# Stress, happiness and maternity leave at childbirth[1]

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PRELIMINARY. PLEASE DO NOT QUOTE

## Significance

The birth of a child is simultaneously a stressful and happy experience for women in many countries. Family leave policies reduce the link between the birth of a child and stress but do not alter the experience of happiness. As the United States begins to adopt more family leave policies, the results of this study suggest that they may have immediate stress-reducing outcomes that are linked to depression, distress and a wide variety of labor outcomes later in life. Our early work linked maternity leave to reductions in depression in late adulthood, decades after the experience of childbirth. Importantly in this work, we show that country level availability of maternity benefits reduces the stress identified by mothers to be linked with the birth of a child. The negative effect on stress of giving birth to a child is offset with less than two months of paid maternity leave, while having no adverse effect on happiness. The social and policy context of the experience shapes the ratio of stress to happiness.

## Abstract

This study examines the impact of childbirth on both stress and happiness. We use unique data from the Survey of Health, Ageing and Retirement in Europe (SHARE), which collects full retrospective life histories for women aged 50 years and older in 12 European countries. Using an instrumental variable fixed effect approach, we show that the first two years after childbirth lead to a significant increase in the risk of severe stress, while simultaneously increasing the probability of reporting a distinct period of happiness. We show that longer maternity leave entitlements leading to longer job interruptions significantly decrease the risk of stress: A period of eight weeks of maternity leave is sufficient to counterbalance the effect of childbirth on stress. Our results highlight the critical impact of maternity leave policies on the experience of childbirth and the wellbeing of working mothers.

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## 1. Introduction

It is a familiar notion that the birth of a child brings an extraordinary combination of both stress and happiness to parents. On the one hand, childbirth has been linked to an increased risk of a range of mood disorders in the perinatal period including depression, post-traumatic stress, anxiety, and postpartum psychosis (Leigh and Milgrom, 2008, Brockington, 2004, Howard et al., 2014, Cohen et al., 2006, Bennett et al., 2004). The prevalence of these disorders is high: for example, in addition to the 'baby blues' that affect nearly two thirds of new mothers (but often recede after two weeks), about 9.5 percent of mothers in high-income countries experience postnatal depression (Woody et al., 2017), while around 17 percent experience anxiety disorders during the early postpartum period(Fairbrother et al., 2016). Yet, childbirth is often described as one of the most rewarding events in adult life, a cornerstone in the quest for adult wellbeing and happiness (Billari, 2008). A strand of literature has examined the extent to which expectations about happiness after childbearing may explain fertility decisions (Aassve et al., 2012, Baranowska and Matysiak, 2011, Billari, 2008, Margolis and Myrskylä, 2011, Margolis and Myrskyla, 2016, Myrskylä and Margolis, 2014, Margolis and Myrskylä, 2015). While the relationship is complex and may vary across contexts(Aassve et al., 2012, Baranowska and Matysiak, 2011, Margolis and Myrskylä, 2011), evidence suggests that happiness might increase in the years around the birth of a first child, before returning to pre-birth levels(Myrskylä and Margolis, 2014).

How do we reconcile the fact that childbirth is both a stressful and yet happy event in a woman's life? Literature on the mental health impact of entering parenthood has evolved independently from research on impacts on wellbeing and happiness, so that no studies have examined both outcomes simultaneously. In this paper, we test the hypothesis that psychological distress may coexist with emotions of fulfilment and happiness in the aftermath of childbirth. Early work on "life events" as stressors (Holmes and Rahe, 1967) had also included what were then called positive and negative life events acknowledging that positive events such as marriage and having children can simultaneously be stressful and rewarding. Since both positive and negative events involve a challenging readjustment period, they can be bring both happiness and also be stressful. In fact, marriage and the addition of family members are in the top third of stressful 43 life events outlined by Holmes and Rahe. However little research has been conducted more recently on the dual nature or buffering effects of social policies or conditions. We address this paradox from a life-course perspective that links older parents' full fertility histories to their retrospective assessments of the most stressful and happy periods in their lives.

Two broad sets of theories have been proposed to explain the impact of entering parenthood on mental health. Based on literature on the 'value of children' (Hoffman and Hoffman, 1973, Friedman

et al., 1994), a set of theories poses that children bring about wellbeing to parents through a 'social production function'. In this framework, parenthood is associated with a range of positive values such as social esteem and a sense of adult achievement; parenthood may also strengthen social ties with families and friends (Gallagher and Gerstel, 2001, Umberson and Gove, 1989). Another set of theories proposes that parenthood negatively influences wellbeing by harming mother's employment prospects, increasing work-family stress due to competing demands, and reducing job satisfaction after childbirth(Georgellis et al., 2012). Parenthood may also strain the relationship between parents (Pailhé and Solaz, 2009, Lavee et al., 1996), increase financial distress (Zimmermann and Easterlin, 2006, Stanca, 2012), and reduce time spent on leisure (Sanchez and Thomson, 1997), thus reducing overall wellbeing.

Separately, several theories have been proposed to explain the increased risk of mood disorders after childbirth. Most of these theories have focused on postpartum depression, the most common mood disorder associated with childbirth(Abdollahi et al., 2016). A first set of biological theories focuses on the pathophysiological hormonal effects of pregnancy and childbirth. Hormones including estrogen, progesterone, beta-endorphin and cortisol increase during pregnancy, and decrease abruptly after childbirth(Abdollahi et al., 2016). Because hormones and neurotransmitters share common pathways and receptors in brain areas linked to mood, rapid shifts in levels of these hormones may lead to increased risk postpartum depression(Soares and Zitek, 2008).

The hormonal regulatory hypothesis , however, is not likely to be the sole explanation or link between childbirth and mental health. The role of additional related psychosocial stressors such as role overload are likely to play a role as sources of mood disorders (Abdollahi et al., 2016, Soares and Zitek, 2008). Thus a second group of theories emphasizes the role of psychosocial stressors associated with childbirth. Social and interpersonal theory emphasizes the role of the social environment, and particularly social support, so that insufficient social support or marital conflict may moderate the impact of childbirth lead to depression and anxiety after childbirth (Hunker et al., 2009, Abdollahi et al., 2016).

These multiple approaches can be combined, allowing for the possibility that well-being and mood disorders may coexist after childbirth. For example, in accordance to the 'value of children' literature, new mothers may experience a boost in social esteem or sense of adult achievement (Hoffman and Hoffman, 1973, Friedman et al., 1994). Yet, this may not prevent potential changes in mood associated with sudden drops in hormonal levels, or increased anxiety and depression associated with cognitive disturbances about the new mother's role. In fact, the literature on wellbeing emphasizes that happiness and life satisfaction are not simply along the same axis as distress and mood disorders and not the "opposite" of distress. We hypothesize that the simultaneous occurrence of multiple mechanisms leads to a combination of both enhanced well-being and increased stress,

resulting in a unique emotional state that places mothers at particularly high risk of mental health disorders.

An important consideration is that the impacts of childbirth on both well-being and stress may vary according to the institutional context. For example, research suggests that there is a negative or weak association between parenthood and well-being in the US and Canada, while in European countries, studies have typically found a weak or positive association (Margolis and Myrskylä, 2011). While some of these variations may reflect cultural values around parenthood, we claim that the institutional and policy context may shape the childbirth experience and its impact on wellbeing and stress. In particular, we hypothesize that an institutional context characterized by generous maternity leave benefits and child support policies may simultaneously reduce the stress of childbirth and increase the wellbeing effects of entering motherhood. In previous work, for example, we showed that working mothers living in countries with longer paid maternity leave policies during the birth of their first child had lower rates of depression many decades later when they reached older age (Avendano et al., 2015). Yet, no studies have examined the simultaneous impact of entering motherhood on stress and wellbeing in the aftermath of childbirth and how it is modified by maternity and child support policies.

Our paper aims to understand the extent to which women report the birth of their first child as one of the most stressful periods of their lives while simultaneously reporting it as one of the main periods of happiness in their life. We examine the impact of childbirth on both wellbeing and stress, focusing on the period around childbirth starting from pregnancy and covering the early months of life of the child. We use life history data from the third wave of the Survey of Health, Ageing and Retirement in Europe (SHARE). This dataset allows to focus the attention on the single most stressful event in life and on the happiest period in life for women aged 50 and over across Europe. Our paper makes three critical contributions to the existing literature.

First, we provide evidence that childbirth increases parental well-being. Second, we find a potential causal effect of childbirth on the risk of stress, and show that this effect is comparable in magnitude to that of other, better understood socio-economic risk factors such as bereavement or marital dissolution. Finally, we place this relationship in the context of different countries and time periods and show that more generous maternity leave benefits and child support policies significantly reduce the risk of stress after childbirth, by allowing longer job interruptions around childbirth. In particular, we show that being away from work for eight weeks is enough to counterbalance the increase in psychosocial stress due to being in a childbirth year. At the same time, these policies do not affect the positive effect of childbirths on happiness. These findings are important in the context of literature on the impact of policies on both the wellbeing of mothers and children, as well as the fertility choices of parents in countries with predominantly low fertility rates. To our knowledge, this is the first paper to

document the coexistence of both experiences of stress and happiness in the aftermath of childbirth in the context of different policy contexts across Europe.

## 2. Data and descriptive analysis

We use data from the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a cross-national panel survey designed to provide comparable information on the health, employment and social conditions of a representative sample of the European population aged 50+. Samples were drawn in Northern Europe (Sweden and Denmark), Western Europe (Austria, France, Germany, Switzerland, Belgium, Ireland and the Netherlands), Southern Europe (Spain, Italy and Greece) and Eastern/Central Europe (Poland and Czech Republic)(Borsch-Supan et al., 2013). We focus on data from the third wave, which took place in 2008: this specific interview provides life-history information about a representative sample of about 27,000 respondents aged 50 or over. The domains of interest include family relationships, fertility history, housing, working history, health and health care. The dataset contain sequences of life events in a flat file format: as an example, the length of interruption at maternity leave is looped over all birth episodes and the information is stored as a set of variables for each individual in the sample. We use the data reorganized in a retrospective panel dataset following Brugiavini et al. (2013) and Antonova et al. (2014): each respondent contributes as many observations as there are years of age from birth to the age at which they are observed at the moment of the interview. A retrospective panel has a number of interesting features for our purposes. First, being a panel it is possible to control for unobservable characteristics affecting both the length of leave from work at each childbirth, happiness and psychosocial stress. Second, since the dataset contains full life histories of women aged 50 or older in 2008, we have complete fertility histories. While a standard panel dataset is likely to be too short to observe a sufficient longitudinal variation at individual level in variables with low frequency changes, a retrospective panel is so long that we can control for parity, number of children, spacing between childbirths. This is new in the literature: most previous papers had to rely on single maternities events datasets (Chatterji and Markowitz (2012) Baker and Milligan (2008) Chatterji et al. (2013)) or on panel data where mothers are followed for a limited period around a specific policy change (Baker et al., 2008).

Our first outcome variable, *stress*, is a dummy variable that takes value 1 if the given year is reported as being part of a distinct period of stress. Being specific, the dependent variable is obtained based on the following three questions: "Looking back on your life, was there a distinct period during which you were under more stress compared to the rest of your life?", and in case of positive answer, the respondent was asked when the period started and when it finished. The second left hand side variable in our analysis, *happy*, is obtained exactly in the same way: it is 1 if the given year is part of the happiest period in respondent's life. The exact wording of the survey question is "Looking back on your life, was there a distinct period during which you were happier than during the rest of your

life?". Finally, in order to be sure mothers reporting an increase in stress are the same that report childbirth being in the happiest period of their life, we will use as dependent a dummy variable taking value 1 if the given year is part of a distinct period of stress and of a distinct period of happiness.

The way the questionnaire is structured helps to identify the salient episodes in women's life. These questions are asked at the very end of the questionnaire, several minutes after the set of questions about job episodes, children and maternity leaves. During the interview a "lifegrid", i.e. a visual representation of the work, relationship, accommodation and fertility histories is populated with respondent's answers, so that respondents can anchor the stress and happiness answers to the most important events in their life, but not necessarily childbirths. This feature of the questionnaire allows us to include non-working women and women with no children in the analysis, therefore implicitly providing meaningful comparisons across risk factors. Moreover, since respondents are not asked to report each single period of happiness and stress, but only the relevant ones over their entire life-course, we are confident that childbirths are reported as crucial events only if they actually had a substantial effect on well-being and left a mark.

In analyses in the appendix of this paper we report the stress incidence by country, i.e. the fraction of women reporting that they experienced a distinct period of stress in their life. This fraction varies between 31 percent in Greece and 66 percent in France. These numbers are far from 100 percent: this corroborates the claim that our measure identifies only periods of severe stress. A potential threat to the quality of our stress indicator is recall bias: being forced to choose just one stress period, respondents may report the most recent stress episode or only those spanning several years, if not an entire lifetime. Descriptive statistics support the validity of the self-reported question: in figure 1 we report respectively the distribution of age of onset in the stress period (left panel), and of the length of reported stress episodes. The age distribution seems symmetric and not skewed towards interview age, and most of the reported periods last for less than five years, with modal length at one year.

Regarding the second variable of interest, also in the appendix we report its incidence by country. As for stress, the graph highlights a significant heterogeneity across countries: happiness incidence varies between 33 percent in the Netherlands to 73 percent in France. Figure 4 reports the age of onset of happiness period and the distribution of lengths of these periods. The distribution of age of onset is much more concentrated than for stress, and it is bimodal with a peak at birth and a second one, much larger, in the 20s. On the other hand, the distribution of length of happiness period is much less concentrated than for stress. The modal answer is still one year, but a substantial fraction of respondents report very long periods of happiness.

. In the dataset at hand we observe child births over a 50 years span, from 1960 until almost 2008, but given the age selection of SHARE respondents most child birth episodes are concentrated between

1965 and 1985. This is a period of spectacular increase in female labor force participation, as documented in e.g. Mincer (1985). This means an increasing fraction of women had to combine work and family responsibilities. We document the total number of reported childbirth per year divided between working and not working mothers. While the latter where substantially higher until 1980, the majority of the child births in the '80 and in the following decades took place while the mothers were employed. According to the "scarcity hypothesis", women have limited time and energy, and the conflicting demands from work and family trigger stress (Frone et al., 1997, Chandola et al., 2004, Wang et al., 2007). This motivates us to dig further about the labor force participation decisions of mothers around childbirth.

First of all, the important role of labour force participation decisions at child births forced us to exclude from the analysis women that had at least one child birth episode in Poland, Czech Republic or in East Germany before 1989. Those women were exposed to a system of full, but not freely chosen, employment (Gal and Kligman, 2000), so that their labour force participation decisions at child birth are not comparable to those of women in Western countries. On the other hand, we include women who gave birth to children in few countries not included in SHARE, but that lately migrated to a surveyed country.[2] The final sample after a few further selections due to missing values in key variables consists of 12,791 women, summing up to 480,016 year-individual observations.

In order to study labour force participation decisions of new mothers we construct a *leave length* variable, i.e. the number of weeks of job interruption at child birth. The variable is obtained combining information from several questions. For each natural child, the questionnaire asks first "Did you temporarily or permanently stop working when *name of child* was born?". Respondents can answer "stopped working temporarily"; "never worked again"; "no interruption" or "was not working at that time". In Figure 7 we consider only childbirths that took place while the mother was working, and computed the fractions of temporary interruption, no interruption and leaving the labour force for good. In many countries, the fraction of child-births associated to "no interruptions" seems too high: in most countries there were paid maternity leaves in place over the entire period spanned by the data, in some cases the leave was compulsory. This over reporting "no interruption" may be due to the wording of the question: women who took a few months of leave keeping the same job may have answered «no interruption», meaning they always kept the same job, thus interpreting "stop working" as resigning/being laid off.

*Leave length* takes value zero if the respondent reports "no interruption", and it is set to missing if not working at child or left the labour force for good at child birth. If the women reported a temporary

[2] Namely US, UK, Norway, Finland and Portugal. The country of residence at delivery indicator for women giving birth to a child other than those just mentioned is a "catch all" category that does not allow to link the records to policy variables, therefore also those observations are dropped from the sample.

gap, *leave length* is determined by the follow up question that asks "how long did you stop working for". Answer categories are a month or less; more than 1 but less than 3 months; more than 3 but less than 6 months; more than six months but less than a year; more than a year but less than 3; 3 year or longer, but worked at a certain point in the future. *leave length* then takes value respectively 4, 12, 26 52 in the year in which the birth is recorded if the respondent reports an interruption shorter than a year. If the interruption is longer, the exact length in years is retrieved from the set of questions asking about each job episode. In the case, the variable *leave length* takes value 52 in the year of childbirth, and in each following year until the mother starts working again. We then decided to cut interruptions longer than 6 years (about 4 percent of the reported interruptions at childbirth). The rationale is that if the mother does not return to the labor force (as employed or unemployed) when the child goes to primary school, she is choosing to look after home and family, but she's no more in a job interruption at child birth.[3] Note that this does not rule out "chained" interruptions: some women have a second child while they are still not working since the previous maternity episode.. Average length is everywhere above 6 months, in most countries above a year. Note that the dataset does not include the month in which the job interruption begins, as this would be an excessively detailed question to ask: this implies that leaves longer than a year are overestimated.[4] These potential measurement errors in the construction of the leave length variable must be taken seriously. We then took two approaches. First, as an alternative women choice variable we used a "out of labour force due to maternity" dummy, which takes value 1 in the child birth year if the respondent reports that "stopped worked temporarily". The dummy is 1 also in all the following years until the respondent reports to be working again. The second approach is to instrument leave length with key characteristics of legislation on maternity leave and family allowances in each country. Policy data came from the Comparative Maternity, Parental, and Childcare Leave and Benefits Database (Gauthier, 2011) and cover the period from 1960 until 2008. The first instrumental variable is Full Wage Weeks of maternity leave (FWW), i.e. the product of the duration of leave in weeks and the percentage of past wages that are replaced during maternity leave (Ruhm, 2000, Avendano et al., 2015). Maternity leave length in most countries takes values between 12 and 18 weeks. In terms of generosity, most countries have benefits close to 100% of the last wage, with the exceptions of Belgium and Denmark. The second instrumental variable is the amount of family allowances granted for the first child expressed in 2008 euros. Figure 9 reports graphs of the time series by country of those policy variables. The

[3] Note that this is an innocuous assumption: we run all the regressions of the paper including also those extremely long interruptions and results are in line with the one reported in the paper.

[4] Consider a mother who had 18 months of interruption overall. Since the interruption is longer than a year, the exact length is retrieved using information from the job episodes loops, but, in that section, labor market status is reported at a yearly level. This means that if the interruption started before June, it is recorded as two full years of interruption. If the leave from work started in the second half of the child birth year and lasted 18 months, the interruption is recorded as being three full years long, as the respondent reports to be back at work two calendar years after the child birth year.

wide set of countries and the long time span allows to have sufficient cross country and within country variability in policies.

## 3. Model specification

The econometric setup exploits the panel dimension of the dataset and is similar to the one proposed by Myrskylä and Margolis (2014) who look at the effect of being in a child birth year or in a year just before or after delivery on happiness. The model to be estimated is the following:

$$depv_{it} = \beta_1 D(y\ bef\ childbirth)_{ict} + \beta_2 D(childbirth)_{ict} + \beta_3 D(y\ aft\ childbirth)_{ict} + \beta_4 jobinterruption_{it} + \boldsymbol{x}'\beta_X + \delta_t + \theta_i + \varepsilon_{it} \quad (1)$$

The dependent variable $depv_{it}$ is a dummy indicating that woman *i* reports respectively that *t* falls in a period of stress, happiness or both stress and happiness. As regards the right hand side variables, $D(childbirth)_{ict}$ is a dummy that takes value 1 if woman *i* had a child in year *t* in country *c*, $D(y\ bef\ childbirth)_{ict}$ indicates that the childbirth took place in year *t+1* and $D(y\ aft\ childbirth)_{ict}$ that childbirth was in year *t-1*. The aim is to assess whether being pregnant, being in a child birth year or in the first months of child care (the year after child birth) affect the probability of being stressed and happy. $jobinterruption_{it}$ is either *leave length* or the out of labor force due to maternity dummy. $\theta_i$ are individual fixed effect and $\delta_t$ a full set of time fixed effects. Vector $\boldsymbol{x}$ contains a constant, a quadratic in age, a set of dummies indicating the sector where women *i* is working in year *t* (the omitted category is not working), household income[5] and a set of potential life cycle and health related stress risk factors. The life cycle risk factor are total number of children, a dummy which takes value 1 if the woman *i* is single in year *t;* a dummy indicating there is at least one child younger than 6 in the household in year *t*; the interaction between them indicating lone motherhood of a young child. Moreover, we define a set of dummies to indicate the following cases: if respondent *i* had a divorce in year *t*; if the partner of individual *i* died in year *t*; if the individual *i* reports year *t* to fall in a financial hardship period (a question asked in the same way as the stress and happiness period information is retrieved) and if individual *i* was dispossessed in year *t*. Besides these life cycle risk factors, vector $\boldsymbol{x}$ contains a series of health measures: a dummy indicating whether women *i* reported an illness due to gynecological problems in year *t*; whether she had a miscarriage in year *t*; whether she had being diagnosed in the past a specific disease, namely cancer, osteoporosis, arthritis, asthma, a different lung disease, diabetes, high cholesterol, high blood pressure. Finally a

[5] In order to interpret the results in terms of percentage variation of household income, the regressor in x is the Inverse Hyperbolic Sine (IHS) transformation of household income BURBIDGE, J. B., MAGEE, L. & ROBB, A. L. 1988. Alternative transformations to handle extreme values of the dependent variable. *Journal of the American Statistical Association,* 83**,** 123-127. IHS is preferred to log transformation to handle women-year records with zero household income.

dummy which takes value 1 if the respondent had a stroke in the past, and a variable that indicates whether the individual had a heart attack in the past.

Equation (1) is estimated by means of a Fixed Effects linear regression (Linear Probability Model) and not with a logit fixed effects because the list of potential confounders may well not be exhaustive. An omitted right had side may bias a linear estimator, but estimates obtained with a logit would be inconsistent. Individual fixed effects allow to control for unobserved individual characteristics affecting both the length of job interruption decision and stress prevalence. Still, they are not enough to account for endogeneity stemming from reverse causality: if women decide the length of interruption based on their level of stress, parameters' estimates of equation (1) will be biased. Moreover if measurement error in *leave length* varies with parity (i.e., within women and along time) FE are not enough to account for it even if measurement error is of the classic form. As an example, if all women have long interruptions (say, longer than a year) at first child birth and shorter ones for the second, then the interruption at first child will be mechanically overestimated, while the one at second child birth may be underestimated as we explained in the previous section. Measurement error can be explicitly modelled, but this would not solve the potential reverse causality issue. Therefore we follow other two approaches. First, we estimate a reduced form regression, where leave length is replaced by FWW. Second, we estimate an Instrumental Variables (IV) FE linear regression. In this way, we use only the variability in the instrument that helps to explain the variability in the endogenous/ill measured variable. Moreover, we can add a second instrument (namely, family allowances) and run an overidentified IV regression.

The nature of the dependent variable and the fact that some covariates vary by year and country, but not at individual level, requires a double clustering procedure in order to obtain consistent estimates of parameters' variances (Cameron and Miller, 2015). First, we need to cluster standard errors at individual level. The dependent variables are by construction serially correlated: if $depv_{it}$ takes value 1 in more than one period, they are necessarily adjacent because women are requested to report a single period of stress and a single period of happiness in their life. Therefore, since $depv_{it-1}$ is not included among the regressors, including individual-specific fixed effects is not enough to control for all the within-cluster correlation. Note that even if $depv_{it-1}$ was explicitly included among the regressor and the model estimated e.g. with a Arellano-Bond GMM estimator, the remaining error $\varepsilon_{it}$ may still be serially correlated. This is the reason why we prefer not to include $depv_{it-1}$ and cluster at individual level rather than specifying a dynamic panel model. Second, the presence of the policy variables that vary by country and year requires to cluster at the year*country level. Those two clustering levels are non-nested, therefore the variance covariance matrix of the parameters must be computed accordingly. Finally, in order to reduce the computational burden of the estimation, we use the feasible estimator for multi-way fixed effects proposed by Correia (2016).

## 4. Results

Table 1 reports the results of the estimates of equation (1) for *stress*. In Column (1) the model is estimated without any indicator for being in maternity leave, in column (2) we include leave length. In both specifications, being in a childbirth year significantly increases the probability of reporting a severe period of stress. In terms of magnitude, being in a childbirth year increases the probability of reporting stress by 0.5 percentage points. The unconditional probability of reporting stress is 10.1 percent, therefore the implied semi-elasticity is 4.9 percentage points. The effect is approximately one third than the one of being single with no children, and 10 times smaller than having a miscarriage in the year. Other, more studied, lifecycle stress risk factors like experiencing a divorce or the death of a partner have larger marginal effects. On the other hand, health conditions seem to play a marginal role as stress triggers. Moreover, also being in the year immediately after childbirth is significant and comparable in magnitude. Leave length in column (2) on the other hand, have a negative but not statistically significant effect on stress probability. These results nevertheless must be commented with caution. First, measurement error may have induced an attenuation bias in the job interruption measures thus explaining the lack of statistical significance. Second, as we pointed out in the previous section all estimates are inconsistent if the length of job interruption is endogenous due to reverse causality. Column (3) reports the reduced form estimation of equation (1) for *stress*, where the *leave length* taken by individual *i*, living in country *c* in year *t* if a child is born is replaced by the number of full wage weeks of maternity leave available in year *t* and country *c*. In this specification the FWW proxy is negative and significant, pointing to a stress reducing effect of job interruption. In columns (4) and (5) we report respectively the FE, IV estimation of equation (1) where job interruptions are measured by the leave length measure and FWW is used together with the log of family allowances as an instrument, and the corresponding first stage estimates. In the first stage the two instruments are jointly significant (F-test: 9.74), in the second stage the length of leave turns significant. Moreover, the magnitude of the year of birth coefficient as well as the one of its lead increases significantly compared to the non-instrumented estimates. This result confirm the need of accounting properly for labour market participation decisions of mothers at child birth. The marginal effect of the variables of interest are now comparable to those of other, better studied stress risk factors: being in a child birth year increases the probability or reporting stress by 6.6 percent, being in a divorce year increases it by 12.3 percent, being single with one child younger than 6 in the household increases stress by 3.8 percent. It is also interesting to compare the absolute value of the coefficient of being in a birth year

and the one of maternity leave length in weeks: the negative marginal effect of a being in a child birth year is approximately equal to the effect of an 7 weeks job interruption.[6]

Table 2 reports the same set of estimates of equation (1) when the dependent variable is being in a happiness period. In this case, being in a childbirth year as well as the year before and after, i.e. during pregnancy and in the first months of child caring, significantly increase the probability of reporting happiness. The magnitude of this effect is slightly below 4 percentage points in the non-instrumented regressions, and increases to 6 percentage points in column (5). Regarding the year before and after, the marginal effect is between 3 and 2.5 percentage points (up to 3.9 for the year after in the instrumented regression, but less precisely estimated). Differently from stress, length of maternity leave has no significant effect on reporting happiness: childbirth improves wellbeing regardless of the leave policies in place in the country where the child birth took place.

Table 3 reports the estimates where the outcome is a dummy which takes value 1 if respondent I reports year t being simultaneously part of a stressful and of a particularly happy period. In this analysis we want to establish that women reporting stress are the same reporting exceptional happiness at childbirth. In this case, the marginal effects of being in a childbirth year and the year after are positive and significant in the FE specification, as well as in the reduced form. Coefficients turn insignificant in the IV specification, but the magnitude is almost unchanged while standard errors are ten times bigger. Given that from table 1 and 2 the length of maternity leave seems to affect only the probability of reporting stress but not happiness, our interpretation is that the lack of significance is due to a loss of efficiency in the estimation.

## 5. Robustness

In section 2 we highlighted the measurement error in our measure of length of maternity leave, due to the way the information is elicited in the retrospective questionnaire. We dealt with this problem by instrumenting the variable. Here, we re-estimate equation (1) for the three outcome variables of interest replacing the leave length measure with a dummy which takes value 1 if respondent *i* reports being in maternity leave in year *t*. Results are in table (4). For each outcome, we report the FE estimates in the specification that includes the *in-maternity* dummy and the corresponding IV-FE specification. Results confirm the findings of tables (1) to (3): being in a childbirth year and in the year after significantly increase the probability of being stressed and the probability of reporting happiness. The marginal effects are also statistically significant for the joint outcome in the FE specification, while they lose significance but maintain the same magnitude in the IV-FE estimation.

[6] The effect of weeks of maternity leave may not be linear. We think we cannot appropriately test non linear effects due to data restrictions: first, leave length is treated as a continuous variable, but is obtained from a categorical question. Second, introducing a polynomial in an endogenous variable either would lead to an exactly identified model, or will call for an additional instrument.

Being pregnant positively affects only the probability of reporting happiness but not the other outcomes, as in the baseline specifications.

In table (5) we repeat the estimation restricting the sample to mothers. That is, the thought experiment in this case is to compare mothers that associate a child birth with stress and happiness to mothers that do not report an increase in those two variables at the moment of child delivery. Results are again in line with the baseline specifications. In tables (6) and (7) we check whether the fact we have information about maternity leave polices only starting from 1960 is driving the results. In table (6) we restrict the estimation to women that had no children prior to 1960. Results are in line with the baseline, the only exception is a loss of significance of the coefficients for being in childbirth year and in the subsequent year on stress in the IV-FE specification. Their magnitude nevertheless is comparable to the baseline results. In Table (7) we select only women born before 1960. Again, results confirm the baseline findings

## 6. Discussion and Conclusion

Psychosocial stress can lead to mental disorders in older ages, with important costs for the household and for the society at large. Child birth is a key event in a woman's life: it is a life changer and requires working mothers to cope with multiple roles. In this paper we show that a child birth is a stress risk factor comparable in magnitude to other, more studied and more negative, risk factors. Besides the stress increasing effect of childbirth, we find that women report an increase in happiness around childbirth. We document that the same respondents tend to report childbirth to be simultaneously a stressful but also a happy event. We then show that for working mothers taking a leave from work at child birth can have stress reducing effects: a 7 weeks job interruption nets out the stress increasing effect of maternity. Being away fromm work does not have any harmful effect on wellbeing: the probability of being happy is not affected by the length of maternity leave in any specification. We consider the evidence on the effect of maternity leave particularly important from a policy perspective: allowing women to leave the labor force temporarily at maternity would limit the negative effects on mental health without suffering the adverse effects of a discontinuous career nor reducing well being.

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## Tables and figures

**Figure 1: Stress incidence by country**

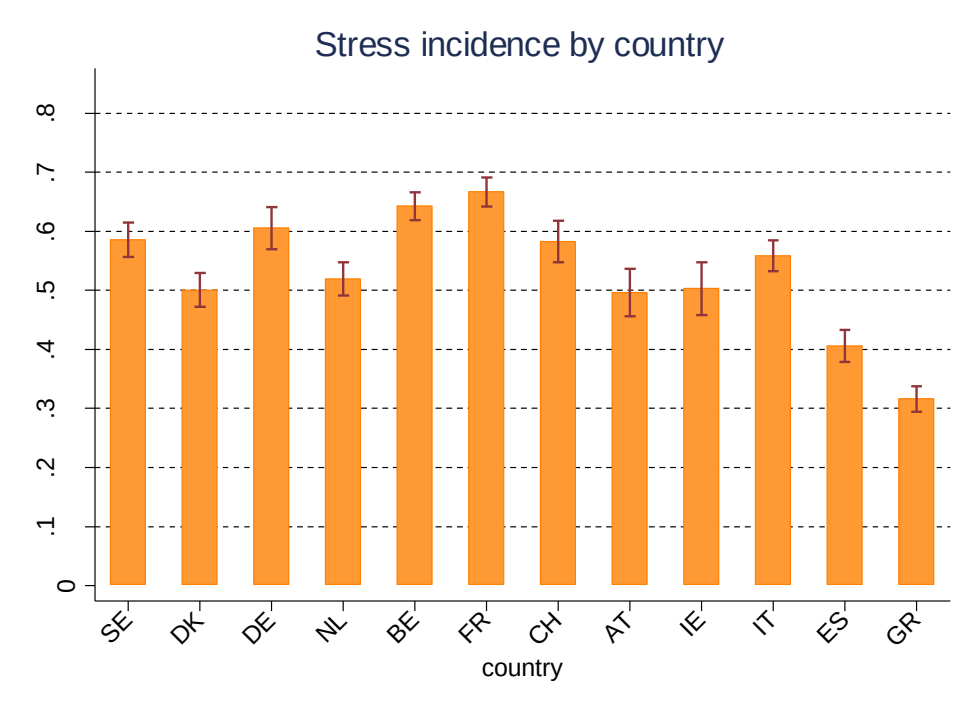
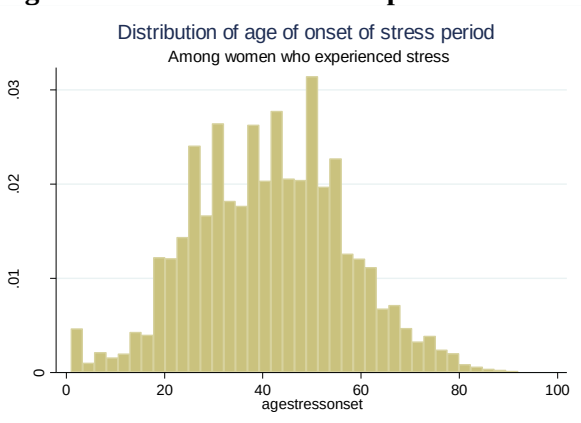



**Figure 2: distribution of self-reported stress**



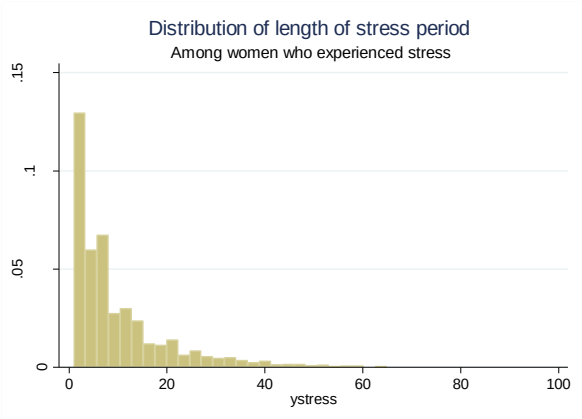



**Figure 3: Happiness incidence by country**

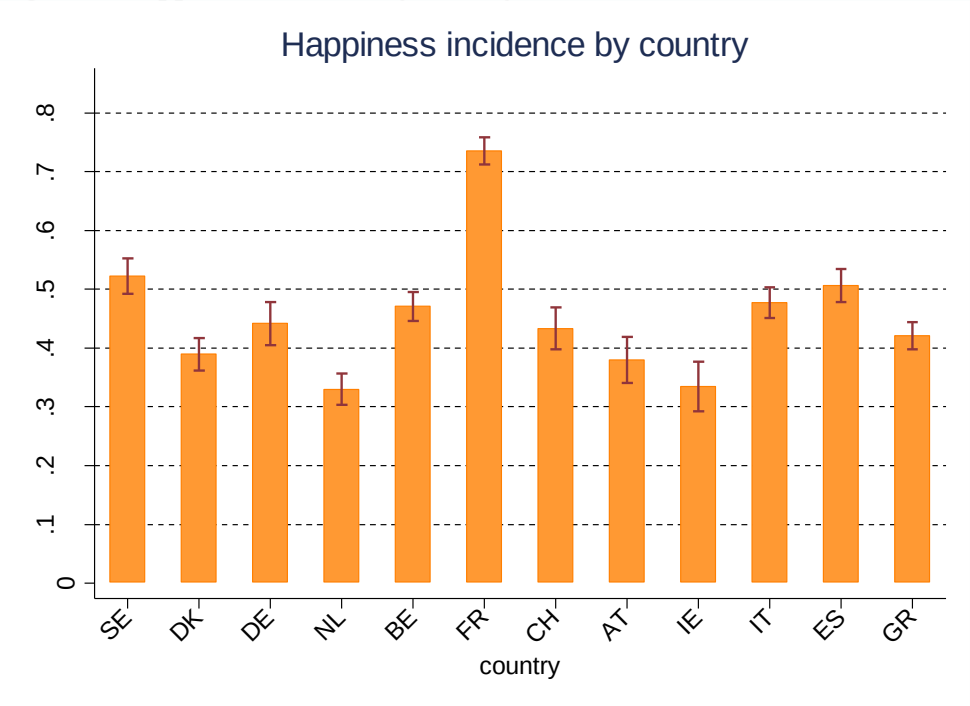
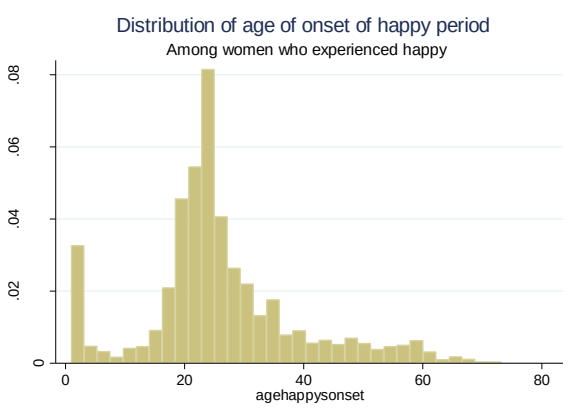



**Figure 4: distribution of happiness periods**



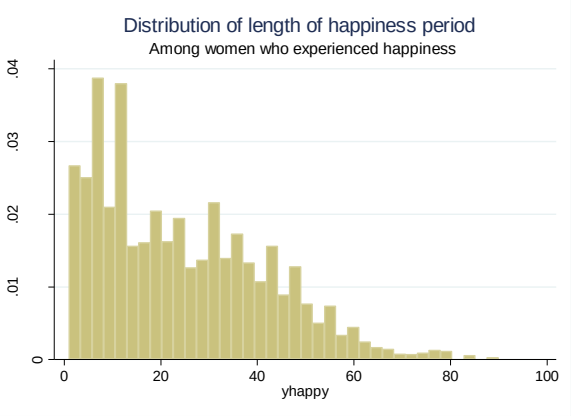
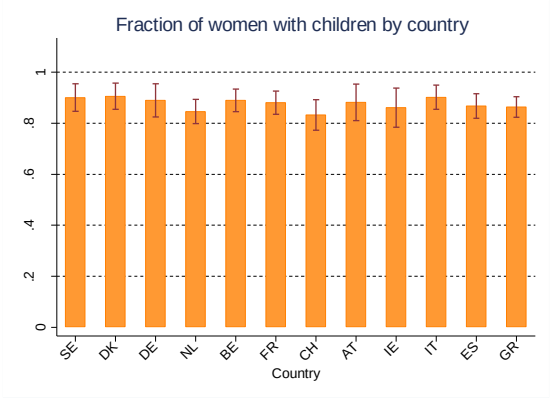



**Figure 5: Child births**



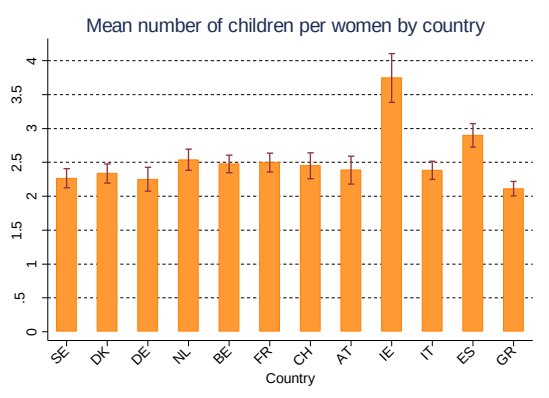




**Figure 6 Working and non working mothers**

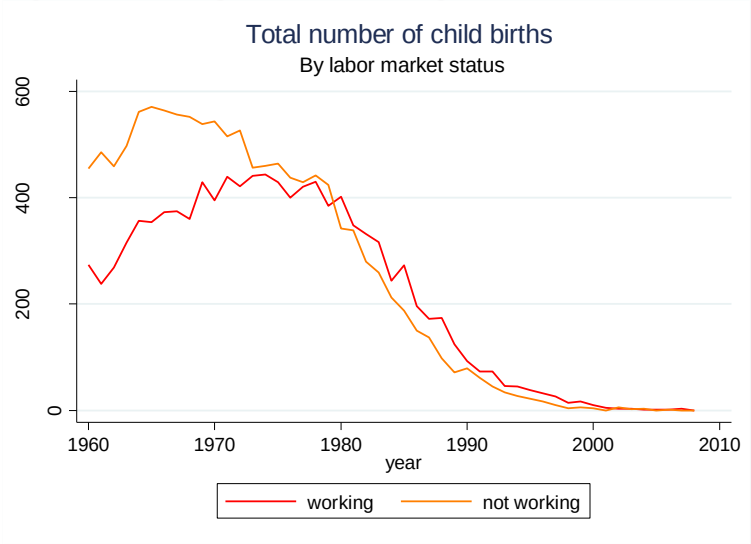



**Figure 7: type of interruption at child birth**

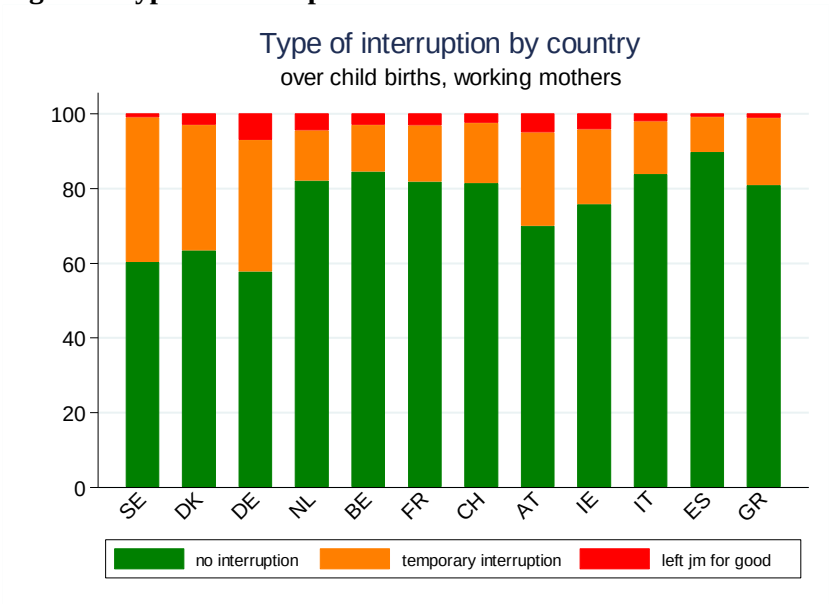


**Figure 8: length of interruption at child birth**

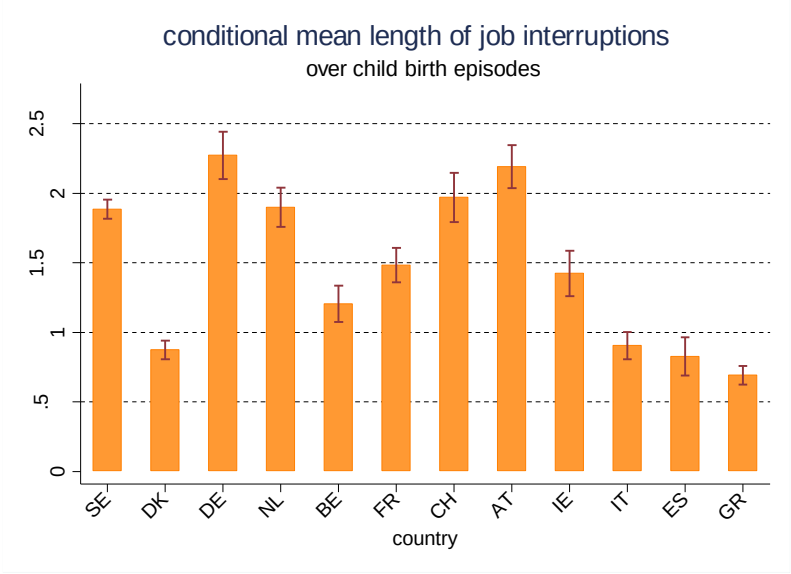
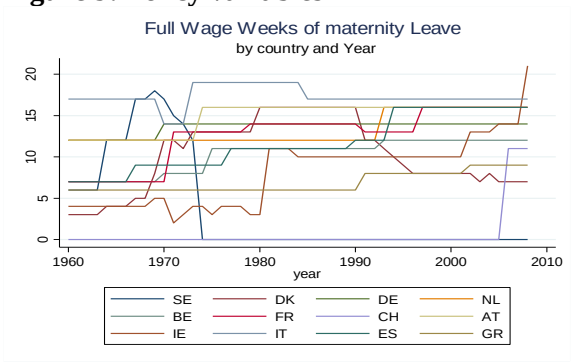



**Figure 9: Policy variables**



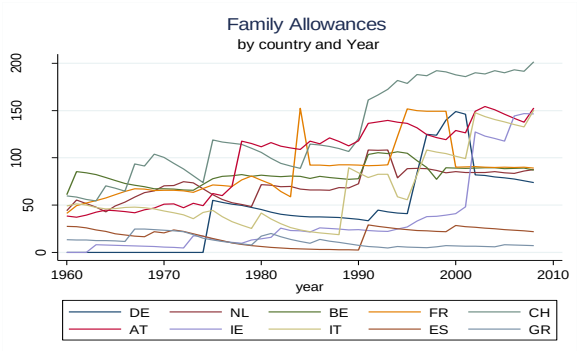



**Table 1: baseline specification, stress**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| year prior to chldbirth | -0,00233 | -0,00227 | -0,00217 | 0,00315 | 0,53496*** |
| | (0,0025) | (0,0025) | (0,0025) | (0,0038) | (0,1192) |
| child birth year | 0,00489** | 0,00551** | 0,00409** | 0,06567** | 6,20276*** |
| | (0,0020) | (0,0022) | (0,0021) | (0,0294) | (0,3300) |
| year after childbirth | 0,00467*** | 0,00508*** | 0,00441*** | 0,04477** | 4,06493*** |
| | (0,0016) | (0,0016) | (0,0016) | (0,0194) | (0,2666) |
| Weeks of job interruption | | -0,0001 | | -0,00993** | |
| | | (0,0001) | | (0,0047) | |
| FWW | | | -0,00095** | | 0,11390*** |
| | | | (0,0004) | | (0,0260) |
| IHS(family allowances) | | | | | -0,09527 |
| | | | | | (0,0886) |
| number of children | 0,01160*** | 0,01168*** | 0,01232*** | 0,02039*** | 0,81401*** |
| | (0,0022) | (0,0022) | (0,0023) | (0,0046) | (0,0727) |
| single | 0,01203** | 0,01194** | 0,01209** | 0,00394 | -0,81779*** |
| | (0,0050) | (0,0050) | (0,0051) | (0,0066) | (0,1191) |
| at least one child younger than 6 in HH | 0,00251 | 0,00294 | 0,00205 | 0,04285** | 4,10484*** |
| | (0,0029) | (0,0029) | (0,0030) | (0,0196) | (0,2152) |
| single & at least one child younger than 6 in HH | 0,03058** | 0,03062** | 0,02977** | 0,03474** | 0,49817 |
| | (0,0132) | (0,0131) | (0,0133) | (0,0148) | (0,6496) |
| divorce in the year | 0,12918*** | 0,12913*** | 0,12972*** | 0,12339*** | -0,64061** |
| | (0,0115) | (0,0115) | (0,0116) | (0,0122) | (0,2766) |
| death of partner in the year | 0,17315*** | 0,17314*** | 0,17191*** | 0,17080*** | -0,11539 |
| | (0,0101) | (0,0101) | (0,0101) | (0,0102) | (0,1198) |
| age | -0,75997 | -0,75992 | -0,11052 | 0,00203 | 10,69134 |
| | (18176,7144) | (18191,4947) | (6803,8584) | (8416,2277) | (342755,1798) |
| $age^2$ | -0,00005*** | -0,00005*** | -0,00005*** | -0,00005*** | -0,00026 |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0002) |
| IHS(HH yearly earnings) | -0,00128*** | -0,00128*** | -0,00140*** | -0,00164*** | -0,02198 |
| | (0,0005) | (0,0005) | (0,0005) | (0,0005) | (0,0212) |
| being dispossed in year | 0,17356*** | 0,17341*** | 0,18196*** | 0,16952*** | -1,23773 |
| | (0,0454) | (0,0454) | (0,0503) | (0,0502) | (0,7518) |
| in a financial hardship period | 0,15806*** | 0,15819*** | 0,15749*** | 0,16998*** | 1,25116*** |
| | (0,0089) | (0,0089) | (0,0091) | (0,0109) | (0,2104) |
| Working in ISCO sector | | | | | |
| 1 Agriculture, hunting, forestry, fishing | 0,00662 | 0,00645 | 0,00761 | -0,0104 | -1,83183*** |
| | (0,0142) | (0,0142) | (0,0142) | (0,0171) | (0,3738) |
| 2 Mining and quarrying | 0,03922 | 0,03919 | 0,04352 | 0,04077 | -0,27367 |
| | (0,0283) | (0,0283) | (0,0285) | (0,0276) | (0,7001) |
| 3 Manufacturing | 0,03946*** | 0,03923*** | 0,03939*** | 0,01644 | -2,32630*** |
| | (0,0074) | (0,0074) | (0,0074) | (0,0135) | (0,2715) |
| 4 Electricity, gas and water supply | 0,03831 | 0,03819 | 0,03797 | 0,0275 | -1,06292 |
| | (0,0257) | (0,0257) | (0,0258) | (0,0270) | (0,6919) |
| 5 Construction | 0,05583** | 0,05550** | 0,04805** | 0,01637 | -3,19211*** |
| | (0,0232) | (0,0232) | (0,0233) | (0,0280) | (0,4850) |
| 6 Wholesale and retail trade | 0,03387*** | 0,03355*** | 0,03609*** | 0,00447 | -3,20057*** |

| | | | | | |
|---|---|---|---|---|---|
| | (0,0078) | (0,0078) | (0,0079) | (0,0174) | (0,3135) |
| 7 Hotels and restaurants | 0,04454*** | 0,04427*** | 0,04677*** | 0,0206 | -2,65459*** |
| | (0,0135) | (0,0135) | (0,0137) | (0,0187) | (0,4371) |
| 8 Transport, storage and communication | 0,04947*** | 0,04915*** | 0,04938*** | 0,01812 | -3,16334*** |
| | (0,0169) | (0,0169) | (0,0172) | (0,0235) | (0,5070) |
| 9 Financial intermediation | 0,04924*** | 0,04884*** | 0,04885*** | 0,01033 | -3,88927*** |
| | (0,0159) | (0,0159) | (0,0162) | (0,0249) | (0,4907) |
| 10 Real estate, renting and business activities | 0,08256*** | 0,08219*** | 0,08384*** | 0,04611 | -3,79924*** |
| | (0,0279) | (0,0279) | (0,0281) | (0,0340) | (0,6502) |
| 11 Public administration and defence | 0,03070*** | 0,03032*** | 0,03336*** | -0,00252 | -3,60907*** |
| | (0,0101) | (0,0101) | (0,0101) | (0,0204) | (0,3853) |
| 12 Education | 0,04988*** | 0,04957*** | 0,05051*** | 0,02037 | -3,02921*** |
| | (0,0091) | (0,0092) | (0,0093) | (0,0179) | (0,3259) |
| 13 Health and social work | 0,02459*** | 0,02421*** | 0,02333*** | -0,01468 | -3,82384*** |
| | (0,0067) | (0,0067) | (0,0067) | (0,0198) | (0,3320) |
| 14 Other community | 0,01839*** | 0,01807** | 0,01702** | -0,01396 | -3,12721*** |
| | (0,0071) | (0,0071) | (0,0071) | (0,0170) | (0,3153) |
| illness period due to gynaecol problems | 0,10708** | 0,10704** | 0,11479*** | 0,10792** | -0,67974 |
| | (0,0422) | (0,0422) | (0,0431) | (0,0447) | (0,5902) |
| miscarriage in the year | 0,04116** | 0,04120** | 0,04527** | 0,04812** | 0,27512 |
| Being diagnosed in the past: | (0,0188) | (0,0188) | (0,0194) | (0,0206) | (0,6447) |
| cancer | 0,01576 | 0,01564 | 0,02319 | 0,01144 | -1,17884* |
| | (0,0258) | (0,0258) | (0,0273) | (0,0297) | (0,6963) |
| osteoporosis | 0,03756 | 0,03762 | 0,03292 | 0,03911 | 0,60793 |
| | (0,0235) | (0,0235) | (0,0240) | (0,0248) | (0,3937) |
| arthritis | 0,04133*** | 0,04133*** | 0,04297*** | 0,04280*** | -0,02553 |
| | (0,0097) | (0,0097) | (0,0099) | (0,0102) | (0,2650) |
| asthma | 0,01206 | 0,01205 | 0,02222 | 0,0207 | -0,14278 |
| | (0,0193) | (0,0193) | (0,0188) | (0,0191) | (0,4429) |
| other lung disease | 0,0238 | 0,02372 | 0,0174 | 0,01025 | -0,72155 |
| | (0,0241) | (0,0241) | (0,0246) | (0,0265) | (0,6406) |
| diabetes | 0,02002 | 0,02004 | 0,01992 | 0,02254 | 0,25563 |
| | (0,0253) | (0,0253) | (0,0262) | (0,0270) | (0,6106) |
| stroke | 0,01755 | 0,01736 | 0,01362 | -0,00387 | -1,76302 |
| | (0,0445) | (0,0446) | (0,0449) | (0,0497) | (1,2285) |
| high cholesterol | 0,00289 | 0,00282 | 0,00216 | -0,00523 | -0,75900* |
| | (0,0135) | (0,0135) | (0,0139) | (0,0149) | (0,4606) |
| high blood pressure | 0,01566 | 0,01567 | 0,01793* | 0,01991* | 0,20151 |
| | (0,0102) | (0,0102) | (0,0105) | (0,0107) | (0,3019) |
| heart attack | -0,00366 | -0,0037 | 0,00194 | -0,00474 | -0,69204 |
| | (0,0245) | (0,0245) | (0,0253) | (0,0258) | (0,6727) |
| N obs | 480650 | 480650 | 467787 | 467787 | 467787 |
| N individuals | 12794 | 12794 | 12628 | 12628 | 12628 |
| N country/year clusters | 961 | 961 | 774 | 774 | 774 |

**Table 2: baseline specification, happiness**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| year prior to childbirth | 0,02127*** | 0,02116*** | 0,02267*** | 0,02439*** | 0,53496*** |
| | (0,0036) | (0,0036) | (0,0037) | (0,0044) | (0,1192) |
| child birth year | 0,03917*** | 0,03779*** | 0,03985*** | 0,06021** | 6,20276*** |
| | (0,0027) | (0,0029) | (0,0027) | (0,0302) | (0,3300) |
| year after childbirth | 0,02503*** | 0,02411*** | 0,02572*** | 0,03906* | 4,06493*** |
| | (0,0020) | (0,0021) | (0,0020) | (0,0199) | (0,2666) |
| Weeks of job interruption | 0,00023 | | -0,00328 | | |
| | | (0,0002) | | (0,0048) | |
| FWW | | -0,00058 | | 0,11390*** | |
| | | | (0,0006) | | (0,0260) |
| IHS(family allowances) | | | | | -0,09527 |
| | | | | | (0,0886) |
| number of children | 0,01101*** | 0,01082*** | 0,01208*** | 0,01470*** | 0,81401*** |
| | (0,0027) | (0,0028) | (0,0028) | (0,0049) | (0,0727) |
| single | -0,15140*** | -0,15119*** | -0,15177*** | -0,15443*** | -0,81779*** |
| | (0,0065) | (0,0065) | (0,0066) | (0,0073) | (0,1191) |
| at least one child younger than 6 in HH | 0,06117*** | 0,06021*** | 0,06154*** | 0,07498*** | 4,10484*** |
| | (0,0034) | (0,0035) | (0,0035) | (0,0201) | (0,2152) |
| single & at least one child younger than 6 in HH | -0,00502 | -0,00512 | -0,00213 | -0,00053 | 0,49817 |
| | (0,0140) | (0,0140) | (0,0143) | (0,0147) | (0,6496) |
| divorce in the year | -0,04296*** | -0,04286*** | -0,04239*** | -0,04458*** | -0,64061** |
| | (0,0099) | (0,0099) | (0,0100) | (0,0104) | (0,2766) |
| death of partner in the year | 0,02362*** | 0,02365*** | 0,02413*** | 0,02375*** | -0,11539 |
| | (0,0064) | (0,0064) | (0,0064) | (0,0064) | (0,1198) |
| age | 0,35053 | 0,3503 | 0,10552 | 0,14729 | 10,69134 |
| | (25680,1464) | (25686,7573) | (10434,0458) | (10476,0860) | (342755,1798) |
| $age^2$ | -0,00004*** | -0,00004*** | -0,00004*** | -0,00004*** | -0,00026 |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0002) |
| IHS(HH yearly earnings) | 0,00107** | 0,00108** | 0,00099* | 0,00093* | -0,02198 |
| | (0,0005) | (0,0005) | (0,0005) | (0,0006) | (0,0212) |
| being dispossessed in year | -0,01508 | -0,01475 | -0,00189 | -0,00578 | -1,23773 |
| | (0,0433) | (0,0433) | (0,0499) | (0,0503) | (0,7518) |
| in a financial hardship period | -0,02788*** | -0,02817*** | -0,02932*** | -0,02526*** | 1,25116*** |
| Working in ISCO sector | (0,0070) | (0,0070) | (0,0071) | (0,0094) | (0,2104) |
| 1 Agriculture, hunting, forestry, fishing | 0,0154 | 0,01578 | 0,01318 | 0,00706 | -1,83183*** |
| | (0,0170) | (0,0170) | (0,0169) | (0,0188) | (0,3738) |
| 2 Mining and quarrying | 0,05364 | 0,0537 | 0,05654 | 0,05556 | -0,27367 |
| | (0,0537) | (0,0537) | (0,0540) | (0,0539) | (0,7001) |
| 3 Manufacturing | -0,00726 | -0,00675 | -0,00721 | -0,0149 | -2,32630*** |
| | (0,0083) | (0,0083) | (0,0084) | (0,0143) | (0,2715) |
| 4 Electricity, gas and water supply | 0,0077 | 0,00797 | 0,00195 | -0,0016 | -1,06292 |
| | (0,0323) | (0,0323) | (0,0322) | (0,0327) | (0,6919) |
| 5 Construction | -0,01504 | -0,0143 | -0,01202 | -0,02257 | -3,19211*** |
| | (0,0212) | (0,0212) | (0,0211) | (0,0261) | (0,4850) |

| | | | | | |
|---|---|---|---|---|---|
| 6 Wholesale and retail trade | 0,00149 | 0,00221 | -0,0002 | -0,01081 | -3,20057*** |
| | (0,0080) | (0,0080) | (0,0080) | (0,0175) | (0,3135) |
| 7 Hotels and restaurants | -0,00724 | -0,00663 | -0,01011 | -0,01891 | -2,65459*** |
| | (0,0145) | (0,0145) | (0,0144) | (0,0193) | (0,4371) |
| 8 Transport, storage and communication | 0,02856 | 0,02926 | 0,02421 | 0,01364 | -3,16334*** |
| | (0,0232) | (0,0232) | (0,0234) | (0,0285) | (0,5070) |
| 9 Financial intermediation | 0,00447 | 0,00537 | 0,00264 | -0,01026 | -3,88927*** |
| | (0,0171) | (0,0171) | (0,0173) | (0,0257) | (0,4907) |
| 10 Real estate, renting and business activities | 0,03982 | 0,04064 | 0,04316 | 0,03068 | -3,79924*** |
| | (0,0313) | (0,0313) | (0,0318) | (0,0359) | (0,6502) |
| 11 Public administration and defense | 0,01873 | 0,01958* | 0,01784 | 0,00603 | -3,60907*** |
| | (0,0119) | (0,0119) | (0,0120) | (0,0213) | (0,3853) |
| 12 Education | -0,00002 | 0,00066 | 0,00188 | -0,00808 | -3,02921*** |
| | (0,0103) | (0,0104) | (0,0104) | (0,0180) | (0,3259) |
| 13 Health and social work | -0,00032 | 0,00054 | 0,00009 | -0,0125 | -3,82384*** |
| | (0,0078) | (0,0078) | (0,0078) | (0,0200) | (0,3320) |
| 14 Other community | 0,00527 | 0,00598 | 0,00536 | -0,00493 | -3,12721*** |
| | (0,0080) | (0,0080) | (0,0080) | (0,0167) | (0,3153) |
| illness period due to gynecol problems | -0,02142 | -0,02133 | -0,02216 | -0,02425 | -0,67974 |
| | (0,0384) | (0,0384) | (0,0392) | (0,0396) | (0,5902) |
| miscarriage in the year | 0,00043 | 0,00032 | -0,00186 | -0,00101 | 0,27512 |
| Being diagnosed in the past: | (0,0157) | (0,0156) | (0,0156) | (0,0161) | (0,6447) |
| cancer | 0,04051 | 0,04075 | 0,04593 | 0,04196 | -1,17884* |
| | (0,0296) | (0,0296) | (0,0309) | (0,0317) | (0,6963) |
| osteoporosis | -0,0188 | -0,01893 | -0,01923 | -0,01722 | 0,60793 |
| | (0,0252) | (0,0252) | (0,0254) | (0,0255) | (0,3937) |
| arthritis | -0,01605 | -0,01606 | -0,01729 | -0,01748 | -0,02553 |
| | (0,0120) | (0,0120) | (0,0123) | (0,0123) | (0,2650) |
| asthma | -0,03196 | -0,03193 | -0,02984 | -0,03025 | -0,14278 |
| | (0,0205) | (0,0205) | (0,0211) | (0,0211) | (0,4429) |
| other lung disease | -0,00411 | -0,00394 | -0,00591 | -0,00837 | -0,72155 |
| | (0,0243) | (0,0242) | (0,0248) | (0,0254) | (0,6406) |
| diabetes | 0,00746 | 0,00743 | 0,00391 | 0,00474 | 0,25563 |
| | (0,0281) | (0,0281) | (0,0288) | (0,0290) | (0,6106) |
| stroke | 0,04735 | 0,04777 | 0,04534 | 0,03949 | -1,76302 |
| | (0,0424) | (0,0424) | (0,0428) | (0,0449) | (1,2285) |
| high cholesterol | -0,02626 | -0,0261 | -0,02149 | -0,02407 | -0,75900* |
| | (0,0243) | (0,0243) | (0,0248) | (0,0255) | (0,4606) |
| high blood pressure | -0,01247 | -0,0125 | -0,0122 | -0,01153 | 0,20151 |
| | (0,0126) | (0,0126) | (0,0131) | (0,0132) | (0,3019) |
| heart attack | 0,03095 | 0,03104 | 0,04518* | 0,04274 | -0,69204 |
| | (0,0268) | (0,0268) | (0,0260) | (0,0266) | (0,6727) |
| N obs | 480650 | 480650 | 467787 | 467787 | 467787 |
| N individuals | 12794 | 12794 | 12628 | 12628 | 12628 |
| N country/year clusters | 961 | 961 | 774 | 774 | 774 |

**Table 3: baseline specification, stress and happiness**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| year prior to childbirth | 0,00079 | 0,00079 | 0,00097 | 0,00095 | 0,53496*** |
| | (0,0013) | (0,0013) | (0,0014) | (0,0017) | (0,1192) |
| child birth year | 0,00495*** | 0,00492*** | 0,00484*** | 0,00452 | 6,20276*** |
| | (0,0012) | (0,0013) | (0,0012) | (0,0113) | (0,3300) |
| year after childbirth | 0,00266*** | 0,00264*** | 0,00280*** | 0,00259 | 4,06493*** |
| | (0,0009) | (0,0010) | (0,0010) | (0,0075) | (0,2666) |
| Weeks of job interruption | 0,00001 | | 0,00005 | | |
| | | (0,0001) | | (0,0018) | |
| FWW | | 0 | | 0,11390*** | |
| | | | (0,0002) | | (0,0260) |
| IHS(family allowances) | | | | | -0,09527 |
| | | | | | (0,0886) |
| number of children | 0,00452*** | 0,00452*** | 0,00476*** | 0,00472** | 0,81401*** |
| | (0,0010) | (0,0010) | (0,0011) | (0,0019) | (0,0727) |
| single | -0,01009*** | -0,01008*** | -0,01026*** | -0,01022*** | -0,81779*** |
| | (0,0020) | (0,0020) | (0,0020) | (0,0025) | (0,1191) |
| at least one child younger than 6 in HH | 0,00132 | 0,00129 | 0,00108 | 0,00086 | 4,10484*** |
| | (0,0014) | (0,0014) | (0,0015) | (0,0077) | (0,2152) |
| single & at least one child younger than 6 in HH | -0,00058 | -0,00059 | -0,0001 | -0,00013 | 0,49817 |
| | (0,0064) | (0,0064) | (0,0066) | (0,0066) | (0,6496) |
| divorce in the year | 0,02516*** | 0,02516*** | 0,02489*** | 0,02492*** | -0,64061** |
| | (0,0066) | (0,0066) | (0,0067) | (0,0068) | (0,2766) |
| death of partner in the year | 0,08985*** | 0,08985*** | 0,09066*** | 0,09067*** | -0,11539 |
| | (0,0071) | (0,0071) | (0,0072) | (0,0072) | (0,1198) |
| age | 0,13027 | 0,1302 | 0,02042 | 0,01983 | 10,69134 |
| | (7185,3506) | (7184,5093) | (3186,2741) | (3178,7794) | (342755,1798) |
| $age^2$ | -0,00001*** | -0,00001*** | -0,00001*** | -0,00001*** | -0,00026 |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0002) |
| IHS(HH yearly earnings) | -0,00026 | -0,00026 | -0,00027 | -0,00027 | -0,02198 |
| | (0,0002) | (0,0002) | (0,0002) | (0,0002) | (0,0212) |
| being dispossessed in year | 0,04731* | 0,04731* | 0,03716 | 0,03723 | -1,23773 |
| | (0,0281) | (0,0281) | (0,0292) | (0,0293) | (0,7518) |
| in a financial hardship period | 0,03568*** | 0,03567*** | 0,03624*** | 0,03618*** | 1,25116*** |
| Working in ISCO sector | (0,0043) | (0,0043) | (0,0045) | (0,0049) | (0,2104) |
| 1 Agriculture, hunting, forestry, fishing | 0,01950** | 0,01951** | 0,01932** | 0,01941** | -1,83183*** |
| | (0,0091) | (0,0091) | (0,0091) | (0,0096) | (0,3738) |
| 2 Mining and quarrying | 0,0221 | 0,0221 | 0,02329 | 0,02331 | -0,27367 |
| | (0,0148) | (0,0148) | (0,0150) | (0,0150) | (0,7001) |
| 3 Manufacturing | 0,01009*** | 0,01010*** | 0,01013*** | 0,01025* | -2,32630*** |
| | (0,0037) | (0,0037) | (0,0038) | (0,0056) | (0,2715) |
| 4 Electricity, gas and water supply | 0,01428 | 0,01429 | 0,01468 | 0,01474 | -1,06292 |
| | (0,0098) | (0,0098) | (0,0100) | (0,0103) | (0,6919) |
| 5 Construction | 0,01184 | 0,01186 | 0,00959 | 0,00975 | -3,19211*** |

| | | | | | |
|---|---|---|---|---|---|
| | (0,0094) | (0,0094) | (0,0087) | (0,0106) | (0,4850) |
| 6 Wholesale and retail trade | 0,01003** | 0,01004** | 0,01000** | 0,01016 | -3,20057*** |
| | (0,0041) | (0,0041) | (0,0042) | (0,0070) | (0,3135) |
| 7 Hotels and restaurants | 0,01123* | 0,01125* | 0,01061 | 0,01074 | -2,65459*** |
| | (0,0066) | (0,0066) | (0,0066) | (0,0084) | (0,4371) |
| 8 Transport, storage and communication | 0,01072 | 0,01073 | 0,0101 | 0,01026 | -3,16334*** |
| | (0,0094) | (0,0095) | (0,0096) | (0,0112) | (0,5070) |
| 9 Financial intermediation | 0,01443* | 0,01446* | 0,01532* | 0,01552 | -3,88927*** |
| | (0,0078) | (0,0078) | (0,0081) | (0,0104) | (0,4907) |
| 10 Real estate, renting and business activities | 0,01441 | 0,01443 | 0,01457 | 0,01477 | -3,79924*** |
| | (0,0097) | (0,0097) | (0,0100) | (0,0119) | (0,6502) |
| 11 Public administration and defense | 0,00591 | 0,00593 | 0,0063 | 0,00649 | -3,60907*** |
| | (0,0048) | (0,0048) | (0,0049) | (0,0087) | (0,3853) |
| 12 Education | 0,01511*** | 0,01512*** | 0,01567*** | 0,01583** | -3,02921*** |
| | (0,0046) | (0,0046) | (0,0047) | (0,0075) | (0,3259) |
| 13 Health and social work | 0,00416 | 0,00419 | 0,0043 | 0,0045 | -3,82384*** |
| | (0,0032) | (0,0032) | (0,0033) | (0,0076) | (0,3320) |
| 14 Other community | 0,00658 | 0,0066 | 0,00652 | 0,00668 | -3,12721*** |
| | (0,0040) | (0,0040) | (0,0040) | (0,0069) | (0,3153) |
| illness period due to gynaecol problems | 0,02168 | 0,02169 | 0,02679 | 0,02682 | -0,67974 |
| | (0,0179) | (0,0179) | (0,0177) | (0,0177) | (0,5902) |
| miscarriage in the year | 0,01014 | 0,01014 | 0,01137 | 0,01135 | 0,27512 |
| Being diagnosed in the past: | (0,0078) | (0,0078) | (0,0081) | (0,0081) | (0,6447) |
| cancer | -0,00787 | -0,00786 | -0,00856 | -0,0085 | -1,17884* |
| | (0,0050) | (0,0050) | (0,0054) | (0,0057) | (0,6963) |
| osteoporosis | -0,01420* | -0,01421* | -0,01480* | -0,01483* | 0,60793 |
| | (0,0075) | (0,0075) | (0,0078) | (0,0079) | (0,3937) |
| arthritis | 0,00894* | 0,00894* | 0,00893* | 0,00893* | -0,02553 |
| | (0,0046) | (0,0046) | (0,0047) | (0,0047) | (0,2650) |
| asthma | 0,00633 | 0,00633 | 0,00761 | 0,00761 | -0,14278 |
| | (0,0090) | (0,0090) | (0,0094) | (0,0094) | (0,4429) |
| other lung disease | 0,00484 | 0,00484 | 0,00491 | 0,00495 | -0,72155 |
| | (0,0110) | (0,0110) | (0,0114) | (0,0114) | (0,6406) |
| diabetes | 0,01076 | 0,01076 | 0,00993 | 0,00992 | 0,25563 |
| | (0,0107) | (0,0107) | (0,0108) | (0,0108) | (0,6106) |
| stroke | -0,00819 | -0,00818 | -0,0089 | -0,00881 | -1,76302 |
| | (0,0059) | (0,0059) | (0,0060) | (0,0068) | (1,2285) |
| high cholesterol | 0,00331 | 0,00331 | 0,00377 | 0,00381 | -0,75900* |
| | (0,0066) | (0,0066) | (0,0069) | (0,0070) | (0,4606) |
| high blood pressure | 0,01077* | 0,01077* | 0,01090* | 0,01089* | 0,20151 |
| | (0,0056) | (0,0056) | (0,0058) | (0,0059) | (0,3019) |
| heart attack | -0,00439 | -0,00438 | 0,00137 | 0,0014 | -0,69204 |
| | (0,0145) | (0,0145) | (0,0145) | (0,0146) | (0,6727) |
| N obs | 480650 | 480650 | 467787 | 467787 | 467787 |
| N individuals | 12794 | 12794 | 12628 | 12628 | 12628 |
| N country/year clusters | 961 | 961 | 774 | 774 | 774 |

## Table 4: in maternity indicator

| | stress | | happiness | | stress&happy | |
|---|---|---|---|---|---|---|
| | FE | IVFE | FE | IVFE | FE | IVFE |
| year prior to chldbirth | -0,00229 | 0,00183 | 0,02116*** | 0,02414*** | 0,00079 | 0,00095 |
| | (0,0025) | (0,0033) | (0,0037) | (0,0041) | (0,0013) | (0,0016) |
| child birth year | 0,00575** | 0,08536** | 0,03689*** | 0,07034* | 0,00495*** | 0,00445 |
| | (0,0023) | (0,0377) | (0,0031) | (0,0410) | (0,0014) | (0,0155) |
| year after childbirth | 0,00501*** | 0,03618** | 0,02412*** | 0,03764** | 0,00266*** | 0,00265 |
| | (0,0016) | (0,0149) | (0,0021) | (0,0162) | (0,0010) | (0,0061) |
| dummy in maternity leave | -0,0046 | -0,42152** | 0,01216 | -0,158 | -0,00001 | 0,00202 |
| | (0,0062) | (0,1932) | (0,0075) | (0,2114) | (0,0030) | (0,0804) |
| number of children | 0,01167*** | 0,01922*** | 0,01081*** | 0,01463*** | 0,00452*** | 0,00473*** |
| | (0,0022) | (0,0040) | (0,0028) | (0,0045) | (0,0010) | (0,0018) |
| single | 0,01195** | 0,00526 | -0,15118*** | -0,15430*** | -0,01009*** | -0,01023*** |
| | (0,0050) | (0,0061) | (0,0065) | (0,0071) | (0,0020) | (0,0024) |
| at least one child younger than 6 in HH | 0,00289 | 0,03594** | 0,06017*** | 0,07422*** | 0,00132 | 0,00091 |
| | (0,0029) | (0,0160) | (0,0034) | (0,0172) | (0,0014) | (0,0066) |
| single & at least one child younger than 6 in HH | 0,03063** | 0,03470** | -0,00515 | -0,00032 | -0,00058 | -0,00013 |
| | (0,0131) | (0,0145) | (0,0140) | (0,0147) | (0,0064) | (0,0066) |
| divorce in the year | 0,12913*** | 0,12397*** | -0,04284*** | -0,04463*** | 0,02516*** | 0,02492*** |
| | (0,0115) | (0,0121) | (0,0099) | (0,0103) | (0,0066) | (0,0068) |
| death of partner in the year | 0,17314*** | 0,17085*** | 0,02366*** | 0,02372*** | 0,08985*** | 0,09067*** |
| | (0,0101) | (0,0101) | (0,0064) | (0,0064) | (0,0071) | (0,0072) |
| age | -0,76016 | -0,02834 | 0,35089 | 0,14018 | 0,13021 | 0,02002 |
| | (18189,0838) | (8002,6559) | (25684,9864) | (10503,7063) | (7185,3971) | (3180,7237) |
| $age^2$ | -0,00005*** | -0,00005*** | -0,00004*** | -0,00004*** | -0,00001*** | -0,00001*** |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) |
| IHS(HH yearly earnings) | -0,00128*** | -0,00161*** | 0,00109** | 0,00093* | -0,00026 | -0,00027 |
| | (0,0005) | (0,0005) | (0,0005) | (0,0006) | (0,0002) | (0,0002) |
| being dispossessed in year | 0,17341*** | 0,17023*** | -0,01469 | -0,0061 | 0,04731* | 0,03722 |
| | (0,0454) | (0,0504) | (0,0433) | (0,0503) | (0,0281) | (0,0293) |
| in a financial hardship period | 0,15817*** | 0,16732*** | -0,02817*** | -0,02569*** | 0,03568*** | 0,03620*** |
| Working in ISCO sector | (0,0089) | (0,0102) | (0,0070) | (0,0087) | (0,0043) | (0,0047) |
| 1 Agriculture, hunting, forestry, fishing | 0,0065 | -0,00452 | 0,01571 | 0,00849 | 0,01950** | 0,01938** |
| | (0,0142) | (0,0156) | (0,0170) | (0,0178) | (0,0091) | (0,0093) |
| 2 Mining and quarrying | 0,03923 | 0,04434 | 0,05361 | 0,05679 | 0,0221 | 0,02329 |
| | (0,0283) | (0,0274) | (0,0537) | (0,0537) | (0,0148) | (0,0150) |
| 3 Manufacturing | 0,03930*** | 0,02362** | -0,00682 | -0,01322 | 0,01009*** | 0,01021** |
| | (0,0074) | (0,0107) | (0,0083) | (0,0118) | (0,0037) | (0,0048) |
| 4 Electricity, gas and water supply | 0,03822 | 0,03108 | 0,00793 | -0,00071 | 0,01428 | 0,01471 |
| | (0,0257) | (0,0264) | (0,0323) | (0,0326) | (0,0098) | (0,0101) |
| 5 Construction | 0,05557** | 0,02465 | -0,01436 | -0,02087 | 0,01184 | 0,0097 |
| | (0,0232) | (0,0257) | (0,0212) | (0,0241) | (0,0094) | (0,0099) |
| 6 Wholesale and retail trade | 0,03362*** | 0,01284 | 0,00215 | -0,00906 | 0,01003** | 0,01011* |
| | (0,0078) | (0,0137) | (0,0080) | (0,0142) | (0,0041) | (0,0059) |
| 7 Hotels and restaurants | 0,04433*** | 0,02780* | -0,00669 | -0,01736 | 0,01123* | 0,0107 |
| | (0,0135) | (0,0164) | (0,0145) | (0,0174) | (0,0066) | (0,0077) |
| 8 Transport, storage and communication | 0,04923*** | 0,02652 | 0,02919 | 0,01543 | 0,01072 | 0,0102 |
| | (0,0169) | (0,0207) | (0,0232) | (0,0265) | (0,0094) | (0,0105) |
| 9 Financial intermediation | 0,04892*** | 0,01988 | 0,00531 | -0,00838 | 0,01443* | 0,01546 |
| | (0,0159) | (0,0214) | (0,0171) | (0,0227) | (0,0078) | (0,0095) |
| 10 Real estate, renting and business activities | 0,08228*** | 0,05665* | 0,04056 | 0,03295 | 0,01441 | 0,0147 |
| | (0,0279) | (0,0312) | (0,0313) | (0,0339) | (0,0097) | (0,0111) |
| 11 Public administration and defence | 0,03040*** | 0,00652 | 0,01953 | 0,00781 | 0,00591 | 0,00643 |
| | (0,0101) | (0,0165) | (0,0119) | (0,0181) | (0,0048) | (0,0075) |
| 12 Education | 0,04964*** | 0,02843** | 0,0006 | -0,0064 | 0,01511*** | 0,01578** |
| | (0,0092) | (0,0145) | (0,0104) | (0,0151) | (0,0046) | (0,0065) |
| 13 Health and social work | 0,02429*** | -0,0053 | 0,00049 | -0,01068 | 0,00416 | 0,00444 |
| | (0,0067) | (0,0153) | (0,0078) | (0,0163) | (0,0032) | (0,0062) |
| 14 Other community | 0,01814** | -0,0058 | 0,00592 | -0,00324 | 0,00658 | 0,00663 |
| | (0,0071) | (0,0133) | (0,0080) | (0,0136) | (0,0040) | (0,0059) |
| illness period due to gynaecol problems | 0,10705** | 0,11051** | -0,02136 | -0,02362 | 0,02168 | 0,02681 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0,0422) | (0,0444) | (0,0384) | (0,0394) | (0,0179) | (0,0177) |
| miscarriage in the year | 0,04124** | 0,05151** | 0,0002 | 0,0004 | 0,01014 | 0,01134 |
| Being diagnosed in the past: | (0,0188) | (0,0204) | (0,0156) | (0,0162) | (0,0078) | (0,0082) |
| cancer | 0,01565 | 0,01289 | 0,04078 | 0,042 | -0,00787 | -0,00851 |
| | (0,0258) | (0,0289) | (0,0296) | (0,0316) | (0,0050) | (0,0057) |
| osteoporosis | 0,03761 | 0,03734 | -0,01892 | -0,0176 | -0,01420* | -0,01482* |
| | (0,0235) | (0,0247) | (0,0252) | (0,0255) | (0,0075) | (0,0079) |
| arthritis | 0,04133*** | 0,04283*** | -0,01606 | -0,01746 | 0,00894* | 0,00893* |
| | (0,0097) | (0,0101) | (0,0120) | (0,0123) | (0,0046) | (0,0047) |
| asthma | 0,01205 | 0,0213 | -0,03194 | -0,03011 | 0,00633 | 0,00761 |
| | (0,0193) | (0,0189) | (0,0205) | (0,0211) | (0,0090) | (0,0094) |
| other lung disease | 0,02373 | 0,01149 | -0,00394 | -0,00821 | 0,00484 | 0,00494 |
| | (0,0241) | (0,0261) | (0,0242) | (0,0253) | (0,0110) | (0,0114) |
| diabetes | 0,02003 | 0,02208 | 0,00743 | 0,00469 | 0,01076 | 0,00992 |
| | (0,0253) | (0,0267) | (0,0281) | (0,0290) | (0,0107) | (0,0108) |
| stroke | 0,01738 | -0,00102 | 0,04779 | 0,03979 | -0,00819 | -0,00883 |
| | (0,0446) | (0,0486) | (0,0424) | (0,0445) | (0,0059) | (0,0066) |
| high cholesterol | 0,00283 | -0,00376 | -0,0261 | -0,02382 | 0,00331 | 0,0038 |
| | (0,0135) | (0,0145) | (0,0243) | (0,0254) | (0,0066) | (0,0070) |
| high blood pressure | 0,01567 | 0,01946* | -0,0125 | -0,01161 | 0,01077* | 0,01090* |
| | (0,0102) | (0,0106) | (0,0126) | (0,0132) | (0,0056) | (0,0059) |
| heart attack | -0,0037 | -0,00432 | 0,03106 | 0,04263 | -0,00439 | 0,0014 |
| | (0,0245) | (0,0255) | (0,0268) | (0,0266) | (0,0145) | (0,0146) |
| N obs | 480527 | 467669 | 480527 | 467669 | 480527 | 467669 |
| N individuals | 12794 | 12627 | 12794 | 12627 | 12794 | 12627 |
| N country/year clusters | 961 | 774 | 961 | 774 | 961 | 774 |

**Table 5: Only women who had at least one child**

| | stress | | happiness | | stress&happy | |
|---|---|---|---|---|---|---|
| | **FE** | **IVFE** | **FE** | **IVFE** | **FE** | **IVFE** |
| | col2s | col3ivs | col2h | col3ivh | col2hs | col3hs |
| | b/se | b/se | b/se | b/se | b/se | b/se |
| year prior to childbirth | -0,00167 | 0,0041 | 0,02357*** | 0,02657*** | 0,00157 | 0,0018 |
| | (0,0026) | (0,0039) | (0,0036) | (0,0045) | (0,0014) | (0,0018) |
| child birth year | 0,00572*** | 0,06259** | 0,03858*** | 0,06229** | 0,00514*** | 0,00608 |
| | (0,0022) | (0,0287) | (0,0029) | (0,0299) | (0,0013) | (0,0112) |
| year after childbirth | 0,00518*** | 0,04249** | 0,02464*** | 0,04037** | 0,00277*** | 0,00358 |
| | (0,0016) | (0,0188) | (0,0021) | (0,0196) | (0,0010) | (0,0073) |
| Weeks of job interruption | -0,00011 | -0,00940** | 0,00024 | -0,00349 | 0,00001 | -0,00017 |
| | (0,0001) | (0,0046) | (0,0002) | (0,0048) | (0,0001) | (0,0018) |
| number of children | 0,01236*** | 0,02178*** | 0,01205*** | 0,01598*** | 0,00525*** | 0,00561*** |
| | (0,0024) | (0,0050) | (0,0028) | (0,0054) | (0,0011) | (0,0021) |
| single | 0,01318** | 0,00426 | -0,14421*** | -0,14906*** | -0,00807*** | -0,00853*** |
| | (0,0056) | (0,0075) | (0,0069) | (0,0080) | (0,0022) | (0,0028) |
| at least one child younger than 6 in HH | 0,00246 | 0,03850** | 0,06159*** | 0,07672*** | 0,00111 | 0,00151 |
| | (0,0030) | (0,0184) | (0,0036) | (0,0191) | (0,0014) | (0,0072) |
| single & at least one child younger than 6 in HH | 0,02985** | 0,03483** | -0,0093 | -0,00363 | -0,00173 | -0,00106 |
| | (0,0132) | (0,0148) | (0,0139) | (0,0148) | (0,0064) | (0,0066) |
| divorce in the year | 0,13340*** | 0,12763*** | -0,03960*** | -0,04131*** | 0,02467*** | 0,02426*** |
| | (0,0122) | (0,0130) | (0,0103) | (0,0110) | (0,0070) | (0,0073) |
| death of partner in the year | 0,16891*** | 0,16618*** | 0,02255*** | 0,02262*** | 0,08441*** | 0,08516*** |
| | (0,0104) | (0,0105) | (0,0066) | (0,0067) | (0,0071) | (0,0071) |
| age | 0,25297 | -0,59041 | -0,14508 | -0,15367 | 0,25041 | -0,06604 |
| | (13714,6899) | (8002,3030) | (19334,3526) | (12608,8433) | (5277,7396) | (3449,0028) |
| $age^2$ | -0,00005*** | -0,00005*** | -0,00004*** | -0,00004*** | -0,00001*** | -0,00001*** |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) |
| IHS(HH yearly earnings) | -0,00103** | -0,00139** | 0,00113** | 0,00096 | -0,0001 | -0,00011 |
| | (0,0005) | (0,0006) | (0,0006) | (0,0006) | (0,0003) | (0,0003) |
| being dispossessed in year | 0,17780*** | 0,16966*** | -0,01853 | -0,00781 | 0,05206* | 0,04027 |
| | (0,0471) | (0,0517) | (0,0433) | (0,0510) | (0,0301) | (0,0312) |
| in a financial hardship period | 0,16144*** | 0,17331*** | -0,02750*** | -0,02437** | 0,03784*** | 0,03860*** |
| Working in ISCO sector | (0,0093) | (0,0115) | (0,0073) | (0,0101) | (0,0046) | (0,0052) |
| 1 Agriculture, hunting, forestry, fishing | 0,00186 | -0,01539 | 0,02439 | 0,01468 | 0,02031** | 0,01981** |
| | (0,0147) | (0,0178) | (0,0175) | (0,0195) | (0,0093) | (0,0100) |
| 2 Mining and quarrying | 0,04343 | 0,04398 | 0,0494 | 0,05181 | 0,02462 | 0,02563 |
| | (0,0300) | (0,0292) | (0,0565) | (0,0568) | (0,0158) | (0,0160) |
| 3 Manufacturing | 0,03807*** | 0,01468 | -0,00461 | -0,01374 | 0,00997** | 0,00958 |
| | (0,0079) | (0,0144) | (0,0089) | (0,0154) | (0,0040) | (0,0061) |
| 4 Electricity, gas and water supply | 0,01972 | 0,01119 | 0,02366 | 0,01118 | 0,00773 | 0,00765 |
| | (0,0297) | (0,0311) | (0,0384) | (0,0388) | (0,0079) | (0,0083) |
| 5 Construction | 0,05029** | 0,01092 | -0,02085 | -0,02737 | 0,0036 | 0,00376 |
| | (0,0255) | (0,0308) | (0,0223) | (0,0280) | (0,0094) | (0,0118) |
| 6 Wholesale and retail trade | 0,03226*** | 0,00179 | 0,005 | -0,01051 | 0,01091** | 0,01026 |
| | (0,0083) | (0,0187) | (0,0085) | (0,0190) | (0,0045) | (0,0076) |
| 7 Hotels and restaurants | 0,03906*** | 0,01479 | -0,00594 | -0,01997 | 0,00905 | 0,0078 |
| | (0,0144) | (0,0197) | (0,0156) | (0,0207) | (0,0070) | (0,0090) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 Transport, storage and communication | 0,06309*** | 0,02934 | 0,02209 | 0,00254 | 0,01479 | 0,01347 |
| | (0,0182) | (0,0260) | (0,0251) | (0,0314) | (0,0111) | (0,0131) |
| 9 Financial intermediation | 0,04844*** | 0,00658 | -0,00688 | -0,02619 | 0,00911 | 0,00927 |
| | (0,0163) | (0,0265) | (0,0177) | (0,0281) | (0,0077) | (0,0112) |
| 10 Real estate, renting and business activities | 0,06969** | 0,03077 | 0,04518 | 0,03284 | 0,00863 | 0,00794 |
| | (0,0302) | (0,0368) | (0,0336) | (0,0389) | (0,0102) | (0,0128) |
| 11 Public administration and defence | 0,02783*** | -0,00982 | 0,021 | 0,00527 | 0,00757 | 0,00713 |
| | (0,0107) | (0,0224) | (0,0128) | (0,0239) | (0,0053) | (0,0096) |
| 12 Education | 0,05140*** | 0,02034 | 0,00274 | -0,00817 | 0,01499*** | 0,01506* |
| | (0,0099) | (0,0195) | (0,0111) | (0,0199) | (0,0050) | (0,0082) |
| 13 Health and social work | 0,02027*** | -0,02036 | 0,00218 | -0,01314 | 0,00461 | 0,00403 |
| | (0,0070) | (0,0213) | (0,0084) | (0,0220) | (0,0035) | (0,0083) |
| 14 Other community | 0,01489* | -0,01897 | 0,00614 | -0,00682 | 0,00346 | 0,00263 |
| | (0,0077) | (0,0185) | (0,0085) | (0,0184) | (0,0042) | (0,0074) |
| illness period due to gynaecol problems | 0,10882** | 0,10975** | -0,0024 | -0,00607 | 0,02592 | 0,03163 |
| | (0,0468) | (0,0495) | (0,0407) | (0,0419) | (0,0206) | (0,0204) |
| miscarriage in the year | 0,03581* | 0,04276** | -0,00358 | -0,00508 | 0,00723 | 0,00853 |
| Being diagnosed in the past: | (0,0183) | (0,0201) | (0,0163) | (0,0168) | (0,0078) | (0,0081) |
| cancer | 0,02396 | 0,01906 | 0,05990* | 0,05961 | -0,00746 | -0,00845 |
| | (0,0307) | (0,0353) | (0,0342) | (0,0369) | (0,0059) | (0,0068) |
| osteoporosis | 0,03306 | 0,03385 | -0,01171 | -0,01158 | -0,01536* | -0,01620* |
| | (0,0256) | (0,0270) | (0,0230) | (0,0242) | (0,0081) | (0,0086) |
| arthritis | 0,04195*** | 0,04330*** | -0,01918 | -0,02003 | 0,00716 | 0,007 |
| | (0,0104) | (0,0110) | (0,0128) | (0,0132) | (0,0048) | (0,0049) |
| asthma | 0,0118 | 0,01467 | -0,02953 | -0,02948 | 0,00434 | 0,00544 |
| | (0,0197) | (0,0203) | (0,0217) | (0,0225) | (0,0087) | (0,0091) |
| other lung disease | 0,02903 | 0,01609 | 0,01431 | 0,00913 | 0,00696 | 0,00697 |
| | (0,0270) | (0,0299) | (0,0255) | (0,0272) | (0,0125) | (0,0131) |
| diabetes | 0,02343 | 0,02478 | 0,01506 | 0,00998 | 0,01318 | 0,01226 |
| | (0,0275) | (0,0295) | (0,0284) | (0,0294) | (0,0118) | (0,0119) |
| stroke | 0,02834 | 0,00386 | 0,02954 | 0,01804 | -0,00942 | -0,01058 |
| | (0,0544) | (0,0605) | (0,0479) | (0,0509) | (0,0071) | (0,0082) |
| high cholesterol | -0,0002 | -0,00955 | -0,01463 | -0,01251 | 0,00555 | 0,00594 |
| | (0,0144) | (0,0160) | (0,0263) | (0,0276) | (0,0076) | (0,0081) |
| high blood pressure | 0,02076* | 0,02597** | -0,0166 | -0,01629 | 0,01220** | 0,01243* |
| | (0,0108) | (0,0113) | (0,0132) | (0,0139) | (0,0061) | (0,0063) |
| heart attack | -0,00539 | -0,0056 | 0,02565 | 0,03875 | -0,00847 | -0,00217 |
| | (0,0271) | (0,0286) | (0,0293) | (0,0292) | (0,0154) | (0,0154) |
| N obs | 427873 | 416011 | 427873 | 416011 | 427873 | 416011 |
| N individuals | 11296 | 11154 | 11296 | 11154 | 11296 | 11154 |
| N country/year clusters | 942 | 765 | 942 | 765 | 942 | 765 |

* p<0.10, ** p<0.05, *** p<0.01

**Table 6: Only women with no children when they enter the sample**

| | stress | | happiness | | stress&happy | |
|---|---|---|---|---|---|---|
| | **FE** | **IVFE** | **FE** | **IVFE** | **FE** | **IVFE** |
| year prior to childbirth | -0,00295 | 0,00099 | 0,01950*** | 0,02527*** | 0,00015 | 0,00103 |
| | (0,0026) | (0,0040) | (0,0039) | (0,0050) | (0,0014) | (0,0018) |
| child birth year | 0,00590** | 0,08237 | 0,03982*** | 0,12019* | 0,00487*** | 0,01752 |
| | (0,0023) | (0,0519) | (0,0031) | (0,0633) | (0,0014) | (0,0209) |
| year after childbirth | 0,00555*** | 0,05657 | 0,02495*** | 0,07838* | 0,00240** | 0,01104 |
| | (0,0018) | (0,0344) | (0,0023) | (0,0420) | (0,0010) | (0,0139) |
| Weeks of job interruption | -0,00011 | -0,01156 | 0,0002 | -0,01166 | 0,00002 | -0,00189 |
| | (0,0002) | (0,0076) | (0,0002) | (0,0093) | (0,0001) | (0,0031) |
| number of children | 0,01142*** | 0,02003*** | 0,00956*** | 0,01924*** | 0,00448*** | 0,00612** |
| | (0,0023) | (0,0060) | (0,0030) | (0,0073) | (0,0011) | (0,0025) |
| single | 0,00901* | 0,00078 | -0,14416*** | -0,15276*** | -0,01143*** | -0,01296*** |
| | (0,0053) | (0,0079) | (0,0072) | (0,0098) | (0,0021) | (0,0031) |
| at least one child younger than 6 in HH | 0,00158 | 0,04883 | 0,06490*** | 0,11523*** | 0,00059 | 0,00847 |
| | (0,0033) | (0,0322) | (0,0039) | (0,0390) | (0,0016) | (0,0130) |
| single & at least one child younger than 6 in HH | 0,03821*** | 0,04086** | -0,00264 | 0,0055 | 0,00132 | 0,00241 |
| | (0,0142) | (0,0164) | (0,0155) | (0,0186) | (0,0072) | (0,0075) |
| divorce in the year | 0,12539*** | 0,11808*** | -0,04222*** | -0,05007*** | 0,02093*** | 0,01917*** |
| | (0,0120) | (0,0138) | (0,0103) | (0,0127) | (0,0066) | (0,0071) |
| death of partner in the year | 0,22800*** | 0,22626*** | 0,02931*** | 0,03006*** | 0,12089*** | 0,12190*** |
| | (0,0157) | (0,0161) | (0,0102) | (0,0106) | (0,0117) | (0,0119) |
| age | -0,47286 | -3973,26989 | -0,70001 | 777,91596 | -0,05887 | -32,56363 |
| | (28212,4533) | (691550,0380) | (50502,5907) | (865911,5505) | (14930,7753) | (316243,8930) |
| $age^2$ | -0,00005*** | -0,00006*** | -0,00005*** | -0,00006*** | -0,00001*** | -0,00001** |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) |
| IHS(HH yearly earnings) | -0,00155*** | -0,00155** | 0,00101 | 0,00097 | -0,00026 | -0,00028 |
| | (0,0005) | (0,0006) | (0,0006) | (0,0007) | (0,0003) | (0,0003) |
| being dispossessed in year | 0,18458*** | 0,17772*** | -0,0385 | -0,04911 | 0,04054 | 0,02475 |
| | (0,0507) | (0,0586) | (0,0447) | (0,0540) | (0,0300) | (0,0302) |
| in a financial hardship period | 0,15756*** | 0,16927*** | -0,03327*** | -0,02125 | 0,03593*** | 0,03858*** |
| Working in ISCO sector | (0,0097) | (0,0128) | (0,0078) | (0,0132) | (0,0047) | (0,0056) |
| 1 Agriculture, hunting, forestry, fishing | 0,01459 | -0,00927 | 0,01863 | -0,00936 | 0,02420** | 0,02003 |
| | (0,0154) | (0,0231) | (0,0188) | (0,0274) | (0,0106) | (0,0125) |
| 2 Mining and quarrying | 0,04142 | 0,03779 | 0,04361 | 0,03886 | 0,02066 | 0,02075 |
| | (0,0324) | (0,0320) | (0,0597) | (0,0608) | (0,0170) | (0,0173) |
| 3 Manufacturing | 0,03342*** | 0,00427 | -0,00482 | -0,03474 | 0,00894** | 0,0043 |
| | (0,0075) | (0,0211) | (0,0087) | (0,0258) | (0,0039) | (0,0088) |
| 4 Electricity, gas and water supply | 0,04012 | 0,02322 | 0,00777 | -0,01517 | 0,01516 | 0,01297 |
| | (0,0270) | (0,0306) | (0,0342) | (0,0381) | (0,0101) | (0,0114) |
| 5 Construction | 0,05673** | 0,00846 | -0,02471 | -0,06279 | 0,01042 | 0,00152 |
| | (0,0245) | (0,0365) | (0,0203) | (0,0391) | (0,0099) | (0,0143) |
| 6 Wholesale and retail trade | 0,03093*** | -0,00707 | 0,00283 | -0,04003 | 0,00996** | 0,00346 |
| | (0,0082) | (0,0282) | (0,0085) | (0,0341) | (0,0044) | (0,0115) |
| 7 Hotels and restaurants | 0,04533*** | 0,01433 | -0,01222 | -0,04897 | 0,00956 | 0,00352 |
| | (0,0139) | (0,0259) | (0,0157) | (0,0320) | (0,0070) | (0,0116) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 Transport, storage and communication | 0,05184*** | 0,01482 | 0,0257 | -0,01627 | 0,01 | 0,00352 |
| | (0,0178) | (0,0309) | (0,0241) | (0,0388) | (0,0100) | (0,0142) |
| 9 Financial intermediation | 0,04479*** | -0,00201 | 0,01208 | -0,03687 | 0,01474* | 0,00824 |
| | (0,0162) | (0,0348) | (0,0173) | (0,0417) | (0,0083) | (0,0145) |
| 10 Real estate, renting and business activities | 0,08350*** | 0,03688 | 0,03483 | -0,01008 | 0,01588 | 0,00834 |
| | (0,0294) | (0,0441) | (0,0329) | (0,0505) | (0,0104) | (0,0163) |
| 11 Public administration and defence | 0,02689** | -0,01313 | 0,02260* | -0,02194 | 0,0055 | -0,00107 |
| | (0,0106) | (0,0309) | (0,0127) | (0,0373) | (0,0053) | (0,0132) |
| 12 Education | 0,04453*** | 0,0075 | -0,00235 | -0,0388 | 0,01255*** | 0,00697 |
| | (0,0094) | (0,0273) | (0,0109) | (0,0325) | (0,0047) | (0,0113) |
| 13 Health and social work | 0,02543*** | -0,022 | 0,00053 | -0,04596 | 0,00408 | -0,00325 |
| | (0,0072) | (0,0318) | (0,0084) | (0,0384) | (0,0035) | (0,0127) |
| 14 Other community | 0,01431* | -0,0246 | 0,00644 | -0,03151 | 0,00688* | 0,00079 |
| | (0,0074) | (0,0262) | (0,0087) | (0,0315) | (0,0041) | (0,0106) |
| illness period due to gynaecol problems | 0,14615*** | 0,15014*** | -0,04375 | -0,05383 | 0,02127 | 0,02615 |
| | (0,0481) | (0,0503) | (0,0479) | (0,0501) | (0,0222) | (0,0221) |
| miscarriage in the year | 0,04265** | 0,05155** | 0,00323 | 0,00741 | 0,01162 | 0,01376 |
| Being diagnosed in the past: | (0,0200) | (0,0223) | (0,0178) | (0,0208) | (0,0088) | (0,0094) |
| cancer | 0,02356 | 0,01627 | 0,04621 | 0,03762 | -0,00748 | -0,01063 |
| | (0,0277) | (0,0339) | (0,0323) | (0,0383) | (0,0054) | (0,0074) |
| osteoporosis | 0,04756* | 0,04242 | -0,044 | -0,04131 | -0,01651* | -0,01675* |
| | (0,0281) | (0,0300) | (0,0308) | (0,0308) | (0,0089) | (0,0092) |
| arthritis | 0,04189*** | 0,04054*** | -0,00967 | -0,01345 | 0,00980* | 0,00959* |
| | (0,0107) | (0,0116) | (0,0139) | (0,0149) | (0,0052) | (0,0055) |
| asthma | 0,0017 | 0,00822 | -0,02431 | -0,02605 | 0,00178 | 0,0022 |
| | (0,0214) | (0,0214) | (0,0226) | (0,0240) | (0,0098) | (0,0104) |
| other lung disease | 0,0168 | 0,00373 | -0,00239 | -0,00951 | 0,00475 | 0,00417 |
| | (0,0231) | (0,0246) | (0,0284) | (0,0310) | (0,0107) | (0,0114) |
| diabetes | 0,01743 | 0,01608 | 0,02178 | 0,01731 | 0,00801 | 0,00681 |
| | (0,0220) | (0,0245) | (0,0302) | (0,0325) | (0,0122) | (0,0124) |
| stroke | -0,02346 | -0,05683 | 0,03812 | 0,00791 | -0,01243* | -0,01728 |
| | (0,0353) | (0,0463) | (0,0497) | (0,0604) | (0,0066) | (0,0106) |
| high cholesterol | 0,00241 | -0,00598 | -0,01115 | -0,01113 | 0,00402 | 0,00341 |
| | (0,0139) | (0,0160) | (0,0251) | (0,0273) | (0,0070) | (0,0077) |
| high blood pressure | 0,02093* | 0,02699** | -0,01593 | -0,01085 | 0,01050* | 0,01146* |
| | (0,0113) | (0,0122) | (0,0141) | (0,0155) | (0,0063) | (0,0066) |
| heart attack | -0,00876 | -0,01589 | 0,04192 | 0,03423 | -0,00416 | -0,00306 |
| | (0,0266) | (0,0285) | (0,0290) | (0,0334) | (0,0171) | (0,0173) |
| N obs | 380777 | 370134 | 380777 | 370134 | 380777 | 370134 |
| N individuals | 10013 | 9860 | 10013 | 9860 | 10013 | 9860 |
| N country/year clusters | 961 | 774 | 961 | 774 | 961 | 774 |

* p<0.10, ** p<0.05, *** p<0.01

**Table 7: Balanced panel. Only women born before 1960**

| | stress | | happiness | | stress&happy | |
|---|---|---|---|---|---|---|
| | **FE** | **IVFE** | **FE** | **IVFE** | **FE** | **IVFE** |
| | col2s | col3ivs | col2h | col3ivh | col2hs | col3hs |
| | b/se | b/se | b/se | b/se | b/se | b/se |
| year prior to childbirth | -0,00202 | 0,00344 | 0,02312*** | 0,02625*** | 0,00099 | 0,00103 |
| | (0,0025) | (0,0039) | (0,0037) | (0,0044) | (0,0013) | (0,0018) |
| child birth year | 0,00544** | 0,06390** | 0,03885*** | 0,06179** | 0,00467*** | 0,00321 |
| | (0,0022) | (0,0292) | (0,0029) | (0,0302) | (0,0013) | (0,0113) |
| year after childbirth | 0,00517*** | 0,04394** | 0,02470*** | 0,04007** | 0,00245** | 0,00172 |
| | (0,0016) | (0,0193) | (0,0021) | (0,0199) | (0,0010) | (0,0075) |
| Weeks of job interruption | -0,00007 | -0,00967** | 0,0002 | -0,00341 | 0,00001 | 0,00023 |
| | (0,0002) | (0,0047) | (0,0002) | (0,0049) | (0,0001) | (0,0018) |
| number of children | 0,01102*** | 0,01980*** | 0,01224*** | 0,01617*** | 0,00455*** | 0,00460** |
| | (0,0022) | (0,0047) | (0,0028) | (0,0051) | (0,0011) | (0,0020) |
| single | 0,01289** | 0,00514 | -0,15034*** | -0,15382*** | -0,01011*** | -0,01013*** |
| | (0,0051) | (0,0067) | (0,0065) | (0,0074) | (0,0020) | (0,0025) |
| at least one child younger than 6 in HH | 0,00397 | 0,04302** | 0,05957*** | 0,07477*** | 0,00162 | 0,00051 |
| | (0,0030) | (0,0196) | (0,0035) | (0,0202) | (0,0014) | (0,0077) |
| single & at least one child younger than 6 in HH | 0,03586*** | 0,03945*** | -0,01381 | -0,00951 | -0,00283 | -0,00249 |
| | (0,0132) | (0,0150) | (0,0139) | (0,0146) | (0,0063) | (0,0065) |
| divorce in the year | 0,13602*** | 0,13102*** | -0,04196*** | -0,04354*** | 0,02698*** | 0,02684*** |
| | (0,0119) | (0,0126) | (0,0101) | (0,0106) | (0,0068) | (0,0070) |
| death of partner in the year | 0,17406*** | 0,17156*** | 0,02415*** | 0,02414*** | 0,08998*** | 0,09083*** |
| | (0,0101) | (0,0102) | (0,0064) | (0,0064) | (0,0071) | (0,0072) |
| age | -0,2847 | -0,32208 | 0,90429 | 1,16633 | -0,01043 | 0,43175 |
| | (11725,5309) | (13461,0267) | (17814,2805) | (17205,3384) | (5570,3456) | (5081,3010) |
| $age^2$ | -0,00006*** | -0,00006*** | -0,00004*** | -0,00004*** | -0,00001*** | -0,00001*** |
| | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) | (0,0000) |
| IHS(HH yearly earnings) | -0,00128*** | -0,00166*** | 0,00137** | 0,00122** | -0,00021 | -0,00021 |
| | (0,0005) | (0,0005) | (0,0006) | (0,0006) | (0,0002) | (0,0003) |
| being dispossed in year | 0,18896*** | 0,18543*** | -0,01753 | -0,01104 | 0,05060* | 0,04038 |
| | (0,0466) | (0,0522) | (0,0440) | (0,0518) | (0,0292) | (0,0307) |
| in a financial hardship period | 0,15728*** | 0,16872*** | -0,02657*** | -0,02350** | 0,03578*** | 0,03603*** |
| Working in ISCO sector | (0,0090) | (0,0110) | (0,0070) | (0,0095) | (0,0044) | (0,0050) |
| 1 Agriculture, hunting, forestry, fishing | 0,00298 | -0,01431 | 0,01342 | 0,00428 | 0,01846** | 0,01870* |
| | (0,0145) | (0,0175) | (0,0174) | (0,0194) | (0,0091) | (0,0098) |
| 2 Mining and quarrying | 0,03083 | 0,03263 | 0,04545 | 0,04763 | 0,02443 | 0,02587 |
| | (0,0275) | (0,0270) | (0,0528) | (0,0528) | (0,0160) | (0,0163) |
| 3 Manufacturing | 0,03983*** | 0,01705 | -0,0091 | -0,01799 | 0,00962** | 0,01013* |
| | (0,0075) | (0,0138) | (0,0084) | (0,0146) | (0,0038) | (0,0058) |
| 4 Electricity, gas and water supply | 0,0371 | 0,0265 | 0,00678 | -0,003 | 0,01405 | 0,01467 |
| | (0,0258) | (0,0272) | (0,0325) | (0,0329) | (0,0099) | (0,0104) |
| 5 Construction | 0,05636** | 0,0174 | -0,02048 | -0,02946 | 0,01088 | 0,00924 |
| | (0,0236) | (0,0284) | (0,0211) | (0,0262) | (0,0095) | (0,0108) |
| 6 Wholesale and retail trade | 0,03537*** | 0,00613 | 0,00234 | -0,01147 | 0,01056** | 0,01122 |
| | (0,0081) | (0,0179) | (0,0081) | (0,0180) | (0,0042) | (0,0072) |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 Hotels and restaurants | 0,04391*** | 0,02027 | -0,0147 | -0,02733 | 0,00872 | 0,00863 |
| | (0,0136) | (0,0190) | (0,0141) | (0,0193) | (0,0059) | (0,0079) |
| 8 Transport, storage and communication | 0,05034*** | 0,01872 | 0,02965 | 0,01257 | 0,01144 | 0,01151 |
| | (0,0173) | (0,0241) | (0,0238) | (0,0294) | (0,0097) | (0,0115) |
| 9 Financial intermediation | 0,05411*** | 0,01606 | 0,00063 | -0,01595 | 0,01524* | 0,01699 |
| | (0,0163) | (0,0253) | (0,0171) | (0,0260) | (0,0081) | (0,0107) |
| 10 Real estate, renting and business activities | 0,07994*** | 0,04344 | 0,03311 | 0,0222 | 0,00869 | 0,00957 |
| | (0,0286) | (0,0349) | (0,0316) | (0,0364) | (0,0087) | (0,0110) |
| 11 Public administration and defence | 0,02919*** | -0,0031 | 0,01483 | 0,00096 | 0,00402 | 0,00521 |
| | (0,0103) | (0,0206) | (0,0120) | (0,0216) | (0,0047) | (0,0087) |
| 12 Education | 0,05180*** | 0,02317 | -0,00163 | -0,01125 | 0,01475*** | 0,01596** |
| | (0,0093) | (0,0180) | (0,0104) | (0,0181) | (0,0047) | (0,0076) |
| 13 Health and social work | 0,02344*** | -0,01526 | -0,00078 | -0,01412 | 0,00378 | 0,00473 |
| | (0,0068) | (0,0201) | (0,0080) | (0,0204) | (0,0033) | (0,0077) |
| 14 Other community | 0,01729** | -0,01444 | 0,00215 | -0,00876 | 0,00588 | 0,00646 |
| | (0,0072) | (0,0173) | (0,0081) | (0,0171) | (0,0041) | (0,0071) |
| illness period due to gynaecol problems | 0,10505** | 0,10636** | -0,0196 | -0,02282 | 0,02184 | 0,02708 |
| | (0,0423) | (0,0448) | (0,0385) | (0,0396) | (0,0180) | (0,0178) |
| miscarriage in the year | 0,03985** | 0,04665** | 0,00064 | -0,00082 | 0,0105 | 0,01171 |
| Being diagnosed in the past: | (0,0190) | (0,0209) | (0,0159) | (0,0164) | (0,0080) | (0,0083) |
| cancer | 0,0164 | 0,01333 | 0,04607 | 0,04765 | -0,00768 | -0,00816 |
| | (0,0265) | (0,0303) | (0,0301) | (0,0323) | (0,0052) | (0,0058) |
| osteoporosis | 0,04025* | 0,04266* | -0,0193 | -0,01761 | -0,01565** | -0,01649** |
| | (0,0238) | (0,0249) | (0,0253) | (0,0258) | (0,0074) | (0,0079) |
| arthritis | 0,03971*** | 0,04196*** | -0,01071 | -0,01177 | 0,00942** | 0,00941** |
| | (0,0097) | (0,0103) | (0,0120) | (0,0123) | (0,0046) | (0,0048) |
| asthma | 0,0095 | 0,0199 | -0,02898 | -0,02723 | 0,0072 | 0,00849 |
| | (0,0194) | (0,0193) | (0,0207) | (0,0212) | (0,0092) | (0,0096) |
| other lung disease | 0,0268 | 0,01275 | -0,00398 | -0,00675 | 0,00503 | 0,00546 |
| | (0,0245) | (0,0268) | (0,0246) | (0,0258) | (0,0112) | (0,0116) |
| diabetes | 0,01951 | 0,02021 | -0,00101 | -0,00234 | 0,0107 | 0,00984 |
| | (0,0258) | (0,0272) | (0,0281) | (0,0287) | (0,0109) | (0,0109) |
| stroke | 0,01718 | -0,00375 | 0,0451 | 0,0364 | -0,00866 | -0,00904 |
| | (0,0446) | (0,0496) | (0,0422) | (0,0448) | (0,0060) | (0,0068) |
| high cholesterol | -0,0003 | -0,00818 | -0,01937 | -0,01732 | 0,00349 | 0,0041 |
| | (0,0134) | (0,0148) | (0,0244) | (0,0256) | (0,0068) | (0,0072) |
| high blood pressure | 0,01405 | 0,01783* | -0,01054 | -0,00974 | 0,01168** | 0,01184* |
| | (0,0103) | (0,0107) | (0,0127) | (0,0133) | (0,0058) | (0,0060) |
| heart attack | -0,00276 | -0,00323 | 0,03276 | 0,04561* | -0,00482 | 0,00114 |
| | (0,0249) | (0,0262) | (0,0272) | (0,0270) | (0,0149) | (0,0149) |
| N obs | 468835 | 456338 | 468835 | 456338 | 468835 | 456338 |
| N individuals | 12496 | 12330 | 12496 | 12330 | 12496 | 12330 |
| N country/year clusters | 953 | 774 | 953 | 774 | 953 | 774 |

* p<0.10, ** p<0.05, *** p<0.01