

# A Review of the Literature on Gender and International Family Joint Migration

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Volume 16, numéro 1, 2024

URI : <https://id.erudit.org/iderudit/1113924ar>

DOI : <https://doi.org/10.15353/rea.v16i1.5413>

[Aller au sommaire du numéro](#)

Éditeur(s)

International Centre for Economic Analysis

ISSN

1973-3909 (numérique)

[Découvrir la revue](#)

Citer cet article

Freitas-Monteiro, T. (2024). A Review of the Literature on Gender and International Family Joint Migration. *Review of Economic Analysis*, 16(1), 19–59. <https://doi.org/10.15353/rea.v16i1.5413>

Résumé de l'article

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# A Review of the Literature on Gender and International Family Joint Migration

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Most migration decisions are not made by isolated individuals but by families or entire households. However, international family migration remains an understudied field. This article provides an overview of the literature on gender and family dynamics as a path to understanding the family decision to migrate internationally. The first three sections summarize the major historical trends and economic theories on the gender pay gap and give a brief overview of the neoclassical migration model and household models in economics. The central section of this article documents the models of family migration in economics and sociology. Despite the recent improvements, the analysis of family migration still lags far behind that of individual migration and can gain from incorporating gender-theories and the recent developments in household models.

*Keywords:* Household, International Migration, Gender

*JEL Classifications:* O18, R20

## 1 Introduction

Most migration decisions are not made by isolated individuals but by families or entire households. In an ad-hoc 2014 module of The European Labour Force Survey, first-generation EU citizens migrants were asked about their main reason for migrating to another Member State, and about 37% stated 'family' as the main reason for migration.<sup>1</sup> However, most of the literature on international migration between industrialized countries (e.g., from and to) focuses on individual migration. This article addresses this limitation by providing an overview of the literature on family international joint migration<sup>2</sup> and by discussing avenues for further research.

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<sup>\*</sup>The author acknowledges the financial support from the European Union's H2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 765355

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<sup>1</sup>Commission (2018)

<sup>2</sup>This study focuses on family joint migration, which is the form of family migration most common in industrialized countries (e.g., from and to). There is an established literature in development economics studying family migration, but this tends to be split migration, where one member migrates, and the other remains in the home country

The preferences of each household member and how these preferences are weighted to form joint decisions are crucial for understanding the labour market integration of both men and women in a destination country. Traditional economic rationality implies that a couple weighs the earnings potential of each partner equally,<sup>3</sup> independent of gender (Mincer, 1978; Sandell, 1977). However, gender ideology theories argue that women have less decision-making power within the household independent of their level of human capital (Bielby and Bielby, 1992; Shihadeh, 1991).

Until the 1970s, many couples across the developed world still followed the traditional male breadwinner model. Economic studies of the 1970s and 1980s found that family migration was mainly associated with career gains for husbands (Mincer, 1978; Sandell, 1977) since men had higher human capital and earning potential. The increase in female labour market participation among industrialised countries since the 1970s and the gender reversal in years of schooling have disrupted the traditional male breadwinner model. Currently, many couples are comprised of both working husband and wife, so most family migration decisions will now have to deal with a situation where both partners have comparable earnings potential.<sup>4</sup> Making it more interesting to understand who or whom are the drivers of the migration decision.

The economic models analysing the decision to migrate and the household decision-making process are intrinsically linked to Becker's human capital model. According to the Human Capital Theory (Becker, 1994), the productivity of an individual depends on his human capital, which depends on skills, education and experience, among others. Wages reflect an individual's productivity and can be seen as a return to human capital. However, the rates of return to human capital are likely to differ across groups of individuals and locations. Becker (1994, 1974) showed that there are differences in economic returns to human capital between men and women and that this is mainly attributable to women's lower participation in the labour force and household specialisation. Sjaastad (1962) argued that it is the difference in returns to human capital which encourages individuals to migrate. These two contributions have been the major departing points in the literature on gender and migration, which will be the focus of this literature review.

The literature on the origin of gender differences and the decision to migrate has received much attention in economics over the past years. While there are some surveys covering migration topics,<sup>5</sup> there is no survey focusing specifically on the issue of family migration and its relation to gender theories. This paper addresses this limitation by providing a comprehensive review of the literature on family migration decisions and by succinctly reviewing the gender

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<sup>3</sup>Henceforth spouse, partner, household member and family member are used interchangeably

<sup>4</sup>This study focuses on couples composed of two individuals of different biological sexes since there is little empirical evidence on family migration among gay or non-binary couples

<sup>5</sup>See the *Handbook of Labour Economics VI*, V3A, V3C, V4 and *Handbook of Economics of International Migration*

theories and household models which help understand family decision-making and the role of women in those decisions. Since a large part of potential migrants belong to a family, for countries to attract, retain and make use of the labour potential of these migrants, it is vital to understand which households move, why they move and how this impacts the integration of the different family members in the host country.

This article is concerned with the migration decision of families in industrialised countries and therefore it mainly focuses on models where partners migrate together.<sup>6</sup> To better understand the position of women in household decisions, section 2 briefly overviews some of the main theories that explain the prevalence of gender gaps in the labour market in industrialised countries. Several empirical studies support these theories, but they will not be reviewed here.<sup>7</sup> The main goal of this section is to provide a clear understanding of the gender literature to help clarify the position of women in the household decision-making process<sup>8</sup> (such as the family decision to migrate) as well as the opportunities and disadvantages they face in the labour market both in the home and host country. Section 3 describes the main set-up of the neoclassical theory of migration, and section 4 reviews the general framework of household models in economics. These sections aim to provide an understanding of the family migration models in economics rather than review the literature in those fields. Section 5 reviews the decision to migrate to and from industrialised countries with a particular focus on the family decision to migrate jointly. While this last section is linked to two very extensive streams of literature on migration theory and family economics, it does not aim to review them extensively but to focus on the intersection of the two.

The first part of section 5 documents the models of family migration in economics and sociology. While traditional family migration models in economics (based on human capital) and in sociology (based on the role of marital power and gender roles) have not always agreed on the motives behind women's role as tied migrants, this article shows that by modifying the traditional human capital model of Mincer (1978) it is possible to encompass these main theories. This is a small contribution, but it helps to harmonise the discussion between fields. The second part of Section 5 reviews the recent developments in family migration models in economics.

Despite the recent improvements, the analysis of family migration decision-making still lags

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<sup>6</sup>Here, migrating together does not imply that partners migrate at the same time but that the way migration is planned is one where the entire household moves versus one where one spouse migrates from the host country and tries to apply for family reunification, without certainty about the result of the process

<sup>7</sup>A detailed review and criticism of these theories and existing empirical evidence is well documented in Altonji and Blank (1999), Azmat and Petrongolo (2014), Bertrand (2011) and Ponthieux and Meurs (2015)

<sup>8</sup>For a review of models used in family economics see Apps and Ree (2009), Browning et al. (2014) and Chiappori and Meghir (2015) and for its relation to gender theories Ponthieux and Meurs (2015) and Lundberg (2008)

far behind that of individual migration decision-making and can gain from incorporating gender theories and the recent developments in household models. Section 6 discusses some possible improvements and suggests directions for future research in the field of family migration. Finally, Section 7 concludes.

”This study focuses on family joint migration between industrialized countries. There is an established literature in development economics studying family migration, which is out of the scope of this review. Family migration from developing countries to developed countries tends to be split migration, where one member migrates and the other remains in the home country”.

## 2 Gender Gap: Main theories

Although the long-run trend in the gender gap among industrialized economies has followed a downward trend, substantial gender differences in wages, employment, participation rates, hours worked, and occupations persist. The traditional division of home tasks, intermittent labour force participation and part-time work were some of the major drivers of the gender gap until the 1970s. Since then, and until the early 2000s, women’s labour force participation, working hours and schooling increased considerably. At the end of the 1990s and early 2000s, the main explanations for the gender inequalities in labour market outcomes were differences in human capital accumulation and discrimination (Altonji and Blank, 1999).

Despite the remarkable achievements of the 1980s and 1990s, women’s progress seems to have stalled in the 2000s (Goldin, 2006; OECD, 2017; Olivetti and Petrongolo, 2016). An OECD report (OECD, 2017) estimates that the gender pay gap among full-time workers has remained constant, near 15%, since 2010. Women’s higher propensity to work part-time or in lower-paid sectors/occupations combined with their lower propensity to study in STEM fields<sup>9</sup> are some of the most critical drivers of the remaining gender gap. Women also seem less likely to be entrepreneurs and to hold leadership positions.

As the gender gap in traditional human capital variables diminished and richer datasets and methods became available, new explanations emerged for the remaining gender gap. These theories, extensively related to the psychology and sociology literature, explore the role of gender norms and culture as well as gender differences in psychological attributes, personality traits, and preferences and how they are rewarded in the labour market.

The explanations for the existence and persistence of the gender gap in the economic literature can be grouped into four large groups: differences in human capital accumulation (either pre- or post-labour market entry); discrimination (taste-based or statistical); psychological attributes, personality traits and preferences; and gender identity (Altonji and Blank, 1999; Bertrand, 2011; Black and Strahan, 2001; Goldin, 2000; Polachek, 1981). The following subsections will briefly overview these theories.

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<sup>9</sup>Science, technology, engineering and mathematics.

## 2.1 Human capital accumulation and family constraints

A basis for understanding the human capital model is the notion of comparative advantage and how it influences the time allocation between market and non-market activities. The traditional view was that women held a comparative advantage in home production due to biological differences in reproduction, and men had a comparative advantage in specific labour market tasks due to differences in physical strength. Although differences in physical strength have become less relevant over the past decades, other biological differences, such as testosterone levels and the menstrual cycle, also fit this logic.

The second important idea of the human capital model is how the productivity of an individual in market and non-market activities is changed by investments in human capital (Becker, 1992). An individual's incentive to invest in human capital specific to an activity is positively related to the time he or she expects to spend in that activity over the life course (Becker, 1994, 1991, 1985). Expecting to drop out of the labour force or to dedicate more time to the household and children (for instance, by taking a part-time job) reduces lifetime work and hence the returns to human capital. Furthermore, economies of scale from investments in activity-specific human capital encourage spouses to specialize in different types of investments and to allocate their time differently (Becker, 1991, 1985). In early studies (Becker, 1985; Mincer and Polachek, 1974; Polachek, 1975*a*; Weiss and Gronau, 1981) this was used to explain why married women had lower returns than married men: women expected to participate less in the labour force and the traditional division of labour at home increases the incentive of married women to invest in less remunerable home activities and men to invest in more marketable skills. Polachek (1975*b*) shows theoretically and empirically that within-family specialization causes differences in market productivity, which lead to opposite effects on the wage of wives and husbands.

In sum, the human capital model argues that the gender gap can largely be explained by differences in expected labour force participation over the entire life cycle (Polachek, 1975*a*). On the one hand, differences in expected labour force participation over the life cycle lead to gender differences in human capital investments (e.g. education and job-related training). On the other hand, being temporarily out of the labour force can lead to actual depreciation of skills and lost seniority, leading to further deterioration of women's earnings power (Polachek, 2004).

## 2.2 Gender discrimination

The second traditional explanation for the gender gap in economics is discrimination. Labour market discrimination is a case where equally productive individuals are rewarded differently in the labour market due to differences in an observed characteristic, such as gender or migration status. There are two general classes of theoretical models aimed at explaining the existence of discrimination: the 'taste-based' discrimination model introduced by Becker (1957), and the 'statistical' discrimination model introduced by Phelps (1972), Arrow (1973) and Aigner

and Cain (1977). In the taste-based model, employers (customers or other employees) hold a 'taste for discrimination' and derive a dis-utility from employing (purchasing from or working with) minority groups (Becker, 1957; Goldberg, 1982). Consequently, minority groups (e.g. women) need to 'compensate' by either accepting a lower wage than an equally productive member of the majority group (e.g. men) or being more productive for the same wage. In the statistical discrimination literature, employers have limited information about the skills of job candidates and use observable characteristics or prior beliefs (stereotypes) to infer about unobserved components of productivity. Employers can use, for instance, their knowledge about the average characteristics of different groups of workers at their firm and decide whether to hire or what wage to offer to an individual based on membership in a group.

Discrimination in the labour market can, in fact, be linked to the idea of comparative advantage. Women's comparative advantage in home activities and men's in market activities may help shape employers' beliefs and influence the structure of pay and promotion systems (Albanesi and Olivetti, 2009; Francois and van Ours, 2000; Lazear and Rose, 1990). In a long run perspective, as a society and the structure of the labour market change, discrimination is also likely to change. Olivetti and Petrongolo (2016) note that the sharp increase in female labour participation and the entry of women into occupations previously reserved for men is likely to have impacted social norms and stereotypes. Such changes might well have decreased the size of discrimination by changing both men's and women's attitudes towards working mothers, employers' beliefs and women's incentive to invest in pre-labour market human capital (Fernandez et al., 2004; Gayle and Golan, 2012).

### **2.3 Psychological attributes, preferences and personality traits**

In recent decades, as the gender gap in education has reversed and more family policies have been enacted, new explanations for the persistence of gender differences in labour market outcomes have emerged in the economic literature (Bertrand, 2011; Cortes and Pan, 2018). These are strong candidates for explaining the steady gender differences in employment and wages across occupations and industries.

**a) Psychological Attributes:** One stream of this literature is intrinsically related to psychological studies and argues that differences in psychological attributes and traits can explain differences in occupational preferences between women and men. Bertrand (2011) and Azmat and Petrongolo (2014) extensively review the literature on gender differences in attitudes towards competition, risk preferences, attitudes towards negotiation and personality traits. Overall there seems to be evidence consistent with women being more risk averse, having a lower propensity to initiate negotiations, preferring less competitive work environments and being more social-minded than men (Bertrand, 2011; Bowles et al., 2007; Croson and Gneezy, 2009; Dohmen and Falk, 2011; Eckel and Grossman, 2001, 2002, 2008*a,b*; Gneezy et al., 2003; Niederle and

Vesterlund, 2008; Small et al., 2007). Although there is no solid empirical evidence, some studies have found that having these characteristics makes women shy away from specific work environments and occupations, which might contribute to a wider gender wage gap (Flory et al., 2014; Fortin, 2008).

**b) Preferences:** Systematic differences in preferences by gender may translate into gender differences in earnings due to compensating differentials in which women are willing to give up higher earnings to obtain other job attributes. Recent studies have also highlighted that women, particularly mothers, tend to place a relatively higher value on workplace flexibility than men (Cortes and Pan, 2018; Flabbi and Moro, 2012; Pan, 2015; Pertold-Gebicka et al., 2016; Wiswall and Zafa, 2018). Given that firms in certain industries (such as business and law) have an incentive to disproportionately reward individuals who work long hours and penalize labour force interruptions, the preference of (some) women for temporal flexibility contributes to occupational segregation and, therefore, to the gender gap (Goldin, 2014).

For instance, using cross-sectional data for the US, Goldin (2014) shows that the returns to overwork are higher in occupations associated with less flexible work schedules and deadlines and that the gender gap in earnings is more significant in these occupations. Cortes and Pan (2019) use a panel dataset on occupations across cities and find that low-skilled immigration reduces the gender gap in earnings and hours worked, particularly in occupations that disproportionately reward overwork.

As Altonji and Blank (1999) notice, women's preferences for specific job characteristics are not at odds with Becker (1985) theory, where differences in male and female wages are due to differences in productivity from women's specialization in home activities.

**c) Personality Traits:** There is also some recent evidence that differences in personality traits between men and women affect preferences and labour market outcomes, although it is unclear if it works in favour of women or men (Bertrand, 2011). Personality traits make part of the individual productivity 'package' and hence are valued and rewarded by employers. If personality traits are rewarded differently in the market, and there are well-identified differences between men and women, this could explain part of the occupational segregation and the difference in earnings. Differences in personality traits could also explain the different gender attitudes towards risk or negotiation.

Traditionally used in psychology, the 'Big Five' model (agreeableness, neuroticism, conscientiousness, extroversion, and openness to experience) has been used as a measure of personality traits in some economic studies (Mueller and Plug, 2006; Nyhus and Pons, 2005). Mueller and Plug (2006) find that women are likely to score higher than men in the Big Five (excepting conscientiousness) and that these factors are rewarded differentially across genders.<sup>10</sup> The au-

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<sup>10</sup>Women receive a wage premium for conscientiousness and openness and men for non-agreeableness



thors estimate that differences in the Big Five explain up to 16 per cent of the gender wage gap, and differences in the returns to these personality traits explain up to 13 per cent of the gender wage gap. The main driver of the gender gap seems to be antagonism (non-agreeableness), where men score higher than women.

Overall, most studies in this area find that the 'Big Five' have a significant, although modest, role in explaining gender inequalities in wages (Anger and Heineck, 2010; Braakmann, 2009; Cobb-Clark and Tan, 2011; Mueller and Plug, 2006; Nyhus and Pons, 2005). The impact of the 'Big Five' also tends to be lower than that of education, while the magnitude and the returns to each of the 'Big Five' vary somehow across studies and countries.

## **2.4 Gender identity and social norms**

The existence of social norms which prescribe what is appropriate for men and women to do has gained increased attention in recent years as an explanation for gender differences in the labour market. This idea was imported from sociology and social psychology literature to economics by Akerlof and Kranton (2000, 2005, 2010). The authors define identity as a sense of belonging to one or multiple social categories and to an idea of how people belonging to that category should behave. Identity influences economic outcomes because deviating from the behaviour expected of one's social category is costly and decreases utility. Individual economic actions can be partially explained by an individual decision on the 'type of person' to be.

The typical example is the (old) social norm 'women work at home and men in the labour market'. This shapes two social categories, men and women (e.g. gender identities), which are associated with an expected behaviour in the labour market (e.g. homework and market work). Violating this social norm would decrease utility and hence would be something hard to change (Akerlof and Kranton, 2000, 2005, 2010). This theory is consistent with the initially slow change in female labour force participation and more currently with the higher share of women working part-time and dedicating more time to home tasks, even if working full-time (Bertrand, 2011). Gender segregation can also be explained by gender identity: many occupations are labelled as a typical 'male profession', so women might be reluctant to work in such a profession since it conflicts with the prescribed social norm (Akerlof and Kranton, 2000).

The origin of certain discriminatory practices and sex stereotypes might also be explained by gender identity. A male manager may see having a woman working for him at high wages as a threat to his gender identity (decreasing utility) and hence discriminates to balance his utility (Akerlof and Kranton, 2000).

## **3 The Neoclassical Model On The Decision to Migrate**

According to the early neoclassical economic theory of migration (Sjaastad, 1962; Todaro, 1976) international migration is related to the global supply and demand for labour. The individual's decision to migrate is driven by differences in the returns to labour supply (e.g. earnings)

across countries, net of migration costs.

Sjaastad (1962) argued that migration could be seen as (1) an investment because it entails up-front costs and its future payoff is uncertain; (2) in human capital, because according to the human capital theory, (Becker, 1994) labour income is a return to human capital. Hence, migration is 'the act of locating one's skills in that market that offers the highest return' (Bodvarsson et al., 2015).

In the simplest framework, where migrations are permanent and voluntary, and human capital is acquired before migration, an individual decides whether to migrate by comparing earnings in his country of origin with those in the destination country, net of costs. This is a single-period model that treats migration as a one-off decision and where individuals' utility-maximizing problem is seen as a problem of income maximization net of costs. Traditionally, the distance between destination and origin country was viewed as a proxy for these migration costs: the greater the distance, the more imperfect the information and the greater the monetary costs of migration (e.g. transportation costs)

$$G(t) = \int_{t=0}^{T-t} [y_t^F - y_t^H] e^{rt} dt - C(d, Z) \quad (1)$$

$y_t^j$  denotes earnings per period at location  $j = F, H$  where  $F$  denotes foreign country and  $H$  home country. The earnings depend on an individual's human capital and how it is rewarded in each location.  $C$  denotes the cost of migration which is a positive function of  $d$  and  $Z$ ,  $d$  is the distance between foreign and home country, and  $Z$  denotes other costs. The individual chooses to move if  $G(t) > 0$ .

While the relatively simple framework of the neoclassical model provides the basis for analysing migration motives, it fails to explain several patterns. For instance, it treats migration as a single-period decision. However, migration is not necessarily a once and for all decision. Some individuals migrate only temporarily and wish to return home at some stage (Dustmann, 1993, 1996, 1997, 1999, 2003; Dustmann and Goerlach, 2016). More importantly, the traditional neoclassical theory does not explain why family members migrate - in most cases, they tend to 'lose' from migration in terms of individual income or employment.

In many situations, migration decisions are not made by isolated individuals but by families or entire households (Mincer, 1978; Sandell, 1977). Having a partner who participates in the labour market is likely to weigh in the decision to migrate, and so is the presence of school-age children. This article will focus on the family's decision to migrate and the role played by women. For a summary of the main migration theories in economics, see Bodvarsson et al. (2015) and for a specific focus on different topics, the handbook edited by Chiswick and Miller (2014) for instance.

For a large proportion of the moves, migration is a family decision, and that decision affects all members of the nuclear family. The probability of migration should be affected by the

potential labour market outcomes of all the working-age family members. To understand international family migration, three central questions can be posed: How does the family decide to migrate? Are there conflicting interests among the different family members? Does the entire family migrate or only some of the family members?

This article will focus on the case where both family members migrate since it is the most common form of family migration between developed countries, and the literature in this area is scarce. One of the main constraints to study empirically family international joint migration is the limited availability of data allowing the identification of tied and lead movers. For this reason, most of the international family migration literature has focused on split migration. Nevertheless, this type of family migration is not the most prevalent in families coming from industrialized countries.

#### 4 Household Models in Economics

Until the late 1970s, the most common approach in economics to analyse household preferences and decision-making was what is now called the 'unitary model' (Becker, 1974, 1991; Samuelson, 1956), which assumes that households behave as if they were single decision-making units with a single utility function and budget constraint. This approach considers that households pool income and each member benefits equally from the common resources within the household.

Consider a two-person household, composed of a husband ( $m$ ) and a wife ( $f$ ), with rational preferences,<sup>11</sup> making joint decisions with regard to time and consumption allocation. Let  $G$  denote the household public good (the surplus from marriage),  $C$  a private composite good and  $l^i$  the family members' respective leisure time. In unitary models, the couple's joint utility can be represented as  $U = \tilde{U}(C, G, l^m, l^f)$ , subject to the relevant budget and time constraints.

However, this approach was later criticised by economists on the theoretical side (Apps and Ree, 1988; Chiappori, 1992; Folbre, 1986), because it contradicted the neoclassical principle of individualism, and on the empirical side by the lack of support that changes in the individual income level of spouses do not influence household consumption and labour supply, known as the income pooling hypothesis (Attanasio and Lechene, 2002; Browning et al., 1994; Fortin and Lacroix, 1997; Lundberg et al., 1997; Phipps and Burton, 1998). Alternative models have since been suggested, including the collective models (Bourguignon and Chiappori, 1994; Browning and Chiappori, 1998; Chiappori, 1992), cooperative bargaining models (Manser and Brown, 1980; McElroy and Horney, 1981) and the non-cooperative bargaining models (Chen and Woolley, 2001; Lundberg and Pollak, 1993, 1994; Konrad and Lommerud, 1995, 2000; Woolley, 1988). Rather than considering that the household maximises a single utility function based on a set of common preferences as in the unitary approach, these models assign differ-

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<sup>11</sup>Preference orderings that are complete and transitive

ent preferences to individual family members (e.g.,  $U^f$  and  $U^m$ ). By maintaining individual identities within the family, these models create room for analysing gender asymmetries in the household decision-making process (Lundberg, 2008).

Two common features of the cooperative bargaining models and collective models are that household decisions are Pareto efficient<sup>12</sup> and that each household is characterised by a stable decision process<sup>13</sup> (see Browning et al., 2014, for a discussion).

For instance, in Nash bargaining models (Manser and Brown, 1980; McElroy and Horney, 1981), household behaviour results from a bargaining process between family members. The distribution of utility in the family is determined by the feasible consumption set of the two spouses and their 'threat point' or 'outside option'. The threat point represents the best a spouse could do outside the household - it represents the utility level this spouse could reach in the event of a disagreement with the partner. Manser and Brown (1980) and McElroy and Horney (1981) interpret this as the threat of divorce. The couple plays a cooperative game with an axiomatic Nash solution,<sup>14</sup> maximizing an utility of the following form:  $N = [U^m(l^m, c^m, g^m) - P^m][U^f(l^f, c^f, g^f) - P^f]$ , subject to the relevant time and budget constraints. Here,  $P^i$  is the threat point of spouse  $i$  which represents the indirect utility of the spouse. This threat point can be a function of the wage rate and non-labour income of each spouse and might include a vector of parameters that represent extra-household environmental factors such as the conditions on the marriage market. The higher the threat point of a spouse, the higher his or her relative bargaining power and, hence, the higher the bargaining outcome.

The Nash solution produces an equilibrium that is symmetric with respect to the spouses' threat points; hence, it is gender-neutral. However, this specification allows for gender differences in the threat points - through differences in the alternatives available outside the marriage for wife and husband. These differences might emerge due to different conditions in the marriage market. For instance, if the ratio of women to men increases, this will cause a change in the threat points of each spouse and increase the relative bargaining power of the husband.

Collective models argue that Pareto efficient outcomes are a reasonable assumption given that family members interact with each other regularly and observe each other consumption patterns and preferences, such that it is plausible to expect that they exploit all Pareto improvement possibilities (Browning et al., 2014). Instead of using an axiomatic approach as in the Nash bargaining models, the collective models (Browning et al., 1994; Browning and Chiappori, 1998; Chiappori, 1988, 1992) specify the household objective function as a weighted average of individual utilities. These can broadly be represented as:  $N = \mu(\cdot)U^m(l^m, c^m, g^m) +$

<sup>12</sup>In the sense that no feasible alternative outcome would have been preferred by all family members

<sup>13</sup>Such that under the same model fundamentals and economic environment in different time periods, the household adopts the same decision process, leading to the same outcomes

<sup>14</sup>Characterized by a) Pareto efficiency, b) symmetry, 3) invariance with regards to linear transformation and 5) independence from irrelevant alternatives

$[1 - \mu(\cdot)]U^f(l^f, c^f, g^f)$ , subject to the relevant time and budget constraints.  $\mu(\cdot)$  represents the Pareto weights, which can be a function of wages, non-labour income and other distribution factors. Distribution factors can be broadly defined as variables that impact the decision process but have no direct impact on preferences nor on the budget constraint, such as variables that influence divorce and the re-marriage market. For instance, the relative contribution of spouse  $i$  to total family income can be seen as a distribution factor since it influences the outcome only through its impact on the decision process.

By assuming Pareto efficiency alone, the model abstracts from considering explicitly the process by which the family agreement is reached. An increase in a distribution factor or the wage in favour of spouse  $m$  leads to an increase in  $\mu(\cdot)$ , which will result in a higher utility for spouse  $m$  and a lower utility for spouse  $f$ . Hence,  $\mu(\cdot)$  can be seen as the bargaining power of spouse  $m$  - a larger  $\mu(\cdot)$  corresponds to more power, yielding better outcomes for  $m$ .

Contrary to the cooperative modes, non-cooperative models do not assume the existence of some exogenous binding commitment between family members and do not require the optimal outcome to be Pareto efficient, although it can be if supported by the self-interest of the individual players. These types of models specify the bargaining process and the strategic behaviour of each spouse that can lead to inefficient outcomes. In non-cooperative models, partners cannot coordinate their decisions with each other. Each spouse maximises his or her own utility subject to an individual budget constraint, taking as given the decisions of the other spouse.

## 5 Family Migration Theory

### 5.1 Classic models: The tied mover theories and the co-location problem of couples

The first economists to approach the issue of family migration were Sandell (1977), Mincer (1978) and Polachek and Horvath (1977). These authors use a unitary conceptualization of the household (e.g. 'benevolent dictator') and rely on the human capital theory to explain how location decisions are made. They recognize that even if the family 'gains' from migration, on an individual level, some family members might 'lose' from moving. Wives are more likely to be tied movers since they tend to have a more discontinuous labour force participation and less market earning power (e.g. motherhood, non-market activities) - hence smaller gains from migration.

In sociology, Lichter (1983) emphasized the role of marital power (Blood and Wolfe, 1960) in the family decision to migrate, which yields similar predictions to the one developed by Mincer (1978). Later in the 1990s, Shihadeh (1991) and Bielby and Bielby (1992) argued that gender roles were the primary explanation for the observed migration pattern of wives. Women were more likely to be tied movers not because of their lower human capital but because of their prescribed role within societies.

Later in this chapter, we will see that evidence in favour of any particular theory is not strong.

Furthermore, while these three theories have been seen as distinct, a very simple adaptation of the Mincer theoretical model can be constructed to accommodate them.

### 5.1.1 Tied movers: the role of human capital

Mincer (1978) uses a unitary conceptualization of the household, which assumes that households behave as if they were single decision-making units with a 'head' of the household. The head of the household is assumed to be altruistic and is given control over family resources such that it considers the gains and losses from migration of all family members.

Consider a household composed of two spouses, a husband ( $m$ ) and a wife ( $f$ ). Individual  $i = m, f$  net gains from migration can be described by  $G^i = R^i - C^i$ , where  $R^i$  are the returns to market skills from migration<sup>15</sup> and  $C^i$  the monetary and non-monetary costs. For simplification, all potential destinations are aggregated into one, and it is assumed that the sign of  $G^m$  is independent of the sign of  $G^f$  and that divorce is not possible<sup>16</sup>.

If single, individual  $i$  chooses to migrate if  $G^i > 0$ . As a household, the family will migrate if  $G^H = G^m + G^f > 0$ . If  $G^m$  and  $G^f$  have the same sign, there is no conflict between family members. However, it might be the case that even if it is optimal for the family to migrate (e.g.  $G^H > 0$ ), family members forgo opportunities that are optimal from an individual perspective. This would be the case if, for instance, the husband's gains from migration are large enough to offset the losses of the wife, i.e.  $G^m > 0$ ,  $G^f < 0$  and  $|G^m| > |G^f|$ . In this case, the family will move even if family members have conflicting interests. When family net gains dominate individual gains, they can create tied movers (family migrant who, if single, would not have chosen to migrate) or tied stayers (family non-migrant who, if single, would have chosen to migrate).

Who is more likely to have higher gains from migration? The spouse with greater market earning power and continuous labour force participation (e.g. higher human capital). Linking this to the theory of specialization within marriage (Becker, 1985)<sup>17</sup> - one of the prevailing theories for gender differences at the time - it can be inferred that wives are more likely to be tied movers and husbands are more likely to be tied stayers. Because women tend to have a more discontinuous labour market participation (e.g. fertility, child care) and, therefore, a higher propensity to specialize in non-market activities, they under-invest in marketable human capital. This, in turn, lowers their earnings potential and their gains from migration - making them more likely to be tied movers.

However, the larger the wife's contribution to household earnings and the stronger her labour market attachment, the more likely it is that the family will not migrate and the husband is a

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<sup>15</sup>This is the difference in wages between home and host country

<sup>16</sup>The model is easily extended to the case where divorce is possible

<sup>17</sup>see section 2

tied stayer. Overall, single-earner families are more likely to migrate than families where both spouses work since it is harder to find a good job match for both partners in the same location than for a single person to find a good match.

Assuming a bivariate distribution of  $G^m$  and  $G^f$ , the correlation in the migration gains between spouses will determine to a large extent if family migration is individually optimal or not. The more negative the correlation between spouses' gains, the higher the incidence of tied spouses - there is a conflicting situation between what is optimal for the family and what is optimal individually. On the other hand, the higher the correlation between spouses' gains from migration, the smaller the incidence of tied spouses - family migration decisions will be more consistent with individual gains from migration.

The family migration model developed by Mincer (1978) yields interesting insights, which at the time were confirmed by the data:

- Families are less likely to migrate than single individuals
- Families with only one working spouse are more likely to migrate than families where both spouses work
- Migration will occur when either both partners gain from it or when one spouse's gains offset the other's losses
- Wives are more likely to be tied movers (due to their lower human capital)

### 5.1.2 Tied movers: the role of marital power

In sociology, Lichter (1983) applied the marital power/relative resource theory (Blood and Wolfe, 1960) to migration. Marital decision-making power is characterized by 'who makes the decisions' within the household. A spouse's relative marital power is defined as a positive function of the resources (e.g. education, occupational status, income) that he or she brings to the conjugal unit. In such a setting, the partner with greater relative resources has a comparative advantage within the household and can exert a disproportionately large influence on major family decisions - such as the migration decision. When deciding whether to migrate or not, the partner with the highest power can push through a move for his or her own career and subject the other partner to the role of trailing spouse. The marital power/relative resource theory argues that the family decision to migrate ( $G^H$ ) is reduced to an individual-level decision ( $G^i$ ), where the decision to migrate is up to the family member who has a comparative advantage within the family. Considering again the case of a two-person family ( $i = m, f$ ), the head of household is the spouse with the highest resources  $X^i$  (here seen as higher market human capital). Hence, in a very simple adaptation of the Mincer (1978) model, the family migration problem can be defined by  $G^H = (1 - \alpha)G^m + \alpha G^f$  where

$$\alpha = \begin{cases} 1 & \text{if } \text{Max}(X^m, X^f) = X^f \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

The household will migrate if the spouse with the greatest relative resources gains from migration. For instance if  $X^m > X^f$  and  $G^m > 0$ ,  $G^H = 1G^m + 0G^f$  even if  $|G^m| < |G^f|$ . Hence, migration can occur even if the gains of the spouse with higher marital power do not completely outweigh the loss of the other. The decision is gender symmetric in the sense that the household member that makes the decision is the one with the highest resources, e.g. if  $X^f > X^m$ , then the wife becomes the decision maker.

This framework may not seem very reasonable in certain contexts. One can expect that spouses care for each other within families, such that even if the husband is the main decision maker, he incorporates (albeit at a possible discount) the wife's gains and losses from migration.

Despite being premised on a very different prior, the relative resource theory yields fairly similar predictions to those of the human capital theory:

- Couples with balanced power (e.g. similar resources) are less likely to migrate
- Migration will occur when the spouse with higher resources gains from migration
- Wives are more likely to be tied movers (they tend to have less relative earnings power)

### 5.1.3 Tied movers: the role of gender

Later in the 1990s, some sociologists criticized the human capital model and relative resources theory because they did not consider the role of gender in society/family (Bielby and Bielby, 1992; Shihadeh, 1991). The models presented above are gender symmetric/neutral in that they consider how much each spouse contributes to the total family earnings, independently of the spouse's gender. In the human capital model of Mincer (1978), if the wife has a much higher level of human capital than her husband, her earnings potentials are likely high enough such that the family migrates even if, individually, the husband would be better off without migrating. Similarly, in the marital power/relative resource theory, if the wife has more resources than the husband, she has a comparative advantage within the household such that she can push a move for her career and subject the husband to the role of trailing spouse.

On the other hand, the gender role theory rejects the idea that each partner's potential gain or loss is weighted equally in the calculation of family well-being. It argues that decision-making within the household is asymmetric with respect to spouses, which is generated by differences in the gender of spouses and the prevailing social norms. Gender role theories argue that wives do not have the same decision power within the family because they are socialized to place family first and personal goals second (Bielby and Bielby, 1992; Cooke, 2008). The traditional gender



division of labour in most societies induces women to perform most household tasks, placing them in a subordinate position. While the husbands are seen as the head of the household and family breadwinner even if the wife has a higher earnings power. Given the gender roles within societies, these theories argue that wives' characteristics are not good predictors of family migration. Even in a situation where the wife has equal or higher human capital than the husband, the characteristics of the male will have a greater influence on the decision to migrate. This can lead to inefficient solutions, where the households migrate because the husband's position is improved and not necessarily because the family gains from migration.

The role of gender norms can be incorporated into the Mincer (1978) human capital model by assigning a lower weight to the net gains of the wife. For instance:  $G^H = G^m + \alpha G^f$ , where  $0 \leq \alpha < 1$  depends on social norms. Migration can occur even if the net returns of the husband do not outweigh the loss of the wife,  $|G^m| < |G^f|$  because of the role of wives in society  $\alpha < 1$ ,  $G^H = G^m + \alpha G^f > 0$ . Nevertheless, even in a society with more traditional gender roles, husbands can still be tied stayers or movers if  $|G^m| < |\alpha G^f|$ , although this would require substantial returns for the wife. The migration decision is gender asymmetric if  $0 \leq \alpha < 1$  simply because of gender roles.

The gender role theory of family migration predicts that:

- Migration is more likely to occur in traditional unions when the husband gains from migration
- Decision-making in more traditional unions is more 'male-dominant' than in less traditional unions (e.g., common-law and consensual unions)
- Wives are more likely to be tied movers regardless of their absolute and relative human capital

Overall, a more general form of the Mincer model can be built to encompass these three main theories:

$$G^H = (1 - \alpha)G^m + \alpha G^f \quad (3)$$

where  $0 \leq \alpha \leq 1$ <sup>18</sup>. In the case of the Mincer (1978) human capital model, the gains of each spouse are equally weighted and  $\alpha = 1/2$ . In the relative resource theory (Lichter, 1983),  $\alpha$  is defined by equation (2). In the case of the gender roles (Bielby and Bielby, 1992; Cooke, 2008),  $0 \leq \alpha < 1$  is defined by gender roles in society.

#### 5.1.4 Empirical results of internal migration studies on tied mover theories

**Empirical Issues:** The models described above have mainly been tested in the context of internal migration, i.e. across cities or regions within the same country. Despite the different

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<sup>18</sup>This setting gets closer to the collective models described in the previous section

entry barriers, there is little theoretical distinction between internal and international family migration - the underlying motive to move is reasonably similar. Empirically, however, it is much harder to infer on the decision to migrate internationally. The main limitation to the analysis of international family migration is the lack of appropriate data. There are very few harmonized datasets that allow to compare stayers (in the home country) with movers (in the host country) and have detailed individual characteristics<sup>19</sup>, and even fewer follow the same individuals/couples across countries of residence. In some cases, the data might be available, but it is challenging to integrate and harmonize datasets of different origins due to distinct methodological frameworks.

As a result, the researcher only observes individuals and couples who chose to migrate and has very little reliable pre-migration information available at the individual level<sup>20</sup>. Given the possible difference in individual gains from the migration of each spouse, without pre-migration labour market data, it is difficult to provide robust evidence of which of the family members 'gained' and 'loosed', in terms of individual income, from migration. Given these limitations, it is very hard to infer on the family migration decision on an international level. Some datasets, such as the German IAB-SOEP migration sample and the US New Immigrant Survey ask retrospective questions to migrants, which can help to analyze the role of pre-migration human capital on integration and allow to draw conclusions regarding the migration decision of couples.

The empirical literature on international migration has mainly focused on the analysis of the labour market outcomes at migration and with years since migration while considering the role of several factors such as language, culture and networks, among others<sup>21</sup>. Using the appropriate methods and controls, looking at the different labour market outcomes in the host country can provide evidence on who chose to migrate and who might have the largest gains. While country administrative data allows the identification of migrants and has a large sample size, it is not always possible to identify households or migration-specific variables. Despite smaller sample sizes, migrant surveys provide a valuable tool as they usually contain a set of cultural, migration and pre-migration variables (e.g. education and work experience in the home country, networks). This is also particularly relevant for the case of international family migration since differences between partners in language skills and transferability of education

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<sup>19</sup>For instance, the European Labour Force Survey is standardized across member countries but does not contain much detailed information of migrants. The European Social Survey contains detailed information but still few observations per country. OECD also has some data available but does not contain much detailed information on migrants

<sup>20</sup>Some studies have used recent data to analyze the selection of migrants, but this mainly concerns individual migrants (for instance Junge et al., 2014; Patt et al., 2021). Using Danish register data, Junge et al. (2014), Nikolka and Poutvaara (2014), Foged (2016) and Munk et al. (2022) were able to study the selection of Danish emigrants

<sup>21</sup>There are some few exceptions to this such as the work of Foged (2016) and Krieger (2020)

are likely to affect the outcome of the decision-making process and the subsequent integration into the destination country.

**Some general findings from the internal migration literature:** Many studies have looked into the Tied Mover theories. The following results are not an exhaustive list of all these studies but rather a summary of the findings of some of the most referenced studies.

Concerning the family migration decision, economic motivations on the part of the husband seem to have a more significant influence on the decision to migrate (e.g., Battu et al., 1998; Duncan and Perrucci, 1976; Gardner et al., 2001; Grant and Vanderkamp, 1980; Lichter, 1980, 1983; Long, 1974; Nivalainen, 2004; Sandell, 1977; Shihadeh, 1991; Snaith, 1990; Spitze, 1984; Tenn, 2010). Some of these studies show that wives' personal and jobs characteristics (e.g. occupational status, earnings) exert less influence on family migration. However, dual-earner couples are less mobile than single-earner couples (e.g., Boeheim and Taylor, 2002; Holmlund, 1984; Lichter, 1980; Long, 1974; Mincer, 1978; Nivalainen, 2004; Sandell, 1977), such that the wife's employment status seems to have some effect on migration propensities. Concerning the position of the wife, some studies find that the wives are more likely to be tied movers, who experience a fall in working hours and wages after migrating, reinforcing the initial differences between spouses (e.g. Boyle et al., 2001; Jacobsen and Levin, 1997; Lee and C., 1999; Taylor, 2007; Tenn, 2010), but that after an initial drop they seem to recover (LeClere and K., 1997; Maxwell, 1988; Blackburn, 2010; Rabe, 2011).

Evidence in favour of any particular theory is not strong. It highly depends on the model's specification, the chosen dependent variable, the set of controls, and the country being studied. Recent evidence that provides (some) support in favour of the human capital theory includes Jacobsen and Levin (2000) and Rabe (2011), on the marital power Shauman (2010) and on the gender role Cooke (2003), Nivalainen (2004) and Juerges (2006).

A shortcoming of most of these studies is that they look at earnings at two points in time (before and after migration) and not at life cycle earnings. However, according to Mincer and Polachek (1974) and Polachek (1981, 1985) life cycle adaptation of the human capital model, a worker with anticipated intermittent labour force participation (e.g. motherhood) usually follows a different life cycle-training pattern from the typical worker. This means that women's life cycle earnings profiles may be flatter than men's, and their incentives to invest in human capital are also different. By discounting future earnings for both husband and wife, migrating might still be optimal from a long-term perspective.

Secondly, these studies look at the gains of each spouse in terms of their individual earnings and labour market outcomes. Nevertheless, they fail to analyse the more complex family setting. For spouses to remain married and migrate together, it must be the case that there is some form of intra-household transfers (e.g., 'compensation' for migrating when it is not individually beneficial). The unitary framework assumes that there is full commitment and that

intra-household transfers take place ex-ante such that the gains from the lead mover are shared between spouses<sup>22</sup>. However, these studies fail to analyse the intra-household allocation of resources after migration. Although the tied mover might have lower individual labour market earnings, the actual disposable income or individual consumption should be higher than before migration due to transfers from the lead mover. This can indeed be a test of whether the unitary framework of Mincer is the most appropriate setting to analyse family migration (further discussed in section 6).

### 5.1.5 Self-selection with family ties and the co-location problem of couples

Rather than focusing on the decision-making process between spouses, Borjas and Bronars (1991) use the Roy-Borjas model<sup>23</sup> to examine men's self-selection according to family ties. The authors theoretically and empirically examine the role of family ties in determining the skill composition and labour market experience of immigrant men in the US. They allow for a correlation in spouses' earnings assume that families maximize joint income, and compare the total family income across different locations. Migration is motivated by cross-country differences in returns to skill and the level of migration costs. The authors argue that the self-selection of migrant men who move with their spouses is weaker in terms of individual characteristics than the self-selection of single migrants. Accordingly, if migrants are positively (negatively) self-selected, single immigrants will have higher (lower) earnings than married immigrants. The empirical analysis using US census data corroborates the predictions of the theoretical model.

However, Borjas and Bronars (1991) model implies that the probability of migration is increasing in the correlation between spouse's earnings. This is at odds with most studies that find that dual-earner couples with more symmetric earnings potential and similar contributions to household income are more likely to face coordination problems regarding the optimal location.

The coordination problem between dual-earner couples is addressed in a study by Costa and Kahn (2000) in the context of internal migration in the US. The authors classify dual-earner American couples according to their 'power' and look into their co-location problem. Power is defined according to the level of education of each partner: power couples are those in which both spouses have a college education, male (female) couples are those in which only the male (female) spouse has a college education, and low power are those in which neither spouse has a college education. Using the 1940 and 1970-1990 US censuses of population and housing

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<sup>22</sup>As seen in section 4 these assumptions do not necessarily hold

<sup>23</sup>Borjas (1987) points out that the migration decision depends not only on human capital but also on the differences in the distribution of the returns to human capital and the degree of transferability of human capital between the home country and destination country (Roy-Borjas model). In this model, individuals will choose to migrate when the return to education and income inequality in the home country is lower than in the destination country, assuming that mean wages are higher in the foreign country.

(cross-sectional), the authors observe that over the past 50 years, power couples tended to locate in large metropolitan areas relative to other household types and identically educated singles. They argue that the co-location problem of spouses can explain this increased concentration of power couples in larger cities - it is harder for a dual-career power couple to find a good job match for both partners in the same location, and therefore large metropolitan offer more opportunities.

Using the Panel Study of Income Dynamics (PSID), Compton and Pollak (2007) also find that power-couples are more likely to migrate and locate in larger urban areas than low-power couples. However, they find that the migration behaviour of male power couples is indistinguishable from that of power couples and that the migration behaviour of female power couples is indistinguishable from that of low-power couples. Furthermore, using the panel structure of the data, the authors find that both single and married educated individuals are more likely to reside in larger cities where they enjoy better amenities and higher returns and that power couples are not more likely to migrate to the larger cities than singles or male power couples. This leads them to conclude that the primary mechanism behind the concentration of power couples in large metropolitan areas is not higher migration rates but a higher rate of power couple formation. Consistent with previous findings, the authors also conclude that the likelihood of migration to large metropolitan areas is more responsive to the husband's educational background than to the joint couple's education.

### 5.1.6 Empirical results of international migration studies on tied mover theories and self-selection

Following on the work of Borjas and Bronars (1991) and Costa and Kahn (2000), some recent studies have relied on a comprehensive register dataset from Denmark – which allows identifying emigrants and their destination– to infer on the selection of migrant couples and derive empirical estimates (Foged, 2016; Junge et al., 2014; Munk et al., 2022; Nikolka, 2019).<sup>24</sup> Although there is no information on income earned after migration, the dataset includes several variables from which it is possible to derive empirical estimates of the income earned abroad under certain assumptions.

In a similar setup to that of Mincer (1978), Junge et al. (2014) build a theoretical model that abstracts from differences in the returns to skill between home and destination country(ies) and assumes that migration is driven by individual-specific job opportunities abroad.<sup>25</sup> Using Danish register data for dual-earner couples from 1982 to 2010, the authors find that the likelihood

<sup>24</sup>By law, Danish citizens must report to the authorities when they stay abroad for more than six months. The government also provides tax incentives for migrants to register when they leave the country

<sup>25</sup>Wages in Denmark tend to be high relative to other countries, so the authors consider other migration drivers. The net income abroad of a single individual ( $w_i^A$ ) depends on net income at home ( $w_i$ ) and an individual-specific random variable ( $x_i$ ) that follows a uniform distribution ( $w_i^A = (1 + x_i)w_i$ ).

of emigration of dual-earner couples is increasing in the pre-emigration income of the higher-earning partner, irrespective of gender. However, while the probability of emigration increases with a college education, couples where only the male is college-educated (but not the female) seem to be more mobile than couples where only the female is college-educated, independently of who is the main earner. This suggests that emigration is not entirely gender-neutral.

A novel finding from this study is that the elasticity of the probability of couple emigration with respect to the pre-emigration earnings of the main earner is not only large but also considerably larger than the elasticity with respect to the income of singles - and this result does not change whether the main earner is female or male. This finding implies that primary earners in couples are more positively self-selected than singles, contrary to Borjas and Bronars (1991) conclusion that family ties weaken self-selection. The authors argue that the co-location problem 'raises a bar for couples to emigrate'. The gains from the partner driving migration (independent of gender) must be large enough to compensate the tied partner if he or she does not find a good job abroad. After running a set of robustness checks regarding education, labour market status and destination country, Junge et al. (2014) conclude that family ties have a different effect on primary and secondary earners in Denmark. They strengthen self-selection with respect to the primary earner's income but weaken self-selection with respect to the secondary earner's income.

Foged (2016) constructs a unitary model similar to the one described in sub-section 5.1.3, which relates migration propensities of couples to their relative (lifetime) earnings potential. The theoretical model captures features of both the human capital and the gender role theories by assigning a relative weight to the returns of the wife (equal to  $\alpha/(1-\alpha)$  in equation 3). If the weight equals one, each spouse's share of total earnings potential is equally weighted, and the spouse with the highest share gains the most from migrating (e.g. migration is gender neutral). If the weight equals 0, migration is an increasing function of the husband's share (e.g. migration is husband-centred). A weight between 0 and 1 reflects moderate husband-centred migration and has a shape in between the two extreme cases.

One of the main features of Foged (2016) model is that instead of using pre-migration earnings like in Junge et al. (2014), the author estimates the education-specific earnings potential of individuals while allowing for a correlation between spouses' returns to migration. Using Danish administrative data, the author finds that when maximizing the gains from migration, gender-neutral family migration is not rejected against a husband-driven migration. In line with previous findings, Foged (2016) concludes that couples are more likely to migrate if family earnings potential is disproportionately due to one spouse. However, while couples tend to react equally strongly to both wife and husband's relative advantage in educational earnings potential, migration rates fall when there is a very small female advantage. The author suggests that gender identity norms may play a role when the opportunity costs of sticking to them are small and that discrimination abroad might also contribute for this pattern.

Using a theoretical background model similar to equation 3, Krieger (2020) looks at the labour market integration of tied, lead, and equal migrants in Germany. The IAB-SOEP migration sample asks respondents to give a retrospective account of their employment biographies since the age of 15 on an annual basis. This allows the author to have data on the labour market status of each spouse both before (pre-period) and after migration (post-period). Using a differences-in-differences (DiD) method, Krieger (2020) assigns tied movers to the treatment group and lead and equal movers to the control group. Because treatment assignment is non-random, the author controls for individual time-varying characteristics, such as education and language skills, and individual fixed effects.

Descriptive evidence from the study shows that relatively more women than men are tied migrants. From the DiD analysis, the author finds that tied, relative to lead and equal migrants, are less likely to be employed after migrating to Germany. However, when breaking it down by gender, the author shows that female tied migrants are not less likely to be employed than female lead and equal migrants. On the other hand, male-tied movers are less likely to be employed in the short and long term relative to their reference groups after migration. Nevertheless, using survival analysis, Krieger (2020) finds that lead migrants of both genders enter the German labor market earlier than tied movers. The author suggests that the lower employment rate among tied men might be because they migrate in the same year as their wife and thus have less country-specific knowledge available, while tied women migrate some years after their spouse.

The shortcomings of these studies are similar to the ones on internal migration. Namely, for a tied mover to accept to migrate, it must be the case that the loss in utility from a decrease in personal income is compensated by the utility derived from marriage or intra-household transfers. Additionally, it is unclear what the effects of changing cultural environment and potentially gender norms on  $\alpha$  will affect post-migration household decision-making.

## **5.2 Recent models: Unitary, collective, bargaining and dynamic models of family migration**

Economists have also criticized Mincer's model of family migration as being incomplete (Juerges, 2006) since it does not specify the distribution of resources within the family nor considers the future labour supply of spouses. Furthermore, Mincer's model assumes the existence of a 'benevolent' dictator who maximizes family well-being, although this is not always a reasonable assumption. Assuming that family migration is a collective and consensual decision can be a relatively strong assumption in many scenarios since it ignores the possibility of conflict of individual interests between spouses.

As a result of these developments, later interpretations of the family decision to migrate in economics rely on the collective and bargaining framework to model the interaction of spouses with distinct preferences (Chen et al., 2007a; Lundberg and Pollak, 2003; Nikolka and Poutvaara, 2014) or use unitary models that account for gender norms (Foged, 2016; Munk et al.,

2022; Prelipceanu, 2008).

### 5.2.1 Immigration

The repeated interaction argument for efficiency,<sup>26</sup> used in many cooperative family decision-making models, is harder to implement when the decision to be made is exceptional - such as the decision to migrate (Browning et al., 2014). Particularly, it might be the case that a fair redistribution of household resources after migration cannot be taken for granted when deciding where to move. This raises the issue of commitment within families when there is a lack of enforceable contracts. Since current decisions can affect future bargaining power, family members might be compelled to act strategically, leading to inefficient outcomes. If spouses could commit not to exploit future bargaining advantage, the decision to migrate would most likely be efficient. However, this is not necessarily the case.

Lundberg and Pollak (2003) apply a dynamic bargaining model to a two-earner couple migration decision and show that inefficiencies can occur under the lack of commitment. The model has two stages, in the first stage, the migration location is determined, and in the second stage, resources are allocated within the household (conditional on the location decision). Because the first stage decision on where to locate can impact the spouses' future bargaining power in the second stage, in the absence of commitment, the spouse advantaged by the move can renegotiate the intra-household resource allocation. Foreseeing this, the spouse whose bargaining position would be weakened with migration might block the move, even if migrating would be the optimal decision.

Overall, the model by Lundberg and Pollak (2003) recognizes that within the family, the spouse who contributes with more resources has more bargaining power and can trigger relocations that are not always efficient. The model predicts that families are less mobile than the Mincer model suggests due to changes in intra-family bargaining. Nevertheless, assuming that family members never commit in such situations might be a strong assumption considering that these individuals are in a marriage and, in principle, should care for each other.

Commitment in such situations may be achieved through a certain type of contract. These might be formal contracts, such as prenuptial agreements, or informal ones, such as religion, ethics or 'love' (Browning et al., 2014). With an initial setup similar to Lundberg and Pollak (2003), where a spouse could block the move if she is made worse off after migrating, Browning et al. (2014) and Browning (2009) formalize a collective model where commitment mechanisms are possible. Assuming that spouses  $i = a, b$  have caring preferences (e.g., partner's utility enters their own utility), if spouse  $a$  exerts 'too aggressively' his or hers post-migration (higher) bargaining power, spouse  $b$  feels deceived and loses some respect or affection for him or her.

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<sup>26</sup>Cooperation is easier to support in a setting where there is repeated interaction between players (e.g., spouses). Marriage can be seen as such a setting.



This loss of affection can be seen as a penalty that is out of the control of the partner pushing for the move ( $a$ ), and hence is a credible threat by spouse  $b$ . This type of penalty works as a mechanism which discourages spouse  $a$  from exercising his or her full bargaining power after migration. For instance, if  $a$  has a small increase in power after migration, he or she will be less likely to betray if  $b$  cares a lot for him or her and punishes the betrayal strongly (e.g., large penalty).

Chen et al. (2007*b*) develop a two-period cooperative model of intra-household bargaining with the possibility of renegotiation and apply it to the analysis of family migration decision-making (Chen et al., 2007*a*). At time zero,<sup>27</sup> before a certain wage state  $s$  is realised with a given probability, spouses  $i = a, b$  enter into a contract specifying the levels of consumption and leisure in each state. At time one, after a given wage state  $s$  is realised, partners can renegotiate the terms of the agreement taking into account their respective re-matching costs and outside option.

In the first stage (time 0), spouses take this ex-post renegotiation outcome into account and maximise the sum of their utilities subject to the resource constraint and the no-renegotiation constraints (NRCs).<sup>28</sup> Each spouse's NRC includes a penalty,  $\lambda^i$ , that each spouse must incur in case of breaking the agreement made at time zero.<sup>29</sup> At  $\lambda = 0$  no ex-ante agreement is feasible and the model leads to a result similar to that of Lundberg and Pollak (2003). As  $\lambda$ 's increases, ex-ante agreements can determine choices where the ex-post joint utility differs from the optimal choice with renegotiation.

Chen et al. (2007*a*) argue that 'a strong marriage works as an insurance device'. Couples whose spouses are less risk averse and are more committed to household agreements (e.g.  $\lambda$ 's approach infinity and renegotiation is limited) are more likely to migrate. If renegotiation is feasible, an increase in the wage of one spouse in the host country will improve her or his bargaining position. However, if renegotiation is limited, ex-ante optimal arrangements (e.g., hours of housework) might no longer be optimal for the spouse to experience a wage increase in the host country. Considering a couple who migrated from a developing country to a developed country, the wife outside option is higher in the latter, such that the NRC becomes more binding for these women after migration. In such case, an increase in the relative wage of migrant women after migration is more likely to have an adverse effect on them than in the case of men.<sup>30</sup>

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<sup>27</sup>Before migration

<sup>28</sup>Individual utility must be at least as high as the renegotiation utility levels in each future state  $s$  minus the penalty

<sup>29</sup>Note that penalties serve as an insurance device that allows spouses to smooth outcomes across states, ex-ante spouses have the opportunity to limit ex-post choices

<sup>30</sup>Women tend to have more flexible labour market responses and face higher re-matching and renegotiation costs

Chen et al. (2007a) use the German SOEP panel data to test their model, focusing on migrant women from non-industrialised countries and using self-reported satisfaction as a subjective measure of utility. Using a simple regression model with interaction terms, the authors find evidence consistent with the theoretical model and conclude that migration increases the 'double burden' of market and household work of women from non-industrialised countries.

Nevertheless, the model fails to account for the potential confounding role of gender norms which are likely to be stronger in non-industrialised countries. If migrant women are strongly attached to their home country's culture and identity, they might prefer to follow the gender norms of their home country,<sup>31</sup> since not doing so would decrease individual utility.

### 5.2.2 Emigration

Prelipceanu (2008) builds a collective model of couple migration with endogenous sharing rules and power distribution in the context of Romanian emigration. The model relies on strong assumptions that are not appropriate in many contexts. It assumes, for instance, that there is specialization in the household according to gender, that the public good consists of children exclusively raised by women, and it relies on a restrictive form of social norms. Nevertheless, the interesting feature of the model is that it incorporates the role of social norms in household migration decision-making. The social norm dictates the time women should allocate to home production  $t_i \geq \bar{t}$  and it has two cost effects, a social cost  $t_i$  and a psychological cost. Women may refrain from allocating more time to the labour market because this entails a social cost  $S(\bar{t}-t_i, \theta)$  from deviating from the social norm. This cost  $S$  reduces the Pareto weight of women such that it can overtake the income gains from allocating more time to the labour market - worsening the women's position. Deviating from this norm also has a psychological effect on women through the decrease in time they allocate to the production of children. Under this model, women only migrate in extreme cases ( $t_i = 0$  and  $S$  is at a maximum), when there are very high wage inequalities between the home country and the destination country and when gains in the home country are below subsistence level.

Nikolka and Poutvaara (2014) model family decision-making on international migration in a bargaining framework. Particularly, they analyse to what extent spouses who migrate together share the preference for emigration and to what extent a spouse compromises his or her preferred location for family union. The author also looks into the role of intra-family transfers in compensating the tied partner, who sacrificed his or her job to stay with the family.

For a single ( $s$ ) individual ( $i$ ) living in the home country ( $h$ ), utility equals wage  $u_i^{sh} = w_i$ . Individual gains from migration are modelled as in Junge et al. (2014), such that the utility of a single individual emigrating to country  $m$  is written as:  $u_i^{sm} = (1 + x_i)w_i - c$ . A single individual

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<sup>31</sup>These can be for instance, that a woman should not earn more than her husband, or that women should do most of the housework

emigrates if  $x_i w_i - c > 0$ .

Considering a two-person family, with partners  $a$  and  $b$ , it is assumed without loss of generality that  $w_a \geq w_b$  and that partners consume joint household surplus  $h > 0$ . The model assumes that spouses can coordinate efficiently on where to locate and commit to future compensations through costless up-front utility transfers. For joint emigration to occur it must be that  $M = x_a w_a + x_b w_b - 2c > 0$  and the couple ( $c$ ) resource constraint is  $u_a^{cm} + u_b^{cm} = (1 + x_a)w_a + (1 + x_b)w_b + h - 2c$ . If  $M \leq 0$ , the couple ( $c$ ) stays in the home country ( $h$ ) and bargains with the constraint  $u_a^{ch} + u_b^{ch} = w_a + w_b + h$ .

Nikolka and Poutvaara (2014) consider a Nash bargaining set-up in which the outside option of each spouse is the income at the optimal location in the single state and the bargaining powers,  $\alpha$  for  $a$  and  $1 - \alpha$  for  $b$ , are exogenous with  $\alpha \in [0,1]$ . Three broad cases can arise:

- 1 No partner has an incentive to emigrate:  $(u_a^{ch} - w_a)^\alpha (u_b^{ch} - w_b)^{(1-\alpha)}$ . Such that the solution to the bargaining problem is:  $u_a^{ch} = w_a + \alpha h$  and  $u_b^{ch} = w_b + (1 - \alpha)h$
- 2 Both have an incentive to emigrate:  $(u_a^{cm} - [(1 + x_a)w_a - c])^\alpha (u_b^{cm} - [(1 + x_b)w_b - c])^{(1-\alpha)}$ . This yields:  $u_a^{cm} = (1 + x_a)w_a - c + \alpha h$  and  $u_b^{cm} = (1 + x_b)w_b - c + (1 - \alpha)h$ . In this case, both partners would migrate as singles and there are no intra-family income transfers. Just as in the case of no migration, the couple consumes joint household surplus according to their exogenous bargaining powers.
- 3 One spouse (assume  $a$ ) has an incentive to emigrate, but the other does not ( $b$ ):  $(u_a^{cm} - [(1 + x_a)w_a - c])^\alpha (u_b^{cm} - w_b)^{(1-\alpha)}$ . Yielding the solution <sup>32</sup>:  $u_a^{cm} = (1 + x_a)w_a - c + \alpha(x_b w_b - c + h)$  and  $u_b^{cm} = w_b + (1 - \alpha)(x_b w_b - c + h)$ . In this scenario, partner  $b$  is a tied mover - if single he or she would have chosen not to migrate ( $x_b w_b - c < 0$ ). The utility of partner  $b$  is lower than in the case of no migration  $u_b^{cm} = w_b + (1 - \alpha)(x_b w_b - c + h) < u_b^{ch} = w_b + (1 - \alpha)h$ . The losses of the tied mover ( $x_b w_b - c$ ) are shared between spouses according to their respective bargaining powers such that the tied mover receives his or hers outside option ( $w_b$ ) plus the joint household surplus net of income losses. For couple stability to occur, it must be that the losses of the tied mover  $x_b w_b - c + h > 0$ . If this is not the case, the couple dissolves and loses  $h$ .

The theoretical model yields four main hypotheses: 1) a higher wage in the home country lowers the likelihood of being a tied mover; 2) a higher wage of the partner in the home country raises the likelihood of being a tied mover; 3) an increase in the household surplus raises the probability that either spouse is a tied mover and 4) the effect of an increase in migration costs for both spouses is ambiguous.

To test these hypotheses, the authors link register data to a unique survey of 582 Dane couples who emigrated between 1987 and 2002 and did not return to Denmark. Besides the typical

<sup>32</sup>for a very small  $x_b$

demographic and migration questions, the survey asks respondents about their preferences and motives for emigration, which allows analysing if partners were in disagreement with regards to migration.<sup>33</sup> Despite the reduced sample size, Nikolka and Poutvaara (2014) find that family migration decisions tend to be a shared preference between spouses (around 55%), although in many cases, they are driven by the male preference (around 32%), particularly if the wife does not have a college education. When looking into the probability of being a tied mover, the authors find evidence consistent with hypotheses 2) and 4), while the effect of a higher female wage on the probability of being a tied mover is negative but not significant (3).

### 5.2.3 Internal migration

Several new developments have emerged in the family migration literature, which cover different issues. Answering to some of the criticism of the internal migration models described in section 4, this subsection will describe models that put family migration in a life cycle perspective.

To study the internal migration of couples in the US, Gemici (2011) extends the Lundberg and Pollak (2003) intra-household bargaining framework by incorporating job search, endogenous experience accumulation and uncertainty. Using simulated method of moments, the author structurally estimates the family migration problem and assesses the implications of joint search on labour market outcomes, migration patterns and marital stability of men and women. Using the Panel Study of Income Dynamics (PSID), Gemici (2011) finds that men and women have structurally different preferences and face distinct labour market environments between and within locations. In a counter-factual experiment - where individuals act alone instead of making joint decisions with their partner - the author concludes that family ties reduce mobility and the wage gains from mobility when moving. About 18 per cent of couples migrate at least once, while 25 per cent of men and 23 per cent of women migrate when they are alone. For college-educated females, the log wage gains from moving are -0.11 for married women and 0.09 for women acting alone, while for men, this amounts to 0.23 for married men and 0.42 for men acting alone.

The dual-earner co-location problem is also evident in the data, with a low correlation in gains between partners across and within locations. Most importantly, the results from the estimated model show that the husband usually initiates household migration, while women tend to be tied movers. The main reason is that men (married or single) have larger geographical differences in their wage offer distribution, higher average wage offer in each location and lower utility leisure than women. Hence, women tend to be in the position of tied movers and incur private losses due to migration. As predicted by the model, these losses are compensated by the

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<sup>33</sup>e.g. 'I was in favour of migration, while my partner would have preferred to stay'

utility derived from the marriage and intra-household transfers. Regarding marital stability, the model results show that joint location constraints lead to higher divorce rates.

Besides having a lower probability of inter-state migration, US data shows that since the late 1980s, the rate of family intra-state migration decreased more sharply than that of singles (Guler and Taskin, 2018; Braun et al., 2021). Guler and Taskin (2018) assess how much of this decline is due to an increase in the labour force attachment of women and a change in the role of wives within the family. The main logic behind their argument is that the stronger labour market attachment of women leads to a reduction in the income gap between spouses, such that the co-location problem of spouses became more acute.

In a unitary framework, Guler and Taskin (2018) constructs a labour search model with multiple locations, where individuals receive job offers and decide about marriage and divorce. The model considers that as the gender gap in wages declines, family migration is reduced because wives face a higher opportunity cost, and it becomes more difficult for the spouse receiving the wage offer to compensate the other spouse for the job loss. Calibrating the model to match US statistics, the authors find evidence that the reduction in the gender wage gap leads to an increase in the contribution of married women to the total household income, such that there is an increase in the share of dual-earner couples and couples with similar incomes. Because the opportunity cost of moving for these couples is higher, they are more likely to decline job offers coming from different locations, leading to a reduction in inter-state migration.

The model predicts that 35 per cent of the drop in family migration since 1981 can be explained by a reduction in the gender wage gap. The effect of a narrower gender wage gap can be decomposed further into a 'compositional effect', which explains 72 per cent of the moves, and a 'within group effect', which explains 28 per cent of the moves. The compositional effect arises because a decrease in the gender wage gap increases the value of being employed and decreases the value of home production for females. This leads to a decrease in the share of single-earner families (more likely to migrate) and an increase in dual-earner families (less likely to migrate). The within-group effect reflects the fact that a lower gender wage gap increases the likelihood of family migration due to job opportunities of the wife but reduces migration due to job opportunities of the husband. Because most family-interstate migrations are driven by job offers received by the husband, the change in male-generated moves dominates the female one.

In a similar study, Braun et al. (2021) built a two-location model that considers both single and dual-search married couples (does not consider marriage and divorce like Guler and Taskin, 2018). The authors find that dual-search families have a 10 per cent lower likelihood of moving than single-search households. Among those families who moved, they are 26 per cent less likely to have moved due to job-related reasons than singles. Using the dual-location model, the authors conclude that the increase in dual-earner households and the rise in women's wages have explained 55 per cent and 16 per cent, respectively, of the decline in the migration rate of married households.

## 6 Discussion

To attract and use the labour potential of migrants belonging to a family unit, it is vital to understand which households move, why they move and how this impacts the integration of different families in foreign countries. While the selection of couples and their subsequent labour market behaviour has been widely studied in internal migration, international migration poses a broader set of challenges: the lack of appropriate data. As discussed in the previous section, better data will allow studying which families choose to migrate and how this relates not only to their pre-migration education and income but also to their values, preferences and the way they share homework.

As women's labour market participation and education increased, the traditional male breadwinner model became less prevalent. With such dynamics, the traditional neoclassic theory of family migration (Mincer, 1978) became less relevant, and new theories started to emerge. These theories recognized that family decisions do not necessarily represent a unified decision or benefit all household members equally. Some economic models of family migration incorporated insights from sociology and recognized that there might be conflicting interests among family members and that unequal bargaining powers may heavily influence the decision to migrate.

This section discusses the relation between family migration models and the gender theories described in section 2. In an international setting, the co-location problem of couples could be seen as more challenging due to legal, cultural and preferential constraints. Nevertheless, family international migration seems to be increasing<sup>34</sup>. Most likely, part of this trend is driven by changes in emigration policies and by a more integrated and global world. Among others, international migration allows couples to exploit cross-country differences in wage levels and dispersion (also between gender), labour regulations, paternity leave, child care provision, and other amenities. Hence, besides differences in earnings, the couple's migration decision is likely to capture differences in preferences, gender identity and even personality.

**Household Models and Migration:** A complete family migration model should endogenize the labour market participation decision of the tied mover at the destination and possibly consider the role of fertility decisions in younger couples. Such a model would consider the labour market conditions (e.g. returns to human capital) and benefits (e.g. childcare) in the host country and would potentially deliver interesting implications regarding couples' migration and labour supply decisions.

The issue of commitment in family migration could be exploited empirically using internal migration data – albeit migrating internationally is a larger commitment, studying at the internal

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<sup>34</sup>This trend was also documented in the studies by Junge et al. (2014), Munk et al. (2022), Foged (2014, 2016) and Nikolka (2019) for Denmark.

level would allow for a better understanding of the mechanisms. Some of the studies using internal migration data reviewed in section 5.1.4 argue that because married women experience a reduction in labour supply and personal income when moving, married women gain less from migration than married men. However, a fall in the personal income of a spouse does not mean that the consumption and well-being of this spouse decreases. It is necessary to consider the distribution of income within the family. By experiencing an increase in personal income, the lead mover might compensate the tied mover (or not) through an intra-household transfer, such that the tied mover is equally well or better after migration. In the Mincer (1978) model, this compensation was assumed to happen; empirically, this is still an open question.

**Social Norms and Migration:** Some of the models described above allowed for gender differences in the wage rate, or in the case of the unitary framework, they considered the possibility of discounting the wife's utility. However, few models have incorporated the role of social norms in explaining why women might accept the role of tied movers even though they lose in terms of labour market outcomes.

As presented in section three, Akerlof and Kranton (2000, 2005, 2010) show how identity could influence economic outcomes. Similarly, social norms can impact the decision to migrate by creating a cost of deviating from the expected behaviour of the spouse's social category. Consider the existence of a social norm that, for instance, dictates the time women should allocate to home production and the labour market or that women should submit to the husband's job opportunities, or even that a wife should not earn more than the husband. A job opportunity abroad that significantly improves the wife's labour market position, such that in the absence of the social norm, the husband would be a tied mover, can lead to a violation of the social norm (e.g. wife allocates more time to the labour market/earns more than the husband). Deviating from the expected behaviour creates a cost and decreases the wife's utility, such that the couple may choose to remain married but not to migrate.<sup>35</sup>

Through their influence on the selection of couples, social norms will also influence the integration of spouses into the host country, particularly in the first years after migration. As gender norms vary widely, even among industrialized countries, there is still room to explore how these affect the migration decision of couples. Most of the studies mentioned in the previous section look into the selection of Danish couples. However, Denmark is one of the most gender-equal countries. To better understand how to encourage tied spouses to participate in the labour force or even to help in the design of policies to attract highly skilled migrants, it is necessary to deepen our knowledge of how gender norms across source countries affect the migration decision of couples and their consequential integration into the host country.

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<sup>35</sup>While the model by Prelicpeanu (2008) described in the previous section incorporates social norms and assumes Pareto efficiency, this needs not be the case.

Particularly for studying integration, it is important to recognise that gender identities are not necessarily static. Gender norms are socially constructed and reconstructed through time so that the norms may influence a migrant's identity in the host country as the years pass. This can happen, for instance, through the interaction with natives or the adoption of certain values or practices that are perceived as socially accepted or desired in the host country. Hence, it is also relevant to understand if the household distribution of power and organisation of labour is changed or reconstituted after migration.

Another interesting direction is to analyse the selection of migrant couples compared to those who stayed at home based on their preferences. While the study by Blau et al. (2011) explored the role of home country gender division of labour on the assimilation of migrant women labour supply in the US by using female labour force participation relative to men in the home country as a proxy, it assumed that migrant women are similar to those in their country of origin. However, they could have migrated due to their different preferences and/or gender identities. Using survey micro-data, it would be possible to look at how the values of the migrant couples compare with the average values in the home country. Two main questions could then be answered: i) are those families who choose to migrate similar to the ones who stayed in the home country, or are they a selected group who did not identify with the home country norms; ii) how does this vary according to the difference between home and host countries norms.

From a more macro perspective, economic factors in both origin and destination countries are not necessarily gender neutral - these might have different impacts on the migration propensity of men and women and the position of each within the household. For instance, economic developments in the home country can affect the economic roles of men and women differently, while the labour demand in receiving countries might be gender-specific (i.e. domestic workers, care services).

**Preferences and Migration:** Preferences for parental leave or other local amenities, for instance, will likely impact the family location decision. Even assuming that spouses share the same preferences for amenities, the decision on where to live and whether to return to the home country is likely to be heavily influenced by fertility decisions and the presence of children. When deciding on having children, it is likely that the couple considers not only paternity leave policies and the price of child care in the host country but also more subtle factors, such as the presence of grandparents or friends who can help take care of their children. When children are about to enter school age, parents care not only about the price of education but also the quality of education (this was considered in Nikolka, 2019). Some of these subtle differences might be irrelevant for single-earner or lower-educated couples. However, they are likely more relevant when explaining the migration decisions of dual-earner couples within industrialized countries, particularly if they have a college degree. Furthermore, parents might prefer to raise their children in their home culture when there are large cultural or religious differences.



Interestingly, differences in preferences for amenities between spouses could also influence family decision-making. Spouses might have different preferences on how to allocate resources to raise their children (e.g., the income pooling hypothesis is not confirmed Attanasio and Lechene, 2002; Browning et al., 1994; Bourguignon et al., 1993; Dauphin and Fortin, 2001; Fortin and Lacroix, 1997; Lundberg et al., 1997; Phipps and Burton, 1998) and this might be a source of discord in the locational choice. These differences are likely to be small when compared to differences in earnings. However, more subtle factors might explain why power couples do not migrate (permanently) more frequently.

**Psychological Attributes, Personality Traits and Migration:** Psychological attributes and personality traits are likely to have a reduced effect on big decisions like the decision to migrate internationally. Nevertheless, in combination with other factors, psychological attributes and personality traits provide a measure of individuals' capacities and preferences which can help explain household behaviour (Lundberg, 2010). Differences between spouses in such attributes and traits can be reflected in different preferences and attitudes towards migration.

Lundberg (2011) showed how personality traits can be incorporated into a preference for the marriage good (i.e. conformity with social conventions, children, among others) and how this affects selection into marriage. The author suggests that personality traits may also play a role in predicting departures from rational actions in the context of models of family behaviour (Lundberg, 2011). For instance, certain personality traits, such as low conscientiousness and impulsivity, are reflected in short-sighted and impulsive behaviour (Duckworth and Weir, 2010; Lundberg, 2010; Roberts et al., 2007). Hence, personality traits seem relevant for analysing family dynamics and how their members react to different policies and institutional environments. Just as marrying and divorce, the decision to migrate as part of a family might be influenced by the different personality traits of its family members. Perhaps more impulsive or more risk-taking spouses are more willing to move internationally. Differences in persuasion skills between spouses might also affect the decision to migrate in marginal situations.

When looking at the integration of spouses in the host country, differences in psychological attributes and personality traits between spouses might be reflected in differences in the easiness of labour market integration in the host country and the family dynamics after migration. These, however, have been little explored in the literature.

## 7 Conclusion

This article provided an overview of the literature on gender and family dynamics as a path to understanding the family decision to migrate internationally. The first sections summarized the major historical trends and economic theories on the gender pay gap in industrialized countries and gave a brief overview of the neoclassical migration model and household models in economics. Starting with the traditional theories of the gender gap in human capital and discrimi-

nation to the more recent theories that explore the role of gender norms and gender differences in psychological attributes, personality traits, and preferences.

In the fourth section, this article explored the literature on the family decision to migrate from and to industrialized countries. In tandem with the gender theories, the economic models of family migration of the 1970s and 1980s relied on the human capital theory as a building block. These models predict that because women tend to have a more discontinuous labour market participation and lower earnings power, they are more likely to become tied movers, while couples, where both spouses work, are less likely to migrate than singles. While traditional family migration models in economics (based on human capital) and in sociology (based on the role of marital power and gender roles) have not always agreed on the motives behind women's role as tied migrants, this article shows that by modifying the traditional human capital model of Mincer (1978) it is possible to encompass these main theories.

More recent models of family migration consider other issues, such as gender roles, uncertainty and strategic behaviour, by relying on both unitary and non-unitary models. Nevertheless, the analysis of family migration decision-making in economics can still gain from drawing on the insights of gender theories and consider the role of gender norms, preferences, psychological attributes and personality traits more seriously. Endogenizing the labour market participation decision of the tied mover, the fertility decision of couples and the role of commitment in families would also help to understand the different mechanisms driving family migration and its members' subsequent labour market integration.

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