

Did the Free Movement Agreement with the EU Lead to Displacements in the Swiss Labor Market?



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Switzerland attracted a lot of international attention when Swiss voters adopted the mass immigration initiative, which aims to revoke the Free Movement Agreement with the European Union and re-introduce immigration quotas. One important reason for adopting the initiative was the fear that immigrants take away residents' jobs. This article investigates, by analyzing the relationship between displacement risk and share of immigrants in different labor market segments, whether this fear is justified.

From the enactment of the Free Movement Agreement (FMA) in 2002, to 2012, the foreign labor force grew by a third. Net migration from the European Union was on average around 40,000 per year in this period. One important characteristic of this new migration is the skill mix of the immigrant workforce. While half of the immigrants from 1960 on to the early 1990s were low skilled, more than 50% of the new migrants possessed an academic diploma when they came to Switzerland. Against this backdrop, the following measures the relationship between the new immigration to Switzerland and its impact on the unemployment of the resident workforce.

The Limitations of Theoretical Approaches

The impact of immigration on the labor market is affected by many

different factors such as the skill mix of the migrants, capital adjustments, international trade, wage rigidity, and different forms of immigration. I focus here on the latter aspect, which is important to understand the Swiss case.¹ In this context, I distinguish between two forms of immigration: the exogenous and the endogenous case. Immigration is exogenous, if it occurs independently of the local labor market conditions. In such a case, immigration may be caused by war, poverty, political instability or other factors related to the sending countries. Given this assumption, the decision to migrate is taken with the intention of settling in the host country permanently. This form of immigration is mostly observed in traditional immigrant destination countries such as the United States, Australia, or Canada. The influx leads to an exogenous increase in labor supply. In such a situation, the

labor market has to absorb the new workers. In the case of endogenous immigration, however, the local labor market induces the influx. It is a consequence of an unmet rise in the demand for labor in the host country. This may have several reasons such as, for example, labor shortage caused by demographic change.

“Immigration is exogenous, if it occurs independent from the local labor market conditions. Endogenous immigration, however, is a consequence of a rise in the demand for labor in the host country.”

The effects of these two forms of immigration can be shown by looking at a classical labor market model. The setup of such a model may be rudimentary, implying a number of assumptions; however, the model

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provides good insights, when it comes to the results of immigration.

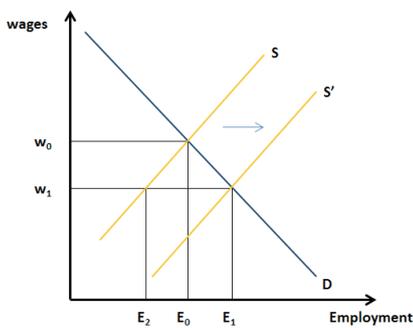


Figure 1: Exogenous Immigration in the Classical Labor Market Model

Figure 1 illustrates the labor market with the supply curve S , which is increasing and the demand curve D , which is decreasing with higher wage levels. The labor market is initially in equilibrium with wage w_0 and employment E_0 . Exogenous immigration leads to a higher labor supply which is reflected in a shift in the supply curve from S to S' . Increased competition decreases the wage from w_0 to w_1 and raises total employment from E_0 to E_1 until a new equilibrium is reached. This results in a decrease in the employment of the resident workforce from E_0 to E_2 . In such a case, resident workers are crowded out by immigrants, represented in the graph by the distance between E_1 and E_2 . The magnitude of this crowding-out effect depends on wage rigidities and elasticities.

In contrast to the exogenous case, endogenous immigration occurs in reaction to an excess demand for labor in the host country. Immigrants often come with the intention to work and then return to their home countries. Looking again at the classical labor market model shows that, in this case, demand first increases to D' creating a disequilibrium (left-hand panel in Figure 2). Absent immigration, wages first rise from w_0 to w_2 , and employment increase from E_0 to E_3 .

The right-hand panel in Figure 2 models the endogenous immigration as a reaction to the new situation. The immigration shown in the figure corresponds exactly to the shift in the demand curve. In such a situation, wages and resident employment remain at w_0 and E_0 . The difference between the new employment equilibrium E_4 and the initial equilibrium E_0 represents the number of immigrants employed in the labor market. The immigrants and residents do not compete for the same jobs. Wage and employment structures remain unchanged.

Nevertheless, it is possible that immigration is curbed by quotas and, thus, cannot completely cover the excess labor demand. This situation would lead to a slight rise in wages and employment. In this case, immigration prevents wages from rising strongly but only meets part

of the increased labor demand. The opposite situation is an influx of more immigrants than needed. Such a situation with excess immigration may lead to negative outcomes in the host country's labor market.

In short, exogenous immigration is likely to lead to a wage drop and negative employment effects. Endogenous immigration, on the other hand, is likely to satisfy the host country's excess labor demand and prevent wages from rising strongly and production shortages to arise.

“While exogenous immigration disturbs the labor market equilibrium, the endogenous case closes a disequilibrium gap.”

Nevertheless, we see that even in the endogenous case, situations can arise where immigration has an adverse impact on wages and resident employment.

How to Measure the Impact of Immigration

Since theory cannot provide a clear answer to the question on the impacts of migration, the effects have to be measured using real world data. For this purpose, two approaches exist in the literature – namely, the structural and the direct approach.² I use here the direct approach, which segments the labor market into cells and correlates the variation in immigrant shares with the labor market outcomes of residents.³ This approach has several advantages against the structural approach, which simulates the impact of migration using a production function. First, if the production function is not correctly specified, it may produce biased results. Another major problem is its applicability to the Swiss case. The structural model cannot take endogenous immigration into account, since it implicitly

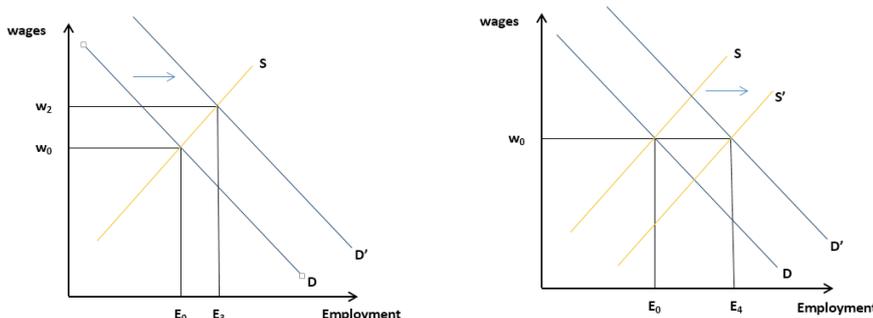


Figure 2: Endogenous Immigration in the Classical Labor Market Model

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assumes immigration to be exogenous. Given that there is strong evidence that immigration in Switzerland is endogenous, this model is less appropriate for the Swiss case.⁴

The variable of interest in my econometric model is dichotomous and takes the value 1 if a person is employed in $t-1$ and becomes unemployed or inactive in t , and zero otherwise. The dependent variable indicates the probability of becoming unemployed or inactive. I call that the unemployed or inactivity risk.

> *Statistical Model (see appendix)*

I measure the impact of migration on different regions and skill-levels. Accordingly, the Swiss labor market is broken down into the four regions (Zurich and Northwest Switzerland, East and Central Switzerland, the Lake of Geneva region and the canton of Ticino) and three skill-levels (low, medium and high-skilled workers). A more detailed segmentation would lead to fewer observations, which would make it hard to establish any effects.

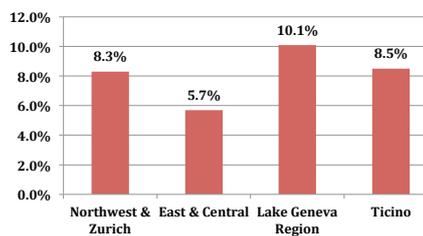


Figure 3: Share of EU-Migrants Immigrated under the Frame of the FMA in the Employed Population in Switzerland in 2011; Source: Swiss Labor Force Survey, own calculations

Northwest Switzerland and Zurich as well as the Lake Geneva region are more urban areas with a big industrial and service sector. In contrast

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to the rural regions of Central and East Switzerland, these areas receive more immigrants. The canton of Ticino is taken as a separate region because it differs from the other regions with respect to the composition of its immigrants.

The estimations are carried out for three different resident groups, as they differ significantly in their characteristics: (i) Swiss, (ii) EU foreigners who immigrated before the FMA, and (iii) other foreigners from third countries.

For the estimations, the Swiss Labor Force Survey (SLFS) from 2002 to 2011 is used. This survey has been conducted since 1991 and delivers a representative sample of the population above the age of 15. The SLSF consists of panel data that were drawn annually from survey interviews with individuals. This data consists of 530,000 observations between 2002 and 2011. They allow us to identify FMA immigrants by simply looking at the current duration of stay in Switzerland and the country of origin. For the estimations, only persons between 15 and 60 years of age are included. The age is limited to 60 so as to avoid any biases due to early retirement. Individuals with temporary work contracts are also dropped. Extreme and implausible observations are eliminated. Further only the first two survey waves are considered to avoid panel attrition. Our resulting estimation data consists of 150,000 observations.

Did the Immigration Lead to a Higher Displacement Risk for Residents?

I find scant evidence of an impact of the immigration on the employment outcomes of the resident workforce. At the national level, no statistically significant effects can be established, whereas at the level of regions and

skills, only few examined cases are significant. These statically significant cases show that the high-skilled resident workforce profits, while the low-skilled workforce loses out.

The high-skilled Swiss enjoy a decrease in their unemployment risk in two out of four regions. The medium-skilled in Zurich and Northwest Switzerland as well as the low-skilled in the Ticino suffered slightly higher levels of unemployment risk. Low and medium skilled other foreigners each suffered in two of the regions. In the Lake of Geneva region, high-skilled other foreigners face a higher unemployment risk, which could be caused by excess immigration in to this labor market segment.

Former EU migrants did not suffer from displacement risk, though they were the group with the largest increase in inactivity risk. They faced a higher inactivity risk in five out of twelve cases, whereas no positive effects could be observed for them. On the other hand, medium and high-skilled Swiss in the Ticino and high-skilled other foreigners in Zurich and Northwest profited in terms of inactivity risk.

These results indicate that the new migration to Switzerland is mainly driven by endogenous factors. Immigration of high-skilled persons seems to cover the excess demand that exists in the labor market for qualified workers. Such a situation cannot be observed in the market for the low-skilled. Thus, the immigration of the low-skilled workforce leads to higher competition and crowding out.

“I conclude from this that the immigrants act as complements for the high-skilled labor and as substitutes to the low-skilled labor.”

Other studies conducted for Switzerland come to similar results.

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Most studies, which try to quantify the impact of immigration on labor market, find no or very small effects. This is true for the wages⁵, as well as for the employment opportunities of the residents.⁶

“The labor market was barely affected by immigration. The empirical evidence speaks clearly in favor of a mainly endogenous immigration, which is driven by labor shortages in Switzerland.”

Even though the economy profits in total, one has to bear in mind that

there are also losers from immigration. Since the amount of low-skilled labor immigration stayed quite low in the last decade, the negative effects are rather small.

> *Table 1: The Impact of Immigration on the Unemployment Risk of Different Resident Groups (see appendix)*

> *Table 2: The Impact of Immigration on the Inactivity Risk of Different Resident Groups (see appendix)*

- 1 Can et al. ,2013.
- 2 An overview is given by Okkerse ,2008; Blau and Kahn, 2012.
- 3 This is a more general notation of the Area Analysis or Spatial Correlations Approach.
- 4 Survey by the UBS (2012) with a sample of Swiss firms shows that the central reason for hiring immigrants is a specific labor scarcity in the resident workforce.
- 5 Sheldon, 2003; Küng, 2005; Gerfin and Kaiser, 2010; Cueni and Sheldon, 2011; Favre, 2012; Müller et al., 2013.
- 6 Favre et al., 2013; Basten and Siegenthaler, 2014; Beerli and Peri, 2015.

Appendix Statistical Model

The econometric model underlying the empirical analysis is specified as followsⁱ:

$$\pi_{ijt} = \Phi(\theta + \alpha'x_{it-1} + \beta'w_t + \gamma m_{j,t-1}) \quad (4.1)$$

where:

π_{ijt} = probability of resident i being unemployed or inactive in year t after being employed in market segment j in year $t-1$,

Φ = standard normal distribution function that maps a linear function into the 0-1 interval,

$m_{j,t-1}$ = share of immigrants who entered under the FMA, in segment j by year $t-1$,

x_{it-1} = column vector of relevant attributes of resident i in year $t-1$,

w_t = column vector of relevant factors in force in year t ,

α, β, γ = parameters to be estimated with Maximum Likelihood procedures.

The parameter γ indicates whether residents in labor market segments with a higher concentration of immigrants are more likely to become unemployed.

The Swiss labor market is segmented with respect to three dimensions: 2 language regions, 2 skill levels, and 9 industries, which result in a total of 36 labor market segments.

A major problem in measuring the effects of immigration on the labor market is endogeneity in an econometric sense. If immigrants decide to go to areas where the economy is prospering – say wages are high or the unemployment rate is low – the immigrant share will be endogenous. In this case, there will be an identification problem due to reverse causality. In this situation we will observe high immigrant shares in labor market segments with low unemployment. The good condition of the labor market is here not caused by immigration but rather the other way around. Immigrants settle here because the labor market is prospering. Generally, this problem is solved by an Instrumental Variable approach. However, this procedure is not applicable here because of the non-linearity of the above model specification. To solve the endogeneity problem, a Control Functions model is implemented.ⁱⁱ

ⁱ My model comes close to the model used in Winter-Ebmer and Zweimüller, 1999.

ⁱⁱ Wooldridge, 2010, p. 472.

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Appendix

Table 1: The Impact of Immigration on the Unemployment Risk of Different Resident Groups

Unemployment Risk							
Region	Qualification	SWISS		EU-17/EFTA FOREIGNERS		OTHER FOREIGNERS	
		Marginal Effect at means	p-Value MEM	Marginal Effect at means	p-Value MEM	Marginal Effect at means	p-Value MEM
Zürich & Northwestern Switzerland	LS	+0.03%-points	0.753	+0.19%- points	0.315	+0.79%- points**	0.034
	MS	+0.12%- points**	0.048	+0.12%- points	0.643	+0.14%- points	0.591
	HS	+0.03%- points	0.371	+0.04%- points	0.600	+0.03%- points	0.804
Eastern & Central Switzerland	LS	+0.08%- points	0.287	-0.001%- points	1.000	+0.35%- points	0.159
	MS	-0.05%- points	0.221	+0.18%- points	0.234	-0.08%- points	0.679
	HS	-0.04%- points**	0.036	-0.02%- points	0.681	+0.01%- points	0.900
Lake of Geneva Region	LS	-0.03%- points	0.718	+0.006%- points	0.950	-0.07%- points	0.712
	MS	-0.05%- points	0.472	+0.08%- points	0.481	+0.49%- points*	0.084
	HS	-0.06%- points***	0.002	+0.03%- points	0.659	+0.20%- points*	0.091
Ticino	LS	+0.24%- points**	0.035	-0.02%- points	0.896	+1.11%- points***	0.008
	MS	+0.03%- points	0.674	-0.05%- points	0.825	+0.60%- points*	0.065
	HS	-0.04%- points	0.307	+0.26%- points	0.337	-0.06%- points	0.482
Wald Test for Exogeneity		0.765		0.988		0.592	

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Table 2: The Impact of Immigration on the Inactivity Risk of Different Resident Groups

Inactivity Risk							
Region	Qualification	SWISS		EU-17/EFTA FOREIGNERS		OTHER FOREIGNERS	
		Marginal Effect at means	p-Value MEM	Marginal Effect at means	p-Value MEM	Marginal Effect at means	p-Value MEM
Zürich & Northwestern Switzerland	LS	-0.15%-points	0.482	+0.15%- points	0.573	-0.15%- points	0.386
	MS	+0.04%- points	0.786	+0.37%- points***	0.005	-0.11%- points	0.669
	HS	+0.03%- points	0.444	+0.18%- points***	0.001	-0.13%- points**	0.012
Eastern & Central Switzerland	LS	-0.08%- points	0.649	+0.07%- points	0.666	+0.06%- points	0.737
	MS	+0.09%- points	0.399	+0.19%- points*	0.069	-0.11%- points	0.644
	HS	-0.02%- points	0.476	+0.05%- points	0.254	-0.09%- points	0.202
Lake of Geneva Region	LS	+0.08%- points	0.670	+0.14%- points	0.249	+0.0001%- points	0.994
	MS	-0.05%- points	0.609	+0.07%- points	0.532	-0.27%- points	0.151
	HS	-0.02%- points	0.522	+0.06%- points	0.375	-0.07%- points	0.560
Ticino	LS	+0.17%- points	0.496	+0.46%- points***	0.000	-0.32%- points	0.103
	MS	-0.24%- points**	0.041	+0.22%- points*	0.053	+0.36%- points	0.242
	HS	-0.11%- points***	0.003	-0.001%- points	0.854	+0.03%- points	0.916
Wald Test for Exogeneity		0.792		0.982		0.179	

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Zusammenfassung

Hat die das Freizügigkeitsabkommen mit der EU zu Verdrängung im Schweizer Arbeitsmarkt geführt?

Seit Inkrafttreten des Personenfreizügigkeitsabkommens 2002 hat die Zahl der ausländischen Arbeitskräfte bis 2012 um fast ein Drittel zugenommen. Die Netto-Migration aus der Europäischen Union betrug in diesem Zeitraum im Schnitt rund 40'000 jährlich. Die Zunahme der ausländischen Bevölkerung in der Schweiz führte zur Befürchtung, dass die Einwanderung zur Verdrängung von Einheimischen auf dem Arbeitsmarkt führen könnte. Doch diese neue Einwanderung unterscheidet sich von derjenigen der letzten 50 Jahre markant. Ein wichtiges Merkmal dieser neuen Migration ist der Qualifikations-Mix der eingewanderten Arbeitskräfte. Während die Hälfte der Einwanderer zwischen 1960 und den frühen 1990er Jahren nur niedrig qualifiziert war, besitzen mehr als 50 Prozent der neuen Einwanderinnen und Einwanderer bei ihrer Einreise in die Schweiz einen Hochschulabschluss. Vor diesem Hintergrund befasst sich die vorliegende Arbeit mit der Beziehung zwischen der neuen Einwanderung in die Schweiz und deren Auswirkungen auf die Beschäftigungsstabilität heimischer Arbeitskräfte. Zu diesem Zweck verwende ich den gängigen direkten Ansatz, der den Arbeitsmarkt in Segmente aufteilt und den Einwandereranteil mit Beschäftigungsindikatoren der heimischen Bevölkerung korreliert. Die empirischen Modelle stellen nur wenig statistisch signifikante Zusammenhänge zwischen dem Einwandereranteil eines Arbeitsmarktsegments und der Verdrängungsgefahr für Schweizerinnen und Schweizer fest. Diese wenigen signifikanten Einflüsse zeigen, dass die Hochqualifizierten profitieren, während die Niedrigqualifizierten in manchen Fällen eher Gefahr laufen, durch Einwanderinnen und Einwanderer verdrängt zu werden. Da niedrig qualifizierte Arbeitskräfte nur einen geringen Teil der gesamten Einwandererzahl ausmachen, halten sich die negativen Auswirkungen in Grenzen. Gesamthaft betrachtet, sprechen die Ergebnisse für eine durch den Arbeitsmarkt getriebene Einwanderung, die hilft, die zunehmende Nachfrage nach qualifizierten Arbeitskräften zu decken und Engpässe im Schweizer Arbeitsmarkt zu überbrücken.

Résumé

L'accord de libre circulation avec l'UE a-t-il provoqué des déplacements sur le marché du travail suisse ?

De 2002, qui marque l'entrée en vigueur de l'accord sur la libre circulation des personnes, à 2012, la main-d'œuvre étrangère a augmenté de près d'un tiers. En moyenne, le solde migratoire net des ressortissant-e-s de l'UE s'est élevé à environ 40 000 personnes par an sur cette période. L'augmentation de la population étrangère en Suisse a suscité la crainte que l'immigration provoque des déplacements sur le marché du travail de la population résidente. Toutefois, cette nouvelle vague d'immigration se distingue fortement des flux migratoires des cinquante dernières années. L'une de ses principales caractéristiques porte sur le niveau de compétences de la main-d'œuvre immigrée. Si, de 1960 au début des années 1990, la moitié des immigrant-e-s étaient peu qualifié-e-s, plus de 50 % des nouveaux migrant-e-s arrivant en Suisse détiennent un diplôme d'enseignement supérieur. Dans ce contexte, la présente analyse propose de mesurer la corrélation entre le nouveau flux migratoire et son impact sur la stabilité de l'emploi pour la main-d'œuvre suisse. À cette fin, j'ai appliqué une méthode couramment utilisée qui consiste à segmenter le marché du travail et à établir une corrélation entre les proportions de migrant-e-s et les indicateurs de l'emploi pour la population résidente. Les modèles empiriques ne peuvent établir qu'un petit nombre de relations significatives sur le plan statistique entre la proportion de migrant-e-s dans un segment professionnel et le risque de déplacement des résident-e-s. Ces quelques impacts significatifs montrent que les personnes hautement qualifiées profitent de l'immigration tandis que, dans certains cas, les personnes peu qualifiées courent un plus grand risque d'être évincées en raison de l'immigration. Étant donné que la main-d'œuvre peu qualifiée ne représente qu'une proportion infime des migrant-e-s, les effets négatifs sont plutôt réduits. Somme toute, les résultats plaident en faveur d'une immigration axée sur le marché du travail de façon à répondre à la demande croissante de personnel et à résorber la pénurie de main-d'œuvre sur le marché du travail suisse.