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Article

Italexit and the Impact of Immigrants from Italy on the Italian Labor Market

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Abstract: Considering the recent debates regarding Brexit and the potential negative effects of immigrants on Italian labor market, the main aim of this paper is to assess the impact of immigrants from Italy on the labor market of this country using econometric techniques. Based on these results, one answer regarding the potential exit of Italy from the EU (Italexit) because of the immigration issue is provided. According to a Johansen co-integration test, there was not any long-run relationship between the number of EU immigrants from Italy and the variation of unemployment rate in the period from 1990 to 2019. The estimations based on Bayesian ridge regressions indicated that the number of EU immigrants did not affect labor cost index in business economy, manufacturing or industry, construction and services in the period 2001–2019. The variation in employed immigrants from Italy in the period 2008–2019 depends on changes in risk of poverty or social exclusion, housing cost overburden rate, exports of goods and services, inflation and tax rate on low wage earners and adult participation in learning.

Keywords: immigrants; labor market; policies; Bayesian ridge regression; Italexit



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1. Introduction

The issue of economic migration inside the European Union (EU) still generates much debate within and outside academia. However, this constant debate is not helped too much by the inaccurate data regarding the number of economic migrants, illegal migrants or asylum seekers from or outside the EU (Zaiceva and Zimmermann 2008). According to European Social Surveys, Italy is among the EU countries that are against immigrants, because of the fiscal burden in the receiving country and because of the issues on the labor market (Boeri and Brücker 2005; Boeri 2010; Pellizzari 2013).

This paper considers the debates regarding a potential Italexit, providing arguments against Italy exist from the EU on the basis of an empirical analysis of the effects of immigrants on the Italian labor market. The paper combines the theoretical approach (the labor market description in the case of Italy and the immigrants' contribution on the Italian labor market) with the empirical approach (the effects of growing number of immigrants on labor market indicators). Both approaches will conduct us in the end to the same conclusion regarding the best position related to Italexit.

Due to the concerns about the negative impacts of migration on labor market, restrictions were imposed to migrants from new EU members, excepting Cyprus and Malta. Only three countries (Ireland, UK and Sweden) opened the labor market immediately after 2004 (Kahanec et al. 2009). The UK only adopted a scheme requiring the registration of the EU-28 workers with the Home Office. Another seven countries gave up to restrictions in 2006 and in 2007 (Italy, Spain, Greece, Finland, Portugal, Luxembourg, The Netherlands). For Romania and Bulgaria, only 10 EU-25 countries gave free access to the labor market (Poland, Slovakia, Slovenia, Lithuania, Estonia, Latvia, Czech Republic, Sweden, Finland, Cyprus). The migrants are seen as buffers in the labor market, because they are very responsive to economic cycles (Zaiceva and Zimmermann 2016). Borjas (2014) showed that the level of education of the immigrants is important in explaining the capacity to integrate

on labor market. Moreover, the cheaper labor force ensured by immigrants contributed to the decrease of nationals' wages (Borjas 2003).

This study uses empirical data to show that the EU immigrants did not influence the unemployment rate and the labor cost in several sectors. However, some policy measures on the labor market were affected by the growing number of EU immigrants. In this context, a possible Italexit could not be justified by the EU migrants in Italy. However, some issues related to illegal immigrants should be solved by the Italian government through suitable policy measures. The novelty of this study is reflected by theoretical and empirical contributions. From a theoretical point of view, the impact of immigrants on Italian labor market is analyzed around the concept of Italexit. From an empirical point of view, some econometric models were built to assess the impact of immigrants on labor cost index, the labor policy measures and the number of employed immigrants in Italy. All these empirical results allow us to propose recommendations to alleviate immigrants' issues for better integration in the Italian labor market and formulate arguments against Italexit. On the other hand, the high uncertainty of international context changed by COVID-19 pandemic might be an argument for Brexit because of the contagion effect. The previous studies focused on the impact of immigrants on nationals' wages (Borjas 2014), but labor cost index was not taken into consideration as it was in this study.

This paper presents some issues on the Italian labor market in connection with the arguments for a potential Italexit. The next section is a description of the methodological background, followed by the empirical analysis of the effects of growing number of immigrants on the EU labor market. The last section concludes.

2. Labor Market Issues in Italy-Argument for Italexit?

The labor market in Italy faces some important difficulties. Italy was considered by the OECD as a country with an intermediate level of rigidity. Up to the last few years, in Italy, the interventions related to dismissals did not exist. On the other hand, there were many interventions regarding the regulation and the facilitations to enter the labor market with the support of the consensus of the trade unions. The last social pact from 2007 and the recent economic crisis increased the labor market flexibility only for the people who first entered the market. Unlike Germany and other EU countries, in Italy the trade union continued to be strong. The working conditions are established by collective agreements. At a sector level, manufacturing has the largest contractual coverage in Italy. The necessity of controlling the public debt and a better labor market regulation are issues that should be solved by the government in order to reduce unemployment and the economic difficulties of the Italian companies. The complex labor reform from 2012 followed two directions: changes in the rules of unfair dismissals and in the shock absorbers system to counterbalance the consequences of a limited worker protection. Even if the labor market flexibility has grown, the protection of employees from unfair dismissals remains a controversial issue. The reform in pension system in 2011 extended the working age with many economic and social effects for companies and individuals. Fornero's reform from 2012 made it easier to hire and dismiss employees and created a new system of social shock absorbers. The decrease in youth unemployment became an objective of the Renzi government since 2013. However, the Italian labor market is characterized by a high uncertainty that makes unemployment difficult.

Italy transformed from a sending country to a receiving country for immigrants mostly since the 1990s when the immigration sharply rose. In the last 30 years, the immigration laws became very restrictive. The Bossini-Fini law established that the residence is given only if the immigrant has a secure job and the employment contract was signed before the entry into Italy. Therefore, the number of illegal immigrants rapidly increased. Many of these immigrants became workers for elder people in Italy, knowing that Italy faces the problem of demographic ageing. The dramatic shortage of care labor was partly solved by the growing number of immigrants. Ambrosini (2013) explained that unauthorized migrant care workers exist in Italy and are represented by illegal immigrants that are placed

in the domestic labor market. The Italian government only later allowed and supported the migrants to work in the field of elderly care, mostly for covering the shortage in this area. Besides the generous public pension, an attendance allowance is given by the government to elderly for paying for the services of migrant care workers.

Considering the theoretical impact of immigrants on the Italian labor market, the literature placed it in the framework of political issue rather than an economic or social danger. The Italian welfare system and labor market framework brings favorable conditions for the ideological approach of the mainstream left, as [Massetti \(2015\)](#) considered. Moreover, the arguments of Italexit are connected to the difficulties on labor market caused by the growing number of immigrants. Nowadays, most of the Italian immigrants (about 1.1 million in the official statistics) come from Romania, a country that entered the EU in 2007. The next top places of immigrants are occupied by countries like: Albania, Morocco, China, Ukraine, Philippines, India, Moldova or Bangladesh. Less than 100,000 immigrants were from Poland in 2015 and almost 37,000 from Germany. So, EU immigrants are not a danger for the Italian labor market. They are required by Italian natives in many sectors that imply manual labor, but where salaries, working conditions or social status are not attractive for Italian workers ([Ambrosini 2013](#)).

Romanian migrants came to Italy especially after 1999, because the language is related to Italian. A large wave also arrived in 2002 because of the right of Romanian citizens to go in any country within the Schengen Zone without a visa. For the Italian welfare system, the foreign workers in the care sector play a crucial role. In the 2007 EU enlargement, Italy did not ask for a transition period. The Romanian community doubled, because the illegal immigrants arriving before Romanian entrance in the EU became legal. The existence of the non-documented immigrants in the informal economy was favored by the institutional setting. Moreover, according to surveys, the recent economic crisis made immigrants less eager to come back home ([Hinks and Davies 2015](#)).

More studies in literature confirm the same conclusion: the immigrants' participation rate on the labor market is higher than in the case of natives ([Zaiceva and Zimmermann 2008, 2016](#); [Ambrosini 2013](#); [Carvalho 2013](#); [Hollifield et al. 2014](#); [Del Boca and Venturini 2016](#)). The high unemployment rate based on reasons such as economic transition or high education level for home country jobs explained the trend of migration from Eastern European countries to Italy.

[Carlo et al. \(2012\)](#) showed that the returns on human capital are mainly due to intra-occupational earnings progression. A "glass-ceiling" effect for immigrant workers was detected, because they face a large penalty in accessing high-paying occupations.

[Del Boca and Venturini \(2016\)](#) studied the consequences of changes in migration policies and the accession to the EU former countries of emigration. In the last few years, in the context of an aged society, the immigrants played a crucial role in the family sector, contributing to the integration of Italian skilled women in the national labor market. Previous studies analyzing migration in the context of recent economic recession reported changes in migrants' inflows ([Trenz and Triandafyllidou 2017](#)). However, [Papademetriou et al. \(2010\)](#) showed that the migrants' decision to return home is more influenced by the economic situation in the origin countries rather than economic difficulties in the host countries. The restrictions of migration flows in the context of economic crisis suggested changes in the channel of entrance for migrants ([Hatton and Williamson 2009](#)). In Italy, the labor channel of entrance reduced, while the family reunification channel extended lately.

Several types of labor market policies were implemented in Italy for which data are available since 1998. The database for labor market policy (LMP) was created and maintained by Eurostat only until 2013. Since 2014, this database is provided by European Commission's Directorate General for Employment, Social Affairs and Inclusion and disseminated by Eurostat.

LMP database refers to labor market interventions that consist of government actions to provide support to unemployed people and other disadvantaged categories in their transition from inactivity or unemployment to work. LMP interventions are divided into

three groups: services, measures (training, employment incentives, direct job creation, supported rehabilitation and employment, start-up incentives as percentage of GDP) and supports (financial assistance for early retirement or for supporting people that are out-of-work). There are few studies in literature that assess the effects of Italian labor market measures or intervention on immigrants, but the number of illegal immigrants is not taken into account because is not known (Ambrosini and Triandafyllidou 2011).

The Italian government tried to solve the immigration “emergency” by the Law No. 40/06.3.1998 and a final regularization initiative in order to monitor the immigration and to provide suitable integration policies. The laws dealt with issues like immigrants’ trends, entry, work and recognition, but the migrants were still seen as a threat for the Italian labor market. Severe measures were taken for undocumented people. The official immigrants were drawn out of the labor market, mainly because the illegal ones do not ask employers for official conditions and pay (Veikou and Triandafyllidou 2001). The immigration law did not have a significant impact on the illegal immigrants’ participation in the Italian black labor market. The problem of undocumented immigrants on the labor market is considered more a political issue than an economic or social concern (Mingione and Quassoli 2000).

The Law No. 177 from 2002, known as “Bossi Fini” law, introduced sanctions for immigrants who are stopped without a residence and they are expelled immediately. The permission for residence of the immigrants is strictly connected to a work contract. According to the Security Set 94/2009, illegal immigration is considered a crime and all public workers should report the existence of an illegal immigrant.

Most of the immigrants come to work in Italy because of economic (unemployment, poverty, overpopulation) and political reasons (persecution from authoritarian political regimes, ethnic strife). The large part of the immigrants comes from Romania, an EU country from Eastern Europe. In the period 2009–2012, almost 38% of the national European financial resources of the General Directorate of Immigration and Integration policies were allocated to policies for an active labor market. The implemented programs referred to job orientation, training jobs, up-skilling measures and support for labor market services, the immigrants being also included in the program, but they were underrepresented. The immigrants were included mostly in programs related to undeclared work and the support for active low-skilled workers (OECD 2014).

Labor policy could be treated as an endogenous variable affected by immigration since in Italy the migration policies were revised in line with the successive waves of immigrants that determined the growth of the number of immigrants. The increase in the number of immigrants that arrived in Italy for labor purposes determined the government to design suitable policies to successfully integrate the migrants in labor field.

Despite some positive effects of immigrants on labor market, a possible exit of a developed country from the EU might be related to the immigrants’ issue. In the case of Brexit, many Britons claimed that immigrants brought a high pressure on the labor market (lower level of minimum wage, Britons’ fear of losing jobs because of the immigrants that are available to work more for lower salaries and with a higher productivity, immigrants’ pressure on public services in the UK).

Populists and nationalists in the other EU countries follow the Brexit wave and propose the exit of their country from the EU (Italexit, Frexit and Nexit). In Italy, the nationalists claim for reasons such as: sovereignty loss as part of the EU, migration issue, high financial contribution required by the EU. However, most academics and mainstream politics brought arguments against Italexit, taking into account the chaos generated by an eventual Italexit. The results of the Referendum placed Italy far from a near exit from the EU, but there are still voices for Italy leave. Considering the recent international context and the lack of scientific papers to provide solid arguments for or against Italexit, the novelty of this paper is related to the empirical results regarding the migration issue in Italy that are a strong argument against Italexit.

The COVID-19 pandemic determined new issues for Italian immigrants regarding their insertion on the labor market. Borjas and Cassidy (2020) showed that immigrants

were more affected by restrictions imposed by the epidemic than nationals, with most of the immigrants reducing the working time or losing their job. This situation is explained by the fact that most of the Italian immigrants had jobs that could be performed remotely.

3. Methodology

The traditional regression models might provide misleading results on empirical data, because of the assumptions that are, in most cases, violated by the economic data series. Therefore, an accurate analysis should be based on a regression model that describes all possible data patterns. One solution to this real issue is given by the Bayesian nonparametric approach that allows for constructing flexible models as an infinite mixture of regression models based on minimal assumptions regarding data.

Unlike the frequently used ordinary least-squares estimator (OLS) from the linear regression model, the ridge regression linear model constructs estimate via shrinkage. In this case, usually the prediction error and the mean squared error are improved.

Considering the theoretical background of a Bayesian linear regression model as in O'Hagan and Forster (2004), for a certain data set $D_n = (X, y)$ with $X = (x_{ip})_{n \times p}$ and $y = (y_1, \dots, y_n)^T$ and a conjugate normal-inverse gamma prior density to (β, σ^2) , we have:

$$f(y|X, \beta, \sigma^2) = N_n(y|X\beta, \sigma^2 I_n) = \prod_{i=1}^n N(y_i|x_i^T \beta, \sigma^2) \quad (1)$$

$$\pi(\beta, \sigma^2) = N_p(\beta|m, \sigma^2 V) IG(\sigma^2|a, b) = NIG(\beta, \sigma^2|m, V, a, b) \quad (2)$$

$N_n(\cdot|\mu, \Sigma)$ —probability density function (pdf) of the n-variate normal distribution

$N(\cdot|\mu, \sigma^2)$ —probability density function (pdf) of the uni-variate normal distribution

$IG(\cdot|a, b)$ —probability density function (pdf) of the inverse gamma distribution (a is the shape and b is the rate, $1/b$ is the scale)

$NIG(\beta, \sigma^2|m, V, a, b)$ —probability density function (pdf) of the NIG distribution (product of the inverse-gamma pdf and multivariate normal pdf as in Lindley and Smith 1972).

So, if the joint prior distribution of (β, σ^2) has an NIG distribution, in the marginal approach, β has a Student prior distribution of mean m and covariance matrix $V1(\beta) = \frac{b}{a-1}V$ and $2a$ degrees of freedom. σ^2 has an inverse-gamma prior distribution of mean $\frac{b}{a-1}$ and variance $\frac{b^2}{(a-1)^2(a-2)}$.

According to Karabatsos (2014), the ridge regression model (RR model) is a Bayesian linear regression model with a normal prior distribution $N_p(\beta|0, \sigma^2 \lambda^{-1} I_p)$ for β , conditionally on σ^2 . If (β, σ^2) has a prior normal inverse-gamma distribution $NIG(\beta, \sigma^2|0, \lambda^{-1} I_p, a, b)$, all the inferential procedures corresponding to Bayesian normal linear regression model apply to a ridge regression.

The singular value decomposition (svd) corresponding to the design matrix X is $X = UDW^T$. In this case, U and W represent orthogonal matrices of $n \times q$, respectively $p \times q$, where $q = \min(n, p)$ and $Z = UD = XW$.

$D = \text{diag}(d_1, \dots, d_q)$ is a diagonal matrix of singular values $d_1 > d_2 > \dots > d_q > 0$.

(d_1^2, \dots, d_q^2) gives at most the first q eigenvalues (q different from 0, $q \leq p$) $(d_1^2, \dots, d_q^2)^T$ of $X^T X$. and gives the diagonal values of $Z^T Z$

The q principal components of X are provided in the columns of XW . The column-wise sum of squares over the rows provides the eigenvalues (d_1^2, \dots, d_q^2) .

Given the orthogonalized data (Z, y) , the multivariate normal likelihood density for canonical normal linear model is:

$$n_n(y|XW\alpha = Z\alpha = X\beta, \sigma^2 I_n) \quad (3)$$

The OLS estimate for the coefficients of the canonical regression is:

$$\hat{\alpha} = \text{diag}(d_1^2, \dots, d_q^2)^{-1} Z^T y \quad (4)$$

The OLS estimate for the slope coefficients is:

$$\hat{\beta} = W\hat{\alpha} \quad (5)$$

The conditional prior distribution for $\beta = W\alpha$, when σ^2 is given, has the following multivariate normal pdf, which is the prior distribution (pdf) for generalized ridge regression:

$$\pi(\beta | \sigma^2) = n(\beta | 0, \sigma^2 W V_\lambda^{(\alpha)} W^T) \quad (6)$$

A special case for the generalized ridge regression is the ordinary ridge regression (RR). It is based on the assumption that $\lambda = \lambda_1 = \lambda_2 = \dots = \lambda_q$. In this case, we have:

$$\pi(\beta | \sigma^2) = n(\beta | 0, \sigma^2 \lambda^{-1} I_p) \quad (7)$$

$$\pi(\alpha | \sigma^2) = n(\alpha | 0, \sigma^2 \lambda^{-1} I_p) \quad (8)$$

The ridge regression permits a fast OLS estimation of the coefficients, even in the case when the number of covariates (p) is very large and when number of covariates is larger than the number of observations. This approach that supposes a large number of parameters is also met in the Bayesian nonparametric models. Actually, model specification with (infinitely) many parameters is made for achieving a robust and flexible statistical inference. Griffin and Brown (2013) showed that Bayesian ridge regression is based on simple prior structure and presents a good predictive performance in many cases.

In the case of a flexible linear model when p increases with n , the mean function is:

$$E(Y|x) = X^T \beta = \sum_{k=1}^L \beta_k x_k + \sum_{i=1}^n \beta_i B_i(x) \quad (9)$$

$B_i(x)$ —multivariate spline

$\sum_{i=1}^n \beta_i B_i(x)$ is a linear combination of basis functions capturing the departures of linearity of the regression function.

According to Polson and Scott (2012), high dimensional shrinkage linear regression models could be described by Levy processes.

In our application, we provided the estimations and we computed the posterior probability that the standardized coefficient is within 1 standard deviation of 0 (PP1SD). If the value of PP1SD was lower than 0.5, then the explanatory variable was a significant predictor in the ridge regression.

4. The Assessment of Immigrants' Impact on Italian Labor Market

The empirical approach of this study focused on the impact of EU immigrants on a few indicators related to the labor market, and the data being provided by Eurostat was: duration of unemployment and labor cost index in various sectors. The research is limited by the different lengths of the data series because of their availability. For unemployment rate and number of EU immigrants the data are available since 1990 until 2019. The data series for labor cost index in business economy, manufacturing or industry, construction and services cover the period 2001–2019. The descriptive statistics for the data series used in this research are presented in Appendix A.

First of all, the presence of unit roots in the data series was checked using KPSS test (Appendix A). The following data series were stationary at 5% level of significance: number of immigrants in Italy in first difference, employed immigrants as percent of total immigrants in the first difference, GDP in first difference and more data series in level (labor cost index for industry, construction and services in level, labor cost index in business economy, labor cost index in manufacturing, export, housing cost overburden rate, people at risk of poverty or social exclusion, employment in knowledge-intensive activities, harmonized index of consumer price, tax rate on low wage earners, labor productivity per person employed and hour worked, adult participation in learning, impact of social transfers (excluding pensions) on poverty reduction, duration of unemployment, net monthly income). The critical value at 5% level of significance is 0.463. The results of the KPSS test are presented in Appendix B.

The labor cost index for industry, construction and services has registered an ascending trend in the period 2001–2019 (Figure 1). The value of this indicator grew by almost 43.8% in 2019 compared to 2001.

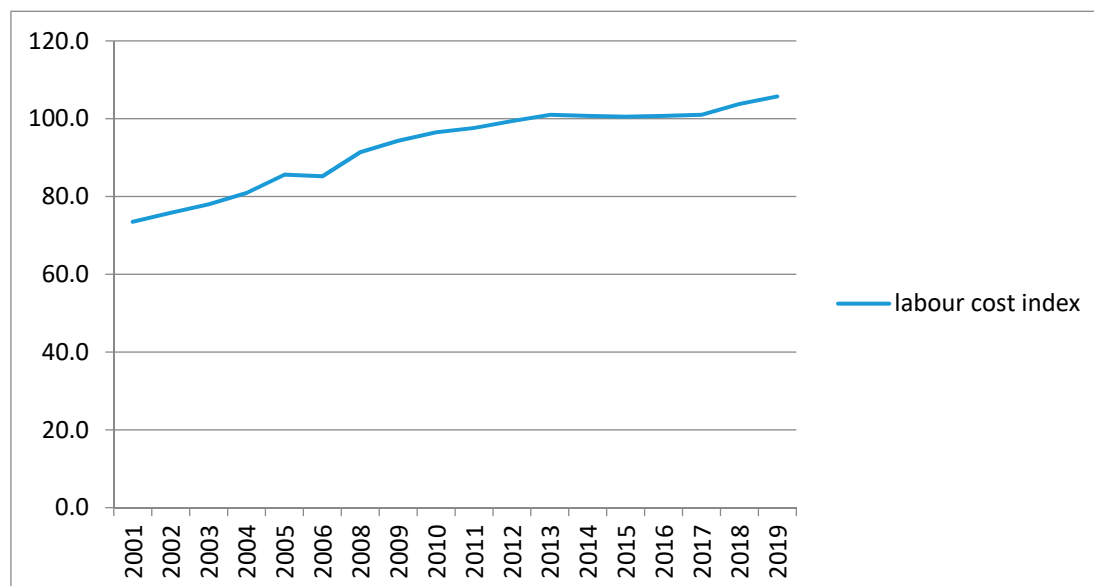


Figure 1. The evolution of labor cost index in Italy for industry, construction and services (2001–2019).

According to Figure 2, the unemployment rate in Italy registered a minimum value in 2007 (6.1%), the year when Romania joined the EU. The most Romanian immigrants chose Italy as a destination country mainly for work purposes which affected the structure of the Italian labor market. The maximum unemployment rate was observed in 2014 because of the global economic crisis that deeply affected countries in Southern Europe.

The percentage of employed immigrants from Italy with respect to total number of immigrants was below 50% (see Figure 3) which suggests that many migrants came to Italy for family reunifications without having a job. Many immigrants do not have legal forms of working in Italy, and other categories are children at school below the legal age for working or people without a job, including unemployed people. The maximum value of employed immigrants as percent of total immigrants was registered in 2011 (49.5%) when the economic crisis forced migrants to accept low paid jobs in poor conditions of work.

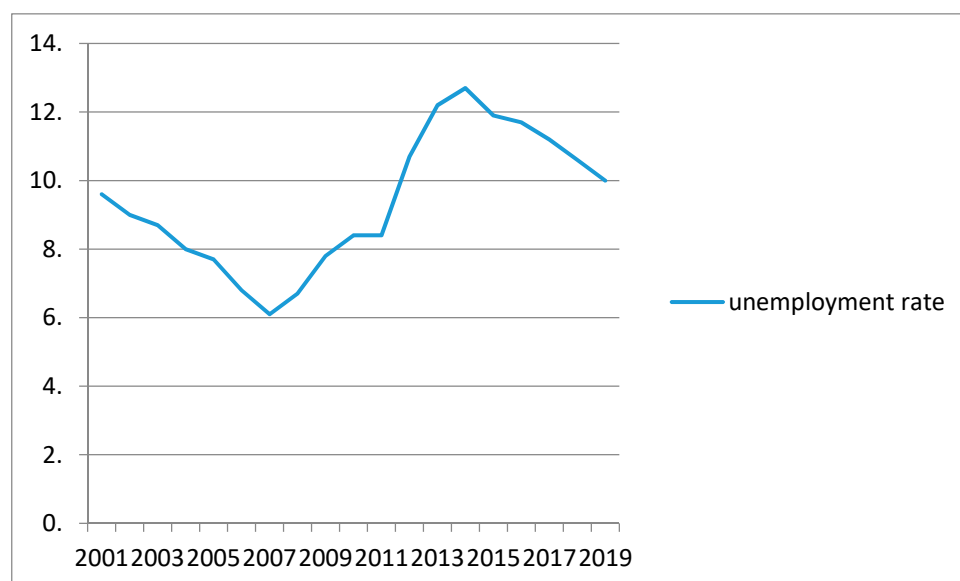


Figure 2. The evolution of unemployment rate in Italy (2001–2019).

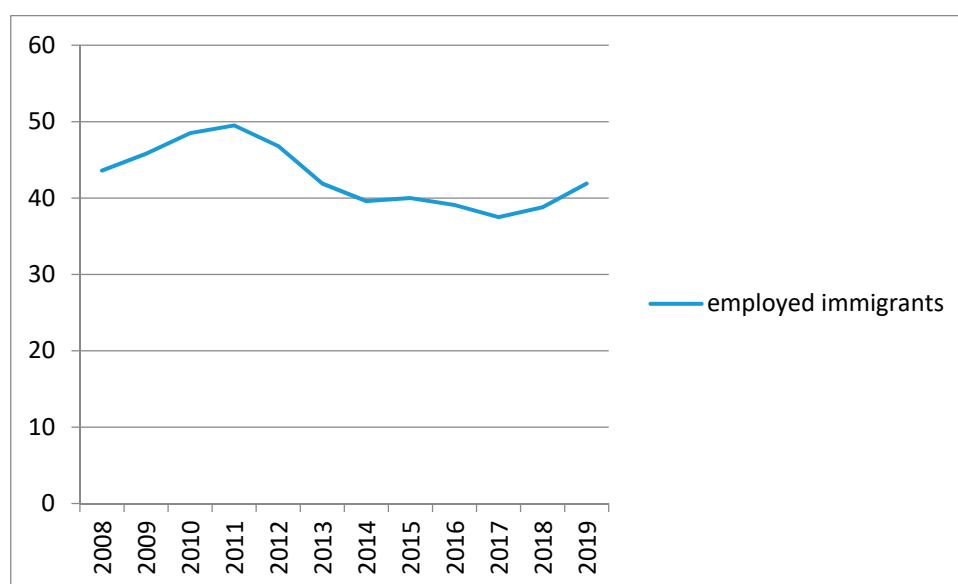


Figure 3. The evolution of employed immigrants in Italy as percent of total number of immigrants (2001–2019).

According to a Johansen co-integration test, there was not any long-run relationship between the number of immigrants from Italy and the variation of unemployment rate in the period from 1990 to 2019. The results are in line with the conclusions of [Borjas \(2014\)](#) that showed only the existence of short-run relationships. The situation with the instruments is stable over the years. The conditions of the individual instruments that would affect their use did not change, while the individual years are comparable.

The estimations based on Bayesian ridge regressions indicated that the number of immigrants did not affect labor cost index in business economy, manufacturing or industry, construction and services in the period 2001–2019.

As we can observe from Table 1, PP1SD is higher than 0.5 and the number of EU immigrants is not relevant in establishing the labor cost index in these sectors. Even if the purpose of EU immigrants is to work in Italy for lower salaries compared to nationals and they exert a certain pressure on labor market, they did not affect the labor cost. Our results are contrary to [Borjas \(2014\)](#) that showed the decrease in wages because of the immigrants.

Table 1. Bayesian ridge regressions to explain the labor cost index in business economy, manufacturing or industry, construction and services (2001–2019).

Coefficients	Dependent Variable					
	labor cost index in business economy		labor cost index in manufacturing		labor cost index in industry, construction and services	
	Slope estimate	PP1SD	Slope estimate	PP1SD	Slope estimate	PP1SD
Intercept	4.716	1	4.643	1	5.671	1
Number of immigrants in the first difference	0.1	0.667	0.2	0.667	0.1	0.667

Source: own calculations.

We can conclude that the increase in the number of immigrants does not represent a danger for the Italian labor market and an eventual Italian Exit from the EU (Italexit), which is a Brexit contagion, is not supported by the empirical findings.

Compared to other EU countries, Italy has a rigid segmentation in the labor market and a large underground economy which accelerated the immigrants' integration in temporary, irregular and low-paying jobs. However, [Veikou and Triandafyllidou \(2001\)](#) showed the limit of this research which is given by the fact that it is difficult to provide suitable policies since most of the immigrants are illegal and they remain undocumented.

Based on Eurostat survey for the research "Case study of Labor Force Survey" (LFS) in the period 2008–2020, we determined the percent of employed immigrants from Italy in total number of immigrants. This indicator is determined knowing that the samples of immigrants in this survey are representative for Italian population.

The variation in the employed immigrants from Italy as percent of total immigrants is explained based on more explanatory variables provided by Eurostat: exports, GDP in PPS, employment in knowledge-intensive activities, housing cost overburden rate, number of people at risk of poverty or social exclusion, adult participation in learning, harmonized index of consumer prices, impact of social transfers (excluding pensions) on poverty reduction, tax rate on low wage earners, labor productivity per person employed and hour worked. The interpretations start from the economic theory. There is an inverse correlation between unemployment and GDP according to Okun law, this correlation being analyzed for developed and developing countries by [Bartolucci et al. \(2018\)](#). Exports might be correlated to unemployment, because more exports could ensure jobs for immigrants ([Subramaniam 2008](#)). The relationship between inflation and unemployment is known as the Phillips curve and it should be indirect ([Simionescu 2014](#)). Housing costs and poverty could influence the labor market as [Saunders et al. \(2016\)](#) explained. Aspects related to labor market (labor productivity, social transfers, employment in knowledge-intensive activities, tax on low wage) are correlated to unemployment ([Barnichon 2010](#)). Adult participation in learning is designed to reduce unemployment ([Pont 2004](#)).

The indicator related to employed immigrants from Italy is explained based on these variables in Table 2. The situation with these instruments is stable over the years. The conditions of the individual instruments that would affect their use did not change, while the individual years are comparable.

The variation in the employed immigrants from Italy depends on more indicators. There is a positive correlation between variation in the employed immigrants and exports of goods and services. An increase in exports, which is a sign of growth of economic activity, created more jobs for immigrants. A growth of housing cost overburden rates put more pressure on immigrants that are forced to become employed faster. People at risk of poverty or social exclusion are inversely connected to changes in employed immigrants. The poorer or more socially excluded people are, the less employed immigrants are, which means that poor immigrants have lower chances to get a job. The positive correlation between employed immigrants and harmonized index of consumer price suggests that

higher prices put pressure on immigrants to find a job. Higher tax on low wage earners motivates immigrants to get a job, while more adults engaged in learning imply less employed immigrants, some of them preferring to focus just on learning before getting a job.

Table 2. Bayesian generalized ridge regression to explain the variation in the employed immigrants in Italy (2008–2019).

Covariate	Standardized Coefficients (Posterior Mean)	Posterior Probability that the Standardized Coefficient Is within 1 Standard Deviation of 0
GDP in first difference	−1,263,427.653	0.660
Export	29,808,993.935	0.339
Housing cost overburden rate	9,543,395.923	0.146
People at risk of poverty or social exclusion	−29,825,567.272	0.177
Employment in knowledge-intensive activities	−8,412,735.573	0.589
Harmonized index of consumer price	19,283,580.726	0.426
Tax rate on low wage earners	51,015,136.825	0.020
Labor productivity per person employed and hour worked	5,067,592.154	0.653
Adult participation in learning	−77,239,078.033	0.024
Impact of social transfers (excluding pensions) on poverty reduction	1,211,455.823	0.656

Source: own calculations.

Moreover, we determined the duration for unemployment for immigrants in Italy (Table 3). This database is provided by the National Institute for Statistics in Italy (Istat). As explanatory variables for duration of unemployment, we will consider variables from this survey: gender, level of education, marital status, degree of dependence (independent/dependent), net monthly income. Age was introduced in the initial model, but its coefficient was not significant from statistical point of view at 5% level of significance.

Table 3. Generalized linear model to explain the duration of unemployment (in months) for immigrants from Italy (2008–2019).

Parameter	B	Std. Error	T	Sig.
Intercept	5.6	0.066	96.766	0.000
Gender	−0.083	0.025	−3.22	0.002
Level of education	−0.83	0.016	−40.9	0.000
Dependence	0.903	0.022	43.203	0.000
Marital status	−0.678	0.025	−49.102	0.000
Net monthly income	−0.003	0.001	−13.61	0.000

Source: own calculations.

As expected, the foreign women have a lower period of unemployment compared to foreign men. This result is consistent with expectations and to previous studies. Women find easier jobs in the family services sector (domestic work, old and sick people care), restaurants and hotels and agriculture, while foreign men usually work in construction and were affected by the recent economic crisis. A deep contraction in the construction sector was observed up to 2013. The recovery started in 2014, but with a slow rhythm, forcing many men to become unemployed or to go back to their countries of origin (Rugiero et al. 2018).

The higher the level of education is, the less the period of unemployment is, since the highly educated people prefer to perform low-skilled jobs, but they have more skills that help them to work in a variety of domains (Fellini 2018).

Married people have, in general, a lower period of unemployment since these people cannot afford to stay without job, because they have more members of family that need their financial support. In this case, married people prefer to adapt to weaker work conditions and to accept less paid jobs only to have an income. Moreover, Bonifazi and Paparusso (2019) confirmed that married migrants do not prefer to return home and make efforts to keep their job in Italy or to quickly attain another job in case of unemployment. Most of them are afraid that in their origin country they could not support their family.

Independent people are used to having a longer period of unemployment compared to dependent ones, since the latter are more eager to find a job to not become a burden for the rest of their family. The higher the net monthly income of the household, the longer the period of unemployment is, since people are motivated to wait until they find a job in better conditions.

Some policy recommendations could be made, if these empirical findings are taken into account. The official immigration should be still encouraged, mostly in the care sector where Italy faced real difficulties with elderly. However, the Italian government should not resume to the advantages of immigrants on the labor market. Some policy measures should be taken, in order to invest more in the direct jobs creation and the training of the labor resources. Youth unemployment is another important issue that should be solved by the actual and future governments. In case of Italexit, the labor market will suffer from serious problems in covering labor force for some sectors. Moreover, the issues on Italian labor market (unemployment, labor cost) are not caused by the legal immigrants, but from specific and old problems like workers' unfair dismissals, another task that should be solved by the government by proposing better laws for employees' protection. As the OECD (2014) stated, the main issue regarding immigrants is related to the control of illegal and informal workers. One solution would be to replace the actual cash-benefits in the care sector with service vouchers in order to limit the incentives that are given to workers in the informal market.

5. Conclusions

The Italian labor market has two main characteristics: diffusion of undeclared work in the underground economy, the immigrants playing an important role here and the regional disparities of the global labor market conditions. Immigration is still considered as an emergency for public and political attention in Italy with a focus on illegal immigration (Caneva 2014). The largest foreign community after 2007 is represented by the Romanian immigrants, Poles being in the 9th place and Bulgarian in the 28th position (Del Boca and Venturini 2016).

In the context of the debates regarding a possible Italexit, the problem of immigrants from the EU is taken into consideration. However, in this research we showed, based on empirical data, that the EU immigrants had not a significant impact on Italian labor market. They might influence some policy labor market measures, but not the unemployment and labor cost in some sectors. In the context of economic recession, Italian immigrants do not prefer to come back to their origin country, but prefer to adapt to a worse condition of work in Italy in fear of not having economic difficulties when coming back home. The new international reality of the COVID-19 pandemic forced many immigrants to come back to their origin countries, because many of them lost their job. However, no one could anticipate if these immigrants will come back in Italy after the pandemic. Many of them tried to return immediately after some restrictions were relaxed during the epidemic. The decision factors should also design a specific migration policy to not discourage migration in those sectors where the foreign labor force is essential for the Italian economy. However, this research is limited by the fact that the undocumented EU immigrants were not considered in the analysis because of the data availability. In a future research, an

impact analysis only for some immigrants from Eastern European countries would be useful. The policy recommendations should focus on the control of illegal immigrants and better labor conditions for employees. It is a feasible scenario in the fact that all kinds of exits in various countries in EU will burst out as the EU immigration system is broken down. The COVID-19 pandemic might contribute to Italexit.

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Appendix A

Table A1. Descriptive Statistics.

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Jarque-Bera Stat.
number of immigrants in Italy	337,463.40	332,324.00	458,856.00	277,631.00	57,475.27	1.50
employed immigrants (% of total immigrants)	43	40	80	20	22	0.90
labor cost index for industry, construction and services	93.55	97.60	106	73.5	10.50	2.12
labor cost index in business economy	92.34	95.34	102	67.9	11.3	2.56
labor cost index in manufacturing	94.5	97.4	100.4	56.4	8.98	2.98
GDP	1,668,214.00	1,648,756.00	1,789,747.00	1,577,256.00	70,361.74	1.09
export	476,293.00	473,718.70	563,839.40	353,292.10	63,121.77	0.36
housing cost overburden rate	8.45	8.50	9.60	7.70	0.54	0.57
people at risk of poverty or social exclusion	1622.00	2064.00	3055.00	−282.00	1181.30	1.13
employment in knowledge-intensive activities	7346.79	7366.30	7477.60	7200.00	96.47	0.98
harmonized index of consumer price	103.4	102.7	106.7	99.3	8.45	3.03
tax rate on low wage earners	79.35	79.90	80.40	77.20	1.16	1.46
labor productivity per person employed and hour worked	109.49	108.30	115.60	104.90	3.37	0.84
adult participation in learning	7.14	7.30	8.30	5.70	1.01	1.35
impact of social transfers (excluding pensions) on poverty reduction	20.85	21.10	21.65	19.44	0.82	1.38
net monthly income (EUR)	920.8	1000.2	788.3	1400.3	6.78	1.92

Appendix B

Table A2. The Results of KPSS Test.

Variable	LM-Stat.
number of immigrants in Italy in first difference	0.326462
number of employed immigrants in the first difference	0.139423
GDP in first difference	0.128734
labor cost index for industry, construction and services	0.358150
labor cost index in business economy	0.365589
labor cost index in manufacturing	0.346523
export	0.332356
housing cost overburden rate	0.238641
people at risk of poverty or social exclusion	0.267833
employment in knowledge-intensive activities	0.395538
harmonized index of consumer price	0.400232
tax rate on low wage earners	0.199874
labor productivity per person employed and hour worked	0.298874
adult participation in learning	0.290023
impact of social transfers (excluding pensions) on poverty reduction	0.388672
duration of unemployment	0.400362
net monthly income	0.203348

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