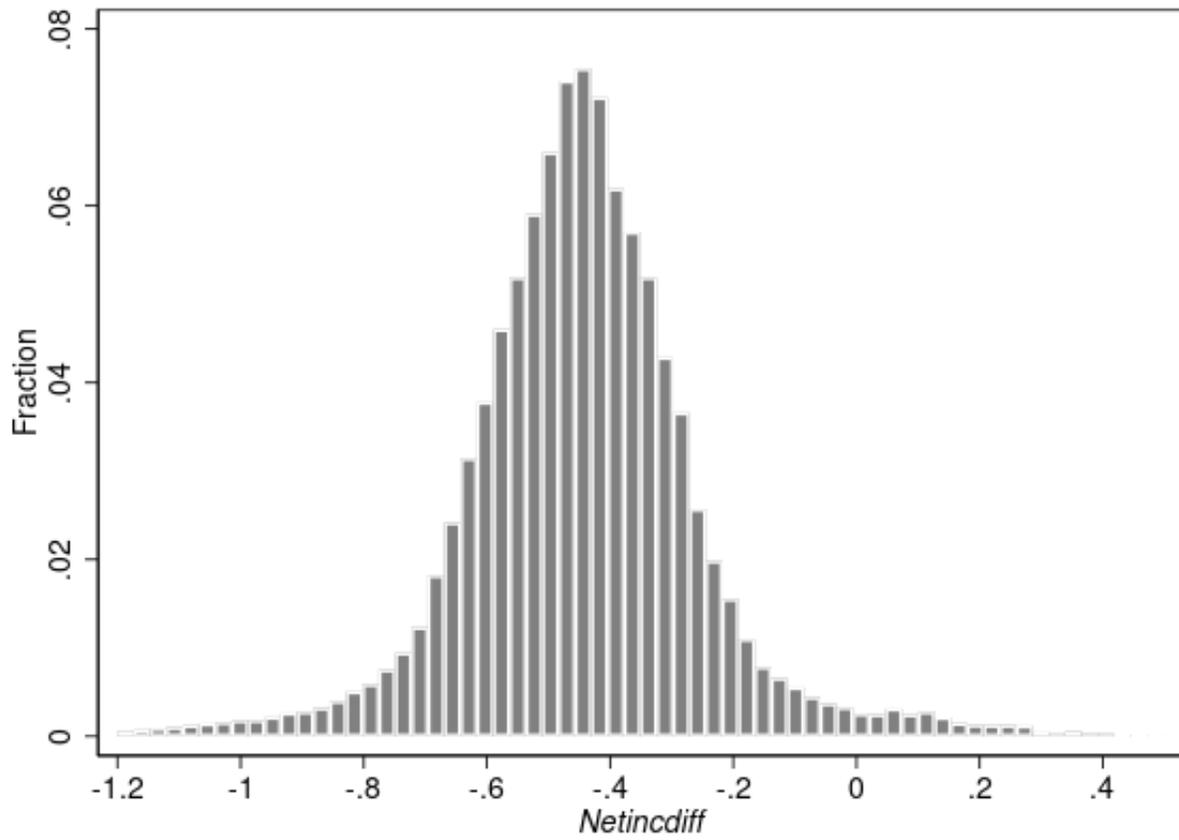
Notes: (i) Average tax rate for a wage earner in tax class 1 with only wage income in year 1995, 2005 and 2010. Employer's social security contribution are excluded. Thresholds are adjusted to account for income growth during the period (base year is 2005). (ii) To improve readability, the case for self-employment income is not reported, as it would only imply a proportional vertical shift of each of the three curves presented, see Figure 1.

Figure 4: Annual share of self-employment observation



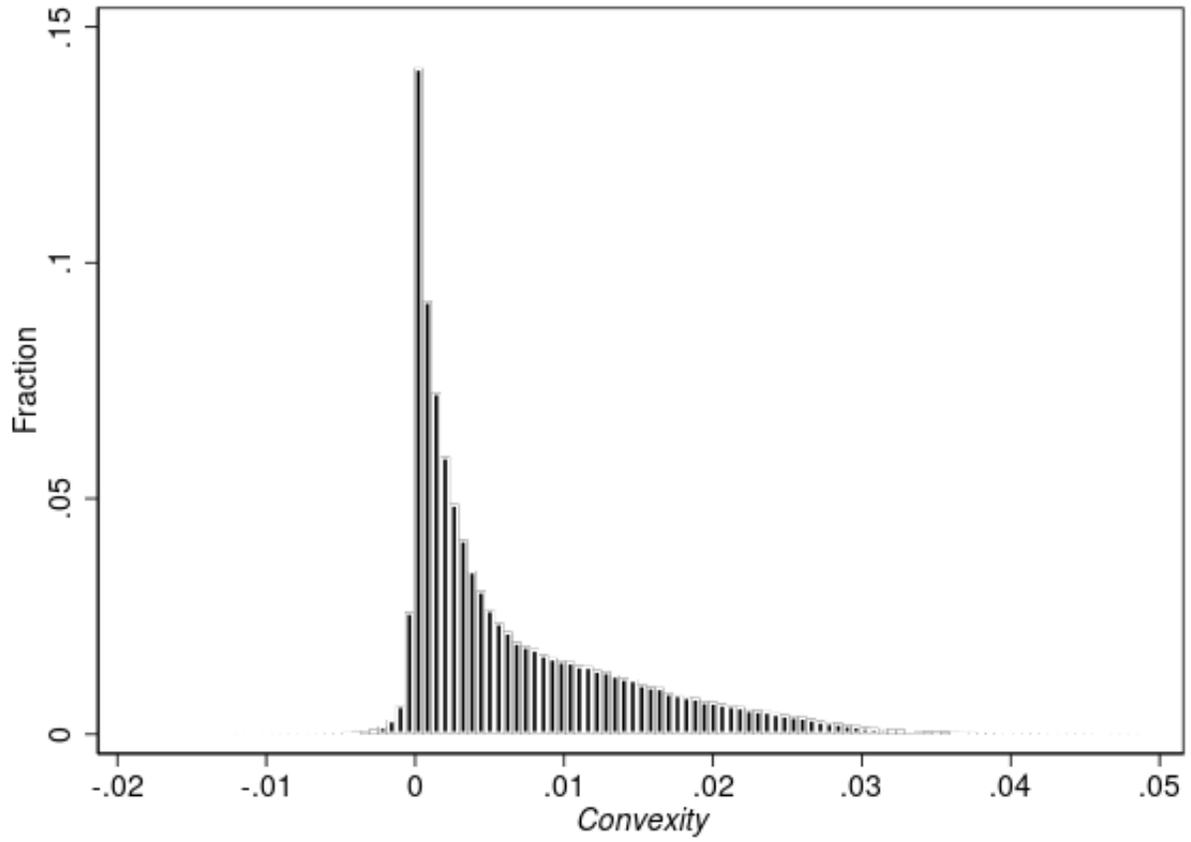
Notes: Annual self-employment observation as a share of total self-employment + wage employment observations. Categorisation into self-employment and wage employment is described in Section 3.

Figure 5: Density of *netindiff*



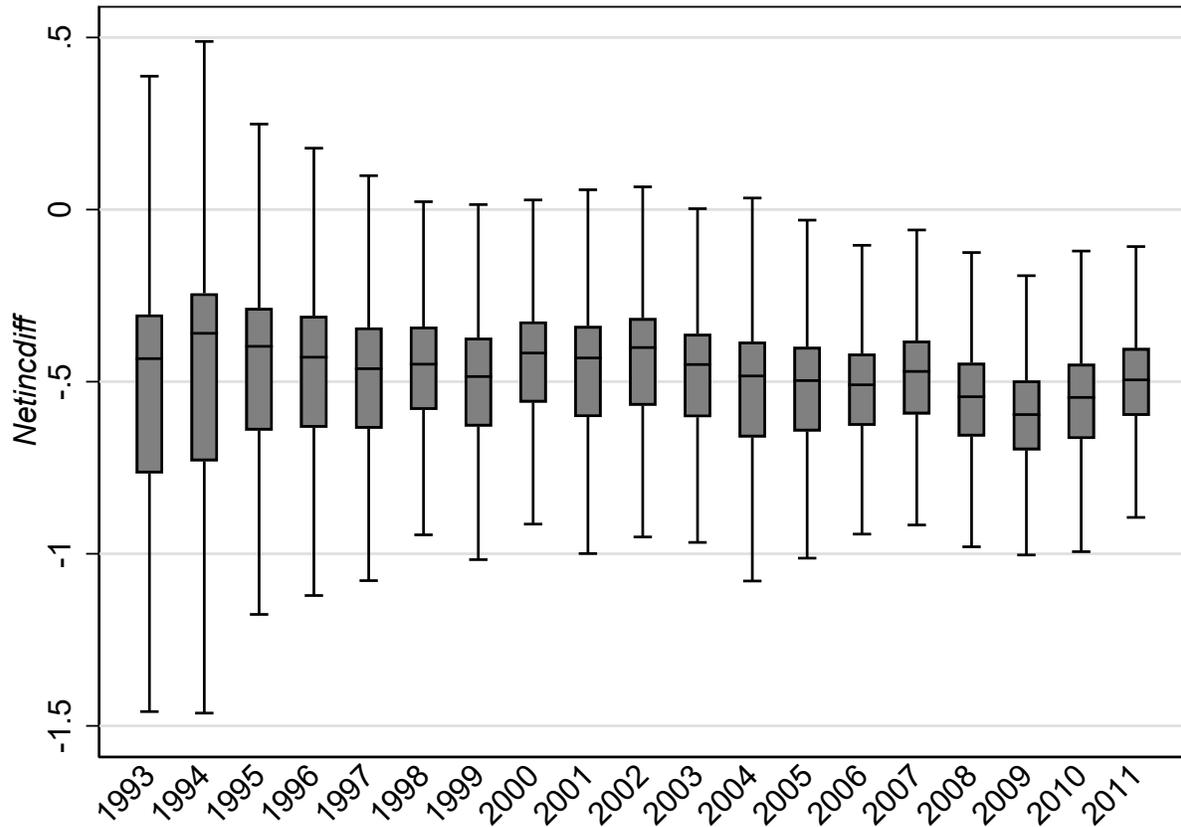
Notes: *netindiff* distribution across all years and observations. *netindiff* is defined in Section 4.2.

Figure 6: Density of *convexity*



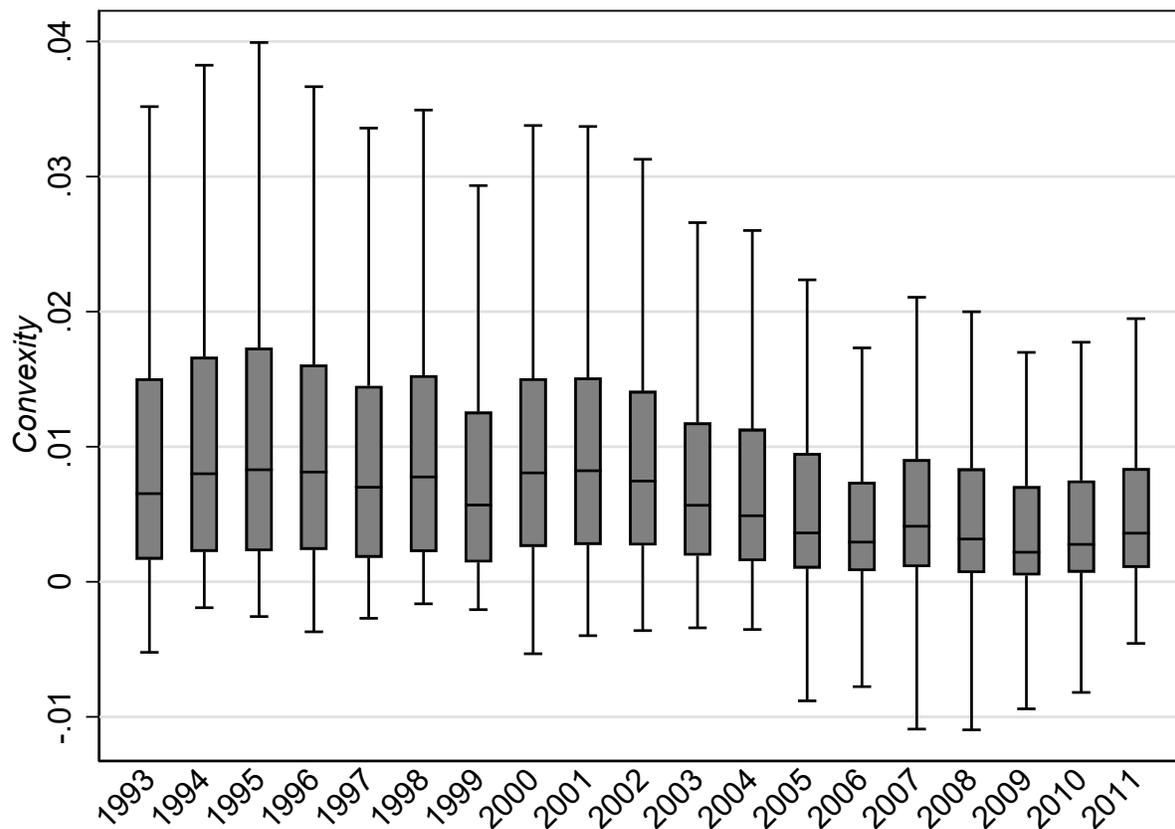
Notes: *convexity* distribution across all years and observations. *convexity* defined in equation (4).

Figure 7: Box-and-whisker plot for *netincdiff*



Notes: (i) $netincdiff = \ln[\text{net income in } SE / \text{net income in } WE]$. See Section 4.2 for further details. (ii) The box shows the median and the inter-quartile range (IQR). 1.5 times IQR is given by the end of the whiskers.

Figure 8: Box-and-whisker plot for of *convexity*



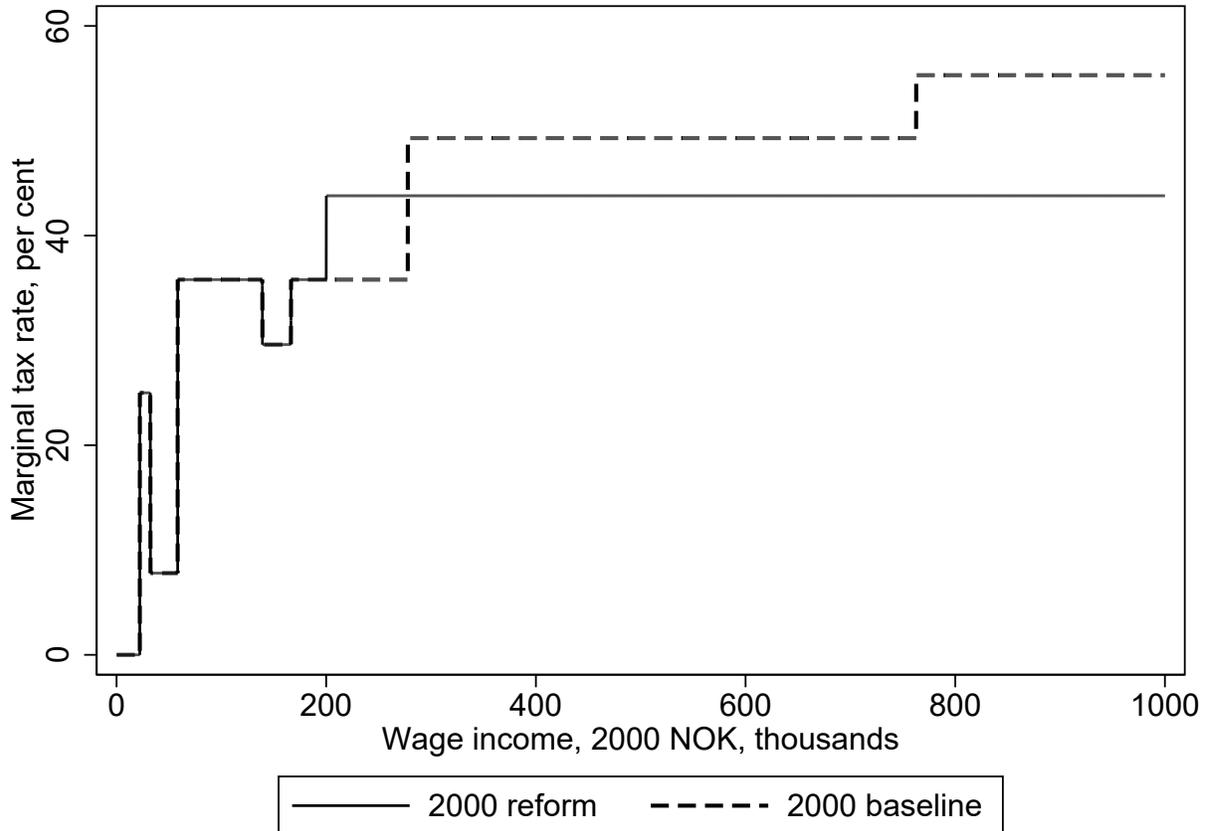
Notes: (i) See equation (4) for the definition of *convexity*. (ii) The box shows the median and the inter-quartile range (IQR). 1.5 times IQR is given by the end of the whiskers.

Figure 9: Non-parametric hazard estimates



Notes: The figure presents the non-parametric hazard estimates for wage employment and self-employment spells. These are the OLS estimated coefficients on the duration time dummies in a linear regression of the duration variable. The duration variable takes the value of 0 if that particular year refers to an on-going spell and 1 when it is associated with an exit.

Figure 10: Marginal Tax Rate for Wage Income, Year 2000, and hypothetical unique surtax on personal income



Notes: (i) Bold line: Marginal tax rate for a wage earner in tax class 1 (see online Appendix A.2) with only wage income in year 2000. Employer’s social security contributions are excluded. (ii) Dashed line: year 2000 tax experiment. The two surtaxes are replaced by a single surtax of 11% for gross incomes exceeding 200,000 NOK. (iii) To improve readability, the case for self-employment income is not reported, as it would only imply a proportional vertical shift of each marginal tax curve presented, see Figure 1.

A Appendix

A.1 The generation of tax variables³⁵

In the following, we discuss how the two tax variables *netincdiff* and *convexity*, are derived. Individual index is omitted for ease of exposition.

Assume gross income y_j in occupation j ($j = s$ for self-employment and e for wage employment) is log normally distributed with parameters μ_j and σ_j . i.e. $y_j = \exp(Y_j) \sim LN(\mu_j, \sigma_j)$ which implies that $Y_j = \ln y_j \sim N(\mu_j, \sigma_j^2)$

The mean and the variance of y_j are respectively:

$$\bar{y}_j \equiv E(y_j) = \exp\left(\mu_j + \frac{\sigma_j^2}{2}\right) \quad (\text{A.1})$$

$$\text{Var}(y_j) = [\exp(2\mu_j + \sigma_j^2)] [\exp(\sigma_j^2) - 1]. \quad (\text{A.2})$$

Under risk-neutrality and an expected utility maximisation framework, Wen and Gordon (2014) show that the occupational choice is dependent on the following two terms which they call *netincdiff* and *convexity* respectively:

$$\text{netincdiff} = (1 - \tau) \ln [\bar{y}_s / \bar{y}_e] \simeq \ln [\text{netincome}_s / \text{netincome}_e] \quad (\text{A.3})$$

and³⁶

$$\text{convexity} = \frac{1}{2}(1 - \tau_s)\tau_s\sigma_s^2 \simeq \frac{E[T(y_s)] - T(\bar{y}_s)}{\bar{x}_s} \quad (\text{A.4})$$

³⁵ This appendix is based on Wen and Gordon (2014). However, we allow the tax regimes to be different in the two occupations, since we model both self-employment and wage employment exits.

³⁶ Similar to Wen and Gordon (2014), we also set the variability of wage income to be 0 and hence only use the one related to self-employment income.

The net incomes $netincome_s$ and $netincome_e$ are evaluated at the estimated expected values of the pre-tax income (\bar{y}_j) from each of the occupations. $(1 - \tau)$ is the elasticity of after-tax income with respect to pre-tax income. \bar{y}_j is the expected income in occupation j , i.e. $\bar{y}_j = E(y_j)$ and $T(y_j)$ is the tax burden defined as $(y_j - x_j)$. Finally, \bar{x}_j is the net-of-tax income evaluated at \bar{y}_j . The *convexity* variable measures the increase in tax liability taken on by the individuals in self-employment due to the volatility of their earnings, expressed as a proportion of their net income.³⁷ The higher the *convexity* the lower the probability of choosing self-employment relative to wage employment.

Steps involved in the estimation of netincdiff and convexity

We need three terms for each occupation:

1. \bar{y}_j which is the $E(y_j)$;
2. $T(y_j)$ and hence $E[T(y_j)]$;
3. \bar{x}_j which is $\bar{y}_j - T(\bar{y}_j)$.

i.e. we need a distribution for y_j and a distribution for the corresponding $T(y_j)$. Remember $\ln y_j$ is assumed to be lognormally distributed. The steps are listed below.

Estimation of *netincdiff*

Step 1: Using the actual reported *pre-tax* self-employment income and wage employment income for each time period separately, estimate a log linear switching regression model that accounts for selection into the two occupations (self-employment and wage employment), and calculate the predicted income (\hat{y}_j) using equation A.1 in each occupation. The variables used in the income regressions are: quadratic polynomial in age, labour regional dummies, dummies accounting for both the level and the field of education and gender dummy.³⁸ The variables that enter the selection equation and not the income equations are binary indicators

³⁷ Note, $x_s = (y_s)^{1-\tau} (y_0)^\tau$ which is the after-tax income. Tax liability is zero at y_0 and the tax liability is given by $T(y_s) \equiv (y_s - x_s)$ which is assumed to be strictly convex.

³⁸ The selection model is estimated as a probit and the correction term is the well known Inverse Mills Ratio (IMR) which is the generalised residual from the probit model.

for the presence of children, family members and head of family.³⁹ The results are provided in online Appendix A.3.

Step 2: Add other types of income to this predicted income to get \tilde{y}_j . We include interest income, dividends, capital gains, and other capital incomes.

Step 3: Estimate individual specific variances under the assumption that errors are heteroskedastic and given by

$$\sigma_j^2 = \exp(z'\delta) \tag{A.5}$$

We use the selection corrected log earnings equations to estimate $z'\delta$ using the predicted values from a regression of $\ln(\text{residual}^2)$ on a constant term, a set of individual specific characteristics. $\hat{\sigma}_j^2$ then follows from equation (A.5).

Step 4: Use the tax simulator to generate the tax payments $T(\tilde{y}_j)$ and hence the net incomes $(\tilde{y}_j - T(\tilde{y}_j))$. The tax simulator takes into account the different rules in each year for taxing labour income, self-employment income and capital income and the most relevant deductions rules in each year for individual tax returns.

Step 5: log difference in the net incomes provides the estimate of *netindiff* as per equation (A.3). For example, the relevant variable for the self-employment decision would be $\ln(\tilde{y}_s - T(\tilde{y}_s)) - \ln(\tilde{y}_e - T(\tilde{y}_e))$.

Estimation of *convexity*

As discussed earlier, we only estimate the *convexity* variable for the self-employment occupation. We have the mean (predicted income \hat{y}_s from *step 1*) and the variance of the distribution of $\ln(y_s)$ (σ_s^2 from *step 3*) for each individual. The relevant equations are (A.1) and (A.5).

Step 6: Using the expected income and variance estimated in *steps one* and *two* as before,

³⁹ Household background and the presence of kids have been found to have an influence on the probability of undertaking risky entrepreneurial activities (Parker, 2008; Taylor, 1996; Berglann et al., 2011) but are not expected to influence gross earnings, so similarly to other studies, we use them as exclusion restrictions (Wen and Gordon, 2014; Rees and Shah, 1986). The selectivity correction terms as measured by rho, and the instruments, are significantly different from 0 at conventional levels of significance (see Appendix A.3).

we generate 200 draws from $N(\widehat{\ln y_s}, \widehat{\sigma_s^2})$. The exponentiated values of each draw are added to the “other income” which is then used to generate the $T(y_s)$ using the tax-simulator. \bar{y}_s is the mean of the values that feed into the tax-simulator. The corresponding $T(\bar{y}_s)$ is calculated next.

Step 7: The expected after-tax income is calculated as $\bar{x}_s = \bar{y}_s - T(\bar{y}_s)$.

Step 8: $E[T(y_s)]$ is estimated as the sample mean of the generated $T(y_s)$ calculated from the draws.

Step 9: We then generate the *convexity* variable as given in equation (A.4) for each individual.

A.2 Main features of the Tax Simulator

Given some limitations of the information we had in the tax returns data, a simplified tax simulator that considers the most important tax rules, deductions, and allowances, was developed. We briefly discuss the simplifications here.

The initial intention of the 1992 reform was to tax “labour income” similarly for wage earners and self-employed individuals. However, many modifications were introduced during the period 1993 to 2004, which saw high incomes from self-employment (*SE*) exempted from personal income taxation. For example, *SE* income from non-liberal professions were only subject to the flat capital tax rates for amounts exceeding a certain threshold.⁴⁰ ⁴¹ We are not able to identify the type of occupation from our tax returns register and hence we do not take into account these differences in taxation of *SE* income. However, only approximately 2% of our sample members report *SE* income that exceeds the thresholds, and this problem arises for just a handful of observations when predicted *SE* income is used in the calculation of our tax variables. This distinction between liberal and non-liberal occupation was dropped in 2005, and labour income from *SE* would follow the same schedule as wage income. Other

⁴⁰ Liberal professions include lawyers, dentists, doctors and other independent contractors delivering services to the public.

⁴¹ The threshold varied between 16g and 32g in different year, where g is the *basic amount*. g is used as a starting point for payment related to social insurance and is defined as approximately five times the monthly wage of a blue collar worker.

differences to the wage income case are the lack of the basic allowance and the higher social security contribution paid (10.7% in 2005).

There are two tax classes in Norway and the difference between the two is the level of the personal allowance. The personal allowance in class 2 is higher than in tax class 1, and, in some years, the surtax. The vast majority of individuals are taxed under tax class 1 schedule. However, single parents and individuals supporting their low-income spouses, can be placed in tax class 2, and hence be subject to a higher personal allowance. Because of limitations in the information available, we assume that all individuals are taxed under the class 1 schedule.

In our simplified tax simulator, we set the capital income component within the net self-employment income to zero. That is, we assume that all the *SE* income is coming from the labour income component of the net *SE* income. We believe this simplification is a good approximation for the following reason. Among the self-employed group, about two thirds report a labour income component which is at least 85% of the total net *SE* income. Table 4, Panel [H] reports the results from our investigation where we replace the zero-capital income component with the median value of 3.7% in our generation of the tax variables.

A.3 Wage and self-employment income equations

A.4 Detailed results for Table 2 and Table 4

A.3 Equations used to generate the tax variables

Variables	Probit					Probit					Probit					Probit																					
	1993 SE	1993 SE	1993 SE	1993 SE	1993 SE het	1993 WE	1993 WE	1993 WE	1993 WE	1993 WE het	1994 SE	1994 SE	1994 SE	1994 SE	1994 SE het	1994 WE	1994 WE	1994 WE	1994 WE	1994 WE het																	
kids		0.034 (0.01)			-0.016 (0.03)					-0.027 (0.01)					-0.046 (0.01)					0.027 (0.01)					-0.049 (0.03)					-0.018 (0.01)						-0.056 (0.01)	
headfam		-0.107 (0.01)			-0.270 (0.05)					0.283 (0.01)					-0.171 (0.01)						-0.097 (0.01)					-0.202 (0.05)					0.276 (0.01)					-0.193 (0.01)	
married		0.057 (0.01)			-0.149 (0.03)					0.044 (0.01)					-0.124 (0.01)						0.052 (0.01)					-0.107 (0.03)					0.054 (0.01)					-0.126 (0.01)	
age	0.092 (0.01)	0.080 (0.00)			-0.049 (0.01)	0.099 (0.00)				-0.090 (0.00)					-0.190 (0.00)	0.081 (0.01)	0.080 (0.00)									-0.025 (0.01)	0.099 (0.00)					-0.093 (0.00)					-0.187 (0.00)
agesquared	-0.001 (0.00)	-0.001 (0.00)			0.001 (0.00)	-0.001 (0.00)				0.001 (0.00)					0.002 (0.00)	-0.001 (0.00)	-0.001 (0.00)									0.000 (0.00)	-0.001 (0.00)					0.001 (0.00)					0.002 (0.00)
region_2	0.062 (0.02)	0.004 (0.01)			-0.003 (0.06)	-0.101 (0.00)				0.040 (0.01)					0.078 (0.01)	0.028 (0.02)	0.015 (0.01)									0.024 (0.06)	-0.096 (0.00)				0.022 (0.01)					0.074 (0.01)	
region_3	0.065 (0.01)	-0.094 (0.01)			-0.054 (0.03)	-0.032 (0.00)				0.105 (0.01)					0.010 (0.01)	0.064 (0.01)	-0.096 (0.01)									-0.110 (0.03)	-0.035 (0.00)				0.097 (0.01)					0.005 (0.01)	
region_4	-0.016 (0.02)	-0.115 (0.01)			-0.113 (0.05)	-0.083 (0.00)				0.023 (0.01)					-0.084 (0.01)	-0.028 (0.02)	-0.121 (0.01)									-0.121 (0.05)	-0.086 (0.00)				0.029 (0.01)					-0.078 (0.01)	
region_5	0.124 (0.02)	-0.069 (0.01)			0.091 (0.05)	-0.061 (0.00)				-0.052 (0.01)					-0.073 (0.01)	0.068 (0.01)	-0.073 (0.01)									0.113 (0.05)	-0.065 (0.00)				-0.044 (0.01)					-0.077 (0.01)	
educ_1_3	-0.118 (0.05)	0.141 (0.03)			0.013 (0.15)	-0.101 (0.01)				0.061 (0.03)					0.204 (0.04)	-0.108 (0.05)	0.124 (0.03)									0.359 (0.15)	-0.086 (0.01)				0.055 (0.03)					0.141 (0.04)	
educ_1_4	0.052 (0.02)	-0.065 (0.01)			0.016 (0.06)	0.060 (0.00)				0.071 (0.01)					0.046 (0.01)	0.035 (0.02)	-0.075 (0.01)									0.134 (0.06)	0.062 (0.00)				0.079 (0.01)					0.013 (0.01)	
educ_1_5	-0.031 (0.02)	-0.030 (0.01)			-0.057 (0.05)	0.080 (0.00)				-0.054 (0.01)					-0.140 (0.01)	-0.027 (0.02)	-0.026 (0.01)									-0.026 (0.05)	0.081 (0.00)				-0.064 (0.01)					-0.164 (0.01)	
educ_1_6	-0.081 (0.04)	-0.277 (0.02)			0.039 (0.10)	-0.020 (0.00)				0.091 (0.02)					-0.143 (0.02)	-0.054 (0.03)	-0.283 (0.02)									-0.162 (0.10)	-0.020 (0.00)				0.086 (0.02)					-0.215 (0.02)	
educ_1_7	0.001 (0.04)	0.192 (0.03)			-0.100 (0.11)	0.022 (0.01)				-0.193 (0.02)					-0.073 (0.04)	-0.011 (0.03)	0.196 (0.03)									0.249 (0.10)	0.020 (0.01)				-0.201 (0.02)					-0.019 (0.04)	
educ_1_8	-0.052 (0.04)	-0.189 (0.02)			-0.172 (0.11)	0.157 (0.01)				0.018 (0.02)					-0.230 (0.03)	-0.049 (0.04)	-0.191 (0.02)									-0.078 (0.11)	0.156 (0.01)				0.023 (0.02)					-0.161 (0.03)	
educ_2_2	0.063 (0.02)	-0.157 (0.01)			0.235 (0.06)	0.160 (0.00)				0.286 (0.01)					0.155 (0.01)	0.056 (0.02)	-0.147 (0.01)									0.304 (0.06)	0.162 (0.00)				0.281 (0.01)					0.120 (0.01)	
educ_2_3	0.004 (0.05)	0.451 (0.04)			0.438 (0.14)	0.149 (0.01)				-0.141 (0.03)					0.364 (0.05)	-0.110 (0.05)	0.452 (0.03)									0.444 (0.14)	0.143 (0.01)				-0.138 (0.03)					0.291 (0.05)	
educ_2_4	0.084 (0.02)	-0.037 (0.01)			-0.214 (0.07)	0.259 (0.00)				0.038 (0.01)					-0.154 (0.02)	0.092 (0.02)	-0.046 (0.01)									-0.151 (0.07)	0.258 (0.00)				0.051 (0.01)					-0.195 (0.02)	
educ_2_5	-0.057 (0.02)	-0.169 (0.01)			-0.183 (0.05)	0.186 (0.00)				0.028 (0.01)					-0.198 (0.01)	-0.003 (0.02)	-0.174 (0.01)									-0.237 (0.05)	0.191 (0.00)				0.008 (0.01)					-0.267 (0.01)	

Variables	Probit 1993					Probit 1993					Probit 1994					Probit 1994				
	1993 SE	1993 SE	1993 SE	1993 SE	1993 SE het	1993 WE	1993 WE	1993 WE	1993 WE	1993 WE het	1994 SE	1994 SE	1994 SE	1994 SE	1994 SE het	1994 WE	1994 WE	1994 WE	1994 WE	1994 WE het
educ_2_6	0.312 (0.07)	0.051 (0.04)			0.085 (0.20)	0.108 (0.01)	-0.153 (0.04)			-0.336 (0.04)	0.214 (0.06)	0.006 (0.04)			0.135 (0.19)	0.098 (0.01)	-0.131 (0.03)			-0.396 (0.04)
educ_2_7	-0.189 (0.12)	-0.333 (0.07)			0.327 (0.35)	0.001 (0.02)	0.087 (0.06)			-0.309 (0.07)	-0.153 (0.11)	-0.341 (0.07)			-0.005 (0.34)	0.013 (0.02)	0.124 (0.06)			-0.257 (0.06)
educ_2_8	0.011 (0.03)	0.295 (0.02)			0.086 (0.08)	0.283 (0.01)	-0.164 (0.02)			0.037 (0.03)	0.028 (0.03)	0.302 (0.02)			0.011 (0.08)	0.279 (0.01)	-0.176 (0.02)			0.021 (0.03)
educ_3_2	0.094 (0.15)	-0.358 (0.09)			1.055 (0.45)	0.143 (0.02)	0.682 (0.09)			0.611 (0.08)	0.055 (0.14)	-0.343 (0.08)			0.979 (0.42)	0.142 (0.02)	0.642 (0.08)			0.611 (0.07)
educ_3_3	-0.145 (0.03)	-0.276 (0.02)			0.453 (0.10)	0.087 (0.00)	0.395 (0.02)			0.672 (0.02)	-0.132 (0.03)	-0.249 (0.02)			0.652 (0.09)	0.078 (0.00)	0.398 (0.02)			0.698 (0.02)
educ_3_4	0.057 (0.04)	-0.705 (0.02)			0.339 (0.11)	0.226 (0.00)	0.245 (0.02)			-0.421 (0.01)	0.078 (0.04)	-0.693 (0.02)			0.206 (0.11)	0.220 (0.00)	0.242 (0.02)			-0.412 (0.01)
educ_3_5	1.004 (0.03)	0.064 (0.02)			0.348 (0.08)	0.256 (0.01)	0.236 (0.02)			0.543 (0.02)	0.991 (0.03)	0.056 (0.02)			0.427 (0.08)	0.242 (0.01)	0.255 (0.02)			0.587 (0.02)
educ_3_6	0.524 (0.03)	-0.301 (0.02)			0.453 (0.09)	0.429 (0.00)	0.479 (0.02)			0.048 (0.02)	0.570 (0.03)	-0.315 (0.02)			0.436 (0.09)	0.438 (0.00)	0.523 (0.02)			-0.047 (0.02)
educ_3_7	0.138 (0.03)	-0.531 (0.01)			0.448 (0.07)	0.384 (0.00)	0.424 (0.01)			0.150 (0.01)	0.148 (0.03)	-0.534 (0.01)			0.347 (0.07)	0.377 (0.00)	0.432 (0.01)			0.120 (0.01)
educ_3_8	0.385 (0.05)	-0.586 (0.02)			0.319 (0.14)	0.279 (0.00)	0.190 (0.02)			-0.514 (0.02)	0.423 (0.05)	-0.588 (0.02)			0.345 (0.13)	0.276 (0.00)	0.187 (0.02)			-0.570 (0.01)
educ_3_9	0.808 (0.03)	0.861 (0.02)			-0.532 (0.05)	0.686 (0.01)	-0.650 (0.01)			0.108 (0.03)	0.759 (0.03)	0.865 (0.01)			-0.589 (0.05)	0.686 (0.01)	-0.668 (0.01)			0.047 (0.03)
educ_3_10	0.344 (0.16)	-0.688 (0.08)			1.306 (0.46)	0.261 (0.01)	0.610 (0.09)			-0.427 (0.06)	0.648 (0.17)	-0.776 (0.09)			0.297 (0.50)	0.251 (0.01)	0.703 (0.10)			-0.371 (0.06)
educ_3_11	0.243 (0.13)	-0.957 (0.06)			0.232 (0.39)	0.361 (0.01)	0.728 (0.06)			-0.333 (0.03)	0.094 (0.13)	-0.967 (0.06)			0.317 (0.38)	0.343 (0.01)	0.878 (0.06)			-0.251 (0.03)
female	-0.575 (0.02)	-0.483 (0.01)			0.161 (0.05)	-0.471 (0.00)	0.480 (0.01)			0.833 (0.01)	-0.562 (0.02)	-0.468 (0.01)			0.200 (0.05)	-0.461 (0.00)	0.463 (0.01)			0.776 (0.01)
Constant	9.843 (0.16)	-3.086 (0.06)	0.111 (0.05)	-0.259 (0.01)	-0.734 (0.30)	10.054 (0.01)	2.940 (0.05)	-1.563 (0.01)	-0.591 (0.00)	0.986 (0.06)	10.163 (0.16)	-3.126 (0.06)	0.089 (0.05)	-0.278 (0.01)	-1.446 (0.28)	10.054 (0.01)	3.017 (0.05)		-0.6 (0.00)	0.995 (0.06)
rho	0.111 (0.05)					-1.563 (0.01)					0.089 (0.05)				-1.541 (0.01)					
ln(sigma)	-0.259 (0.01)					-0.591 (0.00)					-0.278 (0.01)				-0.600 (0.00)					
Observations	582,947	582,947	582,947	582,947	30,839	582,947	582,947	582,947	582,947	552,108	617,044	617,044	617,044	617,044	32,392	617,044	617,044	617,044	617,044	584,652
R-squared					0.019					0.069					0.020					0.066

Notes: (i) Models estimated using Maximum likelihood method.

(ii) sigma is the variance of the wage/self-employment income equation error term.

(iii) rho is the correlation coeff between the wage/SE income equation and the selection eq errors.

Variables	Probit 1995					Probit 1995					Probit 1996					Probit 1996				
	1995 SE	1995 SE	1995 SE	1995 SE	1995 SE het	1995 WE	1995 WE	1995 WE	1995 WE	1995 WE het	1996 SE	1996 SE	1996 SE	1996 SE	1996 SE het	1996 WE	1996 WE	1996 WE	1996 WE	1996 WE het
kids		0.024			0.012		-0.014			-0.055		0.024			0.029		-0.011			-0.055
		(0.01)			(0.03)		(0.01)			(0.01)		(0.01)			(0.03)		(0.01)			(0.01)
headfam		-0.103			-0.285		0.285			-0.202		-0.104			-0.161		0.289			-0.198
		(0.01)			(0.05)		(0.01)			(0.01)		(0.01)			(0.05)		(0.01)			(0.01)
married		0.044			-0.148		0.067			-0.115		0.033			-0.169		0.078			-0.102
		(0.01)			(0.03)		(0.01)			(0.01)		(0.01)			(0.03)		(0.01)			(0.01)
age	0.094	0.076			-0.048	0.099	-0.092			-0.191	0.093	0.078			-0.065	0.100	-0.097			-0.195
	(0.00)	(0.00)			(0.01)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)			(0.01)	(0.00)	(0.00)			(0.00)
agesquared	-0.001	-0.001			0.001	-0.001	0.001			0.002	-0.001	-0.001			0.001	-0.001	0.001			0.002
	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)			(0.00)
region_2	0.009	0.022			-0.030	-0.102	0.010			0.079	0.029	0.032			0.053	-0.096	-0.012			0.068
	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)
region_3	0.030	-0.097			-0.078	-0.038	0.103			0.018	0.021	-0.090			-0.102	-0.039	0.091			0.011
	(0.01)	(0.01)			(0.03)	(0.00)	(0.01)			(0.01)	(0.01)	(0.01)			(0.03)	(0.00)	(0.01)			(0.01)
region_4	-0.047	-0.121			-0.046	-0.088	0.028			-0.086	-0.019	-0.118			-0.118	-0.083	0.025			-0.096
	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)
region_5	0.026	-0.087			0.091	-0.079	-0.022			-0.034	0.017	-0.072			0.045	-0.079	-0.035			-0.042
	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)
educ_1_3	-0.053	0.122			0.169	-0.100	0.053			0.205	-0.062	0.095			0.082	-0.082	0.053			0.185
	(0.05)	(0.03)			(0.15)	(0.01)	(0.03)			(0.04)	(0.05)	(0.03)			(0.15)	(0.01)	(0.03)			(0.04)
educ_1_4	0.023	-0.076			0.162	0.062	0.078			0.029	0.029	-0.091			0.167	0.060	0.094			0.029
	(0.02)	(0.01)			(0.06)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.06)	(0.00)	(0.01)			(0.01)
educ_1_5	-0.015	-0.021			0.005	0.082	-0.062			-0.178	-0.002	-0.031			-0.028	0.082	-0.052			-0.167
	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)
educ_1_6	-0.083	-0.291			0.094	-0.021	0.096			-0.203	-0.114	-0.307			-0.121	-0.015	0.105			-0.235
	(0.03)	(0.02)			(0.10)	(0.00)	(0.02)			(0.02)	(0.04)	(0.02)			(0.10)	(0.00)	(0.02)			(0.02)
educ_1_7	-0.025	0.161			0.110	0.013	-0.174			-0.019	0.019	0.149			0.051	0.015	-0.164			-0.051
	(0.04)	(0.03)			(0.11)	(0.01)	(0.02)			(0.04)	(0.04)	(0.03)			(0.11)	(0.01)	(0.02)			(0.04)
educ_1_8	-0.086	-0.184			0.057	0.151	0.027			-0.228	-0.069	-0.166			-0.024	0.152	0.025			-0.193
	(0.04)	(0.02)			(0.11)	(0.01)	(0.02)			(0.03)	(0.04)	(0.02)			(0.11)	(0.01)	(0.02)			(0.03)
educ_2_2	0.078	-0.153			0.198	0.155	0.297			0.159	0.064	-0.162			0.095	0.158	0.311			0.158
	(0.02)	(0.01)			(0.06)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.06)	(0.00)	(0.01)			(0.01)
educ_2_3	0.014	0.463			0.023	0.132	-0.173			0.375	-0.092	0.464			0.107	0.132	-0.215			0.365
	(0.05)	(0.03)			(0.13)	(0.01)	(0.03)			(0.05)	(0.05)	(0.03)			(0.13)	(0.01)	(0.03)			(0.05)
educ_2_4	0.087	-0.048			-0.111	0.251	0.062			-0.192	0.114	-0.062			-0.213	0.240	0.080			-0.158
	(0.02)	(0.01)			(0.07)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.07)	(0.00)	(0.01)			(0.01)
educ_2_5	0.009	-0.176			-0.220	0.199	0.014			-0.273	0.033	-0.178			-0.288	0.198	0.016			-0.273
	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)	(0.02)	(0.01)			(0.05)	(0.00)	(0.01)			(0.01)

Variables	Probit 1995					Probit 1995					Probit 1996					Probit 1996				
	1995 SE	1995 SE	1995 SE	1995 SE	1995 SE het	1995 WE	1995 WE	1995 WE	1995 WE	1995 WE het	1996 SE	1996 SE	1996 SE	1996 SE	1996 SE het	1996 WE	1996 WE	1996 WE	1996 WE	1996 WE het
educ_2_6	0.177 (0.06)	-0.041 (0.04)			0.075 (0.19)	0.089 (0.01)	-0.089 (0.03)			-0.346 (0.04)	0.207 (0.06)	-0.087 (0.04)			-0.067 (0.19)	0.075 (0.01)	-0.051 (0.03)			-0.304 (0.03)
educ_2_7	-0.020 (0.12)	-0.449 (0.07)			-0.231 (0.37)	-0.010 (0.01)	0.235 (0.06)			-0.098 (0.06)	-0.365 (0.10)	-0.277 (0.06)			0.655 (0.29)	0.013 (0.01)	0.105 (0.05)			-0.114 (0.06)
educ_2_8	0.078 (0.03)	0.288 (0.02)			-0.055 (0.07)	0.272 (0.01)	-0.169 (0.02)			-0.002 (0.02)	0.087 (0.03)	0.275 (0.02)			-0.150 (0.08)	0.263 (0.01)	-0.154 (0.02)			0.018 (0.02)
educ_3_2	-0.145 (0.14)	-0.377 (0.08)			1.209 (0.42)	0.114 (0.02)	0.658 (0.08)			0.739 (0.07)	-0.141 (0.15)	-0.431 (0.08)			1.119 (0.44)	0.122 (0.01)	0.717 (0.08)			0.720 (0.06)
educ_3_3	-0.105 (0.03)	-0.230 (0.02)			0.565 (0.09)	0.064 (0.00)	0.408 (0.02)			0.737 (0.02)	-0.128 (0.03)	-0.220 (0.02)			0.554 (0.09)	0.059 (0.00)	0.422 (0.02)			0.765 (0.02)
educ_3_4	0.019 (0.04)	-0.673 (0.02)			0.291 (0.10)	0.207 (0.00)	0.246 (0.02)			-0.393 (0.01)	-0.037 (0.04)	-0.659 (0.02)			0.048 (0.10)	0.204 (0.00)	0.264 (0.02)			-0.353 (0.01)
educ_3_5	0.944 (0.03)	0.056 (0.02)			0.294 (0.08)	0.223 (0.00)	0.272 (0.02)			0.645 (0.02)	0.875 (0.03)	0.031 (0.02)			0.417 (0.08)	0.208 (0.00)	0.293 (0.02)			0.689 (0.02)
educ_3_6	0.512 (0.03)	-0.314 (0.02)			0.549 (0.09)	0.438 (0.00)	0.508 (0.02)			-0.037 (0.02)	0.407 (0.03)	-0.341 (0.02)			0.409 (0.09)	0.438 (0.00)	0.525 (0.02)			-0.026 (0.02)
educ_3_7	0.159 (0.03)	-0.536 (0.01)			0.530 (0.07)	0.382 (0.00)	0.448 (0.01)			0.127 (0.01)	0.141 (0.03)	-0.546 (0.01)			0.349 (0.07)	0.392 (0.00)	0.476 (0.01)			0.118 (0.01)
educ_3_8	0.409 (0.05)	-0.569 (0.02)			0.191 (0.13)	0.266 (0.00)	0.192 (0.02)			-0.508 (0.01)	0.435 (0.05)	-0.621 (0.02)			0.031 (0.13)	0.260 (0.00)	0.247 (0.02)			-0.497 (0.01)
educ_3_9	0.773 (0.03)	0.886 (0.01)			-0.550 (0.05)	0.673 (0.01)	-0.690 (0.01)			0.099 (0.03)	0.770 (0.03)	0.845 (0.01)			-0.612 (0.05)	0.645 (0.01)	-0.594 (0.01)			0.398 (0.03)
educ_3_10	0.435 (0.15)	-0.665 (0.08)			0.378 (0.44)	0.256 (0.01)	0.571 (0.08)			-0.347 (0.06)	0.236 (0.15)	-0.654 (0.08)			0.258 (0.43)	0.256 (0.01)	0.623 (0.08)			-0.269 (0.06)
educ_3_11	0.122 (0.12)	-0.910 (0.05)			-0.064 (0.34)	0.325 (0.01)	0.803 (0.05)			-0.212 (0.03)	-0.021 (0.11)	-0.843 (0.05)			0.058 (0.31)	0.330 (0.01)	0.858 (0.05)			-0.066 (0.03)
female	-0.573 (0.02)	-0.470 (0.01)			0.142 (0.05)	-0.452 (0.00)	0.468 (0.01)			0.717 (0.01)	-0.561 (0.02)	-0.461 (0.01)			0.303 (0.05)	-0.439 (0.00)	0.462 (0.01)			0.665 (0.01)
Constant	9.865 (0.15)	-3.056 (0.06)	0.105 (0.05)	-0.267 (0.01)	-0.808 (0.27)	10.089 (0.01)	3.020 (0.05)	-1.485 0	-0.632 0	0.981 (0.05)	9.938 (0.15)	-3.129 (0.06)	0.117 (0.05)	-0.243 -0.01	-0.558 (0.28)	10.113 (0.01)	3.161 (0.05)	-1.422 0	-0.656 (0.00)	0.988 (0.05)
rho	0.105 (0.05)					-1.485 (0.00)					0.117 (0.05)				-1.422 (0.00)					
ln(sigma)	-0.267 (0.01)					-0.632 (0.00)					-0.243 (0.01)				-0.656 (0.00)					
Observations	643,183	643,183	643,183	643,183	33,226	643,183	643,183	643,183	643,183	609,956	654,810	654,810	654,810	654,810	32,078	654,810	654,810	654,810	654,810	622,732
R-squared					0.019					0.062					0.021					0.057

Variables	Probit 1997					Probit 1997					Probit 1998					Probit 1998				
	1997 SE	1997 SE	1997 SE	1997 SE	1997 SE het	1997 WE	1997 WE	1997 WE	1997 WE	1997 WE het	1998 SE	1998 SE	1998 SE	1998 SE	1998 SE het	1998 WE	1998 WE	1998 WE	1998 WE	1998 WE het
educ_2_6	0.198 (0.06)	-0.175 (0.03)			-0.022 (0.18)	0.053 (0.01)	-0.005 (0.03)			-0.406 (0.03)	0.158 (0.06)	-0.280 (0.03)			-0.161 (0.18)	0.047 (0.01)	0.065 (0.03)			-0.430 (0.03)
educ_2_7	-0.062 (0.09)	-0.267 (0.05)			0.450 (0.28)	0.023 (0.01)	0.097 (0.05)			-0.101 (0.05)	-0.029 (0.09)	-0.236 (0.05)			0.094 (0.26)	0.024 (0.01)	0.068 (0.05)			-0.041 (0.05)
educ_2_8	0.122 (0.03)	0.284 (0.02)			-0.112 (0.07)	0.260 (0.01)	-0.184 (0.02)			-0.008 (0.02)	0.161 (0.03)	0.295 (0.02)			-0.052 (0.07)	0.245 (0.00)	-0.209 (0.02)			-0.002 (0.02)
educ_3_2	0.131 (0.16)	-0.481 (0.08)			0.484 (0.47)	0.144 (0.01)	0.622 (0.08)			0.623 (0.06)	-0.142 (0.16)	-0.468 (0.08)			1.092 (0.47)	0.125 (0.01)	0.685 (0.08)			0.703 (0.06)
educ_3_3	-0.112 (0.03)	-0.193 (0.02)			0.635 (0.09)	0.047 (0.00)	0.414 (0.02)			0.792 (0.02)	-0.116 (0.03)	-0.185 (0.02)			0.567 (0.09)	0.042 (0.00)	0.415 (0.02)			0.800 (0.02)
educ_3_4	-0.009 (0.04)	-0.620 (0.02)			0.216 (0.10)	0.190 (0.00)	0.264 (0.02)			-0.330 (0.01)	0.056 (0.04)	-0.594 (0.02)			0.162 (0.10)	0.189 (0.00)	0.255 (0.02)			-0.340 (0.01)
educ_3_5	0.860 (0.03)	0.036 (0.02)			0.493 (0.08)	0.207 (0.00)	0.269 (0.02)			0.692 (0.02)	0.828 (0.03)	0.055 (0.02)			0.545 (0.08)	0.210 (0.00)	0.238 (0.02)			0.657 (0.02)
educ_3_6	0.449 (0.03)	-0.355 (0.02)			0.535 (0.09)	0.440 (0.00)	0.544 (0.02)			0.013 (0.02)	0.416 (0.03)	-0.359 (0.02)			0.443 (0.09)	0.446 (0.00)	0.545 (0.02)			0.048 (0.01)
educ_3_7	0.152 (0.03)	-0.544 (0.01)			0.494 (0.08)	0.403 (0.00)	0.478 (0.01)			0.132 (0.01)	0.169 (0.03)	-0.539 (0.01)			0.347 (0.08)	0.419 (0.00)	0.472 (0.01)			0.138 (0.01)
educ_3_8	0.403 (0.05)	-0.610 (0.02)			-0.040 (0.13)	0.251 (0.00)	0.257 (0.02)			-0.497 (0.01)	0.334 (0.05)	-0.582 (0.02)			0.311 (0.13)	0.237 (0.00)	0.274 (0.02)			-0.445 (0.01)
educ_3_9	0.806 (0.03)	0.861 (0.01)			-0.560 (0.05)	0.681 (0.01)	-0.570 (0.01)			0.659 (0.03)	0.809 (0.03)	0.897 (0.01)			-0.624 (0.05)	0.666 (0.01)	-0.623 (0.01)			0.669 (0.03)
educ_3_10	0.314 (0.15)	-0.667 (0.08)			0.861 (0.45)	0.230 (0.01)	0.570 (0.08)			-0.183 (0.06)	0.377 (0.14)	-0.625 (0.08)			0.576 (0.43)	0.228 (0.01)	0.557 (0.08)			-0.088 (0.05)
educ_3_11	0.119 (0.11)	-0.872 (0.05)			0.276 (0.32)	0.337 (0.01)	0.883 (0.06)			-0.097 (0.03)	0.103 (0.11)	-0.841 (0.05)			0.615 (0.31)	0.347 (0.01)	0.841 (0.05)			-0.113 (0.03)
female	-0.575 (0.02)	-0.455 (0.01)			0.270 (0.05)	-0.434 (0.00)	0.452 (0.01)			0.602 (0.01)	-0.560 (0.02)	-0.444 (0.01)			0.283 (0.05)	-0.424 (0.00)	0.441 (0.01)			0.534 (0.01)
Constant	9.838 (0.15)	-3.178 (0.06)	0.153 (-0.04)	-0.263 (0.01)	-0.765 (0.28)	10.181 (0.01)	3.262 (0.05)	-1.347 (0.00)	-0.675 (0.00)	0.786 (0.05)	9.934 (0.16)	-3.273 (0.06)	0.146 (0.05)	-0.259 (0.01)	-0.511 (0.29)	10.292 (0.01)	3.374 (0.05)	-1.291 (0)	-0.696 (0)	0.724 (0.05)
rho	0.153 (0.04)					-1.347 (0.00)					0.146 (0.05)				-1.291 (0.00)					
ln(sigma)	-0.263 (0.01)					-0.675 (0.00)					-0.259 (0.01)				-0.696 (0.00)					
Observations	664,020	664,020	664,020	664,020	31,672	664,020	664,020	664,020	664,020	632,347	671,231	671,231	671,231	671,231	30,584	671,231	671,231	671,231	671,231	640,645
R-squared					0.023					0.051					0.024					0.046

Variables	Probit					Probit					Probit					Probit				
	1999 SE	1999 SE	1999 SE	1999 SE	1999 SE het	1999 WE	1999 WE	1999 WE	1999 WE	1999 WE het	2000 SE	2000 SE	2000 SE	2000 SE	2000 SEhet	2000 WE	2000 WE	2000 WE	2000 WE	2000 WE het
educ_2_6	0.129 (0.06)	-0.304 (0.03)			-0.038 (0.17)	0.060 (0.01)	0.083 (0.03)			-0.493 (0.02)	0.092 (0.06)	-0.345 (0.03)			0.050 (0.16)	0.058 (0.00)	0.109 (0.03)			-0.538 (0.02)
educ_2_7	0.142 (0.07)	-0.126 (0.05)			0.124 (0.23)	0.039 (0.01)	-0.005 (0.04)			-0.096 (0.05)	0.141 (0.07)	-0.085 (0.04)			-0.094 (0.21)	0.051 (0.01)	-0.009 (0.04)			0.010 (0.05)
educ_2_8	0.205 (0.03)	0.297 (0.02)			-0.066 (0.07)	0.250 (0.00)	-0.208 (0.02)			-0.028 (0.02)	0.164 (0.03)	0.296 (0.02)			0.012 (0.07)	0.237 (0.00)	-0.223 (0.02)			-0.005 (0.02)
educ_3_2	0.147 (0.15)	-0.453 (0.08)			0.806 (0.46)	0.126 (0.01)	0.647 (0.08)			0.720 (0.06)	-0.120 (0.14)	-0.391 (0.07)			1.027 (0.41)	0.144 (0.01)	0.614 (0.07)			0.583 (0.06)
educ_3_3	-0.150 (0.03)	-0.153 (0.02)			0.666 (0.08)	0.051 (0.00)	0.382 (0.02)			0.782 (0.02)	-0.148 (0.03)	-0.126 (0.02)			0.646 (0.08)	0.071 (0.00)	0.339 (0.01)			0.740 (0.02)
educ_3_4	-0.017 (0.04)	-0.568 (0.02)			0.229 (0.10)	0.188 (0.00)	0.252 (0.02)			-0.316 (0.01)	0.010 (0.04)	-0.568 (0.02)			0.115 (0.09)	0.197 (0.00)	0.260 (0.02)			-0.319 (0.01)
educ_3_5	0.874 (0.03)	0.049 (0.02)			0.545 (0.08)	0.219 (0.00)	0.246 (0.02)			0.634 (0.02)	0.859 (0.03)	0.049 (0.02)			0.653 (0.08)	0.240 (0.00)	0.221 (0.02)			0.613 (0.02)
educ_3_6	0.404 (0.03)	-0.370 (0.02)			0.466 (0.09)	0.454 (0.00)	0.570 (0.02)			0.100 (0.01)	0.467 (0.03)	-0.352 (0.02)			0.530 (0.08)	0.464 (0.00)	0.567 (0.02)			0.180 (0.01)
educ_3_7	0.203 (0.03)	-0.578 (0.02)			0.300 (0.08)	0.420 (0.00)	0.529 (0.01)			0.155 (0.01)	0.200 (0.03)	-0.572 (0.01)			0.455 (0.08)	0.420 (0.00)	0.556 (0.01)			0.207 (0.01)
educ_3_8	0.414 (0.05)	-0.587 (0.02)			0.206 (0.13)	0.238 (0.00)	0.298 (0.02)			-0.398 (0.01)	0.314 (0.05)	-0.574 (0.02)			0.112 (0.12)	0.244 (0.00)	0.300 (0.02)			-0.396 (0.01)
educ_3_9	0.860 (0.03)	0.901 (0.01)			-0.529 (0.05)	0.647 (0.01)	-0.622 (0.01)			0.658 (0.03)	0.858 (0.03)	0.928 (0.01)			-0.530 (0.05)	0.641 (0.01)	-0.671 (0.01)			0.659 (0.03)
educ_3_10	0.384 (0.14)	-0.605 (0.07)			0.581 (0.43)	0.230 (0.01)	0.483 (0.07)			-0.094 (0.05)	0.113 (0.14)	-0.570 (0.07)			1.137 (0.40)	0.234 (0.01)	0.523 (0.07)			-0.035 (0.05)
educ_3_11	0.012 (0.10)	-0.816 (0.05)			0.592 (0.30)	0.363 (0.01)	0.747 (0.05)			-0.084 (0.03)	0.206 (0.10)	-0.784 (0.04)			0.178 (0.27)	0.361 (0.01)	0.754 (0.05)			-0.030 (0.03)
female	-0.527 (0.02)	-0.431 (0.01)			0.230 (0.05)	-0.413 (0.00)	0.422 (0.01)			0.498 (0.01)	-0.510 (0.02)	-0.420 (0.01)			0.291 (0.05)	-0.405 (0.00)	0.426 (0.01)			0.435 (0.01)
Constant	9.802 (0.16)	-3.270 (0.06)	0.160 (0.04)	-0.251 (0.01)	-0.294 (0.30)	10.305 (0.01)	3.411 (0.05)	-1.270 0	-0.685 (0.00)	1.048 (0.05)	9.754 (0.16)	-3.160 (0.06)	0.138 (0.05)	-0.242 (0.01)	-0.304 (0.29)	10.352 (0.01)	3.363 (0.05)	-1.215 (0.00)	-0.696 (0.00)	1.174 (0.05)
rho	0.160 (0.04)					-1.270 (0.00)					0.138 (0.05)				-1.215 (0.00)					
ln(sigma)	-0.251 (0.01)					-0.685 (0.00)					-0.242 (0.01)				-0.696 (0.00)					
Observations	677,851	677,851	677,851	677,851	29,633	677,851	677,851	677,851	677,851	648,218	681,648	681,648	681,648	681,648	29,615	681,648	681,648	681,648	681,648	652,033
R-squared					0.021					0.044					0.024					0.042

Variables	Probit					Probit					Probit					Probit				
	2001 SE	2001 SE	2001 SE	2001 SE	2001 SE het	2001 WE	2001 WE	2001 WE	2001 WE	2001 WE het	2002 SE	2002 SE	2002 SE	2002 SE	2002 SE het	2002 WE	2002 WE	2002 WE	2002 WE	2002 WE het
educ_2_6	0.134 (0.05)	-0.332 (0.03)			-0.045 (0.15)	0.038 (0.00)	0.134 (0.03)			-0.446 (0.02)	0.058 (0.05)	-0.340 (0.03)			-0.025 (0.15)	0.038 (0.00)	0.144 (0.02)			-0.426 (0.02)
educ_2_7	0.033 (0.07)	-0.089 (0.04)			0.222 (0.20)	0.069 (0.01)	-0.010 (0.04)			0.029 (0.04)	-0.011 (0.07)	-0.095 (0.04)			0.055 (0.19)	0.064 (0.01)	-0.008 (0.04)			0.015 (0.04)
educ_2_8	0.187 (0.03)	0.290 (0.02)			-0.063 (0.07)	0.237 (0.00)	-0.216 (0.02)			0.024 (0.02)	0.174 (0.03)	0.288 (0.02)			-0.038 (0.07)	0.234 (0.00)	-0.220 (0.02)			0.050 (0.02)
educ_3_2	0.082 (0.12)	-0.301 (0.07)			0.760 (0.35)	0.174 (0.01)	0.447 (0.06)			0.516 (0.06)	0.159 (0.12)	-0.265 (0.06)			0.812 (0.34)	0.185 (0.01)	0.394 (0.06)			0.552 (0.06)
educ_3_3	-0.154 (0.03)	-0.089 (0.02)			0.534 (0.08)	0.088 (0.00)	0.290 (0.01)			0.699 (0.02)	-0.196 (0.03)	-0.100 (0.02)			0.528 (0.08)	0.076 (0.00)	0.317 (0.01)			0.751 (0.02)
educ_3_4	-0.030 (0.04)	-0.538 (0.02)			0.258 (0.09)	0.222 (0.00)	0.238 (0.02)			-0.334 (0.01)	-0.044 (0.04)	-0.542 (0.02)			0.382 (0.09)	0.228 (0.00)	0.231 (0.01)			-0.328 (0.01)
educ_3_5	0.899 (0.03)	0.062 (0.02)			0.680 (0.07)	0.270 (0.00)	0.185 (0.02)			0.545 (0.02)	0.769 (0.03)	0.073 (0.02)			0.640 (0.07)	0.286 (0.00)	0.169 (0.02)			0.514 (0.02)
educ_3_6	0.495 (0.03)	-0.347 (0.02)			0.526 (0.08)	0.466 (0.00)	0.571 (0.02)			0.240 (0.01)	0.542 (0.03)	-0.361 (0.02)			0.546 (0.08)	0.452 (0.00)	0.585 (0.02)			0.247 (0.01)
educ_3_7	0.219 (0.03)	-0.548 (0.01)			0.388 (0.08)	0.426 (0.00)	0.516 (0.01)			0.205 (0.01)	0.181 (0.03)	-0.557 (0.01)			0.373 (0.08)	0.413 (0.00)	0.542 (0.01)			0.221 (0.01)
educ_3_8	0.332 (0.05)	-0.581 (0.02)			0.261 (0.12)	0.244 (0.00)	0.327 (0.02)			-0.329 (0.01)	0.259 (0.05)	-0.587 (0.02)			0.192 (0.12)	0.246 (0.00)	0.344 (0.02)			-0.332 (0.01)
educ_3_9	0.906 (0.03)	0.939 (0.01)			-0.383 (0.05)	0.645 (0.01)	-0.692 (0.01)			0.638 (0.03)	0.911 (0.03)	0.950 (0.01)			-0.416 (0.05)	0.643 (0.01)	-0.700 (0.01)			0.599 (0.03)
educ_3_10	0.121 (0.14)	-0.579 (0.07)			0.457 (0.40)	0.232 (0.01)	0.516 (0.07)			-0.052 (0.05)	0.119 (0.14)	-0.613 (0.07)			0.585 (0.41)	0.223 (0.01)	0.580 (0.07)			0.021 (0.05)
educ_3_11	0.003 (0.09)	-0.736 (0.04)			0.997 (0.25)	0.380 (0.01)	0.698 (0.04)			0.011 (0.03)	0.010 (0.09)	-0.746 (0.04)			0.369 (0.25)	0.391 (0.01)	0.672 (0.04)			0.058 (0.03)
female	-0.504 (0.02)	-0.420 (0.01)			0.240 (0.04)	-0.400 (0.00)	0.422 (0.01)			0.391 (0.01)	-0.471 (0.02)	-0.417 (0.01)			0.257 (0.04)	-0.388 (0.00)	0.405 (0.01)			0.339 (0.01)
Constant	9.631 (0.15)	-3.053 (0.06)	0.144 (0.04)	-0.233 (0.01)	0.112 (0.28)	10.415 (0.01)	3.271 (0.05)	-1.201 (0.00)	-0.701 (0.00)	1.165 (0.05)	9.806 (0.15)	-3.031 (0.06)	0.120 (0.05)	-0.235 (0.01)	-0.068 (0.29)	10.381 (0.01)	3.337 (0.05)	-1.210 (0.00)	-0.699 (0.00)	1.619 (0.05)
rho	0.144 (0.04)					-1.201 (0.00)					0.120 (0.05)				-1.210 (0.00)					
ln(sigma)	-0.233 (0.01)					-0.701 (0.00)					-0.235 (0.01)				-0.699 (0.00)					
Observations	683,816	683,816	683,816	683,816	29,812	683,816	683,816	683,816	683,816	654,002	685,711	685,711	685,711	685,711	29,819	685,711	685,711	685,711	685,711	655,891
R-squared					0.024					0.039					0.025					0.040

Variables	Probit																			
	2003 SE	2003 SE	2003 SE	2003 SE	2003 SE het	2003 WE	2003 WE	2003 WE	2003 WE	2003 WE het	2004 SE	2004 SE	2004 SE	2004 SE	2004 SE het	2004 WE	2004 WE	2004 WE	2004 WE	2004 WE het
kids		-0.006 (0.01)			-0.046 (0.03)		0.016 (0.01)			-0.037 (0.01)		-0.010 (0.01)			-0.036 (0.03)		0.018 (0.01)			-0.034 (0.01)
headfam		-0.082 (0.01)			-0.224 (0.05)		0.257 (0.01)			-0.191 (0.01)		-0.094 (0.01)			-0.273 (0.05)		0.257 (0.01)			-0.204 (0.01)
married		0.007 (0.01)			-0.094 (0.03)		0.097 (0.01)			-0.052 (0.01)		0.006 (0.01)			-0.113 (0.03)		0.098 (0.01)			-0.057 (0.01)
age	0.123 (0.00)	0.064 (0.00)			-0.111 (0.01)	0.106 (0.00)	-0.103 (0.00)			-0.263 (0.00)	0.127 (0.00)	0.063 (0.00)			-0.099 (0.01)	0.113 (0.00)	-0.110 (0.00)			-0.286 (0.00)
agesquared	-0.001 (0.00)	-0.001 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.003 (0.00)	-0.001 (0.00)	-0.001 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.003 (0.00)
region_2	0.039 (0.02)	-0.025 (0.01)			-0.101 (0.06)	-0.100 (0.00)	0.037 (0.01)			0.071 (0.01)	0.023 (0.02)	-0.037 (0.01)			-0.131 (0.06)	-0.101 (0.00)	0.041 (0.01)			0.074 (0.01)
region_3	0.010 (0.01)	-0.129 (0.01)			-0.098 (0.03)	-0.049 (0.00)	0.133 (0.01)			0.046 (0.01)	-0.004 (0.01)	-0.131 (0.01)			-0.050 (0.03)	-0.049 (0.00)	0.131 (0.01)			0.042 (0.01)
region_4	-0.082 (0.02)	-0.188 (0.01)			0.037 (0.05)	-0.097 (0.00)	0.111 (0.01)			-0.072 (0.01)	-0.084 (0.02)	-0.203 (0.01)			0.003 (0.05)	-0.098 (0.00)	0.121 (0.01)			-0.076 (0.01)
region_5	-0.022 (0.02)	-0.179 (0.01)			0.035 (0.05)	-0.088 (0.00)	0.070 (0.01)			-0.058 (0.01)	-0.064 (0.02)	-0.186 (0.01)			0.082 (0.05)	-0.088 (0.00)	0.082 (0.01)			-0.060 (0.01)
educ_1_3	-0.200 (0.06)	0.112 (0.04)			0.401 (0.17)	-0.063 (0.01)	-0.026 (0.03)			0.211 (0.04)	-0.288 (0.06)	0.093 (0.04)			0.609 (0.18)	-0.068 (0.01)	-0.030 (0.03)			0.196 (0.04)
educ_1_4	0.050 (0.03)	-0.157 (0.02)			-0.002 (0.08)	0.052 (0.00)	0.143 (0.01)			0.030 (0.02)	0.025 (0.03)	-0.156 (0.02)			0.115 (0.08)	0.054 (0.00)	0.148 (0.01)			0.020 (0.02)
educ_1_5	0.024 (0.02)	-0.039 (0.01)			-0.060 (0.06)	0.079 (0.00)	-0.031 (0.01)			-0.105 (0.02)	0.009 (0.02)	-0.034 (0.01)			-0.078 (0.06)	0.074 (0.00)	-0.038 (0.01)			-0.108 (0.02)
educ_1_6	-0.066 (0.04)	-0.271 (0.02)			-0.100 (0.12)	-0.051 (0.00)	0.143 (0.02)			-0.117 (0.02)	-0.085 (0.04)	-0.276 (0.02)			0.008 (0.12)	-0.055 (0.00)	0.142 (0.02)			-0.152 (0.02)
educ_1_7	-0.032 (0.04)	0.204 (0.03)			0.054 (0.13)	0.001 (0.01)	-0.203 (0.03)			0.029 (0.04)	-0.069 (0.05)	0.189 (0.03)			0.047 (0.13)	-0.001 (0.01)	-0.209 (0.03)			-0.020 (0.04)
educ_1_8	-0.016 (0.05)	-0.115 (0.03)			0.138 (0.15)	0.142 (0.01)	0.040 (0.03)			-0.171 (0.03)	-0.068 (0.05)	-0.097 (0.03)			0.075 (0.15)	0.132 (0.01)	0.029 (0.03)			-0.180 (0.04)
educ_2_2	0.024 (0.02)	-0.158 (0.01)			0.260 (0.06)	0.147 (0.00)	0.305 (0.01)			0.240 (0.01)	0.036 (0.02)	-0.150 (0.01)			0.213 (0.06)	0.149 (0.00)	0.292 (0.01)			0.188 (0.01)
educ_2_3	-0.094 (0.05)	0.344 (0.03)			0.236 (0.14)	0.098 (0.01)	-0.189 (0.03)			0.306 (0.04)	-0.060 (0.05)	0.377 (0.03)			0.332 (0.13)	0.091 (0.01)	-0.222 (0.03)			0.326 (0.04)
educ_2_4	0.073 (0.02)	-0.142 (0.01)			-0.008 (0.07)	0.198 (0.00)	0.165 (0.01)			-0.073 (0.01)	0.089 (0.02)	-0.142 (0.01)			0.037 (0.07)	0.197 (0.00)	0.167 (0.01)			-0.091 (0.01)
educ_2_5	0.062 (0.02)	-0.166 (0.01)			-0.218 (0.05)	0.199 (0.00)	0.036 (0.01)			-0.189 (0.01)	0.075 (0.02)	-0.154 (0.01)			-0.278 (0.05)	0.198 (0.00)	0.020 (0.01)			-0.189 (0.01)

Variables	Probit					Probit					Probit					Probit				
	2003 SE	2003 SE	2003 SE	2003 SE	2003 SE het	2003 WE	2003 WE	2003 WE	2003 WE	2003 WE het	2004 SE	2004 SE	2004 SE	2004 SE	2004 SE het	2004 WE	2004 WE	2004 WE	2004 WE	2004 WE het
educ_2_6	0.041 (0.05)	-0.349 (0.03)			0.030 (0.14)	0.049 (0.00)	0.148 (0.02)			-0.451 (0.02)	0.085 (0.05)	-0.376 (0.02)			0.163 (0.14)	0.046 (0.00)	0.159 (0.02)			-0.463 (0.02)
educ_2_7	-0.050 (0.06)	-0.035 (0.04)			0.298 (0.18)	0.074 (0.01)	-0.057 (0.03)			-0.017 (0.04)	0.070 (0.06)	0.020 (0.04)			-0.080 (0.17)	0.084 (0.01)	-0.108 (0.03)			-0.079 (0.04)
educ_2_8	0.165 (0.03)	0.292 (0.02)			-0.060 (0.07)	0.240 (0.00)	-0.214 (0.02)			0.050 (0.02)	0.196 (0.03)	0.312 (0.02)			-0.149 (0.07)	0.233 (0.00)	-0.251 (0.02)			0.021 (0.02)
educ_3_2	-0.263 (0.11)	-0.261 (0.06)			1.233 (0.33)	0.175 (0.01)	0.388 (0.06)			0.552 (0.05)	-0.067 (0.12)	-0.286 (0.06)			0.862 (0.33)	0.193 (0.01)	0.389 (0.06)			0.399 (0.05)
educ_3_3	-0.187 (0.03)	-0.062 (0.02)			0.528 (0.07)	0.099 (0.00)	0.266 (0.01)			0.692 (0.02)	-0.201 (0.03)	-0.018 (0.01)			0.597 (0.07)	0.121 (0.00)	0.183 (0.01)			0.561 (0.02)
educ_3_4	-0.017 (0.04)	-0.529 (0.02)			0.352 (0.09)	0.241 (0.00)	0.205 (0.01)			-0.358 (0.01)	-0.073 (0.04)	-0.533 (0.02)			0.435 (0.09)	0.232 (0.00)	0.214 (0.01)			-0.375 (0.01)
educ_3_5	0.761 (0.03)	0.064 (0.02)			0.652 (0.07)	0.301 (0.00)	0.168 (0.02)			0.431 (0.02)	0.721 (0.02)	0.078 (0.02)			0.664 (0.07)	0.288 (0.00)	0.157 (0.01)			0.415 (0.02)
educ_3_6	0.477 (0.03)	-0.339 (0.02)			0.651 (0.08)	0.442 (0.00)	0.543 (0.02)			0.208 (0.01)	0.523 (0.03)	-0.315 (0.01)			0.704 (0.08)	0.431 (0.00)	0.560 (0.02)			0.237 (0.01)
educ_3_7	0.148 (0.03)	-0.543 (0.01)			0.363 (0.08)	0.403 (0.00)	0.531 (0.01)			0.203 (0.01)	0.057 (0.03)	-0.516 (0.01)			0.522 (0.08)	0.386 (0.00)	0.529 (0.01)			0.213 (0.01)
educ_3_8	0.196 (0.05)	-0.586 (0.02)			0.270 (0.12)	0.263 (0.00)	0.333 (0.02)			-0.336 (0.01)	0.127 (0.04)	-0.572 (0.02)			0.179 (0.12)	0.255 (0.00)	0.341 (0.02)			-0.329 (0.01)
educ_3_9	0.960 (0.03)	0.943 (0.01)			-0.519 (0.05)	0.682 (0.01)	-0.657 (0.01)			0.675 (0.03)	0.953 (0.03)	0.982 (0.01)			-0.466 (0.05)	0.691 (0.01)	-0.733 (0.01)			0.552 (0.02)
educ_3_10	0.210 (0.12)	-0.454 (0.06)			0.104 (0.34)	0.252 (0.01)	0.379 (0.06)			-0.075 (0.05)	0.126 (0.12)	-0.478 (0.06)			-0.067 (0.35)	0.233 (0.01)	0.434 (0.06)			-0.032 (0.05)
educ_3_11	0.122 (0.08)	-0.703 (0.04)			0.504 (0.23)	0.413 (0.01)	0.608 (0.04)			-0.015 (0.03)	0.112 (0.08)	-0.689 (0.04)			0.300 (0.22)	0.396 (0.01)	0.601 (0.04)			-0.096 (0.03)
female	-0.434 (0.02)	-0.414 (0.01)			0.202 (0.04)	-0.371 (0.00)	0.385 (0.01)			0.288 (0.01)	-0.442 (0.02)	-0.415 (0.01)			0.116 (0.04)	-0.365 (0.00)	0.382 (0.01)			0.264 (0.01)
Constant	9.531 (0.15)	-2.864 (0.06)	0.127 (0.05)	-0.221 (0.01)	0.474 (0.29)	10.256 (0.01)	3.351 (0.05)	-1.246 (0.01)	-0.689 (0.00)	2.407 (0.05)	9.439 (0.15)	-2.822 (0.06)	0.155 (0.05)	-0.220 (0.01)	0.288 (0.28)	10.142 (0.01)	3.509 (0.05)	-1.215 (0.00)	-0.688 (0.00)	2.960 (0.05)
rho	0.127 (0.05)					-1.246 (0.01)					0.155 (0.05)				-1.215 (0.00)					
ln(sigma)	-0.221 (0.01)					-0.689 (0.00)					-0.220 (0.01)				-0.688 (0.00)					
Observations	687,888	687,888	687,888	687,888	29,776	687,888	687,888	687,888	687,888	658,109	689,009	689,009	689,009	689,009	30,202	689,009	689,009	689,009	689,009	658,807
R-squared					0.027					0.043					0.028					0.046

Variables	Probit																			
	2005 SE	2005 SE	2005 SE	2005 SE	2005 SE het	2005 WE	2005 WE	2005 WE	2005 WE	2005 WE het	2006 SE	2006 SE	2006 SE	2006 SE	2006 SE het	2006 WE	2006 WE	2006 WE	2006 WE	2006 WE het
kids		-0.019 (0.01)			-0.044 (0.03)		0.028 (0.01)			-0.030 (0.01)		-0.008 (0.01)			-0.061 (0.03)		0.016 (0.01)			-0.035 (0.01)
headfam		-0.093 (0.01)			-0.277 (0.05)		0.249 (0.01)			-0.229 (0.01)		-0.097 (0.01)			-0.239 (0.05)		0.248 (0.01)			-0.217 (0.01)
married		0.001 (0.01)			-0.107 (0.03)		0.103 (0.01)			-0.066 (0.01)		-0.013 (0.01)			-0.129 (0.03)		0.111 (0.01)			-0.050 (0.01)
age	0.133 (0.00)	0.058 (0.00)			-0.088 (0.01)	0.116 (0.00)	-0.109 (0.00)			-0.291 (0.00)	0.129 (0.00)	0.051 (0.00)			-0.109 (0.01)	0.114 (0.00)	-0.098 (0.00)			-0.264 (0.00)
agesquared	-0.001 (0.00)	-0.001 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.003 (0.00)	-0.001 (0.00)	-0.000 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.003 (0.00)
region_2	0.080 (0.02)	-0.034 (0.01)			-0.124 (0.06)	-0.091 (0.00)	0.037 (0.01)			0.048 (0.01)	0.051 (0.02)	-0.051 (0.01)			-0.221 (0.06)	-0.084 (0.00)	0.057 (0.01)			0.029 (0.01)
region_3	-0.005 (0.01)	-0.140 (0.01)			-0.090 (0.03)	-0.045 (0.00)	0.144 (0.01)			0.023 (0.01)	0.008 (0.01)	-0.144 (0.01)			-0.120 (0.03)	-0.031 (0.00)	0.151 (0.01)			0.008 (0.01)
region_4	-0.103 (0.02)	-0.204 (0.01)			-0.053 (0.06)	-0.097 (0.00)	0.130 (0.01)			-0.080 (0.01)	-0.108 (0.02)	-0.212 (0.01)			-0.077 (0.06)	-0.095 (0.00)	0.152 (0.01)			-0.091 (0.01)
region_5	-0.086 (0.02)	-0.199 (0.01)			0.020 (0.05)	-0.089 (0.00)	0.103 (0.01)			-0.054 (0.01)	-0.097 (0.02)	-0.215 (0.01)			-0.073 (0.05)	-0.084 (0.00)	0.134 (0.01)			-0.079 (0.01)
educ_1_3	-0.214 (0.07)	0.096 (0.04)			0.673 (0.18)	-0.077 (0.01)	-0.026 (0.04)			0.208 (0.04)	-0.334 (0.07)	0.098 (0.04)			0.784 (0.19)	-0.078 (0.01)	-0.039 (0.04)			0.239 (0.04)
educ_1_4	0.084 (0.03)	-0.168 (0.02)			0.038 (0.08)	0.050 (0.00)	0.165 (0.02)			0.026 (0.02)	0.036 (0.03)	-0.180 (0.02)			0.022 (0.09)	0.048 (0.00)	0.181 (0.02)			0.014 (0.02)
educ_1_5	0.023 (0.02)	-0.037 (0.01)			-0.187 (0.06)	0.075 (0.00)	-0.033 (0.01)			-0.111 (0.02)	0.029 (0.02)	-0.036 (0.01)			-0.207 (0.07)	0.073 (0.00)	-0.025 (0.01)			-0.111 (0.02)
educ_1_6	-0.066 (0.05)	-0.277 (0.02)			-0.066 (0.12)	-0.057 (0.00)	0.144 (0.02)			-0.179 (0.02)	-0.119 (0.05)	-0.292 (0.02)			0.063 (0.13)	-0.064 (0.00)	0.173 (0.02)			-0.195 (0.02)
educ_1_7	0.022 (0.05)	0.223 (0.03)			0.092 (0.14)	0.001 (0.01)	-0.231 (0.03)			-0.042 (0.05)	-0.029 (0.05)	0.205 (0.03)			0.183 (0.15)	-0.013 (0.01)	-0.212 (0.03)			-0.031 (0.05)
educ_1_8	-0.007 (0.06)	-0.064 (0.03)			0.046 (0.16)	0.128 (0.01)	0.015 (0.03)			-0.154 (0.04)	-0.039 (0.06)	-0.044 (0.03)			0.027 (0.16)	0.119 (0.01)	0.010 (0.03)			-0.152 (0.04)
educ_2_2	0.060 (0.02)	-0.132 (0.01)			0.203 (0.06)	0.154 (0.00)	0.256 (0.01)			0.206 (0.01)	-0.021 (0.02)	-0.143 (0.01)			0.348 (0.06)	0.157 (0.00)	0.260 (0.01)			0.198 (0.01)
educ_2_3	-0.052 (0.05)	0.375 (0.03)			0.319 (0.13)	0.087 (0.01)	-0.254 (0.03)			0.249 (0.04)	-0.085 (0.04)	0.364 (0.03)			0.354 (0.12)	0.080 (0.01)	-0.267 (0.03)			0.255 (0.04)
educ_2_4	0.103 (0.03)	-0.142 (0.01)			0.043 (0.07)	0.193 (0.00)	0.170 (0.01)			-0.094 (0.01)	0.064 (0.03)	-0.167 (0.01)			0.119 (0.07)	0.183 (0.00)	0.188 (0.01)			-0.064 (0.01)
educ_2_5	0.098 (0.02)	-0.145 (0.01)			-0.280 (0.05)	0.202 (0.00)	0.012 (0.01)			-0.162 (0.01)	0.088 (0.02)	-0.136 (0.01)			-0.232 (0.05)	0.207 (0.00)	0.017 (0.01)			-0.144 (0.01)

Variables	Probit					Probit					Probit					Probit				
	2005 SE	2005 SE	2005 SE	2005 SE	2005 SE het	2005 WE	2005 WE	2005 WE	2005 WE	2005 WE het	2006 SE	2006 SE	2006 SE	2006 SE	2006 SE het	2006 WE	2006 WE	2006 WE	2006 WE	2006 WE het
educ_2_6	0.038 (0.05)	-0.383 (0.02)			0.131 (0.14)	0.042 (0.00)	0.178 (0.02)			-0.451 (0.02)	-0.014 (0.05)	-0.368 (0.02)			-0.045 (0.13)	0.041 (0.00)	0.184 (0.02)			-0.474 (0.02)
educ_2_7	0.067 (0.06)	0.038 (0.03)			-0.084 (0.16)	0.084 (0.01)	-0.118 (0.03)			-0.075 (0.04)	-0.056 (0.06)	0.053 (0.03)			0.315 (0.16)	0.089 (0.01)	-0.128 (0.03)			-0.045 (0.04)
educ_2_8	0.199 (0.03)	0.314 (0.02)			-0.197 (0.07)	0.224 (0.00)	-0.271 (0.02)			0.040 (0.02)	0.165 (0.03)	0.317 (0.02)			-0.123 (0.07)	0.221 (0.00)	-0.279 (0.02)			0.115 (0.02)
educ_3_2	0.118 (0.12)	-0.274 (0.06)			0.655 (0.33)	0.226 (0.01)	0.339 (0.06)			0.252 (0.05)	0.160 (0.12)	-0.316 (0.07)			0.335 (0.36)	0.250 (0.01)	0.346 (0.06)			0.120 (0.05)
educ_3_3	-0.185 (0.03)	-0.001 (0.01)			0.492 (0.07)	0.125 (0.00)	0.146 (0.01)			0.502 (0.02)	-0.219 (0.02)	0.033 (0.01)			0.518 (0.07)	0.125 (0.00)	0.100 (0.01)			0.467 (0.02)
educ_3_4	0.020 (0.04)	-0.516 (0.02)			0.338 (0.09)	0.219 (0.00)	0.222 (0.01)			-0.348 (0.01)	0.003 (0.04)	-0.515 (0.02)			0.458 (0.09)	0.202 (0.00)	0.257 (0.02)			-0.372 (0.01)
educ_3_5	0.808 (0.03)	0.087 (0.02)			0.616 (0.07)	0.275 (0.00)	0.142 (0.01)			0.492 (0.02)	0.704 (0.02)	0.074 (0.02)			0.623 (0.07)	0.263 (0.00)	0.141 (0.01)			0.505 (0.02)
educ_3_6	0.615 (0.03)	-0.308 (0.01)			0.853 (0.08)	0.429 (0.00)	0.559 (0.02)			0.258 (0.01)	0.412 (0.03)	-0.350 (0.01)			0.769 (0.08)	0.442 (0.00)	0.603 (0.02)			0.265 (0.01)
educ_3_7	0.138 (0.03)	-0.514 (0.01)			0.400 (0.08)	0.384 (0.00)	0.537 (0.01)			0.206 (0.01)	0.129 (0.03)	-0.524 (0.01)			0.412 (0.08)	0.407 (0.00)	0.543 (0.01)			0.165 (0.01)
educ_3_8	0.193 (0.05)	-0.552 (0.02)			0.188 (0.12)	0.243 (0.00)	0.321 (0.02)			-0.315 (0.01)	0.077 (0.04)	-0.573 (0.02)			0.192 (0.12)	0.228 (0.00)	0.368 (0.02)			-0.284 (0.01)
educ_3_9	1.006 (0.04)	1.016 (0.01)			-0.524 (0.05)	0.704 (0.01)	-0.818 (0.01)			0.469 (0.02)	0.923 (0.03)	0.979 (0.01)			-0.469 (0.05)	0.657 (0.00)	-0.804 (0.01)			0.520 (0.02)
educ_3_10	0.125 (0.13)	-0.515 (0.06)			0.489 (0.37)	0.201 (0.01)	0.487 (0.06)			0.050 (0.05)	0.039 (0.13)	-0.516 (0.07)			0.276 (0.37)	0.210 (0.01)	0.538 (0.07)			0.049 (0.05)
educ_3_11	0.033 (0.08)	-0.664 (0.04)			0.376 (0.22)	0.402 (0.01)	0.567 (0.04)			-0.103 (0.03)	0.112 (0.08)	-0.638 (0.04)			0.390 (0.21)	0.420 (0.01)	0.580 (0.04)			0.019 (0.03)
female	-0.438 (0.02)	-0.415 (0.01)			0.115 (0.04)	-0.361 (0.00)	0.380 (0.01)			0.205 (0.01)	-0.419 (0.02)	-0.402 (0.01)			0.076 (0.04)	-0.357 (0.00)	0.373 (0.01)			0.129 (0.01)
Constant	9.289 (0.15)	-2.687 (0.05)	0.166 (0.05)	-0.168 (0.01)	0.090 (0.28)	10.088 (0.01)	3.501 (0.05)	-1.151 (0.00)	-0.691 (0.00)	3.112 (0.05)	9.504 (0.14)	-2.557 (0.06)	0.161 (0.04)	-0.214 (0.01)	0.472 (0.28)	10.195 (0.01)	3.318 (0.05)	-1.038 (0.00)	-0.712 (0.00)	2.520 (0.05)
rho	0.166 (0.05)					-1.151 (0.00)					0.161 (0.04)				-1.038 (0.00)					
ln(sigma)	-0.168 (0.01)					-0.691 (0.00)					-0.214 (0.01)				-0.712 (0.00)					
Observations	690,316	690,316	690,316	690,316	30,638	690,316	690,316	690,316	690,316	659,678	690,842	690,842	690,842	690,842	28,977	690,842	690,842	690,842	690,842	661,864
R-squared					0.028					0.046					0.029					0.038

Variables	Probit																			
	2007 SE	2007 SE	2007 SE	2007 SE	2007 SE het	2007 WE	2007 WE	2007 WE	2007 WE	2007 WE het	2008 SE	2008 SE	2008 SE	2008 SE	2008 SE het	2008 WE	2008 WE	2008 WE	2008 WE	2008 WE het
kids		-0.004 (0.01)			-0.044 (0.03)		0.019 (0.01)			-0.038 (0.01)		-0.004 (0.01)			-0.036 (0.03)		0.020 (0.01)			-0.047 (0.01)
headfam		-0.103 (0.01)			-0.233 (0.05)		0.250 (0.01)			-0.209 (0.01)		-0.112 (0.01)			-0.278 (0.05)		0.249 (0.01)			-0.207 (0.01)
married		-0.016 (0.01)			-0.154 (0.03)		0.114 (0.01)			-0.038 (0.01)		-0.028 (0.01)			-0.170 (0.03)		0.119 (0.01)			-0.043 (0.01)
age	0.124 (0.00)	0.050 (0.00)			-0.101 (0.01)	0.107 (0.00)	-0.092 (0.00)			-0.231 (0.00)	0.119 (0.00)	0.048 (0.00)			-0.077 (0.01)	0.099 (0.00)	-0.079 (0.00)			-0.186 (0.00)
agesquared	-0.001 (0.00)	-0.000 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.003 (0.00)	-0.001 (0.00)	-0.000 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.002 (0.00)
region_2	0.046 (0.02)	-0.049 (0.01)			-0.166 (0.06)	-0.068 (0.00)	0.056 (0.01)			0.010 (0.01)	0.080 (0.02)	-0.046 (0.01)			-0.139 (0.06)	-0.060 (0.00)	0.060 (0.01)			0.010 (0.01)
region_3	0.001 (0.01)	-0.148 (0.01)			-0.103 (0.03)	-0.021 (0.00)	0.157 (0.01)			0.019 (0.01)	0.018 (0.01)	-0.150 (0.01)			-0.095 (0.03)	-0.011 (0.00)	0.155 (0.01)			0.010 (0.01)
region_4	-0.109 (0.02)	-0.220 (0.01)			-0.098 (0.06)	-0.090 (0.00)	0.168 (0.01)			-0.087 (0.01)	-0.118 (0.02)	-0.216 (0.01)			-0.138 (0.06)	-0.086 (0.00)	0.164 (0.01)			-0.097 (0.01)
region_5	-0.099 (0.02)	-0.232 (0.01)			-0.026 (0.06)	-0.078 (0.00)	0.160 (0.01)			-0.088 (0.01)	-0.132 (0.02)	-0.236 (0.01)			-0.033 (0.06)	-0.075 (0.00)	0.172 (0.01)			-0.096 (0.01)
educ_1_3	-0.324 (0.07)	0.106 (0.04)			0.756 (0.20)	-0.085 (0.01)	-0.046 (0.04)			0.164 (0.05)	-0.267 (0.07)	0.100 (0.04)			0.592 (0.20)	-0.082 (0.01)	-0.055 (0.04)			0.187 (0.05)
educ_1_4	0.012 (0.03)	-0.187 (0.02)			0.085 (0.09)	0.049 (0.00)	0.189 (0.02)			-0.026 (0.02)	0.019 (0.03)	-0.204 (0.02)			0.057 (0.10)	0.050 (0.00)	0.221 (0.02)			-0.007 (0.02)
educ_1_5	-0.011 (0.02)	-0.043 (0.01)			-0.112 (0.07)	0.071 (0.00)	-0.013 (0.01)			-0.104 (0.02)	-0.009 (0.02)	-0.031 (0.01)			-0.068 (0.07)	0.070 (0.00)	-0.019 (0.01)			-0.125 (0.02)
educ_1_6	-0.148 (0.05)	-0.297 (0.02)			0.022 (0.14)	-0.071 (0.00)	0.198 (0.02)			-0.216 (0.02)	-0.194 (0.05)	-0.296 (0.03)			0.227 (0.14)	-0.069 (0.00)	0.207 (0.02)			-0.213 (0.02)
educ_1_7	-0.076 (0.05)	0.239 (0.03)			0.233 (0.15)	-0.021 (0.01)	-0.236 (0.03)			-0.001 (0.05)	-0.028 (0.05)	0.265 (0.04)			0.038 (0.15)	-0.035 (0.01)	-0.251 (0.03)			-0.053 (0.05)
educ_1_8	-0.094 (0.06)	-0.030 (0.04)			-0.073 (0.18)	0.126 (0.01)	0.000 (0.03)			-0.152 (0.04)	-0.062 (0.06)	-0.029 (0.04)			-0.120 (0.18)	0.123 (0.01)	0.009 (0.04)			-0.114 (0.04)
educ_2_2	-0.023 (0.02)	-0.156 (0.01)			0.335 (0.06)	0.152 (0.00)	0.271 (0.01)			0.210 (0.01)	-0.014 (0.02)	-0.158 (0.01)			0.295 (0.06)	0.152 (0.00)	0.265 (0.01)			0.234 (0.01)
educ_2_3	-0.031 (0.04)	0.334 (0.03)			0.345 (0.12)	0.063 (0.01)	-0.252 (0.03)			0.308 (0.03)	-0.060 (0.04)	0.322 (0.03)			0.412 (0.12)	0.055 (0.01)	-0.257 (0.03)			0.310 (0.03)
educ_2_4	0.072 (0.03)	-0.189 (0.01)			0.010 (0.08)	0.176 (0.00)	0.214 (0.01)			-0.040 (0.01)	0.073 (0.03)	-0.203 (0.02)			0.088 (0.08)	0.173 (0.00)	0.243 (0.02)			0.036 (0.01)
educ_2_5	0.086 (0.02)	-0.136 (0.01)			-0.341 (0.05)	0.205 (0.00)	0.032 (0.01)			-0.125 (0.01)	0.078 (0.02)	-0.133 (0.01)			-0.285 (0.05)	0.201 (0.00)	0.046 (0.01)			-0.087 (0.01)

Variables	Probit 2007					Probit 2007					Probit 2008					Probit 2008				
	2007 SE	2007 SE	2007 SE	2007 SE	2007 SE het	2007 WE	2007 WE	2007 WE	2007 WE	2007 WE het	2008 SE	2008 SE	2008 SE	2008 SE	2008 SE het	2008 WE	2008 WE	2008 WE	2008 WE	2008 WE het
educ_2_6	0.005 (0.05)	-0.372 (0.02)			-0.104 (0.13)	0.035 (0.00)	0.203 (0.02)			-0.462 (0.02)	0.018 (0.04)	-0.382 (0.02)			-0.109 (0.13)	0.030 (0.00)	0.233 (0.02)			-0.430 (0.02)
educ_2_7	0.040 (0.05)	0.069 (0.03)			-0.066 (0.16)	0.092 (0.01)	-0.129 (0.03)			-0.059 (0.04)	0.065 (0.05)	0.096 (0.03)			-0.159 (0.15)	0.086 (0.01)	-0.136 (0.03)			-0.006 (0.04)
educ_2_8	0.142 (0.03)	0.306 (0.02)			-0.061 (0.07)	0.220 (0.00)	-0.274 (0.02)			0.162 (0.02)	0.190 (0.03)	0.297 (0.02)			-0.211 (0.07)	0.209 (0.00)	-0.266 (0.02)			0.142 (0.02)
educ_3_2	-0.047 (0.12)	-0.318 (0.07)			0.617 (0.37)	0.264 (0.01)	0.319 (0.07)			0.063 (0.06)	0.063 (0.13)	-0.333 (0.07)			0.601 (0.38)	0.267 (0.01)	0.364 (0.07)			0.076 (0.06)
educ_3_3	-0.242 (0.02)	0.021 (0.01)			0.480 (0.07)	0.127 (0.00)	0.090 (0.01)			0.427 (0.02)	-0.213 (0.02)	0.052 (0.01)			0.481 (0.07)	0.135 (0.00)	0.041 (0.01)			0.390 (0.02)
educ_3_4	-0.057 (0.03)	-0.497 (0.02)			0.514 (0.09)	0.185 (0.00)	0.276 (0.02)			-0.378 (0.01)	-0.053 (0.03)	-0.492 (0.02)			0.298 (0.09)	0.174 (0.00)	0.290 (0.02)			-0.377 (0.01)
educ_3_5	0.719 (0.02)	0.062 (0.02)			0.742 (0.07)	0.265 (0.00)	0.125 (0.02)			0.468 (0.02)	0.724 (0.02)	0.069 (0.02)			0.849 (0.07)	0.281 (0.00)	0.094 (0.02)			0.432 (0.02)
educ_3_6	0.469 (0.03)	-0.364 (0.02)			0.799 (0.08)	0.457 (0.00)	0.603 (0.02)			0.298 (0.01)	0.508 (0.03)	-0.386 (0.02)			0.858 (0.08)	0.458 (0.00)	0.612 (0.02)			0.331 (0.01)
educ_3_7	0.171 (0.03)	-0.549 (0.01)			0.517 (0.08)	0.419 (0.00)	0.584 (0.01)			0.161 (0.01)	0.212 (0.03)	-0.552 (0.02)			0.688 (0.08)	0.432 (0.00)	0.581 (0.02)			0.135 (0.01)
educ_3_8	0.128 (0.04)	-0.536 (0.02)			0.167 (0.11)	0.214 (0.00)	0.359 (0.02)			-0.278 (0.01)	0.198 (0.04)	-0.514 (0.02)			0.104 (0.11)	0.201 (0.00)	0.361 (0.02)			-0.230 (0.01)
educ_3_9	0.884 (0.03)	0.974 (0.01)			-0.457 (0.05)	0.622 (0.00)	-0.829 (0.01)			0.500 (0.02)	0.928 (0.03)	0.989 (0.01)			-0.481 (0.05)	0.598 (0.00)	-0.860 (0.01)			0.572 (0.02)
educ_3_10	-0.169 (0.12)	-0.461 (0.06)			0.164 (0.36)	0.226 (0.01)	0.464 (0.06)			0.019 (0.05)	-0.002 (0.11)	-0.398 (0.06)			-0.220 (0.33)	0.239 (0.01)	0.381 (0.06)			0.033 (0.05)
educ_3_11	0.217 (0.08)	-0.685 (0.04)			0.665 (0.23)	0.411 (0.01)	0.651 (0.04)			0.033 (0.03)	0.137 (0.08)	-0.729 (0.04)			0.580 (0.24)	0.396 (0.01)	0.724 (0.04)			0.075 (0.03)
female	-0.411 (0.02)	-0.408 (0.01)			0.054 (0.04)	-0.353 (0.00)	0.384 (0.01)			0.049 (0.01)	-0.408 (0.02)	-0.401 (0.01)			-0.005 (0.04)	-0.340 (0.00)	0.383 (0.01)			-0.013 (0.01)
Constant	9.710 (0.14)	-2.552 (0.06)	0.158 (0.04)	-0.228 (0.01)	0.254 (0.28)	10.404 (0.01)	3.203 (0.05)	-0.944 (0.01)	-0.734 (0.00)	1.790 (0.05)	9.789 (0.13)	-2.509 (0.06)	0.202 (0.04)	-0.239 (0.01)	-0.173 (0.28)	10.652 (0.01)	2.948 (0.05)	-0.878 (0.01)	-0.771 (0.00)	0.765 (0.05)
rho	0.158 (0.04)						-0.944 (0.01)				0.202 (0.04)					-0.878 (0.01)				
ln(sigma)	-0.228 (0.01)						-0.734 (0.00)				-0.239 (0.01)					-0.771 (0.00)				
Observations	691,196	691,196	691,196	691,196	28,257	691,196	691,196	691,196	691,196	662,938	688,870	688,870	688,870	688,870	27,255	688,870	688,870	688,870	688,870	661,615
R-squared					0.031					0.031					0.032					0.023

Variables	Probit																			
	2009 SE	2009 SE	2009 SE	2009 SE	2009 SE het	2009 WE	2009 WE	2009 WE	2009 WE	2009 WE het	2010 SE	2010 SE	2010 SE	2010 SE	2010 SE het	2010 WE	2010 WE	2010 WE	2010 WE	2010 WE het
kids		-0.004 (0.01)			-0.056 (0.03)		0.024 (0.01)			-0.067 (0.01)		0.001 (0.01)			-0.042 (0.03)		0.022 (0.01)			-0.071 (0.01)
headfam		-0.113 (0.01)			-0.263 (0.05)		0.244 (0.01)			-0.200 (0.01)		-0.112 (0.01)			-0.238 (0.05)		0.235 (0.01)			-0.181 (0.01)
married		-0.029 (0.01)			-0.129 (0.03)		0.117 (0.01)			-0.038 (0.01)		-0.030 (0.01)			-0.179 (0.03)		0.116 (0.01)			-0.025 (0.01)
age	0.110 (0.00)	0.051 (0.00)			-0.065 (0.01)	0.089 (0.00)	-0.074 (0.00)			-0.147 (0.00)	0.104 (0.01)	0.046 (0.00)			-0.039 (0.02)	0.080 (0.00)	-0.060 (0.00)			-0.095 (0.00)
agesquared	-0.001 (0.00)	-0.000 (0.00)			0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.002 (0.00)	-0.001 (0.00)	-0.000 (0.00)			0.000 (0.00)	-0.001 (0.00)	0.001 (0.00)			0.001 (0.00)
region_2	0.065 (0.02)	-0.047 (0.01)			-0.111 (0.06)	-0.051 (0.00)	0.069 (0.01)			0.040 (0.01)	0.018 (0.02)	-0.045 (0.01)			0.137 (0.06)	-0.051 (0.00)	0.060 (0.01)			0.010 (0.01)
region_3	0.030 (0.01)	-0.160 (0.01)			-0.086 (0.04)	0.002 (0.00)	0.174 (0.01)			0.027 (0.01)	0.016 (0.01)	-0.159 (0.01)			-0.076 (0.04)	0.003 (0.00)	0.173 (0.01)			0.032 (0.01)
region_4	-0.107 (0.02)	-0.225 (0.01)			-0.002 (0.06)	-0.075 (0.00)	0.181 (0.01)			-0.101 (0.01)	-0.117 (0.02)	-0.212 (0.01)			-0.034 (0.06)	-0.067 (0.00)	0.171 (0.01)			-0.125 (0.01)
region_5	-0.089 (0.02)	-0.240 (0.01)			-0.018 (0.06)	-0.064 (0.00)	0.187 (0.01)			-0.094 (0.01)	-0.086 (0.02)	-0.246 (0.01)			-0.043 (0.06)	-0.054 (0.00)	0.200 (0.01)			-0.115 (0.01)
educ_1_3	-0.259 (0.07)	0.103 (0.04)			0.287 (0.21)	-0.070 (0.01)	-0.064 (0.04)			0.157 (0.05)	-0.225 (0.07)	0.119 (0.05)			0.410 (0.22)	-0.068 (0.01)	-0.089 (0.04)			0.145 (0.05)
educ_1_4	0.053 (0.03)	-0.204 (0.02)			0.028 (0.10)	0.050 (0.00)	0.204 (0.02)			-0.043 (0.02)	0.049 (0.04)	-0.200 (0.02)			0.067 (0.11)	0.056 (0.00)	0.200 (0.02)			-0.028 (0.02)
educ_1_5	-0.039 (0.02)	-0.035 (0.02)			-0.139 (0.07)	0.072 (0.00)	-0.012 (0.02)			-0.081 (0.02)	-0.009 (0.03)	-0.053 (0.02)			-0.127 (0.08)	0.067 (0.00)	0.008 (0.02)			-0.094 (0.02)
educ_1_6	-0.019 (0.05)	-0.275 (0.03)			-0.411 (0.15)	-0.052 (0.00)	0.194 (0.03)			-0.207 (0.02)	-0.036 (0.05)	-0.293 (0.03)			-0.059 (0.16)	-0.049 (0.00)	0.222 (0.03)			-0.208 (0.02)
educ_1_7	-0.050 (0.05)	0.266 (0.04)			0.104 (0.16)	-0.031 (0.01)	-0.264 (0.04)			-0.031 (0.05)	-0.087 (0.06)	0.219 (0.04)			-0.160 (0.17)	-0.033 (0.01)	-0.222 (0.04)			-0.071 (0.05)
educ_1_8	-0.061 (0.07)	-0.003 (0.04)			-0.117 (0.20)	0.135 (0.01)	-0.015 (0.04)			-0.025 (0.05)	-0.018 (0.07)	-0.016 (0.04)			-0.263 (0.21)	0.124 (0.01)	0.008 (0.04)			-0.037 (0.05)
educ_2_2	0.003 (0.02)	-0.153 (0.01)			0.288 (0.07)	0.156 (0.00)	0.241 (0.01)			0.216 (0.01)	-0.010 (0.02)	-0.159 (0.01)			0.217 (0.07)	0.166 (0.00)	0.230 (0.01)			0.215 (0.01)
educ_2_3	-0.079 (0.04)	0.334 (0.03)			0.291 (0.12)	0.049 (0.01)	-0.272 (0.03)			0.324 (0.03)	-0.091 (0.04)	0.332 (0.03)			0.204 (0.12)	0.056 (0.01)	-0.290 (0.03)			0.313 (0.03)
educ_2_4	0.077 (0.03)	-0.200 (0.02)			-0.003 (0.08)	0.164 (0.00)	0.224 (0.02)			-0.018 (0.01)	0.057 (0.03)	-0.205 (0.02)			-0.046 (0.08)	0.167 (0.00)	0.225 (0.02)			-0.020 (0.02)
educ_2_5	0.079 (0.02)	-0.134 (0.01)			-0.344 (0.05)	0.201 (0.00)	0.063 (0.01)			-0.074 (0.01)	0.077 (0.02)	-0.146 (0.01)			-0.308 (0.05)	0.194 (0.00)	0.085 (0.01)			-0.081 (0.01)

Variables	Probit					Probit					Probit					Probit				
	2009 SE	2009 SE	2009 SE	2009 SE	2009 SE het	2009 WE	2009 WE	2009 WE	2009 WE	2009 WE het	2010 SE	2010 SE	2010 SE	2010 SE	2010 SE het	2010 WE	2010 WE	2010 WE	2010 WE	2010 WE het
educ_2_6	-0.015 (0.04)	-0.355 (0.02)			-0.013 (0.13)	0.044 (0.00)	0.224 (0.02)			-0.414 (0.02)	0.067 (0.04)	-0.363 (0.02)			-0.359 (0.13)	0.037 (0.00)	0.253 (0.02)			-0.426 (0.02)
educ_2_7	0.082 (0.05)	0.133 (0.03)			-0.258 (0.15)	0.091 (0.01)	-0.179 (0.03)			-0.066 (0.04)	0.124 (0.05)	0.060 (0.03)			-0.218 (0.16)	0.080 (0.01)	-0.096 (0.03)			0.004 (0.04)
educ_2_8	0.251 (0.03)	0.319 (0.02)			-0.297 (0.08)	0.219 (0.00)	-0.287 (0.02)			0.166 (0.02)	0.243 (0.03)	0.302 (0.02)			-0.308 (0.08)	0.205 (0.00)	-0.283 (0.02)			0.174 (0.02)
educ_3_2	-0.009 (0.12)	-0.295 (0.07)			0.632 (0.37)	0.276 (0.01)	0.317 (0.07)			0.035 (0.06)	-0.058 (0.12)	-0.271 (0.07)			0.108 (0.37)	0.298 (0.01)	0.269 (0.07)			0.020 (0.06)
educ_3_3	-0.197 (0.02)	0.064 (0.02)			0.315 (0.07)	0.156 (0.00)	0.006 (0.01)			0.345 (0.02)	-0.195 (0.02)	0.078 (0.02)			0.257 (0.07)	0.172 (0.00)	-0.029 (0.01)			0.299 (0.02)
educ_3_4	-0.023 (0.04)	-0.483 (0.02)			0.336 (0.10)	0.200 (0.00)	0.285 (0.02)			-0.420 (0.01)	-0.007 (0.04)	-0.482 (0.02)			0.191 (0.10)	0.205 (0.00)	0.310 (0.02)			-0.431 (0.01)
educ_3_5	0.839 (0.02)	0.094 (0.02)			0.797 (0.07)	0.323 (0.00)	0.021 (0.02)			0.331 (0.02)	0.893 (0.02)	0.093 (0.02)			0.837 (0.07)	0.356 (0.00)	-0.020 (0.02)			0.259 (0.02)
educ_3_6	0.563 (0.03)	-0.370 (0.02)			0.704 (0.08)	0.454 (0.00)	0.541 (0.02)			0.290 (0.01)	0.632 (0.03)	-0.369 (0.02)			0.775 (0.08)	0.469 (0.00)	0.528 (0.02)			0.336 (0.01)
educ_3_7	0.183 (0.03)	-0.571 (0.02)			0.605 (0.09)	0.455 (0.00)	0.581 (0.02)			0.100 (0.01)	0.130 (0.04)	-0.590 (0.02)			0.657 (0.09)	0.475 (0.00)	0.586 (0.02)			0.067 (0.01)
educ_3_8	0.241 (0.04)	-0.478 (0.02)			0.103 (0.11)	0.225 (0.00)	0.332 (0.02)			-0.288 (0.01)	0.263 (0.04)	-0.477 (0.02)			-0.056 (0.11)	0.222 (0.00)	0.355 (0.02)			-0.300 (0.01)
educ_3_9	1.004 (0.03)	1.014 (0.01)			-0.571 (0.05)	0.608 (0.00)	-0.898 (0.01)			0.614 (0.02)	0.979 (0.03)	1.016 (0.01)			-0.627 (0.05)	0.612 (0.00)	-0.936 (0.01)			0.651 (0.02)
educ_3_10	-0.024 (0.12)	-0.417 (0.06)			0.172 (0.35)	0.274 (0.01)	0.389 (0.06)			0.030 (0.05)	0.230 (0.12)	-0.452 (0.07)			0.324 (0.37)	0.291 (0.01)	0.410 (0.07)			-0.053 (0.05)
educ_3_11	0.145 (0.08)	-0.717 (0.04)			0.134 (0.24)	0.413 (0.00)	0.688 (0.04)			0.010 (0.03)	-0.064 (0.09)	-0.762 (0.04)			0.723 (0.25)	0.426 (0.00)	0.730 (0.04)			-0.085 (0.03)
female	-0.380 (0.02)	-0.405 (0.01)			0.009 (0.04)	-0.317 (0.00)	0.384 (0.01)			-0.076 (0.01)	-0.389 (0.02)	-0.401 (0.01)			0.037 (0.05)	-0.313 (0.00)	0.392 (0.01)			-0.108 (0.01)
Constant	9.924 (0.14)	-2.603 (0.06)	0.208 (0.04)	-0.255 (0.01)	-0.397 (0.29)	10.865 (0.01)	2.871 (0.06)	-0.825 (0.01)	-0.817 (0.00)	-0.091 (0.05)	10.157 (0.14)	-2.492 (0.06)	0.180 (0.04)	-0.246 (0.01)	-0.986 (0.32)	11.079 (0.01)	2.600 (0.06)	-0.734 (0.01)	-0.844 (0.00)	-1.261 (0.06)
rho	0.208 (0.04)					-0.825 (0.01)					0.180 (0.04)				-0.734 (0.01)					
ln(sigma)	-0.255 (0.01)					-0.817 (0.00)					-0.246 (0.01)				-0.844 (0.00)					
Observations	683,369	683,369	683,369	683,369	26,056	683,369	683,369	683,369	683,369	657,313	657,493	657,493	657,493	657,493	24,873	657,493	657,493	657,493	657,493	632,618
R-squared					0.031					0.018					0.032					0.014

Variables	Probit					Probit				
	2011 SE	2011 SE	2011 SE	2011 SE	2011 SE het	2011 WE	2011 WE	2011 WE	2011 WE	2011 WE het
kids		0.012 (0.01)			-0.097 (0.03)		0.012 (0.01)			-0.076 (0.01)
headfam		-0.116 (0.01)			-0.194 (0.05)		0.231 (0.01)			-0.168 (0.01)
married		-0.032 (0.01)			-0.092 (0.04)		0.113 (0.01)			-0.016 (0.01)
age	0.106 (0.01)	0.038 (0.00)			-0.037 (0.02)	0.077 (0.00)	-0.051 (0.00)			-0.073 (0.00)
agesquared	-0.001 (0.00)	-0.000 (0.00)			0.000 (0.00)	-0.001 (0.00)	0.000 (0.00)			0.001 (0.00)
region_2	0.025 (0.02)	-0.051 (0.01)			0.003 (0.07)	-0.056 (0.00)	0.067 (0.01)			0.028 (0.01)
region_3	0.013 (0.01)	-0.166 (0.01)			-0.073 (0.04)	0.005 (0.00)	0.180 (0.01)			0.038 (0.01)
region_4	-0.101 (0.02)	-0.223 (0.01)			-0.025 (0.06)	-0.064 (0.00)	0.186 (0.01)			-0.134 (0.01)
region_5	-0.057 (0.02)	-0.254 (0.01)			-0.164 (0.06)	-0.051 (0.00)	0.216 (0.01)			-0.113 (0.01)
educ_1_3	-0.157 (0.08)	0.117 (0.05)			0.620 (0.23)	-0.063 (0.01)	-0.095 (0.05)			0.121 (0.05)
educ_1_4	0.050 (0.04)	-0.221 (0.02)			-0.112 (0.12)	0.060 (0.00)	0.220 (0.02)			-0.031 (0.02)
educ_1_5	-0.014 (0.03)	-0.047 (0.02)			-0.229 (0.08)	0.066 (0.00)	0.008 (0.02)			-0.063 (0.02)
educ_1_6	-0.028 (0.05)	-0.281 (0.03)			-0.143 (0.16)	-0.049 (0.00)	0.220 (0.03)			-0.232 (0.02)
educ_1_7	-0.080 (0.06)	0.214 (0.04)			0.031 (0.18)	-0.039 (0.01)	-0.220 (0.04)			-0.061 (0.06)
educ_1_8	-0.035 (0.07)	0.009 (0.05)			-0.203 (0.22)	0.119 (0.01)	-0.017 (0.05)			-0.078 (0.05)
educ_2_2	0.019 (0.02)	-0.168 (0.01)			0.170 (0.07)	0.168 (0.00)	0.232 (0.01)			0.237 (0.01)
educ_2_3	-0.071 (0.04)	0.326 (0.03)			0.164 (0.13)	0.047 (0.01)	-0.286 (0.03)			0.308 (0.03)
educ_2_4	0.035 (0.03)	-0.216 (0.02)			-0.001 (0.08)	0.170 (0.00)	0.228 (0.02)			-0.001 (0.02)
educ_2_5	0.068 (0.02)	-0.161 (0.01)			-0.274 (0.05)	0.189 (0.00)	0.106 (0.01)			-0.067 (0.01)

Variables	Probit					Probit				
	2011 SE	2011 SE	2011 SE	2011 SE	2011 SE het	2011 WE	2011 WE	2011 WE	2011 WE	2011 WE het
educ_2_6	0.048 (0.04)	-0.372 (0.02)			-0.239 (0.13)	0.036 (0.00)	0.271 (0.02)			-0.451 (0.02)
educ_2_7	0.077 (0.05)	0.072 (0.03)			-0.327 (0.16)	0.078 (0.01)	-0.105 (0.03)			-0.002 (0.04)
educ_2_8	0.222 (0.03)	0.296 (0.02)			-0.330 (0.08)	0.197 (0.00)	-0.278 (0.02)			0.190 (0.02)
educ_3_2	-0.292 (0.13)	-0.315 (0.07)			1.551 (0.39)	0.297 (0.01)	0.323 (0.07)			-0.002 (0.06)
educ_3_3	-0.218 (0.02)	0.082 (0.02)			0.363 (0.08)	0.184 (0.00)	-0.049 (0.02)			0.249 (0.02)
educ_3_4	-0.022 (0.04)	-0.487 (0.02)			0.307 (0.10)	0.205 (0.00)	0.334 (0.02)			-0.424 (0.01)
educ_3_5	0.936 (0.02)	0.086 (0.02)			0.802 (0.08)	0.378 (0.00)	-0.038 (0.02)			0.211 (0.02)
educ_3_6	0.542 (0.03)	-0.387 (0.02)			0.735 (0.09)	0.479 (0.00)	0.522 (0.02)			0.376 (0.01)
educ_3_7	0.201 (0.04)	-0.614 (0.02)			0.548 (0.09)	0.488 (0.00)	0.612 (0.02)			0.079 (0.01)
educ_3_8	0.245 (0.04)	-0.457 (0.02)			-0.278 (0.11)	0.222 (0.00)	0.348 (0.02)			-0.324 (0.01)
educ_3_9	0.955 (0.03)	1.010 (0.01)			-0.575 (0.05)	0.611 (0.00)	-0.948 (0.01)			0.658 (0.02)
educ_3_10	0.093 (0.13)	-0.520 (0.07)			-0.071 (0.40)	0.291 (0.01)	0.492 (0.07)			0.004 (0.05)
educ_3_11	0.041 (0.08)	-0.740 (0.04)			0.526 (0.25)	0.428 (0.00)	0.710 (0.04)			-0.015 (0.03)
female	-0.382 (0.02)	-0.400 (0.01)			0.069 (0.05)	-0.311 (0.00)	0.400 (0.01)			-0.142 (0.01)
Constant	10.216 (0.15)	-2.335 (0.07)	0.165 (0.05)	-0.270 (0.01)	-1.130 (0.35)	11.191 (0.01)	2.420 (0.07)	-0.666 (0.01)	-0.862 (0.00)	-1.763 (0.07)
rho	0.165 (0.05)					-0.666 (0.01)				
ln(sigma)	-0.270 (0.01)					-0.862 (0.00)				
Observations	629,981	629,981	629,981	629,981	23,476	629,981	629,981	629,981	629,981	606,505
R-squared					0.030					0.014

A.4 Detailed results for Table 2 and Table 3

Variable	Base model			New Sample definition			No left censored			Trimmed Netincdiff			Regional unemployment rate 1996-2011		
	Coeff	Std Err	z	Coeff	Std Err	z	Coeff	Std Err	z	Coeff	Std Err	z	Coeff	Std Err	z
hazardE															
Netincdiff	-0.429	0.053	-8.11	-0.493	0.016	-30.31	-0.405	0.053	-7.68	-0.333	0.068	-4.9	-0.531	0.057	-9.34
Convexity	0.049	0.015	3.2	0.011	0.005	2.25	0.055	0.015	3.59	0.065	0.017	3.83	0.045	0.018	2.58
Male	-0.024	0.027	-0.9	0.042	0.009	4.84	-0.024	0.027	-0.89	-0.043	0.030	-1.46	0.037	0.029	1.27
Age at the start of the spell	-0.012	0.001	-9.47	-0.011	0.000	-27.41	-0.009	0.001	-7.42	-0.013	0.001	-9.47	-0.008	0.001	-5.7
Upper secondary school	0.006	0.029	0.21	-0.013	0.009	-1.42	0.018	0.029	0.64	0.018	0.030	0.62	-0.008	0.032	-0.26
University	0.220	0.028	7.87	0.210	0.009	23.64	0.234	0.028	8.38	0.168	0.031	5.47	0.213	0.031	6.77
Years 1999-2002	-0.092	0.034	-2.68	-0.066	0.011	-6.10	-0.100	0.034	-2.92	-0.083	0.036	-2.28			
Years 2003-2007	0.021	0.032	0.64	0.056	0.010	5.47	0.000	0.033	0.01	0.019	0.035	0.55	0.184	0.030	6.06
Years 2008-2011	-0.221	0.040	-5.57	-0.315	0.012	-26.09	-0.258	0.040	-6.42	-0.234	0.043	-5.43	-0.133	0.037	-3.57
Southern Norway	0.038	0.040	0.96	0.044	0.013	3.45	0.030	0.040	0.75	0.037	0.042	0.89			
West Norway	0.015	0.028	0.55	0.002	0.009	0.22	0.014	0.028	0.51	0.021	0.030	0.72			
Central Norway	0.038	0.042	0.92	0.054	0.013	4.07	0.034	0.042	0.82	0.050	0.045	1.12			
Northern Norway	0.096	0.047	2.06	0.100	0.014	6.94	0.094	0.047	2	0.096	0.049	1.95			
Ln(t)	-0.519	0.016	-32.08	-0.511	0.005	-100.37	-0.507	0.016	-30.75	-0.524	0.017	-30.1	-0.553	0.017	-31.73
Constant	-1.135	0.094	-12.11	-1.239	0.030	-41.70	-1.091	0.092	-11.8	-1.011	0.106	-9.51	-1.421	0.099	-14.32
Local Unemployment Rate													-8.089	1.685	-4.8
hazardU															
Netincdiff	1.685	0.082	20.53	1.734	0.026	67.17	1.920	0.083	23.21	2.281	0.108	21.2	1.709	0.096	17.85
Convexity	-0.246	0.021	-11.45	-0.277	0.007	-39.61	-0.292	0.022	-13.1	-0.222	0.025	-9.07	-0.292	0.026	-11.16
Male	0.602	0.030	19.8	0.587	0.010	61.24	0.688	0.030	22.62	0.644	0.034	19.04	0.623	0.034	18.08
Age at the start of the spell	0.030	0.002	18.97	0.028	0.000	57.74	0.049	0.001	33.45	0.027	0.002	16.21	0.054	0.001	40.16
Upper secondary school	0.115	0.035	3.27	0.137	0.011	12.23	0.177	0.036	4.94	0.158	0.037	4.34	0.217	0.042	5.19
University	0.131	0.037	3.53	0.211	0.012	17.89	0.225	0.039	5.83	0.038	0.042	0.9	0.419	0.044	9.56
Years 1999-2002	0.246	0.040	6.21	0.221	0.013	17.56	0.269	0.040	6.79	0.253	0.043	5.94	0.160	0.037459	4.26
Years 2003-2007	0.305	0.040	7.66	0.280	0.013	22.02	0.327	0.040	8.19	0.339	0.043	7.91	-0.139	0.045	-3.07
Years 2008-2011	-0.145	0.048	-3.04	-0.202	0.015	-13.65	-0.130	0.048	-2.72	-0.108	0.052	-2.09			
Southern Norway	-0.222	0.047	-4.71	-0.249	0.015	-16.49	-0.276	0.048	-5.76	-0.257	0.050	-5.1			
West Norway	-0.326	0.033	-9.77	-0.364	0.011	-34.45	-0.377	0.034	-11.18	-0.335	0.036	-9.34			
Central Norway	-0.418	0.049	-8.47	-0.380	0.016	-24.34	-0.476	0.049	-9.61	-0.415	0.054	-7.72			
Northern Norway	-0.473	0.055	-8.54	-0.402	0.017	-23.46	-0.545	0.056	-9.81	-0.466	0.059	-7.87			
Ln(t)	-0.490	0.018	-27.14	-0.432	0.006	-76.22	-0.489	0.018	-26.91	-0.496	0.020	-25.18	-0.643	0.019795	-32.5
Constant	-3.106	0.103	-30.3	-3.075	0.033	-93.13	-3.445	0.104	-32.99	-2.801	0.116	-24.17	-5.415	0.10645	-50.87
Local Unemployment Rate													7.356	1.951	3.77
hazard ELF															
Netincdiff	-0.725	0.109	-6.65	-0.615	0.034	-18.11				-0.871	0.138	-6.32	-0.718	0.110	-6.54
Convexity	-0.017	0.030	-0.56	0.016	0.009	1.77				-0.061	0.032	-1.91	0.047	0.029	1.6
Male	0.191	0.058	3.28	0.118	0.018	6.65				0.221	0.063	3.52	0.038	0.054	0.71
Age at the start of the spell	-0.034	0.002	-13.86	-0.036	0.001	-47.73				-0.036	0.003	-13.73	-0.038	0.002	-17.33
Upper secondary school	-0.131	0.048	-2.76	-0.072	0.015	-4.83				-0.151	0.050	-3	-0.026	0.044	-0.59
University	0.052	0.051	1.01	0.075	0.016	4.65				0.031	0.058	0.54	0.101	0.048	2.11
Years 1999-2002	-0.160	0.061	-2.62	-0.221	0.020	-11.28				-0.185	0.065	-2.85			
Years 2003-2007	-0.310	0.078	-3.95	-0.308	0.025	-12.44				-0.362	0.083	-4.35	-0.090	0.075	-1.21
Years 2008-2011	-0.739	0.122	-6.05	-0.815	0.038	-21.22				-0.797	0.131	-6.1	-0.615	0.109	-5.66
Southern Norway	0.034	0.068	0.5	0.021	0.021	1.02				0.036	0.072	0.49			
West Norway	-0.042	0.048	-0.89	-0.019	0.015	-1.25				-0.056	0.050	-1.11			
Central Norway	0.181	0.066	2.73	0.103	0.021	4.81				0.169	0.069	2.46			
Northern Norway	0.139	0.069	2.01	0.106	0.023	4.71				0.131	0.071	1.84			
Ln(t)	-0.016	0.037	-0.43	-0.025	0.011	-2.14				0.008	0.040	0.2	-0.359	0.042	-8.45
Constant	-0.892	0.192	-4.66	-0.723	0.059	-12.24				-0.883	0.220	-4.01	-1.033	0.206	-5
Local Unemployment Rate													-7.009	2.910	-2.41
hazardULF															
Netincdiff	1.753	0.087	20.18	1.768	0.028	62.98				2.998	0.134	22.36	1.568	0.083	18.950
Convexity	-0.163	0.023	-7.13	-0.187	0.007	-26.04				-0.237	0.026	-9.04	-0.115	0.025	-4.640
Male	0.776	0.037	20.89	0.704	0.011	62.39				0.814	0.041	19.74	0.576	0.036	16.180
Age at the start of the spell	-0.046	0.002	-24.48	-0.041	0.001	-70.58				-0.046	0.002	-23	-0.042	0.002	-24.190
Upper secondary school	-0.008	0.038	-0.22	0.128	0.012	10.55				0.079	0.040	2.01	0.095	0.037	2.580
University	0.100	0.038	2.63	0.222	0.012	18.20				0.218	0.041	5.33	0.162	0.040	4.080
Years 1999-2002	0.152	0.050	3.02	0.145	0.016	9.15				0.100	0.053	1.88	-0.120	0.049	-2.450
Years 2003-2007	0.030	0.063	0.48	0.037	0.020	1.89				-0.024	0.066	-0.37	-0.820	0.069	-11.8
Years 2008-2011	-0.748	0.088	-8.47	-0.656	0.027	-24.08				-0.764	0.094	-8.15			
Southern Norway	-0.295	0.053	-5.57	0.481	0.019	25.49				-0.428	0.056	-7.66			
West Norway	-0.482	0.037	-13.1	0.188	0.024	7.98				-0.519	0.039	-13.47			
Central Norway	-0.559	0.056	-9.96	0.069	0.020	3.41				-0.554	0.058	-9.52			
Northern Norway	-0.536	0.060	-8.87	-0.094	0.024	-3.83				-0.584	0.063	-9.24			
Ln(t)	-0.234	0.032	-7.39	-0.226	0.010	-22.96				-0.171	0.034	-5.05	-0.16406	0.030712	-5.34
Constant	-1.930	0.118	-16.32	-2.538	0.040	-63.88				-1.503	0.136	-11.09	-3.73514	0.118278	-31.58
Local Unemployment Rate													7.379	1.938	3.81
support points															
a1	-0.531	0.049	-10.9	-0.582	0.016	-36.71	-0.505	0.043	-11.77	-0.516	0.054	-9.57			
a2	-1.337	0.072	-18.67	-1.319	0.022	-60.72				-1.336	0.082	-16.24			
b1	-3.042	0.200	-15.23	-2.943	0.051	-57.39	-2.366	0.051	-46.56	-2.747	0.138	-19.95			
b2	-1.839	0.094	-19.66	-1.981	0.031	-63.86				-1.856	0.096	-19.42			
logit(p)	-1.418	0.124	-11.42	-1.498	0.040	-37.74	-1.945	0.134	-14.47	-1.597	0.151	-10.59			
p1	0.805	0.019	41.31	0.817	0.006	137.87	0.875	0.015	59.47	0.832	0.021	39.37			
p2	0.195	0.019	10	0.183	0.006	30.82	0.125	0.015	8.5	0.168	0.021	7.98			
Loglikelihood	-105688			-1064749			-60573.1			-93800.6					
# of Obs	476,275			4813827.000			229,036			432,409					
Loglikelihood_GLM1													-18064.7		
# of Obs_GLM1													44,601		
Loglikelihood_GLM2													-19441.3		
# of Obs_GLM2													112,330		
Loglikelihood_GLM3													-11130.6		
# of Obs_GLM3													47,973		
Loglikelihood_GLM4													-23766.4		
# of Obs_GLM4													201,920		

