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How do female migration and gender discrimination in social institutions mutually influence each other?

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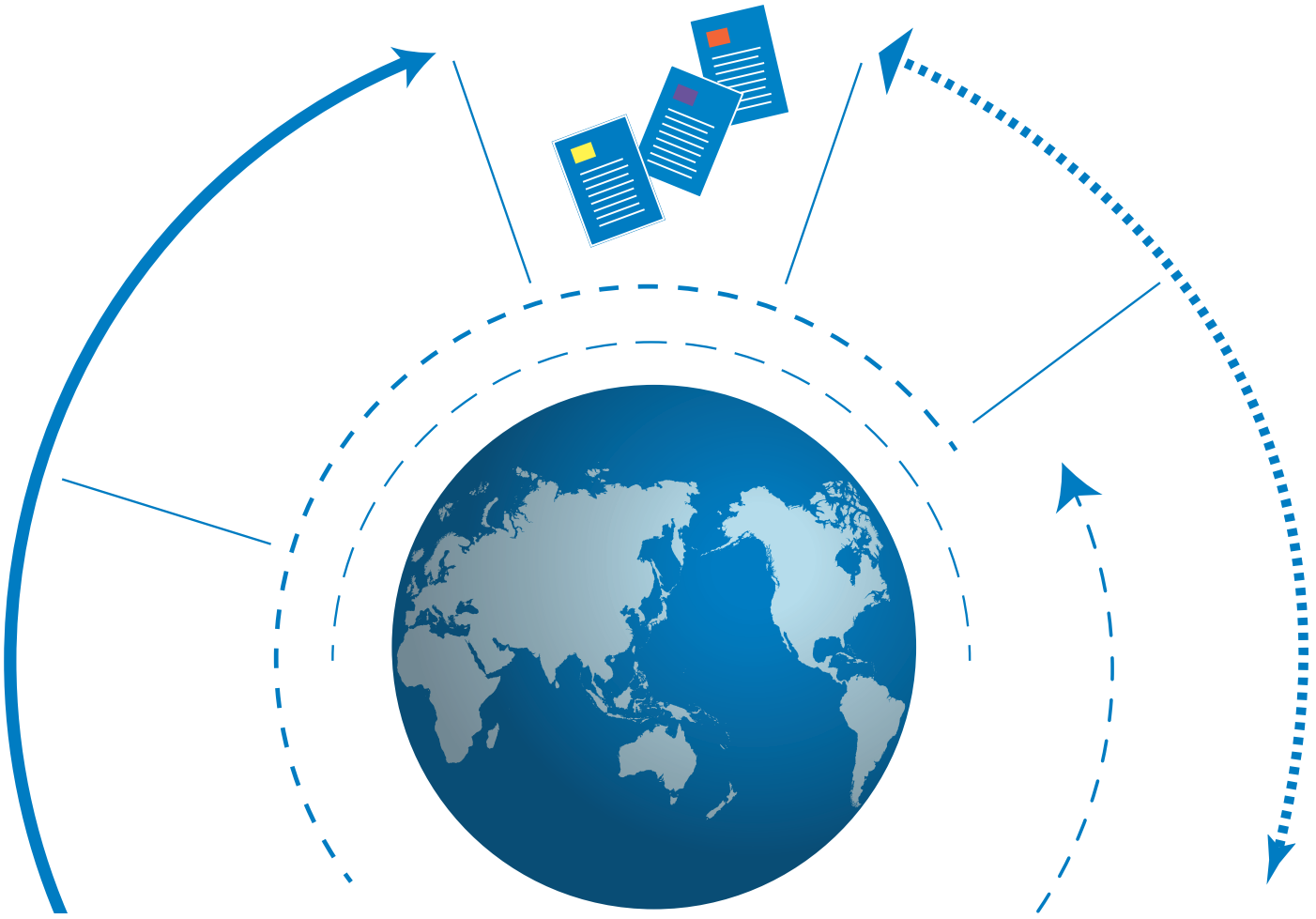

OECD DEVELOPMENT CENTRE

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PREFACE

The migration of women is a growing phenomenon in most countries: about half of all international migrants are women. The push and pull factors influencing this significant share of migration have typically been explained as a by-product of male migration: female migrants have been assumed to migrate mainly for reasons of family reunification as dependents of male migrants as wives, daughters or mothers. Over the years, the body of knowledge on the migration of women seeking better employment opportunities has increased, including research on topics such the role of gender discrimination in the workplace. Despite this growing knowledge, information on the links between migration and discriminatory social institutions has been neglected in the economic literature. The causes, processes and impacts of migration on women and men are expected to be different. By defining which decisions and behaviours are acceptable for each gender, as well as restricting women's access to power and resources. Hence, studying migration from a gender perspective implies looking beyond the differences in migration behaviour between men and women, such as the likelihood and type of migration, and to examine further the inequalities underlying those differences.

This paper assesses how South-South migration and gender discrimination in social institutions mutually influence one another. Gender discrimination in both the origin and destination country appears to be an additional push and pull factor for female migrants. In addition, the relevance of international migration goes well beyond the movement of people as migration also represents a powerful mechanism to transmit ideas across borders. This contributes to a better understanding of why discriminatory laws, attitudes and practices persist and how social transformation and shifts in discriminatory social institutions can occur. In addition to the fulfilment of fundamental rights for women and girls, gender equality has recently been hailed as a 'breakthrough' strategy for promoting inclusive development and reducing poverty. Understanding the nature and extent of the obstacles to gender equality is therefore critical to designing effective policies to promote equality between men and women, and consequently, to improving development outcomes.

Using the innovative OECD Development Centre's Social Institutions and Gender Index (SIGI), this paper provides evidence of a vicious circle. Higher levels of discriminatory institutions in origin countries hinder the likelihood of female migration, reducing the migrant share in origin populations, which consequently is too low to positively shift discriminatory norms towards greater gender equality.

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RESUMÉ

Cet article étudie l'influence réciproque entre discriminations de genre au sein des institutions sociales et migration. D'un côté, le niveau de discrimination de genre dans les institutions sociales du pays d'origine et du pays d'accueil influence significativement la migration des femmes dans les pays du Sud. Ainsi les discriminations auxquelles les femmes font faces dans les lois formelles et informelles, les normes sociales et pratiques coutumières dans leurs pays d'origine constituent un déterminant supplémentaire à la migration : lorsque les discriminations dans les pays d'origine sont trop fortes, elles entravent les opportunités de migration des femmes et réduisent ainsi les flux migratoires Sud-Sud. En outre, le niveau de discrimination dans les institutions sociales des pays d'origine semblent aussi jouer un rôle important, les femmes étant attirés par des pays ayant des niveaux de discrimination plus faibles que dans leurs pays d'origine. Ce type d'inégalité n'a pas d'impact significatif sur les hommes, suggérant que les facteurs de migration diffèrent entre les hommes et les femmes.

D'autre part, la migration apparait comme un acteur de transmission des normes sociales. En effet, les flux migratoires impliquent des changements culturels relatifs aux discriminations basées sur le genre dans les pays d'origine, en fonction du niveau de discrimination des pays de destination. Alors que les flux migratoires vers des destinations à faibles niveaux de discrimination favorisent l'égalité de genre dans les pays d'origine, ceux dirigés vers des destinations ayant des niveaux de discriminations élevés renforcent les inégalités homme-femme dans les institutions sociales.

Cet article utilise un indicateur novateur développé par le Centre de Développement de l'OCDE mesurant les inégalités de genre dans les institutions sociales d'une centaine de pays : le SIGI (Social Institutions and Gender Index). Ces résultats sont robustes aux changements de spécifications et au contrôle des potentiels biais d'endogéneité et de simultanéité.

Classification JEL: F22; O15; J16.

Mots-clés: Migration Sud-Sud, Inégalités de genre, Institutions Sociales.

ABSTRACT

Using the Social Institutions and Gender Index (SIGI) from the OECD Development Centre, this paper provides evidence of the two-way relationship between gender inequality in social institutions and South-South migration. Discriminatory social institutions in both origin and destination countries are one additional determinant of female migration. Gender inequality appears to be both a pull and a push factor for migrant women. On one hand, higher gender discrimination at home reduces female emigration, since women's restricted opportunities and low decision-power limit their possibility to move abroad. On the other hand, lower discrimination in the destination country attracts female immigration. However, they have no significant impact on male migration, suggesting that male and female incentives to migrate differ.

In addition, migration appears to be a driver of cultural change regarding gender inequality in opportunities, according to the level of discriminatory social institutions in the destination country. Migration towards countries having low levels of discrimination promotes gender equality in social institutions in the origin country, while migration towards countries having high levels of discrimination has the reverse effect, whatever the gender of the migrant.

This paper contributes to a better understanding of why gender inequalities persist. These results are robust to changes in specifications and controls for potential endogeneity and simultaneity bias.

JEL Classification: F22; O15; J16.

Keywords: South-South migration, Gender inequality, Social institutions

I. INTRODUCTION

There is widespread consensus that gender equality is a prerequisite for development, economic growth and poverty reduction. In recent decades, policy makers and researchers have increasingly turned attention and resources to closing gender gaps on key economic and social indicators. Discriminatory social institutions, defined as formal and informal laws, social norms and practices that shape or restrict the decisions, choices and behaviours of women (Jütting et al., 2008), have gained prominence as a useful analytical framework to illuminate gender disparities. In parallel to the increasing focus on gender equality in social norms, the even bigger question of how to measure and shift them has come to the fore.

The OECD Development Centre investigated these issues by building a unique composite index. The Social Institutions and Gender Index (SIGI) was the first attempt to measure discriminatory social institutions, which reduce female access to opportunities, resources and power (Cerise et al., 2012). Through its innovative focus on gender inequalities in opportunities, the SIGI provides additional insights on the root causes of gender inequality (Ferrant et al., 2014). Increasing attention on targeting discriminatory social norms and practices will not only empower women and secure their fundamental human rights, but also contribute to economic growth and development (Ferrant et al., 2015).

Since gender is a social construct, which organises relationships between women and men, the causes, processes and impacts of migration on women and men can be considered as different. Hence, studying migration from a gender perspective implies looking beyond the differences in migration behaviour between men and women, such as the likelihood and type of migration, and to examine further the inequalities underlying those differences.

While the literature focuses on the impact of gender discrimination in the workplace on female migration (Kanaiaupuni, 2000; Baudassé and Bazillier, 2012), it neglects the key role of discriminatory social institutions. By defining which decisions and behaviours are acceptable for each gender, as well as restricting women's access to power and resources, discriminatory social institutions affect migration decisions. Moreover, the relevance of international migration goes well beyond the movement of people as migration also represents a powerful mechanism to transmit ideas across borders.

Using the SIGI, this paper is the first attempt to investigate this two-way influence between gender inequality in social institutions and migration. This exercise brings along a threefold contribution. First, it highlights the gender differences in migration determinants. The literature remains predominantly gender blind at cross-country level, assuming that migrants are

a homogeneous group having the same incentives to migrate. This paper provides evidence that differentials in discriminatory social institutions between origin and destination countries only influence female migration. Indeed, high discrimination in social institutions in the home communities restricts female emigration and low discrimination in the destination countries attracts female immigration, while they have no significant effect on men.

Second, this paper contributes to the migration literature on "transfers of norms" (Spilimbergo, 2009; Lodigiani and Salomone, 2012; Beine et al., 2013; Bertoli and Marchetta, 2013). Migration may be a channel of norms transmission challenging gender inequality in social institutions at home when moving towards countries with low levels of discrimination. It can however reinforce discrimination when moving towards countries with high levels of discrimination.

Finally, this paper contributes to the small literature exploring the neglected issue of South-South migration (Gindling, 2009; Facchini et al., 2013). While Naghsh Nejad and Young (2012) and Naghsh Nejad (2013) focus on institutionalised gender inequality in OECD countries, this paper considers migration flows between developing regions. This is not only because South-South migration represents more than 50% of migration stocks flows comparing to South-North migration (Ratha and Shaw, 2007), but also because discriminatory social institutions in non-OECD countries are different and more restrictive than those in place in high-income areas (such as female genital mutilation, early marriage, inheritance laws).

To investigate the two-way influence between gender inequality in social institutions and migration, several econometric strategies are performed. First, the empirical analysis adopts a Heckman two-step procedure to deal with the high occurrence of null bilateral flows in migration data and the selection process. Then, 2SLS estimators are used to overcome potential endogeneities, due to reverse causality and unobservables. Finally, the simultaneous influence of gender inequality on migration and vice versa is estimated using 3SLS estimators.

The paper is structured as follows: the second section presents the theoretical links between gender inequality in social institutions and migration, and the third section the data. The fourth section describes the empirical strategy and the fifth section the empirical results. Finally, the last section concludes.

II. THE EXPECTED LINKAGES BETWEEN MIGRATION AND GENDER INEQUALITY

II.1. Discriminatory social institutions: A driver of migration

Besides the economic reasons pushing men and women to migrate, such as the differences between the country of origin and destination in terms of income, unemployment rate, cost of living, etc., there is a variety of other determinants, including the education level of migrants, their networks and migration policies, borders, as well as climate and religion factors (Péridy, 2010). The migration literature has typically overlooked gender dynamics, assuming that most women migrate only for family reunification reasons as wives, mothers or daughters of male migrants (Zlotnik, 2003). However, the increasing magnitude of international migration in the recent decades led to a growing focus on women as independent migrants (Grieco and Boyd, 1998; Cerrutti and Massey, 2001; Erulkar et al., 2006; Dumont et al., 2007; Docquier et al., 2009). Looking at the non-economic determinants of female migration, previous studies differentiate three broad categories of factors: individual factors including age, marital status, role and position in the family, educational status and employment experience; family factors including size, structure, status; and societal factors including the community norms and cultural values that determine whether a woman can migrate or not and if she can, how and with whom she can do it (Grieco and Boyd, 1998).

The important role of gender inequality has been neglected by the literature. Few exceptions have looked at gender inequality as a driver of female migration, with a particular focus on discrimination in the workplace. Kanaiaupuni (2000) studies whether the determinants of migration differ by sex, using Mexico-US data. She finds that high-skilled women are more likely to migrate than high-skilled men or low and moderate skilled women. This may be explained by higher gender discrimination faced by women and few occupational rewards in their home country, and thus they benefit more than men from migrating internationally, whether their skill level is high enough to allow them to meet the job demand. Recently, Baudassé and Bazillier (2012) suggest that non-wage motivations for emigration include gender equality in the workplace. They assume that poor working conditions in source countries may be considered as a determinant of emigration. Therefore, when gender discrimination in the local labour market decreases, women's incentives to migrate decrease as well. They show that higher levels of discrimination in the workplace are correlated with higher levels of female emigration and lower levels of male emigration, suggesting a substitution effect between men and women within a given number of migrants.

However, women's decision to migrate and their choice of destination may be also influenced by the discriminatory social institutions that impede their economic, political or social expectations. Gender norms may also affect male migration by defining their role in the public and private spheres. More specifically, discriminatory social institutions in origin countries may influence women's decision to emigrate in two ways. On one hand, they can be an additional determinant of emigration, stemming from women's need to escape gender-specific discrimination. For example, women may migrate to escape sexual violence and abuse; single women, widows and divorcees may migrate to escape social stigma; or girls may migrate to escape restrictions on their freedom, pressure to marry, or to remain chaste until marriage (Jolly and Reeves, 2005). There is evidence from South-East Asia of women migrating in order to escape from involuntary marriages (Lam and Hoang, 2010). Another study in Ethiopia finds that 23% of migrant girls reported to have migrated in order to escape early marriage in their home communities (Erulkar et al., 2006). The same mechanism is expected for men. Gender norms in the household and society may push men to emigrate (Hofmann, 2010). For example, young men may leave the country to escape being forced to become soldiers; migration may be also seen as a rite of passage for young men (Jolly and Reeves, 2005).

On the other hand, gender inequality in social institutions may constraint the "capability" itself for women to migrate.[1] For example, a girl who marries early is less likely to finish her education, which limits her employment opportunities (Cerise et al., 2013), rendering her more socially and financially dependent on her husband for a range of key factors, which include migration possibilities. In the Republic of Moldova, women report having less opportunity to migrate because of a lack of resources, which are generally more available to men (IOM, 2005). As Jolly and Reeves (2005) note, "it may be less acceptable for women to move about and travel on their own". This negative correlation between discrimination in social institutions and male emigration is not expected since patriarchal beliefs would be positively associated with emigration for men (Hofmann, 2010).

These roles of discriminatory social institutions in migration processes have been totally disregarded by the economic literature. Few sociological and qualitative studies, however, have shed light on the relevance of gender norms in driving migration decisions. Diner (1983) is one of the first attempts to include discriminatory social norms into the possible explanations of women's international migration. Studying the Irish diaspora to the United States in the late nineteenth century, she finds that most of the migrants were women in search for better opportunities. Since the famine of those years made impossible for families to give dowry to each daughter, marriage was only possible for one daughter. The unmarried sisters, then, had few alternatives: employment opportunities in the countryside were scarce, and millions of young Irish women migrated to seek fortune and family in America. A recent contribution by Hofmann

1 As Sen (1999) has noted, economic factors are not the only determinants for human well-being and choices: desire for individual freedoms and rights to be respected and expanded also govern individual decision-making. Applying Sen's "capabilities" approach to female migration, it is interesting to explore how women's freedom (or lack of freedom) to "achieve outcomes that they value" may influence their decision to emigrate and their choice of destination.

and Buckley (2013) stresses the possible negative role of social norms in limiting migration opportunities for women. The authors use individual interviews in Georgia to study the feminisation of migration that is currently taking place. Most respondents described female migration as "unnatural, challenging the male role as breadwinner and female responsibilities for childcare and elder-care. Female migration is a crucial serious sociocultural loss, depriving individual families, and Georgian society as a whole, of women's natural contributions".

Likewise, gender and social norms in countries of destination can also inter-relate with women's decision to immigrate to a particular country, since women may be attracted by lower levels of discrimination. For example, in the 19th Century in the Dominican Republic, due to social stigma attached to women working outside of the household, the husband preferred and encouraged women to seek employment in the US, where it was deemed acceptable, even in the Dominican diaspora (Grassmuck and Pessar, 1991). In addition to preferences for gender equality, this attraction of lower discriminatory social institutions in the destination country may also be explained by lower discrimination in its labour market reflected in greater working opportunities for women (Martin, 2004). Mechanically, this is the reverse for men: when women are less discriminated, for a given level of job opportunities, men are less favoured. The hiring conditions are based on productivity instead of the gender of the job candidate. For a given level of labour demand, this may affect negatively the male probability to be hired. Hence, except if men have preferences for gender equality, higher discrimination in social institutions in destination countries is expected to be positively correlated with male migration.

To summarise, while a positive effect of discriminatory social institutions in origin countries on male emigration is expected, the sign of the linkage for women is still ambiguous. Concerning the effect of gender discrimination in social institutions in host countries, a negative effect for female immigration and a positive one for male migration are expected. Nonetheless, the linkages between migration and gender inequality do not terminate here: migrants may be agents of change for gender discrimination in social institutions.

II.2. Migration: A channel of norms transmission

The chains of causality are complex and difficult to establish, making the explanation of gender inequality and its persistence challenging. The standard explanation focuses on economic growth as a determinant of gender inequality (Forsythe et al., 2000). The positive effect of economic growth is widely documented (see Dollar and Gatti (1999) and Ferrant (2015) among others) although income growth by itself is not sufficient. Gender equality also depends on how markets and formal/informal institutions have evolved, how growth has played out, and how all these factors have interacted with household decisions (World Bank, 2012). Interestingly, Rees and Riezman (2012) wonder whether globalisation may influence gender equality. Following this intuition and the migration literature on "transfers of norms", the paper assumes that beyond the movement of people, migration involves norm exchanges. For example, Spilimbergo (2009) describes how student migration towards democratic countries promotes democracy at home. In addition, migrants can also bring back home stronger entrepreneurial attitude (Piracha and Vadean, 2010; Demurger and Xu, 2011; Wahba and Zenou, 2012) or influence fertility decisions

(Beine et al., 2013; Bertoli and Marchetta, 2013). However, the role of migration as an agent of change for gender discrimination has been neglected by the economic literature.

Few exceptions have looked at migration as a driver of women's empowerment. Lodigiani and Salomone (2012) investigate the linkage between transfers of norms through migration and women's political empowerment. Diaspora contributes to the propagation of political and gender equality values when migrants become aware of the fact that female political conditions at origin countries and their consequences on governance are worse than those experienced at destination. Hence, international migration to countries with higher female parliamentary shares significantly increases women's political empowerment in origin countries.

Concerning other aspects of women's empowerment, several studies at micro or regional level have stressed the existence of possible channels of gender equality promotion through migration. For example, Hadi (2001) explains that male migration has a significant positive effect on women's empowerment. Changes in women's position are measured by three indicators: women's decision-making capacity; girls' education; and the practice of dowry. Findings show that male out-migration not only raise the standard of living of their left-behind kin through the injection of remittances, but also "modify their social behaviour through the diffusion of secular ideas into the traditional values of the sending communities." Moreover, Hadi (2001) also shows that households with female migrant members are more concerned with the education of daughters. In Uttar Pradesh Paris et al. (2005) shed light on the consequences of male migration on gender roles in farming households. Interviewed women explain that the gender division of labour shifted, since they now have to take over several male-specific activities. Moreover, wives in migrant families state to have higher decision-making power, with the decision of how much money to invest and what crops to grow lying in their hands. Similarly, evidence from Nicaragua shows that fathers assume new gender roles when their spouses migrate, taking charge of the housework and children (Avellan, 2003).

This paper contributes to the literature by assuming that South-South migration may foster gender equality in social institutions in the home community through three channels. Firstly, remittances and other benefits for the household and the community make the benefits of female emigration more obvious, which in turn creates incentives to increase the women's ability to migrate through improvement in women's access to opportunities, resources and power. For example, women who send remittances gain more respect within their family and community (Jolly and Reeves, 2005). Moreover, parents who rely on their daughters' remittances are less likely to force them to return home to marry (Temin et al., 2013)). Likewise, women gain financial independence and increased decision-making power when they emigrate (Peleah, 2007).

Secondly, social remittances may translate in a shift in attitudes towards less discriminatory practices. Specifically, social remittance exchanges occur when migrants return to live in or visit their communities of origin, when non-migrants visit migrants abroad, or through the exchange of e-mails, blog posts and telephone calls (Levitt, 1998). In this way, migrants carry new ideas, practices and narratives which influence the social institutions and norms of their origin countries. Levitt (1998) records testimonies of Dominican Republic women who migrated

to Boston and modified their ideas about gender roles in response to their more active engagement in the workplace. They then transmitted these new norms to their home community and non-migrant women used them to create new versions of womanhood. Women who migrate tend to model their behaviour on women in destination countries, which proved to have positive effects on reducing violence against women in Moldova for example, as women tolerate it less from their partners (Peleah, 2007).

Lastly, international migrants can alter the power structure within the household. Migration can challenge traditional gender roles when the absence of one spouse leaves the other one with both greater decision-making power and burden of responsibility and labour (Jolly and Reeves, 2005). In fact, in countries such as Mexico where men are far more likely migrating, left-behind women often in- crease their decision-making power regarding daily-choices, since they need to make decisions for the family while the head of the household is away (Antman, 2011). This new position of the woman in the household may translate in greater access to public and political spaces, lowering overall discriminatory social institutions within the country. In addition, larger women's bargaining power creates a virtuous circle, since women are more likely to spend resources on daughters than fathers would (Duflo, 2003). Similarly, another study in Bangladesh finds that the emigration of men is positively associated with women's decision-making capacity and the education of girls in migrant families (Hadi, 2001). Moreover, remittances have also been linked to increased female agency within family structures and a change in perceptions of gender roles. Women who receive remittances have more and better control of resources (Jolly and Reeves, 2005). Economic remittances may also be used to give women better access to health care, allow them to start their own business and keep girls in education for longer (Antman, 2012).

In sum, migration may impact discriminatory social institutions. Since this effect implies a transfer of norms from host to sending country, the sign of the correlation is expected to differ according to the discrimination levels in destination countries. According to these expected links, male and female migration may have the same effect on gender inequality at home, with a higher effect of female migration due to the first channel of transmission.

III. DATA

III.1. Migration data

The United Nations Population Division of the Department of Economic and Social Affairs (UNDESA) produces migration data which disaggregates international migrant stocks by sex, origin and destination countries for the period 1990, 2000 and 2010.[2] To better capture gender dynamics in international migration, the change in migrant stocks observed between 2000 and 2010 is used as a measure for migration flows. More precisely, the net migration flows by sex and country of origin in 2010 are used as dependent variable. To distinguish the effect of discriminatory social institutions between female and male emigration, sub-samples are used.

Two main shortcomings of our migration data have to be acknowledged. Firstly, negative migration flows are also computed. These declining stocks are due to the fact that migrants may die, return to their home or even move to third countries. However, Beine et al. (2011) confirm that this approach still gives a reasonable approximation of the dynamics of migrant flows. Secondly, the UN database includes information only on legal migrants, leaving aside refugees, displaced people and illegal migrants. It is worthy to note that due to lack of available data, it is impossible to address illegal and involuntary migration at a macro level, although it may represent a large share of South-South migration. If anything, our results would be downward biased in magnitude, but there is no reason to believe that the sign of the relationship should be opposite for illegal migrants.

III.2. The SIGI

The Social Institutions and Gender Index (SIGI) produced by the OECD Development Centre measures discriminatory social institutions for non-OECD countries.[3] While other gender-specific measures, such as the Global Gender Gap Index from the World Economic Forum or the UNDP gender-related indices (GDI, GEM and GII), measure gender inequalities in outcomes, the SIGI focuses on gender inequality in opportunities, seeking to capture the underlying causes of discrimination (Ferrant, 2014). An alternative proxy of social institutions would be the CIRI Human Rights Dataset (Cingranelli and Richards, 2010), which covers outcomes of these institutions. However, it does not distinguish between the different dimensions of social

2 See UNDESA (2013) for information on sources and construction. Available at: http://esa.un.org/unmigration/TIMSA2013/documents/MIgrantStocks_Documentation.pdf

3 The OECD provides only one observation for the 2012 SIGI, which captures discriminatory social institutions in non-OECD countries between 2000 and 2009.

institutions, such as between what happens within the family and what happens in public life. Moreover, the main distinction of the SIGI is that it focuses on rights, as well as on social institutions that often are not codified in laws, but are based on norms and values, as well as attitudes and practices, that shape women's opportunities and decisions (Branisa et al., 2013). In addition, the SIGI is a more comprehensive measure considering other dimensions of gender inequality in social institutions. It is a composite index which scores non-OECD countries on the basis of 14 variables (Table 1).[4] The scale of the SIGI goes from 0, meaning low discrimination to 1, high level of discriminatory social institutions.

Table 1. **The SIGI: Dimensions and variables**

Social Institutions and Gender Index				
Discriminatory family code	**Restricted physical integrity**	**Son bias**	**Restricted resources and entitlements**	**Restricted civil liberties**
• Legal age of marriage • Early marriage • Parental authority • Inheritance	• Violence against women • Female genital mutilation • Reproductive integrity	• Missing women • Fertility preferences	• Access to land • Access to property other than land • Access to credit	• Access to public space • Political voice

Variables are grouped into five sub-indices:[5] Discriminatory Family Code, which captures social institutions that restrict women's decision power within the family; Restricted Physical Integrity, which refers to restriction on women's control over their bodies; Son Bias, which measures intra-household biases towards sons and the devaluation of daughters; Restricted Resources and Entitlements, that includes restriction on access to, control of and entitlement over resources; and Restricted Civil Liberties, which captures social institutions that restrict women's access to public space and political voice.[6]

Conceptually the SIGI does not take into account restrictions on men. However, it may still be a good measure of gender norms governing male behaviour and opportunities. In countries where social institutions highly discriminate against women, gender norms are strongly enforced. Consequently, in those countries with high SIGI, both men and women are compelled to behave as expected by social institutions.

III.3. Other data

Additional control variables include standard determinant of migration. Data on GDP per capita (in PPP), government expenditure and population in both origin and destination countries are taken from the Penn World Table. Since migrant flows measure the change in stocks over a decade, the ten-year average of the annual values of these control variables is calculated, in order to be consistent with the construction of our database. Ten-year averages are calculated also for

4 For more details, see Branisa et al. (2013) Cerise et al. (2012) and www.genderindex.org

5 The complete list of variables used to construct the SIGI is in Table A.2 in Appendix.

6 Complete SIGI ranking is in Table A.1 in Appendix.

female unemployment rate (Source: World Development Indicators of the World Bank) and for average years of education of girls aged 15 or over (Source: Barro and Lee, 2012).

Conversely, the number of conflicts occurred in a given country are calculated as a sum over a decade, using data from the Uppsala Conflict Data Program (Gleditsch et al., 2002). A measure of civil liberties is taken from the Freedom House's flagship publication '2013 Freedom in the World' (Freedom House, 2013). The index has a 1 to 7 scale (with 1 representing the highest and 7 the lowest level of freedom). For this variable, the 2010 value is taken, since civil liberties achievement is a progressive and dynamic process measured by a categorical variable that cannot be calculated with averages or sums. Time-invariant variables are obtained from the CEPII's Gravity Dataset (Head et al., 2010): contiguity is a dummy variable being 1 if two countries share a common border, common language is a dummy variable being 1 if a same language is spoken by at least 9% of the population in each country, and distance is taken as the bilateral distance between the two largest cities in the two countries, weighted by the share of each city in the overall country's population.

Finally, the paper uses CEDAW (Convention on the Elimination of all forms of Discrimination Against Women) date of ratification and religiosity as instrument for the level of discriminatory social institutions.[7] The religiosity variable refers to the share of population self-declared as practising actively a religion. This variable comes from the COW database.

7 More precisely, the paper uses the difference between 2012 and the date of ratification to address intensity issue.

IV. EMPIRICAL STRATEGY

Three empirical strategies are used to assess the two-way relationship between discriminatory social institutions and migration. While equation (1) models the influence of discriminatory social institutions on female/male migration, equation (2) estimates the transmission role of migration regarding gender inequality in social institutions. Finally, the system (3) assesses the two-way relationship and simultaneous influence of gender inequality and migration.

IV.1. Influence of discriminatory social institutions on migration

A migration gravity model augmented by gender inequality

First, a standard migration gravity specification is used to estimate the influence of discriminatory social institutions on female/male migration. The gravitational approach expects migration to be negatively linked to distance and positively correlated with population of origin and destination, income differential, language differential and contiguity (Lewer and Van den Berg, 2008; Clark et al., 2007; Beine et al., 2011; Baudassé and Bazillier, 2012). Indeed, migration is driven by a cost-advantages trade-off. Each migrant chooses to migrate where the costs are the lowest. Having lower distance between origin and destination countries, common language and border reduces the migration costs and increases the probability to move. Migration is also driven by the maximisation of utility, meaning that the opportunity differential between sending and receiving countries matters.

It is necessary to acknowledge some criticisms that the gravity approach raises in both the trade and migration literature. Anderson and van Wincoop (2003) underline the lack of theoretical foundations of gravitational models. In fact, the theory states that the more a country is resistant to trade with all others, the more it is pushed to trade with a given bilateral partner (Anderson, 1979). The main implication is that flows between two countries is determined by relative trade barriers, otherwise said bilateral flows depend on the bilateral barrier between the two countries relative to the average trade barriers that both face with the rest of the world. According to the authors, the empirical literature does not consider this "multilateral resistance". As a consequence, empirical results may carry bias due to omitted variables, making impossible the comparison of different situations. A similar approach has been recently applied by Bertoli and Fernandez-Huertas Moraga (2012) to migration, leading to the development of the notion of "multilateral resistance to migration". In fact, bilateral migration flows do not depend only on the attractiveness of the destination country, but also on how this relates to the opportunities to move to other destinations. Studying the determinants of bilateral migration flows to Spain

between 1997 and 2009, the authors find that ignoring the multilateral resistance to migration biases the estimation. For example, the effect of GDP at origin is two thirds of that found when multilateral resistance to migration is not accounted.

Despite the critics, the gravity equation proved to be one of the most stable relationship in economics (Chaney, 2013), and it is indeed useful in our empirical attempt of better understand the linkages between gender inequality and female/male migration. Thus the basic gravity framework is augmented by adding gender inequality in social institutions using the SIGI.

In addition to the standard determinants of migration (GDP per capita in origin country, distance, contiguity, population of origin and destination countries, income and language differentials), our main specification includes female (male) education. Having access to education in the country of origin enhances the likelihood of migration (González-Ferrer et al., 2013; Borjas, 1989) by reducing migration costs (Dustmann, 2011). To take into account the key role of working opportunities for women (men) in both origin and destination countries, female (male) unemployment rates are added. Labour is one of the main reasons of migration (Grieco and Boyd, 1998). Hence, working opportunities in the destination country are an important factor of migration. However, income differentials are not enough to understand the female (male) situation in a given labour market and to capture the complex process of gendered migration. Including unemployment rate by sex therefore controls for gender discrimination in the workplace. Moreover, a measure of networks in the destination country is included to deal with family reunification factors and diaspora effects. The role of peers is important since men and women from the same country of origin tend to migrate to the same destination country. This makes migration easier, as word-of-mouth communication helps to spread information about countries of destination: the bigger the diaspora, the smaller the psychological and integration cost of migration (Munshi, 2003). Various measures of networks are used: the stock of female (male) and total migrant in 2000. Finally, to control for family reunification, male (female) emigration flows in 2010 are included.

The impact of discriminatory social institutions on female and male migration, respectively, is estimated using the following equation:[8]

$$m_{i,j} = \propto_0 + \propto_1 SIGI_i + \propto_2 SIGI_j + \propto_3 \boldsymbol{x}_{i,j} + \varepsilon_{i,j} \quad (1)$$

where $m_{i,j}$ is the log of net female (male) migration flows between origin country i and destination country j, SIGI is the log of the Social Institutions and Gender Index,[9] $\mathbf{x}_{i,j}$ the control variables and $\varepsilon_{i,j}$ the error term. Control variables include GDP per capita in origin country,

8 All variables are expressed in logarithm

9 It is worthy to note than instead of using the log of the SIGI differential between the origin and the destination countries, the paper includes the two separately. This allows us to interpret the effect of social institutions in the origin country for a given level of discrimination in the destination one, and vice-versa. However, it does not exclude the interpretation of the differential since $\ln\left(\frac{SIGI_i}{SIGI_j}\right) = SIGI_i - SIGI_j$ looking at the absolute and relative effect is critical for policy recommendations.

distance and contiguity between country *i* and *j*, population of countries *i* and *j*, income and language differentials, female (male) education, female (male) unemployment rates in countries *i* and *j*, male (female) emigration flows in 2010, migrant network and regional dummies.

As a second step to understand which dimension of discriminatory social institutions is driving the results, equation (1) is estimated using each sub-index of the SIGI instead of the overall SIGI. This allows us to explore which dimensions have the greatest impact on female emigration.

Empirical issues

Nevertheless, two econometric challenges arise in estimating equation (1). First, bilateral migration data present a high occurrence of zero values, which may bias our estimations. Second, our gender inequality variable may be correlated with the error term, due to potential reverse causality, since gender inequality may be a determinant of international migration but at the same time migrants may shift gender attitudes in their origin countries. In addition, unobservable characteristics can affect both SIGI and female migration flows, leading to biased estimates. In order to address these econometric issues, the paper initially abstracts from the bias induced by the log linearization of gravity models,[10] using OLS. It then introduces a Heckman two-step procedure in order to account for the high occurrence of null migration flows. Finally, an instrumental variable approach is taken to address the potential endogeneity.

The high occurrence of null migration flows

It is worthy indicating that migration is very unlikely to occur among all country pairs. Therefore, our sample is characterised by a high occurrence of zero (approximately 75% of our South-South female sample).[11] This incidence of zero requires the use of a particular estimation strategy. While standard gravity models estimate a log-specification using OLS, this approach is limited since it forces to either exclude null migration flows from the estimates or to transform them by taking the log of the migration flows plus 1. Moreover, Santos-Silva and Tenreyro (2006) show the inconsistency of OLS estimates if the variance of the error term $\varepsilon_{i,j}$ depends on the covariates in equation (1).

An alternative to generate consistent estimates even in cases of over-dispersion is the use of a Poisson regression model that relies on pseudo maximum likelihood estimates. However, the Poisson solution is nevertheless unfeasible for the selection analysis, while Baudassé and Bazillier (2012) provide evidence regarding the key role of gender inequality in the selection process of migrants. As previously noted, the authors assume two theoretical hypotheses with respect to the linkages between emigration and gender inequality. First, they consider gender

10 More precisely, the paper focuses on positive flows (96% of our observations) and adds 1 before to take their log.

11 Our sample contains 96 developing countries. Hence, 9 120 female emigration flows are observed but only 2 280 are positive.

inequality as a push factor for female emigration. Second, they assume that gender inequality leads to a gender bias in a selection of migrants. Estimating by a Heckman two-step procedure, their results validate the second hypotheses rather than the first one.

Following Beine et al. (2011) and Baudassé and Bazillier (2012), a Heckman two- step procedure is used. This technique has the advantages to explicitly account for a potential selection bias and to generate consistent estimates even in cases of high zero occurrence.[12] Commonly used in presence of potential selection bias, the Heckman technique involves two steps: the first step assesses the probability of observing female (male) migrants between two given countries using a Probit estimator and an exclusion variable, while the second step quantifies the size of those migrating. Following Beine et al. (2011) and Baudassé and Bazillier (2012), diplomatic representation is used as exclusion variable in the selection equation. In fact, having a diplomatic exchange with a foreign country may reduce migration costs linked to the initial issuing of visas, increasing the probability to have positive emigration flows, but not the size of these emigration flows.

Reverse causality and unobservable characteristics

A typical puzzle of migration studies is due to endogeneity problems. For instance, in presence of reverse causality, estimations could be biased, since gender inequality in social institutions may be a determinant of female (male) migration, but conversely female (male) migration flows may also affect gender inequality in origin countries, due to a stream of new social norms, a change in the household bargaining power, and so forth. Similarly, results could be biased by the presence of omitted variables and especially unobservable country characteristics that affect both the probability of having female emigrants and the level of discriminatory social institutions in a country. These endogeneity issues result in biased OLS estimates, since covariates are correlated with the error term $\varepsilon_{i,j}$.

In order to allow consistent estimation, an instrumental variable approach is applied. A good instrument may still lead to consistent parameter estimates. In order to be valid, instruments must be uncorrelated with the error term in the explanatory equation and have no direct effect on female (male) migration. To be relevant, the instrument must be correlated with the endogenous independent variables, that is the SIGI. Previous studies on gender inequality rarely shed light on the possibility of endogeneity issues and the validity of the instruments to solve them. A prominent exception is represented by Dollar and Gatti (1999), who instrument gender inequality in a growth equation by religious affiliation and civil liberties. However, some doubts have been raised by the literature regarding the exogeneity of religion and civil liberties.

Following Ferrant (2015), the CEDAW ratification date is used as instrumental variable for discriminatory social institutions and controls for religiosity and civil liberties are added. Indeed, the CEDAW ratification date can be considered as a public commitment and recognition

12 Moreover, Beine and Docquier (2009) claim that the two estimation strategies, that is Heckman and Poisson, provide similar results and are equivalent.

of gender equality as a human right. Ratification implies recognition of the legitimacy of reducing gender inequality. It leads to changes in government behaviour toward gender inequality in social institutions and, for example, to changes in law regarding women and discrimination, to implementation of incentives in order to promote law enforcement or punishments. CEDAW can be a powerful tool for change when legislative and other measures to protect women's rights are undertaken once states ratify CEDAW. For example, Bangladesh now prohibits sexual harassment, thanks to a milestone decision issued in 2009 by the High Court. Thanks to a training manual titled "CEDAW Made Easy", empowering traditional leaders in Cameroon to use the Convention to bring about concrete improvements in the lives of women in their communities, they are changing traditional practices that are harmful to women. The CEDAW denounced the prevalence of early marriage in several countries, some of which have thus changed their legal age of marriage, which in turn has reduced the prevalence of such practices: the average prevalence of early marriage across developing countries has decreased from 21% in 2009 to 17% in 2012 (Cerise et al., 2012).

Good instruments often come from policy changes and an earlier date of ratification can be assumed to be linked with a greater and deeper attention to gender equality within a country. This paper considers the CEDAW ratification date as good predictor of the level of discriminatory social institutions. However, it assumes that this date has no effect on female (male) migration. Then, the exogeneity of female (male) migration flows per capita is rejected by the Wu-Hausman test at the 5% level.[13] Finally, the validity (i.e. $Cov(CEDAW, \varepsilon_{i,j}) = 0$) and the relevance (i.e. $Cov(CEDAW, SIGI) \neq 0$) of this instrument are tested. This instrument is significantly correlated with the endogenous variable, as indicated by the first step of the IV estimations (Table 2). Moreover, simple estimation of the SIGI including additional controls and instruments result in a relatively high partial R. Finally, the paper checks that instrumental regressions are not null with F-statistic higher than 0.10, suggested by the rule of thumb (Stock and Yogo, 2002). Even if the exogeneity of the instrument is hard to test, performing female (male) emigration regressions do not provide evidence of correlation between error term and the instrument. Indeed, the null hypothesis that the CEDAW coefficient is equal to zero when the residuals are regressed is not rejected.

IV.2. Influence of migration on gender inequality in social institutions

In this second model, the effect of migration on gender inequality in opportunities is estimated. The paper assumes that migration is a channel of idea transmission and may impact the level of gender inequality in social institutions in origin countries. While migration flows could capture size effect, the share of migrants in total population is used to measure migrants' influence on discriminatory social norms, excluding population size effects. Whatever the direction of this influence, larger shares of migrants are correlated with greater probabilities to transmit new ideas.

13 The Durbin-Wu-Hausman score has a p.value of 0.028 and 0.023 for women and men, respectively.

However, using shares allows taking into account only the weight of migrants in a given country. Unfortunately, the "quality" of migrants is not captured. Yet, according to his/her social position, a migrant could affect differently social norms. For example, it would be expected that a male tribal chief would have higher impact on social institutions, due to his leadership, implying higher potential transmission power. This assumption is consistent with our previous example in Cameroon, where traditional leaders are an agent of change regarding gender equality. Rather than distinguishing social position, female and male migrants are distinguished. According to the theoretical links, the female migration effect is expected to be higher. Finally, the paper divides migrant shares by level of discriminatory social institutions in destination countries. In fact migrants learn those social norms in place at destination, leading to heterogeneous effects according to the area where the migrant moves. For instance, Beine et al. (2013) demonstrate that returnee migrants are more likely to have fewer children than non-migrant households if they migrated towards lower-fertility destinations, whilst Bertoli and Marchetta (2013) find opposite results when looking at returnees from Egypt who have worked in high-fertility Arab countries.

The following equation is then estimated, where the SIGI in origin countries is the dependent variable:

$$SIGI_i = \beta_0 + \beta_1 M_{i,t} + \beta_2 \boldsymbol{z}_i + \mu_i \quad (2)$$

The interest variable $M_{i,t}$ is alternatively the share of total, female and male migrants in the total population in 2010. The set of additional controls $\boldsymbol{z}_i$ includes GDP per capita (in log), share of population self-declared as religious practising, CEDAW date of ratification, female education and level of civil liberties. Finally μ_i is the error term.

The inclusion of these controls is justified by the gender literature. The income growth is expected to reduce gender inequality by loosening constraints, improving market opportunities, promoting market mechanisms, increasing household available resources and so on (See Dollar and Gatti, 1999; Forsythe et al., 2000; World Bank, 2012; Ferrant, 2013 among others). Religious affiliation and civil liberties are included following Dollar and Gatti (1999). They show that, to a large extent, gender inequality can be explained by religious preference and underlying characteristics of societies, such as the extent of civil liberties. The self-declared religious practice is used here, without distinguishing religion. The paper assumes that higher share of population declared as practising a religion higher traditional gender roles are enforced leading to higher discriminatory social institutions, whatever the religion concerned. On the other hand, high restriction on civil liberties is correlated with high discrimination on women. Moreover, as previously mentioned, an earlier ratification of the CEDAW is expected to be positively correlated with gender equality. Finally, greater access to education constitutes a way to move away from gender discrimination.

As shown in the previous model, gender inequality in origin countries is a factor explaining female migration flows. Hence, looking at the effect of migration on gender inequality raises endogeneity issues. In addition, omitted variables could have an impact on both the dependent and the interest variables. For example, a development programme implemented by an international organisation in order to develop female employment would reduce both gender

inequality and female migration. Firstly, higher job opportunities for women lead to lower gender gaps in education. Secondly, if women have more job opportunities at home, they have less incentive to migrate for labour reasons. To tackle endogeneity issues, the paper follows McKenzie and Rapoport (2011) by instrumenting the migrant share in 2010 with historical migration flows (specifically, migrant share in 2000).[14] While previous migration flows could affect current ones through network effects or persistence of incentives to migrate, it has no effect on the level of current discriminatory norms, except through the current migration share or the previous levels of discrimination in the SIGI. The instrumental strategy assumes that the instrument is valid (i.e. $Cov(M_{i,t-1}, \mu_i) = 0$) and relevant (i.e. $Cov(M_{i,t-1}, M_{i,t}) \neq 0$). This instrument is significantly correlated with the endogenous variable, as indicated by the first step of the IV estimations and F-statistics are higher than 0.10 (Tables (6) and (8)). The exogeneity is rejected for all dependent variables at 5%.

IV.3. The two-way relationship between gender inequality and migration

In a last step, feedback is tested. The paper assesses the two-way relationship between migration and gender inequality by dealing with the simultaneous determination of gendered migration flows and level of discriminatory social institutions. Econometrically, this simultaneity issue implies correlation between error terms $\varepsilon_{i,j}$ and μ_i that could be taken into account using a 3SLS estimator. The system (3) includes equations (1) and (2), where all model parameters are jointly estimated.

$$\begin{cases} m_{i,j} = \propto_0 + \propto_1 SIGI_i + \propto_2 SIGI_j + \propto_3 \boldsymbol{x}_{i,j} + \varepsilon_{i,j} \\ SIGI_i = \beta_0 + \beta_1 M_{i,t} + \beta_2 \boldsymbol{z}_i + \mu_i \end{cases} \quad (3)$$

[14] More precisely, an IV and IV-probit estimation are performed, in order to assess the probability to have positive female / male flows between two given countries, controlling for potential endogeneities. The use of an IV-probit model is preferred, both because it solves the problem of the high occurrence of zeros, and because it is coherent with the Heckman results.

V. EMPIRICAL RESULTS

V.1. Influence of discriminatory social institutions on migration

First, let us focus on female migration flows. Tables 2 and 3 present the estimated effect of SIGI in both origin and destination countries on female migration flows. The OLS estimates are provided in Table 2 column (1), Table 2 columns (2) and (3) report the estimates using the two-step Heckman approach and Table 3 those using instrumental variable.

In most of our specifications, control variables are significant and with the expected sign. Income differential results positive, representing the economic attractiveness of the foreign economy. Populations in both origin and destination countries have positive signs, in accordance with the gravitational forces of demographic pressure. Conversely, the distance between the two countries is negatively correlated with migration flows, due to increasing migration costs. Both geographical (i.e. contiguity) and cultural (i.e. common language) proximity have the expected positive sign, since migrants tend to move in countries that are closer to their homes and where they can easily communicate. Women's years of education has a significant effect confirming that being educated increases the probability to migrate.[15] Unemployment rates in origin and destination countries are statistically significant suggesting that differentials in job opportunities matters.[16] It is worthy to note the significance of the exclusion variable in the Heckman procedure, namely diplomatic exchange. The positive sign indicates that the presence of a diplomatic representation in a foreign country is often seen as prerequisite for engaging in legal cross-border migration: the probability of having female migrants increases by 26% in presence of diplomatic exchange. Male migration flows in 2010 are positively correlated with female flows. The interpretation is twofold. First, this can be related to family reunification and dependent migration: women and men migrate from the same country towards the same destination in the same decade due to family relationship. Second, it may capture network effects. As male peers have already migrated towards this destination, female migration flows are higher.

15 NB: only for the IV estimates.

16 NB: except for the Heckman estimates.

Table 2. **Impact of SIGI on female migration (OLS and Heckman estimates)**

	(1)	(2)	(3)
Dep. Var.	Female migration flows	Female migration flows	Select
SIGI (origin)	-0.676**	-0.449	-0.234**
	(0.298)	(0.334)	(0.110)
SIGI (destination)	-0.994**	-0.763	0.721***
	(0.423)	(0.505)	(0.075)
Income differential	0.106**	0.371	0.249***
	(0.045)	(0.296)	(0.069)
Population (origin)	0.007	0.871***	0.202***
	(0.039)	(0.217)	(0.047)
Population (destination)	0.004	0.230	0.168***
	(0.034)	(0.222)	(0.042)
Distance	-0.165***	-2.218***	0.492***
	(0.058)	(0.424)	(0.085)
Contiguity	0.061	1.654***	0.541
	(0.113)	(0.575)	(0.368)
Common language	0.066	1.624**	0.977***
	(0.094)	(0.711)	(0.168)
Female education	0.055	-0.874	-0.046
	(0.090)	(0.604)	(0.194)
Female unemployment	0.147**	-0.126	0.112
(origin)	(0.075)	(0.199)	(0.098)
Female unemployment	-0.949***	0.211	0.205
(destination)	(0.022)	(0.223)	(0.195)
Male migration flows	0.958***	0.954***	0.021**
	(0.130)	(0.120)	(0.008)
Diplomatic exchange			0.263**
			(0.131)
Constant	1.208*	10.313***	-1.881**
	(0.622)	(3.594)	(0.891)
Mills		2.935***	
		(1.074)	
Regional Dummies	Yes	Yes	Yes
Estimation Method	OLS	Heckman	Heckman
Observations	2 239	2 239	2 239

Variables are expressed in log, except for dummy variables, that are contiguity, common language and diplomatic exchange. For sake of clarity other additional controls (such as regional dummies) are not presented here. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

The impact of the discriminatory social institutions in both origin and destination countries on female migration is significant and negative in all specifications. It suggests that higher discrimination is related to lower female emigration. Gender inequality appears to be both a pull and a push factor for migrant women. On one hand, higher gender discrimination at

home reduces female emigration, since women's restricted opportunities and low decision-power limit their possibility to move abroad. On the other hand, lower discrimination in the destination country attracts female immigration.

Interestingly, using a Heckman two-step procedure gives more details on this relationship.[17] In Table 2, estimated effects of discriminatory social institutions on the probability to have female migration flows between two countries (column (3)) and the magnitude of these flows (column (2)) are presented. While the levels of SIGI in origin and destination countries have no significant impact on the extent of female migration flows, they exhibit negative and significant coefficients in the selection equation. These results suggest that gender inequality in social institutions only affects the probability to migrate. Discrimination against women in both origin and destination countries plays a key role in the selection process of migrant, which is consistent with previous findings (Baudassé and Bazillier, 2012).

Table 3. **Impact of SIGI on female migration (2SLS estimates)**

Panel A. Second-stage: Dependent variable = Migration

	(1)	(2)
SIGI (origin)	-0.229**	-0.294**
	(0.091)	(0.128)
SIGI (destination)	-0.632**	-0.705**
	(0.261)	(0.318)
Income differential	0.373***	0.358***
	(0.010)	(0.011)
Population (origin)	0.174***	0.173***
	(0.014)	(0.014)
Population	0.239***	0.227***
	(0.008)	(0.008)
Distance	-0.550***	-0.543***
	(0.022)	(0.023)
Contiguity	1.193***	1.203***
	(0.145)	(0.145)
Common language	0.485***	0.496***
	(0.041)	(0.041)
Female education	0.421***	0.392***
	(0.090)	(0.091)
Female (origin)	0.057***	0.065***
	(0.018)	(0.018)
Female (destination)	-0.032***	-0.025**
	(0.008)	(0.010)
Male migration flows		0.079***
		(0.016)
Constant	-0.900***	-0.943***
	(0.342)	(0.342)
Region dummies	Yes	Yes
R-squared	0.87	0.85
Observations	2 239	2 239

17 This approach is justified by the significance of the Mills ratio.

Table 3. *(cont.)*

Panel B. First-stage: Dependent variable = SIGI		
	(1)	(2)
Cedaw (origin)	-0.015***	-0.015***
	(0.000)	(0.000)
Cedaw (destination)	-0.011***	-0.011***
	(0.000)	(0.000)
Income differential	0.028***	0.025***
	(0.003)	(0.003)
Population (origin)	-0.030***	-0.030***
	(0.005)	(0.005)
Population (destination)	0.005*	0.002
	(0.002)	(0.003)
Distance	0.020**	0.021***
	(0.008)	(0.008)
Contiguity	0.070*	0.073*
	(0.039)	(0.039)
Common language	0.085***	0.086***
	(0.014)	(0.014)
Female education	-0.652***	-0.649***
	(0.014)	(0.014)
Female unemployment (origin)	0.029***	0.029***
	(0.006)	(0.006)
Female unemployment (destination)	-0.017***	-0.018***
	(0.006)	(0.006)
Male migration flows		0.11***
		(0.004)
Constant	-3.095***	-3.068***
	(0.133)	(0.133)
Region dummies	Yes	Yes
R-squared	0.88	0.88
F-stat	12.8	13.3
Observations	2 239	2 239

Variables are expressed in log, except for dummy variables, that are contiguity, common language and diplomatic exchange. For sake of clarity, other additional controls (such as regional dummies) are not presented here. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

Finally, several checks are performed in order to test the robustness of our findings (Table 4). First, migration networks are included in the specification (row (2)) since it reduces the cost of migration. Then, the differential in government expenditure is added to take into account the effect of social allowance and public services provision on migration (row (3)). Finally, a conflict variable in origin countries (row (4)) and the level of civil liberties at home (row (5)) are included to control for the effect of political situation on migration dynamics (Péridy, 2010). In all these cases, even including all these variables, the results maintain their statistical significance.

Regarding male migration, the impact of gender inequality in social institutions is not significant whatever the estimators used (Table A.3 in Appendix). It suggests that male migration is not sensitive to the level of discrimination in the origin countries, neither in the destination. The interpretation is twofold: *i)* men's decision to migrate is not related to the level of gender discrimination in social institutions; or *ii)* the SIGI is not able to capture social pressure on male behaviour and choices. This finding highlights that male and female incentives to migrate differ, suggesting gender-sensitive migration factors.

Table 4. **Robustness checks (Heckman estimates)**

	(1) Female migration flows	(2) Select
1) Main specification		
SIGI (origin)	-0.449	-0.234**
	(0.334)	(0.110)
SIGI (destination)	-0.763	-0.721***
	(0.505)	(0.075)
2) with network		
SIGI (origin)	-0.322	-0.244**
	(0.347)	(0.109)
SIGI (destination)	-0.743	-0.723***
	(0.508)	(0.075)
3) with government expenditures differential		
SIGI (origin)	-0.338	-0.271**
	(0.326)	(0.110)
SIGI (destination)	-0.274	-0.731***
	(0.443)	(0.078)
4) with conflict		
SIGI (origin)	-0.365	-0.251**
	(0.351)	(0.109)
SIGI (destination)	-0.743	-0.722***
	(0.511)	(0.075)
5) with civil liberties		
SIGI (origin)	-0.346	-0.241**
	(0.347)	(0.109)
SIGI (destination)	-0.711	-0.724***
	(0.506)	(0.076)
6) with all additional controls		
SIGI (origin)	-0.307	-0.302***
	(0.333)	(0.114)
SIGI (destination)	-0.257	-0.722***
	(0.437)	(0.079)

Variables are expressed in log. Additional control variables are included: distance, contiguity, population of origin and destination countries, income and language differentials, female education and female unemployment rates in origin and destination countries. The exclusion variable in the selection equation is diplomatic exchange. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

Further analysis disaggregates the SIGI in the origin countries into its five sub-indices, in order to identify which one drives the results (Table 5).[18] Discrimination within the family and restricted civil liberties at home appear to be the main drivers of the gender inequality-migration nexus. In particular, while discriminatory family code confirms our previous results on the negative relationship between gender inequality and female migration in the selection equation, restricted civil liberties exhibit a positive effect. This may be explained by lower access to the public sphere encouraging women to escape elsewhere to enjoy more civil liberties. Conversely, high discrimination at the family level may put more pressure and control over women's actions,

18 For the sake of simplicity, results from the second step are presented in columns. In the first step, four out of five dimensions attract significant coefficient. The son bias dimension was insignificant.

and limit even their ability to move. It is worthy to note that both sub-indices have a significant and negative effect on the extent of female migration, meaning that high levels of discriminatory social norms in the family and in the public space reduce not only the probability to have female migration but also the size of those women who get to migrate.

Table 5. **Impact of SIGI sub-indices on female migration (Heckman two-step procedure)**

	(1) Female migration flows	(2) Select
Discriminatory family code	-1.499***	-0.326**
	(0.462)	(0.156)
Restricted civil liberties	-0.904**	0.278*
	(0.400)	(0.144)
Restricted physical integrity	0.060	-0.056
	(0.382)	(0.145)
Restricted resources and entitlements	0.081	-0.069
	(0.413)	(0.146)
Observations	2 239	2 239

For sake of simplicity, the results are presented in columns. Nevertheless, each dimension was introduced singly. Then, the singly significant dimensions were introduced together. Variables are expressed in log. Additional control variables are included: distance, contiguity, population of origin and destination countries, income and language differentials, female education and female unemployment rates in origin and destination countries. The exclusion variable in the selection equation is diplomatic exchange. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

V.2. Influence of migration on gender inequality in social institutions

Table 6 presents the estimated effects of migration on gender inequality in social institutions (OLS estimates in columns (1)-(3), 2SLS estimates in columns (4)-(6)), while Table 7 presents the heterogeneous effect by levels of discrimination in the destination country.

Control variables exhibit the expected signs. For example, the higher the GDP per capita and female education, the lower the gender inequality. Moreover, countries having ratified the CEDAW earlier have lower SIGI scores that are lower discriminatory social institutions. The level of civil liberties is quite related to the level of gender inequality in social institutions. Countries where civil liberties are restricted are also those where discriminatory social institutions are high, while religiosity does not seem to have significant impact.

Let us initially focus on the average transmission role of migrant: larger shares in total population promote gender equality in social institutions, whatever the gender of the migrant. However, following our theoretical expectation, the female migration effect is significantly higher.[19]

19 The Wald test is performed to check the statistical difference between the two coefficients.

Table 6. **Impact of migration on SIGI (OLS and 2SLS estimates)**

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Second-stage: Dependent variable = SIGI (origin)						
Share of migrants in 2010	-0.076**			-0.313**		
	(0.028)			(0.149)		
Share of female migrants in 2000		-0.075**			-0.354**	
		(0.028)			(0.147)	
Share of male migrants in 2000			-0.074**			-0.247**
			(0.029)			(0.102)
GDP	-0.094**	-0.094**	-0.096**	-0.120**	-0.100**	-0.164**
	(0.037)	(0.036)	(0.037)	(0.047)	(0.039)	(0.068)
Religious	-0.408	-0.410	-0.408	-0.642	-0.595	-0.591
	(0.615)	(0.615)	(0.615)	(0.695)	(0.727)	(0.690)
Cedaw	-0.015**	-0.014**	-0.015**	-0.031**	-0.026**	-0.036**
	(0.006)	(0.006)	(0.006)	(0.012)	(0.010)	(0.014)
Civilliberties2	1.063*	1.053*	1.073*	1.004	0.935	1.052
	(0.578)	(0.579)	(0.577)	(0.646)	(0.668)	(0.642)
Civilliberties3	1.508**	1.506**	1.514**	1.301*	1.246*	1.373**
	(0.580)	(0.580)	(0.579)	(0.658)	(0.685)	(0.653)
Civilliberties4	1.627***	1.622***	1.635***	1.342**	1.275*	1.439**
	(0.583)	(0.583)	(0.581)	(0.657)	(0.684)	(0.651)
Civilliberties5	1.636***	1.640***	1.639***	1.546**	1.613**	1.596**
	(0.581)	(0.580)	(0.581)	(0.663)	(0.694)	(0.665)
Civilliberties6	1.898***	1.890***	1.907***	1.829**	1.780**	1.885***
	(0.603)	(0.603)	(0.602)	(0.676)	(0.697)	(0.672)
Civilliberties7	16.774	15.613	17.417	32.842	26.996	38.045*
	(14.464)	(14.325)	(14.582)	(19.926)	(21.748)	(21.860)
Female education	-0.086*	-0.089*	-0.084*	-0.124*	-0.130*	-0.119
	(0.045)	(0.044)	(0.045)	(0.069)	(0.071)	(0.070)
Constant	26.899	24.746	28.131	60.939	50.356	70.769
	(28.662)	(28.327)	(28.923)	(39.557)	(43.125)	(43.440)
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.70	0.72	0.71	0.74	0.72	0.78
Observations	86	86	86	86	86	86
Panel B. First-stage: Dependent variable = Share of migrants in 2010						
Share of migrants in 2000				0.589***		
				(0.091)		
Share of female migrants in 2000					0.547***	
					(0.114)	
Share of male migrants in 2000						0.552***
						(0.096)
GDP				0.313	0.315	0.249
				(0.208)	(0.238)	(0.229)
Religious				0.396	0.348	0.195
				(0.712)	(0.814)	(0.794)
Cedaw				-0.021**	-0.024**	-0.017**
				(0.008)	(0.007)	(0.006)
Civil liberties2				0.085	0.070	0.205
				(0.661)	(0.748)	(0.736)
Civil liberties3				0.197	0.205	0.179
				(0.671)	(0.760)	(0.746)
Civil liberties4				0.061	0.091	0.091
				(0.672)	(0.764)	(0.746)
Civil liberties5				-0.129	-0.378	-0.158
				(0.681)	(0.782)	(0.766)
Civil liberties6				0.047	-0.037	0.146
				(0.692)	(0.782)	(0.773)
Civil liberties7				22.716	25.808	18.932
				(20.946)	(25.041)	(25.669)
Female education				0.119*	0.082	0.158**
				(0.0705)	(0.080)	(0.077)
Constant				39.160	43.844	31.861
				(41.535)	(49.679)	(50.915)
Estimation Method	OLS	OLS	OLS	2SLS	2SLS	2SLS
Region dummies				Yes	Yes	Yes
R-squared				0.87	0.83	0.82
F-stat				14.85	15.23	12.33
Observations				86	86	86

Variables are expressed in log. ***, **, and * 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

Further analysis shows that the effect of migration depends on the level of discrimination in destination countries. Higher migrant shares towards countries having low levels of discriminatory social institutions reduce gender inequality in social institutions. On the opposite, higher migrant shares towards countries with high levels of discrimination reinforce gender inequality in social institutions.

Table 7. **Impact of Migration on SIGI by level of discrimination in destination country**

	(1)	(2)	(3)	(4)	(5)	(6)
	SIGI (origin)					
Low						
Share of migrants	-0.028**	-0.100**				
	(0.001)	(0.042)				
Share of female migrants			-0.023**	-0.077**		
			(0.001)	(0.032)		
Share of male migrants					-0.029**	-0.003**
					(0.001)	(0.001)
Moderate						
Share of migrants	0.027	0.346				
	(0.051)	(0.239)				
Share of female migrants			0.061	0.609		
			(0.049)	(0.354)		
Share of male migrants					0.048	0.180
					(0.057)	(0.154)
High						
Share of migrants	0.019**	0.076**				
	(0.009)	(0.038)				
Share of female migrants			0.050**	0.109**		
			(0.021)	(0.045)		
Share of male migrants					0.021**	0.050**
					(0.008)	(0.021)
Estimation Method	OLS	IV	OLS	IV	OLS	IV
R-squared	0.74	0.77	0.71	0.78	0.75	0.81
Observation	28	28	28	28	28	28

Low, moderate and high discriminatory destination countries are defined by the SIGI terciles. Variables are expressed in log. Additional control variables are included: GDP (log), religious, CEDAW date of ratification, religious, female average education, civil liberties and regional dummies. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

V.3. The two-way relationship between gender inequality and migration

In the last step, the paper assesses the bidirectional relationship between female migration and the level of discriminatory social institutions, measured by the SIGI. Table 8 considers the simultaneous estimation of equations (1) and (2).[20] Controlling for potential simultaneities confirms the previous results: the differential in discriminatory social institutions between the sending and the receiving countries is an additional determinant of migration, while migration is an agent of change regarding gender inequality in opportunities. This exercise emphasises the existence of a vicious circle: higher discriminatory social institutions in origin country reduce the likelihood of having female emigration, while female emigration is too low to

20 For sake of brevity, the insignificant male regressions are not reported.

have a positive effect on gender equality. These results have some critical policy implications. Indeed, reducing gender inequality in social institutions increases the probability to have female migrant and then to benefit from its positive effect on gender equality promotion.

Table 8. **Bidirectional relationship between female migration and SIGI (3SLS estimates)**

	(1)	(2)	(3)	(4)
Dep. Var.	Female migration	SIGI	Male migration	SIGI
SIGI (origin)	-0.019**		-0.101	
	(0.010)		(0.102)	
SIGI (destination)	-0.051**		-0.127	
	(0.021)		(0.113)	
Income differential	0.118***		0.280***	
	(0.004)		(0.016)	
Population (origin)	0.060***		0.514***	
	(0.004)		(0.014)	
Population (destination)	0.068***		0.488***	
	(0.002)		(0.016)	
Distance	-0.156***		-0.858***	
	(0.008)		(0.033)	
Contiguity	0.275***		1.044***	
	(0.040)		(0.145)	
Common language	0.152***		1.499***	
	(0.015)		(0.068)	
Female/Male education	0.148***		1.496***	
	(0.017)		(0.246)	
Female/Male unemployment	0.021***		0.649***	
(origin)	(0.006)		(0.056)	
Female/Male unemployment	0.002		-1.617***	
(destination)	(0.006)		(0.087)	
Male/ Female migration flows	0.086***		0.032***	
	(0.018)		(0.005)	
Share of female migrants in 2010		-0.066***		
		(0.006)		
Share of male migrants in 2010				-0.042***
				(0.003)
GDP		0.053***		0.041***
		(0.015)		(0.015)
Religious		1.137***		1.135***
		(0.054)		(0.054)
Cedaw		-0.010***		-0.011***
		(0.0001)		(0.001)
Civil liberties_2		1.055***		1.065***
		(0.041)		(0.041)
Civil liberties_3		1.478***		1.454***
		(0.042)		(0.041)
Civil liberties_4		1.567***		1.529***
		(0.042)		(0.042)
Civil liberties_5		1.175***		1.177***
		(0.043)		(0.043)
Civil liberties_6		1.790***		1.789***
		(0.044)		(0.044)
Civil liberties_7		0.960***		0.965***
		(0.030)		(0.030)
Constant	0.014	19.807***	5.030***	20.498***
	(0.086)	(2.433)	(0.846)	(2.396)
Regional Dummies	Yes	Yes	Yes	Yes
Observations	2 473	2 473	2 473	2 473

Variables are expressed in log. ***, **, and * 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

VI. CONCLUSION

Migration is a complex field of research that requires greater attention to the particular gender dynamics of social institutions. This paper assesses the two-way linkages between gendered migration and discriminatory social norms, leading to relevant findings on the interaction between social institutions, gender and South-South migration.

On one side, estimates show that discrimination against women in social institutions in both origin and destination countries plays a key role in the selection process of migrants. While gender inequality in social norms constrains female emigration, it has no effect on male emigration, suggesting that men and women's incentives to migrate differ. Hence, although the broader structural causes of emigration appear to be gender-neutral, the role of gender inequality in social institutions is not. In addition to standard determinants, discriminatory social institutions influence female migration patterns. This is critical in order to understand the role of social institutions in female decision-making. By limiting their access to opportunities, resources and power, discriminatory social institutions restrict women's capabilities to achieve their migration wishes. In particular, discrimination within the family and restricted civil liberties drive our findings.

On the other side, migrants are agent of change by influencing gender relations. In particular, migration may either entrench gender inequality in social institutions or challenge them, according to the level of discriminatory social institutions in the host country. While larger shares of migrants towards low or moderate discriminatory countries are linked to greater gender equality in social institutions in home communities, migration towards high discriminatory destinations has the reverse impact. Both men and women are agent of change, although the effect of female migrants is significantly higher.

Interconnecting the two directions of the relationship emphasises the existence of a circular pattern: high gender inequality in social institutions at origin constraints female migration, but at the same time the share of female migrants is too low to positively shift discriminatory norms towards greater gender equality.

However, drawbacks limited our research. In particular, sex-disaggregated data on international migration is still scarce and seldom collected, with short time coverage. Similarly, gender inequality in social institutions has started to be measured only recently, not allowing for a panel data analysis: the SIGI is only available for one year limiting our empirical study to a cross-country analysis. Although these results are robust to specifications changes and controls for potential endogeneities and simultaneities, the interpretation of this data-driven analysis

should be cautious concerning its causality. Since it is not possible to control for year and country specific effects, findings may be partly due to omitted variables. Finally, at the micro level, more research is required in order to collect data on immigrants and return migrants to allow for an estimation of the spillovers on family structures in origin countries. Nevertheless, this paper is a first contribution to the literature highlighting the bidirectional nature of the migration-gender nexus and the importance of discriminatory social institutions.

APPENDIX

Table A.1: **SIGI 2012 ranking**

Country	SIGI Value 2012	Country	SIGI Value 2012	Country	SIGI Value 2012
Argentina	0.0069	Madagascar	0.1672	Iraq	0.3184
Costa Rica	0.0219	Haiti	0.1693	Georgia	0.3382
Paraguay	0.0642	Indonesia	0.1742	Cote d'Ivoire	0.3397
South Africa	0.1028	Kyrgyzstan	0.1756	Liberia	0.3440
FYR of Macedonia	0.1041	Jamaica	0.2070	Bangladesh	0.3523
Cuba	0.1057	Guatemala	0.2119	Ethiopia	0.3534
Trinidad and Tobago	0.1064	Nepal	0.2154	Egypt.	0.3579
Brazil	0.1085	Nicaragua	0.2165	Sierra Leone	0.3605
Dominican Republic	0.1110	Malawi	0.2171	Togo	0.3608
El Salvador	0.1149	Mozambique	0.2194	Azerbaijan	0.3621
Serbia	0.1175	Tajikistan	0.2235	Afghanistan	0.3634
Philippines	0.1193	Senegal	0.2307	Burkina Faso	0.3687
Cambodia	0.1205	China (P Rep. of)	0.2388	Cameroon	0.3696
Kazakhstan	0.1212	Viet Nam	0.2387	Niger	0.3720
Venezuela	0.1250	Myanmar	0.2403	Uganda	0.3838
Belarus	0.1251	Guinea-Bissau	0.2435	Swaziland	0.3915
Morocco	0.1262	Kenya	0.2479	Syrian Arab Republic	0.3928
Ecuador	0.1307	Tanzania	0.2518	Gambia	0.3933
Honduras	0.1307	Mauritania	0.2539	Gabon	0.4288
Bolivia	0.1328	Lao PDR	0.2593	Guinea	0.4396
Namibia	0.1352	Ghana	0.2611	Nigeria	0.4428
Tunisia	0.1357	Burundi	0.2754	Chad	0.4525
Mongolia	0.1420	Albania	0.2790	Benin	0.4569
Bosnia and Herzegovina	0.1425	Sri Lanka	0.2796	Somalia	0.4992
Thailand	0.1466	Armenia	0.2847	Yemen	0.5065
Colombia	0.1471	Pakistan	0.2945	Congo, Dem. Rep.	0.5136
Ukraine	0.1513	Uzbekistan	0.3044	Sudan	0.5251
Rwanda	0.1539	India	0.3045	Mali	0.6010
Moldova	0.1591	Zambia	0.3046		

Table A.2: **SIGI variables, scoring and data sources**

Variable		Scoring	Source
		Discriminatory Family Code	
1. Legal Age of Marriage		0: equal legal age 0.5: discrimination trough customary practices 1: unequal legal age	SIGI Country notes
2. Early marriage		% of women married between 15-19 years of age.	UN, DHS, MICS
3. Parental Authority		0: equal rights 0.5: discrimination trough customary practices 1: unequal rights	SIGI Country notes
4. Inheritance		0: equal rights 0.5: discrimination trough customary practices 1: unequal rights	SIGI Country notes
		Restricted Physical Integrity	
5. Female Genital Mutilation		% of women who have undergone female genital mutilation	WHO, DHS, MICS
6. Violence against Women	3 components:		
	a) laws	0: existence of law	SIGI Country notes
	b) attitudes towards domestic violence	0.5: problems in law implementation	
	c) prevalence of violence	1: there is no law	
7. Reproductive Integrity		% agree that partner is justified in beating his partner under certain circumstances	DHS
		% of women having experienced physical and/or sexual violence from partner in life	UN WOMEN
		% of married women with unmet need for family planning	DHS, MICS, WHO
		Son Bias	
8. Missing Women			Pr. Klasen
9. Fertility Preferences		% of males as the last child in the household	DHS, MICS
		Restricted Resources and Entitlements	
10. Access to Land		0: same right and access	SIGI Country notes
11. Access to Credit		0.5: discriminatory practices	
12. Access to Assets		1: unequal rights and access	
		Restricted Civil Liberties	
13. Access to public space		0: No legal restrictions neither discriminatory practice 0.5: No legal restrictions, but discriminatory practices 1: There are legal restrictions	SIGI Country notes
14. Political Voice	2 components:		SIGI Country notes
	a) Political participation	% of women in national parliament	
	b) Quotas	0: There are legal quotas at national and sub-national levels 0.5: There are legal quotas at national or sub-national levels 1: There are no legal quotas	

The SIGI contains 5 dimensions and 14 variables. Klasen, S. and C. Wink (2002) A Turning Point in Gender Bias in Mortality? An Update on the Number of Missing Women. Population and Development Review 28; Klasen, S. and C. Wink (2003) Missing Women: Revisiting the Debate. Feminist Economics 9, 263-299. MICS refers to Multiple Indicator Cluster Survey. DHS refers to Demographic and Health Survey. WHO refers to World Health Organization.

Table A.3: **Impact of SIGI on male migration (OLS and Heckman estimates)**

Dep. Var.	(1) Male migration flows	(2) Male migration flows	(3) Select
SIGI (origin)	-0.101	0.222	-0.208
	(0.102)	(0.277)	(0.262)
SIGI (destination)	-0.127	0.703	-0.406
	(0.113)	(0.428)	(0.369)
Income differential	0.280***	-0.041	0.194***
	(0.016)	(0.224)	(0.039)
Population (origin)	0.514***	0.190	0.181***
	(0.014)	(0.209)	(0.029)
Population (destination)	0.488***	0.186	0.123***
	(0.016)	(0.153)	(0.019)
Distance	-0.858***	-0.694	-0.375***
	(0.033)	(0.432)	(0.069)
Contiguity	1.044***	0.950	0.431***
	(0.145)	(0.798)	(0.131)
Common language	1.499***	-0.290	0.780***
	(0.068)	(0.731)	(0.127)
Male education	1.496***	0.596***	0.488***
	(0.246)	(0.111)	(0.086)
Male unemployment	0.649***	0.496***	0.632***
(origin)	(0.056)	(0.156)	(0.156)
Male unemployment	-1.617***	-0.456***	-0.967***
(destination)	(0.087)	(0.107)	(0.332)
Female migration flows	0.041**	0.033***	0.048**
	(0.016)	(0.013)	(0.020)
Diplomatic exchange			0.398***
			(0.103)
Constant	5.030***	9.933***	-0.820
	(0.846)	(2.710)	(0.618)
Mills			-2.635**
			(1.158)
Regional Dummies	Yes	Yes	Yes
Estimation Method	OLS	Heckman	Heckman
Observations	2,473	2,473	2,473

Variables are expressed in log, except for dummy variables, that are contiguity, common language and diplomatic exchange. For sake of clarity others additional controls (such as regional dummies) are not presented here. ***, **, and * represent 1%, 5% and 10% significance levels, respectively. Standard errors are in parentheses.

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