Yassine Khoudja and Lucinda Platt

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- Yassine Khoudja and Lucinda Platt

Centre for Research and Analysis of Migration
Department of Economics, University College London
Drayton House, 30 Gordon Street, London WC1H 0AX

www.cream-migration.org

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Abstract

In the context of increasing women's labour force participation (LFP) across Western countries, there remain large differences in LFP for women of different ethnic origins. While existing research has demonstrated that part of these differences can be attributed to compositional differences (age, qualifications, family context etc.) and to differences in gender role attitudes and religiosity, residual 'ethnic effects' typically remain. Further insight into the drivers of such differences has the potential to inform us about factors shaping women's LFP more widely. In this paper we exploit a large-scale longitudinal study of the UK to investigate ethnic differences in both LFP entry and exit probabilities. We examine how far we can account for overall ethnic differences in LFP entry and exit, taking account of individual characteristics, gender role attitudes and religiosity, and the contribution of relevant life-course events. We find that, adjusting for all these factors, Indian and Caribbean women do not differ from White majority women in their labour force entry and exit probabilities but that Pakistani and Bangladeshi women are less likely to enter and more likely to exit the labour market, while Black African women have higher entry rates. We also find that Pakistani and Bangladeshi women's labour market entries and exits are less sensitive to partnership and child-bearing events than other women's.

Keywords: ethnic minority women, labour force participation, labour market transitions, life-course events, gender role attitudes

Introduction

In the context of a secular increase in women's labour force participation (LFP) across the last few decades in Western nations (Charles 2011), persistent ethnic differentials in the rates of women being either employed or actively searching for a job are perceived as problematic with regard to female emancipation and the socio-cultural

integration of immigrant women (Kokkonen, Esaiasson, and Gilljam 2014). While much existing literature has focused on the lower LFP rates of (certain) minority group women, patterns of LFP differ in complex ways across immigrant origin groups. In the UK, for instance, among working age women, Black African and Indian women have similar LFP rates to White majority women, Pakistani and Bangladeshi women have much lower rates, while Black Caribbean women have slightly higher rates (See Appendix, Figure A1). This raises the question of how to explain these differences; and, in the context of relative stagnation in equalisation of labour market opportunities among women relative to men (Charles 2011), it provides an opportunity for a more complete understanding of the factors linked to lower and higher participation among women. A number of studies have tried to explain ethnic differences in LFP rates by compositional difference in human capital, household conditions, and, more recently, gender role attitudes and religiosity (Dale, Lindley, and Dex 2006; Berthoud and Blekesaune 2007; Khoudja and Fleischmann 2015). Even though these factors accounted for a substantial amount of the differences between groups, a residual ethnic group effect remained in all cases, leaving outstanding questions about how it could best be explained.

Previous studies that examined ethnic differences in women's LFP have mostly focused on the stock of women in the labour force at one or multiple time points (Bevelander and Groeneveld 2006; Dale, Lindley, and Dex 2006). This tends to assume that labour market status is constant over time, and across different cohorts with different labour market exposure and experience of economic cycles. Analysing ethnic differences in women's labour force transitions makes it possible instead to examine several key issues that are implicit in much of the discussion of ethnic differences in LFP, but which have rarely been evaluated (Taniguchi and Rosenfeld 2002). We therefore exploit a recent panel survey to analyse labour force transitions, focusing on three main contributions.

First, we examine how labour force transitions are linked to net differences in female LFP. Previous cross-sectional studies of necessity left open the question as to whether ethnic differences in female LFP rates are due to variation in entrance or exit rates (or both). Taniguchi and Rosenfeld (2002) have illustrated for the US how ethnic variations in LFP can be driven by differences in re-entry rather than exit rates. The extent to which patterns of entry or exit drive variation in LFP across groups is

potentially informative about the particular processes implied (Bane and Ellwood 1986). They draw our attention to causes rather than correlates. For example, higher rates of exit suggest issues around retention, rather than reluctance to participate, while lower rates of entry are more likely to indicate structural or more deep-seated cultural obstacles.

Second, we examine how far ethnic differences in cultural factors, such as religiosity and gender role attitudes, contribute to the explanation of divergent labour force entry and exit rates of ethnic minority women (Reimers 1985). Given the influence of prevailing norms from countries of origin (Norris and Inglehart 2012) and the strong intergenerational persistence of gender role attitudes (Bisin and Verdier 2000; Farré and Vella 2013), women from certain ethnic groups may have more (and others less) traditional attitudes regarding the gendered division of labour, influencing their preferences for domestic and childrearing specialisation. Going beyond previous research, we test whether more traditional women are not only less likely to enter but also more likely to exit the labour market compared to women with egalitarian gender role attitudes but otherwise similar characteristics, thereby aligning their behaviour with their preferences (cf. Hakim 2000). Religion, and especially Islam, is often critically discussed in public debates about gender equality and immigrant integration (Voas and Fleischmann 2012). And (Muslim) religiosity clearly differs markedly across ethnic groups (Platt 2014). But while studies show that more religious women also tend to have more traditional attitudes and therefore participate less in the labour market (Khoudja and Fleischmann 2015), we do not know whether labour market entries, exits or both are affected by women's religious belief independently of the traditional gender role attitudes that tend to accompany religiosity.

Third, we address the role of life-course events in triggering labour market entries and exits (c.f. Bane and Ellwood 1986; Jenkins 2011). We focus on childbirth, partnership change, and household income changes net of women's income and evaluate their influence on women's labour force transitions. Children and partnership breakdown are well-known causes of change in female LFP (Manning and Swaffield 2008; Brewer and Nandi 2014); and loss of (partner's) income may drive women into the labour force regardless of preferences, while an increase in household income may facilitate exit from the labour force. Studying labour force transitions allows us to

connect life-course events such as starting cohabitation with a partner and childbirth more directly with women's decision about their LFP. It also enables us to estimate the specific contribution of life-course events to ethnic differences in transitions. We would also expect that transitions would be particularly sensitive to the influence of events in the presence of conservative (or liberal) gender role attitudes.

To the extent that individual characteristics, attitudes and life-course events reduce ethnic differences in transition probabilities, they are informative not only about how and why ethnic inequalities in LFP persist, they may also indicate the conditions under which women experience and respond to the labour market across the life-course. Female LFP is particularly well suited to study women's labour market behaviour net of the influence of broader labour market conditions. In contrast to other outcomes that measure the extent of labour market involvement, such as employment, hours worked or unemployment, the decision to participate in the labour force is more affected by individual preferences. Unemployment may be a direct consequence of external factors such as discrimination or a lack of sufficient employment opportunities; LFP is arguably to a larger extent an individual choice even if non-participation can be influenced by anticipated discrimination, long-term unemployment and persistent health problems.

The UK provides a particularly rich context for the study of differences in women's LFP across ethnic groups. The minority population comprises a number of sizeable groups, with differentiated migration histories, and patterns of settlement, participation and occupation. As noted, LFP rates differ across ethnic groups in a number of ways (see also Appendix, Figure A1) and we encompass this diversity in our analysis. Ethnic minority women's participation in the UK takes place in a context of a gendered labour market, with a substantial degree of occupational segregation and high rates of part-time work and changes in occupational trajectories following parenthood among women (Manning and Petrongolo 2008; Olsen and Walby 2004).

We use the first four waves of Understanding Society: the UK Household Longitudinal Study from 2009/10 to 2012/13 (University of Essex 2014) to analyse both labour force entries and exits across a sample of women comprising the five largest (non-European) minority groups in the UK, namely Indian, Pakistani, Bangladeshi,

Black Caribbean and Black African, and white British majority women. Our main research questions are whether we can understand ethnic differences in LFP through differences in entry and exit and whether we can explain these ethnic differences in transitions through variation not only in compositional factors but also gender role attitudes, religiosity and life-course events. In an additional exploratory analysis, we also test how far these factors have the same impact on women's labour market transitions across the particular ethnic groups under study, examining the often implicit assumption that economic behaviour can be understood similarly across all cultural contexts. The study is, to the knowledge of the authors, one of the first studies to use dynamic models to analyse ethnic differences in labour market transition of women in a European country and is therefore of value in its descriptive as well as in its explanatory contribution.

Theoretical Background

The influence of cultural factors: Gender role attitudes and religiosity

Hakim's (2000) preference theory argues that individual attitudes of women have become more important for life-course decisions due to increasing individualisation and female emancipation in Western society. Gender role attitudes might therefore be expected to have a substantial effect on a woman's decision whether to enter or exit the labour force; and this might either happen directly or indirectly.

Directly, gender role attitudes can influence the prioritisation of time between domestic work and paid work. Women with traditional attitudes might simply choose to focus on domestic work rather than on paid work based on their preferences (Khoudja and Fleischmann 2015). But women with traditional gender role attitudes might also choose to have more children or have higher incentives to live with a partner who wants to be the sole breadwinner of the family, both of which might indirectly lead to a lower participation in the labour market (Reimers 1985).

The causal relation between gender role attitudes and female LFP is theoretically and empirically contested. Empirical studies that have examined the causal

relationships between gender role attitudes and later labour market behaviour found evidence for an effect of early gender role attitudes on later labour market outcomes (Cunningham 2008) but also of labour market behaviour on later gender role attitudes (Corrigall and Konrad 2007; Kroska and Elman 2009). However, theoretically sound arguments exist for causation in both directions. Following the psychological theory of cognitive dissonance, one would argue that labour market behaviour shapes attitudes by making individuals value what they are doing (Kroska 1997). A woman not active in the labour market would therefore tend to maintain or develop more traditional attitudes to decrease discrepancies between her behaviour and her values (Gangl and Ziefle 2015). In contrast, planned rational choice theory proponents would argue that individuals have certain preferences that they strive to fulfil in their behaviour (Hakim 2000; Hakim 2002), implying that more traditional women would be slower to enter and faster to exit the labour market to align their behaviour with their preferences. This will particularly be the case when they experience a life transition (partnership or parenting) that brings their preferences into relief. We hypothesize that women with more traditional gender role attitudes are less likely to enter and more likely to exit the labour market. It is acknowledged that differences in rates of women's LFP cross-nationally are linked not only to policy regimes but also to local, country-specific gender norms (Charles 2011). Since gender norms and values are subject to early socialisation processes (Bandura 1997; Moen, Erickson, and Dempster-Mcclain 1997; Burt and Scott 2002), we expect gender role attitudes to vary across ethnic groups (Kane 2000; van de Vijver 2007), and therefore contribute to explaining ethnic differences in women's labour force transitions.

Religion is often related to female LFP (Lehrer 1995). Religiosity, rather than simply religious affiliation, is deemed to foster traditional gender role attitudes since nearly all world religions can be characterised by a homogeneously male religious elite and a strict gender hierarchy embedded within their promoted norms (Brinkerhoff and MacKie 1985). Early religious beliefs might therefore impact later life-course decisions about LFP, or more indirectly, about giving birth, and in turn indirectly affect labour market attachment. Religiosity varies substantially across ethnic groups and therefore might provide some explanation for differences in labour force transitions. However, whereas older research among immigrants has found a strong relationship between

religiosity and female LFP (van Tubergen 2007) more recent studies find no or rather low associations in immigrant groups (Fleischmann and Phalet 2012; Maliepaard, Gijsberts, and Lubbers 2012). These divergent findings might reflect that the relation between religiosity and gender role attitudes seems to be more complex for second-generation immigrants with evidence pointing at the decoupling of religious beliefs from gender ideology among Muslim women (Ahmad 2001; Scheible & Fleischmann, 2012; Georgiadis and Manning 2011). As our focus lies on first as well as second-generation immigrants, our hypothesis is, nevertheless, that religiosity is negatively related to labour market entry and positively related to labour market exit, through its association with more traditional gender role attitudes. But we expect that once we have accounted for individual characteristics, household conditions and gender role attitudes, the relationship vanishes.

Trigger/ Changes in household conditions: Partnership, income & children

The effect of partnership on women's LFP is contested. Due to female emancipation in the last 50 years and an increasing societal acceptance of dual-earner families, entering a partnership is not *per se* expected to affect women's labour force status. Instead, many scholars now raise the question which specific partner characteristics (labour market resources, gender role attitudes, involvement in domestic work) influence women's labour market behaviour and in what way (Verbakel & de Graaf, 2009).

A major limitation of existing studies of ethnic differences in partnership effects on women's LFP (and that on household conditions more generally) is that they are based on static models, which only address the association of partnership status with female LFP. Inherent to this approach is the tendency to assume symmetric effects, meaning, for instance, that starting a partnership increases the probability of exiting the labour market as much as it decreases the probability of entering it. Some studies have shown that this might not be the case (Jeon 2008; Paull 2007) even though there is little consistent evidence. Overall, we expect that partnership changes tend to prompt both women's LFP entries and exits compared to no change.

One could argue that the economic necessity for entering the labour market might be highest for women (not in education) who are continuously single. Domestic work in couples continues to be primarily conducted by the female partner, leaving partnered women with less time to focus on their career (Breen and Cooke 2005; Gershuny and Sullivan 2003). Moreover, entering a partnership might promote deep-seated notions about the traditional gendered division of domestic work, which could trigger women's labour market exit either on their own behalf or by wanting to meet the expectation of a partner (or a family) with traditional views (Cunningham 2008). Separating from a partner might decrease the normative pressure to focus on domestic work and, in turn, increase the likelihood of women re-entering the labour. In the context of low state benefits, strong labour market activation policies and no statutory alimony for separated women, as in the UK, it is challenging for single women to sustain a life as homemaker.

Another major aspect brought into the labour force dynamics of women is the partner's financial resources. Conditional on the partner providing sufficient income to maintain the couple, women can choose to focus on domestic work. However, a decrease in the partner's income might also be expected to increase the need for a woman to become active in the labour market in order to maintain the living standard of the household.

We therefore hypothesise that an income decrease of other household members (primarily the partner) increases the chances of women entering the labour market while an increase in household income increases the probability of women exiting the labour market. Regardless of financial considerations partnership changes might also trigger women to enter or exit the labour market for other reasons, mostly related to the gendered division of paid and domestic work and normative notions about it hold by the women, the partner, or the extended family.

Children in the household, regardless of partnership status, are among the most recognized factors in decreasing women's LFP (van der Lippe and van Dijk 2002). Children of pre-school age tend to have the strongest negative effect on women's LFP. In countries in which public childcare is not easily accessible, such as the UK, mothers are especially likely to be primarily responsible for raising the child while the father is in paid work. Lone parents in receipt of state benefits are also not expected to seek work

until their youngest child is five years old. Moreover, recent research has also shown that gender role attitudes become more traditional after first childbirth, which could also increase labour force exits (Baxter et al. 2015). Once children reach school age (5 years in the UK), the mother's need to stay at home decreases. Moreover, the cost of children increases with age (Banks and Johnson 1993) and hence can increase the need for mothers to work, regardless of their partnership status. Besides the trigger event of childbirth, the number of children already in the household is also relevant for women's decision whether to participate in the labour force (Jeon 2008). An additional new-born might make little differences if there are already young children in the household but if it is the first or second child, women might feel more pressure to reduce their economic activity.

Studies in the UK and the Netherlands (Bevelander and Groeneveld 2006) have highlighted that the effect of partnership and children might be related to women's cultural and family context. Holdsworth and Dale (1997) found that partnership was a key factor associated with lower LFP among Bangladeshi and Pakistani women, though for White majority women having a child was the key trigger. Dale et al. (2006) found a positive effect of having a partner on White and Black women's economic activity, no effect on Indian women and a negative effect for Bangladeshi and Pakistani women. Black Caribbean lone mothers also tend to have substantially higher LFP than other groups. This suggests that the degree to which gender equality in relationships is embedded within the family structure and the cultural context might affect how partnership and children impacts women's LFP. We therefore expect life-course events to reduce ethnic differences in labour force transtions, but that there will be some difference in their impact across ethnic groups.

Ethnic differences in women's LFP in the UK

Even with increasing female LFP, the UK labour market, as in most other countries, remains highly segregated by gender, particularly for part-time work, which makes up a substantial share of women's employment (Manning and Petrongolo 2008; Olsen and Walby 2004). Researchers have pointed to the importance of parenthood in shaping occupational segregation and gender pay gaps in the UK. Moreover, some stabilising of traditional gender role attitudes at increasing levels of overall women's LFP (Park et al. 2013) points to major challenges in reconciling expectations of women as workers with family orientations.

At the same time there is complex patterning of LFP by ethnicity. Non-European migration to the UK has been dominated by a range of ethnic groups primarily from former colonies in the Caribbean, South Asia and Africa. These have occurred along different timescales and have involved different patterns of women's migration, with primary migration among women from the Caribbean in the earlier migration period (1950s-1960s) and more family re-unification among women from South Asia joining labour migrants from India, Pakistan and Bangladesh. African migrants have been a more recent migration move and have included highly educated student migrants alongside refugees and family reunification (ONS 2013). Differences in timing of migration as well as in characteristics of migrants have resulted in differentiated patterns of settlement, family structure and LFP across these main ethnic minority groups.

Women from different ethnic groups tend to concentrate in different occupations, linking them to different patterns of pay, conditions, and labour market flexibility and demonstrate different labour market attachment (Blackwell and Guinea-Martin 2005; Platt 2006). For example, rates of part-time work are lower across minority compared to majority group women; and there are higher rates of public sector work among Caribbean women (Platt 2006). Existing research has tended to identify unexplained differences between groups in their LFP, even after taking account of individual characteristics and structural context, with a particular focus on the low participation of Pakistani and Bangladeshi women. Qualitative and quantitative accounts have emphasised the potential role of life-course events as well as different orientations to family and gender roles and religiosity (Brah 1993; Dale et al. 2006;

Holdsworth and Dale 1997), at the same time as some convergence across generations (Ahmad 2001; Georgiadis and Manning 2011).

More specifically, Pakistani & Bangladeshi (and to a smaller extent Indian) women marry earlier and more often (while divorcing less frequently) than White majority women, whereas Caribbean and Black African women are relatively more often single (Georgiadis and Manning 2011). Moreover, Pakistani & Bangladeshi as well as Black African women tend to have more children than women from the other ethnic groups, while lone parenthood is particularly high among Black African and Black Caribbean women (Nandi and Platt 2010). Originating in countries in which traditional forms of family organization are the norm, we expect Pakistani & Bangladeshi women to have rather traditional gender role attitudes. White majority and Caribbean women are likely to have less traditional attitudes due to their socialization in countries and families with a stronger acceptance of non-traditional family forms while Indian and Black African women might lie somewhere in between these two poles. Based on previous research we can also expect Muslim, i.e. Pakistani & Bangladeshi, women to be more religious than women from other religious groups – with 2nd generation Muslims more or less keeping the level of religiosity of their parents while ethnic minority women with a non-Muslim religious background adapt to the low levels of religiosity of the White majority population across generations (Georgiadis and Manning 2011).

Hence, we hypothesize that, for the first time in a UK study, we can explain ethnic difference in women's labour market entry and exit rates by adding to relevant individual characteristics direct compositional differences between ethnic groups in gender role attitudes, religiosity and specified life-course events.

Data & Methods

We use *Understanding Society*: the UK Household Longitudinal Study (UKHLS). An annual panel study that started in 2009, UKLHS has a number of features that make it particularly suitable for addressing our research aims. First, it is a nationally representative household panel survey with a large sample size of over 28,000 households in the general population sample (GPS) at wave 1 (2009/10). Second, it has

a substantial ethnic minority boost (EMB), of an additional 4,000 households, which allows for more fine-grained analysis of individual ethnic groups than a strictly proportional sample would allow. Third, it collects annual information from respondents on their current state and on events that have happened between waves. Information is collected by both interviewer-administered questionnaire and a self-completion questionnaire for measures more likely to be subject to social desirability effects. It currently has four waves of data available each covering two calendar years. Fourth, it collects information from all adult household members of the original sample. Hence it provides information on existing and on new partners. Fifth, it contains measures, essential for our research questions, of gender role attitudes, religiosity, ethnic self-categorization, country of origin and ethnic identity of the parents, family status and household context, as well as standard measures of socio-demographics, economic status, health etc. For further information on the study, see www.understandingsociety.ac.uk.

UKHLS has a rich array of questions enabling the construction of ethnic group (McFall, Nandi, and Platt 2014). We use the self-reported ethnic group of the respondent and their parents and information on own/parental/grandparental country of birth to allocate respondents to an ethnic group category. Ethnic self-categorization is the basis for our ethnicity measure: we distinguish between (1) White British/White Irish/other White background, (2) Indian, (3) Pakistani & Bangladeshi, (4) Caribbean & mixed Caribbean, (5) Black African & mixed African. In a second step, we also assign respondents to one of the ethnic groups if at least one of their ancestors was born in the country of origin of the minority group. If respondents had ancestors from more than one of the minority groups (mostly the case for Indians and Pakistanis), we used the self-categorization of the respondent or the ethnic categorization of their parents (by the respondent) in the case that the respondent identified as White. We also used the ethnic categorization of the parents to identify White British born in Africa or India and Indians/Pakistanis with (grand)parents in Africa in order to allocate them appropriately.

Our sample comprises all women who responded in at least two of the four waves; and excludes those who were continuously students. However, those who changed their student status, were considered as leaving or entering the labour market (we provide more detail on this below). The sample was restricted to women aged between 16 and 65 years. Our analytical sample comprises 36,985 person-waves,

covering 14,933 women (11,876 White majority, 796 Indian, 968 Pakistani & Bangladeshi, 527 Caribbean & mixed Caribbean, and 721 African and mixed African).

Measures

Entering the labour market and exiting the labour market

Respondents are considered as participating, or active, in the labour force if they are either employed or actively looking for a job and willing to start paid work at short-notice. We measure entry and exit from the labour force with two dummy variables. Women who were inactive at t1 and active at t2 are considered to have entered the labour market (with those continuously inactive as reference group) and women who were active at t1 and inactive at t2 are considered to have left the labour market (with those continuously active as reference group). Hence, we have two separate samples for estimating entry and exit probabilities (compare the approach used by Jeon 2008).

Those respondents who were students in one wave but had a different economic status in a preceding or subsequent wave were treated with special care. We considered a systematic assignment of students to either being inactive or active as not sensitive to the actual meaning that being student might have for the respondents with regard to their economic activity. We also did not want to exclude all the respondents who were students at one wave from the analysis since the ultimate decision whether to participate in the labour market or not is often made directly after finishing education. Subsequently, only a fraction of women reverse their decision.

Being a student does not inherently mean being active or inactive in the labour market, but what it means rather depends on how the higher education is framed in the life-course, and, in our case, particularly how it can be set into relation with the economic status of the respondents in the preceding or succeeding year. We therefore distinguished between becoming a student after already having been active or inactive and becoming active or inactive after having been a student. While the latter tends to depict the regular life-course stage of young people deciding to become inactive or active after finishing education, the former does not necessarily stand for a change in one's orientation in the labour market. We therefore considered respondents who became active after being a student as entering the labour market and those who became inactive after being a student as leaving the labour market. In contrast, we did not consider women who became a student after being already active or inactive as

changing their economic status. Becoming a student after having been active is most likely to mean either reorienting oneself on the labour market or improving ones qualification. Starting education after having been homemaker (which is the smallest group in the sample), however, is not necessarily indicative of entering the labour market.

Gender role attitudes

We use two items that measure two different dimensions of gender role attitudes. One is that "A pre-school child is likely to suffer if his or her mother works" and the other is "A husband's job is to earn money; a wife's job is to look after the home and family". Respondents answered on a five-point scale ranging from "strongly agree" through "neither agree nor disagree" to "strongly disagree" with the statement. We reversed the coding so that a higher value represents more traditional gender role attitudes. Despite having measures of this variable in wave 2 and wave 4, we decided to only use the measurement at wave 2 to minimize the potential reverse effect of LFP on gender role attitudes. These two items had a Pearson's correlation of only .42 and were therefore both included in the analysis.

Religiosity

Our measure for religiosity is based on the question "How much difference would you say religious beliefs make to your life? Would you say they make… (1) a great difference, (2) some difference, (3) a little difference, (4) or no difference?". We recoded the variable so that a higher value means that religious belief makes more difference to the respondent's life. This item on religiosity was asked in Wave 1 and Wave 4, but as for gender role attitudes, we only use the first measurement.

Household Changes

To measure partnership status and change we use a four level categorical variable with (1) women who remained in partnerships over two consecutive waves as reference group, (2) women who remained single/divorced/widowed, (3) single/divorced/widowed women who started a partnership and (4) women who become single/divorcee/widow between two waves.

We constructed a measure of change in the number of children in the household younger than five years old. This variable can be thought of as the number of new-borns

minus the number of children reaching UK school age (5 years) between waves. We created two dummies: one indicates whether the number of children below the age of 5 increased, and one whether it decreased in order to capture changes in the required amount of childcare as precisely as possible. An additional variable is used to account for the overall number of children in the household below the age of 16.

For evaluating income changes, we use a measure of household income net of the woman's own income. We test for the impact of increases or decreases of more than 20 per cent in this net household income. Moreover, given that we might expect income effects to vary for poorer compared to more affluent households, as low-income households might in some cases receive more benefits than they would have the potential to earn on the labour market, we also control for low income, measured as less than 60 per cent of the overall equivalent household median.

Control variables

To control for educational level, we use years of education instead of highest educational degree to have a measure that is comparable across ethnic groups, some of whom may have obtained their highest qualification in a different country. We transformed the highest educational degree achieved into years of education based on the age at school start in the UK (5 years) and the predicted age at receiving the respective qualification. The UK education system is relatively rigid in terms of years spent acquiring specific qualifications, with few repeat years and with the majority of university students completing their degree directly after secondary school within the prescribed three years. For those respondents who did not follow their education in the UK, we used the regular school age in their respective country of birth to calculate their years of schooling.

We additionally control for English language skills with a dummy variable that is coded ”1” if the respondent indicated having difficulties in (a) speaking day-to-day English, (b) speaking English on the phone, (c) reading English, or (d) completing forms in English and coded “0” if the respondent did not claim to have difficulties with English in any of these situations, or if English was their first language.

We control for time-varying general health using a 5-point scale ranging from (1) excellent to (5) poor, which was measured at every wave. We would expect those with poorer general health to be more likely to be or move out of the labour market and less likely to enter it. Years since migration is controlled for by a four-value variable

that indicates whether the respondent was born in the UK (0), or whether she has lived in the UK for (1) at most five years, (2) between 6 and 10 years and (3) more than 10 years. We also control additionally for age and (centred) age squared.

Dealing with missing values

Partly as a result of lower response on the self-completion element of the questionnaire, the share of missing values on the items for gender role attitudes, religiosity and education cumulatively accounted for about 10 per cent of the sample and were therefore too high, particularly within the ethnic minority groups, to be dealt with by listwise deletion (Acock 2005). We assume that the data are missing at random and therefore multiply impute complete sets of responses for 10 imputed data sets, following the rule of thumb that the number of imputed datasets should correspond to the percentage of missing cases (White, Royston, and Wood 2011). We used chained equations as the imputation method with labour market status and change, ethnicity, marital status, children in the household, age, age squared, wave, household income (exclusive women's income), years since migration and general health as predictors in the imputation model.

Analysis Method

Given the relatively small number of events of interest that occur between any two sweeps, we follow standard practice in pooling pairs of waves from across the first four waves of the study. We then model the transitions between t1 and t2 (e.g. moves into or out of LFP for those at risk) controlling for characteristics at t1 and calendar time. We further estimate the contribution of relevant events between t1 and t2 to such moves. [1] Using a base transition specification (see the discussion in Cappellari and Jenkins 2008), we estimate average marginal effects based on logit models for the transitions. This allows us straightforwardly to explore and quantify the extent to which there are a) ethnic differences in rates of entry and or exit which contribute to overall differences in LFP and b) the extent to which such differences in LFP can be accounted for by differences in individual and family level characteristics, in specific life-course

[1] If the respondent did not participate in t2, we used t3 as consecutive wave. Similarly, if respondents were only part of the sample at t2 and t4, we used these waves as basis to measure transitions or trigger events. Respondents with a two-wave gap, meaning those that were only present in wave 1 and wave 4 were excluded from the analysis.

events, and in gender role attitudes and religiosity, in line with our hypotheses outlined above. In a first model, we examine how far ethnic differences in women's labour force transitions are explained by various control variables. In a second step, we test the contribution of religiosity and gender role attitudes to labour force transitions. We then evaluate the explanatory power of inter-wave events (such as partnership separation, the birth of a child, or a substantial change in the household income) for ethnic differences in women's labour force transitions; and subsequently, we test how far women's gender role attitudes at an early stage of the survey condition the relation between life-course events and labour market transitions. In a final analysis, we explore whether the contribution of the trigger events and the cultural factors to labour market transitions differs by ethnic group, as posited in the life-course literature (e.g. Dale, Lindley, and Dex 2006).

Analysis was conducted in Stata 13.1. All analyses adjust for the complex survey design of the UKHLS by incorporating adjustments for clustering and stratification and employing the design weight (see Knies 2014), and using Stata's svy command. [2]

Robustness of results

The econometric literature on labour market and income/ poverty transitions has highlighted the potential sensitivity of results to issues of unobserved heterogeneity and the impact of initial conditions. That is, it is argued that differences in exit and entry rates, particularly over extended periods of time, may reflect underlying unobserved differences in the propensity to engage in the labour market (Allison 2014). At the same time, for investigating transitions, the starting point, or initial measurement status may lead to an over-estimate of state dependence, if those 'initial conditions' represent a

[2] The household response rate at the initial wave was 57.3% in the GPS and the adjusted response rate in the EMB sample was 39.9%. (the size of the eligible minority population is unknown) Within these households, 82% of the targeted individual members in the GPS and 72.4% in the EMB were fully interviewed. In the subsequent waves the individual response rates conditional on the individual being interviewed in the preceding wave were 74.3 %(GPS) and 62.2 % (EMB) in wave 2, .78.5% (GPS) and 69.4% (EMB) in wave 3 and 83.7% (GPS) and 74.6 % (EMB) in wave 4. Household and individual refusal rates were similar between the GPS and EMB, suggesting that the higher attrition among minorities is mostly due to their higher mobility (Knies 2014). The design weight adjust for the non-response at the initial wave but not for the attrition between subsequent waves.

greater underlying propensity to be in a given state (Stewart and Swaffield 1999; Cappellari and Jenkins 2008). In order to test the robustness of our results to the potential influence of unobserved heterogeneity and initial conditions, we estimate random effects models, both probit and linear probability models; and, following Orme (2001), and as applied by Jeon (2008), incorporating generalized residuals to adjust for initial conditions, estimating the generalised residuals as given in Gourieroux et al. (1987). Since our results were consistent across these specifications, when compared with an unweighted AME specification (see Appendices) and since the literature has not yet clarified how to take account of complex sample designs and weights in particular in mixed (random effects) models, we preferred the original specification outlined above, and focus on the results from these models.

Results

Descriptive Results

[Table 1 about here]

Table 1 illustrates how patterns of labour market transitions vary between ethnic groups. Most striking is the particularly low LFP rate of Pakistani and Bangladeshi women. While this finding is not new, we can now see that it is driven not only by low rates of labour market entry but also by particularly high rates of labour market exit compared to the other ethnic groups. If the LFP of Pakistani and Bangladeshi women was primarily driven by overall cultural norms of women's participation, rather than the intersection with life-course events, we might expect lower entry rates, but not necessarily different rates of exit for those in work.

While Pakistani & Bangladeshi women have an entry rate of 14 per cent (this is the share of women entering the labour market between t_1 & t_2 divided by the share of women that remain inactive in the same time frame), White majority and Indian/Sri Lankan women have an entry rate of over 25 per cent and Caribbean and African women of over 35 per cent. The exit rate of Pakistani & Bangladeshi women is 18 per cent (the share of women exiting the labour market between t_k & $t_{k+1(or2)}$ divided by the share of women that remain active in the same time frame), which is more than four times higher than the exit rate of White majority women (4%). Indian/Sri Lankan and Caribbean women have an exit rate of about six per cent while the rate of Black African

women is slightly higher at 7.6 per cent. It is worth noting that even though Caribbean women have a similar LFP rate as White majority women, the former have a substantially higher entry rate (about eight percentage points) as well as an exit rate that is two percentage points higher. This could suggest that Caribbean women are more flexible in their decisions to participate in the labour market over the life-course than White majority women and may indicate that different explanatory approaches are required for the two groups' LFP.

Caribbean women also have very distinct partnership patterns. Whereas over 65 per cent of White majority, Indian/Sri Lankan and Pakistani & Bangladeshi women are partnered over two waves, this is only the case for 32 percent of the Caribbean women. The majority of them are, and remain, single. Black African women fall in-between with about 50 per cent continuously partnered and 44 per cent continuously single. Turning to cultural factors, White majority women are by far the least religious, whereas, unsurprisingly, Pakistani and Bangladeshi women are the most religious. The latter also show the most traditional gender role attitudes whereas White majority women, together with Caribbean women, have the least traditional attitudes. Interestingly, across ethnic groups, the Pearson's correlation between religiosity and "a pre-school child is likely to suffer if his or her mother works" is .15 while the correlation between religiosity and "A husband's job is to earn money; a wife's job is to look after the home and family" is .12, indicating a rather weak aggregate relationship between the being highly religious and having traditional gender role attitudes.

Multivariate analysis of labour market transitions

Entering the labour market

Table 2 shows the estimates from a series of models of labour market entry. Model 1 shows that considerable ethnic differences in labour market entry rates persist even after accounting for number of children in the household, years of education and other variables conventionally considered of relevance for women's LFP.

In Model 2, we include the two gender role attitudes items and religiosity. Contrary to our expectation, religiosity has a significant positive effect on women's entry rate. In a model not shown (available upon request), in which we did not include gender role attitudes, religiosity did not show a significant effect. This indicates that

religiosity is associated with more conservative gender role attitudes, as we expected, but that once we control for them it reveals an independent effect out of line with standard accounts. As expected, both items on gender role attitudes show that women who support more traditional gender roles are less likely to enter the labour market than women who reject them. Moreover, including the items on gender role attitudes and religiosity also lowers the coefficients of Pakistani & Bangladeshi women on entry rates by about 2 percentage points to a difference of 7.1 percentage points from White majority women, indicating that Pakistani & Bangladeshi women's lower entry rates are partly explained by their more traditional gender role attitudes. We can also see some of the difference in the entry rate between Black Africans/ mixed Africans and White majority women explained by adding gender role attitudes and religiosity in the models, suggesting that Africans are more active in the labour market partly because they have less traditional gender role attitudes. However, for both Pakistani & Bangladeshi as well as Black Africans, unexplained differences remain. We can compare this finding with Tanaguchi and Rosenfeld's (2002) finding of greater re-entry among Black (and Hispanic) women in the US even after accounting for family and job characteristics.

Model 3 shows that, net of the control variables, remaining single increases the likelihood of entering the labour market, relative to remaining partnered, as we expected. Moreover, results show marginally significant positive relationships between starting and ending a partnership and female LFP. The partner's income seems to be an important additional predictor of women's LFP. As expected, we find that a 20 per cent decrease in the household's income (net of the woman's income) increases women's probability of entering the labour market. However, an increase in the household's income is also positively associated with women entering the labour market, making a stable financial situation of the household the scenario the least likely to spur inactive women to participation.

We also find strong evidence that a new child decreases the likelihood of entering the labour market even after controlling for children already present in the household. Furthermore, women who have a child that reached school age are no more likely to enter the labour market than inactive women without any change in young children in the household. The overall number of children in the household decreases the probability of entering the labour market in a given year, in line with expectations.

Ethnic differences in labour market entry rates are not well accounted for by changes in family context, household income and socio-demographics. We can see that Pakistani and Bangladeshi women still have a labour market entry rate 8.4 percentage points lower than White majority women. For Black African/mixed African women the differences decrease to and entry rate that is 7.3 percentage points higher than White majority women after accounting for life-course events.

Model 4 combines religiosity and gender role attitudes with life-course events and in Model 5 we estimate interaction effects between the two on women's probability of entering the labour market. Surprisingly, the interaction between the two gender role attitudes and remaining single go in opposite directions. We find a significant positive interaction between the item "a pre-school child is likely to suffer if his or her mother works" and being single suggesting that single women are more likely to enter the labour market if they have high values on this item. However, as the negative partial effect of "a pre-school child is likely to suffer if his or her mother works" is of similar size as the interaction term, and therefore cancels it out, the dominant effect is the positive one of remaining single on labour market entries. There is a marginally significant negative interaction between the other gender role attitudes item "A husband's job is to earn money; a wife's job is to look after the home and family" and remaining single, suggesting that single women who endorse this claim are less likely to enter the labour market than single women who don't. We also find a significant negative interaction between the view that a child being likely to suffer if the mother works and an income decrease of the household, supporting our expectation that women with more egalitarian attitudes are more likely to enter the labour market if the financial situation of the household deteriorates substantially compared to women with more traditional attitudes. Accounting for the both gender role attitudes and life-course events explains most of the difference in entry rates between Black African/mixed African and White majority women, leaving only a marginally significant difference of about six percentage points.

Exiting the labour market

Table 3 gives the results for labour market exit. Model 1 shows that after including control variables only Pakistani & Bangladeshi women show significantly higher labour market exit rates than White majority women. In Model 2, we include religiosity and the two items on gender role attitudes. Religiosity is not positively related to

women's labour market exit. However, the two items on gender role attitudes show a significant positive effect on the likelihood of exiting the labour market.

In Model 3, we find no evidence for a relationship between partnership dynamics and women's likelihood of exiting the labour market. However, we find strong evidence that a substantial increase in the household's income is associated with a greater likelihood of women exiting the labour market. Furthermore, results show a marginally significant relationship between a decrease in the household's income and women exiting the labour market.

We also find strong evidence that an increase in children under 5 in the household triggers higher rates of labour market exit, supporting our expectation. However, a decrease in children under 5 in the household as they reach school age also seems to increase women's labour market exit rates compared to women in households without changes in the presence of young children, which is not in line with what we expected.

Evidence for interactions between life-course events and gender role attitudes, as shown in Model 5, is rather weak. We find a marginally significant negative interaction between "A husband's job is to earn money; a wife's job is to look after the home and family" and an increase in the number of young children in the household which supports our expectation that giving birth is more likely to lead to labour market exits of women if they have traditional attitudes.

From the descriptive results, we already know that differences between the ethnic groups in exit rates are not as pronounced as for entry rates. In fact, the only major difference is for Pakistani & Bangladeshi women, who have exit rates that are about 14 percentage points higher than those of White majority women. Model 1 shows that individual characteristics explain a large part of this difference so that about 5.5 unexplained percentage points difference in exit rates between Pakistani & Bangladeshi women and White majority women remain after we account for these factors. Including gender role attitudes in Model 2 also explains some of the differences in the exit rate between Pakistani & Bangladeshi and White majority women. However, the ethnicity coefficient remains statistically significant, indicating that about 4.5 percentage points difference remains unaccounted for; and accounting for life-course events (Model 3) and their interaction with gender role attitudes (Model 5) hardly contributes to the explanation of ethnic differences in women's exit rates.

[Table 2 about here]

[Table 3 about here]

Differences between the ethnic groups

The assumption underlying the analysis so far is that the contribution of life-course events and gender role attitudes operates consistently across groups and, alongside individual characteristics, represent potential sources of variation across ethnic groups that can help account for absolute differences in labour force transitions. Given that the overall sample is dominated by an 81 per cent share of White majority women, these relationships will tend to be driven by those that pertain to the majority population. To the extent that they have not fully accounted for differences between groups, this may be attributable to the fact that they may operate differently across ethnic groups. We therefore estimated Model 4 separately for each ethnic group, to explore the extent to which life-course transitions, gender role attitudes and religiosity operated in a consistent fashion across groups. As the number of events for any given minority group is rather small (particularly the transitions in partnerships), the significance levels for their coefficients should be treated with some caution. Instead, Tables 4 and 5 allow more qualitative consideration of the overall consistency of contributory factors across groups in their size and sign. On the other hand, given the comparison is within group, the extent to which there is homogeneity within the group, for example in the religiosity or gender role attitudes of Pakistanis and Bangladeshis, is likely to result in rather limited explanatory power, even if such factors are relevant to explaining differences between groups.

[Table 4 about here]

Table 4 shows the result for women entering the labour market by ethnic group. We see that partnership seems to affect Caribbean women in a different way to women from other ethnic groups. Specifically, we see that Caribbean women who remain single over two waves are no more likely to enter the labour market than Caribbean women who remain partnered. In the other ethnic groups, single women are more likely to enter the

labour market. Changes in household income dynamics also seem to impact women's probability of entering the labour market differently across ethnic groups. Pakistani and Bangladeshi women do not show higher entry rates following a substantial decrease in the household income while we can observe this relationship for the other ethnic groups. Instead, somewhat surprisingly, an increase in the household's income seems to raise the entry rates of Pakistani and Bangladeshi women, possibly because it makes work more economically viable for this particularly economically disadvantaged group. For the other ethnic groups, we cannot find strong evidence for this relationship.

Another interesting finding is that the absolute number of children under the age of 16 seems not to affect Pakistani and Bangladeshi women's propensity to enter the labour market. By contrast, women from other ethnic groups are less likely to enter the labour market when they gain additional young children or have a higher number of children in the household in general. Finally, gender role attitudes do not differentiate among the ethnic minorities, suggesting that individual attitudes might be more homogeneous within minority groups and therefore more suited to explain differences in labour market entries between the ethnic groups.

In contrast to the differences we find between women from different ethnic groups in the labour market entry models, no substantially different effect can be found between ethnic groups in the model for women's likelihood of exiting the labour market (see table 5), with the possible exception that an increase and decrease in young children seems to work slightly different for Pakistani and Bangladeshi women, and living in a low income household seems to increase Caribbean women's exit rates. Interestingly, we also find a marginally significant positive relation between religiosity and labour market exits for Pakistani and Bangladeshi women while no such tendency can be shown in the other ethnic groups.

We find that for Indian/Sri Lankan and Caribbean women, giving birth is more likely to increase labour market exits, as it is for White majority women, but we cannot discern the same effect for the other ethnic groups. More traditional gender role attitudes are associated with higher rates of exit for Black African and also Pakistani & Bangladeshi women, as they are for White majority women, but not for the other groups. Since these association were not found for entry, it illustrates how greater traditionalism can drive withdrawal from the labour market among more traditional groups as much as initial participation.

[Table 5 about here]

Conclusion/Discussion

This paper examined labour force transition of women from different ethnic groups in the UK. We argued that in order to understand and explain ethnic differences in female LFP rates, it is necessary to take a closer look at labour force transitions and examine why women enter or exit the labour market. Our main goal was to explain ethnic differences in women's labour market entry and exit rates with a focus on cultural aspects such as religiosity and gender role attitudes and on potential trigger events related to children, partnership, and household income changes as well as how the former interact with the latter.

We show that compared to the other ethnic groups, Pakistani and Bangladeshi women have the most distinctive labour force transition patterns. Not only do they have much lower labour force entry rates than White majority women or women from other ethnic groups, they also have much higher exit rates. This is the reason why their overall LFP rate is substantially lower than in the other ethnic groups. Another interesting pattern is that Caribbean women have considerably higher entry rates than White majority women and also slightly higher exit rates while having a similar overall LFP rate, suggesting that they might have a more flexible relationship to LFP. Our comparison of coefficients in separate models for the five ethnic groups shows that the relation between partnership and labour market entry in particular looks rather different for Caribbean women than it does for White majority women.

Our findings regarding the influence of partnership show that changes in the partner's income play a crucial role for women's labour market transitions: with a deteriorating financial situation of the household women are more likely to enter the labour market while with an increasing household income, women are more likely to exit the labour market. These results are in line with household specialization theory and have been confirmed in other studies (Becker 1965; Bernasco, de Graaf, and Ultee 1998). Since changes in household income to some extent reflect partnership changes, it is not very surprising that we find little evidence for the influence of starting or ending partnership on female labour market transitions. However, we do find that beyond transitions triggered by the economic situation of the household, remaining single

increases women's likelihood of entering the labour market. This indicates that some of the mechanisms that connect partnership with a lower LFP of women manifest themselves not directly after changes in the partnership status, but rather in the long-term. Another option is that women's who do not intend to become active in the labour market are also more likely to be in a partnership and therefore never enter the labour market in the first place, but our robustness check accounting for the role of initial conditions produced substantively similar results, suggestion this cannot be the reason. These finding suggest that partnerships in the UK often occur within a broader normative framework of a traditional gendered division of paid and domestic work. This accords with the wider trend that has been noted towards stagnation of progress in women's LFP, the high rates of part-time work among women with children, and flatlining of progressive gender role attitudes in recent years (England 2010).

Besides the effect of partnership status, we show that a change in the number of children below the age of five decreases the likelihood of entering the labour market and increases the likelihood of women exiting the labour market, even while controlling for the number of children that are already present in the household. These results are hardly surprising given the previous empirical research that found a similar association (Jeon 2008; Schober 2013; Smeaton 2006). More interesting is that we could not find this relationship among Pakistani & Bangladeshi women in relation to labour market exits. Possibly, the decision on participation is taken earlier, prior to the birth of a child, or, as argued by Holdsworth and Dale (1997), it is the impact of partnering rather than children that is critical for Pakistani and Bangladeshi women compared to White majority women. However, the fact that we cannot find a larger effect of changes in the partnership for Pakistani and Bangladeshi women is not fully in line with this interpretation, leaving a puzzle for future research to investigate further.

The results for the association between religiosity and labour force transition are on first sight counter-intuitive. We expected a negative effect of religiosity on labour market entry and a positive effect on labour market exit that are both mediated by traditional gender role attitudes. However, we found that religiosity, when considered separately from gender role attitudes, did not have a negative impact on the likelihood of entering the labour market, but once we controlled for gender role attitudes this became a significant and positive independent effect. This suggests that traditional gender role attitudes do in fact not mediate, but rather suppress some of the (positive) influence of religiosity on women's labour market entry. This finding is less

surprising considering that religiosity has in the literature also been related to many beneficial outcomes, such as greater social networks, more support and resources, as well as well-being (Lehrer 2009). Once traditional attitudes are accounted for, these positive influences of religiosity on women's labour market activity might become more visible.

We find that more traditional women are less likely to enter the labour market and more likely to exit it, confirming earlier research that showed the importance of women's attitudes for their LFP after accounting for the most common alternative explanations (Read 2004; Khoudja and Fleischmann 2015). Furthermore, differences in gender role attitudes partially explain why Pakistani and Bangladeshi women have lower labour force entry rates and higher exit rates than White majority women even after accounting for household conditions and individual characteristics.

Ultimately, we were not able to fully account for differences in LFP across women from different ethnic groups. Even in additional models that allowed for the effect of initial conditions and unobserved individual-level heterogeneity (see Appendix), we could not explain the lower entry rates of Pakistani & Bangladeshi women and the higher entry rates of African women nor the higher exit rates of Pakistani & Bangladeshi women. Additional untested factors involved in such 'ethnic' differences might be those related to other norms and values not accounted for in our model.

Despite exploiting longitudinal data, incorporating temporal ordering into our analysis, and adjusting for within-individual variation on repeat observations (see Appendix) we do not make strong claims about the direction of effects in our analysis. It is possible that, in fact, transitions in the labour force are causing women to make changes (or no changes) in their partnership. It is also possible that an additional unobserved factor is responsible for changes in both partnership/ family and participation, or a whole range of life-dimensions. This question can only be answered by more sophisticated analyses, likely exploiting yet larger samples and more events than we have here.

Regardless of these limitations, we have demonstrated in this paper how crucial it is to not only look at ethnic differences in labour market stocks of women, but also at their differences in labour market transitions. In particular, Black African women have labour market transition patterns that differ quite substantially from women in the other ethnic groups, and which would not have been revealed by only comparing the overall

LFP rate. Our explanations of ethnic differences in women's labour market transition that focused on life-course events as well as gender role attitudes and religiosity were able to account for some of the variation between the ethnic groups even if not all of it. In particular, we were able to show that Indian women did not differ from the otherwise comparable White majority counterparts in their entries and exits. However, our model was not able to fully explain the lower entry and higher exit rates of Pakistani and Bangladeshi women. Future research is needed to interrogate further what might be driving the differences.

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Tables

Table 1: Range, mean/proportion (M), standard deviation (SD) and number of person-year observations (N)

			All groups		White majority		Indian/ Sri Lankan		Pakistani/ Bangladeshi		Caribbean/ mixed Caribbean		Black African/ mixed African	
Variable	Range	N	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Labour force entry (Ref. remain inactive)	0/1	7723	0.27		0.288		0.258		0.143		0.367		0.351	
Labour force exit (Ref. remain active)	0/1	27524	0.05		0.041		0.061		0.178		0.06		0.076	
Economic activity	0-2	35247												
Active in Labour Force	0		0.79		0.83		0.74		0.37		0.80		0.74	
Homemaker	1		0.20		0.16		0.25		0.62		0.17		0.23	
Full-time student	2		0.01		0.01		0.01		0.01		0.03		0.03	
Ethnic origin group	0-4	35247												
White majority	0		0.81											
India/Sri Lankan	1		0.05											
Pakistan/Bangladeshi	2		0.06											
Caribbean/mixed Caribbean	3		0.04											
Black African/mixed African	4		0.04											
Partnership status	0-3	35247												
Remains in partnership	0		0.65		0.66		0.74		0.70		0.32		0.49	
Remains single	1		0.31		0.30		0.24		0.26		0.64		0.44	
Partnership started	2		0.02		0.02		0.01		0.02		0.02		0.04	
Partnership ended	3		0.02		0.02		0.01		0.02		0.02		0.03	
Change in no. of children <5 years	-3 till 4	35247	-0.01	0.348	-0.01	0.323	-0.03	0.38	-0.03	0.52	-0.01	0.34	-0.02	0.44
Number of children<16	0-9	35247	0.84	1.081	0.757	1.016	0.957	1.05	1.538	1.42	0.799	0.99	1.272	1.32
Religiosity	1-4	35103	2.19	1.119	1.937	0.996	3.022	1.00	3.680	0.60	2.853	1.08	3.311	0.99
Children suffer if mother works	1-5	33286	2.80	1.004	2.708	0.963	3.238	1.08	3.586	1.022	2.695	0.95	3.116	1.10
Husbands should earn, wife should stay at home	1-5	33284	2.21	0.983	2.135	0.933	2.505	1.06	3.066	1.140	2.190	0.99	2.404	1.06
Years of education	4-18	35031	13.08	2.775	13.12	2.701	13.21	2.894	11.90	3.053	13.40	2.654	13.53	3.214
English problems	0/1	35247	0.03		0.006		0.100		0.249		0		0.088	
Age	16-66	35247	40.98	11.86	41.69	12.01	39.38	10.90	35.04	9.920	40.35	11.33	38.47	9.987
Years since migration	0-3	35224												
White majority/Second generation	0		0.84		0.94		0.46		0.37		0.72		0.22	
<=5 years	1		0.02		0.01		0.08		0.05		0.01		0.08	
>5 years & <=10 years	2		0.03		0.01		0.12		0.10		0.03		0.23	
>10 years	3		0.11		0.04		0.34		0.48		0.24		0.47	
General Health	1-5	35239	2.41	1.013	2.371	0.998	2.537	1.027	2.778	1.082	2.687	1.009	2.280	1.012
Wave	2-4	35247	2.94	0.815	2.939	0.815	2.940	0.818	2.966	0.812	2.931	0.814	2.914	0.812
Generalized residual	-0.969 till 0.931	34594	-0.007	0.380	0.016 0	0.358	-0.04	0.442	-0.315	0.447	0.0470	0.361	-0.03	0.431

Notes: Descriptives based on unweighted sample.

Table 2: Average marginal effects for entering the labour market

Predictors	(1) AMEenter		(2) AMEenter		(3) AMEenter		(4) AMEenter		(5) AMEenter	
Ethnic group (Ref.=White)										
Indian/Sri Lankan	-0.017	(0.025)	-0.015	(0.025)	-0.021	(0.025)	-0.017	(0.025)	-0.015	(0.025)
Pakistani & Bangladeshi	-0.083***	(0.020)	-0.071**	(0.022)	-0.084***	(0.020)	-0.068**	(0.022)	-0.068**	(0.022)
Black Caribbean/mixed Caribbean	0.050	(0.035)	0.040	(0.033)	0.034	(0.035)	0.028	(0.032)	0.031	(0.033)
Black African/mixed African	0.089*	(0.037)	0.073*	(0.036)	0.073*	(0.035)	0.064+	(0.034)	0.064+	(0.034)
Partnership (Ref.=Remains in partnership)										
Remained single					0.150***	(0.019)	0.140***	(0.019)	0.138***	(0.019)
Partn. started					0.061+	(0.035)	0.068+	(0.035)	0.062+	(0.036)
Partn. ended					0.077+	(0.042)	0.073+	(0.041)	0.065	(0.042)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase					-0.178***	(0.028)	-0.174***	(0.027)	-0.176***	(0.029)
Child < 5 year old decrease					-0.029	(0.019)	-0.022	(0.019)	-0.033	(0.020)
Household (HH) income (Ref.=stable)										
Household income decrease 20%					0.082***	(0.014)	0.083***	(0.014)	0.088***	(0.014)
Household income increase 20%					0.026*	(0.013)	0.028*	(0.013)	0.026*	(0.013)
HH below 60% median income					-0.093***	(0.015)	-0.089***	(0.015)	-0.088***	(0.015)
Religiosity (w1)			0.012*	(0.006)			0.008	(0.006)	0.008	(0.006)
Children suffer if mother works (w2) (centred)			-0.019***	(0.006)			-0.021***	(0.006)	-0.024**	(0.009)
Husbands should earn, wife should stay at home (w2) (centred)			-0.047***	(0.006)			-0.044***	(0.006)	-0.033**	(0.011)
Childsuffermotherwork X Single									0.026*	(0.012)
Childsuffermotherwork X Partn.start									-0.007	(0.037)
Childsuffermotherwork X Partn.end									0.063	(0.046)
Husbandearn,wifehome X Single									-0.026+	(0.013)
Husbandearn,wifehome X Partn.start									0.012	(0.029)
Husbandearn,wifehome X Partn.end									-0.018	(0.037)
Childsuffermotherwork X birth									-0.040	(0.034)
Childsuffermotherwork X childo5									0.015	(0.018)
Husbandearn,wifehome X birth									-0.009	(0.031)
Husbandearn,wifehome X childo5									0.013	(0.018)
Childsuffermotherwork X income increase									0.003	(0.013)
Childsuffermotherwork X income decrease									-0.043**	(0.016)
Husbandearn,wifehome X income increase									-0.015	(0.014)
Husbandearn,wifehomeX income decrease									-0.000	(0.017)
Generalized residuals										
No of children aged under 16	-0.108***	(0.006)	-0.099***	(0.006)	-0.082***	(0.007)	-0.075***	(0.007)	-0.073***	(0.007)
Years of Education	0.014***	(0.002)	0.010***	(0.002)	0.014***	(0.002)	0.011***	(0.002)	0.011***	(0.002)
English language problems	-0.084*	(0.033)	-0.073*	(0.033)	-0.086**	(0.033)	-0.073*	(0.033)	-0.069*	(0.032)
Age (centred)	-0.010***	(0.000)	-0.009***	(0.000)	-0.008***	(0.001)	-0.008***	(0.001)	-0.008***	(0.001)
Age^2	-0.000	(0.000)	-0.000	(0.000)	-0.000+	(0.000)	-0.000*	(0.000)	-0.000*	(0.000)
Years since migration (Ref.=native-born/ Second generation)										
<=5 years	-0.021	(0.038)	-0.006	(0.038)	0.009	(0.040)	0.022	(0.041)	0.022	(0.040)
>5 & <=10 years	-0.002	(0.030)	0.021	(0.031)	0.008	(0.030)	0.031	(0.031)	0.028	(0.031)
>10 years	-0.005	(0.023)	0.002	(0.024)	-0.006	(0.022)	0.001	(0.023)	0.002	(0.023)

General health	-0.049***	(0.005)	-0.045***	(0.005)	-0.047***	(0.005)	-0.042***	(0.005)	-0.043***	(0.005)
Wave	0.020**	(0.006)	0.019**	(0.006)	0.018**	(0.006)	0.018**	(0.006)	0.017**	(0.006)
N	7709		7709		7709		7709		7709	

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table 3: Average marginal effects for exiting the labour market

Predictors	(1) AMEenter		(2) AMEenter		(3) AMEenter		(4) AMEenter		(5) AMEenter	
Ethnic group (Ref.=White)										
Indian/Sri Lankan	-0.003	(0.006)	-0.007	(0.006)	-0.002	(0.006)	-0.006	(0.006)	-0.006	(0.006)
Pakistani & Bangladeshi	0.055***	(0.013)	0.044***	(0.012)	0.053***	(0.013)	0.042***	(0.012)	0.042***	(0.012)
Black Caribbean/mixed Caribbean	0.009	(0.008)	0.010	(0.008)	0.009	(0.008)	0.010	(0.008)	0.010	(0.008)
Black African/mixed African	-0.002	(0.006)	-0.003	(0.007)	-0.002	(0.006)	-0.003	(0.007)	-0.003	(0.007)
Partnership (Ref.=Remains in partnership)										
Remained single					-0.002	(0.003)	-0.002	(0.003)	-0.001	(0.003)
Partn. started					0.009	(0.007)	0.009	(0.008)	0.009	(0.008)
Partn. ended					0.008	(0.009)	0.008	(0.009)	0.004	(0.010)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase					0.043***	(0.004)	0.042***	(0.004)	0.043***	(0.004)
Child < 5 year old decrease					0.010*	(0.005)	0.009+	(0.005)	0.011*	(0.005)
Household (HH) income (Ref.=stable)										
Household income decrease 20%					0.006+	(0.003)	0.006+	(0.003)	0.006+	(0.003)
Household income increase 20%					0.010***	(0.003)	0.010**	(0.003)	0.010***	(0.003)
HH below 60% median income					0.005	(0.003)	0.005	(0.003)	0.005	(0.003)
Religiosity (w1)			-0.001	(0.001)			-0.001	(0.001)	-0.001	(0.001)
Children suffer if mother works (w2) (centred)			0.006***	(0.001)			0.007***	(0.001)	0.008***	(0.002)
Husbands should earn, wife should stay at home (w2) (centred)			0.008***	(0.001)			0.007***	(0.001)	0.009***	(0.002)
Childsuffermotherwork X Single									-0.002	(0.004)
Childsuffermotherwork X Partn.start									-0.003	(0.008)
Childsuffermotherwork X Partn.end									0.014	(0.009)
Husbandearn, wifehome X Single									-0.001	(0.003)
Husbandearn, wifehome X Partn.start									-0.001	(0.007)
Husbandearn, wifehome X Partn.end									0.003	(0.008)
Childsuffermotherwork X birth									-0.000	(0.004)
Childsuffermotherwork X child decrease									0.002	(0.005)
Husbandearn,wifehome X birth									-0.008+	(0.005)
Husbandearn,wifehome X child decrease									-0.007	(0.005)
Childsuffermotherwork X income increase									-0.005	(0.003)
Childsuffermotherwork X income decrease									0.000	(0.004)
Husbandearn,wifehome X income increase									-0.001	(0.003)
Husbandearn,wifehomeX income decrease									0.001	(0.004)
Generalized residuals										
No of children aged under 16	0.021***	(0.001)	0.020***	(0.001)	0.017***	(0.002)	0.017***	(0.002)	0.017***	(0.002)
Years of Education	-0.004***	(0.001)	-0.004***	(0.001)	-0.005***	(0.001)	-0.004***	(0.001)	-0.004***	(0.001)
English language problems	0.025*	(0.010)	0.022*	(0.011)	0.024*	(0.010)	0.022*	(0.011)	0.022*	(0.011)
Age (centred)	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)
Age^2	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Years since migration (Ref.=native-born/ Second generation)										
<=5 years	0.055**	(0.021)	0.042*	(0.020)	0.050*	(0.021)	0.038*	(0.019)	0.039*	(0.019)
>5 & <=10 years	0.018	(0.011)	0.012	(0.010)	0.016	(0.010)	0.010	(0.010)	0.011	(0.010)
>10 years	0.013+	(0.006)	0.010	(0.006)	0.012+	(0.006)	0.009	(0.006)	0.009	(0.006)

General health	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)	0.009***	(0.001)	0.009***	(0.001)
Wave	0.000	(0.001)	0.000	(0.001)	0.000	(0.001)	0.001	(0.001)	0.001	(0.001)
N	27493		27493		27493				27493	

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table 4: Average marginal effect for entering the labour market, by ethnic group

	(1) White majority		(2) Indian/Sri Lankan		(3) Pakistani/ Bangladeshi		(4) Caribbean		(5) African	
Predictors										
Partnership (Ref.=Remains in partnership)										
Remained single	0.130***	(0.022)	0.269**	(0.084)	0.196**	(0.065)	0.024	(0.083)	0.349***	(0.069)
Partn. started	0.058	(0.040)	0.318*	(0.162)	0.162+	(0.098)	0.001	(0.138)	0.151	(0.115)
Partn. ended	0.072	(0.047)	0.239	(0.184)	0.016	(0.082)	-0.085	(0.155)	0.105	(0.135)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase	-0.190***	(0.032)	-0.119+	(0.071)	-0.075	(0.047)	-0.163+	(0.096)	-0.086	(0.082)
Child < 5 year old decrease	-0.021	(0.021)	0.044	(0.058)	-0.026	(0.032)	-0.109	(0.121)	-0.070	(0.080)
Household (HH) income (Ref.=stable)										
Household income decrease 20%	0.082***	(0.016)	0.152***	(0.045)	0.017	(0.034)	0.074	(0.071)	0.114	(0.069)
Household income increase 20%	0.026+	(0.014)	0.054	(0.041)	0.057+	(0.031)	-0.096	(0.074)	0.040	(0.062)
HH below 60% median income	-0.088***	(0.016)	-0.045	(0.065)	-0.004	(0.036)	-0.363***	(0.064)	-0.118	(0.075)
Religiosity (w1)	0.009	(0.006)	-0.006	(0.018)	0.010	(0.020)	-0.022	(0.029)	0.031	(0.030)
Children suffer if mother works (w2) (centred)	0.008	(0.006)	-0.008	(0.018)	0.006	(0.020)	-0.024	(0.026)	0.026	(0.030)
Husbands should earn, wife should stay at home (w2) (centred)	-0.022***	(0.006)	0.015	(0.021)	-0.012	(0.015)	-0.023	(0.030)	-0.043	(0.027)
No of children aged under 16	-0.083***	(0.007)	-0.022	(0.026)	-0.002	(0.023)	-0.116***	(0.033)	-0.058**	(0.021)
Years of Education	0.012***	(0.003)	0.009	(0.008)	0.010+	(0.006)	0.008	(0.011)	0.002	(0.007)
English problems	-0.034	(0.056)	-0.053	(0.060)	-0.107**	(0.041)			-0.038	(0.070)
Age	-0.008***	(0.001)	-0.009***	(0.002)	-0.004*	(0.002)	-0.004	(0.003)	-0.006*	(0.003)
Age^2 (centred)	-0.000*	(0.000)	0.000	(0.000)	0.000	(0.000)	-0.000+	(0.000)	-0.000	(0.000)
Years since migration	0.001	(0.001)	-0.000	(0.002)	-0.001	(0.001)	0.007+	(0.004)	-0.000	(0.004)
General health	-0.047***	(0.006)	-0.036*	(0.017)	-0.004	(0.014)	-0.007	(0.023)	-0.020	(0.023)
Wave	0.017*	(0.007)	0.025	(0.021)	0.022+	(0.013)	0.110***	(0.032)	0.011	(0.029)
N	5621		537		1477		312		481	

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

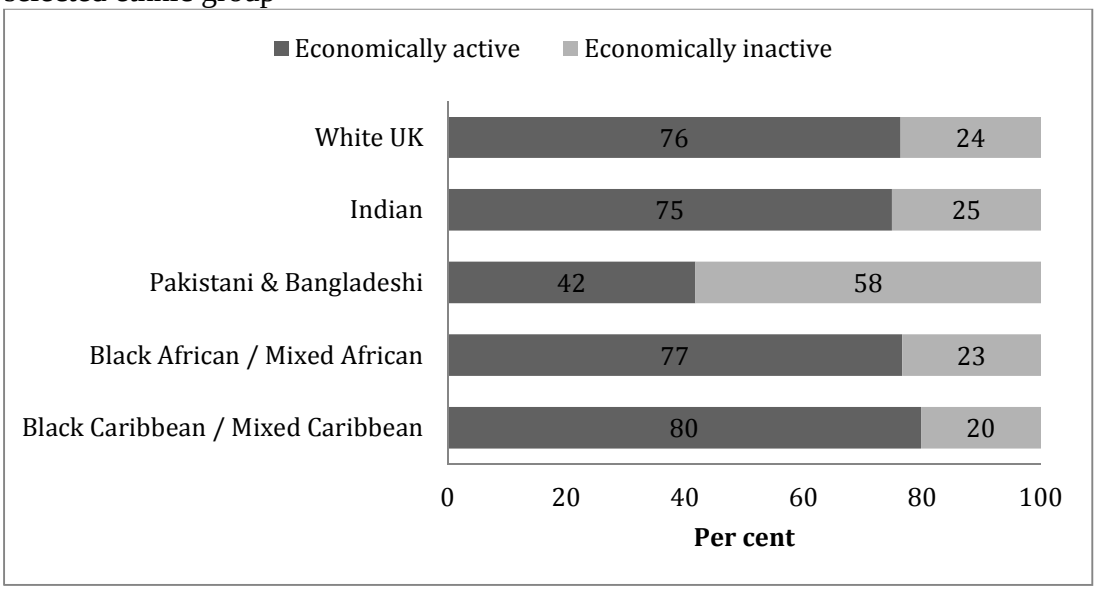
Table 5: Average marginal effect for exiting the labour market, by ethnic group

Predictors	(1) White majority		(2) Indian/Sri Lankan		(3) Pakistani/ Bangladeshi		(4) Caribbean		(5) African	
Partnership (Ref.=Remains in partnership)										
Remained single	-0.003	(0.004)	-0.033	(0.021)	0.037	(0.054)	-0.028	(0.023)	0.031	(0.020)
Partn. started	0.008	(0.008)	-0.014	(0.036)	-0.038	(0.064)	-0.010	(0.041)	0.051	(0.065)
Partn. ended	0.008	(0.010)	0.184	(0.130)	0.027	(0.078)			0.006	(0.028)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase	0.043***	(0.004)	0.046*	(0.022)	-0.023	(0.059)	0.099***	(0.023)	0.011	(0.025)
Child < 5 year old decrease	0.010+	(0.005)	-0.007	(0.032)	-0.072	(0.053)	0.016	(0.024)	0.045*	(0.022)
Household (HH) income (Ref.=stable)										
Household income decrease 20%	0.006+	(0.004)	-0.006	(0.018)	-0.023	(0.044)	-0.010	(0.018)	0.019	(0.019)
Household income increase 20%	0.010**	(0.003)	0.010	(0.016)	-0.036	(0.042)	0.006	(0.017)	0.030	(0.019)
HH below 60% median income	0.005	(0.003)	-0.009	(0.019)	0.021	(0.037)	0.068***	(0.018)	-0.005	(0.018)
Religiosity (w1)	-0.000	(0.001)	-0.010	(0.007)	0.030+	(0.018)	0.006	(0.008)	-0.005	(0.008)
Children suffer if mother works (w2) (centred)	0.007***	(0.002)	0.006	(0.007)	0.023	(0.020)	-0.012	(0.009)	0.020*	(0.008)
Husbands should earn, wife should stay at home (w2) (centred)	0.007***	(0.001)	0.012	(0.009)	0.042*	(0.019)	0.010	(0.008)	0.005	(0.007)
No of children aged under 16	0.016***	(0.002)	0.017*	(0.008)	0.081***	(0.019)	0.018*	(0.009)	0.021*	(0.009)
Years of Education	-0.004***	(0.001)	-0.003	(0.003)	-0.012+	(0.006)	-0.001	(0.003)	-0.009***	(0.003)
English problems	0.038**	(0.014)	0.024	(0.026)	0.212**	(0.070)			0.019	(0.027)
Age	-0.001***	(0.000)	-0.002*	(0.001)	-0.002	(0.002)	-0.003**	(0.001)	-0.002*	(0.001)
Age^2 (centred)	0.000***	(0.000)	0.000**	(0.000)	0.000*	(0.000)	0.000	(0.000)	0.000	(0.000)
Years since migration	0.000	(0.000)	0.000	(0.001)	-0.000	(0.001)	-0.000	(0.001)	0.000	(0.001)
General health	0.010***	(0.001)	-0.005	(0.007)	0.024	(0.015)	0.019*	(0.008)	-0.004	(0.008)
Wave	0.001	(0.002)	-0.012+	(0.007)	-0.024	(0.018)	-0.010	(0.008)	0.002	(0.009)
N	23305		1348		776		1079		1132	

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Appendix: Supplementary figures and tables

Figure A1: Economic activity and inactivity among women aged 16-64 (excluding students) by selected ethnic group



Source: ONS 2011 Census. Constructed by authors from Table BD0076.

Additional analysis

In additional analyses, we also tested in how far initial conditions and unobserved individual heterogeneity may affect the results. Initial conditions relates to the fact that some of the ethnic differences and the effects we find in our transition models might be caused by factors that determine the labour force status at the first observation (Wooldridge 2005). In other words, the group of women who are at risk of becoming inactive, or becoming active, is a non-random sample since it is the group of women who are already active or inactive respectively at the beginning of the observations. Whether a woman is in one or the other group in the first place might be related to unobserved individual characteristics. Orme (2001) suggests using generalized residuals to account for the bias due to initial conditions.[3] Following this method, first, a logit regression for LFP in the year of the first observation is estimated using a model that includes basic predictors for LFP (Table A1). In a second step, a generalized residual is calculated based on this logit regression, which is then included as a predictor in the final logit models of entering and leaving the labour market. Our results do in fact show a significant effect of the generalized residual on likelihood of entering and exiting the labour market (see Table A2 & A3). However, including it in the model does not have a substantial effect on the ethnic coefficients or on our predictors, which leads us to the conclusion

[3] Other methods have been suggested, but Capellari & Jenkins (2008) could not find substantial difference when comparing the different approaches for the risk of receiving social assistance

that the variations in labour force transitions between the ethnic groups are unlikely to be due to differences in the ethnic composition of the two initial samples (women at risk of entering or exiting the labour market).

To account for individual unobserved heterogeneity across the different waves we estimated random effect probit models with individuals at the second level and time/person observations at the first level, while using a clustered standard error for person sampling units (Table A4 & A5). Again, we could not find any difference in the results that would lead us to different conclusions compared to the average marginal effect models described above. The differing results in the random effect models can in fact be explained by the unaccounted weights as unweighted average marginal effect models come to almost identical conclusions.

Table A1: Initial Condition model

Predictors	Initial Condition LFP Logit model	
Age	0.025***	(0.002)
Age^2	-0.000**	(0.000)
Years of Education	0.215***	(0.009)
hhincome_exclf	0.000	(0.000)
No of children aged under 5	-0.833***	(0.037)
Government Office Region		
North East	Ref.	
North West	0.246+	(0.128)
Yorkshire and the Humber	-0.002	(0.133)
East Midlands	0.152	(0.134)
West Midlands	-0.001	(0.126)
East of England	-0.011	(0.133)
London	-0.577***	(0.123)
South East	0.020	(0.128)
South West	0.063	(0.129)
Wales	0.033	(0.136)
Scotland	0.308*	(0.136)
Northern Ireland	-0.005	(0.149)
Constant	-1.963***	(0.182)
N	15295	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A2: Average marginal effects for entering the labour market

Predictors	AME		AME Initial condition control		AME Initial condition with IA	
Ethnic group (Ref.=White)						
Indian/Sri Lankan	-0.017	(0.025)	-0.015	(0.025)	-0.013	(0.025)
Pakistani & Bangladeshi	-0.068**	(0.022)	-0.065**	(0.022)	-0.065**	(0.022)
Black Caribbean/mixed Caribbean	0.028	(0.032)	0.022	(0.032)	0.025	(0.032)
Black African/mixed African	0.064+	(0.034)	0.062+	(0.033)	0.062+	(0.033)
Partnership (Ref.=Remains in partnership)						
Remained single	0.140***	(0.019)	0.146***	(0.019)	0.144***	(0.019)
Partn. started	0.068+	(0.035)	0.076*	(0.036)	0.071+	(0.036)
Partn. ended	0.073+	(0.041)	0.072+	(0.041)	0.062	(0.043)
Changes in young children in HH (Ref.=no changes)						
Child <5 year old increase	-0.174***	(0.027)	-0.178***	(0.028)	-0.181***	(0.029)
Child < 5 year old decrease	-0.022	(0.019)	-0.026	(0.019)	-0.036+	(0.020)
Household (HH) income (Ref.=stable)						
Household income decrease 20%	0.083***	(0.014)	0.085***	(0.014)	0.089***	(0.014)
Household income increase 20%	0.028*	(0.013)	0.027*	(0.013)	0.026*	(0.013)
HH below 60% median income	-0.089***	(0.015)	-0.090***	(0.015)	-0.089***	(0.015)
Religiosity	0.008	(0.006)	0.008	(0.005)	0.008	(0.006)
Children suffer if mother works	-0.021***	(0.006)	-0.020***	(0.006)	-0.022*	(0.009)
Husbands should earn, wife should stay at home	-0.044***	(0.006)	-0.043***	(0.006)	-0.032**	(0.010)
Generalized residual			0.063***	(0.016)	0.063***	(0.016)
Childsuffermotherwork X Single					0.026*	(0.012)
Childsuffermotherwork X Partn.start					-0.005	(0.037)
Childsuffermotherwork X Partn.end					0.061	(0.047)
Husbandearn,wifehome X Single					-0.027*	(0.013)
Husbandearn,wifehome X Partn.start					0.011	(0.029)
Husbandearn,wifehome X Partn.end					-0.017	(0.037)
Childsuffermotherwork X birth					-0.040	(0.034)
Childsuffermotherwork X childo5					0.016	(0.018)
Husbandearn,wifehome X birth					-0.009	(0.031)
Husbandearn,wifehome X childo5					0.013	(0.018)
Childsuffermotherwork X income increase					0.002	(0.013)
Childsuffermotherwork X income decrease					-0.042*	(0.016)
Husbandearn,wifehome X income increase					-0.014	(0.014)
Husbandearn,wifehomeX income decrease					0.000	(0.017)
No of children aged under 16	-0.075***	(0.007)	-0.076***	(0.007)	-0.075***	(0.007)
Years of Education	0.011***	(0.002)	0.012***	(0.002)	0.013***	(0.002)
English language problems	-0.073*	(0.033)	-0.075*	(0.033)	-0.070*	(0.032)
Age	-0.008***	(0.001)	-0.007***	(0.001)	-0.007***	(0.001)
Age^2	-0.000*	(0.000)	-0.000*	(0.000)	-0.000*	(0.000)
Years since migration (Ref.=native-born/ Second generation)						
<=5 years	0.022	(0.041)	0.022	(0.040)	0.022	(0.039)
>5 & <=10 years	0.031	(0.031)	0.030	(0.030)	0.026	(0.030)
>10 years	0.001	(0.023)	0.000	(0.023)	0.001	(0.023)
General health	-0.042***	(0.005)	-0.042***	(0.005)	-0.042***	(0.005)
Wave	0.018**	(0.006)	0.008	(0.007)	0.008	(0.006)
N	7709		7709		7709	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A3: Average marginal effects for exiting the labour market

Predictors	AME		AME Initial condition control		AME Initial condition control IA	
Ethnic group (Ref.=White)						
Indian/Sri Lankan	-0.006	(0.006)	-0.005	(0.006)	-0.006	(0.006)
Pakistani & Bangladeshi	0.042***	(0.012)	0.037**	(0.011)	0.037**	(0.011)
Black Caribbean/mixed Caribbean	0.010	(0.008)	0.010	(0.008)	0.010	(0.008)
Black African/mixed African	-0.003	(0.007)	-0.003	(0.006)	-0.004	(0.006)
Partnership (Ref.=Remains in partnership)						
Remained single	-0.002	(0.003)	-0.003	(0.003)	-0.003	(0.003)
Partn. started	0.009	(0.008)	0.008	(0.007)	0.007	(0.008)
Partn. ended	0.008	(0.009)	0.008	(0.009)	0.004	(0.010)
Changes in young children in HH (Ref.=no changes)						
Child <5 year old increase	0.042***	(0.004)	0.043***	(0.004)	0.044***	(0.004)
Child < 5 year old decrease	0.009+	(0.005)	0.013**	(0.005)	0.015**	(0.005)
Household (HH) income (Ref.=stable)						
Household income decrease 20%	0.006+	(0.003)	0.006+	(0.003)	0.006+	(0.003)
Household income increase 20%	0.010**	(0.003)	0.009**	(0.003)	0.009**	(0.003)
HH below 60% median income	0.005	(0.003)	0.005	(0.003)	0.005	(0.003)
Religiosity	-0.001	(0.001)	-0.000	(0.001)	-0.000	(0.001)
Children suffer if mother works	0.007***	(0.001)	0.006***	(0.002)	0.008**	(0.002)
Husbands should earn, wife should stay at home	0.007***	(0.001)	0.007***	(0.001)	0.009***	(0.002)
Generalized residual			-.0361***	(0.005)	-0.036***	(0.005)
Childsuffermotherwork X Single					-0.003	(0.004)
Childsuffermotherwork X Partn.start					-0.004	(0.008)
Childsuffermotherwork X Partn.end					0.014	(0.009)
Husbandearn,wifehome X Single					-0.000	(0.003)
Husbandearn,wifehome X Partn.start					-0.000	(0.007)
Husbandearn,wifehome X Partn.end					0.004	(0.008)
Childsuffermotherwork X birth					0.000	(0.004)
Childsuffermotherwork X childo5					0.000	(0.005)
Husbandearn,wifehome X birth					-0.008+	(0.005)
Husbandearn,wifehome X childo5					-0.008	(0.005)
Childsuffermotherwork X income increase					-0.005	(0.003)
Childsuffermotherwork X income decrease					0.001	(0.004)
Husbandearn,wifehome X income increase					-0.001	(0.003)
Husbandearn,wifehomeX income decrease					0.001	(0.004)
No of children aged under 16	0.017***	(0.002)	0.018***	(0.002)	0.017***	(0.002)
Years of Education	-0.004***	(0.001)	-0.005***	(0.001)	-0.005***	(0.001)
English language problems	0.022*	(0.011)	0.019+	(0.011)	0.020+	(0.011)
Age	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)
Age^2	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Years of migration (Ref.=native-born /Second generation)						
<=5 years	0.038*	(0.019)	0.036+	(0.018)	0.037*	(0.019)
>5 & <=10 years	0.010	(0.010)	0.013	(0.010)	0.013	(0.010)
>10 years	0.009	(0.006)	0.011+	(0.006)	0.010+	(0.006)
General health	0.009***	(0.001)	0.009***	(0.001)	0.009***	(0.001)
Wave	0.001	(0.001)	-0.002	(0.001)	-0.002	(0.001)
N	27493		27493		27493	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A4: Random effect probit models for entering the labour market (not accounting for design weight)

Predictors	AME (unweighted)		Random effect probit		AME (unweighted) Initial condition		Random effect probit Initial condition	
Ethnic group (Ref.=White)								
Indian/Sri Lankan	-.0009	(.0224)	-0.011	(0.139)	-.00098	(.0222)	-0.015	(0.136)
Pakistani & Bangladeshi	-.0554**	(.0169)	-0.406***	(0.122)	-.0549**	(.0168)	-0.398***	(0.119)
Black Caribbean/mixed Caribbean	.0166	(.0257)	0.079	(0.156)	.00878	(.0254)	0.059	(0.154)
Black African/mixed African	.102***	(.0282)	0.616***	(0.157)	.0949***	(.0276)	0.589***	(0.154)
Partnership (Ref.=Remains in partnership)								
Remained single	.14***	(.0166)	0.792***	(0.097)	.145***	(.0166)	0.791***	(0.095)
Partn. started	.0888**	(.0324)	0.488**	(0.175)	.0952**	(.0325)	0.491**	(0.172)
Partn. ended	.0723*	(.0366)	0.325	(0.201)	.07+	(.037)	0.322	(0.198)
Changes in young children in HH (Ref.=no changes)								
Child <5 year old increase	-.146***	(.0237)	-0.774***	(0.132)	-.15***	(.024)	-0.772***	(0.130)
Child < 5 year old decrease	-.0223	(.0173)	-0.102	(0.098)	-.0269	(.0172)	-0.112	(0.097)
Household (HH) income (Ref.=stable)								
Household income decrease 20%	.0812***	(.0122)	0.472***	(0.075)	.082***	(.0121)	0.469***	(0.074)
Household income increase 20%	.0215+	(.0112)	0.111+	(0.066)	.0216+	(.0112)	0.111+	(0.065)
HH below 60% median income	-.0869***	(.0123)	-0.485***	(0.078)	-.0879***	(.0123)	-0.479***	(0.077)
Religiosity	.0105*	(.00492)	0.072*	(0.032)	.0107*	(.00486)	0.072*	(0.031)
Children suffer if mother works	-.0216**	(.00776)	-0.132**	(0.048)	-.0205**	(.0077)	-0.128**	(0.047)
Husbands should earn, wife should stay at home	-.0319***	(.00785)	-0.207***	(0.049)	-.0314***	(.00782)	-0.201***	(0.049)
Generalized residual					.0612***	(.0139)	0.082+	(0.050)
Childsuffermotherwork X Single	.0249*	(.0106)	0.149*	(0.070)	.0247*	(.0105)	0.147*	(0.068)
Childsuffermotherwork X Partn.start	.0244	(.0292)	0.177	(0.179)	.0262	(.0295)	0.176	(0.177)
Childsuffermotherwork X Partn.end	.0482	(.0395)	0.238	(0.220)	.0459	(.0399)	0.229	(0.218)
Husbandearn,wifehome X Single	-.0242*	(.0112)	-0.180*	(0.071)	-.0256*	(.0112)	-0.180*	(0.070)
Husbandearn,wifehome X Partn.start	.0153	(.0254)	0.054	(0.161)	.0138	(.0255)	0.053	(0.159)
Husbandearn,wifehome X Partn.end	-.0151	(.0319)	-0.060	(0.188)	-.0148	(.0321)	-0.059	(0.185)
Childsuffermotherwork X birth	-.0337	(.0265)	-0.180	(0.142)	-.0341	(.0266)	-0.178	(0.140)
Childsuffermotherwork X childo5	.0133	(.0162)	0.110	(0.089)	.0136	(.0162)	0.108	(0.088)
Husbandearn,wifehome X birth	-.00824	(.0246)	0.060	(0.138)	-.00764	(.0247)	0.058	(0.135)
Husbandearn,wifehome X childo5	.00146	(.0157)	-0.020	(0.090)	.000811	(.0158)	-0.019	(0.089)
Childsuffermotherwork X income increase	.00156	(.0105)	0.013	(0.062)	.000974	(.0106)	0.013	(0.061)
Childsuffermotherwork X income decrease	-.0326*	(.0132)	-0.177*	(0.077)	-.0317*	(.0131)	-0.172*	(0.076)
Husbandearn,wifehome X income increase	-.0117	(.0117)	-0.063	(0.065)	-.011	(.0117)	-0.061	(0.064)
HusbandearnX,wifehomeX income decrease	-.00629	(.012)	-0.027	(0.070)	-.00578	(.0119)	-0.026	(0.069)
No of children aged under 16	-.0647***	(.00553)	-0.394***	(0.039)	-.0658***	(.00554)	-0.389***	(0.038)
Years of Education	.0109***	(.00205)	0.077***	(0.014)	.0121***	(.00205)	0.080***	(0.014)
English language problems	-.0894***	(.0255)	-0.523***	(0.158)	-.0904***	(.0253)	-0.512***	(0.155)
Age	-.0067***	(.000474)	-0.042***	(0.004)	-.00617***	(.000487)	-0.040***	(0.004)
Age^2	-.000066	(.000042)	-0.000+	(0.000)	-.000074+	(.000042)	-0.000+	(0.000)
Years since migration (Ref= native-born/ Second generation)								
<=5 years	-.00237	(.0296)	-0.063	(0.186)	-.000678	(.0292)	-0.055	(0.182)
>5 & <=10 years	-.0131	(.0228)	-0.194	(0.148)	-.0136	(.0225)	-0.189	(0.145)
>10 years	-.0154	(.0175)	-0.142	(0.112)	-.0152	(.0173)	-0.136	(0.110)
General health	-.0347***	(.00434)	-0.202***	(0.028)	-.0339***	(.00432)	-0.198***	(0.028)
Wave	.0179***	(.00524)	0.277***	(0.041)	.00867	(.00543)	0.250***	(0.043)
Constant			-1.639***	(0.268)			-1.524***	(0.271)
var(_cons[pidp])								
Constant			1.493***	(0.248)			1.395***	(0.240)
N	7713		7713		7713		7713	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A5: Random effect probit models for exiting the labour market (not accounting for design weight)

Predictors	AME (unweighted)		Random effect probit		AME (unweighted) Initial condition		Random effect probit Initial condition	
Ethnic group (Ref.=White)								
Indian/Sri Lankan	-.000583	(.00576)	-0.004	(0.089)	-.000269	(.00573)	0.003	(0.087)
Pakistani & Bangladeshi	.0485***	(.0104)	0.540***	(0.093)	.0455***	(.0102)	0.519***	(0.092)
Black Caribbean/mixed Caribbean	.018*	(.00792)	0.230*	(0.094)	.0196*	(.00815)	0.254**	(0.093)
Black African/mixed African	.0101	(.00734)	0.111	(0.096)	.0101	(.00735)	0.117	(0.094)
Partnership (Ref.=Remains in partnership)								
Remained single	-.00112	(.00343)	-0.024	(0.050)	-.0026	(.00344)	-0.045	(0.049)
Partn. started	.00922	(.00773)	0.100	(0.098)	.00771	(.00776)	0.086	(0.097)
Partn. ended	.00293	(.00989)	0.041	(0.126)	.00244	(.00993)	0.039	(0.126)
Changes in young children in HH (Ref.=no changes)								
Child <5 year old increase	.0466***	(.00429)	0.639***	(0.065)	.0479***	(.0043)	0.652***	(0.064)
Child < 5 year old decrease	.0123*	(.00507)	0.158*	(0.070)	.0171***	(.00511)	0.217**	(0.070)
Household (HH) income (Ref.=stable)								
Household income decrease 20%	.00605+	(.00339)	0.083+	(0.046)	.00613+	(.00339)	0.083+	(0.045)
Household income increase 20%	.0094**	(.00301)	0.135**	(0.041)	.00894**	(.00301)	0.128**	(0.041)
HH below 60% median income	.00512+	(.00309)	0.067	(0.045)	.00469	(.0031)	0.058	(0.044)
Religiosity	-.000962	(.00135)	-0.008	(0.019)	-.000859	(.00135)	-0.008	(0.019)
Children suffer if mother works	.00927***	(.00239)	0.127***	(0.033)	.00851***	(.00237)	0.116***	(0.033)
Husbands should earn, wife should stay at home	.00895***	(.00241)	0.124***	(0.033)	.0091***	(.0024)	0.121***	(0.033)
Generalized residual					-.0363***	(.00462)	-0.320***	(0.039)
Childsuffermotherwork X Single	-.00383	(.00398)	-0.043	(0.057)	-.00385	(.00396)	-0.043	(0.056)
Childsuffermotherwork X Partn.start	-.00446	(.00797)	-0.064	(0.114)	-.00594	(.00808)	-0.076	(0.113)
Childsuffermotherwork X Partn.end	.0192*	(.00898)	0.281*	(0.127)	.0183*	(.00898)	0.271*	(0.125)
Husbandearn,wifehome X Single	-.00016	(.00314)	0.006	(0.046)	.000706	(.00316)	0.017	(0.046)
Husbandearn,wifehome X Partn.start	.000599	(.00747)	0.025	(0.109)	.00143	(.00756)	0.030	(0.109)
Husbandearn,wifehome X Partn.end	.00401	(.00813)	0.098	(0.123)	.00449	(.0082)	0.098	(0.123)
Childsuffermotherwork X birth	-.00188	(.00439)	-0.007	(0.070)	-.00142	(.0044)	-0.003	(0.069)
Childsuffermotherwork X childo5	.00307	(.00497)	0.048	(0.072)	.00213	(.00497)	0.033	(0.072)
Husbandearn,wifehome X birth	-.00706	(.00471)	-0.079	(0.073)	-.00691	(.0047)	-0.073	(0.071)
Husbandearn,wifehome X childo5	-.00652	(.00525)	-0.078	(0.076)	-.00673	(.00522)	-0.077	(0.075)
Childsuffermotherwork X income increase	-.00607+	(.00336)	-0.083+	(0.046)	-.00581+	(.00338)	-0.081+	(0.046)
Childsuffermotherwork X income decrease	.000107	(.0035)	0.007	(0.049)	.00023	(.00351)	0.009	(0.049)
Husbandearn,wifehome X income increase	.000966	(.00304)	0.013	(0.043)	.000346	(.00302)	0.006	(0.043)
Husbandearn,wifehomeX income decrease	.000844	(.00364)	0.012	(0.051)	.000942	(.00358)	0.014	(0.050)
No of children aged under 16	.0171***	(.00152)	0.256***	(0.023)	.0176***	(.00152)	0.256***	(0.022)
Years of Education	-.00439***	(.000561)	-0.061***	(0.008)	-.00525***	(.00057)	-0.072***	(0.008)
English language problems	.0307***	(.0093)	0.490***	(0.145)	.0292**	(.00915)	0.455**	(0.141)
Age	-.00139***	(.000123)	-0.019***	(0.002)	-.00145***	(.000123)	-0.020***	(0.002)
Age^2	.000088***	(9.6e-06)	0.001***	(0.000)	.000089***	(9.6e-06)	0.001***	(0.000)
Years since migration (Ref.=native-born/ Second generation)	0	(.)	0.000	(.)	0	(.)	0.000	(.)
<=5 years	.0282*	(.014)	0.363*	(0.146)	.0253+	(.0137)	0.332*	(0.144)
>5 & <=10 years	.0135	(.00885)	0.203+	(0.108)	.0155+	(.00897)	0.213*	(0.105)
>10 years	.00736	(.00552)	0.112	(0.073)	.00823	(.00556)	0.119+	(0.072)
General health	.00905***	(.00139)	0.127***	(0.019)	.00906***	(.00138)	0.125***	(0.019)
Wave	.000092	(.00144)	0.032	(0.020)	-.00305*	(.00148)	-0.010	(0.020)
Constant			-2.164***	(0.139)			-1.791***	(0.140)
var(_cons[pidp])								
Constant			0.485***	(0.043)			0.440***	(0.044)
N	27502		27502		27502		27502	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$