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Natalie Chen, Paola Conconi and Carlo
Perroni

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Natalie Chen, ECARES and University of Warwick and CEPR
Paola Conconi, ECARES and University of Warwick and CEPR
Carlo Perroni, University of Warwick

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Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

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ABSTRACT

Does Migration Empower Married Women?*

Differences in gender-based labour market discrimination across countries imply that migration may affect husbands and wives differently. If migrant wives experience a relative improvement in their labour market position, bargaining theory suggests that they should experience comparatively larger gains. However, if renegotiation possibilities are limited by institutional mechanisms that achieve long-term commitment, the opposite may be true, particularly if women are specialized in household activities and the labour market allows more flexibility in their labour supply choices. Evidence from the German Socio-Economic Panel indeed shows that, as long as renegotiation opportunities are limited, comparatively better wages for migrant women lead them to bear the double burden of market and household work.

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Natalie Chen
Department of Economics
University of Warwick
Coventry CV4 7AL
UK
Tel: (44 24) 7652 8419
Fax: (44 24) 7652 3032
Email: n.a.chen@warwick.ac.uk

Paola Conconi
ECARES, ULB
CP114
Avenue F.D. Roosevelt 50
1050 Bruxelles
BELGIUM
Tel: (32 2) 650 3426
Fax: (32 2) 650 4475
Email: pconconi@ulb.ac.be

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Carlo Perroni
Department of Economics
University of Warwick
COVENTRY
CV4 7AL
Tel: (44 24) 7652 8416
Fax: (44 24) 7652 3032
Email: c.perroni@warwick.ac.uk

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=154747

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1 Introduction

One of the concerns often voiced about globalization is that, even if it may produce economic benefits from an aggregate perspective, it may leave behind some categories of individuals—precisely those already facing adverse economic circumstances. In particular, some of the voices speaking against globalization (e.g. members of transnational feminist networks, such as the US-based International Association for Feminist Economics or the EU-based Network Women in Development) have stressed gender-specific concerns. Such concerns are particularly acute in the case of international migration, which is one of the most significant facets of globalization:¹ “[...] female migrants continue to be particularly vulnerable to gender-based discrimination. Stated very simply, the problems faced by migrant women are compounded by their being both women and migrants” (Moreno-Fontes, 2002).

In this paper we ask whether the benefits of international economic migration are unevenly distributed across genders. Migration can affect labor market opportunities differently for the two genders, both because of gender-specific differences between the skills of migrants and the skills that are in demand in the host country, and because of differences in gender-based labor market discrimination between the country of origin and the host country. Moreover, since women are still more centrally involved in childrearing, any migration-related change in childcare opportunities (e.g. separation from family members with whom childcare can be shared) would affect men and women differently. Migration, however, is not an exclusively individual choice: individuals typically belong to a household, and the decision to migrate and take advantage of improved market opportunities is a collective choice that affects all household members.² Thus, for migrant couples, gender-specific outcomes do not just depend on the direct effects migration produces on each spouse, but also on how these effects translate into intra-household bargaining outcomes.

The question of how economic resources are distributed within households is central to the economic literature on marriage (Becker, 1974). This has stressed the idea that marriage can be thought of as a contract that coordinates the actions of the partners in order to maximize joint surplus, and establishes a division of this surplus between them. Accordingly, for a partnership to be viable, it must produce outcomes that are advantageous

¹The number of international migrants has grown steadily in the past four decades to an estimated 175 million in 2000—49% of whom were women (United Nations, 2004).

²The first to stress that spouses might be “tied” in their relocation decisions was Mincer (1978).

for both partners in comparison with what each of them could individually achieve outside the marriage—although the distribution of the surplus may be unequal, depending on the comparative “bargaining strength” of each partner (Nash, 1950).

In a frictionless marriage market, the value of a married individual’s outside option (and hence his or her comparative bargaining strength), given other individual characteristics, always increases if his or her labor market opportunities improve. Since much of the economic migration we observe worldwide takes place from countries where gender-based labor market discrimination is more acute to countries where there is more wage equality between genders, we should conclude that, other things equal, female migrants should experience a comparative increase in their bargaining strength. Thus, at first sight, economic theory would seem to suggest that, although migration can produce differential effects across genders, these differentials should not per se adversely affect female migrants. On the contrary, moving to a country where females face less labor market discrimination should empower women migrants vis-à-vis their partners, and enable them to experience comparatively larger gains.

However, economic theory also suggests that, in the context of a long-term contractual relationship, the possibility of continuously renegotiating the terms of a contract as time progresses may lead to inefficiencies. The reason for such inefficiencies is that, ex ante, individuals may wish to enter into mutually beneficial insurance agreements in order to offset future uncertainty, but some of these agreements will not be honored ex post if individuals are able to renegotiate the contract once the uncertainty has been resolved. With reference to marriage, what this means is that it can be mutually beneficial—and economically efficient—to agree to a certain course of action ex ante, even when ex post this course of action does not result in a gain for both spouses and is therefore not robust to the possibility of renegotiation. Then, in order to achieve ex-ante efficiency, some mechanism for long-run commitment is required. Such commitment can come from legal institutions or from social norms that are enforced through repeated interactions in groups. And, indeed, we do observe that in many societies marriage is formalized as a long-term arrangement supported by legal and social sanctions.

The existence of institutions that make marriage robust to renegotiation weakens the impact of changes in the bargaining strength of married individuals, raising the likelihood of strongly asymmetric intra-household migration outcomes under certain realizations. In all cases, migration will be beneficial to all household members in an ex-ante sense: to the extent that individuals voluntarily enter into a long-run marriage contract, this must pro-

duce an ex-ante Pareto gain; the possibility of migration would be accounted for ex ante and would simply expand the overall ex-ante expected surplus. Yet, under certain realizations, household surplus may be distributed very unequally across household members; and to the extent that there exist systematic gender asymmetries within households—arising from gender-based specialization within households and labor market discrimination—we could expect that there may be a systematic gender gap in migration outcomes.

To explore these issues, we construct a simple theoretical model of intra-household bargaining that is able to generate testable predictions about the gender-specific distributional impacts of joint migration for married couples. Our theoretical specification is based on existing models of intra-household bargaining (e.g. Becker, 1974; McElroy and Horney, 1981; Bourguignon and Chiappori, 1992), but extends these constructs to account for the possibility of long-run renegotiation-proof arrangements, enabling us to analyze dynamic bargaining choices within households in the presence of some commitment mechanisms. According to this framework, the impact of a wage increase on a married individual depends on the extent to which renegotiation is constrained: if the contract is renegotiable, a comparative improvement in the outside option of a married individual—due to a comparative wage increase—will always skew the outcomes in that individual’s favor. However, if renegotiation is not feasible, effects on outside options become irrelevant, and, to the extent that the choice of working hours is flexible, an ex-ante optimal arrangement may result in higher market effort and comparatively lower surplus for the spouse whose wage has increased in relative terms.

The model’s predictions are tested using survey data from the German Socio-Economic Panel (GSOEP). This is a representative longitudinal study of private households in Germany since 1984, covering both Germans and resident foreign nationals who migrated in the 1960s and early 1970s, as well as recent immigrants. The dataset gives detailed information for households and household members on a wide range of topics including household composition, employment, earnings, health etc; most importantly, it includes information specifically related to immigrants. In particular, we focus on the relationship between relative wages for married migrant women and their reported satisfaction, and, pooling all observations on all couples over years, we try to uncover the factors that influence this relationship. Notice that, since the GSOEP only includes post-migration information, we cannot directly measure the effect of relative wage changes due to migration on spouses’ satisfaction. We can, however, derive inferences about *comparative* outcomes across migrant couples.

The data exhibit a robust pattern for both German and migrant women: a woman's share in total household income is negatively related to her reported satisfaction. Notice that this is the opposite of what is predicted by standard bargaining models that abstract from frictions, according to which a comparative improvement in a spouse's market position should always work in that spouse's favor. Moreover, the negative effect of an own-wage increase is much stronger for female migrants. We take this pattern as supportive of the hypothesis that renegotiation opportunities for migrant women are weak and that migrant women face comparatively higher childcare costs. These findings thus suggest that, although migration may be beneficial to women, this is not because of the comparative improvement in their labor market opportunities which is likely to accompany migration: on the contrary, as long as renegotiation opportunities are limited by long-run intra-household commitment, comparatively better wages for migrant women translate into an increase in their market effort, with little relief from household activities.

Our empirical findings are in line with the sociological studies that have commented on the role of gender in migration and have stressed the importance of traditional gender roles within households, which lead women to bear the double burden of market work plus household work: "Participation in the labor force does not automatically improve equality between a migrant and her husband. For some migrant women, labor force participation may increase the burden that they must carry unless they find new alternatives to old roles, particularly those of childcare and housework" (Boyd and Grieco, 2003).

2 Theory

In this section we outline a simple theoretical framework that delivers predictions about the relationship between the characteristics of the marriage contract and the intra-household distribution effects of migration.

2.1 Bargaining and Renegotiation

We will consider a two-period model of sequential intra-household bargaining and renegotiation. Perhaps surprisingly, the theoretical literature on this problem is somewhat sparse (Lundberg and Pollak, 2003; Ligon, 2002; Basu, 2004).

As noted by Lundberg and Pollak (2003), lack of commitment under sequential bargaining within households can lead to inefficient outcomes, which is very possibly why we often observe institutional arrangements that limit possibilities for renegotiation (without ever

being able to fully prevent it). These include legal, religious and social norms that sanction marriage as a long-term contract and prescribe certain behaviors within it. One possible modeling approach for capturing the effects of institutions that achieve an intermediate degree of commitment is to represent the bargaining problem as an ex-ante optimization problem subject to certain continuation constraints (interim participation constraints) that are affected by opt-out penalties.³ A limitation of this approach is that it only defines a certain range of allowable choices. This implies discontinuity in the effects of changes in parameters (such as those that determine disagreement payoffs) on predicted outcomes, making predictions difficult to test empirically. Moreover, this formalization does allow for scenarios where the degree of allowable pre-commitment is arbitrarily small, since the outcome is discretely different from that under unconstrained dynamic renegotiation even for small penalties.

An alternative modeling strategy which we will follow in this paper is to explicitly allow for the possibility of renegotiation, linking individual interim participation constraints with ex-post collective rationality as represented by the bargaining objective, N . Suppose that partners are able to renegotiate in each period, “re-optimizing” the objective N , but that if they do so, they incur a penalty λ which reduces their payoff. This implies that, at any node, renegotiation will not occur if the choices prescribed by earlier bargaining rounds provide continuation payoffs to each partner that are at least equal to those they would each obtain by renegotiation, once renegotiation penalties are incurred.

We apply this idea of renegotiation to a two-period bargaining problem. The problem can be formalized as follows. In a given household there are two spouses, denoted by A and B . The utility of each spouse $i = A, B$, u^i , is assumed to be strictly concave in its arguments (reflecting risk aversion).

Consider now a scenario where households face uncertain outcomes. At time 0, before a certain state s is realized with probability π_s , they enter into a contract specifying the utility each spouse obtains in each possible state. Let $\tilde{X}(s)$ represent household choices upon renegotiation in state s . After a given state is realized (time 1), the spouses can

³These constraints require that ex-ante choices must be such that no party would choose to opt out of the agreement at any node given the continuation disagreement payoffs and any additional penalties incurred. Such penalties can be thought of as a reduced-form representation of some (unmodeled) continuation game in which some additional form of punishment is supported by sustainable strategies under repeated interaction. This setup would be an extension of the concept of cooperative bargaining under a sequential Pareto condition as formulated by Ligon (2002).

renegotiate the terms of the agreement. So, the ex-post bargaining outcome in state s can be written as

$$\tilde{X}(s) = \arg \max N(u^A(s) - \bar{u}^A(s) + \mu, u^B(s) - \bar{u}^B(s) + \mu), \quad (1)$$

s.t.

$$u^A(s) \geq \bar{u}^A(s) - \mu, \quad u^B(s) \geq \bar{u}^B(s) - \mu, \quad \forall s, \quad (2)$$

where $\bar{u}^A(s)$ and $\bar{u}^B(s)$ are the values of outside options in state s and μ is a parameter which captures the extent of the costs for rematching. The value of outside option, $\bar{u}^i(s)$, in each state derives from a matching equilibrium in the marriage market—a process which we need not explicitly model here. The only relevant property of this process for our purposes is that in such an equilibrium individuals with better characteristics—such as a higher market wage—obtain a higher-value match (Legros and Newman, 2002). Note that if μ is very large, the solution to the above problem will become insensitive to changes in the outside option.⁴

At time 0, however, the spouses can commit to some extent to future choices. Formally, they select actions for all states in order to maximize

$$N\left(\sum_s \pi_s u^A(s) - \bar{u}_0^A, \sum_s \pi_s u^B(s) - \bar{u}_0^B\right) \quad (3)$$

subject to

$$u^A(s) \geq \tilde{u}^A(s) - \lambda, \quad u^B(s) \geq \tilde{u}^B(s) - \lambda, \quad \forall s, \quad (4)$$

where $\tilde{u}^A(s)$ and $\tilde{u}^B(s)$ are the utility levels corresponding to the renegotiated outcome \tilde{X} defined above, and $\lambda > 0$ is a renegotiation penalty that must be incurred by each party for renegeing on the course of action previously agreed upon. If utility is concave in its arguments, then any ex-ante opportunity (arising from a positive penalty, λ) to tie down ex-post choices will be exploited to achieve smoothing of outcomes across periods (insurance).

If λ is sufficiently small, then the renegotiation constraints will become binding. In the limit, with $\lambda = 0$ this problem will degenerate into a set of unlinked ex-post bargaining

⁴Also notice that in a frictionless marriage market (i.e. $\mu = 0$), outside options can not be Pareto dominated by outcomes within the marriage, and a marriage contract is not possible if there are Pareto dominant outside options. In other words, the bargaining problem becomes degenerate in this case.

problems, i.e. no meaningful ex-ante agreement will be feasible and the outcomes will be fully dictated by ex-post changes in the outside options (as in Lundberg and Pollak, 2003). As λ and/or μ become larger, ex-ante bargaining will be able to prescribe choices that guarantee an ex-post level of N at future nodes that deviate from ex-post optimal renegotiation choices. For λ approaching infinity, full ex-ante commitment will be feasible, and renegotiation possibilities will effectively have no influence on choices. Thus, in this framework, any change in the economic environment that affects the value of the outside option, $\tilde{u}^i(s)$, $i = A, B$, will only have an effect on bargained outcomes if λ and μ are not too large.

2.2 Wages and Intra-household Outcomes

In the empirical analysis that follows, we shall focus on the relationship between female wages and migration outcomes for women. In a bargaining framework, wages generally affect outcomes through two separate channels: they determine the earning power of the couple, thus directly affecting surplus; and they determine individual outside options.

Let us consider a scenario where the only uncertainty is about ex-post market wage outcomes (e.g. post migration). At time 0, before a certain wage state s with market wages $w^A(s)$, $w^B(s)$, and probability π_s is realized, the spouses enter into a contract specifying effort levels and outcomes in all possible states.

Suppose that spouses $i = A, B$ have a total time endowment equal to unity, which they can use for market activities (l^i), or leisure ($h^i = 1 - l^i$). Each individual is characterized by a given market productivity— w^i (the market wage rate). Utility of spouse i depends on consumption, c^i , and leisure, h^i :

$$u^i = U(c^i, h^i), \tag{5}$$

where U is strictly concave (reflecting risk aversion) and

$$c^A + c^B = w^A l^A + w^B l^B. \tag{6}$$

Consider first the case in which μ and/or λ are small enough that the renegotiation constraint for state s is binding. Then, an individual's welfare will always be positively related to his or her wage (i.e. $du^i/dw^i = d\bar{u}^i/dw^i$ is always positive), implying that a comparative improvement in a spouse's market position will always result in a comparative improvement for her. This is the standard prediction that a bargaining framework would generate in the absence of pre-commitment mechanisms and frictions.

But this conclusion neglects the possible presence of renegotiation constraints in long-term marriage relationships. In what follows, we shall show that, under uncertainty and full ex-ante commitment, an increase in the relative earning power of a spouse will tend to affect her ex-post position adversely in comparative terms; moreover, specialization in market and nonmarket activities between spouses and the existence of institutional constraints on labor supply may generate asymmetries in those adverse effects across genders, consistently with the notion that women experience a “double burden” in relation to market and nonmarket work.

Let us consider the case in which λ and μ are sufficiently large that the renegotiation constraints are not binding. Focusing on the case of utilitarian bargaining (N additively linear), the bargaining objective can be written as

$$\sum_s \pi_s u^A(s) + \sum_s \pi_s u^B(s) = \sum_s \pi_s (u^A(s) + u^B(s)), \quad (7)$$

so that optimal choices are fully separable across states. Then, ex-ante optimum choices for state s coincide with the solution to the problem of maximizing

$$u^A(s) + u^B(s). \quad (8)$$

Adopting a dual representation of preferences, the constraint for the above problem can be written as (omitting s for simplicity):

$$E^A(w^A, u^A) + E^B(w^B, u^B) = w^A + w^B, \quad (9)$$

where $E^i(w^i, u^i)$ is the expenditure function for i —a function of prices (the opportunity cost of leisure (w^i) and of the price of consumption, equal to unity) and of the utility level. Note that a strictly concave utility function translates into a strictly convex expenditure function.

The first-order conditions for an interior optimum are:

$$E_u^A - E_u^B = 0, \quad (10)$$

where subscripts denote partial derivatives, and

$$E^A + E^B - w^A - w^B = 0. \quad (11)$$

Suppose that we totally differentiate the above with respect to u^A, u^B and w^A , while at the same time adjusting w^B so as to hold household earnings constant. This exercise

isolates the compensated effect of a change in w^A from the associated income effects; the compensated effect is what corresponds to the effect we examine in our empirical analysis (where household income is separately controlled for). Totally differentiating (11) we obtain a relationship between changes in w^A and w^B that leave the budget unchanged:

$$\frac{dw^B}{dw^A} = -\frac{E_w^A - 1}{E_w^B - 1} = -\frac{l^A}{l^B}. \quad (12)$$

Totally differentiating (10) and (11) with respect to u^A, u^B and w^A , while also using (12), we obtain

$$E_{uu}^A du^A - E_{uu}^B du^B + (E_{uw}^A + E_{uw}^B (l^A/l^B)) dw^A = 0; \quad (13)$$

$$E_u^A du^A + E_u^B du^B + (l^A - l^B (l^A/l^B)) = E_u^A du^A + E_u^B du^B = 0. \quad (14)$$

Combining these we obtain an expression for the compensated effect of a wage change:

$$\frac{du^A}{dw^A} \frac{w^A}{u^A} = -\frac{w^A E_u^B}{u^A l^B} \frac{E_{uw}^A l^B + E_{uw}^B l^A}{E_{uu}^A E_u^B + E_{uu}^B E_u^A}. \quad (15)$$

Since $E_u^i > 0$, $E_{uu}^i > 0$, and $E_{uw}^i > 0$, the above effect is negative.⁵ Thus, if renegotiation is not feasible, a compensated increase in the relative earning power of a household member will adversely affect that individual. The intuition is simply that, if commitment is feasible, it is ex-ante efficient to prescribe that individuals with comparatively higher earning power should work more; and since consumption and leisure are complements—implying that the marginal utility of consumption is comparatively higher for individuals working more—and to the extent that individuals are not too risk-averse ex ante, higher effort should not be compensated with higher consumption.

If we specialize preferences, we can obtain a simple relationship between the size of this negative effect and preference parameters. Suppose the utility function is

$$U(c^i, h^i) = \frac{1}{1-\rho} \left((1-\theta)^{1/\sigma} (c^i)^{(\sigma-1)/\sigma} + \theta^{1/\sigma} (h^i)^{(\sigma-1)/\sigma} \right)^{(1-\rho)\sigma/(\sigma-1)}, \quad (16)$$

where σ is the elasticity of substitution between consumption and leisure (constant in this specification), θ is a labor share parameter, and ρ is the coefficient of relative risk aversion (also constant). The dual representation of the above is as follows:

$$E(w^i, u^i) = ((1-\rho)u^i)^{1/(1-\rho)} e(w^i), \quad (17)$$

⁵When N is not additively linear, optimality conditions are not independent across states. However, for λ approaching infinity, the optimality condition for state s can be written as $\omega^A(s)E_u^A - \omega^B(s)E_u^B = 0$, where $\omega^i(s) = \pi_s \partial N / \partial (\sum_j \pi_s u^i(j))$, and is therefore locally equivalent to a weighted utilitarian solution.

where

$$e(w^i) = (1 - \theta + \theta(w^i)^{1-\sigma})^{1/(1-\sigma)}, \quad (18)$$

and $\phi > 0$. Then, for $w^A = w^B = 1$ (and $l^A = l^B = l = 1 - \theta$), we have

$$\left(\frac{du^i}{dw^i} \frac{w^i}{u^i} \right)_{w^A=w^B=1} = -\theta \frac{1-\rho}{\rho}. \quad (19)$$

Thus the negative effect on an own-wage increase is larger the smaller is the level of labor supply ($l = 1 - \theta$) and is decreasing in the degree of risk aversion, ρ .⁶

Specialization in market and nonmarket activities between spouses may generate asymmetries in compensated own-wage effects across genders. Comparative specialization by women in household production will, other things equal, reduce the labor market supply of a woman relative to that of her husband. If labor supply choices are fully unconstrained, this will tend to reduce the own-wage effect for a woman relative to that of her husband. To see this, suppose we take the extreme case where there exists a fixed requirement of household production output, and the only input required in household production is an amount k of spouse A 's time—spouse B having zero productivity in such activities. This amounts to a reduction in A 's time endowment from 1 to $1 - k$. Assuming identical utility functions for the two spouses and $w^A = w^B$ (implying a common shadow price of leisure), an optimum in which $E_u^A = E_u^B$ will be characterized by $h^A = 1 - k - l^A = h^B = 1 - l^B$, and hence $u^A = u^B$. In other words, higher nonmarket supply by A will be fully offset by a corresponding higher market supply by B . Then the only difference between expression (15) for A and the corresponding expression for B will be in the level of labor supply: other things equal, the own-wage effect will be comparatively larger (in absolute value) for the spouse comparatively more specialized in market activities (the effect for A is proportional to $1/l^B$).

However, when considered in conjunction with institutional constraints on labor supply, gender-based specialization within the household can generate a very different picture. Individuals engaged in full-time market activities have typically little scope for adjusting their level of labor supply at the margin, whereas part-time workers enjoy more working-hours flexibility—as evidenced by the common empirical finding that the labor supply elasticity

⁶Note: for $\rho > 1$ we have $U < 0$, and so a positive elasticity implies a negative effect, which then becomes increasing in ρ .

for full-time workers is smaller than that for part-time workers.⁷

Suppose then that there is an upper bound, \bar{l} , on the hours that can be supplied in the market, and that this is binding only for B , the spouse comparatively specialized in market activities ($l^B > l^A$). Then the shadow price of leisure for A will exceed that for B even if market wages are the same for A and B ;⁸ consequently, an optimum in which $E_u^A = E_u^B$ will be characterized by $h^A < h^B$ and $u^A < u^B$. Thus, specialization on household production by A and working-hours constraints for B can result in a greater combined work burden for A —a “double burden”. In turn, a comparatively lower u^A means that the own-wage effect could be larger, in relative terms, for the spouse who is more specialized in household production and whose market supply is comparatively smaller.⁹ A binding upper bound on labor supply by A in conjunction with full flexibility by B would produce the exact opposite effect, but, with a common upper bound, this cannot happen if A specializes comparatively more in household production ($l^B > l^A$).

Moreover, there will be little scope for upward labor adjustments in households where both spouses work full-time,¹⁰ but more flexibility in situations where there is a full-time working primary earner (often the husband) and a part-time working secondary earner (often a wife who engages comparatively more in household production).

Notice that lower bounds on hours worked can also be relevant in determining the magnitude of the compensated own-wage effects. Evidence on desired working hours shows that such constraints are binding in some cases—with desired hours of work reported being often less than actual hours worked (Stewart and Swaffield, 1997). If there is a lower bound, \underline{l} , on the hours that can be supplied in the market, and if this is binding only for A , the spouse comparatively specialized in household production activities ($l^A < l^B$), the shadow price of leisure for A will again exceed that for B even if market wages are the same for A

⁷Recent empirical labor literature (e.g. Stewart and Swaffield, 1997) has stressed the importance of institutional constraints on hours worked. Bonin *et al.* (2003) focus on the German labor market and find that the own-wage elasticity regarding participation and hours worked is positive for both men and women but is larger for wives than for husbands. The empirical link between gender-based specialization, employment status, and labor supply elasticities is documented in Blundell *et al.* (2000).

⁸This is the value $\tilde{w}^B(u^B, \bar{l})$ for which $E_{uw}^B(u^B, \tilde{w}^B) = 1 - \bar{l}$.

⁹Expression (15) is decreasing in u^A . A binding upper bound on labor supply by B will reduce the size of the right-most ratio in expression (15), but this effect would be common to A and B .

¹⁰Notice that, if both spouses are in full-time work and the upper bound, \bar{l} , is binding for both, the compensated own-wage effects will be zero.

and B , and an optimum will again be characterized by $h^A < h^B$ and $u^A < u^B$. And if there are lower bounds on hours supplied for individuals in full-time work, a wage increase for A , the spouse who specializes in household production, may force a switch from part-time to full-time status accompanied by a large compensated welfare change and resulting in an outcome where $h^A < h^B$ and $u^A < u^B$.

Thus, there is a presumption that, with full commitment, a compensated own wage increase will be particularly adverse to women, and more so to part-time working women than to women already in full-time work. And, in addition to causing part-time spouses to experience comparatively stronger effects for adjustments on the intensive margin, working-hours constraints on full-time work (lower bounds) will also be responsible for adjustments on the extensive margin—discrete switches from part-time to full-time work.

This asymmetry between genders is a direct result of gender-biased intra-household specialization—which in turn can be attributed to some comparative productivity differential between genders in market and nonmarket production (and especially childrearing).¹¹ Notice that female specialization in childcare implies that an increase in the number of children can make it more likely for a woman, other things equal, to be in part-time rather than full-time employment, and is thus more likely to raise her labor supply elasticity.

The overall conclusion from the preceding discussion is that a scenario with $du^A/dw^A < 0$ is more likely the larger are the rematching costs, μ , and the renegotiation costs, λ , the less risk averse individuals are, and the larger is the household productivity differential between A and B .

2.3 Migration and Wages

Although our previous analysis does not specifically refer to migration, it can be applied to obtain predictions about migration outcomes.

Consider the following formalization of migration choices under full commitment. Suppose there are S states corresponding to different wage realizations (in either the origin country or the destination country) for potential migrants, and that one of these states, state $s = S$, represents a wage realization that can be taken advantage of only upon migration. If that opportunity is discarded, then one of the other realizations will ma-

¹¹These differentials may be inherited from the social framework where a couple originates. Thus household productivity differentials might be systematically greater or smaller for migrants in comparison with overall population in the host country.

terialize, drawn from the same probability distribution. Also, suppose that each individual incurs a migration cost ϕ . Then, at time 0, the partners will compare the expected values of the bargaining function that they can obtain whether or not they commit to take advantage of the possible migration opportunity; these values can be defined as $N(\sum_{s \neq S} \pi_s U^A(s) + \pi_S(U^A(S) - \phi), \sum_{s \neq S} \pi_s U^B(s) + \pi_S(U^B(S) - \phi)) \equiv N_M$ and $N(\sum_{s \neq S} (\pi_s/(1 - \pi_S))U^A(s), \sum_{s \neq S} (\pi_s/(1 - \pi_S))U^B(s)) \equiv N_{NM}$, respectively. We shall focus on a scenario in which $N_M > N_{NM}$, in which the couple will prefer, ex ante, to commit to take advantage of the migration opportunity, if it arises.¹²

Notice that renegotiation could take place both at the pre-migration stage and post-migration. The post-migration renegotiation constraints are as described by equations (1)-(4) above.¹³ The pre-migration renegotiation constraints can be written as

$$u^A(S) \geq \hat{u}^A(S) - \lambda, \quad u^B(S) \geq \hat{u}^B(S) - \lambda; \quad (20)$$

in turn, $\hat{u}^A(S)$ and $\hat{u}^B(S)$ are the utility levels corresponding to the renegotiated outcome in state S , which are the solution to the maximization of

$$N(u^A(S) - \check{u}^A(S) + \mu, u^B(S) - \check{u}^B(S) + \mu) \quad (21)$$

subject to

$$u^A(S) \geq \check{u}^A(S) - \mu, \quad u^B(S) \geq \check{u}^B(S) - \mu, \quad (22)$$

where $\check{u}^i(S)$ is the outside options in state S if individual i does not migrate.

For λ and μ sufficiently small, a solution satisfying both the pre-migration and the post-migration renegotiation constraint may not exist, in which case migration will not take place.

As long as λ and/or μ are sufficiently large, the negative compensated relationship between wages and utility predicted by our previous analysis will apply to migrant households. In particular, if migrant women experience a wage increase in comparison with their husbands' wage, this will not be beneficial to them, at least so long as they are able to increase their labor supply. For smaller levels of λ , one of the two kinds of renegotiation constraints

¹²In the opposite scenario in which $N_M < N_{NM}$, a couple might renegotiate on the decision not to migrate.

¹³This assumes that migration is irreversible; if not, then one should also take into account the possibility of going back.

(or both) will become binding. If the binding constraint is the post-migration constraint, we may expect a positive relationship between changes in own earning shares and utility for migrant women, as discussed before. In those scenarios where migration occurs, for all levels of λ and μ , the analysis carried out in the previous section maps into predictions about the effects of compensated wage changes on intra-household outcomes.

However, these predictions will only apply to those couples for which renegotiation does not impede migration; those for which it does will simply not be observed to migrate. What this implies is that the migrant couples we observe will not be randomly selected with respect to their renegotiation characteristics: other things equal, we should expect that the couples more likely to migrate are those for which commitment is stronger. Then, we would expect a relative increase in the wage of a woman belonging to a migrant household to be comparatively more likely to affect her utility adversely, in comparison with a nonmigrant woman. Moreover, there is much evidence suggesting that migrants are likely to be less risk averse than the average non-migrant population (see Borjas (1987), among others). As discussed in the previous section, other things equal, smaller risk aversion results in a stronger negative compensated effect of wages on utility. Thus, we may expect changes in labor market opportunities to operate differently for migrant and nonmigrant couples: migrant women may be comparatively more likely to be adversely affected as they belong to more commitment-prone and less risk-averse households.

Finally, to the extent that there is gender-based specialization in household production, migrant women may experience migration-specific impacts because of the way migration affects household production possibilities—and, more specifically, childcare costs. Separation from a woman's extended family (siblings and elder parents) may reduce her chances to get help with childrearing. Moreover, for migrant couples that wish their children to be raised in their culture of origin, market substitutes for home childcare may be less readily available after migration. As we noted above, with gender-based specialization in childcare, an increase in the number of children can make it more likely for a woman to be in part-time employment; in turn, this makes it more likely that she is negatively affected by a (compensated) own-wage increase under full commitment. Then, larger childcare costs for migrant women imply a larger impact of additional children on their utility.

To summarize the conclusions from our theoretical discussion in this section: to the extent that marriage is open to renegotiation, we should expect that migration to a country that offers comparatively better labor market opportunities for women should improve their relative position within households. If, however, renegotiation opportunities are limited by

institutional mechanisms that achieve long-term commitment, then a relative increase in a woman’s earning position may not help her, as it may result in increased market and household effort without having any relevant impact on her bargaining strength. We should also expect an own relative wage increase to be more likely to affect women adversely in comparison with men, because women are more involved in household production—which makes the own-wage effect proportionally larger—and in part-time work—which allows more labor supply flexibility at the margin. Finally, we should expect migrant women to be more likely to experience adverse effects, because they are more likely to belong to households characterized by strong commitment, low risk aversion and large childcare costs faced by women.

3 Data

This section describes the dataset and the samples we use for the estimation, as well as the variables involved.

3.1 Dataset

We rely on a dataset from the German Socio-Economic Panel (GSOEP), a yearly survey-based representative longitudinal study of private households in Germany since 1984. Germany has been by far the most popular European destination country for emigrants in the past; almost 9 percent of the German population is foreign born (OECD, 2003).

The survey collects information on all household members, including Germans living in the old and new German states, foreigners who have entered the country in the 1960s and early 1970s, recent immigrants to Germany as well as Ethnic Germans who massively migrated from Eastern countries after the Second World War. In 1994/1995 an additional subsample of 500 immigrant households was included in the dataset to capture the massive inflow of immigrants of the late 1980s. The dataset covers a wide range of topics including household composition, employment, earnings, health, etc. Most importantly for our purposes, the survey contains specific information related to immigrant couples, such as year of migration and marital status upon migration.

We use two different samples covering the period 1984 to 2003 (the most recent available data): since we are interested in the intra-household effects of migration, we include in the first sample only those who migrated to Germany as a married couple. Those couples are selected using information about their year of marriage and their year of migration to

Germany. This means that we exclude from the analysis all second generation migrants (who were born in Germany but do not have the German nationality), those who migrated single or got married with German nationals.

We drop from the sample those immigrants originating from other industrialized countries, as we want to focus our analysis on migrants coming from countries where wages and labor market conditions are significantly different from those in Germany; we thus exclude migrants coming from all other European Union countries as well as from the United States, Switzerland, Japan, Australia and Canada.

The second sample combines the previous sample with similar data for German married couples, who are selected using information on the year of their first marriage and are still together today. By using the combined sample, we are able to compare patterns for Germans and migrants, thus isolating migration-specific effects.

[Tables 1 and 2 here]

As can be seen from Table 1, almost 30 percent of all migrant couples to Germany are from Turkey, with most of the others coming from Eastern European countries. Pooling all couples over years, we end up with a total of 10,140 available observations, of which 3,644 (which correspond to 343 individuals) refer to Turkish couples. Notice that the Table reports an odd number of individuals for some countries of origin (column 3). This is because the spouses of some migrant couples do not always hold the same nationality (e.g. the wife originates from Russia and her husband from Georgia). By cross-referencing individual records, we are able to construct a dataset for 628 couples who migrated jointly from poorer countries (see Table 2). The extended dataset further includes 5,400 German couples.

We know that gender-based wage discrimination patterns are markedly different between Germany and the countries of origin as well as across countries of origin. According to Blau and Kahn (2003), the average gender wage gap in Germany is less than 20%, whereas in Turkey the estimated wage gap is about 50% (Selim and Ipek, 2002). Moreover, according to a report by the World Economic Forum (WEF), which ranks nations on five criteria, including equal pay and access to jobs, Turkey is in the bottom ten states for gender equality, while Germany is in the top ten states.¹⁴ So, it is reasonable to conjecture that,

¹⁴In contrast, Eastern (and Southern) European economies are seemingly characterized by a lower extent

upon migration, women in this sample would have experienced, on average, a comparative wage increase relative to their husbands.

3.2 Variables and Estimation

To capture migration outcomes for women, we focus on self-reported satisfaction—our dependent variable. This is measured as the response to the following survey question: “How satisfied are you with your life today, all things considered?”; it ranges from 0 (completely dissatisfied) to 10 (completely satisfied). This is a subjective measure of utility, since people are asked to evaluate their level of well-being with regard to actual and past experience, and in comparison to others. For a thorough discussion about this measure, see Frey and Stutzer (2002).¹⁵

As anticipated in our previous theoretical discussion, the explanatory variable of interest is a woman’s relative wage, measured as the ratio of her wage (per hour) and of the sum of the two spouses’ hourly wage, denoted by *w share*. This is meant both as a measure of comparative bargaining strength and as a measure of a woman’s potential contribution to household income. Our dataset contains information on monthly gross earnings (including overtime payments) and on the number of hours worked per week during the last month. The wage we calculate for each spouse is thus gross monthly earnings divided by the number of hours worked per week, further divided by 4.3 to obtain gross earnings per hour (Dustmann and van Soest, 1997).

Note that both of the above variables only capture post-migration outcomes. Thus, we cannot directly measure absolute migration outcomes. We can, however, derive inferences about *comparative* outcomes across migrant couples.

We then pool all observations on all couples over years, and investigate the effect of within-households relative wage differentials on self-reported satisfaction by women.

A number of controls are included in the regressions. These refer to (standard) indi-

of gender-based wage discrimination. This observation could be explained by the presence of gender-based occupational discrimination, i.e. women being underrepresented in high-paying occupations that are characterized by comparatively greater gender-based wage discrimination (Olivetti and Petrongolo, 2005).

¹⁵This measure raises a difficult question of interpretation. Namely, when comparing across respondents, should this be interpreted as reflecting a subjective ranking within the whole population or as reflecting a subjective ranking within a peer group with which the individual identifies? In the latter interpretation, reported changes should be taken as relative utility changes ($\Delta u/u$) rather than absolute changes (Δu).

vidual characteristics considered in the “happiness” literature (see, among others, Ferrer-i-Carbonell and Frijters, 2004): a gender dummy, age, age squared, years of education, health status (which is an ordinal score on the answer to self-reported satisfaction with health) and a dummy for being married or divorced—both for the individual in question and his or her spouse—as well as household characteristics (household income, number of household members, number of children, a dummy for having children younger than 16 years of age and the number of years since the couple migrated to Germany). The income measure we use is total annual household income. This variable is probably a better measure of economic well-being than monthly household income since it includes irregular income components such as Christmas bonuses etc. In order to compare income over time, household income is deflated to 2000 prices. Year fixed-effects are also included. The names and definitions of the above variables are listed in the first part of Table 3.

The lower panel of Table 3 lists variables that we interact with the explanatory variable *w share* in the regressions. Some of these variables capture the degree of flexibility of labor supply responses on the intensive margin as well as discrete labor supply adjustments. In order to investigate how the extent to which renegotiation is feasible affects the relationship between relative wages for women and their reported satisfaction, we include interactions with a number of variables that capture the degree of intra-household commitment. Some relate to social norms limiting the extent of renegotiation within a couple: these include church attendance (denoted by *church*)—since church attendance may be positively related to religious and cultural sanctions associated with marriage—and a variable denoted by *enclave* which tells us if there are other foreigners around (although we do not know if they are of the same nationality or not). Other commitment variables relate to the extent of rematching costs. Rematching costs are well-known to be increasing with the number of children, particularly younger ones.¹⁶ We thus introduce several variables associated with having children: being a parent (a dummy for having children, *child*); number of children (*# children*); having children younger than 16 years of age (captured by a dummy variable, *child16*)—as younger children probably represent a heavier burden for the mother; absence of nearby relatives, captured by a dummy if the migrants did not move to the same town

¹⁶Indeed, many studies have found childless women to be more likely to remarry than other women, and to do so more quickly (e.g. Bumpass *et al.* 1990; Chiswick and Lehrer 1990); several researchers have also shown a negative effect of children under age six on their mother’s propensity to remarry (e.g. Martinson 1994; Duncan and Hoffman 1985; Koo *et al.* 1984).

or city where their family or friends already live, denoted by *no family*; and time spent by the wife on childcare per weekday, relative to her husband.¹⁷

Note that some of those variables are used both as interactions and as controls (number of children and children younger than 16 years of age). Therefore, in the other cases, we also include in the controls the other variables used as interactions.¹⁸ In all cases, we express the variables in a way such that an increase in the value of the variable indicates stronger commitment and higher rematching costs and childcare costs. A complete description of the variables used can be found in the second part of Table 3.

[Table 3 here]

Table 4 gives descriptive statistics for some key variables. Overall German respondents report a slightly higher level of satisfaction. There is little difference across men and women, although German women report slightly (but significantly) higher satisfaction than migrant women. In comparison with German natives, migrants are significantly less educated, have lower total incomes and wages per hour, larger households, more children, go to church more frequently, worry more about outside childcare opportunities, and report themselves as being in poorer health. The potential wage share is on average larger for men, but also significantly larger for German than for migrant women.

[Table 4 here]

4 Empirical Findings

Given the ordinal nature of the dependent variable on self-reported satisfaction, we report results of ordered probit estimations. In order to account for the survey design of the data,

¹⁷To capture rematching costs we also tried to interact the wage share with variables that capture limited fluency in written and oral German and age, which would tend to limit a spouse's outside options. Those interactions were not significant and the results are thus not reported but are available upon request. It is however interesting to note that both variables on limited language fluency do have a direct effect on satisfaction: not speaking or writing German fluently are significantly associated with lower satisfaction.

¹⁸It is not possible to include all variables both as interactions and as controls because not of all of them are available for the same individuals, as indicated by the different number of observations we can use in each regression. When attempting to include all variables as controls, we were indeed left with no observations.

observations are weighted using sampling weights and standard errors are adjusted for clustering across voting districts. As a robustness check, we have also performed ordinary OLS estimations (not reported).

4.1 Migrants

We first focus only on those migrant couples in which both spouses work and ran a specification that includes, in addition to all the standard controls, the relative wage share, w share, together with the same variable interacted with a female dummy, denoted by fem (column 1 of Table 5a). The coefficient on the wage share (for men) is insignificantly different from zero, while the interaction between the wage share and the female dummy is *negative* and highly significant. It should be stressed that a standard bargaining model that abstracts from frictions would predict instead a positive and significant coefficient on this interaction term. As shown by the p -value reported at the end of the Table, we can reject (at the 3 percent level) the hypothesis that the effect of the wage share variable on self-reported satisfaction is the same for men and women. This seems to indicate that, for migrant women, improvements in the comparative value of outside options—which are positively associated with comparative earning power—have little effect on intra-household outcomes. Our theory would predict this finding to be associated with large renegotiation and/or rematching costs.

[Table 5a here]

Our theoretical discussion then also suggests that with weak renegotiation a negative own wage impact should be associated with a positive labor supply adjustment. To examine this interpretation, taking into account the presence of working hour constraints, we separately look at flexibility on the intensive margin and at the extensive margin.

To capture the first kind of adjustment we interact the female wage share variable with overtime work—measured as the weekly actual number of hours worked divided by the number of hours “agreed” with the employer—which we take as an indication of the degree of marginal flexibility in working hours. The interaction (column 2 of Table 5a) is indeed negative and highly significant, suggesting that the negative effect of the wage share increase on women’s reported satisfaction is stronger the larger is the proportion of overtime hours worked. Note that working overtime is further associated with a lower level of reported satisfaction, as can be seen from the negative and significant coefficient on overtime work (when included as a control).

To capture the second type of labor supply adjustment, we look at changes in participation status from part-time to full-time status (and vice-versa) positively associated with wage increases. This is done as follows. The dataset tells us (i) the month of the survey for each spouse, (ii) whether the spouse worked part-time or full-time in each month of the year, (iii) the wage we observe is the wage for previous month. Suppose that an individual answered the survey in May 2000 and in August 2001. We then compare the employment status for that individual in April 2000 and July 2001 (as those are the months the wage is observed). If the individual worked part-time in April 2000 and full-time in July 2001, then we assign a value of 1 to a dummy variable that indicates switch from part-time to full-time status. Using the same approach, we separately compute a dummy for switching from full-time to part-time status. We then multiply these dummies with the increase in wage per hour between April 2000 and July 2001.

When the female wage share is interacted with the variables so obtained (columns 3 and 4 of Table 5a), we obtain effects with the expected signs (negative for a switch to full-time status and positive for a switch to part-time status) and highly significant in both cases. One interpretation of this finding is that lower bounds on working hours for full-time work are inducing discrete adjustments in market supply (and in the overall work burden). A further indication that lower-bounds on working hours may indeed generate a “double-burden” effect for women (as discussed in Section 2.2) is found by interacting the female income share variable with a dummy variable (denoted by *flex*) that takes a value of 1 if agreed working hours exceed “desired” hours as reported by respondents (column 5 of Table 5a). The associated interaction coefficient is indeed negative but significant at the 10 percent level only. In addition, when included as a control, it appears that working longer than desired is further associated with a lower level of reported satisfaction.

Columns 6 to 8 report results for specifications where the female wage share is interacted with variables that can be thought of as proxies for commitment (through social norms and/or rematching costs). Of these, interaction with church attendance (column 6) is negative, but not significant, but becomes significant for non-Christian women when we specify a separate interaction for them (column 7). Enclave effects (column 8) are as expected: belonging to a more tightly-knit community (endowed with comparatively stronger social norms) significantly raises the negative impact of an increase in the wage share (and is also directly associated with lower levels of reported satisfaction).

The other controls included in the regressions tend to have effects as expected. Richer households and married individuals with a good health (both own health and health of the

partner) tend to be more satisfied with their life.¹⁹ Women and divorced individuals tend to be less satisfied on average. Being more educated, having migrated for a long time and having many children or young children are not significant in explaining own well-being. Finally, consistent with the findings of previous literature, the partial correlation between own age and life satisfaction is U-shaped.

[Table 5b here]

Finally, columns 1-5 of Table 5b report results for specifications where the female wage share is interacted with variables associated with having children.²⁰ Estimated coefficients for these interactions are (mostly) highly significant and have the expected negative sign: overall, this indicates that childcare duties and lack of opportunities for shared childcare with family members strengthen the negative effect of increases in the own wage share on migrant women's reported satisfaction.²¹

In column 4 of Table 5b, we interact the female wage share with the number of hours she spends per weekday on childcare, relative to her husband. We might expect that the more time the wife spends on childcare relative to her husband, the stronger the negative effect of increases in the own wage share should be. The estimated coefficient on the interaction term is indeed negative and significant at the 10 percent level, which is consistent with our previous findings regarding the effects of having children.

As a robustness check, we have further performed estimations with a sample that also includes couples where one or both of the two spouses do not work.²² To do so, we first predicted the potential hourly wage of the non-working spouses using a standard Heckman two-step selection model (Heckman, 1979), using individual health status, number of children and a dummy for being married as exclusion restrictions. The results (not reported) are broadly in line with the ones reported here.

¹⁹The coefficient on being married however becomes negative in column 6 and zero in column 7.

²⁰As discussed in the next section, these variables may be interpreted as capturing both childcare costs as well as limited renegotiation opportunities.

²¹We also tried to interact those variables associated with having children with total household income, to capture the idea that income may buy market substitutes for home childcare. Those double interactions were not significant, suggesting that there is probably little role for market substitutes to home provided childcare. The results are not reported but are available upon request.

²²In those regressions we also include controls for the working status of the two spouses.

4.2 Comparison Between Migrants and Nonmigrant Residents

When we run the same regressions on an extended sample that includes German couples where both spouses work (the second sample), and interact the wife’s wage share with a dummy for migrants and a dummy for Germans, we find a significantly negative effect of the wife’s wage share on her reported satisfaction both for Germans and migrants (Table 6a, column 1). This indicates that improvements in outside options (earning power) have a negative effect on intra-household outcomes—and thus renegotiation is limited—for German women as well. However, we find that this effect is significantly stronger for migrants. The p -value reported at the end of the Table tells us that we can indeed reject (at the 2 percent level) the hypothesis that the two coefficients are equal. Moreover, this negative effect is strongly associated with labor supply responses but for migrants only (columns 2, 3 and 4), except when using the interaction capturing the gap between agreed and desired hours of work (column 5).

[Table 6a here]

Systematic differences in renegotiation costs between migrants and Germans do not seem to play a role in explaining this difference (with the possible exception of the *enclave* variable, which is not included in the extended sample); indeed, although migrants attend church more than Germans do (see Table 4), the interaction with church attendance is negative and (slightly) significant for Germans only (column 6). As noted in the theory section, we could expect positive selection for migrants with respect to risk neutrality—which could explain the gap between migrants and Germans (higher renegotiation costs and less risk aversion translate into stronger negative compensated impacts of own wage changes on own satisfaction). But the information at our disposal does not provide any direct evidence of this.

An alternative explanation, however—one which does seem to be supported by the data—is systematic differentials in the effects of family size and composition between Germans and migrants. If we look at the results for interactions with parenthood status, number of children and children younger than 16 years of age (Table 6b, columns 1 to 3), we see that the coefficients are negative and significant for migrants only. In column 4 of Table 6b, we also consider the effect of relative childcare duties between spouses. Consistent with predictions, the estimated coefficient is negative for migrants only, though only slightly significant.

[Table 6b here]

As discussed earlier, additional children raise the likelihood of a woman working part-time rather than full-time, and hence, working-hours constraints being comparatively more binding for full-time workers, they make it more likely for her to increase her labor supply (by supplying more hours in part-time work or by switching to full-time work) in response to a wage increase, in the absence of renegotiation.²³ This effect, in turn, will be more marked for migrant women if the additional childcare cost incurred for any additional child is comparatively higher for them. In order to explore this interpretation, we have examined how family size affects work status for migrant and nonmigrant working women (Table 7). The effect of an additional child on the probability of moving to part-time status is positive and significant for migrant women only, and nonsignificant for Germans (we can reject the hypothesis that the two coefficients are equal at the 0 percent level)—which does seem to lend support to the proposed explanation. There is also direct evidence that migrant women are particularly concerned about childcare costs. Survey respondents were also asked the following question: “If you have small children, are you concerned about the availability of childcare?” Responses show migrant women to be more concerned than nonmigrant women, and the difference is statistically significant (see Table 4).²⁴

[Table 7 here]

Alternatively, one could conjecture that an increase in the number of children acts by relaxing the renegotiation constraints, i.e. by raising the cost of separation and/or rematching—an effect that could be stronger for migrants (because of the comparatively

²³Evidence from the sample confirms the prior that part-time workers have more flexible working hours. The mean and standard deviation of actual hours worked—for the whole population, not just couples—are respectively 41 (mean) and 8.7 (standard deviation) for self-reported full-time workers, and 22.4 (mean) and 11.9 (standard deviation) for self-reported part-time workers, the difference being statistically significant. Furthermore, the vast majority of part-time workers in the sample consist of women: for the year 2002, for example, women make up about three-quarters of the total number of part-time workers in the sample, and the same pattern is observed in the other years of the panel.

²⁴The finding could also be explained by some unobservable (compensating) differential that we neglect to control for when comparing households of different sizes; in other words, the number of children is arguably not fully exogenous—although one could claim that it is more of a “long-run” choice relatively to labor supply choices.

higher childcare costs they incur as single parents and/or because of a stronger effect on rematching opportunities for migrants). Our results do lend some support to the idea that the degree of commitment may vary across households and may be different for migrants and nonmigrants—regressions including an interaction with church attendance show this to be negative and significant for non-Christian women, and the interaction with the enclave variable is also negative and significant. However, on the whole our results suggest that the degree of renegotiation is in any event very limited, which makes this alternative interpretation less plausible.

Note that once we interact the wage share with variables that proxy for childcare-related costs, as in Table 6b, we can no longer reject the hypothesis that the effect of the wage share for females is different for migrants and Germans (except when controlling for the effect of being a parent, in column 1): the high p -values reported at the end of the Table indicate that the effects of the female wage share on own satisfaction of migrants and Germans do not differ from each other significantly, once we control for childcare costs.

5 Conclusions

If married women experience an increase in their labor market opportunities relative to their husbands, bargaining theory suggests that they should experience comparatively more favorable outcomes. However, economic theory also suggests that, if renegotiation possibilities are limited, the opposite may be true: a relative improvement in labor market opportunities for women may only induce them to exert higher market effort, with little relief from household activities and limited compensation.

Our findings indicate that a relative improvement in labor market opportunities does not translate into comparatively better outcomes for migrant wives. This is not to say that married women do not benefit from migration. Indeed, they may benefit more from it than men do. But, if migration benefits married women, it is not because of the comparative improvement in labor market opportunities that they may experience.

As suggested by many sociological studies that have stressed the importance of traditional gender roles within households, a comparative improvement in labor market opportunities for women might just act to increase their “double burden”. Traditional gender roles (a comparative advantage of wife in childcare/household productions) do imply comparative specialization in market production by males; this should then imply a negative own-wage effect on a woman’s satisfaction under full commitment, which increases with the

extent to which household production costs are exclusively borne by the woman. Working-hours constraints can also make such negative effect much larger: labor supply responses will be more elastic for part-time working spouses than for spouses working full-time, and gender roles imply that there will be comparatively more women working part-time with a full-time working husband (in line with evidence on aggregate labor supply elasticities across genders). Then, a bargaining model that accounts for the presence of female specialization in household activities and working hours constraints generates predictions that are consistent with the above double burden conjecture.

With gender-based specialization in childcare, an increase in the number of children can make it more likely for a woman, other things equal, to be in part-time rather than full-time employment and for her husband to be in an hours-constrained, full-time status. If childcare costs are higher for migrant women (because they receive less help from relatives and/or because of the higher costs of finding market substitutes for minority cultures) then additional children should be comparatively more likely to induce a shift from full-time to part-time status for migrant women than for nonmigrant women. It follows that, under full commitment, an increase in the number of children is more likely to raise the magnitude of the own-wage effect for migrant women than for nonmigrant women. Indeed, in our regression results, variation in the number of young children across households exerts by far the strongest influence on the relationship between own-wage changes and self-reported satisfaction by migrant women. This points to the conclusion that the degree of gender-based specialization within migrant households and childcare costs in the country of destination are key determinants of migration outcomes for women.

A limitation of our empirical analysis is that the dataset at our disposal only allows us to test our theoretical predictions indirectly. A more direct evaluation of the impact of relative wage changes due to migration on the utility of spouses would require information about pre- and post-migration outcomes for individual couples. Such information would also allow us to examine issues of marriage-related selection bias in migration (e.g. in terms of the degree of marriage commitment and the degree of intra-household specialization).

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Table 1: Origin of all migrants in sample (migrated as couples)

Country of origin	Number of individuals times number of years	Percent	Number of individuals	Percent
Turkey	3644	35.94	343	27.20
Ex-Yugoslavia	1524	15.03	177	14.04
Poland	1224	12.07	188	14.91
Russia	914	9.01	164	13.01
Kazakhstan	727	7.17	125	9.91
Romania	508	5.01	76	6.03
Eastern Europe	493	4.86	36	2.85
Croatia	269	2.65	18	1.43
Bosnia-Herzegovina	197	1.94	19	1.51
Ukraine	156	1.54	28	2.22
Slovenia	58	0.57	3	0.24
Kyrgyzstan	46	0.45	13	1.03
Kosovo-Albania	42	0.41	10	0.79
Czech Republic	39	0.38	4	0.32
Vietnam	34	0.34	6	0.48
Iran	30	0.30	10	0.79
Hungary	28	0.28	3	0.24
Bulgaria	28	0.28	3	0.24
Albania	28	0.28	9	0.71
Chile	20	0.20	1	0.08
Mexico	18	0.18	2	0.16
Tajikistan	18	0.18	2	0.16
Kurdistan	16	0.16	4	0.32
Syria	12	0.12	1	0.08
Uzbekistan	12	0.12	2	0.16
Georgia	10	0.10	1	0.08
Iraq	8	0.08	2	0.16
Lebanon	8	0.08	2	0.16
Pakistan	8	0.08	2	0.16
Eritrea	8	0.08	2	0.16
Angola	4	0.04	2	0.16
Latvia	4	0.04	1	0.08
Azerbaijan	4	0.04	1	0.08
Argentina	1	0.01	1	0.08
Total	10140	100	1261	100

Source: GSOEP.

Table 2: Type of migrants in the GSOEP, number of respondents

	Total	Male	Female
<u>Total number of migrants</u>	9968	5011	4957
Second generation	2884	1412	1472
Migrated as a married couple	1644	822	822
Migrated as a married couple (not from rich countries)	1256	628	628
Migrated not as a married couple	4478	2323	2155
Do not know	962	454	508
<u>Migrated not as a couple</u>	4478	2323	2155
Got married before migrating	1132	491	641
Got married the year migrated	501	160	341
Single when migrated	2845	1672	1173

Source: GSOEP

Table 3: List of variables used as controls and/or as interactions

Variables/Controls	Definition
Satisfaction	Survey response to “How satisfied are you today with your life, all things considered?”. Varies between 0 (completely dissatisfied) to 10 (completely satisfied)
w share	(Real) hourly wage share of each spouse in household hourly wage
HH income	(Real) annual household income (DM)
Female	Dummy equal to 1 for female
Age	Age of respondent (years)
Age Sq	Age of respondent (years), squared
# HH members	Number of persons in household
# children	Number of children in household
child16	Dummy for having children younger than 16 years of age
Married	Dummy equal to 1 for married status
Divorced	Dummy equal to 1 for divorced status
Yrs education	Education or training (years)
Health	Survey response to “How satisfied are you today with your health?”. Varies between 0 (completely dissatisfied) to 10 (completely satisfied)
Yrs since migrated	Number of years since migrated to Germany (year of survey minus year of migration)
Interactions	Definition
overtime	Actual number of hours worked per week divided by number of hours “agreed” with the employer (no overtime when the variable is equal to one)
full-time $\times\Delta w$	Dummy equal to 1 for switching from part-time to full-time status from one year to the next, times the change in the hourly wage after one year (positive change only)
part-time $\times\Delta w$	Dummy equal to 1 for switching from full-time to part-time status after one year, times the change in the hourly wage after one year (positive change only)
flex	Dummy equal to 1 if the number of hours of work “agreed” with the employer is larger than the desired number of hours of work per week
church	Survey response to “How often do you go to church?”. Weekly [4], Monthly [3], Less frequently [2] and Never [1]
enclave	Survey response to “Are there any foreign families living in the [your] area?”. Yes, many [2], Yes, a few [1], No [0]
child	Dummy for having children
childcare	Number of hours spent per weekday on childcare, relative to the spouse
no family	Survey response to “Did you move to the same town/city in Germany where your relatives or friends [who already lived in Germany] lived?”. No [1] and Yes [0]

Source: GSOEP

Table 4: Descriptive statistics (mean values for Germans and migrants included in our sample, t -statistics in brackets)

	Germans	German men	German women	Migrants	Migrant men	Migrant women	Germans - Migrants	Men - women, Germans	Men - women, Migrants	German - migrant, women
Individuals										
Satisfaction [0,10] ^a	—	7.11	7.12	—	6.88	6.90	—	−0.02 (−1.37)	−0.02 (−0.41)	0.22 (7.96)
(Real) wage (DM/hour)	—	28.30	20.24	—	23.48	18.30	—	8.07 (65.25)	5.18 (21.07)	1.93 (8.78)
Hourly wage share	—	0.20	0.15	—	0.16	0.13	—	0.05 (26.84)	0.03 (6.34)	0.02 (5.26)
Yrs education	—	12	11	—	10	9	—	0.73 (44.43)	0.72 (15.12)	1.87 (51.38)
Health [0,10] ^b	—	6.57	6.56	—	6.27	6.02	—	0.01 (0.47)	0.24 (4.95)	0.53 (14.98)
Church [1,4] ^c	—	1.77	1.91	—	2.39	2.37	—	−0.14 (−14.29)	0.018 (0.54)	−0.46 (−19.37)
Worries/childcare opportunities [1,3] ^d	—	—	2.43	—	—	2.33	—	—	—	0.09 (2.99)
Households										
(Real) annual HH income (DM)	34950	—	—	28053	—	—	6897 (42.71)	—	—	—
# HH members	3.10	—	—	3.79	—	—	−0.69 (−36.21)	—	—	—
# of children	0.69	—	—	1.05	—	—	−0.35 (−25.06)	—	—	—

Notes: ^a “Satisfaction” is the response to “How satisfied are you today with your life, all things considered?”. Varies between 0 (completely dissatisfied) to 10 (completely satisfied).

^b “Health” is the response to “How satisfied are you today with your health?”. Varies between 0 (completely dissatisfied) to 10 (completely satisfied).

^c “Church” is the response to “How often do you go to church?”. Weekly [4], Monthly [3], Less frequently [2] and Never [1].

^d “Worries/childcare opportunities” is the response to the question “If you have small children, are you concerned about the availability of childcare?”. Very Concerned [1], Somewhat Concerned [2] and Not Concerned At All [3].

Table 5a: Satisfaction for Migrants, both spouses working

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln w share	0.174 (1.100)	-0.286 (-1.028)	0.577 (1.886)	0.521 (1.705)	-0.425 (-1.412)	0.204 (0.609)	0.205 (0.616)	0.465 (1.168)
ln w share×fem	-0.622 (-2.687)	0.505 (1.453)	-1.314 (-3.446)	-1.195 (-3.036)	0.038 (0.115)	-0.363 (-0.664)	-0.370 (-0.666)	-0.694 (-1.397)
ln w share×fem×overtime	—	-0.492 (-4.579)	—	—	—	—	—	—
ln w share×fem×full-time× Δw	—	—	-2.068 (-2.806)	—	—	—	—	—
ln w share×fem×part-time× Δw	—	—	—	1.801 (2.382)	—	—	—	—
ln w share×fem×flex	—	—	—	—	-0.146 (-1.934)	—	—	—
ln w share×fem×church	—	—	—	—	—	-0.066 (-1.625)	—	—
ln w share×fem×church×Christ.	—	—	—	—	—	—	-0.044 (-0.781)	—
ln w share×fem×church×Other	—	—	—	—	—	—	-0.089 (-2.799)	—
ln w share×fem×enclave	—	—	—	—	—	—	—	-0.172 (-3.137)
overtime	—	-0.533 (-2.922)	—	—	—	—	—	—
full-time× Δw	—	—	-0.527 (-1.920)	—	—	—	—	—
part-time× Δw	—	—	—	-0.092 (-0.651)	—	—	—	—
flex	—	—	—	—	-0.235 (-4.284)	—	—	—
church	—	—	—	—	—	-0.033 (-0.570)	-0.051 (-1.007)	—
Christ.	—	—	—	—	—	—	0.240 (1.711)	—
enclave	—	—	—	—	—	—	—	-0.599 (-3.548)

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Table 5a (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln HH income	0.405 (1.606)	0.459 (1.714)	0.453 (3.263)	0.487 (3.548)	0.407 (1.692)	0.458 (1.847)	0.397 (1.525)	0.628 (1.706)
Female	-0.473 (-2.929)	-0.108 (-0.532)	-0.849 (-3.476)	-0.735 (-2.835)	-0.118 (-0.580)	-0.488 (-1.171)	-0.500 (-1.198)	-0.748 (-2.344)
Age	-0.073 (-3.088)	-0.074 (-2.526)	-0.026 (-0.478)	-0.009 (-0.181)	-0.054 (-1.354)	-0.078 (-2.261)	-0.081 (-2.791)	-0.247 (-1.944)
Age Sq	0.001 (2.835)	0.001 (2.317)	0.000 (0.529)	0.000 (0.265)	0.001 (1.335)	0.001 (2.059)	0.001 (2.587)	0.002 (1.759)
Age, partner	0.086 (2.506)	0.088 (2.142)	0.020 (0.339)	0.007 (0.124)	0.053 (1.331)	0.079 (1.928)	0.079 (1.816)	-0.161 (-1.263)
Age Sq, partner	-0.001 (-2.341)	-0.001 (-2.031)	0.000 (-0.365)	0.000 (-0.171)	-0.001 (-1.204)	-0.001 (-1.758)	-0.001 (-1.636)	0.002 (1.228)
# HH members	-0.072 (-0.829)	-0.072 (-0.830)	-0.118 (-2.170)	-0.127 (-2.358)	-0.072 (-1.001)	0.023 (0.304)	0.024 (0.331)	-0.004 (-0.131)
# of children	0.046 (0.311)	0.055 (0.423)	0.176 (1.309)	0.204 (1.564)	0.057 (0.547)	-0.203 (-1.558)	-0.196 (-1.641)	-0.194 (-4.023)
child16	0.032 (0.239)	-0.004 (-0.031)	-0.104 (-0.726)	-0.123 (-0.879)	-0.017 (-0.187)	0.286 (1.547)	0.294 (1.562)	-0.276 (-1.460)
Married	0.315 (2.357)	0.327 (2.577)	0.603 (2.348)	0.568 (1.997)	0.368 (3.467)	-0.210 (-2.904)	-0.043 (-0.372)	0.926 (2.564)
Divorced	-0.605 (-2.199)	-0.497 (-1.698)	-0.545 (-1.870)	-0.563 (-1.886)	-0.476 (-1.629)	-0.948 (-2.503)	-0.804 (-1.970)	—
Yrs education	0.021 (1.676)	0.013 (0.960)	0.012 (1.041)	0.016 (1.404)	0.007 (0.541)	-0.005 (-0.579)	-0.005 (-0.666)	-0.029 (-1.780)
Yrs education, partner	0.010 (0.274)	0.011 (0.322)	0.026 (0.617)	0.026 (0.631)	0.010 (0.247)	-0.011 (-0.378)	-0.012 (-0.361)	-0.010 (-0.603)
Health	0.218 (17.053)	0.224 (13.667)	0.311 (8.347)	0.304 (8.890)	0.227 (9.831)	0.311 (5.969)	0.313 (6.093)	0.245 (17.966)
Health, partner	0.090 (6.307)	0.091 (6.931)	0.051 (2.155)	0.052 (2.155)	0.102 (7.097)	0.098 (4.806)	0.100 (5.325)	0.146 (12.423)
Yrs since migrated	-0.004 (-1.082)	-0.005 (-1.548)	-0.004 (-0.794)	-0.004 (-0.800)	-0.004 (-0.801)	-0.001 (-0.162)	0.002 (0.159)	0.005 (0.324)
<i>p</i> -value	0.03	0.19	0.00	0.01	0.44	0.52	0.51	0.18
Pseudo-R ²	0.10	0.11	0.13	0.13	0.11	0.14	0.14	0.16
Observations	2269	2148	810	810	1838	1129	1129	280

Notes: ordered probit estimations, observations are weighted using sampling weights; standard errors are adjusted for clustering across voting districts; year fixed-effects are always included; *t*-statistics in brackets; *p*-value is the probability associated with the hypothesis that ln w share and ln w share×fem are equal.

Table 5b: Satisfaction for Migrants, both spouses working

	(1)	(2)	(3)	(4)	(5)
ln w share	0.173 (1.114)	0.178 (1.132)	0.174 (1.112)	0.445 (1.545)	0.046 (0.126)
ln w share×fem	-0.503 (-2.119)	-0.587 (-2.525)	-0.559 (-2.410)	-0.063 (-0.123)	0.077 (0.144)
ln w share×fem×child	-0.236 (-5.826)	—	—	—	—
ln w share×fem×#children	—	-0.056 (-2.898)	—	—	—
ln w share×fem×child16	—	—	-0.148 (-2.417)	—	—
ln w share×fem×childcare	—	—	—	-0.266 (-1.820)	—
ln w share×fem×no family	—	—	—	—	-0.336 (-3.471)
child	0.041 (0.569)	—	—	—	—
childcare	—	—	—	-0.134 (-1.969)	—
no family	—	—	—	—	-0.117 (-0.932)

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Table 5b (continued)

	(1)	(2)	(3)	(4)	(5)
ln HH income	0.396 (1.578)	0.404 (1.605)	0.404 (1.604)	0.741 (1.320)	-0.197 (-0.709)
Female	-0.455 (-2.819)	-0.473 (-2.933)	-0.467 (-2.896)	-0.011 (-0.032)	0.050 (0.138)
Age	-0.052 (-2.155)	-0.062 (-2.643)	-0.058 (-2.322)	0.002 (0.028)	-0.044 (-1.098)
Age Sq	0.001 (1.986)	0.001 (2.423)	0.001 (2.146)	0.000 (-0.111)	0.000 (0.670)
Age, partner	0.059 (1.667)	0.075 (2.172)	0.071 (1.883)	0.113 (1.439)	-0.030 (-0.729)
Age Sq, partner	-0.001 (-1.529)	-0.001 (-2.021)	-0.001 (-1.752)	-0.001 (-1.422)	0.000 (0.717)
# HH members	-0.072 (-0.832)	-0.071 (-0.825)	-0.072 (-0.829)	-0.194 (-1.644)	0.133 (1.378)
# of children	0.030 (0.191)	0.021 (0.136)	0.046 (0.310)	0.257 (1.360)	-0.258 (-1.975)
child16	-0.074 (-0.741)	0.032 (0.240)	-0.034 (-0.287)	-0.461 (-1.518)	0.304 (1.493)
Married	0.269 (1.811)	0.305 (2.199)	0.292 (1.957)	0.837 (5.595)	-0.110 (-0.292)
Divorced	-0.512 (-1.854)	-0.573 (-2.067)	-0.565 (-2.023)	—	—
Yrs education	0.021 (1.526)	0.021 (1.653)	0.021 (1.594)	0.026 (0.746)	-0.021 (-1.636)
Yrs education, partner	0.011 (0.316)	0.010 (0.279)	0.010 (0.289)	0.008 (0.268)	-0.033 (-2.264)
Health	0.219 (16.664)	0.219 (16.829)	0.218 (16.794)	0.249 (7.382)	0.201 (7.091)
Health, partner	0.090 (6.791)	0.090 (6.370)	0.090 (6.492)	0.095 (3.501)	0.116 (3.280)
Yrs since migrated	-0.003 (-1.000)	-0.004 (-1.047)	-0.004 (-1.068)	0.003 (0.140)	0.052 (2.472)
<i>p</i> -value	0.07	0.04	0.05	0.50	0.97
Pseudo-R ²	0.10	0.10	0.10	0.12	0.10
Observations	2269	2269	2269	671	801

Notes: ordered probit estimations, observations are weighted using sampling weights; standard errors are adjusted for clustering across voting districts; year fixed-effects are always included; *t*-statistics in brackets; *p*-value is the probability associated with the hypothesis that ln w share and ln w share×fem are equal.

Table 6a: Satisfaction for Migrants and Germans, both spouses working

	(1)	(2)	(3)	(4)	(5)	(6)
ln w share	0.232 (3.441)	0.191 (2.421)	0.242 (2.515)	0.244 (2.535)	0.185 (2.187)	0.217 (2.779)
ln w share×fem×Germans	-0.252 (-2.474)	-0.120 (-0.750)	-0.162 (-1.098)	-0.163 (-1.113)	-0.201 (-1.745)	-0.148 (-1.068)
ln w share×fem×Migrants	-0.323 (-3.172)	-0.027 (-0.202)	-0.300 (-2.008)	-0.316 (-2.111)	-0.279 (-2.393)	-0.273 (-1.472)
ln w share×fem×overtime×Germans	—	-0.088 (-1.036)	—	—	—	—
ln w share×fem×overtime×Migrants	—	-0.242 (-3.596)	—	—	—	—
ln w share×fem×full-time× Δw ×Germans	—	—	-0.173 (-0.931)	—	—	—
ln w share×fem×full-time× Δw ×Migrants	—	—	-1.282 (-2.601)	—	—	—
ln w share×fem×part-time× Δw ×Germans	—	—	—	0.224 (0.585)	—	—
ln w share×fem×part-time× Δw ×Migrants	—	—	—	2.293 (3.599)	—	—
ln w share×fem×flex×Germans	—	—	—	—	0.051 (1.076)	—
ln w share×fem×flex×Migrants	—	—	—	—	0.094 (1.395)	—
ln w share×fem×church×Germans	—	—	—	—	—	-0.041 (-1.621)
ln w share×fem×church×Migrants	—	—	—	—	—	0.033 (0.507)
overtime	—	-0.097 (-1.232)	—	—	—	—
full-time× Δw	—	—	-0.064 (-0.842)	—	—	—
part-time× Δw	—	—	—	0.003 (0.033)	—	—
flex	—	—	—	—	-0.052 (-1.379)	—
church	—	—	—	—	—	0.052 (2.247)

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Table 6a (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
ln HH income	0.633 (11.158)	0.691 (11.444)	0.735 (10.981)	0.739 (11.042)	0.691 (10.974)	0.722 (11.902)
Migrants	0.170 (3.970)	0.165 (3.052)	0.095 (1.127)	0.099 (1.148)	0.110 (1.883)	0.101 (1.363)
Female	-0.113 (-1.550)	-0.119 (-1.558)	-0.085 (-0.814)	-0.082 (-0.784)	-0.084 (-0.996)	-0.114 (-1.268)
Age	-0.030 (-2.059)	-0.031 (-1.628)	-0.042 (-1.681)	-0.042 (-1.677)	-0.033 (-1.515)	-0.035 (-1.980)
Age Sq	0.000 (2.482)	0.000 (1.780)	0.000 (1.761)	0.000 (1.763)	0.000 (1.668)	0.000 (2.220)
Age, partner	0.011 (0.713)	0.017 (0.916)	0.011 (0.518)	0.010 (0.478)	0.011 (0.557)	-0.009 (-0.473)
Age Sq, partner	0.000 (-0.294)	0.000 (-0.569)	0.000 (-0.125)	0.000 (-0.089)	0.000 (-0.250)	0.000 (0.819)
# HH members	-0.147 (-5.915)	-0.153 (-5.536)	-0.159 (-6.153)	-0.160 (-6.098)	-0.154 (-5.766)	-0.159 (-5.814)
# of children	0.080 (2.373)	0.093 (2.711)	0.112 (2.416)	0.113 (2.456)	0.104 (2.987)	0.067 (1.915)
child16	0.019 (0.395)	0.004 (0.082)	-0.028 (-0.392)	-0.029 (-0.413)	-0.024 (-0.482)	-0.028 (-0.481)
Married	0.466 (2.665)	0.479 (2.731)	0.721 (2.888)	0.730 (2.870)	0.445 (2.433)	0.057 (0.571)
Divorced	-0.617 (-4.461)	-0.636 (-4.337)	-0.206 (-1.099)	-0.216 (-1.172)	-0.554 (-3.082)	-0.671 (-6.761)
Yrs education	-0.014 (-2.108)	-0.012 (-1.557)	-0.022 (-2.417)	-0.022 (-2.429)	-0.012 (-1.624)	-0.021 (-3.139)
Yrs education, partner	-0.020 (-3.175)	-0.025 (-3.713)	-0.027 (-3.344)	-0.027 (-3.316)	-0.025 (-3.296)	-0.026 (-3.845)
Health	0.235 (27.471)	0.238 (25.251)	0.247 (19.211)	0.247 (19.138)	0.242 (24.602)	0.269 (19.632)
Health, partner	0.094 (13.696)	0.090 (11.889)	0.084 (7.691)	0.084 (7.760)	0.094 (11.777)	0.092 (9.695)
<i>p</i> -value	0.02	0.30	0.01	0.01	0.06	0.39
Pseudo-R ²	0.09	0.09	0.09	0.09	0.09	0.10
Observations	25214	21923	9724	9724	18837	13541

Notes: ordered probit estimations, observations are weighted using sampling weights; standard errors are adjusted for clustering across voting districts; year fixed-effects are always included; *t*-statistics in brackets; *p*-value is the probability associated with the hypothesis that $\ln w \text{ share} \times \text{fem} \times \text{Germans}$ and $\ln w \text{ share} \times \text{fem} \times \text{Migrants}$ are equal.

Table 6b: Satisfaction for Migrants and Germans, both spouses working

	(1)	(2)	(3)	(4)
ln w share	0.234 (3.492)	0.234 (3.483)	0.234 (3.478)	0.287 (3.483)
ln w share×fem×Germans	-0.260 (-2.403)	-0.270 (-2.520)	-0.262 (-2.457)	-0.275 (-1.919)
ln w share×fem×Migrants	-0.150 (-1.384)	-0.226 (-2.123)	-0.194 (-1.820)	-0.203 (-1.021)
ln w share×fem×child×Germans	0.010 (0.255)	—	—	—
ln w share×fem×child×Migrants	-0.394 (-5.747)	—	—	—
ln w share×fem×#children×Germans	—	0.013 (0.649)	—	—
ln w share×fem×#children×Migrants	—	-0.143 (-3.764)	—	—
ln w share×fem×child16×Germans	—	—	0.013 (0.338)	—
ln w share×fem×child16×Migrants	—	—	-0.331 (-4.353)	—
ln w share×fem×childcare×Germans	—	—	—	-0.006 (-0.333)
ln w share×fem×childcare×Migrants	—	—	—	-0.139 (-1.657)
child	0.061 (1.127)	—	—	—
childcare	—	—	—	-0.008 (-0.352)

Continued on the next page

Table 6b (continued)

	(1)	(2)	(3)	(4)
ln HH income	0.632 (11.190)	0.633 (11.154)	0.632 (11.153)	0.727 (9.991)
Migrants	0.173 (4.163)	0.172 (4.066)	0.172 (4.078)	0.241 (2.326)
Female	-0.113 (-1.546)	-0.117 (-1.591)	-0.114 (-1.561)	-0.110 (-1.018)
Age	-0.027 (-1.772)	-0.028 (-1.862)	-0.027 (-1.791)	0.018 (0.722)
Age Sq	0.000 (2.176)	0.000 (2.264)	0.000 (2.187)	0.000 (-0.814)
Age, partner	0.007 (0.457)	0.011 (0.676)	0.009 (0.546)	0.007 (0.215)
Age Sq, partner	0.000 (-0.045)	0.000 (-0.289)	0.000 (-0.146)	0.000 (0.003)
# HH members	-0.153 (-6.370)	-0.152 (-6.205)	-0.151 (-6.252)	-0.166 (-4.942)
# of children	0.070 (1.979)	0.077 (2.284)	0.081 (2.490)	0.062 (1.500)
child16	-0.029 (-0.619)	0.023 (0.484)	0.009 (0.181)	-0.060 (-0.648)
Married	0.397 (2.198)	0.425 (2.415)	0.414 (2.252)	0.957 (9.247)
Divorced	-0.439 (-2.742)	-0.517 (-3.442)	-0.487 (-3.350)	—
Yrs education	-0.014 (-2.066)	-0.013 (-2.017)	-0.013 (-2.050)	-0.016 (-1.556)
Yrs education, partner	-0.020 (-3.105)	-0.020 (-3.089)	-0.020 (-3.123)	-0.031 (-3.665)
Health	0.235 (27.297)	0.235 (27.262)	0.235 (27.268)	0.244 (18.385)
Health, partner	0.094 (13.928)	0.094 (13.707)	0.094 (13.790)	0.095 (9.533)
<i>p</i> -value	0.01	0.22	0.13	0.64
Pseudo-R ²	0.09	0.09	0.09	0.09
Observations	25214	25214	25214	9571

Notes: ordered probit estimations, observations are weighted using sampling weights; standard errors are adjusted for clustering across voting districts; year fixed-effects are always included; *t*-statistics in brackets; *p*-value is the probability associated with the hypothesis that ln w share×fem×Germans and ln w share×fem×Migrants are equal.

Table 7: Probability of switching from full-time to part-time job

# of children	-0.052 (-1.287)
# of children×fem×Migrants	0.165 (5.125)
# of children×fem×Germans	0.043 (1.010)
ln HH income	-0.193 (-3.620)
Migrants	-0.007 (-0.143)
Female	0.476 (7.806)
Age	-0.088 (-3.797)
Age Sq	0.001 (4.153)
Age, partner	-0.009 (-0.380)
Age Sq, partner	0.000 (0.325)
# HH members	0.057 (2.089)
child16	-0.044 (-0.681)
Married	-1.144 (-4.350)
Divorced	-0.164 (-0.544)
Yrs education	0.004 (0.432)
Yrs education, partner	0.013 (1.467)
Health	-0.061 (-5.932)
Health, partner	0.001 (0.118)
c	3.047 (5.488)
<i>p</i> -value	0.00
Pseudo-R ²	0.07
Observations	34414

Notes: probit estimation, observations are weighted using sampling weights; standard errors are adjusted for clustering across voting districts; year fixed-effects are included; *t*-statistics in brackets; *p*-value is the probability associated with the hypothesis that # of children×fem×Migrants and # of children×fem×Germans are equal.