An OECD-Country Analysis: Gender Discrimination and Female Emigration

Student research project to the empirical Economic Research (PaRE1To)

Julian Müller and Viktoria Szabo
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Field of Study: VWL B.Sc. LMU
Advisor: Julian Dieler
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1. Introduction

Migration within the developed countries of the world is caused by many different factors. Especially the Immigration from economically weaker countries to the more productive ones is a central issue. In this context most of the time women are seen as appendage to emigrating men with their family. Therefore, one can assert that the cause of female migration is mostly based on the cause for male migration (e.g. Lauby and Stark, 1988 and Lee, 1966). But contradictory to this assumption the share of women in total migration is rising. In the most developed countries the share of women in the immigration stock rose from 48.9 to 52.2 percent between 1960 and 2005 (United Nations, 2006).

This means on the one hand that female migration behaviour may not be reduced to the pattern of male migration and on the other hand that female migration has already become a profound topic, which needs to be investigated extensively. The urgency to investigate not only migration patterns of men, but also of women is already pointed out in some papers. While the United Nations recently stated that “A gender perspective is essential to understand migration and development” (United Nations, 2006), Docquier et al. (2008) consider that “The feminization of international migration raises specific economic issues related to the gendered determinants and consequences of migration”. But until now there is almost no research regarding the cause of rising female emigration share in the total stock.

In this paper we want to shed light on a reason for female emigration. Thus, we won’t take a view at the large drivers of emigration which influence both the female and male emigration, like poverty, unemployment, political dissatisfaction and so on, but rather concentrate on factors which influence women solely.

At the present time, where society no longer regards the discrimination against women as a matter of course, as it did just a few decades ago, there are still considerable differences at improvement even within our western society. We assume, that those differences are one reason, even if only with little impact, for the rise of migration of women within the developed countries. Therefore, we examined whether and how
gender discrimination or rather gender inequality\textsuperscript{1}, measured with the gender wage gap, affects the migration behaviour of women. Remarkably, the results of our sample consisting of 24 OECD-countries suggest that high levels of discrimination have negative impact on female emigration, or to put it in other words, improving gender equality induces higher female emigration.

In the second chapter we will clarify the expectations about how discrimination may affect female emigration before we explain our empirical strategy in the third chapter. Afterwards we will present our results in chapter four and conclude our research with chapter five.

2. Expected influences from gender discrimination on emigration

Gender inequality to a large extent within a country can have positive, as well as negative impact on the emigration pattern of women. We will start with illuminating the positive impact first and afterwards explain the negative impact.

Justified from the economic point of view, great gender inequality should lead to a high degree of female emigration. Because of the bad labour perspectives in the source country, opportunity costs of emigrating to another country are low, while the expected payoff is high. A similar approach was pointed out by Baudassé and Bazillier (2014) whereat they call this incentive the “push factor hypothesis”. The decision refers not only to the individual per se, but also to the decision of the family or the household, which decides to send the female rather than the male as far as the opportunity costs are lower. This explanation for female emigration only holds, if the differences in discrimination between source and destiny country are reasonably high. Table 1 shows a mean wage gap for our chosen countries of about 31\%. The smallest wage gap is seen in Slovenia and lies at 0\% whereas the highest difference in wages is recorded in the Netherlands at 57.1 \%. This and the standard deviation of about 10 percent suggests that there exist considerable differences in discrimination across the countries.

\textsuperscript{1} Busse and Spielman (2005) argue that it’s not entirely possible to determine, if differences between men and women are due to discrimination. Because of this, they prefer talking about gender inequality rather than gender discrimination.
### Table 1: Summary Variable Wage Gap

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage Gap</td>
<td>31.33</td>
<td>10.19</td>
<td>0</td>
<td>57.1</td>
</tr>
</tbody>
</table>

Beside the monetary aspects, there are other arguments which favour the idea, that an increase in gender inequality has *negative* effect on the female emigration behaviour. The reason is that more discriminating societies also entail certain social and cultural norms regarding the female behaviour and whose role on the labour market. These social and cultural norms mean limitations for the women, i.e. in travelling alone, but also in the choice of occupation and so on. Those limitations are cutting the freedom of choice and autonomy of women and therefore lead to a decrease in emigration. In this context, Jolly and Reeves (2005) wrote, that “It may be less acceptable for women to move about and travel on their own so women may find it more difficult to migrate [...].” Furthermore, these norms prevent the households form sending women instead of men abroad, even if the opportunity costs are lower and the payoff is higher. These arguments give reason to believe that greater gender equality could lead to a rise in female emigration.

### 3. Empirical strategy

#### 3.1 Measurement for gender discrimination

The discrimination of women can take many different forms and ranges from discrimination in the household or social life to discrimination on the labour market. This types of discrimination are closely interlinked, which means that countries with high levels of discrimination in social life also have a high degree of discrimination on the labour market. This follows from the fact, that discrimination in social life influences discrimination on the labour market and vice versa. In a theoretical approach, Becker (2010) realized this connection. He quotes, that e.g. the managers decisions are influenced by the social attitude towards women’s status in society. Lundberg and Startz (1998) point out that social discrimination has negative impact on the development of the human capital of those who are discriminated. A sentence, summing up the implications of the connection between labour market and social life discrimination comes from Figart (2005). She says: “Labour market discrimination is a multidimensional
interaction of economic, social, political, and cultural forces in both the workplace and the family, resulting in differential outcomes involving pay, employment, and status.” Therefore, data which are measuring discrimination on the labour market also represent and capture the discrimination in social life to a certain extend. This connection between data on labour market and data on social life will be essential for the understanding of our results.

Our measure for discrimination is the gender wage gap. We decided to use this measure because it is absolute objective and data across countries are highly comparable. Furthermore, the data belongs to the category of unadjusted wage gap, which means it does not control for many differences between men and women, for example in occupation, human capital development, work experience, career interruption and so on. As statistical analysis show, these differences combined explain roughly 70 percent of the unadjusted wage gap, leaving 30 percent of the explanation for the pure wage discrimination between two absolute equal individuals (CONSAD Research Corporation, 2009).

Hence, the unadjusted wage gap is probably not the best option to measure the real wage discrimination, but with this entire differences included, it all the more gives a good picture of the whole extend of possible gender discrimination in the labour market. Therefore, we need to assume, that these differences counting for about 70 percent of the wage discrimination are also due to discrimination and not because of individual preferences. The previously mentioned scientific papers already point out, that many of those differences causing smaller wages for women, like the choice of occupation and the level of education, can also be explained by discrimination. Further evidences, provided by the development on the labour market, indicate that those differences must be explained by discrimination, at least to some extent. It has been observed that the changing attitude towards women in the last few decades prompted women to surge into job areas, which were previously dominated by men (Blau and Kahn, 2000). This, and also many other similar changes in the behaviour of women on the labour market, indicate that these differences are likely not due to personal preferences, but rather due to gender discrimination. Therefore, we consider the unadjusted wage gap a good measure for the general discrimination on the labour market.
3.2 Empirical Model

With the empirical Model, including 24 OECD-countries, we pursue our assumption that the wage gap in a particular country has influence on the emigration decision of women in this country. Thus, we use the wage gap as the explanatory variable and emigration as the dependent variable in our OLS regression:

\[ e_f = \beta_0 + \beta_1 \text{low} + \beta_2 \text{medium} + \beta_3 w_g \star \text{low} + \beta_4 w_g \star \text{medium} + \beta_5 w_g \star \text{high} \]

\[ + \beta_6 u_r e_d + \beta_7 e_m e_d + \mu_i + u \]

in which the term \( e_f \) represents the emigration of women as the share of all women in a particular country. The same formula was used to create \( e_m \), representing male emigration. Similarly, the female unemployment rate described by the term \( u_r \), is the share of all women which are unemployed. We generated those variables to avoid the possibility of any distortion because of differences in either the population size or composition of population. The wage gap \( w_g \) is expressed as 1 minus the female earnings as percentage of male earnings. In order to better understand what this means, we can also say that \( w_g \) tells us how much less women earn compared to men, as percentage of the male earnings.

Special about our dataset is, that the variables are divided into low, medium and high education, expressed with the index \( e_d \). High education means post-secondary education, medium education means upper-secondary education and low education enfolds all below (including no education at all). We used the dummies, high, medium and low to enable a separated view on emigration by education-level. One can imagine that as three different regression lines, one for each, high, medium and low educated individuals. A great benefit of this type of data is, that it allows using country fixed effects expressed by the term \( \mu_i \).

These country fixed effects narrow the framework for possible omitted variables, since they capture all effects on female emigration which are equal for every individual within a country, but differ across individuals of different countries. This could be e.g. political differences.

The measure for male emigration has a similar function as the country fixed effects in our regression. That is, because many drivers of emigration influence women in the same way as it does men. Thus, controlling for male emigration means not only
controlling for the direct causal effect from male onto female emigration, but also for effects which influence male and female emigration in the same manner. This effects might be e.g. differences in income or unemployment rate between the different levels of education (male emigration doesn’t control for income per capita or unemployment rate in general in a country, as those aspects are already captured by country fixed effects).

By controlling for country specific differences and for the gender-independent drivers of emigration (meaning the influencing factors for both men and women) we hope to be able to cover all aspects, which could generate endogeneity, therefore receiving a good impression of the real causal effect.

3.3. Data Sources

For the measurement of wage gap we rely on data from the Key Gender-Relevant Employment Indicators (KGEI). It offers cross-country comparable and harmonized household survey data from 26 OECD countries. The indicators have been developed by the World Bank’s Gender and Development Group in partnership with the Luxembourg Income Study.

Concerning data on migration, we rely on the database provided by Docquier, Marfouk and Lowell (2008). As it is very difficult to receive reliable data to emigration from the countries, because data are often not collected, but if though, incomplete and imprecise, they computed the emigration data by aggregating consistent immigration data collected in receiving countries.

We computed the unemployment rates with data from the International Labor Organization, which provided the share of unemployment by sex and education, and with data from the OECD database, which provided the general unemployment rates within a country.

All the data we use in the following regression refers to the year 2000.
4. Results

We start with exploring the bivariate correlation between wage gap and female emigration. That there is a connection between wage gap and education is observable in Figure 1 and 2 showing the correlation for the education levels low and medium. Figure 3 suggests a very weak connection for the high education level. It is crucial, that all Figures support the idea of a negative connection between the gender wage gap and female emigration. This means that female emigration declines when the wage gap rises. Also important is, that we can’t observe any strongly deviating observations, which means that we don’t need to give much thought to distortion because of outliers in our regression later.

**Figure 1: Scatter Plot between Wage Gap and Female Emigration for low education**
Figure 2: Scatter Plot between Wage Gap and Female Emigration for medium education

Figure 3: Scatter Plot between Wage Gap and Female Emigration for high education
In the next step we will explain the results of our empirical analysis. The results can be seen in table 2. We first note, that the effect of wage gap for low educated women is negative and significant throughout. The effect is reduced when including the controls, but it’s significance increases from weakly significant (p≤0.1) with no controls to highly significant (p≤0.01) with all controls. The effect of column four indicates that a decrease in wage gap from 30 to 0 percent (30 percent is the mean, see in table 1), would lead to an increase of female emigration as share of all women of 1.7 percent.

The same negative tendency is observable for medium and high educated women, but its effects are far smaller in comparison to low educated women. Also crucial for the interpretation is, that effects are not significant different from zero (except for high educated women when including unemployment rate). A further indication questioning the connection for high educated women is that the sign of the effect changes its direction with no controls. Therefore, we can’t assume any effect from wage gap on female emigration for the medium and high educated women and refuse to interpret the results for medium and high educated women as indication for a connection between wage gap and female emigration.

At last we take a look at the female unemployment rate. It has a positive and significant impact on female emigration in column two, but its effect declines and loses its significance when including male emigration. This means, that male emigration captures the effect of female unemployment rate (female and male unemployment rate are highly correlated, r =0.87)\(^2\). Therefore, the result proofs our thesis, that male emigration controls for the effects which are the same for both man and women.

\(^2\) We computed the correlation from our data. Data source and strategy of computation for male unemployment rate is the same as for female unemployment rate
After presenting our results, we will now give a plausible explanation for our findings. In doing so, we refer to the expected influences described in chapter two. As the wage gap is a type of discrimination on the labour market it is connected to the monetary aspects of gender discrimination in a natural way. Therefore, at first glance, an increase in wage gap is expected to entail an increase of female emigration. But this is contradictory to our results. Essential in interpreting our results is, that wage gap representing discrimination on the labour market highly correlates with social discrimination. Thus, using wage gap as measure includes measuring social discrimination. Consequently, the negative findings for the effect from wage gap on female emigration suggest social discrimination as the major driver. Concluding can be said that the effect of social discrimination, which influences female emigration in a negative way, overwhelms or even averts the effect of discrimination on the labour market, which in turn would influence female emigration in a positive way.

In regard to our results does it mean, that especially low educated women seem to be influenced or even trapped by social discrimination, while the positive and negative

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WG*low</td>
<td>-.00085*</td>
<td>-.00088**</td>
<td>-.00065***</td>
<td>-.00056***</td>
</tr>
<tr>
<td></td>
<td>(.00050)</td>
<td>(.00044)</td>
<td>(.00023)</td>
<td>(.00022)</td>
</tr>
<tr>
<td>WG*medium</td>
<td>-.001</td>
<td>-.00077</td>
<td>-.00038</td>
<td>-.00031</td>
</tr>
<tr>
<td></td>
<td>(.00077)</td>
<td>(.00059)</td>
<td>(.00047)</td>
<td>(.00049)</td>
</tr>
<tr>
<td>WG*high</td>
<td>.00011</td>
<td>-.00125***</td>
<td>-.00048</td>
<td>-.00086**</td>
</tr>
<tr>
<td></td>
<td>(.00053)</td>
<td>(.00044)</td>
<td>(.00043)</td>
<td>(.00043)</td>
</tr>
<tr>
<td>low</td>
<td>.01950</td>
<td>-.03395**</td>
<td>.01297</td>
<td>-.00805</td>
</tr>
<tr>
<td></td>
<td>(.02181)</td>
<td>(.0163)</td>
<td>(.01186)</td>
<td>(.01348)</td>
</tr>
<tr>
<td>medium</td>
<td>.0770113**</td>
<td>.00122</td>
<td>.0124</td>
<td>-.00477</td>
</tr>
<tr>
<td></td>
<td>(.03103)</td>
<td>(.02540)</td>
<td>(.01353)</td>
<td>(.02082)</td>
</tr>
<tr>
<td>unemployement Rate</td>
<td>.01219***</td>
<td>.053</td>
<td>.0053</td>
<td>.00346</td>
</tr>
<tr>
<td></td>
<td>(.00427)</td>
<td>(0.00250)</td>
<td>(0.00135)</td>
<td>(0.00208)</td>
</tr>
<tr>
<td>male emigration</td>
<td>.77545***</td>
<td>.6107***</td>
<td>.77545***</td>
<td>.6107***</td>
</tr>
<tr>
<td></td>
<td>(.06698)</td>
<td>(.05614)</td>
<td>(.06698)</td>
<td>(.05614)</td>
</tr>
<tr>
<td>Country Fixed Effects</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Notes: Standard error in parentheses; N= 70 for (1) and (3), N= 52 for (2) and (4)
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level
effects seem to eliminate each other for the medium and high educated women. As discrimination on the labour market is roughly the same for the different levels of education (table 3: the differences in the means of wage gap, separated according to education levels, are small) we can assume that differing effects in social discrimination are responsible for the differences between low educated women compared to medium and high educated women.

**Table 3: Summary of Wage Gap for low, medium and high education**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage Gap low</td>
<td>33.85</td>
<td>10.34</td>
<td>16.3</td>
<td>57.1</td>
</tr>
<tr>
<td>Wage Gap med</td>
<td>28.64</td>
<td>10.41</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td>Wage Gap high</td>
<td>31.5</td>
<td>9.26</td>
<td>15.1</td>
<td>43</td>
</tr>
</tbody>
</table>

An explanation could be that female education gets better with fewer social discrimination in the social environment. This means that social discrimination of higher educated women is likely to be lower right from the start. Another argument would be that higher education helps women to better overcome the negative influences of social discrimination.

Hence, an observable impact from gender discrimination on female emigration remains reserved for low educated women, which doesn’t mean that there is no connection for medium and high educated women, as the positive and negative influences may cancel out each other.

5. Conclusion

We investigated the influence from gender wage gap on female emigration. As the wage gap highly correlates with social discrimination, we can explain the negative results with the negative influence from social discrimination on female emigration. This negative effect remains reserved for low educated women, while we can’t show a negative effect for medium and high educated women.

By involving country fixed effects and a measure for male emigration, which captures all the gender-independent influences, we hope to cover all possible omitted variables which could bias our results. Therefore, we assume to be able to make a close approach to the real causal effect from the overall discrimination of women on whose emigration behaviour.
We also want to call attention to the problems of the empirical approach to this topic. As previously mentioned, the discrimination on the labour market and the social discrimination are deeply linked. This makes it impossible to separate those two aspects with our empirical strategy. On the whole, we obtain a good impression of the overall effect from gender discrimination on female emigration, but we can’t answer questions about the separated effects. This implicates that we can’t answer the question e.g. if there are any effects for medium and high educated women which eliminate each other, or if there are no effects at all. Moreover, scientists still have no agreement about defining a threshold between discrimination on labour market and in social life. This also regards our measurement gender wage gap. Differences in occupation and human capital development could directly be generated on the labour market, but also indirectly because of ex-ante discrimination in social life. It remains the problem, that the measure wage gap doesn’t separate labour market discrimination from social discrimination. This makes it impossible to get a crisp view on one of these effects alone. Therefore, the real causal effects in the different areas, labour market and social live, remain unclear.

Future research can address this problem by searching for measures, which can be better categorised in either labour market or social discrimination, and in a further step also include measures for social discrimination explicitly, which should then enable a separated view and not least allowing supportive advices for politics.
6. References


