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Foreign Immigration and Economic Growth

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Synonyms

Economic Growth Rate; Foreign Population; Inflow

Definition

Foreign immigration
Refers to international movement of people to a destination of which they do not possess citizenship.

Introduction

In the last decade, the global influx of foreign population in a number of developed countries has rapidly increased, leading to the imposition of stringent measures on the movement of people across international borders (Massey 1990; Clemens 2011). There are a number of factors that determine the decision of an individual to cross international borders. Some of the factors that pull people across international borders are the host country's wage rate, labor market regulations, and socioeconomic and demographic changes (Clemens 2011; Peri 2012; Tani 2019). The G7 countries have vast economic resources and opportunities that pull people from the third world countries (European Union 2019). Specifically, the G7 countries studied in this entry are the USA, UK, Japan, Italy, Germany, France, and Canada. There are two reasons for studying the G7 countries in this entry. First, the G7 countries have an influence on the economic policies implemented around the world. These policies are implemented to enhance the growth of the trade sector, financial liberalization, and economic development in the G7 countries. These imply that the G7 countries are most likely to attract foreign population (World Population Review 2019). Second, all the G7 countries are the world's top exporting countries and have high net worth per capita. It is more likely that the high level of income and employment in the manufacturing companies of the G7 countries are attracting migrants from the low-income countries (World Population Review 2019).

Existing studies have confirmed that the impact of foreign population inflows and

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economic growth have found mixed results. Few studies have confirmed that the influx of foreign population has a significant impact on the economic growth (Osbild and Bartlett 2019; Clemens and Pritchett 2019; Clemens 2011; Morley 2006), while a number of studies have confirmed that the inflow of foreign population has a relatively insignificant impact on the economic growth (Kerr and Kerr 2011; Massey 1990). All these studies have focused on the impact of the inflow of foreign population on the wage rates, unemployment, and overall well-being. One study used the Autoregressive Distributed Lag (ARDL) model to examine the relationship between immigration and economic growth. Morley's (2006) study was based on Canada, Australia, and the United States and had covered the period from 1930 to 2002. This study is based on the G7 countries and covers the period from 1960 to 2018. On the basis of the unit root test, this study examines the relationship between the inflow of foreign population and the economic growth by using the Ordinary Least Square (OLS), and Dynamic Ordinary Least Square (DOLS) estimators.

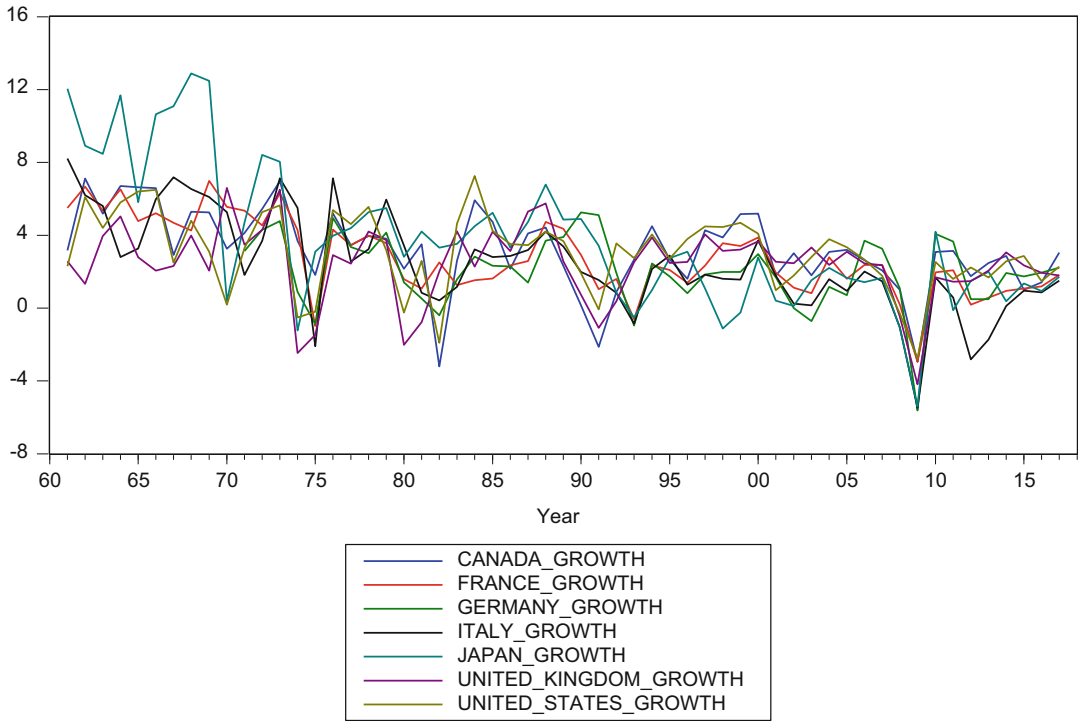
There are two reasons why OLS and DOLS have been used in this study. First, comparing the results of two regression models helps us to check the robustness of the research findings. Second, using the DOLS helps us to address the model's simultaneity problem. To estimate the short-term dynamics, the VECM was used for two reasons. First, the VECM captures both the short-term dynamics and longrun error correction in the model. Second, the VECM automatically addresses the problem of model defects (Enders 1995). By incorporating the error correction term, the errors and defects in the model are effectively captured and addressed. Third, when estimating the model, the model does not require an estimate of normalization and endogeneity.

Based on the studies conducted by Kerr and Kerr (2011), this study examines how foreign population inflows affect economic growth. We chose G7 countries to examine these issues in the context of the relationship between the inflow of foreign population and economic growth. The G7 countries have been receiving inflow of foreign population from the third world countries as these countries offer numerous opportunities for the migrants.

There are nine main sections in this entry. Section two provides an overview of foreign population inflow and economic growth rates of the G7 countries. Section three reviews the existing literature. The model specification is provided in section four and section five outlines how the data was collected for this study. The research findings are presented in section six and section seven discusses the research findings. Section eight outlines the conclusion and limitations of this study.

Overview of Inflow of Foreign Population and Economic Growth Rate of the G7 Countries

The G7 countries are the seven industrialized countries around the world that play a crucial role in the global economic growth, financial crisis management, and global security and terrorism (Council on Foreign Relations 2019). These countries are the drivers of the global economic resources around the world, as investors prefer to invest in the G7 countries, as they are likely to maximize their returns if they invest in the stock market of these countries (Council on Foreign Relations 2019). A close examination of Fig. 1 indicates that the economic growth rate of the G7 countries has been highly volatile due to changes in global politics, economic imbalances, natural disasters, and policies and procedures on capital market liberalization (Council on Foreign Relations 2019). There are both periods of slump and boom noticed in Fig. 1. The periods of slump are deeper than the periods of boom, and all G7 countries face slumps and booms in approximately the same period (Council on Foreign Relations 2019). This entry examines the economic growth rate of G7 countries: Canada, France, Germany, Italy, Japan, the UK, and the USA. The G7 group was formed during the 1970s as a response to the financial troubles faced by the global economy. Unfortunately, critics have mentioned that China and India should be included in



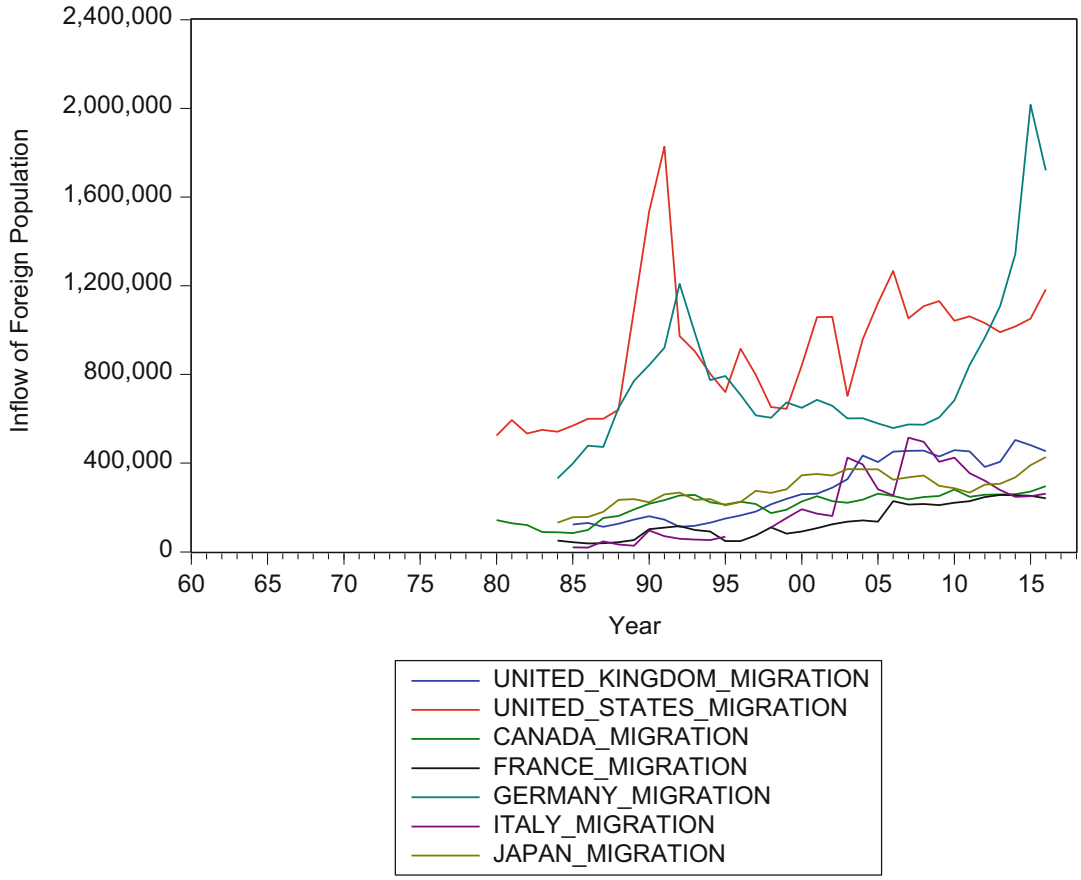
Foreign Immigration and Economic Growth, Fig. 1 Economic Growth Rate of the G7 Countries. (Source: Data was extracted from the World Bank Database (2019) and the graph was developed by the authors)

the group of G8 countries because the economic power is shifting from the western countries to China and India (Council on Foreign Relations 2019).

A comparative analysis of the inflow of foreign population to all the G7 countries shows that Germany and the USA demonstrate similar trends as compared to Canada, France, Italy, Japan, and the UK (Fig. 2). A seasonality effect has been noticed in the inflow of foreign population to Germany and the USA (Morley 2006; Clemens 2011). However, in the case of Canada, France, Italy, Japan, and the UK it has been slowly trending upward. There are a number of factors that are driving the high volatility in the inflow of foreign population and this includes changes in immigration laws, wage rates, employment levels, and opportunities in the host countries (Morley 2006; Clemens 2011).

Literature Review

A close synthesis of existing literature shows that the impact of migration on the economic growth is determined by the changes in the domestic country's labor supply, intellectual capital, wage rate, and total factor productivity (Kerr and Kerr 2011; Clemens and Pritchett 2019). The socioeconomic context of G7 countries has been determined by the changes in the wage rate policies, welfare systems, and national labor laws and regulations (Kerr and Kerr 2011; Morley 2006). Numerous existing studies have emphasized that future studies should examine the empirical relationship between inflow of foreign population and economic growth of the large developed countries (Kerr and Kerr 2011; Mocetti and Porello 2010). Existing studies that have empirically examined the impact of immigration on the economy of the



Foreign Immigration and Economic Growth, Fig. 2 Inflow of Foreign Population to the G7 Countries. (Source: Data was extracted from the OECD (2019) and the graph was developed by the authors)

host country has shown mixed results (Clemens 2011; Osbild and Bartlett 2019). We can categorize the studies on the impact of migration on economic growth in two categories. The first category includes studies that have found a statistically significant impact of migration on the determinants of economic growth and the second group includes studies that have found insignificant impact (Kerr and Kerr 2011; Mocetti and Porello 2010; Clemens 2011; Osbild and Bartlett 2019). This study is based on the impact of inflows of foreign population on the host country rather than on the internal mobility of labor within the host country.

To begin with, studies that have proved that there is a significant impact of immigration on the determinants of the economic growth have explored both the positive and negative impact of immigration on the national economy. Osbild and Bartlett (2019) found that in the case of Western Balkan region, an increase in the inflow of foreign population leads to an increase in the unemployment rates. Intuitively, an increase in the inflow of foreign population in the host countries will increase the level of national competition to secure employment. As Clemens and Pritchett (2019) argue, efficient spatial distribution of labor is extremely important as it increases global production. The migration barriers would definitely reduce production as it acts as a hindrance to spatial reallocation of labor. The private sector employers have benefited from the global shifts in labor, as automatic adjustments in the wage rates lead to employers enjoying cheap labor and low production cost. High barriers to entry, in the form of travel restrictions, acts as a

strong deterrent to people's desires to move to the developed countries. As Clemens (2011) argues, small reductions in the barriers to labor mobility have enormous benefits to the global economy. If migration barriers are removed, people from the poor countries will move to the richer countries. This movement of people would lead to a number of efficiency gains to the destination countries. Morley (2006) examined the causality between per capita economic growth rate and immigration in Australia, USA, and Canada. The findings from this study confirmed that there is longrun unidirectional Granger causality running from per capita economic growth to immigration.

Furthermore, existing studies that have found there is minimal effect of immigration on the host country have mainly focused on the wage and employment levels in the host country. Friedberg and Hunt (1995) found that a 10% increase in the number of immigrants will reduce the wage rate of the natives by 1%. This entry highlighted that the skills provided by the foreigners and the natives can be easily substituted but this does not imply that the inflow of foreign population will lead to a decrease in the welfare of the natives. Kerr and Kerr (2011) found that the immigrant labor usually earn lower than the natives of the host country. The recent immigrants in the Northern Europe tend to use more social benefits than the native citizens. There are a number of factors that influence the social and economic impact immigration and some of the factors that were considered by Kerr and Kerr (2011) were (1) age of the individual during arrival, and (2) reason for migration. The intention of the individual to immigrate will affect the type of economic activities that the migrant will engage in the host country. Those immigrants who have just arrived in the host country are more likely to use welfare assistance as compared to those who have been in the host country for a long period of time. It has been viewed in the existing literature that immigration has adverse impact on the European public finances. There are numerous studies that have confirmed that the fiscal impact of immigration is extremely small. Building on this study, Massey (1990) argues that immigrants consider social and economic benefits as two priority factors in the host countries when they decide to immigrate to the host countries.

Similarly, existing studies that have found no effect of immigration on the host country factors have mainly focused on the total factor productivity and employment levels as the dependent variable in the model. Peri (2012) did not find any effect of immigration on the employment levels. Gonzalez and Ortega (2011) found that the inflow of unskilled foreign population did not affect the employment levels in Spain. Tani (2019) argued that Australia's migration policy is not an important tool that can be used to manage its human capital. Dustmann et al. (2010) did not find that immigration influences unemployment and wages in the British labor market. Bonin (2005) did not find any relationship between foreign population inflow and unemployment in Germany.

Unfortunately, only a few studies have explored the relationship between immigration and economic growth. Morley (2006) examined the relationship between immigration and economic growth by using the Autoregressive Distributed Lag (ARDL) Model. This study expands the existing literature by comparatively analyzing the relationship between inflow of foreign population and economic growth rate of the G7 countries. The list of G7 countries included in this study are the UK, USA, Japan, Italy, Germany, France, and Canada. Drawing from the studies conducted by Kerr and Kerr (2011), this study will examine this relationship in the context of the socioeconomic factors present in the G7 countries. This study explores the relationship between immigration and the economic growth rate by using the Dynamic Ordinary Least Square (DOLS) and Ordinary Least Square (OLS) models to explore the relationship between immigration and economic growth of the G7 countries. These are the two best models that can be used for the estimation of the data that is available for the period 1960–2018. These two models were used for estimation because our econometric results show that our variables are not integrated to different order.

Model Specification

To start with the analysis, unit root test has to be conducted to determine the integration of the variables used in the estimation. Following the studies conducted by Naidu (2017) and Naidu et al. (2017), this study performed the unit root test on two variables used for estimation in this paper. These two variables are Economic Growth Rate (ECR_t) and Inflow of Foreign Population (IFP_t). The Augmented Dickey Fuller and Dickey Fuller-Generalized Least Square test has a null hypothesis that the variables have a unit root. Following the completion of the unit root test, Bai-Perron multiple breakpoint test was conducted to incorporate structural breaks in the estimation strategy. Both Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) were used to determine the Vector Autoregression (VAR) Lag order selection criteria. The Johansen's Cointegration Test was used to determine longrun cointegration between IFP_t and ECR_t. In this entry, we used the cointegration methodology developed by Johansen (1991, 1995) to determine the longrun cointegration between IFP_t and ECR_t. To model the cointegration between the independent and dependent variables, we considered the VAR with the order of p (Johansen 1991, 1995):

$$ECR_t = A_1 ECR_{t-1} + \ldots\ldots + A_p ECR_{t-p} + \vartheta IFP_t + \in_t \quad (1)$$

In Eq. 1, ECR_t is a k-vector of a I (1) variable, IFP_t is a d-vector of a deterministic variable, and $\in_t$ is the error term. Equation 1 can be rewritten as follows:

$$\Delta ECR_t = \delta ECR_{t-1} + \sum_{i=1}^{p-1} \alpha_t + \Delta ECR_{t-i} + \vartheta IFP_t + \in_t \quad (2)$$

In Eq. 2, α is the number of cointegrating relationships and ϑ is the number of cointegrating vector. To estimate the longrun relationship between the variables, we used OLS and DOLS for three reasons. First, comparing the findings from two regression models helps us to check the robustness of the research output. Second, using the DOLS helps us to tackle the problem of simultaneity in the model. The DOLS estimator is captured in Eq. 3 as follows (Mark and Sul 2003; Chikalipah and Okafor 2019):

$$ECR_{y,1} = \alpha + \beta_1 IFP_t + \gamma Dum_\alpha + \theta Dum_{\beta_1 IFP_t} + \sum_{i=-k}^{k} \cup_i \Delta IFP_{t-i} + \mu_i \quad (3)$$

In Eq. 3, Dum_α and $Dum_{\beta_1 IFP_t}$ represent the dummy variables that captures the structural breaks in the series. After the longrun relationship has been established and the error correction terms (ECT) is generated for each longrun model, the next step is to determine the shortrun relationship between IFP_t and ECR_t by using the ECM framework. According to Kim (1998), there are a number of advantages of using the ECM in this paper. First, the VECM captures both the shortrun dynamics and the longrun equilibrium in the estimation model. Second, the VECM automatically addresses the problem of model misspecification (Enders 1995). Third, the model does not require the estimation of normalization and endogeneity while estimating the model. The VECM is depicted as follows (Mark and Sul 2003; Chikalipah and Okafor 2019):

$$ECR_{ij,t} = \beta_0 + \sum_{q=0}^{m} \omega_q IFP_{i,t-q-1} + \vartheta \varepsilon_{t-1} + \mu_i \quad (4)$$

In Eq. 4, ε_{t-1} is the one period lagged error terms, $ECR_{ij,t}$ is the economic growth rate for time period t, and IFP_t is the inflow of foreign population. The final model used to determine the causality between IFP_t and ECR_t is the Granger causality test and is captured by the following equation (Chiou-Wei et al. 2008; Narayan and Prasad 2008):

$$ECR_t = \beta_0 + \beta_1 ECR_{t-1} + \ldots + \beta_1 ECR_{t-l} + \alpha_1 ECR_{t-l} + \ldots + \alpha_l ECR_{-l} + \in_t \quad (5)$$

$$IFP_t = \beta_0 + \beta_1 IFP_{t-1} + \ldots + \beta_1 IFP_{t-l} + \alpha_1 IFP_{t-l} + \ldots + \alpha_l IFP_{-l} + \mu_t \quad (6)$$

In Eqs. 5 and 6, $IFP_{t\ -\ l}$ represents the l lag of IFP_t and $ECR_{t\ -\ l}$ represents the l lag of ECR_t.

Data

The data for this study was collected from the Organisation for Economic Co-operation and Development (OECD) database and the World Bank database. Specifically, immigration was proxied by inflow of foreign population by nationality and economic growth rate was proxied by GDP growth (annual world percentage). There are two reasons for selecting the G7 countries for this research. The OECD data on the inflow of foreign population was only available for G7 countries. Unfortunately, data for Russia was missing, therefore, we could not include the eighth country from the list of G8 countries in our analysis. Data on economic growth rate was available from 1961 to 2017 and data on inflow of foreign population by nationality was available from 1980 to 2016.

Research Findings

Table 1 presents the results of the Augmented Dickey Fuller Test (ADF) and Dickey Fuller-Generalized Least Square (DF-GLS) unit root test shows that the dependent and independent variables are integrated to a different order for the G7 countries. The ADF test confirms that ECR is I (0) for all the G7 countries and IFP is I (1) for all the G7 countries. On the other hand, DF-GLS shows mixed results. The DF-GLS test results show that ECR is I (0) for the USA, UK, Germany, France, and Canada and I (1) variable for Japan and Italy. Similarly, the DF-GLS test results shows that IFP is I (0) variable for the USA and I (1) variable for the UK, Japan, Italy, Germany, France, and Canada.

The results of the multiple breakpoint test presented in Table 2 shows that there is only one sequentially determined break for Japan noted in the year 1992. The multiple breakpoint test did not find any breakpoints for the USA, UK, Italy, Germany, France, and Canada.

Results of the VAR Lag Order Selection Criteria is presented in Table 3 and shows that based on the SIC value, lag length of one is selected for the ARDL bounds test estimation.

The results of the unrestricted cointegration rank test are presented in Table 4. According to the longrun cointegration test, there are two cointegrating equations between the variables used to determine the cointegrating relationships in the USA, and one cointegrating equation for Italy, Germany, France, and Canada. There are no cointegrating equations for the UK.

Table 5 captures the results for the longrun impact of foreign population inflows on the economic growth rate. The OLS results show that the foreign population inflows have a statistically significant impact on the economic growth of the USA, Italy, and France. More specifically, the results show that one unit increase in foreign population inflows will decrease economic growth of the USA and Italy by 0.0000026 units and 0.00000694 units, respectively. On the other hand, the results also indicate that one unit increase in the foreign population inflows will increase economic growth of France by 0.00000889 units. Both the Serial Correlation LM test and the Breusch-Pagan-Godfrey heteroskedasticity test shows that our research findings are free from the problem of serial correlation and heteroskedasticity.

The shortrun results are presented in Table 6. The findings confirm that the shortrun changes in the inflow of foreign population have a statistically significant impact on the economic growth rate of the USA, at 5% level of significance. The statistical significance of the relationship between the inflow of foreign population and the economic growth does not exist for the case of Italy, Germany, France, Canada, Japan, and the UK. The lagged one period error term is

Foreign Immigration and Economic Growth, Table 1 ADF and DF-GLS unit root tests for the dependent and independent variables

		ADF Test		DF-GLS	
Country	Variables	Levels	t-statistics	Levels	t-statistics
USA	ECR	I (0)	−5.201***	I (0)	−5.103***
	IFP	I (0)	−2.883	I (0)	−2.130*
	ECR	I (1)	−6.535***	I (1)	−0.669
	IFP	I (1)	−5.348***	I (1)	−5.353***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (0) IFP: I (0)**	
UK	ECR	I (0)	−5.249***	I (0)	−5.202***
	IFP	I (0)	−0.211	I (0)	−0.211
	ECR	I (1)	−6.890***	I (1)	−6.890***
	IFP	I (1)	−5.431***	I (1)	−5.431***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (0) IFP: I (1)**	
Japan	ECR	I (0)	−3.854***	I (0)	−0.475
	IFP	I (0)	−1.265	I (0)	−0.250
	ECR	I (1)	−7.297***	I (1)	−8.452***
	IFP	I (1)	−4.855***	I (1)	−4.646***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (1) IFP: I (1)**	
Italy	ECR	I (0)	−4.502***	I (0)	−0.974
	IFP	I (0)	−1.564	I (0)	−1.259
	ECR	I (1)	−9.355***	I (1)	−9.101***
	IFP	I (1)	−5.632***	I (1)	−7.073***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (1) IFP: I (1)**	
Germany	ECR	I (0)	−5.544***	I (0)	−5.299***
	IFP	I (0)	−0.320	I (0)	−0.069
	ECR	I (1)	−6.621***	I (1)	−7.175***
	IFP	I (1)	−4.887***	I (1)	−4.946***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (0) IFP: I (1)**	
France	ECR	I (0)	−3.641***	I (0)	−2.872***
	IFP	I (0)	−0.639	I (0)	−0.310
	ECR	I (1)	−8.063***	I (1)	−8.815***
	IFP	I (1)	−5.795***	I (1)	−5.50***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (0) IFP: I (1)**	
Canada	ECR	I (0)	−4.709***	I (0)	−4.752***
	IFP	I (0)	−0.866	I (0)	−0.523
	ECR	I (1)	−8.034***	I (1)	−0.974
	IFP	I (1)	−4.197***	I (1)	−4.487***
	Decision	**ECR: I (0) IFP: I (1)**		**ECR: I (0) IFP: I (1)**	

***represents significance at 1%;
**represents significance at 5%;
*represents significance at 10%;
Source: Created by the Author by Using Outputs from EViews 8, (2019)

Foreign Immigration and Economic Growth, Table 2 Bai-Perron tests of L + 1 vs. L sequentially determined breaks

Country	Break year	Break test	F-Statistic	Critical value**
USA	None	0	2.96	11.47
UK	None	0	4.126	11.47
Japan	1992	0 vs. 1	8.381	11.47
		1 vs. 2	1.456	12.95
Italy	None	0 vs. 1	3.56	11.47
Germany	None	0 vs. 1	5.334	11.47
France	None	0 vs. 1	2.026	11.47
Canada	None	0 vs. 1	3.675	11.47

Source: Created by the Author by Using Outputs from EViews 8, (2019)

Foreign Immigration and Economic Growth, Table 3 VAR lag order selection criteria

Country	AIC	SIC
USA	30.89 (1)	31.16 (1)
UK	27.74 (1)	28.02 (1)
Japan	27.65 (1)	27.93 (1)
Italy	29.64 (1)	29.93 (1)
Germany	31.45 (1)	31.72 (1)
France	26.44 (2)	26.80 (1)

Source: Created by the Author by Using Outputs from EViews 8, (2019)

Foreign Immigration and Economic Growth, Table 4 Unrestricted cointegration Rank Test

Country	Number of cointegrating equations	Hypothesized number of CE(s)	Eigenvalue	Trace statistic	0.05 Critical value	Prob. **
USA	2	None*	0.536	24.67	15.49	0.0016
		At most 1*	0.027	0.841	3.841	0.3591
UK	0	None	0.342	12.996	15.495	0.1150
		At most 1	0.014	0.424	3.841	0.5149
Japan	0	None	0.412	28.30	29.80	0.0736
		At most 1	0.288	11.84	15.495	0.1648
		At most 2	0.412	1.327	3.84	0.2493
Italy	1	None*	0.515	21.136	15.495	0.0063
		At most 1	0.086	2.342	3.841	0.1259
Germany	1	None*	0.4148	16.828	15.495	0.0313
		At most 1	0.0071	0.2206	3.841	0.6386
France	1	None*	0.536	24.67	15.49	0.0016
		At most 1	0.027	0.841	3.84	0.3591
Canada	1	None*	0.387	18.100	15.495	0.014
		At most 1	0.052	1.874	3.841	0.171

Source: Created by the Author by Using Outputs from EViews 8, (2019)

significant for the USA, Germany, and France at 1% level of significance whereas the lagged one period error terms is significant for Canada at 5% significance level. The high value of coefficients indicate that the adjustment to the equilibrium is 23.4% for the USA, 31.9% for Germany, 43.5% for France, 28.6% for Canada.

The results of the pairwise Granger Causality Test indicate that there is unidirectional causality running from migration to economic growth of

Foreign Immigration and Economic Growth, Table 5 Longrun relationship between ECR and IFP

	OLS		DOLS	
	USA		**USA**	
	β	**t-statistics**	**β**	**t-statistics**
Constant	4.988	5.054***	5.725	4.0496***
IFP	-2.60E-06	−2.518**	-3.27E-06	−2.188**
Breusch-Godfrey Serial Correlation LM Test	F-statistics: 1.215	Prob.F(2,33): 0.3095	N/A	N/A
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistics: 1.972	Prob.F(2,33): 0.1691	N/A	N/A
	Italy		**Italy**	
	β	**t-statistics**	**β**	**t-statistics**
Constant	2.55	4.75***	2.676	3.741***
IFP	-6.94E-06	−3.337***	-8.18E-06	−3.125***
Breusch-Godfrey Serial Correlation LM Test	F-statistics: 1.606	Prob.F(2,26): 0.2199	N/A	N/A
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistics: 3.024	Prob.F(1,28): 0.0930	N/A	N/A
	Germany		**Germany**	
	β	**t-statistics**	**β**	**t-statistics**
Constant	1.829	2.11**	2.42	1.561
IFP	3.22E-08	0.032	-1.14E-06	−0.537
Breusch-Godfrey Serial Correlation LM Test	F-statistics: 1.379	Prob.F(2,29): 0.2678	N/A	N/A
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistics: 0.287	Prob.F(1,31): 0.5961	N/A	N/A
	France		**France**	
	β	**t-statistics**	**β**	**t-statistics**
Constant	3.001	6.401***	3.232	7.096***
IFP	8.89E-06	−2.938***	-1.24E-06	−4.025***
Breusch-Godfrey Serial Correlation LM Test	F-statistics: 1.493	Prob.F(2,29): 0.2414	N/A	N/A
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistics: 0.052	Prob.F(1,31): 0.8217	N/A	N/A
	Canada		**Canada**	
	β	**t-statistics**	**β**	**t-statistics**
Constant	4.124	3.354***	4.135	2.521**
IFP	-8.21E-06	−1.452	-7.99E-06	−1.061
Breusch-Godfrey Serial Correlation LM Test	F-statistics: 1.44	Prob.F(2,23): 0.2508	N/A	N/A
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistics: 1.032	Prob.F(1,35): 0.3165	N/A	N/A

***represents significance at 1%;
**represents significance at 5%;
*represents significance at 10%;
Source: Created by the Author by Using Outputs from EViews 8, (2019)

Foreign Immigration and Economic Growth, Table 6 Shortrun relationship between ECR and IFP

	OLS	
	Italy: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	0.250	0.915
LG(IFP_t)	−0.319	−0.650
ε_{t-1}	−0.372	−1.547
Breusch-Godfrey serial correlation LM test	F-statistics: 1.069	Prob.F(2,15): 0.3681
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 1.148	Prob.F(2,17): 0.3407
	United States: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	−0.1611	−1.999
LG(IFP_t)	−0.958	−2.48**
ε_{t-1}	0.234	3.226***
Breusch-Godfrey serial correlation LM test	F-statistics: 0.125	Prob.F(2,23): 0.8835
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 2.13	Prob.F(2,25): 0.1403
	Germany: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	0.078	0.477
LG(IFP_t)	0.696	0.688
ε_{t-1}	−0.319	−3.006***
Breusch-Godfrey serial correlation LM test	F-statistics: 1.295	Prob.F(2,20): 0.2958
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 0.088	Prob.F(2,22): 0.9165
	France: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	−0.0020	−0.014
LG(IFP_t)	0.272	0.462
ε_{t-1}	−0.435	−3.0149***
Breusch-Godfrey serial correlation LM test	F-statistics: 2.075	Prob.F(2,23): 0.1488
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 1.084	Prob.F(2,25): 0.3536
	Canada: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	0.1155	0.771
LG(IFP_t)	−1.350	−1.258
ε_{t-1}	−0.286	−2.54**
Breusch-Godfrey serial correlation LM test	F-statistics: 0.455	Prob.F(2,25): 0.6396
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 1.003	Prob.F(2,27): 0.3799
	Japan: dependent variable: LG(ECR_t)	
	β	**t-statistics**
Constant	0.167	0.631
LG(IFP_t)	0.224	0.108
Dum_t	−1.188	−1.23
ε_{t-1}	−0.321	−2.001
Breusch-Godfrey serial correlation LM test	F-statistics: 0.553	Prob.F(2,16): 0.5858
Heteroskedasticity test: Breusch-Pagan-Godfrey	F-statistics: 0.4036	Prob.F(3,18): 0.7522

(continued)

Foreign Immigration and Economic Growth, Table 6 (continued)

	OLS	
	DOLS: dependent variable: LG(ECR_t)	
	UK	
	β	**t-statistics**
Constant	0.071	0.772
LG(IFP_t)	−0.845	−0.0708
ε_{t-1}	−0.073	−1.096
Hansen's parameter stability test	Lc statistic: 0.22	Deterministic trend (k): 2 Prob. >0.2

***represents significance at 1%;
**represents significance at 5%;
*represents significance at 10%;
Source: Created by the Author by Using Outputs from EViews 8, (2019)

Foreign Immigration and Economic Growth, Table 7 Pairwise Granger causality test

	H_0: Migration does not Granger cause economic growth rate	H_0: economic growth rate does not Granger cause migration
Country	F Statistics	F Statistics
USA	1.480	0.425
UK	1.194	0.611
Japan	2.94	0.027
Italy	5.81***	0.110
Germany	0.061	0.810
France	5.030	2.321
Canada	0.558	1.641

Source: Created by the Author by Using Outputs from EViews 8, (2019)

Italy (see Table 7). This statistical significance does not exist in the case of the USA, UK, Japan, Germany, France, and Canada.

Discussions

The results show that 1% increase in foreign population inflows will decrease economic growth of the USA and Italy by 0.0000026% and 0.00000694%, respectively. The findings from this study is parallel to the findings of the studies that have proved that there is minimal impact of immigration on indicators of economic growth. Unlike existing studies, this study has focused on economic growth rather than the indicators of economic growth (Friedberg and Hunt 1995). Undoubtedly, inflow of foreign population is essential for the USA because it increases the size of the population and addresses the shortage of labor problems. A number of articles have confirmed that with the recent attempts to reduce the inflow of foreign population, there can be negative impacts of this move on the national

economy of the USA. On the other hand, the findings from this study proved that the inflow of foreign population would lead to a minimal negative impact on the economic growth of the USA in the long run. One of the possible factors explaining this minimal negative impact on the economic growth is the negative impact of immigration on the foreign population itself, as in the competitive workforce of USA, it is extremely difficult for the immigrants to find employment if their qualifications do not meet the US standards. In a highly competitive US economy, immigrants will need to hold qualifications and expertise that is able to differentiate them from the native workers (The National Academy of Sciences 2019). Another reason for restricting the inflow of illegal population is to reduce the threats from the terrorist activities faced by the US economy. Existing debates have confirmed that tracking down criminals with very bad records has led to far less success than expected. Drawing from this argument, it is expected that illegal and terrorist activities cause national panic and this imposes negative pressure on the economic growth.

Similarly, the inflow of foreign population will lead to a minimal decrease in the economic growth of Italy. A number of studies have confirmed that the inflow of foreign population to Italy is characterized by unskilled workers. A close examination of the recent statistics indicates that Italy has been a victim of large immigration of unskilled workers with a number of studies noting that immigrants to Italy frequently settle in the richest regions. As compared to other European countries, Italy has a low tendency of attracting high-skilled immigrants due to its favorable location for immigrants from Africa. The contemporary economy of Italy has focused on the traditional industries, and undoubtedly it is able to attract low-skilled immigrations. Most of the immigrants to Italy are low-skilled and low paid workers. A comparative analysis of the education level of native population with that of the foreigners indicates that there is not much difference in the skill level of the two groups. As argued by the Cobb Douglas production function, technological progress is driven by the availability of skilled and unskilled workforce. In the case of Italy, unskilled workers are less likely to innovate, which may exert downward pressure on the economic growth.

On the other hand, the results also indicate that one unit increase in the foreign population inflows to France will increase economic growth rate by 0.00000889 units. The findings from this study are similar to the findings from the study conducted by d'Albis et al. (2016). According to d'Albis et al. (2016), immigration has a positive impact on GDP per capita in France. Ortega and Peri (2009) confirmed that immigration has positive impact on France as compared to other OECD countries. As argued by d'Albis et al. (2016), the immigration policy influences who will be receiving work permits based on their education and background. A close examination of the number of residents receiving permits to France are mainly youngsters who provide complementary skills to the native labor (d'Albis et al. 2016). Some of the characteristics of the young workforce that may drive positive economic growth are (1) high productivity, (2) ability to quickly accept changes in technology, (3) versatility, and (4) innovativeness.

Conclusion and Limitations

The main aim of this study was to investigate the relationship between foreign population inflow and economic growth of the G7 countries. To investigate this relationship, we used data from the UK, USA, Canada, France, Germany, Italy, and Japan, which were considered for the econometric analysis. The findings from this study confirmed that one unit increase in the foreign population inflows will decrease economic growth of the USA and Italy by 0.0000026 units and 0.00000694 units, respectively. The results also indicate that one unit increase in the foreign population inflows will increase economic growth of France by 0.00000889 units. The findings from this study has implications for a number of stakeholders. First, the G7 countries are the most powerful countries of the world and the immigration patterns noted in each of these countries is driven

by the changes in the wage rate, employment, and socioeconomic conditions faced by each of these countries. Second, foreign population inflow has a positive impact on the economic growth of France. In order to cushion the negative impact of the foreign population inflow on the economic growth of the USA and Italy, there should be strict immigration policies on the inflow of foreign population to these two countries. By widening the scope and scale of the private sector and encouraging the growth of the modern industries in the USA and Italy, the policy makers of these two countries can encourage automatic adjustment of the economic growth rates to the equilibrium. One of the limitations of this study is that it is based on G7 countries with Russia being excluded from our analysis. Future researchers can build onto this study by exploring the nexus between the inflow of foreign population and economic growth of regional trading blocs and comparatively analyzing how the impact of the foreign population inflows on the economic growth differs by the geographical region.

Cross-References

- ▶ Economic Growth
- ▶ Public Policy
- ▶ Public Sector Policies

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