

## Journal Transition Studies Review

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## Tax Incentives and the Location of FDI Evidence from a Panel Data in Balkan Countries

Flora Merko\* • Klodian Muço\*\*

**Abstract** This study aims to investigate the impact of taxation on Foreign Direct Investment (FDI) in the Balkan countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, North Macedonia, Romania, Serbia and Slovenia), for the period 2005-2018. Using the empirical analysis method, we find that FDI net inflows are influenced by the tax regime of the host countries.

Our empirical results suggest that a reduction in “corporate tax rate” and “total tax and contribution rate in % of profit”, would lead the increase in FDI net inflow in the Balkan countries. So, on the contrary, the higher the “corporate tax rate” and “total tax and contribution rate in % of profit”, are, the greater the reduced FDI net flow is. Our results also suggest that the increase of “real GDP rate” and “tax revenue in % of GDP” have a positive impact on the increase of FDI net inflow in the Balkan countries.

**Keywords:** Foreign Direct Investment, Corporate Taxation, Tax Revenue, Balkan Countries.

**JEL Classification:** H25, H87, F21, F23, F38, F47.

### Introduction

Trade liberalization and mobility of factors of production create many challenges for fiscal policy and are among the most debated issues in the area of fiscal competitiveness. Globalization offers many opportunities to reduce taxes for companies and increase capital flows for countries with low fiscal pressure.

The increase of capital inflows due to tax reduction leads to an increase in fiscal revenues and generates more employment and prosperity for the country. This result would influence other countries in reducing taxes to be competitive in attracting capital. Therefore fiscal competitiveness is becoming a strategic process for each country, to increase investment (Moro, 2001) and to increase fiscal revenue (Ambrosanio and

Flora Merko\*(✉), Klodian Muço\*\*

\* Associate Professor Aleksander Moisiu University, Economics Department, Durrës, Albania

e-mail: floramerko@uamd.edu.al

\*\* PhD., Aleksander Moisiu University, FASTIP, Durrës, Albania

e-mail: kmuco@fastip.edu.al

Bordignon, 2000; Van Geenhuizen and Nijkamp 1998), thus increasing the country's industrialization (Oman, 2000).

There are many empirical studies showing that the flow of foreign investment is influenced by fiscal pressure (Slemrod, 1990).

Devereux and Freeman (1995) in their study of five different countries in Europe, USA and Japan on the impact of taxation on FDI inflows affirm that low taxation positively influences FDI localization. Similar results are achieved by Simionescu (2016) or Davies et al., (2018) on European Union countries. But, there are also other studies showing the opposite, that the corporate tax rate has a significant negative impact on FDI inflows in Central and Eastern European countries (Eshgh et al., 2016). Industrial activities tend to focus on some regions depending on endogenous agglomeration forces and the level of transport costs (Baldwin and Krugman, 2004), as well as on the availability of natural resources, political and economic stability, and public administration (Tanzi and Zee, 2000). Given the above facts, we think that it is important to analyze the impact of different taxes on the increase in FDI inflows in the Balkan countries.

To achieve this objective, we begin this study with a review of existing empirical studies to see if the fiscal effects estimated in previous studies have taken into account other non-fiscal factors that may have an important impact in absorbing FDI. Under such conditions the effects of fiscal policy on increasing FDI inflows may be overestimated. In the following will proceed with the empirical analysis to highlight the real effects of fiscal policies on the absorption of FDI. To make this assessment will rely on the empirical analysis of a panel data with the eight Balkan countries (Albania, Bosnia, Bulgaria, Croatia, North Macedonia, Romania, Serbia and Slovenia) for the period 2005-2018.

We emphasize that this model includes not only direct taxes on companies such as "corporate tax rate" and "total tax contribution in % of profit" but also "tax revenue" to point out how FDI inflows respond to real economic growth or fiscal revenue. This serves as a measure of the degree to which the government controls the economy's resources. The methodology used for conducting this study starts with a review of the main empirical literature on Tax-FDI correlation. Following, based on the official World Bank data, we analyze empirically the impact of different taxes and real GDP per capita growth on FDI. The study is based on the macroeconomic level of the panel data. The results of the study suggest that taxes play an important role in the flow of FDI. The empirical results also suggest that the real GDP growth per capita and the increase in fiscal revenue have a positive impact on the flow of foreign investment in these countries.

The structure of the study, following the synthetic introduction described above, continues with a brief review of the empirical literature on the impact of fiscal policy on FDI net inflow, the methodology used, the empirical analysis, and closing with some conclusions.

## **Theoretical predictions and literature review**

Removing trade barriers, reducing transport costs and innovation in the field of telecommunications has led to the devaluation of borders between independent economic

systems and the free movement of capital to exploit advantages of the global economy. This increase in international exchanges of goods, services, technology, and capital flows is increasing the interdependence of the economic system and leads to the modification of the structure by moving from an autonomous national economy to a global economy (Alfano, 2003). All this influences in the loss of control over the economic dynamics needed to orient economic growth, in the determination of taxation and consequently the public spending financing. (Munnell, 1992).

Companies are influenced by the taxation level in different countries because they seek to reduce the total costs of production and maximize net profit (Buettner and Rof, 2005). This unification of markets according to Avi-Yonah (2000) may affect the change in the taxable basis and will consequently have a significant impact on the distribution of income in global level.

In such conditions the fiscal policies adopted by one state will be influenced by other states to be competitive even from fiscal pressure. Thus, fiscal competitiveness will be a strategic process for each state, to increase investment (Moro, 2001), to increase fiscal revenue (Ambrosanio and Bordignon, 2000; Van Geenhuizen and Nijkamp 1998), which will lead to an increase in the country's industrialization (Oman, 2000) and the taxable basis. According to Tiebout's model (1956), if individuals are able to move freely, different governments will apply low local taxes in order them to decide to stay within the territory of their country. However, this level of taxation should be sufficient to finance the desired level of local public goods in order to have a more efficient public expenditure (Keen and Marchard, 1997). Free movement without cost would generate equilibrium condition in the form of equal utility levels of residents (Wellish and Hulshorst, 2000).

Of course, reducing fiscal pressure can also lead to a decline in public revenues, and consequently, the government should reduce public spending. (Fourçans and Warin, 2001). Anyhow this will serve the policy-makers to grab the attention of electorate and to stop the "flow" of capital from the country (Alfano, 2003). Fiscal competitiveness can affect the flow of Foreign Direct Investment<sup>1</sup> (FDI) in a given country (Muço et al., 2018; Morisset and Pirnia, 1999; Morisset, 2003; De Mooij and Ederveen, 2003) or given region (Phillips and Goss, 1995).

Devereux and Freeman (1995) using data on flows between seven countries (five top countries of EU and also USA and Japan), found that FDI is elastic to the fiscal pressure factor. Simionescu (2016) or Davies et al., (2018), in their studies, reach again a similar result on the relationship between FDI and effective tax rates in the European Union. The results do not change even if poor countries, such as Nigeria, are included in the study (Olaleye et al., 2016).

<sup>1</sup> Nowadays most governments tend to encourage FDI inflows as they generate economic growth and employment (Aranda and Sauvart, 1996; Muço et al., 2018), salary increase and know-how (Lee, 2002; Lall, 2002 Kostevc et al. 2007; Pournarakis & Varsakelis, 2002; Cipollina et al. 2012), assist in technology transfer and managerial improvement (Grotte, 1966; Borensztein et al., 1998; Findlay, 1978), generate positive externalities for national enterprises (Smarzynska, 2003), increase of productivity and competitiveness (Javoric, 2009; Hee Ng, 2006; Buckley et al., 2007), increase of institutional quality and macroeconomic stability (Kostevs et al., 2007), positive impact in creating capital and increasing domestic investment (Jones, 1996) and social welfare (Estrin and Uvalic, 2013). It should be affirmed, however, that FDI is not only influenced by the fiscal system but also by other factors such as labor costs (Vernon, 1966), competitiveness (Hymer, 1972; Knickerbockers, 1973), market dimensions, and so on.

However, there are other studies showing the opposite, which means that corporate tax rates have a significant negative impact on FDI inflows in Central and Eastern European countries (Eshgh et al., 2016). Baldwin and Krugman (2004) state that industrial activities are affirmed in some regions depending on the endogenous forces of agglomeration and the level of transport costs, so, not only by the level of capital taxation. While Tanzi and Zee (2000) point out that are other factors such as natural resource availability, political and economic stability and efficient public administration that stimulate the concentration of enterprises in a given area.

But beyond these affirmations, we can also add that tax reduction encourages consumption and economic growth (Muineló and Sagalés, 2011; Castelló and Doménech, 2002), increases investment that generates employment, increases consumption and welfare (Engen and Skinner, 1996; Bonucchi et al., 2015).

The lower a country's taxes are, the more likely is it for foreign companies to invest. Given the role of fiscal competition in FDI and capital flows but not only, as well as the positive effects on economic growth, employment and welfare, but governments have also for years reduced the average tax rate on income. Sorensen (2000) points out that in the OECD countries this tax dropped from 51.1% in 1985 to 38.1% in 1999. But at the same time, these countries have taken measures to expand the tax basis. It is also noted that this decline in the complex fiscal burden has been reduced over time and has progressively fallen on the labor factor. The labor supply is considered fixed, while the capital tax is considered mobile.

So it is an optimal choice if capital income is not taxed, as it would not have fiscal competition (Grazzini and Petretto, 2004). All this makes sense only when exists the principle of withholding taxation, which means that wages are taxed were is produced regardless of where the investor is resident. The reducing capital gains would not be of much value, if the residence principle is applied, that means that capital gains are taxed exclusively in the country where the investor resides, regardless of where the wage is generated (Petretto, 2002).

There is a widespread debate about the effects of fiscal policy on a country's economic growth; in particular, this affirmation is even stronger for developing countries. If we ask an economist about the factors that influence a country's economic growth performance, he will for sure mention fiscal policy as one of the main factors that influence it.

The conviction that fiscal pressure, public investment, encouraging investments that generate employment and also other aspects of fiscal policy can contribute to economic growth, to attracting foreign investment, and to pulling a country out of an economic growth situation without development, is articulated in most models of economic growth in recent decades.

Other studies affirm that fiscal policy also affects income inequalities which indirectly generate poverty and emigration.

## **Data**

In the Balkan countries EU integration is seen as the beginning of a new era as it would

generate economic and political stability and foreign direct investment (Muço et al, 2018). Due to the fact that foreign investors choose countries to invest on the basis of high profitability and low costs, the Balkan countries have always tried to pursue more stimulating and competitive fiscal policy for foreign investors.

It is for this reason that in this study we decided to empirically assess the impact of fiscal competitiveness on FDI absorption. Technically, the effects of taxation on FDI can be studied in two ways: using either the cross-section, where Grubert and Mutti (1991) evaluate the effects of tax rate on the distribution of production centers of manufacturing companies in 33 countries to see the adaptability of local tax rate investors; or through a panel of data as in the study of Gropp and Kostal (2000) who analyzed the link between FDI, “corporate taxation” and “corporate tax revenue” at the OECD countries. In this study will also include real economic growth, the same as in Gropp and Kostal’s (2000) study, as it is assumed that higher real economic growth makes FDI more attractive. In this study we have not taken into account the exchange rate since generally in these countries it is very easy to pay in euro even though in some of them the euro is not an official currency.

In our study, we use the panel data analysis, because we alternate historical data for 8 different Balkan countries (Albania, Bulgaria, Bosnia, Croatia, North Macedonia, Romania, Serbia, and Slovenia). We have not included Turkey and Greece since both the historical and the economic situation are very different compared to other Balkan countries. We have also avoided Kosovo and Montenegro as states that are recently created and consequently, the data are only for the last few years. In order to homogenize all the data used in this study, they are obtained from the same source, the World Bank.

To create a balanced panel data set we chose to study the period 2005-2018, because if we try to use earlier data, our sample of states would be significantly reduced for lack of them. Before proceeding with the econometric analysis it is necessary to give a description of the FDI trend. In this model, we prefer to consider only FDI inflows because FDI outflows from the countries considered are relatively low and inconsistent. The FDI trend in the countries we are studying has generally been on the rise. Interestingly is the fact that FDI inflows to countries such as Romania, Bulgaria, Croatia, and Slovenia have increased significantly just before EU membership, and this trend continues to be high even after that.

Another aspect is the fact that for all the countries under analysis there is a reduction in FDI for the period 2008-2010, which coincides with the period of economic and financial crisis. Serbia is the country with the highest decline for the period studied, moving from the \$ 14 billion in 2008 to \$ 6.4 billion in 2010, while North Macedonia is the country with the lowest decline for the same period.

FDI in these countries is also positively correlated with gross fixed capital formation (Muço et al., 2018).

Regarding the fiscal policies pursued by the surveyed countries, we have noticed that most countries outside the EU, which are aspiring to become part of it, have implemented a flat tax, while countries that are already part of the EU have taxes slightly higher, but

nevertheless fiscal pressure is very low compared to developed EU countries.

**Table 1.** Tax rates by country

State	Corp. Inc. tax	Cap. gain tax	Bran. tax	Divid.	Interest	Royalties	Bran. remit. tax
<u>Albania</u>	15%	15%	15%	15%	15%	15%	0%
<u>Bulgaria</u>	10%	10%	10%	0%	5%	10%	0%
<u>Bosnia</u>	10%	10%	10%	5%	10%	10%	0%
<u>Croatia</u>	18%	12%/14%/36%	20%	12%	15%	15%	0%
<u>Kosovo</u>	10%	0%/4%/8%/10%	10%	0%	-	-	0%
<u>Macedonia</u>	10%	10%	10%	10%	10%	10%	0%
<u>Montenegro</u>	9%	9%	9%	9%	9%	9%	0%
<u>Romania</u>	16%	0%/16%	16%	5	16%	16%	0%
<u>Slovenia</u>	19%	17%	19%	15%	15%	15%	-

Source: World tax, 2018

## Empirical analysis

To test the impact of taxes on FDI flows we rely on the fact that both FDI inflows and outflows are influenced by taxes and macroeconomic variables. As the countries we have selected for the study are economically underdeveloped countries, they do not have significant FDI flows.

Based on the studies of Devereux and Freeman (1995); Gropp and Kostal (2000) and Alfano (2003), also in our study we will use FDI as a dependent variable.

In our model, we have preferred to remove lag as they cause a reduction in observations, although, from previous tests done by us, it has been observed that the results do not change much even when using lag.

**Table 2.** The impact of tax and GDP growth in FDI flows

Dep. Var: FDI net inflow % of GDP	Fixet Effects			Random Effects (GLS)		
	Coef.	Stan. Errors	P-value	Coef.	Stan. Errors	P-value
const	-0,184621	0,0712159	0,0110**	-0,162432	0,0659247	0,0137**
Tax revenue in % of GDP	0,15302	0,357808	0,0017***	0,05435	0,326636	0,0012***
Corporate tax rate	-0,284071	0,147428	0,0568*	-0,273197	0,129643	0,0351**
GDP per capita growth	0,289858	0,119436	0,0170**	0,310975	0,114790	0,0067***
Total tax and contribution rate in % of profit	-0,158698	0,0516089	0,0027***	-0,140388	-0,0467824	0,0027***
Observation (groups)	112 (8)			112 (8)		



R-Squared	0,510662	R-Square cor.	0,312576	Sum Sq. Res.	0,16317	St. err. Reg.	0,03887
F-Stat (11, 100)	9.487053	P.Crit	0,0000	Hannan-Quin	-398,16	P.Crit	0,000
Stat. Durbin -Watson		0,928004				0,928004	

\*: 10%, \*\*: 5%, \*\*\*: 1%

Stat F(4, 102) = 11,3677 with p-critic=  $P(F(4, 100) > 11,3677) = 1,20807e-007$  Stat test  $H_{sq} (4) = 46,9243$  with p-critic= $1,58133e-009$ . Breusch-Pagan  $-H_0$ , Var.grad. ind.= 0, Stat test.  $H_{sq} = 34,9716$  with p. crit. =  $3,34547e-009$ , Hausman Test -  $H_0$  Val. GLS is conv. Stat test.  $H_{lsq} = 1,62589$ , p. crit. = 0,804132

In the above model we have choose as dependent variables “FDI net inflow in % of GDP” while as explanatory variables: “tax revenue in % of GDP”, “corporate tax rate”, “real GDP per capita growth” and “total tax and contribution rate in % of profit”, to verify whether foreign investments are affected by fiscal pressure or not, or more precisely whether foreign enterprises choose or not countries with more competitive fiscal systems.

From the model we note that all the independent variables are significant in the FDI flow and the values of the coefficients of the independent variables used are relatively high. “Tax revenues in % of GDP” and “real GDP per capita growth” have a positive impact on the growth of FDI net inflow. The higher the real GDP growth rate, the most likely are foreign companies to invest in that country. This result is in line with the study of Gropp and Kostal (2000).

Moreover, the higher the “tax revenue in % of GDP”, the greater is the FDI net inflow. The independent variables used indicate the share of a country’s output that is collected by the government through taxes. It can be regarded as one measure of the degree to which the government controls the economy’s resources. Thus, the lower the fiscal evasion, the more the economy grows and the more it is considered by foreign investors, the same result as in the studies of Muço and Balliu, 2018; Muço et al., 2018).

Table 2 also shows that the variables “corporate tax rate” and “total tax and contribution rate in % of profit” have a negative impact on the increase of FDI net inflow. So, the higher the corporate tax rate” and “total tax and contribution rate in % of profit”, the more FDI net flow is reduced. Thus tax reduced plays an important role in increasing FDI net inflow. This result is in line with the result obtained in the study of Devereux and Freeman (1995) and Gropp and Kostal (2000).

Taking into consideration the importance of the empirical model as a whole, we can say that comparing the first column with the second one, we find that the coefficients of the variables and their signs are generally the same and consistent, this suggests that the model does not suffer from endogeneity. We also conclude that the model in the complex is robust with F stat, is significant and  $R^2 = 0.3125$ , that means that over 31% of the dependent variables are explained by the independent variables.

Certainly foreign companies do not choose countries only because of fiscal pressure, but above all they choose countries depending on the productivity and total cost per unit produced. We emphasize that the countries selected in this study have relatively low salaries. According to Eurostat data (2016) the average gross salary in Albania is only €

419, while the average gross salary of the countries surveyed is € 773, which is less than 1/3 of the average wage in developed countries such as Italy, France, Germany, etc.

## Conclusions

In this study, we examined the impact of taxation on Foreign Direct Investment (FDI) in the Balkan countries, based on the widely accepted hypothesis that taxation is an essential factor in a country's economic development and influences foreign investors in the localization of their activities.

We examined the effect of taxation using a panel data model, using fixed and random effect, choosing as independent variables: "tax revenue in % of GDP", "corporate tax rate", "real GDP per capita growth" and "total tax and contribution rate in % of profit", to verify whether foreign investment is affected by fiscal pressure or not, or more precisely if foreign enterprises choose countries with a more competitive fiscal system. The empirical analysis confirmed the objective of this study expressed in its title that taxes stimulate FDI localization in a given country. It also confirmed that there is an inverse relationship between FDI and corporate taxation. The lower the corporate tax rate, the more likely companies are to position themselves there, *ceteris paribus*, as the corporate tax rate is certainly not the only determinant of FDI localization.

The empirical analysis also confirmed that "tax revenue in % of GDP" and "GDP real per capita growth" have a positive impact on the growth of FDI net inflow. This fact highlights the role of institutions in increasing FDI inflows in a given country. The lower the tax evasion, the more the economy grows and the more this country is taken into consideration by foreign investors. This conclusion is in line with various empirical studies on the role of institutions and corruption in economic growth.

Another important result of this paper is the fact that the "total tax and contribution rate in % of profit" has a negative impact on the increase in FDI net inflow, which means that the greater the increase in "total tax and contribution rate in % of profit" the more the FDI net flow is reduced. Thus, tax reductions play an important role in increasing FDI net inflow. This result is coherent with the result obtained in the study of Devereux and Freeman (1995) and Gropp and Kostal (2000).

Our study contributes to the debate on the role of fiscal competitiveness in increasing FDI inflows by showing particular attention to the Balkan countries. This contribution is twofold.

Firstly, it is a case study of the impact of taxation at the macro-level and is distinguished from other studies that are focused on the micro-level, or involving only developed countries that are part of the EU, without taking into considerations of both developed and developing countries that aspire to be part of this large family.

Secondly, this study seeks to identify the connection between low levels of taxation and high FDI inflows in Western Balkan countries, which by increasing capital flow, aim to increase employment, consumption, and welfare in order to accelerate the process of EU integration. The political implication of this paper is to stimulate tax reduction, because this will not lead to the reduction of fiscal revenues, but on the contrary, given

the increase in FDI flows, the effects on fiscal revenues would be very positive, as the taxable basis it would be increased.

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# Economic Impact of Institutional Quality on Environmental Performance in Post-Soviet Countries

Shukrillo Abduqayumov\* • Noman Arshed\*\* • Samra Bukhari\*\*\*

**Abstract** Maintaining the balance between economic growth and environmental performance is a new trend of challenges for developing countries. The economic impact of institutional quality on environmental performance is analyzed from 2001 to 2017 using multinational panel data for 15 Post Soviet-Countries. The indicators of institutional quality are government effectiveness and regulatory quality and this research is first of its kind utilizing a comprehensive Environmental Performance Index as an empirical paper for post-Soviet-Countries. This study has utilized an instrumental variable method in Generalized Method of Moments, in order to introduce dynamics and then check for endogeneity. Other controlling factors include GDP per capita, industrial manufacturing, energy efficiency, urbanization, and secondary education. The results indicate that institutional quality have a significant positive impact on environmental performance. It is suggested that the post-Soviet-Countries must ensure better institutions in order to sustain an environment for future generations.

**Keywords:** Panel GMM, Industrialization, Urbanization.

**JEL Classification:** H1, O1, Q5.

## 1. Introduction

It is vitally important for human well-being and economic growth that there is a sustainable management of the environment and natural resources. Sustainable preservation of environment is crucial for economic growth, poverty reduction, and food security. Historically, natural resources are the main source of income and food, and for a government the vital source of revenue. The future prospects of humans,

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Shukrillo Abduqayumov\*, Noman Arshed\*\* (✉), Samra Bukhari\*\*\*

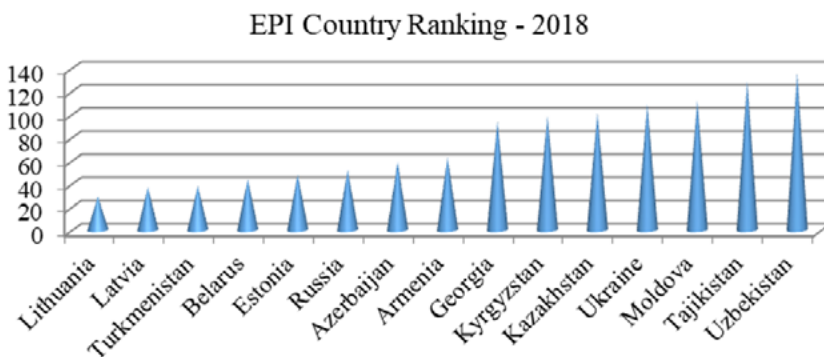
\* MA Economic Governance and Development, OSCE Academy in Bishkek, Kyrgyzstan  
e-mail: s.abduqayumov@osce-academy.net

\*\* Lecturer, Department of Economics, University of Management and Technology, Lahore, Pakistan.  
e-mail: noman.arshed@umt.edu.pk

\*\*\* MS Economics, Department of Economics, University of Management and Technology, Lahore, Pakistan.  
e-mail: sambukhari56@gmail.com

other species and crops depend on an ecosystem. The quality of air, water and soil are the first one in line to be effected by the climate change and extreme weather conditions. Thus, a sustainable ecosystem is necessary for the long run development of every economy. The functionality of these precious natural resources rapidly compromised, and around 60 to 70 % of the global ecosystem is degrading quicker than they actually can recover. However, when our environment and resources are not properly managed can lead to an economic crisis: for example, due to the mismanagement of fisheries from oceans annually, around 80 billion US dollars are wasted. Air pollution is another severe detrimental factor that makes human well beings vulnerable, causes an increased number of untimely deaths, resulting 1 out of 10 deaths globally, and considered a massive loss for welfare and income of the societies (World Bank, 2018). The Energy Policy Institute of the University of Chicago (2015) stated that poor environmental quality for developing countries are not escapable, and poor air quality leads to health issues and decreases lifespans. The health effects of pollution lead to low productivity and increase health costs. Although pollution costs are high, investment in improvements to environmental quality is very low for developing countries. Weak policy design and regulation increase the costs of environmental improvements, for example, when policymakers fail to collect environment tax efficiently, then this process of revenue collection leads to higher costs of environmental quality. NASA (2018) reports that since 1880 the global temperature rose to 1.8 Fahrenheit, Arctic ice minimum decreased to 12.8 percent per decade, sea level rose to 3.2 millimetres per year, and 409 parts per million are the highest carbon dioxide level on air observed for last 650,000 years. Considering the importance of environmental performance and crucial role of government in addressing environmental issues, differences in environmental performance amongst the countries permit a careful study. Thus, there is a need to explore the differences that is why some nations are succeeding as compared to others and why some other nations become failures at regulating water contamination and air pollution, at protecting the environment more effectively. Moreover, for efficient water and energy utilization, we would be in the position to identify the linked elements with the prosperity of the environment as well as its failure. During 1970 the US was a leader in addressing water and air pollution, but afterwards, the US environmental performance declined as suggested by (Esty, 2008; Emerson et al., 2010; Holzinger et al., 2011; Scruggs, 2003).

**Figure 1.** Comparison of EPI country ranking



After introduction, section 2 will discuss the empirical literature relevant to institutes and environment, after this section 3 and 4 will provide the methodological framework and estimation findings. Lastly, section 5 will explore conclusion and policy implications.

## 2. Literature review

There is an increased number of literature covering the relationship of institutional quality and environmental performance. This paper is going to investigate the strength of government effectiveness and regulatory quality as an indicator of institutional quality on environmental performance. One of the earliest empirical paper by King and Borchardt (1994) had found a modest negative association between left wing government and per capita level of air pollution covering 17 OECD countries. Neumayer (2003, 2004) stated that the relationship of left wing government with the pollution level is smaller, hence promotes environmental protection causes. Wen et al. (2016) left-wing governments prefer environmental quality to economic performance, while right-wing governments care more about economic growth than environmental issues.

However, when under pressure for a better economic performance, both left- and right-wing governments tend to forgo environmental goals for higher economic growth. Apergis and Ozturk (2015) stated that higher income increased environmental degradation, and this is in the first stage of development. After first stage, when the certain threshold is reached, the higher income starts to motivate environment friendly procedures. They also found a negative relationship between government effectiveness and regulatory quality with CO<sub>2</sub> emissions. Shahbaz et al. (2014) investigated the relationship between economic growth, electricity consumption, and environmental degradation for the case of United Arab Emirates, they found a negative relationship between economic growth and CO<sub>2</sub> emissions, and positive relationship with urbanization.

Stiglitz (2002) claimed that climate change triggered by the industrialized countries also distresses those living in under developing countries as they are also the major contributor to the global pollution. The variations of the temperature and the emissions level can have severe adverse impacts on the wellbeing of the population as the environmental degradation results in the long term drought. The impacts of CO<sub>2</sub> emissions on developing countries are vitally important because most of it is caused by the industries set by the developed countries.

Over the time period of the past two decades, quite a lot of studies of the associations between economic progress and environmental protection have focused on the sustainability. Centering principally on detailed measures of air and water contamination, these empirical studies found that initially growth intensifies pollution but higher growth brings maturity. This it follows U shaped curve known as EKC (Dasgupta et al., 2001). For this argument variety of literature have emerged. Pinpointing the situation post of materialism Inglehart (1995), an argument arose that as the societies reach a certain level of development and beyond certain point citizens prefer a good quality on the environment and better quality of life. Dasgupta et al. (2006) states that growing capital

expands the society's capability to respond to environmental problems. Developed countries have higher capacity to spend on control of pollution, a tougher legal and governmental infrastructure, and more widespread technical and scientific resources than poor ones. Dasgupta et al. (2005) stated that to take a full response regarding environmental issues of the globalization, one would need serious concentration to the long run governmental sector growth and decision making capacity as well monetary visions. Esty and Porter (2005) showed that there is no evidence of pursuing greener systems slows the economic progress.

Victor (2008) was of the opinion that at the start of modern movements on environmental performance, there was an assumption that the economic growth was the cause for all types of environmental degradation. This stated that growth and technology advancement lead to intensified use of the ecosystem.

Solesbury (1976) studied both left and right parties and stated that when they involuntarily align themselves in environmental or economic growth terms, they have assumed pro-growth visions, somewhat from a strong belief in technology but other from acceptance that economic growth is compulsory to protect social and economic objectives. Bernauer and Koubi (2013) in their paper have found a significant negative relationship between the quality of government and environmental quality. Using government spending as an indicator of governance have led to increase in air pollution.

King and Borhardt (1994) disclosed a modest but sustainable negative relationship between left party strength and per capita levels of air pollution. Konisky et al. (2008) stated that geographic location of the economy matters while enjoying the natural endowments and right wing politicians are known for exploiting such situation leading to depreciation of environment. Bättig and Bernauer (2009) democracies put more effort in the provisioning of global public goods. The study demonstrated that there is a positive effect of voting based system on the environment quality. Neumayer (2003) discovered that parliamentary green left party strength is connected with the lower environment contamination levels. In most regressions, a higher share of fossil fuels is associated with higher per capita contamination levels, whereas more energy efficiency leads to lower contamination levels. The share of manufacturing is constantly assessed with a positive coefficient but is typically statistically insignificant.

Grossman and Krueger (1995) rather they found that while increments in GDP might be related with worsening ecological conditions in exceptionally poor nations, air and water quality seem to profit by economic development once some basic level of wage has been reached. A panel data study by Anwar, Sarwar, Amin and Arshed (2019) compared estimates determinants of environment quality of difference country groups, for all cases it was confirmed that increase in GDP showed significant environment deteriorating effect.

### **3. Methodological framework**

This study includes 15 Post-soviet countries namely, Azerbaijan, Armenia, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian



Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. These countries have similarity environmental conditions as all of them had inherited USSR's industries and infrastructures which are deteriorated enough to contribute to environmental degradation. Further low custom duties between Russia and former USSR states led to increase in the trading of outdated automobiles and machineries, which is a major factor causing pollution in this region.

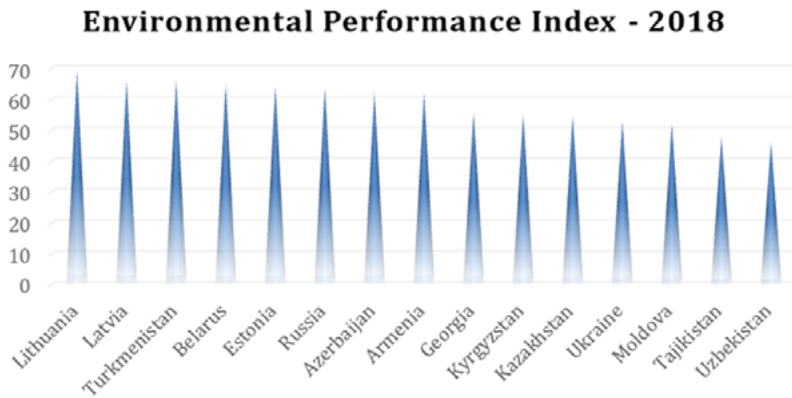
Moreover, developed countries have streamlined environmental legislation which causes the industries to move their production to developing countries with weaker environmental standards, also higher corruption ratios in the region enables the industries to avoid environmental laws using monetary means. Comparing to most of the available literature done on Post-soviet countries that are the main focus of this study is that the institutional quality is comparatively weak, and this is one of the main factors can be considered responsible for environmental degradation. The data time period considered is from 2001 to 2017 and taken from World Development Indicators, Worldwide Governance Indicators and Environmental Performance Index developed by Yale and Columbia University. Total sample constitute to 255 country years.

This study is going to estimate the indicators of institutional quality on environmental performance. The study intends to utilize panel data which is a combination of times series and cross-sections. Studies like (Neumayer, 2003; Garmann, 2014) has used dynamic panel data models (Arellano & Bond, 1991) while studying institutional quality and environmental quality. This approach is better merited than cross-sectional technique as this approach includes a higher number of observations. Accordingly, this approach controls the problem of endogeneity lagged dependent variable in the model, omitted variable biases, unobserved panel heterogeneity, and measurement errors. This technique is more efficient for over identified models as it gives more efficient results.

### ***3.2. Dependent variable***

*Environmental Performance (EP)* – represented by EPI a sophisticated environmental quality indicator evaluation in the region, ranks countries from zero being lowest to 100 being the highest rank. EPI included 180 economies, covering 99% of the global population, 98% of the land, and 97% of global GDP. Ranks how well countries perform on high-priority environmental issues in two broad policy areas: protection of human health from environmental harm and the protection of ecosystems. Within these two policy objectives, scores the country's performance in nine issue areas comprised of 20 indicators. The indicators measure how close countries are to meeting internationally established targets or, in the absence of agreed-upon targets, how they compare to the range of observed countries (EPI, 2018).

In figure 2, the result of Environmental Performance Index for 2018 is displayed for 15 former Soviet countries. The EPI is the combination of Environmental Health and Ecosystem Vitality Indices, and higher ranking shows better performance.

**Figure 2.** Country wise Environmental Performance index

### 3.3. Independent variables

*Government effectiveness (GE)* – According to World Bank’s WGI (2018) “Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies. The estimate gives the country’s score on the aggregate indicator, in units of standard normal distribution, i.e. ranging from approximately -2.5 to 2.5, and the higher score the better”.

As we have mentioned earlier that ‘GE’ is our primary determinant of institutional quality, available literature suggests that for the case of developing countries government effectiveness have mixed effect. Apergis and Ozturk (2015) states that the government effectiveness in Asian countries leads to reduction in CO<sub>2</sub> emissions. But over restrictive regulations might also lead to increase in CO<sub>2</sub> emissions.

*Regulatory quality (RQ)* – is another main explanatory variable in this study and one of the six indicators of Worldwide Governance Indicators. “Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. The measurement ranges from -2.5 to 2.5 and the higher the result the better” (World Bank, 2018). Apergis and Ozturk (2015) found that for the case of Asia countries regulatory quality leads to a reduction of CO<sub>2</sub> emissions.

Choosing government effectiveness and regulatory quality out of six indicators of WGI are essential for determining environmental performance and comparing to other four indicators these two indicators are more suitable in investigating determinants of environmental performance. Government effectiveness measures the commitments of government in policy implementations, the quality of the public and civil services. On the other hand, regulatory quality measures the commitment of the government in implementing effective policies in order to promote the development of private sectors.

*GDP Per Capita (LGDP)* - is the natural log of GDP per capita, and the reason we include this variable is due to the close relationship of economic growth and

environmental performance. This variable indicates the stability of financial resources of the country. Also, the Environmental Kuznets Curve (EKC) explains this relationship, and according to EKC hypothesis countries when experiencing economic growth will face environmental degradation at the first stage of their economic growth. When they shift from the green agrarian economy into industrialization the environmental quality decreases. According to Bacot and Dawes (1997) countries with financial resources can better afford to spend on environmental protections.

*Industrial manufacturing* (LInd) – the natural log of the share of manufacturing production in GDP. In any country the structures and operations of industries have direct link with environmental quality, as they cause pollution in the country. Cole et al. (2005) industrial productivity has negative associations with environmental pollution. The hypothesis of environmental Kuznets curve suggests that as country's technological advancement is in the rise it leads to higher income and this leads to environmental degradations. Neumayer (2003) have found positive but insignificant relationship between industrial manufacturing and environmental quality.

*Energy Efficiency* (LEff) – natural log of energy intensity level of primary energy, measured as a ratio between energy supply and GDP at PPP. Energy efficiency indicates better use of energy but its impact can be two-sided. It may encourage more energy consumptions leading to environmental degradation and may lead to efficient and effective use of energy which decreases environmental degradation (Hanley et al. 2006).

*Urbanization* (LUrb) – natural log of urban population, measured in terms of share of urban population into total population. The literatures suggest that urban population effects environmental quality both negatively and positively thus, it has a mixed effect on environmental quality. Dasgupta et al. (2005) suggest that urbanization leads to better environmental quality.

*Secondary education* (LSecEdu) – is the natural log of secondary enrollment school. This is important because number of educated people will contribute to environmental and effective good governance. That is why more educated people will take care of the environmental quality and will cause the government to react to environmental protections (Liu et al., 2014)

### 3.4. Estimation model

This study is going to estimate following two models, whereby first model will use government effectiveness and second model will use regulatory quality.

$$EPI_{it} = \alpha_0 + \alpha_1 GE_{it} + \alpha_2 LGDP_{it} + \alpha_3 LInd_{it} + \alpha_4 LEff_{it} + \alpha_5 LUrb_{it} + \alpha_6 LSecEdu_{it} + \mu_{it}$$

$$EPI_{it} = \beta_0 + \beta_1 RQ_{it} + \beta_2 LGDP_{it} + \beta_3 LInd_{it} + \beta_4 LEff_{it} + \beta_5 LUrb_{it} + \beta_6 LSecEdu_{it} + \epsilon_{it}$$

Where  $i$  is the number of years between 2001 and 2017,  $t$  is the number of 15 Post-soviet countries,  $\mu_{it}$  and  $\epsilon_{it}$  is the error term.

**Table 1.** Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Source
EPI	249	0.59	0.12	0.31	0.88	EPI (2017)
GE	255	-0.34	0.72	-1.64	1.19	WGI (2017)
RQ	255	-0.27	0.96	-2.13	1.70	WGI (2017)
LGDP	255	8.24	0.98	6.10	9.85	WDI (2017)
LInd	252	3.36	0.31	2.81	4.20	WDI (2017)
LEff	225	2.15	0.50	1.21	3.52	WDI (2017)
LUrb	255	15.26	1.28	13.71	18.49	WDI (2017)
LSecEdu	186	13.53	1.33	11.26	16.49	WDI (2017)

Table 1 shows the results of descriptive statistics of EP, LGDP, LInd, LEff, LUrb, and LSecEdu which have a mean values greater than their standard deviation values which show all these explanatory variables are under-dispersed. These variables are closely scattered around their mean value. While the results of GE and RQ show mean values of negative and smaller than their standard deviations. Thus, government effectiveness, and regulatory quality are below average and over-dispersed. This over-dispersion indicates that series are heterogeneous across countries. Further table 2 reports the VIF statistics of the independent variables in the model. It can be seen here that none of the independent variables have VIF value > 10 indicating that there is no hint of multicollinearity (Gujarati, 2004)

**Table 2.** VIF statistics

	GE	RQ	LGDPpC	LIndustry	LEfficiency	LUrban
RQE	7.579					
LGDPpC	1.547	1.354				
LIndustry	1.000	1.014	1.066			
LEfficiency	1.226	1.292	1.226	1.006		
LUrban	1.074	1.155	1.008	1.158	1.368	
LSecEdu	1.265	1.428	1.048	1.136	1.649	7.043

#### 4. Estimations and results

Following section provides the estimation results based on the equations and estimation approach discussed earlier.

**Table 3.** Estimation Results

VARIABLES	GMM	GMM
GE	0.04*** (0.01)	

<b>RQ</b>		0.04*** (0.01)
<b>LGDPpC</b>	-0.02* (0.01)	-0.02* (0.01)
<b>LIndustry</b>	0.03 (0.04)	0.04 (0.04)
<b>LEfficiency</b>	-0.11*** (0.03)	-0.10*** (0.03)
<b>LUrban</b>	0.07*** (0.02)	0.06** (0.02)
<b>LSecEdu</b>	-0.05* (0.03)	-0.04 (0.03)
<b>Observations</b>	170	170
<b>R-squared</b>	0.25	0.27
<b>Number of Country</b>	14	14

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Source: Worked out from Stata software package

Table 3 provides the 2 step GMM estimates of the model. We can see that GE is significant at 1%, and if GE increases by 1% will increase EP by 0.04% which is supported by previous studies for example King and Borchardt (1994), and Wen et al. (2016). LGDPpC is significant at 10% and if it increases by 1% will decrease EP by 0.02%. This is supported by the statement of EKC that at the initial stages of development, economic growth leads to environmental degradation, Dasgupta et al. (2002), Victor (2008), Shahbaz et al. (2014) and Anwar et al., (2019) conclude the same results.

The coefficient of LIndustry is insignificant, this result is supported by other empirical papers, for example, Neumayer (2003). LEfficiency is significant and 1% increase in LEfficiency will decrease EP by 0.11%, this result follow the Hanley et al. (2006). This happens when industries are efficient in their productivity as they produce more and consume higher energy which leads to increase of environmental degradation this is possible because of the fact that the industries are using old technology purchased from Russia. LUrban is significant and 1% increase in LUrban will increase EP by 0.07% supported by Dasgupta et al. (2005). And also LSecEdu found to be significant at 1%, and if there is an increase in LSecEdu will decrease EP by 0.05%, this study conclude the opposite of Liu et al., (2014), this is in the case when educated people start working on industries while shifting from agrarian economy to industrial economy this process transforms the agricultural lands towards commercial or industrial zones, which leads to an increase of environmental degradation.

In the RQ model, we can see that the results for RQ is significant at 1%, and if RQ increases by 1% will increase EP by 0.04% which supports the study hypothesis about institutional quality and also supported by previous studies for example Varoudakis et

al. (2007), and *Apergis and Ozturk* (2015). LGDPpC is significant and if it increases by 1% will decrease EP by 0.02%, Grossman and Krueger (1995) and Anwar et al. (2019) study support the same result. This is supported by the statement of EKC that at the initial stage of development, economic growth with immature institutes, leads to environmental degradation. The coefficient of LIndustry is insignificant. LEfficiency is significant and 1% increase in LEfficiency will decrease EP by 0.10%, same conclude the Hanley et al. (2006). This happens when industries are at their maximum productivity and consuming energy at maximum level, and this leads to increase of environmental degradation. LUrban is significant and 1% increase in LUrban will increase EP by 6% supported by Shahbaz et al., (2014). And LSecEdu found to be insignificant which fails to reach study hypothesis about secondary education impact on EP.

## 5. Conclusion

This research paper has investigated the relationship between institutional quality and environmental performance by using multinational panel data for 15 Post-Soviet countries. The paper's investigation was for the time period between 2001 to 2017, and defined institutional quality with government effectiveness and regulatory quality, the indicators of WGI. The environmental performance is represented with Environmental Performance Index the broad environmental comprehensive indicator was used for the first time as an empirical paper in this region. We used instrumental variable in Generalized Method of Moments in order to introduce dynamics in the model and then capture the problem of endogeneity. We have incorporated other controlling variables like industrial manufacturing, energy efficiency, urbanization, and secondary education for 15 post-soviet countries.

Overall, we found that the indicators of institutional quality have strong relationship with environmental quality. When there is an increase in government effectiveness and regulatory quality the environmental performance rises by 0.04 percent for both cases. Further increase in GDP per capita, energy efficiency, and education leads to depreciation of environment and urbanization increases the environmental performance.

### 5.1. Policy implication

During this study from our estimation results we have confirmed that our main explanatory variables have strong relationship with environmental performance. The government effectiveness and regulatory quality have vital role for environmental better performance. As we have reviewed in paper that comparing to developed countries post-soviet countries ranked lower for institutional quality, as they are developing and industrialization taking place and economic growth is happening, and for this reason there is need to improve government effectiveness and regulator quality.

Our findings show that economic growth (LGDPpC) is inversely related to environmental performance, and it is logical because when countries start developing their main focus will be economic prosperity and then environmental performance. This economic prosperity degrades environment during initial stage as suggested by

EKC then eventually start positive contribution in environmental quality. Hence further investigation is required for these countries in order to identify the growth threshold for the sustainable environment.

According to paper we reviewed the results of energy efficiency is supported by our hypothesis. The energy efficiency decreases environmental performance as industrial productivity rises more energy is consumed, and environmental degradation increased. Hence policy makers must ensure the fact that the new and existing industries must expand their utilization of renewable energy.

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## The Right to Strike in Post-Soviet Countries Reflections on the Impact of International Labour Law

Elena Sychenko\* • Elena Volk\*\*

**Abstract** The article is devoted to the problems of realization of the right to strike in Belarus and Russia. The article considers the conception of strike in Russia and Belarus. The strike procedure is analyzed in detail. The authors have revealed a number of problems in the organization of the strike: in holding the strike in a structural division of the organization, in making a decision on holding the strike, in notifying the employer of the planned strike, in suspending the strike, etc.

It is rather difficult for employees to exercise the right to strike and after the collapse of the USSR, there has been no legitimate strikes in the independent Republic of Belarus. The article provides statistical data. The article analyzes the compliance of the national legislation of Belarus and Russia with international standards. The authors estimate the influence of international organizations on the change of labour legislation in Russia and Belarus. The judicial practice on cases of recognition of strikes as illegal is considered. The practice of the European Court of Human Rights is analyzed.

The authors consider if the right to strike can indeed be protected in Russia and Belarus through bringing claims to international human rights bodies and through the help of ILO.

**Keywords:** the strike, right to strike, strike procedure, unlawful strike, international standards.

**JEL Classification:** J81, J83, K32.

Certain post-soviet countries where the influence of Russia is traditionally strong and which tend to cooperate with one another building new players on the international stage such as Eurasian Economic Community have much in common in their systems of industrial relations. The purpose of this paper is to analyse the main traits of the regulation of the right to strike in Russia and Belarus, the cases on illegal strikes considered by national courts during last years, if any.

The economic and political reforms of the 90s brought a lot of challenges to the Russian and Belarusian labour law which, preserving in the beginning much legacy of

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Elena Sychenko \*, Elena Volk\*\* (✉)

\*Associate Professor, PhD, Saint Petersburg State University, Russia

e-mail: e.sychenko@mail.ru

\*\*Professor, PhD, Higher Educational Establishment of the Federation of Trade Unions of Belarus

“International University “MITSO” Minsk, Republic of Belarus

e-mail: elena.a.volk@mail.ru

Soviet norms, was unable to ensure the due dynamics of labour relations in the market economy. The process of excluding excessive employees' protection and promoting social dialogue started already in the 90-s and still goes on.

## **1. Russian provisions on the right to strike and their implementation**

Article 37 of the Russian Constitution proclaims the right to strike between other basic labour rights. The norms of the Russian Labour Code provide regulation of the right to strike. The provisions have been amended a number of times, but the most important changes were made in 2006 and then in 2011, both times acting on recommendations made by the Committee on Freedom of Association of the International Labour Organization (Cases No. 2216 and 2251) and approved a number of recommendations submitted to the Russian government.<sup>1</sup> However it important to note at the outset that in spite of those amendments a number of particularly important ILO concerns remained unanswered.<sup>2</sup>

### ***1.1 Definition of a strike***

The Russian Labour Code defines the strike as worker's temporary and voluntary refusal of a worker to fulfill their work duties, (entirely or in part) with the intention being the settlement of a collective labour dispute (Article 398). Thus it strictly links a strike with the existence of the collective labour dispute, representing a very narrow perception of this right. According to the ILO Freedom of Association Committee such interpretation is not in line with the ILO Conventions N 87, 98.<sup>3</sup>

The notion of the collective labour disputes is provided in the same article: "Unresolved disagreements between workers (or their representatives) and employers (or their representatives) concerning the establishment and changing of working conditions (including wages), the making, changing, and fulfilment of collective negotiations agreements and other agreements, and also disagreements concerning an employer's refusal to consider the opinion of an elected workers' representative body in adopting local normative acts".

According to article 410 of Labour Code a decision on declaring a strike shall be taken by a meeting (conference) of employees of an organisation (branch, representative office or another detached structural unit) or individual entrepreneur of the proposal of the representative body of employees which has been earlier empowered by the employees to resolve a collective labour dispute. The meeting of the employees of this employer is deemed competent if attended by at least half of the total number of the

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<sup>1</sup> Gerasimova E., The resolution of collective labour disputes and the realization of the right to strike in Russia. In: Vladimir Lebedev and Elena Radevich editors. 'Labour Law in Russia: Recent Developments and New Challenges', Issue 6. Newcastle upon Tyne: Cambridge Scholars Publishing, 2014, pp. 260-261.

<sup>2</sup> Liutov N., Russian labour legislation and international labour standards: compliance and prospects for improvement. Moscow, 2012, pp. 192-200.

<sup>3</sup> Freedom of Association Digest of decisions and principles of the Freedom of Association Committee of the Governing Body of the ILO. Para. 531, p. 111.

employees. The conference of the employees of this employer is deemed competent if attended by at least two thirds of conference delegates.

Thus the strike is possible only in case of passing all the stages of collective dispute resolution. According to the experts' calculations, the duration of all mandatory preliminary procedures is at least 42 days.<sup>4</sup>

These norms create a number of problems in practise: firstly they mean that no strike at occupational or professional level may be possible, as we can hardly imagine the organization where the half of employees represent the same profession, and the strike will be illegal if supported by the less quantity of employees. ILO Committee on Freedom of Association was concerned with the lack of possibility of collective bargaining at occupational or professional level both in law and in practice<sup>5</sup> the same concern arises in respect of realization of the right to strike on these levels.

The second problem that arises from this formulation of the quorum requirements is the lack of definition of what is deemed under "another structural unit" where the strike may be declared as well.

The legislation does not define this notion and thus leaves much ambiguity in realization of the right to strike on this level. It was up to the courts to establish the criteria for the determination of structural units judging cases where the employer claimed that the strike was illegal as it was declared not in a structural unit of the company but in another kind of a unit.

The research of relevant case law is disappointing. The Supreme Court stated that the structural division should obtain such "a degree of autonomy that ensures that its activity is autonomous from the main organization and which, in the event of a strike by the employees of such a division, would ensure the continuation of the activity of the entire organization".<sup>6</sup> This approach of the Supreme Court demonstrates that the narrow interpretation of the "structural division" serves the aim of restricting strikes for the majority of workers. The case law of lower courts have caught the message of the Supreme court in a very particular manner, requiring almost impossible level of autonomy from the unit in order to establish that it is a structural unit to permit the declaration of strike on a meeting of its workers. Thus the strike organized in the unit producing the spare parts for production held in one private limited liability company was found illegal by court as this unit was not really detached from the main production facility, was located on the territory of the company location, along with other divisions and services it was included in the general production activity.<sup>7</sup> The orchestra of the theatre was also considered as a non-structural unit: the workers referred to the workers referred to the autonomy of its work, the existence of an independent regime and work schedule, the special nature of remuneration, the possibility of the theatre to perform

<sup>4</sup> Kozina I., The labour movement in Russia: the anatomy of strikes. In *Journal of Social Policy Studies*, 2009, 7/4.

<sup>5</sup> 332nd Report of the Committee on Freedom of Association, 288th Session Governing Body Geneva, November 2003. Available at: [www.ilo.org/public/english/standards/realm/gb/docs/gb288/pdf/gb-7.pdf](http://www.ilo.org/public/english/standards/realm/gb/docs/gb288/pdf/gb-7.pdf)

<sup>6</sup> Ruling of the Supreme Court of the Russian Federation, 18 July 2008 No. 45-Г08-12.

<sup>7</sup> Case number 3-140 / 2015 decision of the Perm Regional Court August 26, 2015

without the participation of the orchestra using phonograms. The Court found that the orchestra cannot be recognized as a separate structural division of the opera and ballet theatre, since it is an integral organic part of its overall activities.<sup>8</sup>

These cases demonstrate that the notion of structural unit in spite of some criteria established by the Supreme Court in several cases still remains to be vague. Russian scholars note that it does not help groups of employees to fully understand whether or not they can legitimately start a collective labour dispute.<sup>9</sup>

I think that the lack of clarity in this case might amount to the unjustifiable interference with the freedom of association (article 11 of the European Convention on Human Rights) if as a result of interpretation the strike organized in a unit was declared illegal. According to a well-elaborated case law of the European Court of Human Rights (ECtHR) the consideration of such claims consists of several steps: the ECtHR considered whether there have been an interference, then analyses if it was in accordance with law, pursued legitimate aims, was necessary in the democratic society and proportionate to the pursued goals.<sup>10</sup> The ECtHR general quality requirement to the law permitting interference with human rights, they are: precision, certainty, and foreseeability.<sup>11</sup> In my opinion the provisions of Russian law considered above do not correspond to all these criteria.

Once the decision on strike is adopted according to the norms of Labour Code the workers have to notify the employer of a forthcoming strike in writing at least ten calendar days in advance. The following shall be available in a decision on declaration of a strike: a list of disagreements of the parties to the collective labour dispute that are deemed grounds for the declaration and conduct of the strike; the date and time of beginning of the strike, would-be number of participants (notably, the strike shall not be started after the expiry of two months after the decision on declaration of the strike); the name of the body that leads the strike, the composition of the representatives of employees who are empowered to take part in conciliatory proceedings; proposals for the minimum necessary works (services) to be performed during the period of the strike by employees of the organisation (branch, representative office or other detached structural unit) or the individual entrepreneur.

All these points are very important as the violation of one of them would lead to the finding of illegality of such a strike. According to the article 413 of the Labour Code the strike shall be unlawful if it was declared in disregard of the time limits, procedures, and requirements stipulated in the Code. A workers' representative body that announced the strike and failed to halt it after it has been declared unlawful should compensate the employer for losses caused by the unlawful strike.

<sup>8</sup> Decision of the Chamber of Civil Cases of the Supreme Court of the Russian Federation of 01.12.2006 in case No. 48-G06-20

<sup>9</sup> Gerasimova E., The resolution of collective labour disputes and the realization of the right to strike in Russia. In: Lebedev V., Radevich E. (ed). 'Labour Law in Russia: Recent Developments and New Challenges', Issue 6. Newcastle upon Tyne: Cambridge Scholars Publishing, 2014, p. 269.

<sup>10</sup> For example: ECtHR, National Union Of Rail, Maritime And Transport Workers v. The United Kingdom (31045/10) 08/04/2014

<sup>11</sup> ECtHR, Malone v. The United Kingdom (8691/79) 02/08/1984.

The review of the relevant case law revealed the following reasons for finding the strike illegal:

- The decision on strike was adopted on the last day of the period when the employer had to answer workers' claims;<sup>12</sup>
- The workers missed the stage of consideration of their collective labour dispute by labour arbitration;<sup>13</sup>
- The document adopted on the meeting where the strike was declared did not contain the date of the conference, the signature of the responsible person who compiled and filled this list;<sup>14</sup>
- The reason for strike was not linked with the collective labour dispute: in one case workers went on strike to oppose the appointment of a specific person as the director<sup>15</sup>, in another – to make the employer pay the salary arrears.<sup>16</sup>

This overview illustrates a very important finding: Russian courts do not assess the seriousness of procedural violations, perceiving even minor ones as in the case of making a decision on strike one day before the permitted time was about to start. This approach of the court is comprehensible as the norms of Labour Code stipulate that strike organized with violations should be declared illegal and it reflects the dominant attitude of authorities on this point.

Another problem arising in the realization of the right to strike is the dominance of traditional trade-unions which take roots in the soviet era which are now united under the Federation of Independent Trade Unions (FNPR). This Federation supported the draft of the Labour Code passed in 2001, which largely deprived the alternative trade unions of legal protection, bargaining rights and the right to strike.<sup>17</sup> The trade-unions of this Federation are traditionally supported by the employers and the authorities, their loyalty also expresses, as a rule, in non-resorting to strike actions. This concept of somehow “cut” legal capacity of traditional unions contributed, as some scholars note, to their transformation into a resource of the administration, which uses it for effective personnel management.<sup>18</sup>

Western researchers point that the dominance of such trade unions (they unite about 23 mln workers<sup>19</sup>) is due to the soviet legacy which determine the degree of unevenness in the playing field and the size of the gap that competing unions must close in order to overtake legacy unions.<sup>20</sup> It should be also noted that the dominant position might be

<sup>12</sup> Decision of Novosibirsk Regional Court, October 5, 2015. Case No. 3-139/ 2015.

<sup>13</sup> Decision of Khabarovsk Regional Court, May 24, 2012 in case No. 3-75 / 2012

<sup>14</sup> Decision of Irkutsk Regional Court, 15 November 2011

<sup>15</sup> Decision of Perm Regional Court, October 19, 2011, case №3-178-2011.

<sup>16</sup> Decision of Krasnoyarsk Regional Court, May 4, 2011.

<sup>17</sup> Clarke S., Pringle T. *Labour activism and the reform of trade unions in Russia, China and Vietnam*. In *NGPA Labour Workshop*. Vol. 10. 2007.

<sup>18</sup> Kozina I. The labour movement in Russia: the anatomy of strikes. In *Journal of Social Policy Studies*, 2009, 7/4.

<sup>19</sup> Resolution of the Executive Committee of the FNPR of 05.04.2011, № 2-11, <http://www.fnpr.ru/n/2/15/187/6378.html> (accessed 20.04.2018)

<sup>20</sup> Caraway TL., *Pathways Of Dominance And Displacement: The Varying Fates of Legacy Unions*

also explained by the fact that numerous institutions, which belonged to trade unions in the Soviet era were transmitted to them. This property included not only offices but also print houses, banks, cultural institutions, resorts, and hotels, with an estimated value of \$6 billion and annual income of \$300 million a year<sup>21</sup>. The FNPR's comparatively favorable political alliances contributed to its ability to retain many of its assets<sup>22</sup>.

### *1.2 Reflections on the statistics of strikes and relevant case law*

In the following table I've gathered information on the quantity of official strikes provided by the Rosstat, the information of the stop-actions organized by workers gathered by the NGO "Centre for social and labour rights" and the judicial statistics of applications for the declaration of strike as illegal brought by employers in Russian courts in the recent years.

Year	Official statistics on strikes <sup>1</sup>	Non-official data of stop-actions <sup>2</sup>	Applications for the declaration of strike as illegal brought before the courts. <sup>3</sup> Number of dismissed applications/ number of satisfied
2005	2575	-	-
2010	-----	88	10/24
2012	6	95	8/19
2014	2	97	0/10
2015	5	168	-
2016	3	158	-

<sup>1</sup> Russia in Numbers. 2017: Rosstat. Moscow, 2017, P76.

<sup>2</sup> Bizyukov P., Analytical report on the results of monitoring of labour protests of the Center for social and labour rights. <http://trudprava.ru/expert/analytics/protestanalyt/2015> (accessed 20.04.2019).

<sup>3</sup> Cited from Gerasimova E. Collective labour disputes, strikes and protests in Russia: the impact of legislation and law enforcement practice on their prevalence and application. In *Journal of Russian Law*, 2016, 9, p. 237.

These data demonstrates the reference to the strike as an almost "mission impossible" for the trade union was not an exaggeration. It also illustrates great tension between the labour and the capital which takes illegal form of protests as the legal way remains closed for a number of reasons discussed above.

Another and perhaps the most important conclusion is the negative attitude of the authorities to the realization of the right to strike. Russian scholars are used to cite in this context the words of Vladimir Putin once said: "Those who will sit on rails will sit"<sup>23</sup>. In Russian the verb "sit" is also used to describe imprisonment.

*in New Democracies. In World Politics, 2012, Vol. 64, No. 2, pp. 278-305.*

<sup>21</sup> Ibid, 282

<sup>22</sup> Ibid, 299t

<sup>23</sup> Kosina I., Workers protest. <https://iq.hse.ru/news/177676301.html>. Accessed 20 April 2019.

The words “In the Urals, there were police training to suppress the strike of workers who according to legend were not paid salaries for several months” were heard in the live broadcast news. In my opinion these news report is a sign of a new era in the state’s hostility to strikes. A number of other facts may be referred to support this argument: The recent dissolution of the Interregional Trade Union Workers’ Association (ITUWA) for their alleged involvement in political activities and international work.<sup>24</sup> The point was that the trade union were considered by the prosecutor to be a “foreign agent” as it received some financial support from abroad and lead political activities. It should be noted that it is one of the most potent “alternatives” unions in Russia organized by the famous for its strikes trade union of the Ford Motor Company in Vsevolozhsk.

The Court in Saint Petersburg satisfied the application of the prosecutor and considered as political activities the following:

- the publications posted on the website of the MPRA and in the social network Vkontakte in support of protests of truck drivers
- materials published in support of the campaign to amend the provisions of Russian Labour Code regulating indexation of wages
- critical publications about the public policy on import substitution, launched as a response to the sanctions.<sup>25</sup>

Even though the Russian Supreme Court overruled this decision and considered that the dissolution was a disproportionate sanction for the revealed violations<sup>26</sup> this case is very alarming. Other examples of the same kind include the criminal persecution of trade union leaders, the declaration as extremist materials and the prohibition of the use of trade unions’ leaflets with the slogans “Against precarious employment”, “Let those who created the crisis pay for it”, and the address” Comrades workers!”<sup>27</sup>

Considering these provisions and the relevant case law four main problems can be summed up:

1. The strike is possible only in case of passing all the stages of collective dispute resolution. According to the experts’ calculations, the duration of all mandatory preliminary procedures is at least 42 days.<sup>28</sup>
2. The vague formulation of the quorum requirements
3. Any procedural violation leads to the finding of illegality of such a strike.
4. Legal strike is an almost “mission impossible” for the trade union.
5. Negative attitude of the authorities to the realization of the right to strike.

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<sup>24</sup> See, for example, <http://www.industrialunion.org/international-and-russian-trade-union-movement-opposes-the-dissolution-of-ituwa>. Accessed 20 April 2019.

<sup>25</sup> Liquidation of the trade union MPRA - legal conclusion of the Centre for social and labour rights. <http://trudprava.ru/expert/analytics/unionanalyt/1986>. Accessed 20 April 2019.

<sup>26</sup> Decision of the Supreme Court of the Russian Federation of May 22, 2018, case No. 78-APG18-8.

<sup>27</sup> Lyutov N., The effectiveness of international labour law. Monograph. Prospect, Moscow, 2013, pp. 199-200.

<sup>28</sup> Kozina I., The labour movement in Russia: the anatomy of strikes. *Journal of Social Policy Studies*, 2009, 7/4.

## **2. Belarusian provisions on the right to strike and their implementation**

In Belarus, the right to strike is enshrined in the Constitution and the Labour Code. Article 41 of the Constitution of the Republic of Belarus sets out the right to protect one's economic and social interests, to join trade unions, including the rights to conclude collective agreements and go on strike. However, it is rather difficult for employees to exercise the right to strike and after the collapse of the USSR, there has been no legitimate strikes in the independent Republic of Belarus.

The largest trade union organization is the Federation of Trade Unions of Belarus, which unites 96.5% of the economically active population of the country (more than 4 million people), in the current period does not actually use strikes to resolve disputes. Also in Belarus there are trade unions that are not part of the Federation of Trade Unions of Belarus. They are called independent trade unions. The Association of Trade Unions "Belarusian Congress of Democratic Trade Unions" operates in Belarus, and unites four independent trade unions.

Up until today, only independent trade unions have attempted to strike. There is no systematic information about the number of strikes and their results in the publicly available media.

### ***2.1. The definition and the procedure for calling a strike***

The legislation of Belarus establishes a strict procedure for organization and conduction of a strike. As in Russia, the strike is recognized as a means to resolve collective labour disputes. This arises from the definition of a strike, enshrined in Art. 388 of the Labour Code of Belarus. Accordingly, the launching of strikes for public purposes (strikes of solidarity, strikes for the recognition of professional unions, etc.) is prohibited. In Russia, workers may resort to a preventive strike. But in Belarus, such a strike is not possible. The law may impose restrictions on the enjoyment of the right to strike to an extent necessary for maintenance national security, public order, public health, the rights and freedoms of others. For example, the prohibition to participate in a strike is set for civil servants; civil aviation personnel providing air traffic and flight control; employees working in the sphere of public transportation and performing passengers transfer on regular basis; military personnel; workers who serve in the bodies and units for emergency situations.

In Belarus, unlike Russia, strike must be held no later than within three months after failure to settle collective labour dispute in the conciliation commission, with the participation of a intermediary or in labour arbitration. A strike can be held only after all conciliation procedures to resolve a collective labour dispute has been exerted.

First of all, if disagreements arise between the parties to collective labour relations, then the requirements of the employer are stated at a meeting or a conference of employees. These requirements are sent in writing to the employer. The employer must consider the demands of the workers and, no later than within ten days upon receiving, notify in writing the representative body of the employees about the decision.

If the employer refuses to satisfy all or part of the workers' demands or fails to notify



about his decision, a conciliation commission is formed. Appeal to the conciliation commission is a mandatory stage of consideration of a collective labour dispute. Further, the parties have the right to resolve a collective labour dispute with the participation of an intermediary or in arbitration, but these stages is not mandatory.

Accordingly, a strike can be held only after the failure to reach agreement between the parties to a collective labour dispute in the conciliation commission, as well as the failure to reach an agreement with the participation of a mediator or in labour arbitration, in case the parties agreed to resort to the last two methods.

***To declare the strike the trade union has to come through the following procedure.***

#### **A. The decision making**

The decision to hold a strike can be taken at a meeting or conference of workers. If in Russia the decision to gather a strike can be made by a meeting of employees of a separate structural unit, in Belarus the decision is made only by employees of the entire organization. In the Labour Code of Belarus it is established that the meeting is considered valid if more than half of the employees are present. The conference is considered valid if at least two thirds of the delegates are present.

Belarus has the highest decision-making threshold among the member states of The Eurasian Economic Union. The decision is considered adopted if at least two thirds of the present employees (conference delegates) voted for it.

#### **B. Notice to the employer**

The representative body of workers is obliged to notify the employer in writing about the decision to go on strike. It should be noted that the trade union is the only representative body of workers in Belarus. Notification must be made no later than two weeks before the strike. Belarus has a longer notification period for the start of a strike; in Russia and Kazakhstan, this period is 5 working days. For a strike declared by a trade union or trade union association, Russian legislation has a notification period of 7 working days. The content of the strike notice in Belarus is the same as in Russia. The difference is that the strike notice must specify the duration of the strike.

#### **C. Determining the minimum required work**

The Labour Code of Belarus establishes that the minimum required work is determined in a collective agreement. However, most collective agreements do not contain these norms. Therefore, the minimum required work is determined by agreement of the parties to a collective labour dispute within five days from the date of the decision to hold a strike. If the parties are unable to reach an agreement, then the local executive and administrative body establishes the minimum required work before the strike.

#### **D. Striking**

Parties to a collective labour dispute are required to take the necessary measures to ensure the rule of law in the organization during the strike, the preservation of state and private property, public order, and the fulfillment of the minimum required work.

During the strike, the parties are obliged to continue resolving the collective labour dispute through negotiation.

### **E. Recognition of the strike as illegal**

A strike or a decision to hold it can be declared illegal by a decision of the regional (Minsk City) court, if the strike is carried out or the decision to hold it was made in violation of the requirements of the Labour Code of Belarus and other laws. Belarus has set deadlines for the submission by the employer of an application to declare strikes or decisions to hold it illegal.

A court decision recognizing a strike as illegal, which has entered into legal force, is subject to immediate implementation. Employees must stop the strike and start to work. In 2017, employees of one of the industrial enterprises attempted to hold a strike.<sup>29</sup> An independent trade union, acting in this organization on equal rights as the official trade union, tried to strike. The union put forward the requirement to establish a decent wage, and equally applies to workers, regardless of whether they are in a free trade union or not. The strike was supposed to last from November 1 to December 31. The company's executives appealed to the regional court, which declared the strike illegal. The court came up with a number of reasons for declaring the strike illegal:

- the lack of documents on the holding of a conference of workers at which the decision about the strike was made and the absence of a list of members of the independent trade union. The workers' representatives explained that workers who are members of an independent trade union do not disclose their membership because they are afraid to be dismissed;
- the notice of the strike does not contain the information about the estimated number of workers who will take part in the strikes; the minimum required work is not defined.<sup>30</sup>

### ***Postponement and suspension of a strike***

A strike that has not been started may be postponed, and a strike that has been launched may be suspended. In Russia, the court is entitled to postpone or suspend a strike, in exceptional cases such a decision can be made by the Government, but only until the matter is resolved by the relevant court, in Kazakhstan for instance such a right is given to the court or the prosecutor. In Belarus, only the President of the Republic of Belarus has this right.

There are various grounds to postpone or suspend a strike. In Belarus, they include: the creation of a real threat to national security, public order, public health, the rights and freedoms of others, as well as other cases stipulated in the law. Such cases are enshrined in detail in the Law of the Republic of Belarus of January 13, 2003 "On Martial Law" and in the Law of the Republic of Belarus of June 24, 2002 "On State of Emergency". The threat to national security, public order, public health, the rights and freedoms of others should be real, and some lawyers point out that the threat does not necessarily

<sup>29</sup> Strikes on the "Polotsk-Fiberglass" will not: the court has prohibited it. <https://finance.tut.by/news567058.html>. Accessed 9 Febr. 2019.

<sup>30</sup> Strike Notice. Available at <http://spbpolack.ru/archives/7359>. Accessed 9 Febr. 2019.

have to be caused by the strike itself. It may be caused by some other circumstances.<sup>31</sup> In Russia, the basis for the postponement and suspension of a strike is the cause of an immediate threat to the life and health of people.

There are certain uncertainties around the issue of a threat to public order. In general terms, public order is understood as a certain pattern of relations among people, their behavior in society, actions, way of behavior in public places, and are characterized by the observance of public morality.<sup>32</sup> The threat to public order, the rights and freedoms of others may be interpreted very broadly. Also in Belarus, the periods of postponement and suspension of strikes are long. In Belarus - 3 months, in Russia - 15 days, in Kazakhstan - until the court decides on the case of declares a strike illegal.

## ***2.2 Spontaneous workers protest***

Sometimes in Belarusian organizations spontaneous strikes happen- when people massively refuse to start to work. Protest actions are mainly connected with non-payment of wages or with its extremely small amount.<sup>33</sup> As a rule, such situations are resolved quickly through negotiations.<sup>34</sup> From a legal point of view, such protests are not considered as strikes, because they do not meet all the requirements stipulated by the law. Due to the lack of publicly available information about such protests, it is extremely difficult to estimate the real number of them.

### ***Summing up the provisions on the right to strike in Belarus the following main problems are revealed:***

1) Tough strike-launching procedure.

– a strike can be held no later than within three months after the failure of the parties to reach an agreement to a collective labour dispute in the conciliation commission, with the participation of a mediator or in labour arbitration.

The Labour Code of Belarus has set deadlines for carrying out the necessary actions before the strike (setting up a conciliation commission, making a decision by the conciliation commission, notification of a strike, etc.). Based on this, a strike can be started no earlier than 4-5 weeks from the day the collective labour dispute arose.

– The decision to go on strike can be made at a meeting or conference of the employees of the organization.

– The trade union is obliged to notify the employer in writing of the decision to hold

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<sup>31</sup> Comment to the Labour Code of the Republic of Belarus In 2 volumes. Volume 2. A.V. Baranashnik, E.A. Volk. L.I. Lipen and others; the general ed. L.I. Lipen. Minsk: Amalfea, 2014, pp. 698–699.

<sup>32</sup> Kramnik A.N. Disorderly conduct as an administrative offense // Justice of Belarus. 2006. № 10, P. 39–43.

<sup>33</sup> In Belarus, workers began a strike because of a salary of \$ 35 per month. [https://udf.by/news/main\\_news/178597-v-belarusi-rabochie-nachali-zabastovku-iz-za-zarplaty-35-za-mesyac.html](https://udf.by/news/main_news/178597-v-belarusi-rabochie-nachali-zabastovku-iz-za-zarplaty-35-za-mesyac.html). Accessed 9 Febr. 2019.

<sup>34</sup> Tractor drivers staged a strike in Slonim district. <http://belsat.eu/ru/in-focus/v-slonimskom-rajone-traktoristy-ustroili-zabastovku/>. Accessed 9 Febr. 2019.

a strike at least two weeks before its start. This notification, in contrast with the ILO requirements should contain the duration and the estimated number of participants.

2) The official trade unions are unwilling to resort to strikes.

This is due to several reasons:

– Official trade unions closely cooperate with the government (for example, the Chairman of the Federation of Trade Unions of Belarus was a member of the upper chamber of the Parliament of the Republic of Belarus). The government has a negative attitude to strikes.

– Often the leaders of trade union are at the same time employees of the organization and can easily lose their main job if the employer is dissatisfied with their actions.

3) There is an unfairly wide range of opportunities to restrict the right to strike.

Restrictions on the right to strike can be made not only by the Labour Code of the Republic of Belarus, but also by other laws.

4) Any formal violations of the lawful requirements to hold a strike result in the declaration of its illegality.

### 3. Any light in the end of tunnel?

The right to strike is a human right, guaranteed in a number of international instruments. We will consider if this right can indeed be protected in Russia and Belarus through bringing claims to international human rights bodies and through the help of ILO.

#### 3.1. *International law and Russian labour law*

Russia as a member of UNO, ILO and the Council of Europe has ratified the main international instruments protecting the right to strike: International Covenant on Economic, Social and Cultural Rights (ICESCR), ILO Conventions No 87 and 98, European Convention on Human Rights and finally European Social Charter, which, in contrast with the latter three conventions directly fixes the right to strike.

The main points of international bodies' concern have been already referred to in this paper. The complexity of procedure for strike was the object of criticism and the amendments to the Labour Code in 2006 and 2011 were partly in line with the conclusions of the Committee on Freedom of Association of the International Labour Organization (Cases No. 2216 and 2251).<sup>35</sup> Russian legislation prohibiting a strike for a very broad list of professions and occupations was summarily criticized by a number of international bodies because of the need to protect the public interest.<sup>36</sup> However up

<sup>35</sup> Gerasimova E., The resolution of collective labour disputes and the realization of the right to strike in Russia. In *Labour Law in Russia: Recent Developments and New Challenges*, Radevich E., Lebedev V. (ed). Cambridge Scholars publishing, 2014, pp. 260-261.

<sup>36</sup> European Court of Human Rights, *Ognevenko v. Russia* (44873/09) 20.11.2018; Observation (CEACR) - adopted 2016, published 106th ILC session (2017) Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) - Russian Federation (Ratification: 1956), Concluding observations of the Committee on Economic, Social and Cultural Rights on the sixth periodic report of the Russian Federation E/C.12/RUS/CO/6, 16.10.2017; Concluding

until now nothing has changed. We suppose that the efficiency of international impact depends among other things also on the level of publicity granted to a particular case. Even though the States are encouraged to promote the provisions of the ICESCR and publish the concluding observations delivered by the relevant Committee<sup>37</sup>, it is almost impossible to find in Russian media any information about the results of the report's consideration. The situation is different with individual cases by the ECtHR which attain immediately the broad public interest both in Russia and abroad. This publicity might be very helpful at least for the individual's rights protection.<sup>38</sup> In this context the recent ECtHR's case *Ognevenko v. Russia* is of much interest. Mr Ognevenko was a train driver for Russian Railways. In April 2008 the union to which he belonged decided to call a strike after the failure of wage and bonus negotiations and Mr Ognevenko took part in it. He refused to take up his duties on the day of the strike and was dismissed for the second breach of disciplinary rules (the first one was committed in 2007) as the strike for railway staff was prohibited by the Federal Law of 10 January 2003 no. 17-FZ "On Railway Transport in Russia". The ECtHR has considered the provisions of Russian law, relevant international law, and the jurisprudence of human rights bodies and found out that the Russian norms in question do not correspond to international standards. The Court was reluctant to find that railway is an essential service and referred to ILO and ECSR's conclusions in this respect. The Court pointed out that the Government had not substantiated its argument that the action had caused damage. The Russian authorities, in the view of the Court, did not provide information on the reasons for this prohibition of strikes, on the possible alternatives to a strike for these workers, or any safeguards. The applicant's dismissal had a "chilling effect" on trade union members taking part in industrial actions. These findings led the ECtHR to the conclusion that the dismissal constituted a disproportionate restriction of the applicant's right to freedom of association and violated Article 11 of the European Convention of Human Rights.

Thus the ECtHR did not conclude directly that the ban on strike for railway staff was disproportionate but has provided a number of solid arguments for such a conclusion. Hopefully, this judgment will make the Government at least (and at last) adopt the list of professions of the railway staff to whom the prohibition of a strike will be addressed. We can hardly expect that the ban will be repealed. It is not surprising that the ECtHR did not require legislative changes as a general measure. According to the new norms of the Federal Constitutional Law "On the Constitutional Court of the Russian Federation"

observations of the Committee on Economic, Social and Cultural Rights Russian Federation E/C.12/RUS/CO/5 1 June 2011.

<sup>37</sup> See, for example, Concluding observations of the Committee on Economic, Social and Cultural Rights on the sixth periodic report of the Russian Federation E/C.12/RUS/CO/6, 16.10.2017.

<sup>38</sup> As an example we can refer to the case of Svetlana Medvedeva, who was denied employment because the job she applied for was in the list of occupations prohibited for women. These provisions were criticized by International bodies (see CESCR, Concluding observations E/C.12/RUS/CO/5, 01 June 2011), but were not repealed. After the consideration of the individual case by the UN Committee on the Elimination of All Forms of Discrimination against Women (Opinion of the UN CEDW № 60/2013, 21 March 2016) the Government has at least expressed its readiness to review the norms in question, though nothing has been done yet.

adopted in 2015, this court has now jurisdiction to decide if it is possible to execute a judgment of ECtHR in light of the provisions of the Russian Constitution. In 2007 the Russian Constitutional Court considered the constitutionality of the provisions banning the right to strike for railway staff and it did not find any contradiction, as the ban was found to be justified by the need to protect the rights of others.<sup>39</sup> Therefore there might be a risk that the ECtHR's judgment in *Ognevenko* would be found not in line with the Constitution and not executed in Russia.

### ***3.2. International law and Belarusian labour law***

The Committee of Experts on the Application of Convention and Recommendations of the ILO had repeatedly requested the Government of the Republic of Belarus to take measures to amend some sections of the Labour Code of Belarus which regard to the exercise of the right to strike<sup>40</sup>.

1. It is necessary to amend the Part 3, Article 388 (about restrictions on the exercise of the right to strike) and Article 393 of the Labour Code of Belarus (about reasons for postponing and suspending a strike), so as no legislative limitations can be imposed on the peaceful exercise of the right to strike observing the rights and freedoms of other persons (except for cases of deep national crisis, or for public servants exercising authority in the name of the state, or in case of putting a threat to the provision of essential services in the strict sense of the term, i.e. only those, the interruption of which, would put the life of people in danger, or threaten personal safety and health of the whole or part of the nation).

2. It is necessary to repeal the requirement of the notification of strike duration (Article 390 of the Labour Code of Belarus).

3. It is necessary to ensure that the final determination concerning the minimum amount of work to be done in the event of disputes between the parties is made by an independent body and to further ensure that minimum work is not required to be done by all departments of the organization but only by those whose work is viewed upon as essential services, or public services of fundamental importance (special attention should be attached to situations in which strikes of a certain magnitude and duration could cause an acute crisis threatening the normal conditions of existence of the people, or when a strike can cause damage to safe operation of necessary facilities (Article 392 of the Labour Code of Belarus)).

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<sup>39</sup> Ruling of the Constitutional Court of the Russian Federation dated February 8, 2007 No 275-OO.

<sup>40</sup> Report of the Committee of Experts on the Application of Conventions and Recommendations. Report III (Part 1A) / International Labour Conference, 102nd Session, 2013. [https://www.ilo.org/wcmsp5/groups/public/@ed\\_norm/@relconf/documents/meetingdocument/wcms\\_205472.pdf](https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_205472.pdf). Accessed 9 Febr. 2019; Report of the Committee of Experts on the Application of Conventions and Recommendations. Report III (Part 1A) / International Labour Conference, 106th Session, 2017. [https://www.ilo.org/public/libdoc/ilo/P/09661/09661\(2017-106-1A\).pdf](https://www.ilo.org/public/libdoc/ilo/P/09661/09661(2017-106-1A).pdf). Accessed 9 Febr. 2019.

However, the indicated norms were not changed. It should be noted that sometimes the government of Belarus listens to the opinion of international organizations. For example, in 2015, the rules for creating trade unions were simplified just before the 104th Session of the International Labour Conference.

According to the opinion of UN Human Rights Committee, Belarus should revise relevant laws, regulations and practices so as to repeal the undue limitations on the right to strike<sup>41</sup>.

International organizations can influence the state to enforce international standards. One of such methods of influence is the easing or lifting of economic and political sanctions imposed on a certain state.

In December 2006 the EU warned that it would have to rule out Belarus' trade preferences under the EU's Generalised System of Preferences (GSP) if Belarus did not comply with its ILO obligations relating to freedom of employees' associations. On 15 June 2007, the ILO made its assessment and stated that Belarus had not undertaken any actions to ensure the protection of certain key labour rights related to freedom of associations in Belarus. Belarus' GSP trade preferences have been therefore ruled out from 21 June 2007.<sup>42</sup>

Earlier, the EU refused to back Belarus' candidacy for membership to the Council of Europe and until today, Belarus has not yet been accepted as a full member.

Certainly, sanctions against Belarus have a negative impact on the national economy. However, the Republic of Belarus is not always very actively responding to such measures, since it enjoys the support of a strong union state – Russian Federation.

#### 4. Conclusions

The persistence of practices restricting the right to strike cannot be challenged only and mostly by the measures taken by the international bodies or international society. The Belarusian experience demonstrated that even economic sanctions cannot be considered as an appropriate tool for such challenges.

There is a lot in common between Russia and Belarus: the lack of the spirit of solidarity among workers, the unwillingness of the state to narrow the borders of its interest and leave more space for the protection of the collective rights of workers and the general perception of these factors as normal by the society in general.

The right to strike may be fully realized in case, if the society will realize the importance of collective rights.

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<sup>41</sup> Concluding observations on the fifth periodic report of Belarus. CCPR/C/BLR/CO/5. Adopted by the Committee at its 124th session (8 October–2 November 2018). P. 12. <https://undocs.org/CCPR/C/BLR/CO/5>. Accessed 9 Febr. 2019.

<sup>42</sup> EU will withdraw GSP trade preferences from Belarus over workers' rights violations / European Commission. [http://europa.eu/rapid/press-release\\_IP-07-844\\_en.htm](http://europa.eu/rapid/press-release_IP-07-844_en.htm). Accessed 9 Febr. 2019.

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# Problems of Labour Legislation Codification in Belarus and Ukraine: History, Current Situation and Prospects

Kirill Tomashevski\* • Oleg Yaroshenko\*\*

**Abstract** Taking into account the general historical past (up to the 1990s), the paper examines current issues of codification and improvement of labour legislation in Belarus and Ukraine. The first part of the article briefly analyzes three global reforms of the Labour code of Belarus that took place in 2007-2008, 2014 and 2019-2020. Based on the generalization of legal and technical features of these three reforms, both negative trends in the development of labour law in Belarus and positive features associated with increased flexibility in regulating labour relations were identified. The second part of the paper examines the current situation of labour legislation in Ukraine, its non-compliance with the realities of the market economy. Special attention is paid to the analysis of the draft of law “On labour”, submitted by the Government to the Verkhovna Rada of Ukraine in 2019.

**Keywords:** labour code, codification, law, labour relations, reform, draft.

**JEL Classification:** K3.

## Introduction

The labour legislation of the Republic of Belarus and Ukraine have common historical “roots”, since historically it was formed within the framework of the Soviet legal system from the beginning of the twentieth century. These similarities are observed in the Code of labour laws of the RSFSR of 1918, which was also applied on Belarusian and Ukrainian lands, then in the Code of labour laws of the RSFSR of 1922, which was in force in Belarus and the Code of labour laws of the Ukrainian SSR of 1922, the Code of labour of the Belarussian SSR of 1929. As a result of the USSR codification of labour legislation of the 1970s, the Basics of labour legislation of the USSR and the Union republics were first adopted in 1970. After the Basics, almost identical Code of labour laws were adopted in all the Union republics, including the Code of labour laws of the Ukrainian SSR in 1971 and Code of labour laws of the Belarussian SSR in

Kirill Tomashevski\*(✉), Oleg Yaroshenko\*\*

\* Professor of the Department of Civil Law Disciplines, the International University “MITSO”, Professor of the Department of Civil Procedure and Labour Law, Belarussian State University, Belarus, e-mail: k\_tomashevski@tut.by

\*\* Head of the Department of Labour Law of Yaroslav Mudryi National Law University, Ukraine e-mail: yaroshenkolex@ukr.net

1972. After gaining independence, Belarus and Ukraine took slightly different paths in improving labour legislation. In Belarus, after the reform of the Code of labour laws in 1992 and the adoption of some ordinary laws (“On collective contracts and agreements” in 1992, etc.), the idea of a new codification of labour laws was successfully implemented. As a result, the Labour code of Belarus was adopted on 26.07.1999, which came into force on 01.01.2000. One of the leaders of the group of developers of the draft of the Labour code of Belarus at the initial stage (1992-1997) was a legal scientist V. I. Krivoy. Note that in 1996 in St. Petersburg, he defended his doctoral thesis in the form of a scientific report on the problems of codification of the labour legislation of Belarus [1]. This paper will briefly analyze three reforms of the Labour code of Belarus in the beginning of XXI century: 2007-2008, 2014 and 2019-2020, and also consider the prospects for a new codification of the labour legislation of Belarus.

Ukraine initially also reformed the Code of labour laws in 1991-1992, adopted a number of ordinary laws (for example, the law “On the procedure for resolving collective labour disputes” in 1998), but it was not possible to finally adopt the Labour code of Ukraine in the Verkhovna Rada for a number of socio-political reasons. Currently, a number of drafts of the Labour code of Ukraine and drafts of the law “On labour” have been developed, one of which is considered by the current Government of Ukraine as the main one. The paper will analyze the strengths and weaknesses of this draft of law and proposes suggestions for further reform of the labour legislation of Ukraine.

## **1. The first reform of the Labour code of Belarus in 2007-2008**

This stage of development of the Belarusian labour legislation is connected with the preparation and adoption of the Law of the Republic of Belarus of 20.07.2007 No. 272-Z “On amendments and additions to the Labour code of the Republic of Belarus” (hereinafter – the Bill or Law of 20.07.2007 No. 272-Z).

Its development was planned in 2000 and active since 2001, the initial version of the Bill that provided for the adjustment of 2/3 article of the Labour code of Belarus, in early 2003 were made by the Government in Parliament, but in June 2003 were excluded from the agenda of the Parliament. Active revision of the draft law of this Bill by the working group began after a meeting with the President of the Republic of Belarus, held on January 13, 2005 in the second half of 2006. The bill was approved in the Presidential Administration of the Republic of Belarus, National center of lawmaking activity at the President of the Republic of Belarus. This Bill was introduced by the Government in the House of Representatives of the National Assembly of the Republic of Belarus. The bill was adopted by the House of Representatives in the first reading on 04.05.2007, successfully passed in the second reading on 25.06.2007, was approved by the Council of the Republic on 29.06.2007 and was signed by the President of the Republic of Belarus on 20.07.2007.

As a result, the nearly seven-years process of drafting the bill ended with the adoption of Law No. 272-z of 20.07.2007. The reform of the Labour code of Belarus by Law No. 272-Z of 20.07.2007 was global. This is evidenced by the fact that the

Law of 20.07.2007 No. 272-Z provided for 141 points of changes and additions to the Labour code of Belarus; it corrects or excludes more than 2/3 of articles of this Code. Some chapters were completely excluded from the Code (for example, chapters 30, 38), others are set out almost in a new version (chapters 15, 39), and others are changed conceptually (for example, chapter 12 on labour and social leave). The assessment of this reform as a global one was given in the publications of a number of Belarusian legal scholars (A. Voitik, O. Kuryleva, K. Tomashevski) [1; 2].

## **2. Second reform of the Labour code of Belarus in 2014**

Since 2010 the National center for legislation and legal research of the Republic of Belarus has been developing a draft law “On amendments and additions to certain laws of the Republic of Belarus on the regulation of labour and related relations”. On 17.05.2013 it was adopted in the first reading by the House of Representatives of the National Assembly of the Republic of Belarus. In preparation for the second reading in the Parliament, this Bill was supplemented by the draft of Law “On amendments and additions to the Labour code of the Republic of Belarus”, which makes changes to the institute of collective labour disputes. In December 2013 the Law was adopted in the second reading by the Parliament. On 8.01.2014 it was signed by the President of the Republic of Belarus and entered into force on 25.07.2014. We mention only some fundamental adjustments to the Labour code of Belarus according to this second reform:

- was revised article 8 on the application of international treaties in the sphere of labour;
- in article 14 was extended and formulated with open list of prohibited criteria of discrimination in employment relations;
- in article 17 was expanded scope of application of fixed-term contracts from individual entrepreneurs and micro organizations;
- was restricted the right of persons working on labour contracts to get the minimum compensation and severance pay upon termination of the contract at the request of the employee and others;
- many articles of chapter 35 on the resolution of collective labour disputes were set out in the new version;
- was included a new chapter 26-1 on the work of professional athletes and coaches [4].

## **3. Third reform of the Labour code of Belarus 2019-2020 and assessment of the prospects for new codification**

The development of this law began in 2015, and its adoption lasted for four years. The initial draft law received a mostly negative assessment from the scientific community, which was the subject of an open discussion at a round table held on 20.05.2015 in the Belarusian State University. In 2017, the development of the second draft of law on amendments to the Labour code of Belarus began. Later, both drafts of laws were merged in the House of Representatives into one, in June 2018 it was adopted in the first

reading, and in June 2019 – in the second reading.

Last year the third global reform of the Labour code of Belarus was finalized with the recently adopted Law of the Republic of Belarus “On changes in the laws,” which was adopted by the House of representatives on 26th June 2019, approved by the Council of the Republic National Assembly of the Republic of Belarus on 28th June 2019 and signed by the President of the Republic of Belarus on 18th July 2019 (hereinafter – the Law of 18.07.2019 No 219-Z). This law was officially published on 27.07.2019 and entered into force on January 28, 2020.

The following facts show that the adoption of the Law of 18.07.2019 No. 219-Z can be assessed as the third global reform:

- the law includes 171 items that make adjustments to the Labour code of Belarus;
- it amended or supplemented more than 190 articles of the Code;
- two new chapters have been included: chapter 18-1 on the specifics of regulating the labour of employees with whom fixed-term labour contracts and chapter 25-1 on the specifics of working with remote workers;
- the norms of two Presidential decrees were codified: No. 29 of 26.07.1999 “On additional measures to improve labour relations, strengthen labour and performance discipline” and No. 5 of 15.12.2014 “On strengthening requirements for managerial personnel and employees of organizations»;
- the grounds for dismissal of employees at the initiative of employers have expanded, since article 42 contains those grounds that were previously used only as additional ones in the contract system of hiring, and there are twice as many disciplinary dismissals (14 instead of 7) [5].

#### **4. The labour code of Ukraine in 1971 is an archaic source of Soviet-era law: problems of its inefficiency in the market economy**

The current Code of Labour Laws Ukraine was adopted on December 10, 1971. Despite the numerous changes and additions made to it (there were 31 of them in the last five years only), its provisions are less and less in line with the socio-economic situation in the country. A dangerous (permanently enlarging) gap between the various spheres legal regulation of socio-economic activity arose. The norms are written in such a way that their provisions are oriented to a high level of formal legal protection of the employee, and it leads to adverse economic and social consequences. In addition, labour legislation has been overly politicized during a long period.

The inefficiency of the existing legal regulation of labour relations largely could be explained by the lack of a clear mechanism for implementing the norms which are set in it. There are a lot of reasons for it, among them: a) not quite clear delineation of issues that are being resolved at different levels of regulation; b) inconsistency of legal acts among themselves; c) insufficiently quick filling of gaps in the legislation; d) low level of legal techniques.

For example, the inflexible system of hiring and firing has reduced the mobility of the able-bodied part of population, it hinders both its allocation between enterprises, industries and regions, and the gradual transformation of inefficient spheres of

employment into effective ones. The concentration in the current Code of Labour Laws of economically unrealistic guarantees and benefits contributes to the emergence and further development of certain negative trends, namely:

- labour relations (especially in the commercial sector of the economy) are most often mechanically replaced by civil law ones, since the application of labour legislation in full becomes economically disadvantageous for the employer;
- the most legal protected workers (women, youth, persons with disabilities) have actually become less competitive in the labour market and are being displaced in large numbers.

Informal labour relations are widespread. An employment contract is either not concluded at all, or is concluded fictitiously, providing for a minimum level of remuneration and social guarantees, and the real working conditions are orally agreed by the parties. In addition to the rigidity of legal norms, this process is also affected by the desire of the employer to deduce income from taxation and to reduce costs connected with accruals to the wage fund. An employee in a difficult and tense situation on the labour market, for his/her part, is ready to sacrifice legal and social guarantees in exchange for getting a job, especially if the proposed real level of remuneration exceeds the average one.

Another example of the unfavorable social consequences of strict legislative regulation of labour is the fact of saving in some enterprises of an excess number of workers who are not provided with real work. The excessive complexity of the procedure of mass layoffs and a significant financial burden on the employer should be recognized as one of the main reasons for that specific form of hidden unemployment.

## **5. Justification of the need for new codification and adoption of the new Labour code of Ukraine**

We should add to the above that, thanks to the adoption of the new Labour Code in Ukraine, it is necessary to achieve the optimal combination of the interests of workers and employers while ensuring the adequate protection of the rights and interests of workers while increasing production efficiency. Labour legislation should encourage workers to work highly productive in accordance with labour contracts and protect them from the arbitrariness by employers. However, such protection should not, on the one hand, be excessive, and on the other hand, to be an obstacle to both the development of production, the creation of new vacancies, as well as the employment of job seekers. The new Code should not only proclaim and fix the level and standards of labour protection, privileges and compensation, but rather stimulate the development of the economy, which, in its turn, will create the necessary prerequisites for real ensuring the above standards. In that case, the main condition is the accelerated implementation of the achievements of scientific and technological progress, the systematic updating of the technical base. As the experience of economically developed countries shows, it implies wide participation in the production management through representative bodies of direct producers of material goods - workers.

By the Decrees of the President of Ukraine “On urgent measures aimed at ensuring

economic growth, stimulating the development of regions and the prevention of corruption” dated September 20, 2019 No. 713/2019 and “On urgent measures aimed at implementing reforms and strengthening the state” dated November 8, 2019 No. 837/2019 the introduction and of socio-economic reforms development for the labour relations liberalization and labour legislation updating is recognized as one among the priorities of the government’s activity. That is why in the Program of Activities of the Cabinet of Ministers of Ukraine, approved by the Verkhovna Rada of Ukraine on October 4, 2019 No. 188, it is noted that liberal labour legislation provides an opportunity for employers to easily create qualitatively new jobs, promote the best workers and pay them higher salaries. In order to implement it, the subjects of the right to legislative initiative have registered in the Verkhovna Rada of Ukraine draft Labour Code of Ukraine (No. 2410), Labour Code of Ukraine (No. 2410-1), the Law of Ukraine on Labour (No. 2708), and the Law of Ukraine on Labour (No. 2708-1 ) and the Law of Ukraine on Labour (No. 2708-2), “On Amending Certain Legislative Acts of Ukraine (concerning certain issues of the activities of trade unions)” (No. 2681), “On Amending the Code of Labour Laws of Ukraine on additional grounds for release” (No. 2584) and some others.

## **6. Problematic draft law of Ukraine on labour in 2019**

The main of the most discussed, of course, is the draft law of Ukraine on labour (hereinafter – Draft of law No 2708), developed by the Cabinet of Ministers and submitted to the Verkhovna Rada in 2019. The draft of Law No 2708, created by the Cabinet of Ministers is the main one among them, of course. The mentioned draft content is significantly smaller than the current Code. So, the draft does not regulate issues of labour discipline, labour protection; vacations, labour features of minors, and persons who are studying are regulated to a much lesser extent. Although a number of laws are repealed, in particular, “On Remuneration of Labour”, “On Vacations”, but far from all of their provisions are integrated into the developed draft law. It will entail the appearance of many gaps in law, which will have to be filled by using the analogy of law or the law, or through contractual regulation (collective and labour contracts).

In the Draft of law No 2708 submitted, the norm on the prohibition of discrimination contained in Art. 21 of the current Code, is saved. Additionally, it is proposed to prohibit any prejudice in the workplace and employee mobbing. Persons who have undergone this kind of treatment will be able to go to court, providing relevant facts. The employer will be required to prove their absence, that is, it is proposed to introduce a presumption of ones guilt. These proposals deserve being supported, in the conditions of clear mechanism for termination of the employment contract is maintained, which will not provide for the possibility of its arbitrary termination at the request of the employer, regardless of the desire of the employee, ones behavior and personal qualities.

We should evaluate as positive given in Art. 13 of the Draft of law No 2708 list of signs of labour relations: 1) the person is regularly paid remuneration for work performed in the interests of another person; 2) the direct performance by a person with a specific qualification, profession, occupying a certain position, work on behalf of and

under the control of the person in whose interests it is being performed; 3) the work is being performed at the workplace, determined by the person in whose interests it is being carried out, in compliance with the internal labour rules; 4) a person performs work similar by its content and nature to those which are being carried out by regular employees of the employer; 5) the organization of working conditions is provided by the person in whose interests work is being performed; 6) the duration of working time and rest time is established by the person in whose interests the work is being performed [1, p. 719-734].

According to the Draft of law No 2708, trade unions will be stripped of their status as the key representatives of employees. Undoubtedly, it violates the requirements of Articles 22 and 36 of the Constitution of Ukraine, since it leads to a narrowing of the scope and content of existing constitutional rights and freedoms of both trade unions and their members. Employees will be able to have representatives elected by the labour collective. But Draft of law No 2708 does not contain a norm that would regulate the activity of the labour collective.

The Draft of law No 2708 provides for 7 types of employment contract: indefinite; definite, which cannot last more than 5 years; short-term for up to two months; seasonal; with non-fixed working hours; students one; an employment contract with a domestic worker. A significant increase in the usage of contracts with a limited duration indicates a violation of Art. 2 of the Convention of the International Labour Organization No. 158 on the termination of employment at the initiative of the entrepreneur (1982) (hereinafter – ILO Convention No. 182), ratified by Ukraine on February 4, 1994, which covers all the sectors of economic activity and all the persons employed. When applying the provisions of the Convention, the state may exclude from all or some of its provisions the following categories of employees, namely workers: 1) hired under a contract of employment for a specified period or for performing of a certain work; 2) having a probationary period or acquiring the necessary experience, previously established and of a reasonable duration; 3) hired for a short time for performing casual work. For comparison, we note that the Republic of Belarus has not ratified ILO Convention No. 182, so it does not formally violate it, allowing for an unlimited scope of application of fixed-term labour contracts in the labour legislation.

The Draft of law No 2708 also does not fix a clear procedure for dismissal from work. These issues should be coordinated by the parties in labour or collective agreements. Dismissal will not provide for the issuance of an order, as it is being done now, but the conclusion of an additional agreement. Such an innovation is artificial in the case when it comes to dismissal on the initiative of one of the parties of the employment contract. At the risk of losing ones job or having already actually lost it, the employee is unlikely to voluntarily agree to conclude an agreement. Dismissal from work on the initiative of the employee will require an additional agreement on it with the employer. Moreover, the Draft of law No 2708 does not contain the consequences of the employer's refusal to conclude such an agreement in the usual manner, but only recognizes it as a gross violation of labour law. Instead of dismissal by a reduction, the draft proposes to dismiss workers at the initiative of employers without specifying a reason. To do this, it will be

enough to send an electronic or written message within a period from 15 to 90 days, depending on the duration of the employee's work with this employer. The employer will be able to replace the warning period with monetary compensation in the amount of no more than double daily earnings for each day the term is reduced, that is, in fact, employers will receive the right to dismiss the employee even on the day such a decision is made. We are no longer talking about any severance pay. It grossly violates the requirements of Articles 4, 12, 13 and 14 of Convention No. 158.

Despite the fact the Draft of law No 2708 specifies the norm of working hours - 40 hours for 7 days, nevertheless, the norm of undefined working hours, which now amounts to 120 hours a year, is canceled. The approval of the proposal to legalize the rule on the application of overtime work on the terms determined by the collective or labour contract entails the risk of abuse while their usage.

In addition, certain provisions are taking place, the adoption of which will led to a narrowing of the content and scope of the existing constitutional right to rest, provided for by Art. 45 of the Constitution of Ukraine. Thus, the conditions and procedure for providing annual additional vacations for the special nature of work, for working in harmful and hazardous working conditions and for undefined working hours, and additional vacations for certain categories of citizens are not being regulated. The mentioned vacations are now provided for in Articles 8, 151, 161, 162 and 19 of the Law of Ukraine "On Vacations". The number of cases when employees are granted vacation obligatory without payroll is significantly reduced.

## Conclusion

Historical analysis of the last three reforms of the Labour code of Belarus revealed negative trends in the development of labour law in Belarus:

- instability of labour legislation (three global reforms of the Labour code of Belarus during 20 years its action);
- decrease in the effectiveness of the rules of the Labour code of Belarus due to an increase in the number of reference rules and a decrease in direct action rules;
- legalizing the contract system of employment under fixed-term employment contracts, not limited to any strict list;
- narrowing the concept of labour function during the third reform of the Labour code.

Among the positive innovations in the reform of the Labour code of Belarus, we pay attention to the expansion of flexibility in the regulation of labour relations, the regulation of such a form of employment as remote work.

In general, taking into account the results of the third reform of the Labour code of Belarus, we conclude that there are no prerequisites for a new codification of the labour legislation of Belarus in the next 5 to 10 years.

In any case, the new codification of the labour legislation of Belarus should be preceded by the development of the Concept of improving legislation in the social and labour sphere. Taking into account analysis of legislative initiatives in Ukraine in 2019, we should mention that the adoption of a new Labour Code of Ukraine or the Law of



Ukraine “On labour” will give an ability to streamline labour relations, to increase their flexibility, and to relieve the employer of economically unjustified expenses. Thus, the opportunities for the development of illegal labour relations will decrease, there will be a real increase in the level of protection of the rights and interests of workers. The purpose of the Code should be to establish the rights and obligations of subjects of labour relations, ensuring both the implementation of the labour rights and guarantees provided for by the Constitution of Ukraine and international documents, and the protection of the rights and interests of employees and employers, and the creation of appropriate working conditions.

The adoption of the law of Ukraine “On labour” has a number of negative consequences: first, it will mean the decodification of labour legislation in Ukraine, the loss of this legislation of complexity in the regulation of labour and related relations; second, it leads to the emergence of many gaps in labour law, which is not always possible to fill through collective agreements and labour contracts; third, the ultra-liberal draft of law is in conflict with the ILO Convention No. 182, ratified by Ukraine, and reduces a number of constitutional social and economic rights of Ukrainian workers.

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## Abolition of a Trade Barrier: the Case of the EU Milk Quota and the Chinese Market

Danilo Cavapozzi\* • Martina Mazzarolo\*\* • M. Bruna Zolin\*\*\*

**Abstract** Milk is among the most produced and valuable agricultural commodities worldwide, representing 10% of global agricultural output and 65% of total dairy production. The global trade of milk and milk products accounts for 5% of world trade of agricultural commodities.

The European Union is the second milk producer worldwide and the largest milk exporter (with almost 30% of global exports). Because of an overall European decreasing milk consumption and a self-sufficiency rate higher than 100%, EU milk exports are increasing.

China is among the main milk-deficit countries with an estimated self-sufficiency rate around 80% in 2017. Although it is expected to increase its milk production, because of the growth in consumption, fueled by population and GDP upward trends, and the not sufficient domestic supply, it remains the largest importer of dairy products worldwide. About 20% of milk and milk products imports worldwide are represented by China. China is the top extra-EU importer of milk with a 19% share of total extra-EU exports of milk.

Among the market distortion policies, it is certainly worth mentioning the production quotas. Our case study focuses on the EU milk quotas, introduced by the CAP in 1984 to control the excess of supply in the market, and then removed in 2015 to liberalize the market.

Starting from these premises, the aim of the paper is to understand whether the drop in milk prices following the EU milk quota removal has found a tradeoff with the rise of milk exports towards China.

**Keywords:** milk, quotas, trade, EU, China, consumption.

**JEL Classification:** Q02, Q17, Q18, L66, D12.

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Danilo Cavapozzi\*(✉), Martina Mazzarolo\*\*, M. Bruna Zolin\*\*\*

\* Department of Economics, Ca' Foscari University of Venice, Italy  
e-mail: danilo.cavapozzi@unive.it

\*\* Department of Economics, Ca' Foscari University of Venice, Italy  
e-mail: martina.mazzarolo@unive.it

\*\*\*Department of Economics, Ca' Foscari University of Venice, Italy  
e-mail: zolin@unive.it

## Introduction

Milk is one of the most produced and valuable agricultural commodities worldwide. Third only after maize and sugar cane, it represents nearly 10% of global agricultural output and about 65% of total dairy production (OECD-FAO, 2019a). Since 2010 the world production of milk has expanded by almost 16%, reaching 838 million tonnes and generating more than €350 billion in 2018 (OECD-FAO, 2019a).

The five world largest milk producers in 2018 are India, with a 20.8% share of global production, the European Union (17.9%), the United States (11.8%), Pakistan (6.6%) and Brazil (4.3%). Together they account for nearly two thirds of the world production of milk (OECD-FAO, 2019).

In the 2000s, the Asian region registered the highest milk output expansion by volume, followed by Europe, North America and Oceania. In Asia, the production of milk increased to 346.9 million tonnes in 2018, with a growth of 17.9% from 2012-2014 mainly led by India (+36.3%) and Pakistan (+17.2%). The total milk output in China, by contrast, has started recovering since 2018.

The global milk production, moreover, is forecast to further grow at a 1.7% per year, expanding to nearly 860 million tonnes in 2020 and to more than 937 tonnes in 2025 (OECD-FAO, 2019), fuelled by the stronger demand at international level, mainly driven by developing countries.

The per capita consumption of milk largely varies across the world. It is particularly high in developed markets such as Oceania, with about 105 kg per year consumed both in New Zealand and Australia in 2018, North America with 76 kg, Canada and the United States with 68 kg and the European Union with an average of 65 kg in 2018. Lower values are instead reported in BRIC countries: 46 kg per year in Brazil, 58 kg in the Russian Federation, 49 kg in India and 12.1 in China<sup>1</sup>. Unlike Indians and Brazilians, however, the Chinese per capita consumption is still very low.

According to the latest FAO Outlook (2019a), the global trade of milk and milk products accounts for about 5% of the world trade of total agricultural commodities. The world total exports of milk and milk products (in milk equivalents<sup>2</sup>) have almost reached 75 million tonnes in 2018, with a 20.8% and a 4.6% increment from 2010-2012 and from 2015-2017 respectively (FAO, 2014, 2016, 2018 and 2019).

Almost 70% of the world exports of milk and milk products come from the EU28 (27.4%, 20.5 million tonnes for a worth of €20 billion, mainly driven by Germany and the Netherlands), New Zealand (25.1%, 18.7 million tonnes) and the United States (15.7%, 11.8 million tonnes).

World imports of milk and milk products (in milk equivalents), have consistently expanded to almost 75 million tonnes in 2018, with an increase of 15.4 million tonnes (25.8%) from 2010-2012 and of 3.4 million tonnes (4.8%) from 2015-2017 (FAO, 2014, 2016, 2018 and 2019). About 60% of milk and milk products imports come from Asian countries in 2018. China, with 14.6 million tonnes (20%), is currently the major milk

<sup>1</sup> Data on per capita consumption of milk is collected from CLAL (2019), for China is collected from the National Bureau of Statistics of China (2018).

<sup>2</sup> Milk equivalent is the amount of fluid milk used in a processed dairy product.

importer worldwide. Chinese milk imports have risen by 79.2% from 2010-2012 to 2018 and are expected to further grow, even if at a slower pace (OECD-FAO, 2018). The international dairy sector is among the most distorted agricultural sectors because it is characterized by a large number of tariffs and quotas. Our case study focuses on the EU milk production quotas introduced in the EU by the Common Agricultural Policy (CAP) in 1984 to cope with the so called “milk lakes and butter mountains” resulting from a guaranteed price for EU dairy farmers, higher than the world price market (European Parliament, 2018).

Milk quotas were, therefore, aimed to control the excess of supply in the market and to manage international conflicts rising due to export subsidies and import levies. The quotas, based on “historic” milk production, set a yearly limit to the maximum amount of milk that could be delivered to dairies and the amount of countries’ direct sales. Countries could produce more than their quota by paying a high levy. The result was a clear distinction between EU milk producing and consuming countries.

The Health Check Reform of 2008 was the starting point to the removal of milk quotas. The scope of the European Commission was to liberalize the market by developing a more competitive and market-oriented dairy sector able to meet the increasing demand worldwide (Salou et al., 2017). Milk quota abolition became effective from 1<sup>st</sup> April 2015; however, to gradually prepare farmers, they were increased by 1% per year from 2008 to 2013.

Starting from these premises, the aim of the paper is to understand whether EU milk quota removal, and the consequent drop of milk prices due to the higher amount of milk available in the market, has found a tradeoff with the rise of milk exports.

China (the largest milk importer worldwide), specifically, is particularly relevant for the EU (the largest milk exporter worldwide) because of the progressive increase in milk consumption, due to insufficient domestic production, population and per capita income growth and changes in diets (increase in animal protein intake).

The paper is structured as follows: section 2 and 3 provide an overview of the EU and of the Chinese milk sectors, respectively, while Section 4 goes more deeply into the milk trade relationship between EU and China. Lastly, the final conclusions are in section 5.

## **2. EU milk sector**

The dairy sector is the second biggest agricultural sector in the European Union (after vegetable and horticultural plants and before cereals), representing more than 12% of total agricultural output (European Parliament, 2018).

The EU milk production has grown by 13.7 million tonnes from 2010 to 2018, reaching 150 million tonnes and generating about €48 billion (Table 1). The larger share of milk produced is delivered to dairies for further processing; the rest is either consumed, directly marketed or used as feed.

**Table 1.** EU milk production and producer prices, 2010-2018

Year	EU milk production		EU milk production		Producer price
	(1,000 Tonnes)	$\Delta$ (1,000 Tonnes)	(MM€)	$\Delta$ (MM€)	(€/Tonnes)
2010	136,471		41,484		304.0
2011	138,301	1,830	46,813	5,328	338.5
2012	138,869	568	45,056	-1,757	324.4
2013	139,995	1,126	51,183	6,127	365.6
2014	144,628	4,632	53,279	2,096	368.4
2015	147,502	2,874	45,024	-8,255	305.2
2016	148,606	1,104	41,766	-3,258	281.1
2017	148,907	300	50,965	9,199	342.3
2018	150,142	1,235	47,975	-2,990	319.5

Note:  $\Delta$  indicates the difference with respect to the previous year

Source: authors' elaboration on OECD-FAO data (2019)

In 2018 the largest six European producers are Germany, France, the United Kingdom, the Netherlands, Poland and Italy, which together account for nearly 70% of total EU production.

In 2010-2014 (pre milk quota abolition), milk output increased by 8.2 million tonnes with a surplus of almost €11.8 billion, driven by the sharp rise of producer prices. National milk quotas, in fact, increased by 1% per year from 2008 to 2013 to allow dairy farms to adjust and prepare for quota removal. In 2015-2018, total milk production is incremented by 2.6 million tonnes, and the worth created has increased by about €3 billion (Table 1).

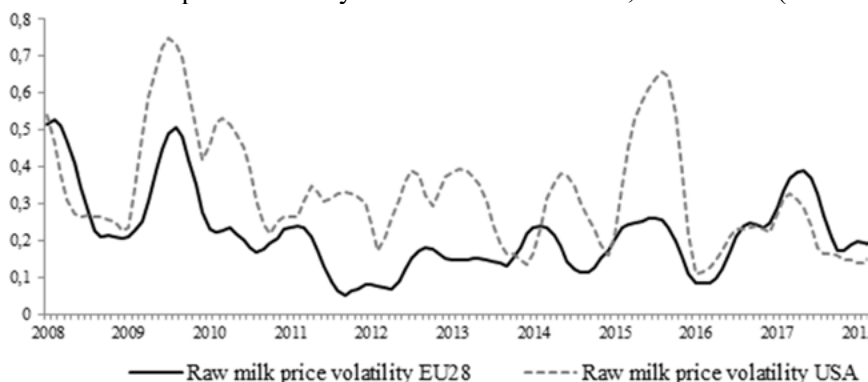
The most significant and rapid growth in real terms, however, occurred in the transition period; from 2013 to 2015 EU milk production rose from 140 to 147.5 million tonnes. Because there was not a quota increase between 2014 and 2015, some countries (e.g. Germany, the Netherlands, Poland) decided to build up their production capacity, risking to pay the super levy fines, and produce above their milk quota (Klootwijk et al., 2016). Giles (2015) states that the ending of milk quota in Europe is having an impact on milk production varying across countries. The policy tool of quota removal is, in fact, leading to a more pronounced concentration of production within the most competitive countries, those that were already producing in accordance with their allocated quotas or exceeding their limits.

The increase by around 7.5 million tonnes in the production between 2013 and 2015 was one of the main causes of the milk sector crisis that took place from 2014 to 2016 when EU milk prices dropped dramatically from €368.4 to €281.1 per tonne, affecting farmers' incomes (European Commission, 2019). The higher expectation of milk exports on the supply side after the milk quota abolition, the ban imposed by Russia to many dairy

products, and the increased volatility of raw milk price since 2007, are other drivers that have contributed to this milk sector crisis (European Parliament, 2018).

In particular, price volatility<sup>3</sup> on international market is one of the main concerns for the dairy sector, especially with its opening to global markets. Raw milk price volatility in the EU is in general lower than in other markets, although they follow rather similar patterns. The comparison with the US, for instance, confirms this trend (Figure 1) and shows how the two curves are similar, although the EU one is less pronounced, smoothed and lower. From 2016, differences in volatility have attenuated, a sign of greater market integration.

**Figure 1.** Raw milk price volatility<sup>4</sup> in the EU28 and USA, 2008-2019 (monthly)



Source: authors' elaboration on European Commission (2019a), updated March 2019

This situation led the European Commission to implement two aid packages, in September 2015 and in July 2016, which included the adoption of public intervention<sup>5</sup> and storage<sup>6</sup> measures and other specific measures to contain the crisis in the short run, for instance incentives for farmers to reduce production (European Parliament, 2018). The recovery of the EU dairy sector started in 2017, supported by a growing global demand and the rise of milk prices.

From the demand side, the overall per capita consumption of milk in Europe is slightly reducing (European Parliament, 2018). Milk consumption, however, varies significantly between European regions and countries: it is higher in the North of Europe; in fact, in 2017, the top five European countries in terms of per capita consumption of fluid milk are Finland (119.7 kg), Ireland (110.6 kg), UK and Estonia (101 kg) and Denmark (85 kg).

<sup>3</sup> Volatility measures the intensity of price changes in percentage terms with respect to the usual average value in a given period of time. High volatility corresponds to more pronounced price changes (positive or negative).

<sup>4</sup> Standard deviation of milk prices of the last 12 months divided by the average price over the same period.

<sup>5</sup> The European Commission bought a specific amount of products at a set price when prices were low to provide a minimum floor.

<sup>6</sup> The European Commission supported private operators through the storage of the products. In this way private operators could temporarily take products off the market but keep ownership so they can sell them when the storage period expires.

CLAL (2019a) has estimated that the European milk self-sufficiency rate<sup>7</sup> in 2018 is about 114% and is increasing over time: from 2010 to 2018 it has grown by 3.2%. The self-sufficiency rate is greater than 100% in Central (125%), Northern (136%) and Eastern European countries (111%). This means that, on average, these are exporter countries, while it is equal to about 75% in the South of Europe where countries are mainly importers. In other terms, countries that were exporters before the milk quota abolition continue being exporters (e.g. Germany, France, the Netherlands). Countries that were importers are still defined in this way, however their self-sufficiency rate is increased, so their dependency on imports is decreased.

With an overall European decreasing demand for milk and a self-sufficiency rate higher than 100%, it is inevitable that a large part of additional milk production is redirected into trade flows. According to Eurostat, about 20 million tonnes of milk (SITC 022<sup>8</sup>), equal to 13% of EU milk production, was put directly on the market in 2018.

As expected, intra-EU exports represent the largest part of total EU exports of milk<sup>9</sup> (16.5 million tonnes in 2018), even if their share of total milk exports is decreasing (from 88% in 2010 to 83% in 2018).

By contrast, total extra-EU exports are following an increasing trend, intensified since the milk quota abolition. The share of extra-EU exports in total EU exports of milk has risen from 11.4% in 2010 to 17.0% in 2018, reaching 3.4 million tonnes. Over the transition period (2013-2015), they grew by more than 30% (by 740 thousand tonnes). China is the top extra-EU importer of milk with a 19% share of total extra-EU exports of milk in 2018. The main extra-EU exporters are Germany (share of 20.6%), France (17.2%), the Netherlands (15.8%) Belgium (8.5%) and Poland (8.2%), with a total volume of exports equal to 2.1 million tonnes in 2018. From 2013 to 2015, extra-EU exports of milk experienced a concentration among these countries, rising by almost 40%, especially in Germany, the Netherlands and Poland.

For countries like Germany and France, the largest EU milk producers, extra-EU milk exports are becoming more convenient than intra-EU exports. First, a tonne of milk sold within the EU is worth less than a tonne sold outside the EU, mainly because the typology of milk exported is different (e.g. fluid, dry, condensed). Second, provided that the demand for milk in Europe is covered in most countries, huge additional quantities, not needed internally, are more likely to promise extra profits if sold where there is a larger market for European dairy products.

### 3. The Chinese milk sector

Very few countries worldwide are self-sufficient with regard to milk. China is among the main milk-deficit countries with an estimated self-sufficiency rate around 80% in

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<sup>7</sup> The self-sufficiency rate indicates to which extent a country relies on its own production resources. It is equal to the ratio between the total cow's milk delivered to dairies and the sum of the total cow's milk delivered to dairies and the difference between total milk imports and exports.

<sup>8</sup> SITC (Standard International Trade Classification) 022: Milk, cream and milk products (excluding butter, cheese).

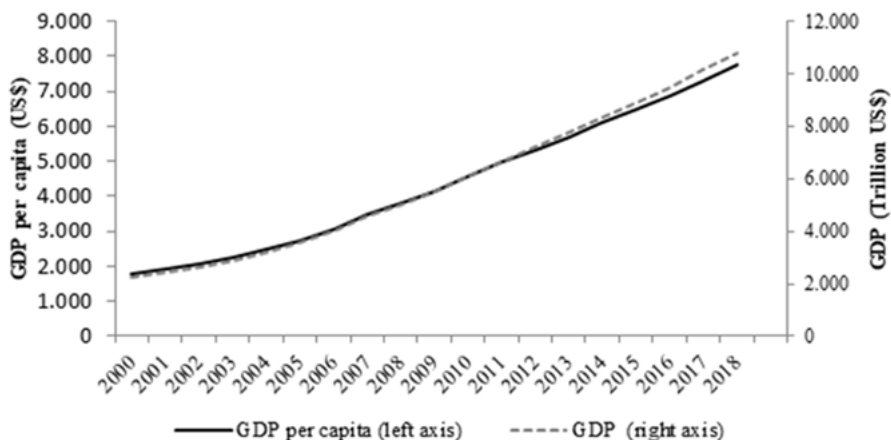
<sup>9</sup> Few EU countries have a milk-deficit and products can move freely and easily within the EU.



2017 (CLAL, 2019).

Despite China's population representing almost 20% of the total world population, its milk production accounts for only 4.3% of world total production. The Chinese milk industry, however, has been rapidly developing since the beginning of the 2000s. Milk production has grown by 22.8 million tonnes (190%) from 2000 to 2018, rising from 12.0 to 34.8 million tonnes (Figure 2).

**Figure 2.** Milk production and growth rate in China, 2000-2025



Note: from 2018 data are estimated

Source: authors' elaboration on OECD-FAO data (2019)

After the sharp increase experienced at the beginning of 2000s, since 2004 the growth rate of Chinese milk production slowed down because of less developed dairy industry and epidemic diseases (Tao et al., 2016). In late 2013, the domestic production saw a significant drop, caused by a disease which led farmers leaving the industry; as a consequence, milk prices jumped. China's shrinking dairy herd, especially due to the retreat of small-scale farms from the market because of increasing feed costs, together with stricter environmental regulations and lower international milk prices, are other important determinants of the slowdown of the growth rate (USDA, 2019).

Supported by a growing demand, the Chinese production of milk is recovering since 2018 and it is projected to further expand in the next years, reaching 36.5 million tonnes in 2025 (+4.7% from 2018) (OECD-FAO, 2019a). Its share of world production, however, will remain at the same level (around 4%).

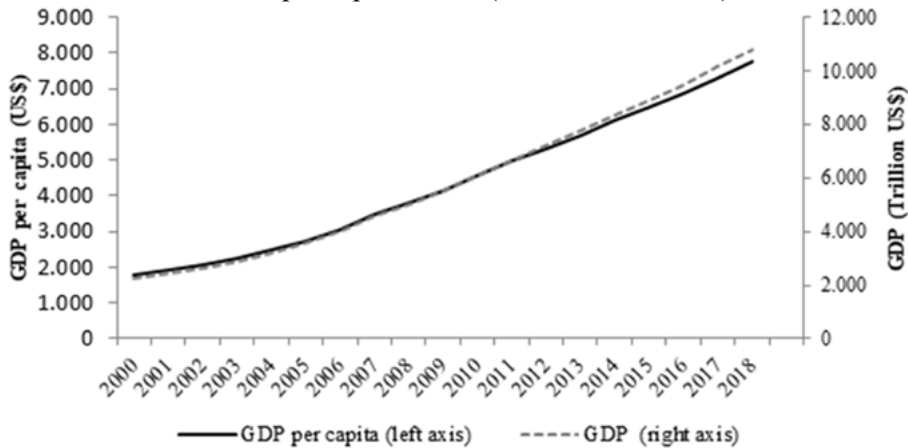
With approximately 1.4 billion people in 2018, China continues being the most populous country in the world. However, its population is currently ageing at a rapid rate (Li et al., 2009; Zhang et al., 2012). The age group of 60 years and over will, in fact, represent the largest share of population by 2050.

Along with population growth and ageing, China is characterized by substantial internal migration flows. According to the World Bank, barely 20% of the Chinese population was living in urban areas in the 1980s. Since then, the urbanization process

has been dominant; in fact, in 2018 nearly 60% of the Chinese population is registered in urban areas. From 2010 to 2018 Chinese rural population reduced by about 95 million people (-13.7%) against an increment of more than 151 million people living in urban regions (+21.9%). This trend is expected to continue over time together with population growth, although at a lower rate.

The distinction between urban and rural areas is associated with substantial income inequalities. The Chinese GDP per capita (constant prices 2010, US\$) increased from \$1,767 in 2000 to \$4,455 in 2010 and to \$7,755 in 2018 (Figure 3). Despite the fact that the per capita income available has grown in both urban and rural regions, income inequality remains significant. In 2017, the ratio between urban and rural per capita disposal income was still equal to 2.7 (National Bureau of Statistics of China, 2018).

**Figure 3.** Chinese GDP and per capita GDP<sup>10</sup> (constant 2010 US\$), 2000-2018



Source: authors' elaboration on World Bank data (2019)

Likewise China's milk production, also the domestic consumption of milk and milk products is progressively growing since the 2000s. Total Chinese milk consumption increased from 12.6 billion kg in 2010 to 18 billion kg in 2017. Per capita consumption nationwide grew from 9.1 to 12.1 kg per year in the same period, registering an increment of 33% (National Bureau of Statistics of China, 2018).

Fluid milk is the most consumed typology of milk. The rapid development of fluid milk is the result of the rapid growth in consumption of UHT (ultra-high temperature) milk because of its longer shelf life. The UHT milk market, nowadays, represents more than 60% of total fluid milk consumed in China (Transparency Market Research, 2014). In spite of its impressive overall growing milk consumption, China has still one of the lowest levels of per capita milk consumption worldwide, also compared to other Asian countries (e.g. India 47.3 kg, Japan 30.1 kg in 2017).

This factor can be partially addressed to the particular predisposition of Chinese people to lactase-deficiency; in fact, in many scientific studies, it is estimated that the percentage of lactose intolerance is higher than 85% in China, affecting 4 in 5 people

<sup>10</sup> Chinese GNI (constant 2010 US\$) is very close to GDP.

(Yang et al., 2013; Goh et al., 2018). Also, the melamine milk scandal<sup>11</sup> of 2008 has seriously affected Chinese milk consumption causing a drop in the demand (Pei et al., 2011; Jia et al., 2012; Lam et al., 2013).

Chinese's lactose intolerance together with the milk scandal have also intensified the demand and consumption of milk alternatives, especially from plant sources, like milk of soy, rice, coconut, walnut and almond. Despite their great potential for the health food market, however, nutritionally they are not comparable or equivalent to animals' milk (Sethi et al., 2016). In fact, Chinese per capita milk consumption is increasing.

Aware of this, the Chinese government has been implementing policies to promote milk consumption. Some examples are the introduction of school milk programs since 2000 and the publication of official nutrition guidelines, aimed to encourage the adoption of healthier diets and raise awareness on the benefits deriving from consuming milk on a daily basis (Cheng et al., 2015).

These programs can partially explain the sharp growth in the per capita consumption of milk starting at the end of the 1990s (Fuller et al., 2006), which is still going on. Nevertheless, this upward trend can be motivated by further demographic, economic and cultural factors.

The Chinese ageing trend, for instance, is expected to deeply shape milk consumption trends (Hengyun and Allan, 2004). An ageing population with greater life expectancy would increase China's nutritional requirements. The integration of traditionally low calcium diets (especially for the elderly) with milk and milk products could have significant public health benefits (Kruger et al., 2016). Secondly, increasing the awareness in milk benefits among the younger generations, they consume more milk today but they will be also more likely to consume more milk when they become older. Finally, there will be an intergenerational effect in milk consumption habits as the younger generation of today will transmit to the next generation this greater propensity to milk.

Consumption and consumption growth rate, in addition, substantially vary depending on the household location in rural or urban areas (Table 2).

**Table 2.** Per-capita milk consumption in urban and rural China, 2010- 2017

Year	Urban		Rural	
	Kg	Δ(%)	Kg	Δ(%)
2010	14.0		3.6	
2011	17.7	26.4	5.2	44.4
2012	14.0	-20.9	5.3	1.9
2013	17.1	22.1	5.7	7.5
2014	18.1	5.8	6.4	12.3
2015	17.1	-5.5	6.3	-1.6
2016	16.5	-3.5	6.6	4.8
2017	16.5	0.0	6.9	4.5
Δ2010-2017	2.5	17.9	3.3	91.7

Note: Δ(%) indicates the difference with respect to the previous year

Source: authors' elaboration on National Bureau of Statistics of China (2018)

<sup>11</sup> It was found that milk suppliers were adding melamine to artificially increment the protein readings of milk and infant formula.

According to the National Bureau of Statistics of China (2018), Chinese per capita milk consumption in urban regions is 16.5 kg against 6.9 kg in rural ones in 2017. The overall growth rate is definitely greater in rural China, 91.7% from 2010 to 2017, than in urban China, 17.9% in the same period. Despite the higher growth rate, the level of per-capita consumption in rural areas in 2017 was lower than a half of the per-capita consumption in urban areas in 2010.

There are many concurrent factors that can contribute to explain the heterogeneity between rural and urban households in per-capita consumption levels and their evolution over time, and income is one of that.

Several studies have estimated a strong positive effect of households' income growth on the Chinese milk consumption (Fuller et al., 2006; Zheng and Henneberry, 2010). Fuller et al. (2006) highlighted that, despite demand increases occurring at all income levels, for lower-income groups (generally rural areas) demand increments are larger than income ones. It follows that milk demand estimations must take into account the existent income gap between urban and rural areas (Zheng and Henneberry, 2010). Our estimation of income elasticity of per capita milk consumption<sup>12</sup> in urban and rural China (Table 3) confirms what was found by Fuller et al. (2006): elasticity decreases as income grows (e.g. from rural to urban areas). In addition, income elasticity measured in urban regions is rather low, although positive (0.27) while in rural regions, it is greater than 1 (1.38); therefore, milk is considered a superior or luxury good (e.g. the per capita consumption will increase more than proportionally as income rises). Income elasticity of meat<sup>13</sup>, on the contrary, is positive and lower than 1 for both regions; this means that Chinese consumers consider meat as a normal good (e.g. an income increase will lead to a per capita consumption increase).

**Table 3.** Income elasticity of per-capita consumption, 2010-2017

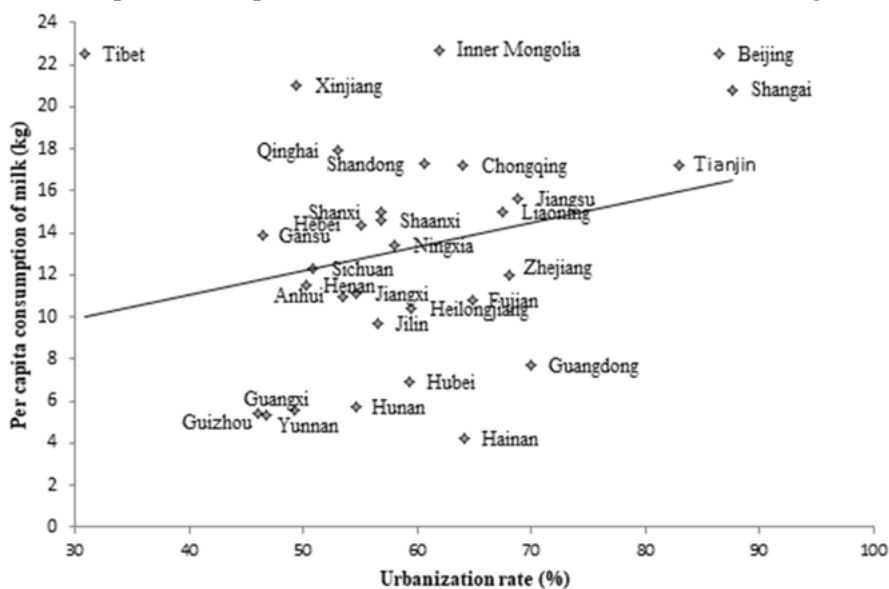
	Urban	Rural
<b>Milk</b>	0.27	1.38
<b>Meat</b>	0.29	0.45

Source: authors' elaboration on National Bureau of Statistics of China data (2018)

Our estimates of income elasticities for milk (Table 3) are consistent with the evidence presented in Table 2. In Table 3 we show that the same percentage increase in income leads to a higher increase in per-capita consumption of milk in rural areas, which are actually those characterized by a more marked increase in milk per-capita consumption over the years (Table 2). It follows that the demand for milk by lower-income consumers is much more responsive to income increases than the demand by higher-income consumers.

<sup>12</sup> Percentage increase in per-capita consumption associated with an increase in Chinese GDP per-capita by 1%.

<sup>13</sup> The comparison between milk and meat income elasticities is driven by the fact that these products tend to follow a similar pattern in China, likewise other developing countries: consumption increases along with income improvement (Delgado, 2003).

**Figure 4.** Per-capita consumption of milk and urbanization rate in Chinese regions, 2017

Source: authors' elaboration National Bureau of Statistics of China data (2018)

There is a significant regional variation in terms of per capita consumption (Zhou, 2017) and urbanization rates. The regression line clearly shows that, on average, per capita milk consumption increases along with the rate of urbanization<sup>14</sup> (Figure 4). An increment of 10% in the urbanization rate is associated with a 1.2 kg increase in the per capita milk consumption, which is about 10% of the nationwide per capita consumption of milk, amounting to 12.1 kg.

The progressive urbanization process may positively affect the consumption of milk via other channels than income. Indeed, urban areas are characterized by a greater diffusion of modern marketing channels, such as supermarkets. Moreover, the opening of the Chinese society in urban areas to the influence of Western countries has changed consumers' perceptions of dairy products and led to a shift from a semi-vegetarian diet to an animal-product-dominant diet (Zhou et al., 2002; Lam et al., 2013).

On top of income as well as demographic and cultural factors, the demand for milk is, as expected, significantly influenced by price variations (Fuller et al., 2006; Cheng et al., 2015). In Cheng et al. (2015), milk demand is negatively affected by price although it is inelastic; therefore, price changes imply smaller changes in the quantity demanded. The prices of substitute goods (e.g. plant-based milk alternatives), are instead positively related to the consumption of milk.

Although China is expected to increase its milk production (OECD-FAO, 2019), it remains the largest importer of dairy products because of the growth in consumption and the insufficient domestic supply.

<sup>14</sup> An exception is represented by the prevalently rural region of Tibet where per capita consumption is among the highest because of the importance of Tibetan yaks.

Chinese imports of milk and milk products (in milk equivalents) reached 14.6 million tonnes in 2018, with an increment of 3.9 million tonnes (+36.3%) from 2015 and of 6.5 million tonnes (+79.1%) from 2010.

Imports of milk alone (e.g. fluid milk, Skimmed Milk Powder-SMP, Whole Milk Powder-WMP and whey), account for more than 10% of them. Chinese milk imports, in fact, reached 1.5 million tonnes, of which, 750 thousand tonnes are of fluid milk (USDA, 2019). The EU, especially driven by Germany, accounts for over 50% of the fluid milk imports into China, followed by New Zealand (35%) and Australia (12%). The trade flow is boosted by the continuous development of Chinese e-commerce. Consumers' safety concerns over domestic milk increased online sales of dairy products, besides the fact that they are often more convenient (Fok et al., 2017).

China's imports of WMP and SMP reached 520 and 275 thousand tonnes respectively in 2018. In both cases New Zealand is the largest supplier, facilitated by the preferential tariffs under the New Zealand–China Free Trade Agreement (FTA) of 2008, followed by the EU, Australia and US (USDA, 2019). Due to the US tariffs imposed in July 2018, the worth of US dairy exports to China reduced by 13% from 2017 to 2018, falling from 577 million of dollars to 500 million, after years characterized by an increasing trend (USDEC, 2019).

#### 4. The EU-China milk trade

The EU-China trade relationship mainly consists of trade in goods; trade in food represents a relatively small share, although it has been increasing over time. By contrast with the overall trade balance between the two traders (which shows a EU deficit in favor of China), for food products, the EU has a surplus, €2.6 billion in 2018 (European Commission, 2019).

A very important share of EU food exports to China is represented by dairy products<sup>15</sup> (15.6%, €1.2 billion in 2018) and, in particular, milk<sup>16</sup> accounts for 85% of dairy exports (13.8% of EU food exports).

The total volume of EU milk exports towards China has rapidly risen since 2010 reaching in 2018 almost 690 thousand tonnes (about 45% of total Chinese milk imports), generating more than €1 billion (Table 4). In this period, exports increased by 552 thousand tonnes for €837 million. This trend is also reflected in the share of EU milk exports towards China in the total EU milk exports which increased from 0.5% in 2010 to 3.5% in 2018.

In 2010-2014, EU milk exports to China increased by 308.7 thousand tonnes to €526 million. After the milk quota abolition, they continued increasing by 83.6 million tonnes generating a surplus of €250 million in 2015-2018.

As a consequence of the significant EU milk production growth registered from 2013 to 2015, EU milk exports to China experienced the most rapid and largest expansion, in quantitative terms, between 2014 and 2015: more than 160 thousand tonnes (+36%) in just one year generating a surplus of €62 million. This expansion has also affected the

<sup>15</sup> SITC 02.

<sup>16</sup> SITC 022.

share of EU milk exports towards China in total EU milk exports which exceeded the 3% in 2015. After that, milk exports stabilized around 700 thousand tonnes, overcoming the billion of euro, and their share in total EU milk exports remained steady at 3.5%.

**Table 4.** EU milk exports (SITC 022) towards China, 2010- 2018

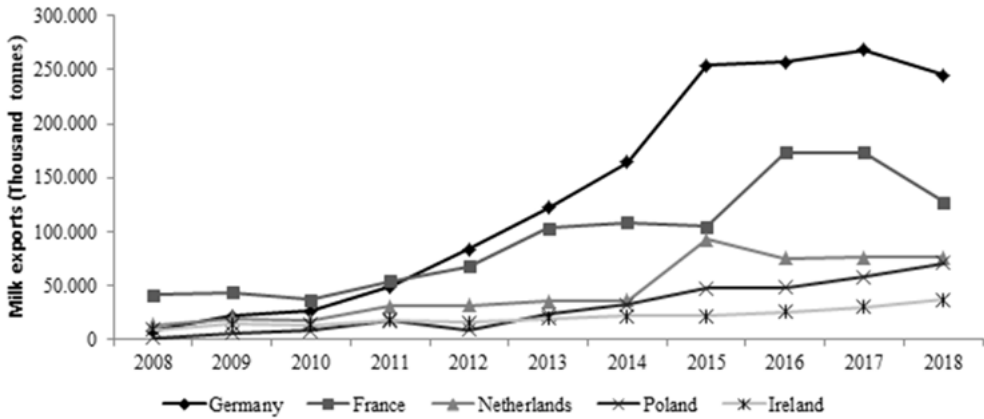
Year	Tonnes	Δ(Tonnes)	MM€	Δ(MM€)	Share on total EU milk exports (%)
2010	136,950		221.8		0.8
2011	209,060	72,110	328.9	107.1	1.1
2012	254,991	45,931	460.9	132.0	1.4
2013	366,108	111,117	679.0	218.1	2.0
2014	445,639	79,531	747.9	68.9	2.3
2015	606,271	160,632	809.5	61.6	3.1
2016	677,185	70,914	922.3	112.7	3.5
2017	708,293	31,108	1,108.1	185.8	3.5
2018	689,858	-18,435	1,059.1	-49.0	3.5

Note: Δ indicates the difference with respect to the previous year

Source: authors' elaboration on Eurostat data

Figure 5 considers Germany, France, the Netherlands, Poland and Ireland, which are the top five European countries for milk exports to China in 2018 in real terms. Together they account for more than 80% of EU exports, corresponding to about 557 thousand tonnes and more than €750 million. Also the main EU milk exporters towards China experienced a sharp increment of milk exports between 2014 and 2015 and, subsequently, maintained them at a higher level with respect to the quota-period. Germany, in particular, incremented its exports by 90.2 thousand tonnes (+55%) and its share of total EU milk exports to China raised from 37% to 42%. Two are the exceptions: Ireland, whose exports towards China remains constant over time, and France whose largest expansion (equal to 68.8 thousand tonnes, +65.6%) occurred between 2015 and 2016 with a share increasing from 17% to 26%.

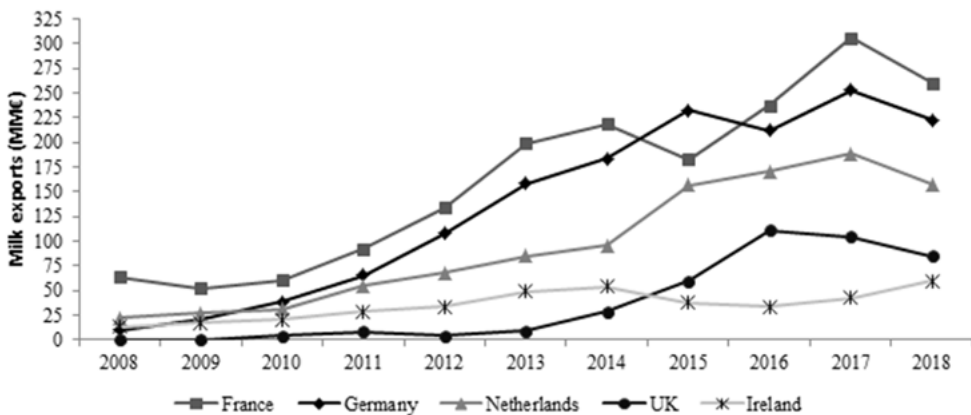
**Figure 5.** Milk exports (SITC 022) to China of top European countries, 2008-2018 (real terms)



Source: authors' elaboration on Eurostat data

Figure 6 focuses on the top five European countries for milk exports to China in 2018 in nominal terms, namely France, Germany, the Netherlands, the UK and Ireland. Their exports, accounting for about 75% of total worth of EU milk exports into China, have reached €786 million. For Germany, the Netherlands and the UK the increase in the volume of milk exports to China has outbalanced the drop in prices that occurred between 2014 and 2015 (Table 1) and, therefore, the worth of those exports has risen. France and Ireland, on the contrary, experienced a decrease in the total worth of milk exports from 2014 to 2015, despite the growth in the exports volume. This reduction, however, is followed by an increasing trend starting in 2016.

**Figure 6.** Milk exports (SITC 022) to China of top European countries, 2008-2018 (nominal terms)

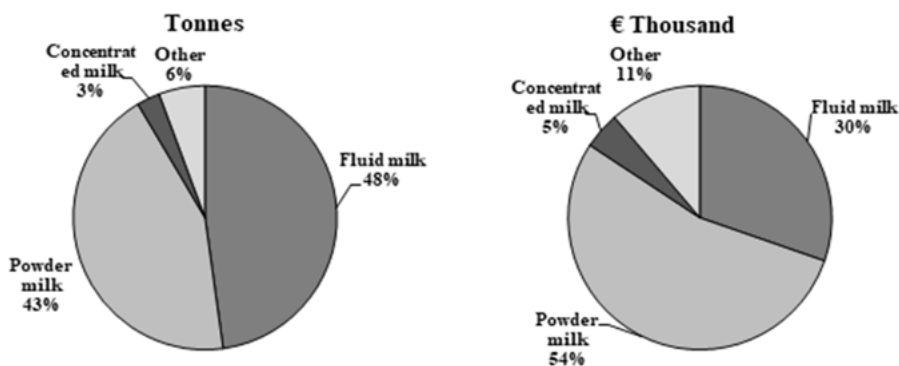


Source: authors' elaboration on Eurostat data



In 2018, almost half of EU milk exported to China (about 330 thousand tonnes) is fluid milk, although it represents just a third of the worth of the trade flow (€321 million). Powder milk (SMP, WMP and whey powder), accounts for 43% of the overall milk exports (301 thousand tonnes) in 2018, and it generates more than half of the total revenue, about €572 million (Figure 7).

**Figure 7.** EU milk exports to China for milk typology, 2018



Source: authors' elaboration on Eurostat data

From 2010 to 2018 the largest increase in EU-China milk exports occurred for fluid milk: the volume increased by almost 322 thousand tonnes (+3,916%) while their worth by more than €310 million (+3,356%), despite the drop in prices registered from 2014 to 2016. Also for fluid milk the largest export increment occurred between 2014 and 2015: they expanded by 108 thousand tonnes, exceeding for the first time the 300 thousand tonnes, and generating a surplus of more than €73 million.

## 5. Concluding remarks

The abolition of milk quotas in the European Union led to a major production expansion from 2013-2014, when EU countries were adapting to the imminent regulation change, to 2015 when the removal of quotas became effective. In three years, EU milk production increased by 7.5 million tonnes (+5.4%). After the quota removal, the EU milk output continued increasing, although at a lower rate (less than 1% per year). The effect on milk prices, instead, manifested itself between 2014 and 2016, when the average EU milk producer price dropped by 23.7% and milk price volatility peaked.

Provided that EU countries are among the few to have a milk-surplus, this excess of production has fueled EU trade flows especially towards international markets where the level of per capita consumption is still lower than that observed in more developed economies. Extra-EU milk exports, in fact, rose by 740 thousand tonnes (+30%) in 2013-2015 and then continued increasing by 8% until 2018.

In this framework, Chinese growing demand of milk has played an important role

in price stabilization for EU farmers. Indeed, between 2014 and 2015 EU milk exports to China increased by more than 160 thousand tonnes (+36%), exceeding 600 thousand tonnes and generating a surplus of €62 million, and then stabilized around 700 thousand tonnes in the next years.

China, potentially, could be an increasingly key market for European milk producers. On the one side, the EU continues being the top milk export worldwide with a more marked growth rate than other exporting countries. On the other side, China is the world largest milk importer and its imports are increasing over time more than other importing countries. This pattern is guided by the growing domestic demand in China, driven by population and GDP trends, and it offsets the insufficient domestic production.

To answer the question whether the EU supply will be able to satisfy the rising Chinese demand in the next future, it is necessary to consider some factors.

First, livestock production is responsible for 18% of overall greenhouse gas emissions in CO<sub>2</sub> terms, although it varies substantially across the world, of which the FAO (2010) has estimated that the dairy sector contributes with 3.0%-5.1%. An uncontrolled increase in production and, in turn, of exports will lead to further environmental damage. The EU dairy sector, therefore, faces the challenge of becoming more sustainable by doing more control on the environmental impact of the activities of milk production and processing. Second, the lack of a Free Trade Agreement (FTA) with China could advantage EU competitors in milk trade flows, such as Australia and New Zealand, which already benefit from their FTAs signed with China. Conversely, the EU could benefit from the duty war between the US and China, which has already reduced the US dairy exports to China, interrupting a long-lasting increasing trend.

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# Discourse Study in the Postmodern Feminist International Relations

Yang Meijiao\*

**Abstract** The development of the theory of international relations has gone through several major changes, of which the most important one is the linguistic turn, and the struggle for and construction of discourse power is an important feature or proposition in the postmodern feminist theory. Language is no longer just the meaning of discourse and text, but essentially reflects a power transfer, discourse also means power, and language bears the carrier of power. Whoever has mastered the right to “speak” has the right to construct the behavior pattern. Postmodern feminist international relations theory is based on deconstruction, existentialism, anti-essentialism and anti-universalism. It advocates individual differences, marginal women’s demands and the mobility of subjectivity, which all reflect the diversity and flexibility of international political development. In order to fully understand the complete picture of international relations, we have retrieved the gender in the international community. This exploration can not only make us understand the important position of discourse in the postmodern feminist international relations theory more clearly, but also help scholars find a feasible path for the construction of feminist international relations theory.

**Keywords:** Postmodern, Feminism, International relations, Discourse power.

## Introduction

Feminist movements have experienced many waves, especially the second movement in the 1960s. This time, they adjusted its focus to pay more attention to the differences between the sexes and the inequality in fact. Because its theoretical basis is weak and its persuasion is poor, it more reflects the demands of the white middle-class women in the West, which as a result has not formed much influence in the world. However, this has not obliterated the development of feminism. On the contrary, the emergence of postmodernism has provided it with a brand-new perspective of thinking. Postmodernism advocates differences and pluralism and opposes the inherent binary opposition, absolute truth and conventional knowledge. This has many overlaps with the ideas advocated by the feminist movement.

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Yang Meijiao\*(✉)

\* Joint PHD candidate of Peking University and Vrije Universiteit Brussel, Peking University, Beijing, P.R.China  
e-mail: meijiao@pku.edu.cn

On this basis, feminism and postmodernism have gradually been integrated and applied in International Relations to form the postmodern feminist international theory. After that, its perspective of attention has been extended to women in the third world, and women of different classes, nationalities, races and colors have become the main actors. In the past, International Relations focused on “high politics” such as state, war, peace and military. However, any international political research that ignores gender is not whole and complete. With the rise of feminist international relations theories, social gender has entered this field and began to pay attention to the influence and construction of female roles in the International Relations.

The development of the theory in international relations has seen several major changes, linguistic turn is one of the most important, and the struggle for and construction of discourse power is an important point in the postmodern feminist theory. At this time, language not only refers to the meaning of discourse and text, but essentially reflects a power transfer, discourse is power, and language takes the carrier of power. By analyzing the discourse view in postmodern feminist international relations, we can not only understand more clearly the importance of discourse in postmodern feminist international relations theory, but also open up a path for the further development of feminist international relations theory.

## 1. The Development of the Postmodern Feminist International Relations

There are many factions in feminist theory, which have not yet formed a complete and unified system. They also have their own views and claims on various issues in International Relations. According to different classification standards, it can be divided into different categories. For example, according to the understanding of equality and difference, it can be divided into universalist feminism, separatist feminism, essentialist feminism and particularism feminism.<sup>1</sup> According to the difference of political orientation, it can be broken into liberal feminism, Marxist feminism, socialist feminism, psychoanalytic feminism and radical feminism.<sup>2</sup> At the same time, some scholars think that it can be separated into liberal feminism, radical feminism, postmodern feminism and new feminism according to political standpoint.<sup>3</sup> No matter whether or not the postmodern feminist international relations faction has been included in many classifications, the post-modern features of it have emerged since its development, that is, criticizing the liberal feminist international relations and the radical feminist international relations, opposing the inherent understanding of the femininity and recognizing the diversity and difference of women's identities.

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<sup>1</sup> Lynda Stone ed (1994), *The Education Feminism Reader*, Routledge, 1994, p.6.

<sup>2</sup> 周绍雪 (2010) 《女性主义国际关系理论研究》，九州出版社

<sup>3</sup> 胡传荣 (2010) 《女性主义与国际关系》，世界知识出版社。

### ***1.1 Philosophical Basis of the postmodern Feminist International Relations Theory***

The development of postmodern feminist international relations theory coincides with various philosophical backgrounds, especially its linguistic turn embodies some philosophical logic. Exploring the philosophical basis behind it will help us to deeply analyze the development context of the theory. To a large extent, the philosophical connotation of postmodern feminist international relations theory should be excavated from the philosophical origins of postmodernism and then applied to feminist international relations theory. Deconstruction, existentialism, anti-essentialism and anti-universalism have laid the development direction and keynote of postmodern feminist international relations theory.

First, deconstruction of language. Jacques Derrida thinks that there is a certain asymmetry between the world described by words and the real world. The former can never truly reflect the latter. However, traditional western philosophy holds that the perfect unity of the two can be realized through three principles, namely, the principle of opposites, the principle of logical exclusiveness and the principle of priority. Its connotation is that things are the unity of opposites, such as men and women, tall and short, advantages and disadvantages, etc. These opposites are mutually exclusive, tall excludes short, yes excludes no. Not only that, one of the opposing roles is always better than the other. Derrida's deconstruction thinks this principle is incomplete, because even the superior party depends on the other, and the opposite party at a disadvantage presents a kind of negativity, negation and fluidity, so priority and purity cannot be confirmed, which violates the principle of priority and exclusiveness. The so-called western centralism and the universality of values are nothing but constructed. As the west was the first to embark on the road of industrialization and modernization in modern times, and its development level far exceeded that of non-western countries. On this basis, it gradually constructed a kind of language hegemony. Postmodern feminist international relations theory draws many ideas from this modern ideas, Derrida's and Foucault's thoughts, including discourse theory and criticism of male centralism, the binary opposition under patriarchy excluding women, that men are taken for granted as the superior part, and women's status and role being hidden, etc.<sup>4</sup>

For Sigmund Freud and Jacques Lacan, women are excluded from the symbol system, which also means that women are excluded from the possibility of any connection with culture and order. She was excluded from the system because she lacked any relationship with Phallogocentrism, she could not enjoy the male order superiority and she is quite far from the real power.<sup>5</sup>

Luce Irigaray tries to deconstruct patriarchy from ontology and discourse. She advocates that both traditional philosophy and contemporary philosophy ignore the

<sup>4</sup> 雅克·德里达(1999),《声音与现象》,杜小真译,商务印书馆;(2001)《书写于差异》,张宁译,三联书店。

<sup>5</sup> Helene Cixous (2000), *Castration or Decapitation*, in Kelly Oliver ed., *French Feminism Reader*, Rowman & Littlefield Publishers Inc.

discussion of gender differences. The consequence of this neglect is that women are not only ignored in real life, but also in text analysis. Gender differences “will bring a new era of thinking, art, poetry and language: the creation of a new poetic era”.<sup>6</sup> In addition, some scholars criticized and deconstructed the gender opposition under the traditional patriarchy from the perspective of women’s writing and from the perspective of language knowledge. They all advocate that women are no longer only the “other” role, and the traditional discourse makes the male characteristics and the female characteristics, which all reflected the masculinity and oppression of women.

Second, existentialism. Beauvoir is the creator of existentialist female thought. Existentialism refuses to admit that human beings have some universal nature. Individual free choice is the meaning of human life. Every living person has self-consciousness, and can construct his own value system and theory according to self-choice. He not only has freedom of choice but also takes responsibility for decisions. He constructs a sense of mission for himself and the world around him, and highlights the value and significance of his life through the pursuit and realization of goals. Postmodern feminist international relations theorists, especially Beauvoir, have drawn a lot of ideas from that. Women should exist on an equal footing with men, have the right to choose freely in the world, and play an important role in the formation of international relations. As women leaders, diplomats’ wives or general women, they are all important actors in their life times and international politics.

The oppression and discrimination suffered by modern women are not commensurate with their roles. Beauvoir’s feminist philosophy draws on the ideas of traditional philosophers and has exerted a great influence on the postmodern feminist theory of international relations. She also draws on the ideas of many scholars, including Hegel, Husserl, Marx and Engels, Freud, other psychologists, Rousseau, etc.<sup>7</sup> She has borrowed Hegel’s dialectic thought, expanded the scope of opposition between self and others, and applies it to the thought of master and servant. Using Husserl’s phenomenological method, a new descriptive analysis mode has been formed. Referring to the thoughts of Marx and Engels, she uses dialectical materialism to re-understand the development direction of society and history. The Freudian school thinks that human beings are just individual creatures, and each organism has its own destiny. Beauvoir uses this logical perspective to think that human beings are concrete of consciousness and thought, life, value and construction. Rousseau believed that the experience of childhood would have an impact on individual freedom, which deeply influenced Beauvoir’s existentialist female thinking way.<sup>8</sup>

Third, anti-essentialism and anti-universalism. Essentialism emphasizes the decisive role of heredity or physiology. Universalism holds that nature or human nature are unchangeable and can be used as the source of all explanations. Postmodern Feminist International Relations Theory criticizes essentialism and universalism. It

<sup>6</sup> Luce Irigaray (2000), *An Ethics of Sexual Difference*, in Kelly Oliver ed., *French Feminism Reader*, Rowman & Littlefield Publishers Inc..

<sup>7</sup> 西蒙娜·德·波伏娃 (2004), 《第二性》, 陶铁柱译, 中国书籍出版社□

<sup>8</sup> 萨莉·J·肖尔茨 (2002), 《波伏娃》, 龚晓京译, 中华书局。



holds that this idea solidifies the traditional binary opposition between men and women and patriarchy, which intensifies the inequality between them. Gender is not the decisive factor, and human nature will change with the social and historical conditions. Moreover, postmodern feminism fundamentally questions the concept of sex. They pay more attention to the differences in nationality, race, country, class, etc. These differences are all based on gender identity under the background of male centralism. Essentialism and Universalism deny the change, which conflicts with the post-modern feminist view of international relations.

### *1.2 Perspectives of the Postmodern Feminist International Relations*

On the philosophical basis of deconstruction, existentialism, anti-essentialism and anti-universalism, the postmodern feminist international relations theory has gradually clarified its main contents, which are respectively women's demands that pay attention to differences, marginal identities and subjectivity that advocates mobility.

First of all, the postmodern feminist international relations theory pays attention to the existence of differences. It opposes the traditional binary opposition and grand narrative theory and highlights the diversity of women's identities. It has multi-dimensional ideological flexibility. It is often skeptical of the traditional social gender cognition, knowledge, one-way, hierarchical, either-or understanding. It can also see the diversity behind these phenomena and adopts a flexible and changeable attitude.<sup>9</sup> From the thought of the Enlightenment, all grand theories claim their universality and value neutrality, but in real life they still strictly distinguish between "public domain" and "private domain", active and passive, rational and emotional, etc. Postmodern feminist international relations theory believes this is a patriarchal mode of thinking in itself, which does not reflect diversity and difference, but rather solidifies its division. Moreover, these thoughts contain oppression on women. The so-called universal values are wrong, all abstract concepts do not show the whole picture of facts, and it deconstructs all inherent gender cultural assumptions of men and women. In addition, this difference is also reflected in the questioning of the gender concept. The traditional concept holds that gender is divided into men and women. According to the priority view of western traditional philosophy, men are naturally superior to women, who can only be subordinate. Under this logic, women's victim images are constructed step by step. However, men and women are actually "stories" that are being narrated. In the process of communication, people construct the identity of the target men or women, and then create this usual seemingly reasonable situation. In this continuous process of narration, gender is confirmed layer by layer, and of course is also restrained layer by layer.<sup>10</sup>

Secondly, it focuses on the appeals of the marginal women. This point of view extends from its emphasis on differences, which makes it necessary to pay attention to women in the Third World, ethnic minorities, marginal areas, etc. Compared with

<sup>9</sup> Christine Sylvester (2002), *Feminism International Relations: An Unfinished Journey*, Cambridge: Cambridge University Press.

<sup>10</sup> 克瑞斯汀·丝维斯特 (2003), 《女性主义与后现代国际关系》, 余潇枫等译, 杭州: 浙江人民出版社

white women or women leaders of the western middle class, they have a marginal status in international relations, and are rarely considered as a factor of interests in handling international affairs. However, postmodern feminist international relations try to deconstruct the traditional international theory and expand the international perspective to marginalized women groups, because it finds that these women also play an important role in the construction of the international system, such as prostitutes in brothels in colonial military bases, women workers in large plantations, third world women service workers working in developed countries, women who have taken refuge in other countries due to wars in their own countries, etc.<sup>11</sup> Even so, women from different regions, countries, societies and groups have formed unique experiences and patterns in the long-term struggle.<sup>12</sup>

Finally, the mobility of the subjectivity also makes a big difference. This concept was introduced into international relations by Christine Sylvester. Its main meaning is the identity and role of the subject are in a state of constant change. When the external environment such as society, politics, economy and culture changes, the identity of the subject will change accordingly. No subject can stick to a specific field, which reflects the richness of the subject and reflects the fragmentation of the identity too.<sup>13</sup> The post-modern feminist theory of international relations has fully absorbed this view. It breaks the traditional patriarchal concept and holds that women have the same subjectivity in international affairs. It also eliminates the boundaries between the public and private fields. Women can not only play a role in the family but also have an impact in the international world. There is no difference in nature between the two fields, but only in the fields in which they play their roles. Social gender is no longer a sign to judge women. Diversity of identity will be the theme of the construction of a new international system. Postmodernism advocates a fragmented identity theory, which is mainly based on the fact that any ontology will exclude other than itself. This political theory provides a new analytical thinking for the development of diverse identities. The so-called universal identity politics cannot completely cover the infinite variety of human real identity types, which means that people cannot fully understand the diversity of reality.<sup>14</sup>

## 2. Linguistic Turn in International Relations and the Postmodern Feminist Theory

For a long time, realism has been in the dominant position in the theoretical research of international relations. It was not until the late 1980s that feminist theory of international relations developed as an analytical discipline in the United States, Britain, Australia and other regions. Feminist international relations theory takes the core categories of rational state, power, interests, security and so on as the breakthrough point, and makes a general criticism on the mainstream international relations theory. Its core concept,

<sup>11</sup> Cynthia Enloe (2014) *Bananas, Beaches and Bases: Making Feminist Sense of International Politics* University of California Press.

<sup>12</sup> 佟新 (2005) *社会性别研究导论——两性不平等的社会机制分析* □, 北京大学出版社 □

<sup>13</sup> 克瑞斯汀·丝维斯特 (2003), *女性主义与后现代国际关系*, 余潇枫等译, 杭州: 浙江人民出版社 □

<sup>14</sup> 米兰达·弗里克、詹妮弗·霍恩斯比编 (2010), *《女性主义哲学指南* □, 肖巍、宋建丽、马晓燕译, 北京大学出版社 □

social gender, as an analytical method, began to permeate into various disciplines.

In 1972, Berenice Caroll published an article “Peace Research: the cult of Power” in the *Journal of Conflict Resolution*. This is the first feminist article in the mainstream international relations journal, which reveals that in today’s international relations research, attention is focused on the interests of the upper class, power is understood as control and rule, women’s daily concerns are ignored, and power is required to be understood as ability.<sup>15</sup> Then Jean Bethke Elshtain published “Public man, private woman: women in social and political thought” as the first feminist theoretical work in international relations. The book points out that the tradition of looking at the world with opposing eyes in western culture makes politics based on opposition to family life, and the marginalization of the private sphere makes women suffer from various unfair treatments.<sup>16</sup> Elshtain’s another book, *Women and War*, believed that men and women were respectively portrayed as warriors fighting for justice and beautiful hearts far from the battlefield in 1987. She focused on the impact of international relations research and practice on the social gender concept in this field. But it lacks a detailed analysis of the role of social gender concept in the formation of the knowledge system.<sup>17</sup>

Hanna Pitkin’s *Fortune Is A Woman: Gender and Politics in The Thought of Niccolo Machiavelli* was published and firstly systematically placed gender among the political thought.<sup>18</sup> Australian sociologist Raewyn Connell’s book “Gender and Power: Society, the Person and Sexual Politics” mapped the structure of gender in the present and past and made a wide-ranging analysis of feminist politics.<sup>19</sup> In the middle and late 1990s, feminist international relations gradually developed in China. Then Shi Bin published “A Feminist Interpretation of International Relations: A Review of Gender in International Relations” in *American Studies*, which can be regarded as a sign that Chinese scholars of international relations have begun to pay attention to this field.<sup>20</sup> Hu Chuanrong’s “Reflections on the Position of Women in International Relations in *International Watch*”, was the beginning of Chinese scholars’ attempt to combine feminism with international relations.<sup>21</sup> In 1998, Wang Yizhou’s *Western International Politics: History and Theory*, comprehensively introduced the research situation of feminist international relations and was of groundbreaking significance to the evaluation of western feminist international relations theory.<sup>22</sup>

<sup>15</sup> Berenice A. Caroll (1972), “Peace Research, The Cult of Power”, *Journal of Conflict Resolution*, Vol.16, No.4, pp.585-616.

<sup>16</sup> Jean Bethke Elshtain (1993), *Public man, private woman: women in social and political thought*, second edition, Princeton University Press.

<sup>17</sup> Jean Bethke Elshtain (1995), *Women and War*, the University of Chicago Press.

<sup>18</sup> Hanna Fenichel Pitkin (1999), *Fortune Is A Woman: Gender and Politics in The Thought of Niccolo Machiavelli*, the University of Chicago Press.

<sup>19</sup> R.W. Connell (1987), *Gender and Power: Society, the Person and Sexual Politics*, Stanford University Press.

<sup>20</sup> 石斌(1996), 《对国际关系的一种女性主义诠释—评〈国际关系中的社会性别〉》, 《美国研究》, 1996年第4期。

<sup>21</sup> 胡传荣(1997), 《关于妇女在国际关系中的位置的思考》, 《国际观察》, (1997)年第2期第53-56页。

<sup>22</sup> 王逸舟(2007), 《西方国际政治学: 历史与理论》, 中国社会科学出版社。

Li Yingtao's *International Politics from a Gender Perspective* was published by Shanghai People's Publishing House, which is the first monograph on feminist international relations published in China. Firstly, the author introduces "social gender" as a research method and western feminist international political theory, analyzes and discusses the characteristics of women and men in international political theory and reality, Chinese and Chinese women in the anti-aggression struggle and the practical problems of the United Nations in improving the status of women.<sup>23</sup> In 2006, "Feminist International Relations", edited by Li, was published as one of the leading textbooks in international relations. It was the first textbook on feminist international relations in Chinese academia. This book introduces the beginning, main schools and development trends of feminism in international relations, and analyzes the issues of war and peace, rights and security, and environmental security from a gender perspective. It shows the role of women as actors in international relations, international organizations and international women's movements, in the development of the country and society, and in the important position of women among cultural and ethnic relations. The textbook also analyzes the development of feminist international relations in China and the development of contemporary Chinese diplomacy from a gender perspective.<sup>24</sup> In 2010, Hu Chuanrong published *Feminism and International Relations*. On the basis of sorting out the core concepts, ontology, epistemology of the feminist school of international relations and the relationship between the school and mainstream theories, she examined the interaction between the construction of the knowledge system of international relations and the social gender concepts embodied in it.<sup>25</sup>

Although there have been a series of works on feminism, it is still in its infancy in international political analysis, and the amount and depth of literature in this area are not comparable to other more mature branches. The balance between autonomy and integration should be sought. However, it is still of far-reaching significance to incorporate feminist factors into international relations. It provides a new theoretical text and identity politics, challenges the traditional view of the state and reconsiders the concept of power. It is of great significance, but the way forward for feminism is very difficult. Through the exploration of Chinese and western scholars, we have a clearer understanding of the development of feminist international relations, however, we still need to further explore the logical mechanism behind the postmodern feminist theory of international relations.

Michel Foucault thinks that knowledge is a kind of discourse system. At this time, the discourse goes beyond its original meaning and includes a series of time. These events are a kind of discourse expressed by some specific actors on specific issues under specific conditions and cultural environment, which embodies a specific purpose and adopts specific ways or means. It can be seen that knowledge embodies obvious historicity, knowledge is formed through discourse practice, and discourse practice acts as a form or carrier of knowledge dissemination.<sup>26</sup> In international relations, a

<sup>23</sup> 李英桃 (2003), 《社会性别视角下的国际政治》, 上海人民出版社

<sup>24</sup> 李英桃 (2006), 《女性主义国际关系学》, 浙江人民出版社

<sup>25</sup> 胡传荣 (2010), 《女性主义与国际关系》, 世界知识出版社。

<sup>26</sup> 米歇尔·福柯 (2003), 《规训与惩罚》, 刘北成 杨远婴译, 三联书店, 2003 年版。[法] 米歇

large part of the interaction between international actors is realized through language, and for many people, their knowledge and understanding of international affairs are also expressed through language and symbols, such as a large number of treaties, negotiations, agreements, etc. In addition, to a certain extent, international relations are also constructed through language. Post-modern feminist international relations also coincide with this proposition. Discourse embodies a kind of power. There is a significance at this level. First, it attempts to deconstruct the inherent discourse system and power mode. Second, it constructs the discourse logic of post-modern feminism. However, no matter what kind of proposition, discourse is the object, carrier and tool. Therefore, analyzing the linguistic turn in international relations is of great significance for us to have a deep understanding of post-modern feminist international relations.

Some scholars believe that international relations have undergone three academic turns, one is scientific turn, based on logical positivism philosophy. The second is sociological turn, critical philosophy and sociology as means. And the third is linguistic turn which is based on the study of philosophy of language. These three academic turns have resulted in three different types of international relations theories, namely, international relations theories focusing on “solving practical problems”, theories concerning norms and ethics, and international relations theories on meaning and discourse.<sup>27</sup>The linguistic turn of international relations explores how language describes the actors and interaction modes in international relations and how international relations construct discourse. It adopts deconstruction method to reject all the fixed and unchangeable meanings of structuralism and holds that texts have different meanings and directions in different contexts. Therefore, Derrida advocates that different meanings of symbols should be deconstructed from texts.<sup>28</sup>

Post-modernist Foucault, Derrida and Bourdieu all believe that there is a certain relationship between symbols and power. Language symbols are not generated naturally, but constructed in a certain social environment. From this, we can see that the constructed symbol language has a kind of power. The constructors consciously or unconsciously interspersed its subjective color in the process of symbol construction, with a certain value judgment. Compared with the actors who only accept and use symbols, the former has an exclusive advantage. In international relations, political discourse includes not only languages directly related to political issues, but also indirectly related to political events, which are scattered in news, newspapers and the Internet.<sup>29</sup>

We can also find some deviation between the real reality and the “reality” described. The latter is a phenomenon after screening and judgment. After language processing or tailoring, the “reality” discourse constructed is full of normative factors.<sup>30</sup>The inspiration

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尔·福柯,《知识考古学》,谢强 马月译,三联书店。

<sup>27</sup> 刘永涛(2007),“理解含义:理论、话语和国际关系”,《外交评论》,2007年4月,第 95 期。

<sup>28</sup> Jacques Derrida (1998), *Of Grammatology*, Baltimore: Johns Hopkins University Press.

<sup>29</sup> Christ'l De Landtsheer (1998). *Politically Speaking : A Worldwide Examination of Language Used in the Public Sphere[C]*, Westpoint: Praeger.

<sup>30</sup> 袁正清(2006),《交往新闻给理论与国际政治研究——以德国国际关系研究为中心的一项考察》[J],世界政治与经济

from the constructed language symbols is that when analyzing international events, we need to find out the main body, the way, the target and the purpose of narration. At the same time, the research perspective of post-modern feminist international relations theory, has gradually shifted from the material and existence of social system, system, etc. to the discussion of text, culture and discourse. The mainstream international relations theory reflects a kind of regulatory color when describing gender, claiming that men are superior to women, and women are excluded from the political, military and other public fields, with strong patriarchal logic. However, the postmodern feminist international relations theory focuses its attention on the existing discourse system, deconstructs and criticizes it, and deeply recognizes that whoever has mastered the right to “speak” has the right to construct the behavior pattern.

Therefore, after being influenced by the thoughts of postmodern philosophers, postmodern feminism realizes that it is necessary to expose and subvert the inherent patriarchal discourse mode, to construct a discourse system belonging to women themselves, and to show the real situation and ideology of women. In response, many postmodern feminist international relations theorists have made arduous explorations to find ways to construct discourse. Some useful attempts include Chris Weedon’s “inverted discourse” and “confrontation discourse”,<sup>31</sup> Anne Leclerc and Ruth Eligary’s “women’s discourse” and Sharon Marcus’s “anti-rape discourse”.<sup>32</sup> They all try to form women’s exclusive power through language construction. Although these attempts to construct discourse have many drawbacks and defects, they are of great significance in essence, because it shows that postmodern feminism not only recognizes the power influence of discourse in the reality of today’s international society, but also tries to change it. In short, postmodern feminist theory of international relations has gradually exerted an important influence on the struggle for and construction of discourse power. It has shaken the discourse hegemony in the theoretical system of international relations.

Different theorists have different understandings of international interaction and international relations. Different theories of international relations have emerged under different social development backgrounds. Realism emphasizes power, liberalism emphasizes system, constructivism emphasizes culture, and the development sequence of different theories is that theorists resort to words. Later readers identify with or criticize them through interpretation. In addition, international interaction is more manifested through negotiation, negotiation, treaty and even war, which is also a game of discourse power.

In addition, in the postmodern feminist international relations theory, some scholars have also distinguished symbolic elements of meaning. The former is nondeterministic, heterogeneous and uncertain. Symbolic language makes language more vague and diffuse. However, this does not mean this development is useless. On the contrary, it also reflects a driving force for development. Traditional, instinctive or symbolic processes can also lead people into a specific situation. From this level, symbolization

<sup>31</sup> Chris Weedon (1987), *Feminism Practice and Poststructuralist Theory*, Oxford and New York: Blackwell.

<sup>32</sup> 莎朗·马库斯: (2001), 《战斗的身体、战斗的文字: 强奸防范的一种理论和政治》, 《性别政治》, 王逢振主编, 天津社会科学院出版社。

itself represents a kind of progress.<sup>33</sup> Julia Kristeva started her research from the perspective of mother, believing that it is necessary to imagine a specific relationship as a social relationship and at the same time regard it as an obvious social existence. Only in this way can it be further symbolized.<sup>34</sup> At this time, a part of discourse analysis in postmodern feminist international relations starts from the template effect of mother, which mainly embodies a method of psychoanalysis. Mother has a model effect on infant's discourse, so it is of great significance to carry out this level of research.

Post-modern feminist international relations theory is not only deeply influenced by post-modern philosophy, but also influenced by discourse turn in international relations. The shift of discourse in international relations to include gender factors has made the development of feminist international relations theory a step forward. To a certain extent, it has made up for the weak focus on power in the shift of sociology, but the carrier of this power realization has changed. Of course, as a form of power, discourse does not play a role alone. It always needs to be combined with other elements in the national relations, such as military actions, economic policies, and diplomatic attitudes in order to exert its influence. For example, in the Vietnam War, the media propaganda at the beginning made the atmosphere of main battle in the United States strong, and constantly sent soldiers to the Vietnam War front. However, as the war became anxious, more importantly, the media reported the anti-humanity and tragic situation of the Vietnam War with value judgment. Anti-war sentiment in the United States forced the United States to withdraw its troops from Vietnam. This is a typical case of the interaction between media discourse and military forces on the country's foreign policy.

### **3. How to Evaluate the Discourse Power of the Postmodern Feminist International Relations Theory**

From the perspective of epistemology, feminist empiricism advocates that the unique experience of women should be added to international relations, revealing the neglect of women in the traditional world, which shows the one-sidedness and limitation of traditional international relations theory from one aspect. Feminist standpoint holds that there is no theory of value neutrality or gender neutrality, and international relations need to be studied from different angles and values, not only from the perspective of women, but also from the perspective of marginal identity subjects. Post-modern feminist international relations theory emphasizes differences, pays attention to the situation of women in the third world, different classes, races, nationalities, skin colors, etc., denies all grand narrative modes, traditional patriarchy and binary opposition. The world is not a linear logic mode of either black or white or either, but a changing, diverse, rich and changeable one. Under the effect of discourse power, this analysis angle is closer to the real world.

Methodologically speaking, discourse analysis in postmodern feminist theory has expanded the development scope of international relations and feminist international

<sup>33</sup> 肖巍 (2014), 《飞往自由的心灵——性别与哲学的女性主义探索》, 北京大学出版社

<sup>34</sup> 茱莉亚·克里斯蒂娃 (2015), 《符号学》, 史忠义, 复旦大学出版社。Kelly Olivered (2000), French Feminism Reader, Rowman & Littlefield Publishers Inc.

relations. Among them, Kristin Sylvester advocates that visual sensitivity can be enhanced by paying attention to art, and the potential value of feminist international relations theory can be fully explored. She also introduces reference sites and methods for feminist international relations research, such as sculpture, architecture, portraits, etc.<sup>35</sup> Fiona Robinson points the establishment of a normative theory that emphasizes relations. She has provided two research tools for this purpose, namely, mapping of responsibilities and criticism of ethical ethnography.<sup>36</sup> Eric and Truu attach more importance to the application of critical methodology in feminist international relations.<sup>37</sup> Both the artistic perspective and the normative theory reflect the transformation and expansion of discourse, providing new research fields, theoretical sources and research topics for postmodern feminist international relations.

In addition, the discourse view in postmodern feminist international relations theory has contributed to the practical and theoretical development of the world women's movements. An international network for women's studies was established at the Second World Conference on Women held in Copenhagen in 1980, and continued to grow in strength at the Third and Fourth World Conferences on Women. Women's organizations around the world are deeply influenced by postmodernism, and gradually build up a network and platform for mutual communication. By emphasizing differences and constructing their discourse, women's organizations in the third world have also developed. Moreover, it constructs women's discourse power through social culture and ideology, breaking the limitation of traditional feminists who do not attach importance to gender ideology and providing a theoretical basis for revealing patriarchy in the West and the Third World.

However, the postmodern feminist theory in international relations has been always criticized in its development process. Similarly, its view of discourse has also been criticized to some extent. Critics believe that the discourse turn in postmodern feminist international relations theory ignores material power, which is depoliticized and makes the connection between economy, politics and women weaker or even disappear. This kind of discourse is somewhat suspected of banning material and evading politics. Secondly, their attention to discourse may make post-modern feminist international relations only pay attention to the rhetoric of the text and turn a blind eye to the real situation of women. Some critics believe that these scholars oppose only the world discourse described, not the real world. They regard discourse as the source of all power, thus avoiding the real difference and the real body. This is a completely academic style, and there is still a big deviation from the real feminist movement and changing the status quo of women's oppression. It emphasizes the difference and opposes grand narration, but at the same time it also denies the accumulation of knowledge, resulting in the improvement of women's

<sup>35</sup> 克瑞斯汀·丝维斯特 (2016), 《将艺术/博物馆纳入女性主义国际关系研究》, 《国际关系女性主义方法论》, 布鲁克·A·艾克里等编, 金铭译, 中信出版社

<sup>36</sup> 菲奥娜·罗宾逊 (2016), 《女性主义规范理论方法: 国际关系关怀政治伦理》, 《国际关系女性主义方法论》, 鲁克·A·艾克里等编, 金铭译, 中译出版社。

<sup>37</sup> 布鲁克·A·艾克里、杰奎·特鲁 (2016), 《研究时代的斗争与渴望: 女性主义理论方法论和女性主义理论方法》, 《国际关系女性主义方法论》, 鲁克·A·艾克里等编, 金铭译, 中译出版社。



political goals, social movements and economic status quo.

In addition, the discourse view of postmodern feminist international relations theory reflects the emphasis on qualitative research and the rejection of quantitative research, which not only conflicts with its view of denying binary opposition, but also narrows the source of power acquisition. In the development of western theories, quantitative research reflects the scientificity, preciseness and conciseness of the research on one side. Qualitative research relies more on the construction and description of language, which has more value judgment color and has certain bias to some extent. On the one hand, it tries to deconstruct the traditional male-centered subject discourse system, and on the other hand, it tries to construct women's own discourse. However, there is chaos in the composition of this deconstruction and construction. It cannot avoid not having the traditional binary opposition view. In the process of deconstructing everything, it is still pursuing some concepts that the enlightenment thought relies on, such as rights, equality, freedom, etc., which falls into the paradox of "problem solving theory" and "norm theory".<sup>38</sup>

The post-modern feminist international relations theory itself has not formed a complete theoretical system. Although it has absorbed the concepts of deconstruction and discourse from the post-modern philosophers Derrida, Foucault, Lyotard and other scholars, it is still not self-consistent for the current development level and level of feminism. Before great progress has been made in the realistic feminist movement and the improvement of the present situation, the shift to discourse construction and neglect of the objective material world, material power, political structure and system may hinder the development of feminist international relations theory and the deepening of feminist practice.

#### 4. Conclusion

International political theory has evolved and developed with the reality of the international community. From traditional realism and idealism to structural realism, neo-liberalism and constructivism, the development of each theory represents enough problems to arouse people's thinking in the international pattern. Postmodern feminist international relations theory combines postmodernism and feminism with the carrier of the international community, which makes us begin to rethink the changes in international political reality and international relations.

By analyzing the philosophical basis, main viewpoints of postmodern feminist international relations theory, the discourse view formed by its combination with the linguistic turn of international relations theory, and its advantages and disadvantages of development, we clearly realize that discourse is an inextricable topic in the development context of postmodern feminist international relations theory. On the one hand, discourse is a universal cultural carrier and tool, on the other hand, discourse also implies social power, Whoever has mastered the right to "speak" has the right to construct the behavior pattern, which is of great significance to international actors who pay attention to the

<sup>38</sup> Jan Jindy Pettman (2004) ,Feminism International Relations after 9/11,Brown Journal of World Affairs, Vol 5,Issue 2 ,Winter/Spring,2004.

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generation, maintenance and expansion of power. Of course, studying the discourse right in postmodern feminist international relations does not mean that this is the only content of postmodern feminist international relations research, but that it is necessary to study its discourse view in the process of exploring postmodern feminist international relations theory. International relations are not only the product but also the place where different texts interact with each other. Studying the discourse in this field opens up a new perspective and angle for us to understand the whole and complete picture of the international world.

# Impact of International Migration Flows on the European Union and Ukraine

Giorgio Dominese\* • Sergey Yakubovskiy\*\* • Julia Tsevukh\*\*\* • Tetiana Rodionova\*\*\*\*

**Abstract** The paper presents the results of the research of the international migration process in the EU Member States that are destination countries for migrants from many countries including Ukrainians. The study discusses different approaches and methods analyzing migration process and comes to the point that econometric modeling based on panel data analysis is one of the most appropriate and useful tools in case of studying a group of countries, in this paper – the EU Member states. The article investigates economic and social factors that influence inward migration to the destination countries: Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, Germany, and Poland, which are deeply involved into migration process with the other European countries and non-EU countries, including Ukraine. It is revealed that immigration flows are highly dependent on GDP per capita and income level in the host countries. The results of the analysis have also shown that the role of migration flows in the socio-economic development of the EU and Ukraine is constantly increasing. This is due to both the quantitative increase in the number of recent immigrants in the EU countries and their percentage of total population, as well as to the growing influence of migrant activities on the socio-economic development of countries. At the same time, migrant remittances have a significant impact on economies of home countries. For instance, for Armenia, Bosnia and Herzegovina, Georgia, Moldova, Montenegro and Ukraine the migrant remittances inflows in 2019 exceeded 10% of national GDP.

**Keywords:** international migration, immigration flows, final consumption expenditure,

Giorgio Dominese\* , Sergey Yakubovskiy\*\* (✉), Julia Tsevukh\*\*\*, Tetiana Rodionova\*\*\*\*

\* Professor (Economics and International Relations), Chair of Transition Studies Research Network, Transition Academia Press, Venice, Italy.

e-mail: g.dominese@transitionstudiesnetwork.org

\*\* Doctor of Economics, Professor, Chair of the Department of World Economy and International Economic Relations, Odessa I. I. Mechnikov National University, Odessa, Ukraine.

e-mail: syakubovskiy@onu.edu.ua

\*\*\* Ph.D. (Economics), Associate Professor of the Department of World Economy and International Economic Relations, Odessa I. I. Mechnikov National University, Odessa, Ukraine.

e-mail: tsevukh.yuliiia@onu.edu.ua.

\*\*\*\* Ph.D. (Economics), Associate Professor of the Department of World Economy and International Economic Relations, Odessa I. I. Mechnikov National University, Odessa, Ukraine.

e-mail: t.rodionova@onu.edu.ua.

migrant remittances, European Union, Ukraine.

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## 1. Introduction

The migration process in European countries has played an important role in labor market development and socio-economic conditions since XVII-XVIII centuries. Over time, local labor markets became dependent on migrants inflows and outflows so deeply that nowadays it is impossible to imagine their functioning without migrant workers. The XX century was characterized by globalization process, economic growth, improving of leaving conditions, population ageing, decrease in fertility index, increase in demand for high- and low-skilled workers, and as a natural consequence Europe faced intensification of migration process. From the very beginning of the XXI century European Union has faced serious challenges connected with migration process: enlargement in 2004 when ten new member states joined EU (European Union, 2000-2009).

The third huge wave of changes was brought by financial and economic crisis of 2008, followed by rapid fluctuations in migrant flows and changes in migration policy of many countries.

The last but not the least challenge fell on migration crisis of 2015 when Europe faced 2.2 million people “illegally present” (European Parliament, 2019).

Ukraine is deeply involved into the migration process all over the globe and also with European countries. According to official data, in 2017 the number of Ukrainian migrants in the world was about 6 million people that represents about 2.2 per cent of all migrant stock in the world. Among them more than 20 per cent of Ukrainians lived in EU, which was about 1.2 million of migrants (The World Bank, 2019).

Ukraine, being one of the biggest countries in Eastern Europe, is deeply involved into the migration process. From the early 2000-s migration flows to EU countries have come through certain fluctuations from rapid growth to decrease in their numbers. Thus, the main factors of Ukrainian emigration to the European countries are: economic crisis of 2008, armed conflict since 2014, regional differences in economic development, providing a visa-free travel regime with EU, obstacles and controversial effects in providing structural and institutional reforms in social and economic sphere (such as pension reform and others), decline in economic growth during 2014-2016. In Ukraine GDP per capita decreased rapidly by 31.6% in 2015 and amounted to 2125 US dollars. The lowest and negative rate of GDP growth (since the global economic crisis of 2008-2009) was also observed in the same year -9.8. Trade of goods in % to GDP decreased in 2012 and stayed relatively stable in 2012-2018, but still didn't reach its point of 2011 level. A rapid inflation rise was shocking and real prices increased almost two-three times, having decreased real purchasing power for people in 2015. Nevertheless, due to implemented changes in macroeconomic policy and providing structural reforms (flexible exchange rate; stabilization of the banking sector – credit risk decline, refinancing rate discount; supporting business and organization interests,

etc.) GDP growth renewed its upward trend and amounted to 2.44%. However, GDP growth remained low in the following years (Table 1) and amounted to 3.44% in 2018. CPI recovery was observed since 2016 and decreased by 24.1% in 2018 compared to 2017. The very positive governmental changes were implemented for opening business – the time required to start a business was reduced by 4 times in 2018 compared to its level in 2008-2010. FDI net flows also demonstrated positive dynamics in 2015-2018 but stay at low level compared to pre-crisis period.

**Table 1.** Dynamics of economic, social, and demographic indicators of Ukraine in 2008-2018

Indicator Name	2008	2013	2016	2017	2018
GDP per capita (USD)	3887	4030	2188	2641	3095
Unemployment (% of total work force)	6.36	7.17	9.35	9.51	9.38
Emigration, number*	22402	22187	6465	430290	610687
Personal remittances, received (USD, million)	6782	9667	9472	12132	14694

\* in 2017-2018 the data includes intraregional, interregional and interstate migration flows

Source: (The World Bank. Countries and Economies, 2019); (State Statistics Service of Ukraine, 2020).

The demographic situation and local labor market immediately reflects the current economic condition. Thus, a negative tendency of population growth remains during all the observed period of 2008-2018, with its small recovery in 2015. The fertility rate fluctuated at 1.37-1.53 point in 2008-2017, which is a very uncertain position for the demographic situation and total economy; under such circumstances it is impossible to have positive population grow in the country. The unemployment rate was increasing since the armed conflict in the East regions and only reduced by 1.36% in 2018 (Table 1), which is another push-factor for those, who have intention to emigrate.

Trying to avoid instability in Ukraine, the citizens are looking for temporary and permanent job opportunities. The year 2015 brought an increase in the number of Ukrainians migrating to the EU countries; for instance, the number of Ukrainian migrants grew by 62.85% compared to 2014 and amounted to 4.52% of total quantity of foreign migrants in Estonia; in 2018 their percentage reached 5.27%. As far as Poland has always been one of the most popular destinations for Ukrainian migration because of cultural background and easy access to the job market, in the middle of 2015 about 400 thousand declarations for temporary job were issued for Ukrainians. (Jaroszewicz M., 2015). By 2017 the stock of migrants from Ukraine amounted to 221307 people that were about one third of the total migrant stock in Poland.

Thus, Poland, Estonia, Czech Republic, Hungary, Slovak Republic, Italy, Spain, and Germany have traditionally accepted Ukrainian citizens and been the countries of immigration. Romania, Latvia, and Lithuania are also attractive for Ukrainians but because there is a negative net migration over the latest years, they may be considered as countries of emigration and we do not take them into account in the analysis.

Immigration and emigration is relatively balanced in Poland, but because it is one of the most popular countries for Ukrainian migrants it is also included into analysis (Table 2):

**Table 2.** Net Migration in selected EU countries in 2008-2018, number

Country	2008	2013	2015	2016	2017	2018
Bulgaria	-1397*	-1108	-4247	-9329	-5989	-3666
Czech Republic	56789	4230	3918	25219	24531	39168
Estonia	-735	-2631	2410	1030	5258	7071
Germany	-55743	433385	1196686	496090	356409	353471
Italy	453765	181719	133123	143758	188330	175364
Hungary	28061	4277	15119	13729	28241	34759
Latvia	-22367	-14262	-10640	-12229	-7808	-4905
Lithuania	-16453	-16807	-22403	-30171	-27557	-3292
Slovakia	7060	2379	3127	3885	3722	3955
Spain	310 643	-251531	-1761	87421	163272	334158
Poland	-14865	-56135	-40690	-28139	-9139	24289
Romania	-163867	-8109	-61923	-70123	-64758	-59083

\* - in 2007

Source: calculated by authors based on (Eurostat, 2020).

Data presented in table 2 indicate that the majority of East European countries have negative net migration flow. This is due to the fact that the most active part of the population of these countries, primarily youth, leaves the less affluent EU countries in an effort to get higher paid jobs in more developed countries. The countries of Central and Eastern Europe, in turn, attract immigrants from post-Soviet states in their attempt to compensate the losses of the national labor market associated with a large outflow of labor force.

Together with the mentioned above push-factors for Ukrainian out-migration process, there is a wide range of attractive pull-factors to migrate to the EU Member States. Difference in income, social security, higher living standard, easier to make a start-up, etc. For instance, in 2018 GDP per capita was more than 4.5 times higher in Estonia and Italy, about 5 times higher in Czech Republic, Poland and Slovakia, 7 times higher in Hungary, about 6,5-8 in Spain and Germany. (Eurostat, 2020). Unemployment rate has demonstrated stable tendency of declining in all these EU countries, being the lowest in Czech Republic (2.2%), Germany (3.4%), and Hungary (3.7%) in 2018. Considering demographic situation in Europe, it is necessary to mention that it influences local labor markets negatively, where low fertility rate (1.7 in Czech Republic, 1.6 in Germany and Estonia, 1.5 in Hungary, Poland, and Slovak Republic, 1.3 in Italy and Spain) and population aging, make receiving countries attract additional labor force that became another pull-factor for Ukrainian migrants.

None of the EU Member State has fertility rate higher than 1.9, which is not enough

for natural population growth. Such social indicators as government expenditure on education, research and development expenditure in Ukraine have become significant push-pull factors for out-migration of highly educated people and high-skilled workers. While in Ukraine research and development expenditure remains less than 0.9% of GDP in 2008-2018, it amounted to 2% in Czech Republic and 3% in Germany (2018). Social protection expenditure is the highest and takes about a quarter of GDP in Germany (29.7%), Italy (29.3), and Spain (23.1%) among the chosen group of EU countries.

## 2. Literature review

The issues of labor markets trends and international migration process have been widely studied in the literature of European, American, Asian, and CIS authors. Since Europe has become one of the most popular destinations for migrants, a special attention of scientists has been drawn to this process, its factors, influence, and consequences for local economies.

Kahanec M., Pytliková M., Zimmermann K. F. (2014) discuss EU enlargement and the impact of east-west migration on the situation in labor market. The research evaluates migration flows to the EEA and five non-EU countries (Australia, Canada, New Zealand, Switzerland, and the United States) as destination countries from the New Member States (NMSs) of EU (2004 and 2007 years). The study provides a deep analysis on the factors that determine flows, which are migration costs (difference in income, distance, language barriers, existence of migration “networks” between the home and host country, difficulties or ease in access to the labor market). By using the difference-in-differences and fixed effects econometric models, the authors conclude that migrants’ connections (“networks”), distance, and low cultural and language differences between two countries are the most significant factors for migrants. Whereas, labor market policy (opening) turned out to be higher for EU-2 than for EU-8 countries. All GDP and GDP per capita variables coefficients were found to be statistically insignificant. Generally, the research demonstrated positive effect for migration flows from EU enlargement. Running triple differences econometric model, that also included such group of countries as Albania, Croatia, Russia, and Ukraine (CEE4) into the model, the research shown even more positive effect of EU enlargement for the first two groups of countries: EU8 and EU2, than for the third group.

A. Zaiceva (2014) describes evidence of the East-West migration in the enlarged EU as a generally positive effect on the labor market (wage increase, decrease in load on the sending labor market, and unemployment rate reduction). At the same time, the author discusses negative side of outmigration, pointing out on demographic challenge and skill loss in home countries.

J. Ritzen, M. Kahanec, J. Haas (2017) consider EU mobility issues after the Great Recession and potential future Brexit. The authors express an opinion that changes happening in EU labor migration, students and travelers mobility are beneficial and have more positive than negative effect for the both sides: the senders and receivers. Furthermore, migrants themselves rather win than loose in migration process by having

new career opportunities or getting a chance to start their own business and be self-employed in the host countries. At the same time, the research argues that macroeconomic impact from migration is higher in host than in home countries.

J. Ritzen, M. Kahanec (2017) compare institutional aspects of inward migration from some EU countries to other ones and from outside the EU, emphasizing on migration crisis in 2015-2016. The study reveals the reasons and differences in migration process for EU citizens and non-EU ones, and examines the opinion in society towards these groups of migrants. The local Europeans' attitude towards the non-EU immigrants is mostly negative and perceived more exaggeratedly than it is in reality. The authors argue that the inflows of migrants are mostly about work, study, and established migration "networks" than refugees and asylum seekers; after the latest "waves" of forced migration inflows to Europe the existing numbers of those who were given official permits are much less than it was considered in European society. The authors conclude that the current situation with the local perception of immigrants happened because the EU was not prepared for those "waves" and locals started to feel fear of the people from the outside who have different values, language, and educational background; thus, migration policy of all the EU Members should be renewed and harmonized in longer-term perspective, taking into account social and economic effect of immigrants who bring new skills, fill the gaps in low-skilled jobs, and even start their own business.

One of the decent researches among the latest publications is International Migration Drivers (2018) formulates reasons, factors, consequences, and prognosis of international migration, providing deep understanding of institutional and individual levels of human mobility. The paper collects and summarizes the theoretical background, statistical analysis, and empirical evidence in terms of econometric modelling. The latest trends in migration-related data demonstrate the most likely reasons for migration in the EU: work, education, family reunification, and asylum seeking. S. Grubanov-Boskovic and S. Kalantaryan's (2018) calculations demonstrate that the stocks of migrants within Europe stay the highest compared to stocks from other continents in the world (67% of European migrants are origins of another European country).

S. Migali (2018) postulates the structural drivers of international migration on the country- and individual levels: socio-economic, demographic, geographical, cultural, historical, and military. Based on the previous research and available empirical data, the author uses four-step analysis to reveal the main factors for decision to migrate: firstly, the countries of emigration were grouped according to their income level (low-, middle-, and high-income); secondly, the countries were grouped considering channels of migration to the EU28 Member States from non-EU countries; on the third stage the asylum seeking was the starting point; and on the last step the individual dimensions of migration were taken into account. The entire analysis was run with gravity models for all the steps. The findings shown the following factors have positive impact on migration: migrant communities for all the three groups of donor-countries (and for all the steps of the modelling), GDP per capita is important for middle-income countries. An inverse correlation was found to be significant for distance between the countries, fertility rate, GDP per capita (is important only for high-income countries). Also GDP per capita was



the most significant factor for asylum seeking group of migrants over the period 1999-2016. The following variables didn't have strong relation with migration: existence and intensiveness of trade relations between the countries of origin and destination, fertility rate for the countries with high income level; employment/ unemployment rates (for low-income countries). On the individual level analysis, it was proved that the younger the potential migrant the more willingness they have to migrate (age), males do wish to migrate more than women (gender), single status and having children also pushes people for migration (marital status), educational level, and being unemployed.

J. Bouoiyour, A. Miftah and R. Selmi (2019) explore how current economic situation attracts migrants by dividing it on favorable or unfavorable. Also the authors estimate the impact of migration inflows on economic growth and the unemployment rate using a panel quantile regression for Belgium, Germany, Netherlands, France, UK, Italy, Spain, Denmark, Finland, and Sweden. The applied methodology proved a positive relation between immigration and growth and an inverse one on unemployment in the receiving countries.

H. Bohman, P. G. Hakansson, I. Thorsen (2020) investigate the role of socio-economic and demographical inequalities both between the European Union Member States and within the countries, that make some regions more attractive for labor migration than others. The authors underline importance of a wide range of factors such as GDP per capita, income per capita, wages, employment, industrial development, technological progress, certain concentration of workforce skills, differences in educational level, working conditions, population changes, and even prices on the real estate market in labor mobility and migration process. On one hand, mobility and migration lead the involved regions to become more balanced in their economic development, on the other hand, they may exacerbate the existing spatial inequalities.

The results of other research – Rodionova et al. (2019), Babenko et al. (2019), Dominese (2019, 2020), Rogach et al. (2019, 2020) and Yakubovskiy et al. (2019) showed the instability of current accounts of East European economies caused by the negative balance of primary income in the conditions of free movement of capital and labor within the European Union.

### **3. Hypothesis, methodology and data**

In recent studies of migration process a wide range of different methodologies is used, among which is econometric analysis with *VAR, OLS, gravity, and panel data models*. *These methods allow analyzing a large set of data and studying the significance of different coefficients used in the models. In this study, the main methodology is an econometric analysis using the panel data structure.* Making a choice among the mentioned methods of econometric analysis, it is appropriate to apply precisely panel data in case when several variables are included. Another advantage of this method is that it allows controlling variables at different levels, therefore the analysis becomes multilevel. Following the algorithm of the panel data modeling, the auxiliary regression equations should be analyzed with help of pooled model (estimates regression coefficients by OLS method that uses the time-series data not taking into account the

structure of existing panel data). However, due to the fact that the proposed model has the panel data structure which is not considered by the OLS estimation, it is appropriate to make a pairwise comparison of the statistical significance of the coefficients taking into account the individual characteristics of the factors using Fixed effects (FE) and Random effects (RE) structure (that can be considered as a special case of FE-model). In general, the model is presented in the following form:

$$y_{it} = \alpha + \beta_1 x_{1t} + \beta_2 x_{2t} + \dots + \beta_n x_{nt} + v_{it}$$

where  $y_{it}$  – endogenous, dependent variable;

$\alpha$  – constant;

$x_{1t}, x_{2t}, \dots, x_{nt}$  – exogenous variables of the model;

$\beta_1, \beta_2, \dots, \beta_n$  – regression coefficients;

$v_{it}$  – residuals;

$i$  – number of observations (countries);

$t$  – time variable.

This study aims to analyze the impact of the social and economic factors on migration process in the particular EU Member States that accept Ukrainian migrants the most over the latest years: Poland, Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, and Germany, which have traditionally been the countries of immigration. At the same time, it is investigated whether the quantity of migrant inflows to the country have impact on one of the most important indicators of living standard – final consumption. The following models determining the impact of the socio-economic factors are suggested:

$$FC_{it} = \alpha + \beta_1 Imm_{it} + \beta_2 Income_{it} + \beta_3 HICP_{it} + \beta_4 Tax_{it} + v_{it} \quad (1)$$

$$Imm_{it} = \alpha + \beta_1 GDP_{pc_{it}} + \beta_2 Empl + \beta_3 ESP_{it} + v_{it} \quad (2)$$

$$Imm_{it} = \alpha + \beta_1 Income_{it} + \beta_2 WH_{it} + \beta_3 HICP_{it} + v_{it} \quad (3),$$

where

$\alpha$ –	Constant
FC –	Final consumption expenditure of households
Imm –	Number of migrants
Income –	Mean and median income
GDP_pc –	Main GDP aggregates per capita
Empl –	Employment rate
WH –	Average number of usual weekly hours of work
HICP –	Harmonized index of consumer prices
ESP –	Expenditure on social protection
Tax –	Tax rate

The given observation period is annual data from 2008 to 2017, the total amount of observations is 80 units. These panel data are balanced time series arranged one by one spatial variables; the number of spatial variables is 8. The main source of data: Eurostat statistical databases (Eurostat, 2020).

#### 4. Results and discussion

The EU Member States (Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, Germany, and Poland) were considered for analysis.

Firstly, we run the regression models (1-3) with the Pooled method and apply all the necessary tests, including multicollinearity test that demonstrates the absence of multicollinearity among the independent variables. Secondly, we run the models (1-3) with the FE and RE instruments. The third stage requires determining the most appropriate method of econometric analysis for the further statistical and economic interpretation. Based on the data in the tables and applied panel diagnostics using Wald test, Breusch-Pagan test, and Hausman test, we make a pairwise comparison of each method of the estimated models. Comparing the Pooled regression and the Fixed effects regression based on the Wald test, the panel diagnostics indicates low p-value ( $< 0.01$ ), which testifies that Fixed effects regression models approximate the data better than a cross-regression models as an alternative. Comparing individual Random effects models with the cross-sectional regressions, based on the Breusch-Pagan test for panel component, the low p-value demonstrates a higher statistical reliability of the models with Random effects as an alternative. According to the results of the Hausman test Fixed effects models approximate the present data better than Random effects models. It can be concluded that only the FE models have reliable estimation for further analysis. The fourth step of analysis includes the statistical estimation of the models (1-3) with Fixed effects and their coefficients relying on R-square, F-statistic for p-value, and t-statistic. The results demonstrate the models are significant and can be used for economic forecasts and decision-making in migration policy.

The results of the empirical verification of the impact of the given socio-economic factors on the final consumption expenditure of households are presented in the table 3:

**Table 3.** Coefficients and their statistical estimate for the model 1

Variables	Pooled method	Fixed effects method	Random effects method
Const	555323 (2.092)**	182769 (2.827)***	242601 (2.100)**
Imm	0.237 (2.390)**	0.168 (6.448)***	0.166 (4.291)***
Income	105.462 (15.50)***	2.044 (0.438)	17.709 (2.730)***
HICP	-17515.3 (-6.035)***	2910.98 (2.596)**	-361.602 (-0.229)
Tax	13453.7 (6.794)***	-4307.72 (-2.534)**	-778.851 (-0.324)
Log.likelihood	–	-925.656	-1145.961
R <sup>2</sup>	0.948	0.997	–
F <sub>stat.</sub> (p-value)	343.3077 (0.0001)	2404.335 (0.0001)	–

\*\*\* – statistical significance at 1% level; \*\* – statistical significance at 5% level.

Source: prepared by authors.

According to the calculation results depending on the chosen method of analysis, from 4 to 2 independent variables have a statistically significant impact on final consumption. However, regardless of the method of analysis in all equations, the quantity of migrant inflows to the country is present as a statistically significant factor affecting the countries' final consumption expenditure of households. Coefficients of quantity of migrant inflows variable have a positive and meaningful effect on final consumption expenditure of households in all equations.

An analysis of the correlation coefficients between the studied indicators shows that the greatest direct correlation is observed between the quantity of migrant inflows and final consumption expenditure of households for Estonia, Hungary and Germany with the corresponding correlation coefficients equal to 0.816, 0.726, and 0.725.

The results of the empirical verification of the impact of the given socio-economic factors on the number of migration inflows for the models 2-3 are presented in the tables 4-5:

**Table 4.** Coefficients and their statistical estimate for the model 2

Variables	Pooled method	Fixed effects method	Random effects method
Const	-846051 (-8.789)***	-130465 (-0.2705)	-744226 (-3.866)***
GDP_pc	12.216 (2.238)**	45.111 (2.851)***	29.444 (3.070)***
Empl	2342.53 (3.789)***	3014.39 (0.318)	2264.85 (1.704)*
ESP	36936.6 (9.096)***	-19135.2 (-1.292)	20527.9 (2.704)***
Log.likelihood	-	-1046.466	-925.656
R <sup>2</sup>	0.688	0.828	-
F <sub>stat.</sub> (p-value)	55.765 (0.0001)	33.286 (0.0001)	-

\*\*\* – statistical significance at 1% level; \*\* – statistical significance at 5% level, \* – statistical significance at 10% level.

Source: prepared by authors.

Regardless of the method of analysis in all equations of model 2, the main GDP aggregates per capita are present as a statistically significant factor affecting the number of migration inflow. Coefficients of the main GDP aggregates per capita variable have a positive and meaningful effect on migration inflow in all equations.

An analysis of the correlation coefficients between the studied indicators shows that the greatest direct correlation is observed between the main GDP aggregates per capita and the number of migration inflow for Estonia, Germany and Poland with the corresponding correlation coefficients equal to 0.827, 0.771, and 0.698.

**Table 5.** Coefficients and their statistical estimate for the model 3

Variables	Pooled method	Fixed effects method	Random effects method
Const	881576 (1.137)	-2.15111e+06 (-0.919)	-48235.0 (-0.039)
Income	53.356 (6.510)***	59.928 (3.192)***	61.713 (4.874)***
WH	-18897.3 (-1.068)	51528.2 (0.966)	3486.16 (0.122)
HICP	-5747.71 (-1.589)	-3545.61 (-0.708)	-6172.80 (-1.855)*
Log.likelihood	-	-1048.354	-1065.399
R <sup>2</sup>	0.730	0.820	-
F <sub>stat.</sub> (p-value)	68.541 (0.0001)	31.434 (0.002)	-

\*\*\* – statistical significance at 1% level; \*\* – statistical significance at 5% level, \* – statistical significance at 10% level.

Source: prepared by authors.

Regardless of the method of analysis in all equations of model 3, mean and median income is present as a statistically significant factor affecting the number of migration inflow. Coefficients of mean and median income variable have a positive and meaningful effect on migration inflow in all equations.

An analysis of the correlation coefficients between the studied indicators shows that the greatest direct correlation is observed between mean and median income and the number of migration inflow for Estonia, Hungary and Germany with the corresponding correlation coefficients equal to 0.939, 0.837, and 0.746.

Thus, according to the calculation results positive causality is observed for the number of immigrants, GDP per capita, mean and median income. GDP per capita and income level are attractive pull-factors for immigrants in the given countries which are determined by their social and economic development.

Migration policy, intensive growth of the local economies and current needs of labor markets in the receiving European countries have led to a relatively high employed rate of recent immigrants from other EU countries: in 2018 it was 84.6% in Poland, 79.4% in Germany, 79% in Czech Republic, 67.9% in Estonia, 68.3% in Spain, 62.9% in Italy, and 54.7% in Hungary. In general, the percentage of employed immigrants in 28 EU countries increased from 70.2 in 2008 to 78.9 in 2018.

On the other hand, much less number of foreign non-EU migrants found jobs in Spain (46.1%), Germany (40.7%), Hungary (36.6%), Italy (36.1%). In Poland it was 78.3%, in Czech Republic 70.7%, in Estonia 88.2% that was connected with the positive dynamics of local labor markets. In general, the percentage of employed non-EU migrants (in age class from 20 to 64 years) in 28 EU countries slightly decreased from 62.5 in 2008 to 59.6 in 2018.

The analysis emphasizes how important migration process is for economic development of the host countries. Earning money during their stay in the country, immigrants not only send remittances to the countries of origin, they also spend a part of their income on current consumption of goods, services, renting apartments, medical care, etc. Besides, they fill gaps in job vacancies in the local labor markets, providing higher productivity. According to The World Bank, the economic contribution of immigrants is substantial as they provide more than 9% of global GDP. That is why the migration policy is becoming more balanced, consciously managed, and adopted to the current economic and political situation in the world and the EU in particular by providing certain measures of regulation on national, regional, and international levels (Mohieldin M., Ratha D., 2019).

After joining the EU, the highest quantity of temporary residence and constant settlement permits were issued for Ukrainian citizens in Poland (Iglicka K., Ziolk-Skrzypczak M., 2010). In condition, when Poland accepts large scale of immigrants from Eastern Europe, the new approach and measures are required to its migration policy. The latest framework document in this sphere called “Polish migration policy” is being under development since 2019, which considers both sides of migration process: migrants’ contribution into economic development and their integration process, at the same time taking into account possible threats and perspectives for social and cultural security (Open Democracy, 2019).

Although Czech Republic provides more favorable migration policy towards EU citizens and has protection measures for national workers, the economic growth requires additional labor force. In 2018, GDP annual growth was 2.96% and GDP growth per capita 2.7%. Ukrainian migrants take the first place among other non-EU citizens, who receive permanent residence permits (Drbohlav D., Janurová K., 2019); (The World Bank. Countries and Economies, 2019).

Over the latest years Estonia witnessed economic growth (GDP 4.8% and GDP per capita 4.48%) and development in IT sector that created new job opportunities and required more labor force (Maasing H., Asari E.-M. 2016-2017). Migration policy has become more liberalized that led to increase in migrants inflows. About 12% of all migrant stocks are migrants from Ukraine. Slovak Republic also experiences economic growth (GDP annual growth 4% and GDP growth per capita 3.89%) and increase in migration inflows (The World Bank. Countries and Economies, 2019). The main document of regulation of migration policy is “Migration Policy of the Slovak Republic. Perspective until the year 2020” (The Government of the Slovak Republic Resolution, 2011).

Having become a country of inward migration in the early 1980-s, Italy faced migration flows from Romania, Poland, Ukraine, Moldova and other Eastern European countries. Since this country became one of the “favorite” countries of destination for Ukrainians (especially for women), their numbers only increasing during the last 15 years. Nowadays about 4% of total migrants stock come from Ukraine (Vianello F. A., 2016).

Recently Germany has gone through a very challenging situation with migration process in 2015 when 476.5 thousand asylum seekers applied for citizenship that was 57.5% higher than in previous year (Eurostat, 2020). The number of applications was

the highest among all the EU Member States. At the same time, Germany managed to interact with and take under control migration process due to implementation of migration policy measures and providing the newcomers with jobs. Germany also pays attention to migrants from Eastern Europe and Ukraine in particular that was reflected by adoption of a new immigration law that concerns employment of foreigners (Ukrainian Institute for the Future, 2018).

The analysis also emphasizes how important migration process is for economic development of the home countries. For instance, the migrant remittance inflows have also very significant impact on the balance of payments and final consumption expenditure of households in Ukraine. In particular, migrant remittance inflows to Ukraine have increased from 5.9 bln.USD in 2009 to 15.9 bln. in 2019 that according to the World Bank calculation was equal to 11.8% of country's GDP (World Bank, 2020). For Georgia migrant remittance inflows in 2019 were equal to 12.3% of GDP; for Armenia – 11.9%; for Bosnia and Herzegovina - 10.5%; for Moldova – 15.6%; for Montenegro – 10.4%.

## 5. Conclusion

Based on the results of the analysis of different approaches and method of studying migration process, it was proved that econometric modeling based on panel data analysis is one of the most appropriate and useful tool in case of studying a group of countries, in this paper – the EU Member states.

Results of investigation of economic and social factors that influence inward migration to the destination countries: Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, Germany, and Poland, which are deeply involved into migration process with the other European countries and non-EU countries, including Ukraine, have proven that immigration flows are highly depended on GDP per capita and income level in the host countries.

Results of the studying of the impact of immigration on consumption, as an important indicator of living standard in Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, Germany, and Poland, have proven that migration inflows have positive statistically significant influence on final consumption expenditure of households in these countries.

Thus, the results of the analysis have shown that the overall role of migration in the EU and Ukraine is constantly increasing. This is due to both the quantitative increase in the number of recent immigrants in the EU countries and their percentage of total population from 0.9% in 2009 to 1% in 2018 (the largest increases were observed in Germany and Austria for which the percentage of number of recent immigrants of total population increased from 0.8 and 1.6 in 2009 to 2.0 and 2.9 in 2018) as well as to the growing influence of migrant activities on the socio-economic development of countries.

Migrant remittance inflows have also very significant impact on the balance of payments and final consumption expenditure of households in the developing European states. For instance, for Armenia, Bosnia and Herzegovina, Georgia, Moldova,

Montenegro and Ukraine the migrant remittance inflows in 2019 exceeded 10% of national GDP. Despite the fact that during the last ten years, in general, the percentage of employed immigrants in 28 EU countries has increased, still less than half of foreign non-EU migrants can find jobs in Spain, Germany, Hungary and Italy. Moreover, during the last ten years, in general, the percentage of employed non-EU migrants in EU countries has decreased.

In terms of intensive migration process in Czech Republic, Hungary, Slovak Republic, Estonia, Italy, Spain, Germany, and Poland and high percentage of Ukrainians among all immigrants, it is crucial to develop closer cooperation between these EU Member States and Ukraine on the national and internal level, making migration policy more balanced and managed, especially in Ukraine. That will allow creating new job opportunities for Ukrainian citizens and comfortable conditions for return migrants in Ukraine. Migration policy should be adopted to the current economic situation and meet the needs of local labor markets. It should be noted that Ukraine is implementing new reforms in economic and social sphere which may affect migration process as well as other processes in society. Nowadays Ukrainian legislation is mostly concentrated on regulation of inward migration (for instance, the Law of Ukraine “About Immigration” and other laws), although it is necessary to create new conditions for legal and controlled emigration process with the European Union, to strengthen partnership with the host countries, to provide more intensive economic growth and higher living standards in Ukraine.

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## Modern Globalization Peculiarities and Its Impact on Ukraine

Olena Borzenko\* • Tamara Panfilova\*\* • Evgeniy Redzyuk\*\*\* •  
Anna Glazova\*\*\*\*

**Abstract** Nowadays, there is a great impact of economic globalization on countries' development, especially in the term of IT wide spreading throughout the world. The paper investigates current globalization peculiarities and its impact on the economy of Ukraine.

Digital technologies bring new opportunities for the growth of national economies and its global competitiveness. Under the influence of globalization, the global economy is undergoing a dramatic transformation, driven by a new wave of technological innovation, which is now characterized as the fourth industrial revolution. Besides, globalization generates numerous risks to sustainable economic growth. In the context of globalization, many countries become extremely dependent on changes in the structure of international trade. Ukraine with increased openness to the outside world is interested in structural parameters of international exchange. The paper discusses the problems of Ukrainian economy development and further digital transformation. Current production and export- import structure are revealed in the context of Ukrainian economy simplification to the structural characteristics of partner countries.

**Keywords:** globalization, digital economy, foreign direct investment, trade balance, integration.

**JEL Classification:** F6, F63.

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Olena Borzenko\*(✉), Tamara Panfilova\*\*, Evgeniy Redzyuk\*\*\*, Anna Glazova\*\*\*\*

\* Doctor of Economic Sciences, Professor, Head of International financial research sector, SI "Institute for Economics and Forecasting of The National Academy of Sciences of Ukraine"

e-mail: slozko2003@ukr.net

\*\* PhD in Economics, Leading Researcher Fellow of International financial research sector, SI "Institute for Economics and Forecasting of The National Academy of Sciences of Ukraine"

e-mail: tamara.panfilova@gmail.com

\*\*\* PhD in Economics, Senior Research Fellow of International financial research sector, SI "Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine"

e-mail: rewww@ukr.net

\*\*\*\* Research Fellow of International financial research sector, SI "Institute for Economics and Forecasting of The National Academy of Sciences of Ukraine"

e-mail: annapelo@ukr.net

## **Introduction**

Progressive globalization fundamentally changes the relationship between external and internal factors of national development. As socio-economic phenomenon, globalization is ambivalent and might bring new opportunities and threats for stable socio-economic development. Globalization opens up enormous opportunities for expanding trade and economic ties between states, contributing to the overflow of capital, technology, and labor in any direction on the globe. As well global and regional trade as economic integration are a key factor in increasing the efficiency of national economies.

Digital technologies bring new opportunities for the growth of national economies and their global competitiveness. The digital economy, as one of the powerful manifestations of modern globalization, helps to accelerate economic development, to increase productivity, to create new markets and industries. It also gives new opportunities for inclusive and sustainable growth. However, the acceleration of economic development is reached by those countries and economic associations that systematically build the foundations and mechanisms of leadership in the digital economy.

## **Analysis of recent research and publications.**

Many foreign and domestic scientists devoted their works to the study of globalization. They consider the global model of economic development as an integration of structural elements of the international economic system based on production internationalization deepening, transnationalization growth, market system modernization and global governance formation. Economic globalization is considered as asynchronous and asymmetric process because some territories are highly globalized, while others are limited. Such divergence leads to deepening of imbalances, complications of relations and dependencies. However, modern trends of globalization requires further investigation. *The object of the paper* is to explore new current trends of globalization and its impact on the economy of Ukraine.

## **Methodology**

The paper uses modern methods of research, namely: system-analytical method (to generalize scientific concepts, developments and proposals of leading domestic and foreign scientists in scope of globalization); method of functional-structural analysis (to formulate the problem under study and tracing the cause and effects of its occurrence); cluster method (to analyze the classification of the main factors affecting of the global economy); scientific abstraction (to model current trends of globalization development), method of system analysis and generalizations.

## **Discussion**

According to the Digital Economy Report (UNCTAD, 2019), much of the global wealth associated with digitization is created in the United States and China, and the rest of the world, especially Africa and Latin America, is far behind. In particular, the

US and China account for 75 % of all patents related to blockchain technology, 50 % of the world's Internet costs, more than 75 % of the cloud computing market and 90 % of the market cap of the world's 70 largest digital platform companies.

Seven large multinational corporations, namely Microsoft, Apple, Amazon, Google, Facebook, Tencent and Alibaba account for two-thirds of the aggregate market capitalization of the 70 largest digital platforms. In 2017, the aggregate value of digital platform companies with a market capitalization of more than \$ 100 million exceeded \$ 7 trillion. For example, Amazon's internal payment service is already used by 33 million customers in 170 countries. Deposits acceptance is the only thing that Amazon can't provide. But it may not be for long either. The company recently announced that it is in talks with several major banks about a joint project that will allow all Amazon customers to automatically receive current bank accounts.

Some digital platforms dominate on key markets. Google company controls about 90% of the search market for the Internet, and Facebook company accounts for two-thirds of the global social networking market and its platform is the most popular social networking site in more than 90% of countries (Borzenko and Glazova, 2019). In China, the Wechat communications network (owned by Tencent) has over one billion active users. Its payment system, together with Alipay (owned by Alibaba), covers virtually the entire Chinese payment market through the cellular network. At the same time, Alibaba accounts for almost 60% of China's e-commerce market.

These companies are actively enhancing their competitive position by the following ways: absorbing potential competitors and related products or services; lobbying policymakers at both national and international levels; establishing strategic partnerships with leading multinationals in traditional sectors such as automotive, semiconductor industry and retail.

Under the influence of globalization, the global economy is undergoing a dramatic transformation, driven by a new wave of technological innovation, which is now characterized as the fourth industrial revolution (Kirilov, 2016).

At the same time, globalization processes generate numerous risks to sustainable economic growth (Slogub, 2019). Among the factors that cause slowdowns in economic growth are the following:

- *conditions of international trade*, deterioration of which were caused by the "trade war" between the US and China, the strengthening of protectionism in bilateral and multilateral trade relations, the uncertainty of global prospects for the development of multilateral system of international trade within the World Trade Organization, etc. In the run-up to the G7 Leaders' Meeting in June 2018, the United States imposed tariffs on steel and aluminum imports from the European Union, Canada, Mexico and some other countries. US President D. Trump has announced his intention to set a 20% tariff on imports of vehicles from the European Union. The European Commission has prepared global countermeasures totaling \$ 294 billion. The United States, accounting for about one-fifth of total merchandise exports. Finally, President D. Trump and former European Commission President Jean-Claude Juncker agreed in July 2018 to work on

reducing tariffs for both parties. In October 2018, the US, Mexico, and Canada revised the NAFTA: USMCA (US-Mexico-Canada Agreement) trade agreement (The Global Risks Report, 2019).

- *protectionism in foreign investment*: foreign investment has become more linked to geopolitical positioning. In particular, developed countries are stepping up their regulatory framework to block investment in strategic sectors, especially in the latest technologies; foreign investment has become more geopolitical. For example, in August 2018, the German government announced a reduction in the limit at which foreign investment could be blocked.

In recent years, China has significantly reduced its FDI constraint, but remains one of the most restrictive countries in the world. Although in 2018, China has announced a further reduction of its “negative list” – sectors that are not allowed to invest by foreign businesses or where they can operate only as part of a joint venture with Chinese entities. As in the trade sector, if the climate for cross-border investment flows continues to deteriorate, this will impede global economic growth and increase economic and geopolitical tension risk (IMF, 2019).

- *external debt*: the total global debt is about 225% of world GDP, while in countries with systemically significant financial sectors – it’s up to 250% of GDP (210% in 2008). The total accumulated external debt of developing countries and countries with economies in transition has more than doubled – from \$ 4.5 trillion in 2009 to about \$ 9.7 trillion in 2018. The overall ratio of debt service costs to exports increased from 8.1% in 2008 to 12.4% in 2018 for developing and transition economies. In 2018, gold and foreign currency reserves of developing countries decreased to \$ 6.6 trillion (from \$ 6.7 trillion in 2017). The ratio of gold and foreign currency reserves to the volume of short-term debt sharply decreased from 305% in 2017 to 260% in 2018 (Guterres, 2019).

**Thus, the strengthening of globalization and integration processes actualizes the question of choosing the place and role of the Ukrainian economy and its components in the geo-economic space.** The institutional capacity to optimally use of the globalization benefits and counteract its threats, the ability to formulate appropriate mechanisms for the development of global competitiveness should be considered as key economic policy objectives (Borzenko, 2019).

Ukraine has entered an era of dramatic global transformation with a significantly deformed economic structure, which is undergoing a clear structural simplification and approaching the structural characteristics of less developed countries. It is increasingly gaining a peripheral status within the world economy, which, under the influence of globalization and internal factors, exacerbates problems in the areas of foreign trade, foreign debt management and attracting foreign investment.

In the context of globalization, the economy of the vast majority of countries throughout the world becomes extremely dependent on changes in the structure of international trade. For instance, Ukraine with increased openness to the outside world (the share of exports and imports relative to GDP exceeds 50%) is interested in structural parameters of international exchange (Pelo, 2013). Changes in the structure of Ukraine’s exports (in the absence of an effective national policy on the implementation of structural priorities

for economic development) play a powerful catalyst for the processes of structural simplification of the Ukrainian economy and its approximation to the structural characteristics of less developed countries in the world (Korablin, 2017).

Ukraine does not exploit the potential of the global tendency to expand global value chains, but belongs to the countries that are significantly vulnerable to the supply of raw materials on the world markets. This is evidenced by the results of the analysis of the main tendencies of foreign trade relations for 2014-2019. The dynamics of the foreign trade balance for 2014-2018 is characterized by negative 2.5 5 slowdown (from -4.6 to -11.4 billion USD). This tendency is caused by the lack of competitiveness of national production (Slovoidilo, 2019). Data on foreign trade for 11 months 2018 and 2019 indicate the preservation of the negative foreign trade balance at the level of 2018 (Table 1).

**Table 1.** Dynamics of the foreign trade balance of Ukraine, (million USD)

<b>Data</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Jan- Nov 2018</b>	<b>Jan- Nov 2019</b>
<b>Balance of goods and services</b>	<b>-4 606</b>	<b>-2 362</b>	<b>-6 453</b>	<b>-8 644</b>	<b>-11 367</b>	<b>-10 536</b>	<b>-10 942</b>
<b>Balance of goods</b>	<b>-7 128</b>	<b>-3 455</b>	<b>-6 942</b>	<b>-9 663</b>	<b>-12 714</b>	<b>-11 658</b>	<b>-12 556</b>
Export of goods	50 552	35 420	33 560	39 701	43 341	39 547	42 255
Import of goods	57 680	38 875	40 502	49 364	56 055	51 205	54 811
<b>Balance of services</b>	<b>2 522</b>	<b>1 093</b>	<b>489</b>	<b>1 019</b>	<b>1 347</b>	<b>1 122</b>	<b>1 614</b>
Export of services	14 884	12 442	12 448	14 167	15 794	14 310	15 632
Import services	12 362	11 349	11 959	13 148	14 447	13 188	14 018

Compiled according to the NBU data

In the structure of goods export started from 2015, 41-45% are food and raw materials for their production, about 25% – ferrous and non-ferrous metals and articles thereof, up to 9% – mineral products, which indicates the raw material nature of export potential (Movchan, 2019; MinFin, 2019), (Table 2).

**Table 2.** Dynamics of exports commodity structure in 2014-2018, %

Name of product groups	2014	2015	2016	2017	2018
TOTAL, mln. dollar USA	50 552	35 420	33 560	39 701	43 341
Food products and raw materials for their production	16 670	14 478	15 250	17 739	18 594
Mineral products	5 291	2 672	2 391	3 517	3 883
Chemicals and related industries	3 730	2 436	1 832	2 052	2 381

Name of product groups	2014	2015	2016	2017	2018
Wood and and articles thereof	1 954	1 540	1 510	1 647	1 965
Industrial products	704	503	463	575	649
Ferrous and non-ferrous metals and articles thereof	14 953	9 164	8 099	9 890	11 402
Machines, equipment, vehicles and appliances	5 432	3 339	2 748	2 862	3 002
Miscellaneous *	1 818	1 288	1 267	1 419	1 465
<b>Structure, %</b>					
<i>TOTAL</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>
<i>Food products and raw materials for their production</i>	33,0	40,9	45,4	44,7	42,9
<i>Mineral products</i>	10,5	7,5	7,1	8,9	9,0
Chemicals and related industries	7,4	6,9	5,5	5,2	5,5
Wood and and articles thereof	3,9	4,3	4,5	4,1	4,5
Industrial products	1,4	1,4	1,4	1,4	1,5
Ferrous and non-ferrous metals and articles thereof	29,6	25,9	24,1	24,9	26,3
Machines, equipment, vehicles and appliances	10,7	9,4	8,2	7,2	6,9
Miscellaneous *	3,6	3,6	3,8	3,6	3,4

Compiled according to the NBU data.

In the structure of goods imports there is a significant increase from 18.6% to 28.5% in the share of machines, equipment, vehicles and devices, comparing with the other goods groups (Table 3).

**Table 3.** Dynamics of import commodity structure in 2014-2018,%

Name of product groups	2014	2015	2016	2017	2018
TOTAL, mln. dollar USA	57 680	38 875	40 502	49 364	56 055
Food products and raw materials for their production	6 025	3 413	3 863	4 265	5 020
Mineral products	15 254	11 186	8 075	11 971	13 587
Chemicals and related industries	10 310	7 540	8 297	9 575	10 439
Wood and and articles thereof	1 466	935	1 033	1 148	1 321



Industrial products	2 615	1 750	1 957	2 128	2 575
Ferrous and non-ferrous metals and articles thereof	3 208	1 898	2 192	2 878	3 430
Machines, equipment, vehicles and appliances	10 724	7 502	10 353	13 569	15 991
Miscellaneous *	8 078	4 651	4 732	3 830	3 692
<b>Structure, %</b>					
<i>TOTAL</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>
<i>Food products and raw materials for their production</i>	10,4	8,8	9,5	8,6	9,0
<i>Mineral products</i>	26,4	28,8	19,9	24,3	24,2
Chemicals and related industries	17,9	19,4	20,5	19,4	18,6
Wood and and articles thereof	2,5	2,4	2,6	2,3	2,4
Industrial products	4,5	4,5	4,8	4,3	4,6
Ferrous and non-ferrous metals and articles thereof	5,6	4,9	5,4	5,8	6,1
Machines, equipment, vehicles and appliances	18,6	19,3	25,6	27,5	28,5
Miscellaneous *	14,0	12,0	11,7	7,8	6,6

Compiled according to the NBU data.

Ukraine has no favorable investment climate for attracting foreign capital in the real economy, on the background of speculative operations with securities.

For the period 2000 - 10 months of 2019, the total net inflow of direct and portfolio foreign investments and foreign loans to Ukraine amounted to \$ 185.3 billion (Pravda, 2019). Significant financial resource was able to provide important structural changes for the country, to positively influence on the development of the economy, to promote the development of domestic production, etc. (Cairo, Titar, 2013)

At the same time, non-resident income from foreign investments (direct, portfolio, other) of \$ 104.4 billion was transferred from Ukraine during the same period, including January-October 2019 – \$ 7.2 billion . The factor of repatriation of non-resident income has a negative impact on the current balance account of Ukraine. For the eleven years in a row, the repatriation of non-resident income accounts for about 10% of all payments on the current account of the balance of payments, and in some years its amount has exceeded the negative balance of payments for goods.

At the same time, the dynamics of foreign equity and loan capital flows to Ukraine during 2000-2019 shows the following:

- during 2000 - 10 months of 2019, net inflow of foreign direct investment (FDI) amounted to \$ 85.5 billion. At the same time, revenues in the amount of \$ 36.7 billion

were paid to foreign investors during this period, accounting for 43% of net revenues;

- there is a clear interest of foreign investors in government debt securities investing. The share of such investments during the period 2000-2019 evaluated 63% (the State Statistics Service of Ukraine, 2019).

This is due to the extremely high yields of government securities and their relatively low riskiness. During 2000-2019, net investments in portfolio investments in Ukraine totaled \$ 38.2 billion. At the same time, non-resident income from these investments amounted to \$ 23.9 billion, which is equivalent to 62% of net investment. During 2018-2019, non-resident investments in government securities significantly exceed FDI inflows into the real sector of the economy (in particular, in January-October 2019 – 2.3 times), which is evidenced mainly by speculative motives of foreign investors;

- the influx of large amounts of speculative capital into the Ukrainian securities market generates risks of potential complications on the foreign exchange market and devaluation of the national currency.

Currency and refinancing risks inherent in Ukraine's sovereign debt structure remain critically high. Although the substitution of external commercial loans by internal ones and the maturity of the latter have had a positive impact on the debt risk profile for the public finance sector. Government debt risks remain high. Thus, government debt and government guaranteed debt relative to GDP decreased from a peak level of 81% of GDP (2016) to 51.2% of GDP (2019).

Public and government-guaranteed debt in October 2019 was 216% and still exceeded the debt ceiling (200% of revenues). In Ukraine, the ratio of short-term external debt to gross international reserves at the end of the second quarter of 2019 was 215.3% and was characterized by declining dynamics. But even these changes did not achieve the maximum level (100%) (the National Bank of Ukraine, 2019). The analysis of debt repayment indicators during 2013-2019 indicates an increase in individual debt indicators in 2019. The volume of debt repayment and debt servicing relative to GDP reached a maximum of 14%. And the share of public debt payments in budget expenditures increased to 36.7%.

## **Conclusion**

Globalization is characterized by enormous opportunities on the one hand and negative trends on the other. Ukraine needs to take advantages of positive globalization possibilities and counteract the negative ones. The current tendencies of Ukraine's foreign economic activity testify the ineffectiveness of the state policy on purposeful globalization opportunities. Given the unfavorable scenario of global economy development (slowdown of economic growth, crisis of foreign debt, increased protectionism in the sphere of international trade and foreign investment, etc.), the country may suffer another loss of export potential, reduction of foreign investments, foreign debt management. Ukraine needs to modernize its existing economic policy in order to be able to realize long-term development priorities in the global environment. We need to develop a long-term foreign economic strategy that addresses all the challenges

posed by global challenges. Long-term development priorities will be a new system of mutually agreed management measures for economic, social and environmental dimensions aimed at forming public relations on the basis of de-oligarchization, equality and security of doing business in Ukraine, solidarity, environment. In this context, the institutional capacity of public authorities to ensure macroeconomic stability should be substantially strengthened, based on the implementation of complex strategic plans for socio-economic development of Ukraine for a period of 5-10 years, including foreign economic aspect – competitive geo-economic positioning in the world. In the long term, understanding and preventing risk situations will have a positive effect, thanks to the government ability to global challenges respond.

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# An Analysis of EU-China Agricultural Trade Relations in the Context of Brexit – the Perspective of Trade Specialisation Dynamics

**Bernadette Andreosso-O’Callaghan\* • Junshi Li\*\***

**Abstract** This paper uses trade data from 2001 to 2017 to analyse comparative advantage of both the EU27 (excluding the UK) and China by employing Balassa’s revealed comparative advantage index (BRCA) and the normalised revealed comparative advantage index (NRCA). Two broad types of trade specialisation dynamics have been analysed by using OLS regression analysis, together with Markov transition probability, Shorrocks’ mobility index, and regression trend analysis. The results show that the majority of the agricultural products are in the comparative disadvantage category, and that although the EU has a strong comparative advantage in several agricultural products, its probability to keep these advantages is lower than for China.

**Keywords:** EU27, China, agricultural product trade, comparative advantage, trade specialisation, Brexit.

**JEL Classification:** F13, F15, Q17, Q18.

## 1. Introduction

The agricultural sector is an essential sector for both the EU and China. In the EU-28, it represents 6 per cent of its GDP, it offers about 44 million job opportunities and more than 500 million consumers rely on the sector (EC 2017). In China, the sector matters not only for the well-being of 1.4 billion Chinese people but also in terms of the Chinese Central Government’s stability and legitimacy. Moreover, the agricultural sectors of both the EU and China have undergone significant changes in the last five decades and these changes are mostly mirrored through the perspective of agricultural and trade policies as well as through the socio-economic environment.

The Common Agricultural Policy (CAP) of the European Union (EU) plays an important role in re-organizing and administrating the EU agricultural sector; since its implementation in 1962 and especially in the last three decades, significant reforms

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Bernadette Andreosso-O’Callaghan\*(✉), Junshi Li\*\*

\* University of Limerick, Ireland  
e-mail: Bernadette.Andreosso@ul.ie

\*\* University of Limerick, Ireland  
e-mail: Junshi.Li@ul.ie

have been changing the CAP from a market-distorted policy towards a more market-orientated policy. Since the reform and the opening-up policy in 1979 and the accession of China to the World Trade Organization (WTO) in late 2001, China's agricultural policy has also been revised dramatically in order to meet the needs of world economic integration and the commitments undertaken under the WTO auspices. With China stepping into the domain of world economic integration, China's agricultural trade has been decentralized and its policies are much more market-oriented compared with the centrally-planned regime before 1978 and shortly after. These new policies have indeed provided a favorable platform for EU-China agricultural trade.

As one of the most obvious benefits arising from the opening-up policy of China and from its aggressive economic policies, disposable income has been increasing significantly. An emerging middle class in China has led to a higher demand for quality agricultural and food products. However, demand growth is in conflict with the limitation of Chinese domestic supply due to various reasons for example: the scarcity of both arable land and of water resources; the food safety issue; environmental degradation and pollution. China therefore needs to import large amounts of such products to satisfy its domestic demand and this, in turn, can provide a good opportunity for the EU to strengthen its agricultural trade with China. Moreover, under the pressure of the forthcoming Brexit, the EU should maintain a stable trade relationship with China and China ought to seize the chance of enhanced trade relations by means of doing more trade in the agricultural sector.

In such a background, it is necessary to conduct a study to analyse the EU-China evolving agricultural trade specialisation in a long term framework (from 2001 to 2017) covering a few significant years such as China's accession to the WTO (in 2001), before and after the crisis (in 2008). However, trade specialisation can be reflected from many perspectives and in this study it will be conceptualized using the notion of comparative advantage. The paper has adopted two indexes for measuring comparative advantage which are Balassa's Comparative Advantage Index (BRCA) and the Normalised Comparative Advantage index (NRCA). It should be noted that trade specialisation is not static and that it is evolving along with the changes of trade policies and of the domestic and international economic environment. Therefore, this study analyses dynamics of trade specialisation patterns in both the EU and China for agricultural products trade by using an OLS model, a one-step Markov transition probability matrix (followed by a mobility index), and a trend analysis method based on the preliminary results of the NRCA index. It will be interesting to see how the trade pattern changes along with the growth of these two large economies.

The rest of the paper is structured as follows: the ensuing section will provide a concise literature review in relation to the studies on comparative advantage; section 3 will clarify the methodology and the data used, and section 4 will show the empirical results with an analysis; finally, some important points will be drawn in section 5 as concluding remarks.

## 2. Literature review

The concept of comparative advantage is a key component in the study of international trade, and comparative advantage can be measured using various methods such as real exchange rates, purchasing power parity or revealed trade comparative advantage (Latruffe 2010). The earliest attempt to quantify trade comparative advantage is Balassa (1965)'s Revealed Comparative Advantage Index (BRCA). The nature of the index is that it calculates the share of an exported product of a country in its trading partner's market to the share of world's exports of the same products in the world's total exports. Based on the nature of BRCA, a few different modified indexes have been developed by different people such as Vollrath (1991)'s Relative Export Advantage Index (RXA) and Relative Import Advantage Index (RMA); Banterle and Carraresi (2007)'s Net Export Index (NEI) and the Grubel-Lloyd Index (GL); Dalum et. al (1998)'s Revealed Symmetric Comparative Advantage Index (RSCA); and the Normalised Comparative Advantage Index (NRCA) developed by Yu et al. (2009). These different indexes provide many alternatives for quantifying trade comparative advantage.

The analysis of trade comparative advantage is quite popular and common in terms of the scope of international trade research and the related studies are usually conducted from two perspectives: the first one is a country-wide analysis while the second one is a sector-wide analysis. More specifically, the so called country-wide analysis means that the study of comparative advantage is at country level and is not specified into different sectors (see Ahmad et al. (2018)) while the so called sector-wide analysis is for those studies that focus on different sectors of various countries such as the agricultural sector (Hoang et al. 2017a), and the services sector (Nath et al. 2015). However, studies from the second perspective are more refined and this is the approach taken in this study. For example, Carraresi and Banterle (2015) focus on the food industry and agricultural sector of Central and East-European Countries (CEECs); Bojnec and Fertő (2009) study the agri-food sector of the Central European and Balkan countries; Sudan's agricultural products are analysed in Elryah (2015) and the dairy industry of the EU member countries are researched by Drescher and Maurer (1999); Fang and Beghin (2000) analyse China's major crop sectors while Bavorová (2003) interest in the Czech Republic's sugar industry. However, these above-cited studies only analyse a specific sector for a single country. Some of the other studies therefore analyse the comparative advantage of specific sectors of two or more countries in a context of bilateral or multilateral trade relations. For example, Sahinli (2012) analyses the Turkey-EU agricultural sector and Serin and Civan (2008) focus on the Turkey-EU fruit and vegetable industry; Esquivias (2017) illustrates the comparative advantage of agricultural product trade between East Java, Indonesia and six ASEAN exporting countries while Bulgaria's and the Czech Republic's agri-food sectors are studied by Gorton et al. (2000).

However, the comparative advantage of a sector in a country is not static. It changes along with structural change in an economy due to different factors. Theoretically, the changes rely on three elements: i) the role of factor accumulation (see Findlay (1970); Deardorff (1974)); ii) the endogeneity of technological change (see Krugman (1987));

iii) the influence of agglomeration economies (see Krugman (1991) and Fujita et al. (1999)). It implies that trade specialisation which is conceptualized by the concept of comparative advantage in this study is dynamic and it evolves endogenously over time. According to Hinloopen and Marrewijk (2001) three types of trade specialisation are defined: first, the changes of the comparative advantage index from one period to the next; secondly, the mobility versus persistence of the trade specialization for every two adjacent years during a whole research period; finally, the trends of comparative advantage over the research period and predictions for the future. Empirically, Hoang et al. (2017b) study the dynamic comparative advantage of Vietnam in its agricultural sector and Proudman and Redding (2000) analyse the evolving trade pattern for France, Germany, Japan, the UK, and the USA in the manufacturing sectors. This study will therefore follow the ideas of the three dynamic types and will analyse the trade specialisation dynamics for the EU and China respectively in terms of agricultural products in the context of EU-China bilateral trade relations.

Though research on the comparative advantage concept is abundant at both the sector-wide level and country-wide level and especially in the agricultural sector, when it comes to EU-China agricultural products bilateral trade relations, studies are rare and even rarer in terms of analysing dynamic agricultural trade specialisation. This paper will therefore fill this research gap and it will use Brexit as the background of the analysis with an “anti-monde” (or counterfactual) assumption, implying that the UK is not in the EU for the whole research period from 2001 to 2017.

### 3. Methodology and data

In general, there are two main steps of the methodology. The first step involves using Balassa's Revealed Comparative Advantage Index (hereafter BRCA) and the Normalised Revealed Comparative Advantage Index (hereafter NRCA) to quantify the comparative advantage of the EU and China respectively in a number of selected agricultural products. The second step is based on the results obtained from the BRCA and NRCA values, or from a static statistical descriptive analysis leading to preliminary results; these results will be followed by a dynamic analysis for the three types mentioned earlier, namely by using first an OLS regression model, second a Markov one-step transition probability matrix along with a Shorrocks (1978)'s mobility index, and third a regression trend analysis. Each method will be explained further in the following subsections. The data used for this paper will be introduced in the latter part of this section.

#### 3.1 Quantifying comparative advantage (Step 1)

According to Balassa (1965 and 1977), the measurement of the BRCA can be expressed as follows:

$$BRCA_{ij}^t = \frac{X_{ij}^t / X_i^t}{X_{wj}^t / X_w^t} \quad (1)$$



Where,

- $X_{ij}^t$  = Country i's exports of product j in time t;
- $X_i^t$  = Country i's total exports in time t;
- $X_{wj}^t$  = World's exports of product j in time t;
- $X_w^t$  = World's total exports in time t.

A  $BRCA > 1$  denotes a comparative advantage, whereas conversely a  $BRCA < 1$  implies no comparative advantage (or the existence of a comparative disadvantage); when  $BRCA = 1$ , it implies neutral comparative advantage. However, the BRCA can only indicate that country i has a comparative advantage in a product j (or conversely no comparative advantage); however, when putting two countries together with the same product, with both a  $BRCA > 1$ , the results cannot tell which country has a stronger comparative advantage and vice versa. Moreover, the distribution of the BRCA index is asymmetric because the interval of comparative disadvantage is between 0 and 1 while the interval of comparative advantage is spread between 1 and infinity. Also the asymmetric issue will violate the assumption of normality of the error terms in regression models and this is why the BRCA is not selected for the later regression analysis (Dalum et al. 1998).

Thankfully, another index (the NRCA) which is a modified version of the BRCA by Yu et al. (2009) is adopted here and it allows to overcome the shortcomings of the BRCA. The expression of the NRCA is given as follows:

$$NRCA_{ij}^t = \frac{X_{ij}^t}{X_w^t} - \frac{X_i^t * X_{wj}^t}{X_w^t * X_{wj}^t} \quad (2)$$

Where,

- $X_{ij}^t$  = Country i's exports of product j in time t;
- $X_w^t$  = World's total exports in time t;
- $X_i^t$  = Country i's total exports in time t;
- $X_{wj}^t$  = World's exports of product j in time t.

The results derived from (2) are symmetric ranging from -0.25 to +0.25 with 0 being the comparative-advantage-neutral point (comparative advantage above 0, disadvantage below 0) and it can easily be used for making comparisons across regions/countries (the EU and China) or time (years).

### 3.2 Measurements of dynamic trade specialisation (Step 2)

For the measurement of the first type of dynamic trade specialisation, this paper has adopted the OLS regression method which is built by Hart and Prais (1965) and which was first used in this context by Cantwell (1989)<sup>1</sup>.

<sup>1</sup> It should be noted that Cantwell (1989) used the OLS model which was built by Hart and Prais (1965) to identify the changing pattern of international trade and production of the selected countries. However, it did not use the NRCA indicators.

The OLS regression model for the first type can be written as:

$$NRCA_{ij}^{t_2} = \alpha_i + \beta_i NRCA_{ij}^{t_1} + \varepsilon_{ij}, (\varepsilon_{ij} \sim n.i.d. (0, \sigma)) \tag{3}$$

Where,

- $NRCA_{ij}^{t_2}$  Country i's NRCA result in product j at time 2 ( $t_2$ : final year)
- $NRCA_{ij}^{t_1}$  Country i's NRCA result in product j at time 1 ( $t_1$ : initial year)
- $\alpha_i$  = A constant
- $\beta_i$  = A regression coefficient to be estimated
- $\varepsilon_{ij}$  = residual terms.

Three time periods are designed for the OLS regression, with the year 2008 epitomizing a structural break in the data, as shown below:

	$t_1$	$t_2$
<b>Period 1</b>	2001	2008
<b>Period 2</b>	2008	2017
<b>Period 3</b>	2001	2017

Making the year 2008 as the cut point for the long-term three sub-periods allows us to see the stability of comparative advantage before and after the economic crisis happening in 2008.

The estimated  $\beta$  coefficient will indicate the different changing patterns of the comparative advantage. When  $0 < \beta < 1$ , products with an initial weak comparative advantage gain comparative advantage through time while products with a strong initial comparative advantage lose their comparative advantage; when  $\beta > 1$ , it implies that a comparative advantage will become stronger (conversely weaker) for products with a strong (conversely weak) initial comparative advantage; when  $\beta = 1$ , there is stability in terms of the degrees of comparative advantage (unchanged trade specialisation); when  $\beta = 0$ , there is no relation between comparative advantage; when  $\beta < 0$ , the comparative advantage indexes initially below the average value will eventually be above the average value and vice versa.

However, following Cantwell (1989) the case when  $\beta > 1$  is not a necessary case to identify if the changing pattern of trade specialisation is from comparative disadvantage to advantage and vice versa. Therefore, in order to find out the trends of trade specialisation for each selected time period, Hart (1976) provides a way to make comparisons between  $\beta$  and the correlation coefficient R from the same regression model which can be shown as follows:

$$\frac{\sigma_i^{t_2}}{\sigma_i^{t_1}} = \frac{|\beta_i|}{|R_i|} \tag{4}$$

Where,

- $R_i$  = Correlation coefficient from (3)
- $\sigma$  = Standard deviation of the variables  $NRCA_{ij}^{t_2 \& t_1}$

When  $\beta=R$ , specialisation trend stays unchanged; when  $\beta>R$ , the degree of trade specialisation rises; and when  $\beta<R$ , the degree of trade specialisation falls.

For the second type of trade specialisation which is in relation to mobility and persistence, a one-step Markov transition probability matrix is applied here. Firstly, with the help of the results of the NRCA, we leave the NRCA indexes which are less or equal to 0 as one class named Group1 (denoting a comparative disadvantage); then, we use the quartile method to classify the rest of the NRCA indexes into three other groups namely Group 2, Group 3, and Group 4 respectively. Group 2 refers to a weak comparative advantage situation; Group 3 denotes medium comparative advantage and Group 4 represents the case of a strong comparative advantage.

The one-step transition probability shows the probability of the NRCA index to move from an initial state to other states within two adjacent years; and after obtaining the probability matrix, Shorrocks (1978)'s mobility index (hereafter M index) is used to assess the trace<sup>2</sup> of the transition probability matrix in order to find out the extent of the mobility. The equation of the M index can be written as follows:

$$M = n - \text{tr}(P) / n - 1 \tag{5}$$

Where,

$n$  = Number of groups (we have four groups here)

$P$  = Transition probability matrix

$\text{tr}(P)$  = Trace of P.

A high M index implies greater mobility while a lower M index mirrors a lower mobility which denotes relative persistence; finally, if  $M=0$  this implies perfect immobility.

For the last sequence of trade specialisation dynamics, this paper employs a regression trend analysis method to investigate and predict the trend of trade specialisation in agricultural products over the research period (2001-2017) and in the future. The regression trend analysis model can be defined as follows:

$$NRCA_{ij}^t = \alpha_{ij} + \beta_{ij}t + \varepsilon_{ij}^t \tag{6}$$

Where,

$t$  = time index which is from 2001 to 2017 respectively

$\beta_{ij}$  = regression coefficient that shows the NRCA of selected agricultural products' trends.

When  $\beta_{ij}$  is close to 0 at a 10 per cent significant level, country  $i$ 's trade specialisation in product  $j$  can be considered as stable; when  $\beta_{ij}>0$ , a trend shows that the country is gaining a comparative advantage in product  $j$  over time, while when  $\beta_{ij}<0$ , it shows a trend towards a loss of comparative advantage.

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<sup>2</sup> The Trace of the transition probability matrix, which is denoted as  $\text{tr}(P)$ , refers to the sum of the elements on the principal diagonal in the matrix.

### 3.3 Data and agricultural products

The trade data from 2001 to 2017 for the purpose of calculating the results of the BRCA index and NRCA indices are collected from the Trade Map Database. The agricultural products in this study are defined by the Harmonized System at the 4-digit level which are from HS01 to HS24 plus HS 50 to HS53. Therefore, 245 agricultural products in total are covered in this study. However, to facilitate the analysis and interpretation, all the 4-digit level agricultural products are compressed into 2-digit level. Moreover, the first type and the second type of trade specialisation dynamics have integrated all the agricultural products into the agricultural sectors for both the EU and China. Also, in order to facilitate the presentation of the results, all the NRCA indexes are multiplied by 10000.

As mentioned in the introduction section, this study is conducted in the background of Brexit with an assumption that the UK is not in the EU for the research period which is from 2001 to 2017. In doing so, when calculating the index of BRCA and NRCA the trade data of the UK are deducted from the EU and it is why the term of EU27 are used in this paper.

## 4. Empirical results

In this section, all the results will be analysed in the following 4 subsections. Section 4.1 focuses on analysing the preliminary results of both the BRCA and the NRCA indices by using statistical descriptive methods; section 4.2 analyses the results from the usage of the OLS regression method; section 4.3 discusses the degree of mobility of both the EU and China's comparative advantage in the agricultural sectors over time and finally in section 4.4 the results relating to the EU and China's trends in terms of comparative advantage at a product level for the future are analysed.

### 4.1 Analysis of the preliminary results

Since a comparative advantage is not a static concept especially in a long term period, it is pointless to analyse comparative advantage for each single year. Instead, it makes more sense to interpret comparative advantage in different subsequent time periods within a long term year range. Therefore, the study has grouped 4 time periods within the 17 years from 2001 to 2017 and has calculated the average value for both the BRCA index and NRCA index.

**Table 1.** Average value of the BRCA and NRCA indexes for the 4 periods from 2001 to 2017 in the EU27

HS Code and Product Category	2001-2005		2006-2009		2010-2013		2014-2017	
	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA
01 Live Animals	0.10	-0.07	0.09	-0.08	0.16	-0.09	0.24	-0.10
02 Meat	0.21	-0.27	0.22	-0.34	0.74	-0.15	<b>1.77</b>	<b>0.57</b>
03 Fish	0.64	-0.12	0.61	-0.15	0.35	-0.32	0.32	-0.46

HS Code and Product Category	2001-2005		2006-2009		2010-2013		2014-2017	
	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA
04 Dairy products	0.41	-0.14	0.46	-0.17	0.72	-0.12	<b>1.27</b>	<b>0.13</b>
05 Animal originated	<b>2.76</b>	<b>0.05</b>	<b>3.19</b>	<b>0.07</b>	<b>2.75</b>	<b>0.08</b>	<b>2.98</b>	<b>0.11</b>
06 Live trees	0.47	-0.04	0.44	-0.05	0.45	-0.06	0.67	-0.04
07 Edible vegetables	0.02	-0.18	0.01	-0.24	0.01	-0.32	0.01	-0.41
08 Edible fruit and nuts	0.05	-0.24	0.10	-0.30	0.10	-0.42	0.09	-0.60
09 Coffee, tea, etc.	0.02	-0.09	<b>7.06</b>	-0.11	0.04	-0.23	0.07	-0.28
10 Cereals	0.30	-0.19	0.06	-0.37	0.06	-0.55	0.32	-0.44
11 Milling products	0.24	-0.03	0.27	-0.05	0.32	-0.06	0.25	-0.08
12 Oil seeds	0.21	-0.14	0.13	-0.23	0.09	-0.42	0.14	-0.49
13 Lac, gums, resins	0.51	-0.01	0.53	-0.01	0.36	-0.03	0.50	-0.02
14 Vegetable plaiting materials	0.06	0.00	0.09	0.00	0.10	0.00	0.04	-0.01
15 Animal or vegetable fats	0.13	-0.18	0.14	-0.29	0.31	-0.37	0.31	-0.39
16 Meat preparations	0.03	-0.13	0.02	-0.17	0.01	-0.23	0.02	-0.28
17 Sugar	0.06	-0.11	0.11	-0.15	0.07	-0.25	0.10	-0.24
18 Cocoa	0.13	-0.10	0.18	-0.13	0.39	-0.14	0.43	-0.17
19 Preparations of cereals or milk	0.24	-0.12	0.58	-0.08	<b>1.21</b>	<b>0.07</b>	<b>2.77</b>	<b>0.74</b>
20 Preparations of vegetables	0.06	-0.16	0.08	-0.21	0.11	-0.26	0.17	-0.30
21 Various edible preparations	0.22	-0.12	0.31	-0.14	0.49	-0.15	0.46	-0.21
22 Beverages	0.35	-0.21	0.75	-0.10	<b>1.54</b>	<b>0.30</b>	<b>1.74</b>	<b>0.50</b>
23 Food wastes	0.10	-0.15	0.11	-0.21	0.10	-0.32	0.17	-0.37
24 Tobacco	0.09	-0.14	0.07	-0.15	0.08	-0.20	0.05	-0.24
50 Silk	0.31	-0.01	0.38	-0.01	0.51	-0.01	0.33	-0.01
51 Wool	<b>1.85</b>	<b>0.07</b>	2.41	0.09	2.15	0.09	1.97	0.08

HS Code and Product Category	2001-2005		2006-2009		2010-2013		2014-2017	
	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA
52 Cotton	<b>46.54</b>	-0.16	0.25	-0.19	0.27	-0.26	0.15	-0.30
53 Vegetable textile fibers	<b>1318.24</b>	<b>0.16</b>	8.27	0.13	7.18	0.13	8.45	0.20
<b>Number of products with a comparative advantage</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>7</b>

Source: Authors' own calculation based on trade data from Trade Map database (2001-2017).

Note: for a full description of each product area, please refer to the appendix.

As shown in Table 1, in the first period (2001-2005), there were only 4 kinds of agricultural products in the EU27 showing a comparative advantage (hereafter CA) according to the results of the BRCA index; these are HS05 (2.76), HS51 (1.85), HS52 (46.54), and HS53 (1318.24); this accords broadly with the results of the NRCA index; according to the results of the NRCA index, there were 3 products with a CA, namely HS05 (0.05), HS51 (0.07), and HS53 (0.16). The number of products with a CA has increased to 7 in the most recent period (2014-2017) and for this period both the BRCA index and NRCA index have shown a CA for the identical product groups which are HS02 (BRCA:1.77, NRCA:0.57), HS04 (BRCA:1.27, NRCA: 0.13), HS05 (BRCA: 2.98, NRCA: 0.11), HS19 (BRCA: 2.77, NRCA: 0.74), HS22 (BRCA: 1.74, NRCA: 0.5), HS51 (BRCA: 1.97, NRCA: 0.08), and HS53 (BRCA: 8.45, NRCA:0.2). Also, HS05, HS51, and HS53 always show a CA in the four periods which indicates that the EU has a stable CA for these three product groups. However, the EU27 gained a CA in products such as HS02, HS04 only in the recent years.

**Table 2.** Average value of the BRCA and NRCA indexes for 4 periods from 2001 to 2017 in China

HS Code and Product Category	2001-2005		2006-2009		2010-2013		2014-2017	
	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA
01 Live Animals	0.02	-0.12	0.02	-0.19	0.01	-0.19	0.01	-0.22
02 Meat	0.10	-0.53	0.01	-0.95	0.02	-1.05	0.01	-1.21
03 Fish	0.94	-0.04	<b>1.03</b>	<b>0.03</b>	<b>1.06</b>	<b>0.05</b>	0.84	-0.19
04 Dairy products	0.05	-0.39	0.03	-0.67	0.07	-0.72	0.09	-0.76
05 Animal originated	<b>7.49</b>	<b>0.29</b>	<b>5.05</b>	<b>0.29</b>	<b>4.46</b>	<b>0.29</b>	<b>3.91</b>	<b>0.28</b>
06 Live trees	0.14	-0.11	0.12	-0.17	0.13	-0.16	0.14	-0.17
07 Edible vegetables	<b>1.10</b>	<b>0.02</b>	0.76	-0.13	0.68	-0.18	0.46	-0.38

HS Code and Product Category	2001-2005		2006-2009		2010-2013		2014-2017	
	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA	BRCA	NRCA
08 Edible fruit and nuts	0.20	-0.34	0.23	-0.57	0.21	-0.66	0.16	-0.94
09 Coffee, tea, etc.	0.40	-0.10	<b>68.84</b>	-0.18	0.36	-0.28	0.48	-0.26
10 Cereals	0.04	-0.44	0.01	-0.87	0.01	-1.03	0.00	-1.07
11 Milling products	0.02	-0.07	0.03	-0.14	0.07	-0.15	0.16	-0.15
12 Oil seeds	0.96	-0.03	0.43	-0.34	0.30	-0.57	0.28	-0.69
13 Lac, gums, resins	0.60	-0.01	<b>1.00</b>	<b>0.00</b>	<b>1.51</b>	<b>0.03</b>	<b>2.49</b>	<b>0.10</b>
14 Vegetable plaiting materials	<b>1.88</b>	<b>0.00</b>	<b>1.54</b>	<b>0.00</b>	<b>1.68</b>	<b>0.01</b>	<b>2.51</b>	<b>0.01</b>
15 Animal or vegetable fats	0.09	-0.31	0.07	-0.71	0.04	-0.90	0.09	-0.86
16 Meat preparations	0.51	-0.11	0.59	-0.17	0.48	-0.22	0.49	-0.24
17 Sugar	0.09	-0.19	0.09	-0.33	0.07	-0.44	0.07	-0.42
18 Cocoa	0.04	-0.19	0.07	-0.32	0.09	-0.37	0.08	-0.45
19 Preparations of cereals or milk	0.17	-0.23	0.10	-0.43	0.10	-0.48	0.09	-0.62
20 Preparations of vegetables	<b>2.06</b>	<b>0.28</b>	<b>1.38</b>	<b>0.18</b>	0.94	-0.03	0.75	-0.15
21 Various edible preparations	0.12	-0.23	0.09	-0.42	0.12	-0.46	0.18	-0.54
22 Beverages	0.05	-0.52	0.02	-0.90	0.02	-0.94	0.05	-1.06
23 Food wastes	0.04	-0.27	0.12	-0.44	0.23	-0.49	0.35	-0.48
24 Tobacco	0.24	-0.19	0.66	-0.14	0.30	-0.27	0.27	-0.31
50 Silk	<b>8.09</b>	<b>0.19</b>	<b>5.49</b>	<b>0.17</b>	<b>6.90</b>	<b>0.18</b>	<b>7.29</b>	<b>0.15</b>
51 Wool	<b>2.28</b>	<b>0.18</b>	<b>2.06</b>	<b>0.16</b>	<b>2.70</b>	<b>0.23</b>	<b>2.13</b>	<b>0.15</b>
52 Cotton	<b>70.45</b>	-0.15	0.59	-0.23	0.64	-0.23	0.56	-0.26
53 Vegetable textile fibers	<b>232.08</b>	<b>0.03</b>	<b>2.37</b>	<b>0.05</b>	<b>2.39</b>	<b>0.05</b>	<b>2.04</b>	<b>0.05</b>
<b>No. of Products with a comparative advantage</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>8</b>	<b>7</b>	<b>7</b>	<b>6</b>	<b>6</b>

Source: Author's own calculation based on trade data from Trade Map (2001-2017).

Note: for a full description of each product area, please refer to the appendix.

Turning to China's standpoint, Table 2 illustrates the average value of both the BRCA

and NRCA indexes for the four periods from 2001 to 2017 for China. According to the results of the BRCA shown in the table, in the first period (2001-2005), China had a CA in 8 agricultural product groups namely: HS05 (7.49), HS07 (1.10), HS14 (1.88), HS20 (2.06), HS50 (8.09), HS51 (2.28), HS52 (70.45), and HS53 (232.08); the NRCA indices shown for the same period denote 7 product groups in which China had a CA and the only difference is HS52 with a NRCA equal to -0.15. Again, the results of the two indices broadly point to the same direction. By contrast with the EU27, the number of agricultural product groups decreased to 6 in the most recent period (2014-2017) according to the results of both the BRCA and NRCA. Also, HS05, HS14, HS50, HS51, and HS53 always show a CA in the last 17 years which implies that these product groups in China have a relatively stable CA pattern.

**Table 3.** Product groups in the EU27 and China with a CA in two limit periods

Country	Products (HS Code)	2001-05	2014-17
<b>EU(27)</b>	Meat and edible meat offal (02)	N	<u>Y</u>
	Dairy products (04)	N	<u>Y</u>
	Animal originated products (05)	<u>Y</u>	<u>Y</u>
	Preparations of cereals or milk; pastrycooks' products (19)	N	<u>Y</u>
	Beverages, spirits and vinegar (22)	N	<u>Y</u>
	Wool, animal hair; horsehair yarn and woven fabric (51)	<u>Y</u>	<u>Y</u>
	Cotton (52)	<u>Y</u>	N
	Vegetable textile fibers; paper yarn and woven fabrics of paper yarn (53)	<u>Y</u>	<u>Y</u>
	<b>China</b>	Animal originated products (05)	<u>Y</u>
Edible vegetables and certain roots and tubers (07)		<u>Y</u>	N
Lac; gums, resins and other vegetable saps and extracts (13)		N	<u>Y</u>
Vegetable plaiting materials (14)		<u>Y</u>	<u>Y</u>
Preparation of vegetable, fruit, nuts or other parts of plants (20)		<u>Y</u>	N
Silk (50)		<u>Y</u>	<u>Y</u>
Wool, animal hair; horsehair yarn and woven fabric (51)		<u>Y</u>	<u>Y</u>
Cotton (52)		<u>Y</u>	N
Vegetable textile fibers; paper yarn and woven fabrics of paper yarn (53)		<u>Y</u>	<u>Y</u>

Source: Authors' own work.

Note: "N" refers to product without comparative advantage; "Y" implies product with comparative advantage.



Table 3 summarizes the agricultural product groups for both the EU27 and China that show a CA in either or both of the time periods 2001-2005 and 2014-2017<sup>3</sup>. From China's standpoint (bottom part of the table) and for the period 2001-05, edible vegetables and certain roots and tubers; vegetable plaiting materials; preparation of vegetable, fruit, nuts or other parts of plants; and silk all show a CA whereas this is not the case for the EU27. However, for animal originated products (such as wool, animal hair; horse hair yarn and woven fabric), cotton, vegetable textile fibers, paper yarn and woven fabrics and paper yarn, the results show a CA for both the EU27 and China in this period (2001-05).

For the most recent period (2014-17), agricultural product groups in which the EU27 had a CA and China did not have a CA were meat and edible meat offal; dairy products; preparations of cereals or milk; pastry cooks' products; beverages, spirits and vinegar. For products such as lac; gums, resins and other vegetable saps and extracts; vegetable plaiting materials; and silk, China has a CA in sharp contrast with the EU27. A comparison between the two periods shows that the EU27 has lost its CA in cotton while China lost its CA in edible vegetables and certain roots and tubers; preparation of vegetable, fruit, nuts or other parts of plants; and cotton. However, in the same two periods, the EU27 had gained a CA in meat and edible meat offal; dairy products; preparations of cereals or milk; pastrycooks' products; beverage, spirits and vinegar, while in China a comparative disadvantage was changed into a CA for products such as lac; gums, resins and other vegetable saps and extracts.

#### **4.2 Dynamic analysis (type 1)**

Table 4 below shows the OLS regression results for the NRCA indexes over the three defined time periods for the EU27 and China respectively. All the regression coefficients are significant at the 1 per cent level; however, the  $r^2$  for the EU27 and for the second and the third periods are relatively low implying a priori a low explanatory power of the model. However, the data is well explained in the case of China.

In each time period and for both the EU27 and China,  $\beta$  are all greater than 1 which implies that for both the EU27 and China, agricultural product groups with an initial strong CA gain more CA whilst product groups with an initial weak CA lose CA. This situation happens in all the three defined time periods.

Furthermore, all the  $\beta$  are larger than R (correlation coefficient) which indicates that the degree of trade specialisation rises for both the EU27 and China in all the three time periods. This also tells that the economic crisis in 2008 had no significant influence on the agricultural products trade specialisation in both the EU27 and China, and that China's accession to the WTO enhanced the trade specialisation for both. When combined with the results obtained for both  $\beta$  and R, the trade specialisation in agricultural products can be defined as divergent trade patterns for both the EU27 and China.<sup>4</sup>

<sup>3</sup> Note that the results in Table 3 are summarized by using only the NRCA index. The BRCA index is not used for Table 3.

<sup>4</sup> Trade patterns can be defined by type of trade specialisation. When trade specialisation rises, trade patterns point towards divergent trade patterns while when trade specialisation falls, trade patterns tend to converge.

**Table 4**, The OLS regression results for both the EU and China over three periods

<b>EU27</b>	<b>Year period</b>	<b><math>\beta</math></b>	<b><math>r^2</math></b>	<b>R</b>	<b><math>\beta/R</math></b>
	<b>2001-2008</b>	1.163***	0.65	0.80	1.45
	<b>2008-2017</b>	1.898***	0.23	0.48	3.94
	<b>2001-2017</b>	1.500***	0.07	0.26	5.69
<b>China</b>	<b>Year period</b>	<b><math>\beta</math></b>	<b><math>r^2</math></b>	<b>R</b>	<b><math>\beta/R</math></b>
	<b>2001-2008</b>	1.589***	0.76	0.87	1.82
	<b>2008-2017</b>	1.111***	0.89	0.95	1.17
	<b>2001-2017</b>	1.690***	0.63	0.79	2.14

Source: Authors' own calculation by using Stata. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  and R denotes correlation coefficient.

### 4.3 Analysing the degree of mobility of trade specialisation (type 2)

After grouping the NRCA indices of the 245 selected agricultural products from 2001 to 2017 for the EU27, the numbers of the agricultural products in each group vary from year to year but on average, as the last column in Table 5 shows there are 214 products in Group 1, 8 products in Group 2, 16 products in Group 3, and 8 products in Group 4. Therefore, it shows that for most agricultural products, the EU27 has a comparative disadvantage in its agricultural trade relations with China.

In terms of the degree of mobility within the four groups, this paper defined the movement from a comparative disadvantage to a strong CA as “forward moving” while the move from a strong CA to a comparative disadvantage is termed a “backward movement”. Table 6 depicts the transition probability from one group (or state) in the current year to another group (or state) in the next year for the EU27<sup>5</sup>. The probabilities which are highlighted on the diagonal represent the stability of each group. The agricultural products with a comparative advantage have a 94.1 per cent probability to keep this comparative advantage while the products with a medium CA and a strong CA have a 36.1 per cent and a 32.5 per cent probability respectively to stay in the same state. However, the products of group 2 (weak CA) have a 0 probability to stay in the weak CA group and there is a 100 per cent probability for these products to move backward to group 1. There is a 26.7 per cent probability for Group 3 to move backward to Group 1. For those products with a strong CA (group 4), there is no chance that they will move backward to the comparative disadvantage group but a 67.5 per cent probability that they will move backward to the medium CA group while Group 3 has a 37.3 per cent probability to move forward to Group 4. Finally, Group 1 has probabilities of 3.2 per cent, 2.6 per cent, and 0.13 per cent to move forward to Group 2, Group 3, and Group 4 respectively.

<sup>5</sup> Note that the results in Table 6 are the average probability value on transition probabilities of 16 pairs of each two adjacent years from 2001 to 2017 (e.g. 2001-2002, 2002-2003, 2003-2004, ..., 2016-2017) and Table 8 for the case of China is the same. The mobility indexes in Table 6 and 8 are also average values derived from the 16 transition probability matrixes of the EU and China respectively.

**Table 5.** The groups of EU27'S NRCA index

States	Explanations	NRCA cut points	No. average
<b>Group1</b>	comparative disadvantage	$\leq 0$	214
<b>Group2</b>	weak comparative advantage	$\leq 0.00102$	8
<b>Group3</b>	medium comparative advantage	$\leq 0.0447$	16
<b>Group4</b>	Strong comparative advantage	$> 0.0447$	8

Source: Authors' own calculation.

**Table 6.** The Markov transition probability matrix for the NRCA (EU27)

Obs.4165	Group1	Group2	Group3	Group4
<b>Group1 (comparative dis.)</b>	0.9405	0.0324	0.0258	0.0013
<b>Group2 (Weak CA)</b>	1.0000	0.0000	0.0000	0.0000
<b>Group3 (Medium CA)</b>	0.2667	0.0000	0.3607	0.3726
<b>Group4 (Strong CA)</b>	0.0000	0.0000	0.6752	0.3248
<b>M index</b>	0.7913			

Source: Authors' own calculation based on the NRCA results of the EU27.

For China, there are on average 197 products, 21 products, 19 products, and 7 products in Groups 1, 2, 3, and 4 respectively (Table 7). Although the number of products in Group 1 is smaller than is the case for the EU27, it still takes the most portion of all the products. As the probabilities highlighted in Table 8 show, products that have a comparative disadvantage will still stay in the same group with a high probability (84.2 per cent) while, as in the case of the E27, Group 2 products have a 0 probability to still stay in the same group but there is a 100 per cent probability that products with a weak CA will move to group 1 (comparative disadvantage). Products in Group 3 have a 31.3 per cent probability to stay in the same group while Group 4 products have a 46.8 per cent chance to still have a strong CA. Therefore, the products with a strong CA in China tend to have more stability than the products in the EU27. It is worth to notice that products with a medium CA have a higher probability compared with the EU27 case to change backward to the comparative disadvantage group with a 49.7 per cent probability. Moreover, products with a medium CA have a lower probability than the EU27 to move forward to the strong CA group with only a 19 per cent probability. Eventually, the

probabilities of Group1 moving forward to Group 2, Group 3, and Group 4 are 10.9 per cent, 4.72 per cent, and 0.16 per cent respectively.

**Table 7.** The groups of China's NRCA index

States	Explanation	NRCA cut points	No. average
<b>Group1</b>	comparative disadvantage	$\leq 0$	197
<b>Group2</b>	weak comparative advantage	$\leq 0.01207$	21
<b>Group3</b>	Medium comparative advantage	$\leq 0.0697$	19
<b>Group4</b>	strong comparative advantage	$> 0.0697$	7

Source: Authors' own calculation.

**Table 8.** The Markov transition probability matrix for the NRCA (China)

Obs.4165	Group1	Group2	Group3	Group4
<b>Group1 (Comparative dis.)</b>	0.8420	0.1092	0.0472	0.0016
<b>Group2 (Weak CA)</b>	1.0000	0.0000	0.0000	0.0000
<b>Group3 (Medium CA)</b>	0.4974	0.0000	0.3129	0.1897
<b>Group4 (Strong CA)</b>	0.0000	0.0000	0.5324	0.4676
<b>M index</b>	0.7924			

Source: Authors' own calculation based on the NRCA results of China.

The mobility index M has shown that the degree of mobility of the agricultural products trade specialisation of the EU27 and China are roughly similar. For the EU27, the mobility index is 0.7913 while for China the mobility index is 0.7924. However, China still has a little more mobility than the EU27 in terms of agricultural trade specialisation.

#### **4.4 Analysing the trends of trade specialisation at a product level (type 3)**

In the EU27, there are five product groups showing a trend according to which they will gain a comparative advantage and this trend can be proved by the comparison between the NRCA in 2017 and the NRCA in 2001 (see the last column in Table 9). These product groups are meat and edible meat offal (HS02), dairy products, birds' eggs, honey, edible products of animal origin (HS04); animal originated products (HS05); preparations of cereals or milk; pastrycooks' products (HS19); and beverages, spirits and vinegar

(HS22). Although the product group of silk (HS50) has a result that very close to 0 at 5 per cent level, it still shows an unchanged pattern to some degree. The rest of the products show a downward trend in the future which implies a loss of comparative advantage vis-à-vis China; however, the results for HS06 and HS51 are not significant.

**Table 9.** Trends analysis results for the EU27 at product level

Products	B	r <sup>2</sup>	NRCA (2001)	NRCA (2017)	2017-2001
HS01	-0.003***	0.605	-0.0517	-0.115	-0.0633
HS02	0.061***	0.48	-0.175	0.536	0.711
HS03	-0.027***	0.832	-0.11	-0.502	-0.392
HS04	0.020***	0.511	-0.106	0.2	0.306
HS05	0.005***	0.832	0.0312	0.134	0.1028
HS06	-0.0003	0.012	-0.0268	-0.0508	-0.024
HS07	-0.018***	0.867	-0.143	-0.459	-0.316
HS08	-0.029***	0.875	-0.184	-0.686	-0.502
HS09	-0.016***	0.792	-0.0806	-0.311	-0.2304
HS10	-0.025***	0.443	-0.143	-0.638	-0.495
HS11	-0.004***	0.803	-0.0293	-0.0881	-0.0588
HS12	-0.030***	0.916	-0.062	-0.545	-0.483
HS13	-0.001***	0.441	-0.00994	-0.0199	-0.00996
HS14	-0.000***	0.593	-0.0029	-0.00603	-0.00313
HS15	-0.017***	0.51	-0.111	-0.472	-0.361
HS16	-0.012***	0.93	-0.101	-0.305	-0.204
HS17	-0.012***	0.762	-0.0961	-0.273	-0.1769
HS18	-0.006***	0.44	-0.0621	-0.23	-0.1679
HS19	0.064***	0.666	-0.0877	1.146	1.2337
HS20	-0.011***	0.878	-0.126	-0.322	-0.196
HS21	-0.007***	0.661	-0.0968	-0.233	-0.1362
HS22	0.059***	0.872	-0.148	0.673	0.821
HS23	-0.018***	0.873	-0.123	-0.361	-0.238
HS24	-0.008***	0.784	-0.124	-0.259	-0.135
HS50	0.000**	0.325	-0.0119	-0.00853	0.00337
HS51	0.001	0.061	0.0817	0.0774	-0.0043
HS52	-0.010**	0.289	-0.202	-0.314	-0.112
HS53	0.003	0.126	0.112	0.186	0.074

Source: Authors' own calculation. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, "2017-2001" refers to results of NRCA (2017) minus NRCA (2001)

In China, there are only two product groups showing an upward trend in terms of

obtaining a comparative advantage in the future and it is also proved by the positive value of the dispersion between the NRCA in 2017 and NRCA in 2001. These two product groups are lac; gums, resins and other vegetable saps and extracts (HS13) and vegetables plaiting materials (HS14). The rest of the product groups show that they are tending to lose their comparative advantage in the future vis-à-vis the EU27 and note that the results of HS03, HS05, HS24, HS51, HS52 and HS53 are insignificant in the regression analysis.

**Table 10.** Trends analysis results for China at product level

Products	B	r <sup>2</sup>	NRCA (2001)	NRCA (2017)	2017-2001
HS01	-0.007***	0.749	-0.0877	-0.218	-0.1303
HS02	-0.054***	0.838	-0.272	-1.259	-0.987
HS03	-0.009	0.137	0.135	-0.272	-0.407
HS04	-0.029***	0.736	-0.248	-0.802	-0.554
HS05	-0.001	0.008	0.358	0.322	-0.036
HS06	-0.004***	0.432	-0.0729	-0.185	-0.1121
HS07	-0.030***	0.908	0.11	-0.423	-0.533
HS08	-0.045***	0.912	-0.255	-0.996	-0.741
HS09	-0.015***	0.449	-0.0529	-0.27	-0.2171
HS10	-0.052***	0.789	-0.339	-1.044	-0.705
HS11	-0.006***	0.675	-0.053	-0.15	-0.097
HS12	-0.054***	0.951	0.0759	-0.779	-0.8549
HS13	0.008***	0.498	-0.00478	0.0707	0.07548
HS14	0.001***	0.458	0.00621	0.0164	0.01019
HS15	-0.046***	0.705	-0.171	-0.865	-0.694
HS16	-0.011***	0.479	-0.0339	-0.276	-0.2421
HS17	-0.020***	0.747	-0.146	-0.444	-0.298
HS18	-0.021***	0.818	-0.116	-0.49	-0.374
HS19	-0.030***	0.909	-0.134	-0.661	-0.527
HS20	-0.036***	0.888	0.312	-0.184	-0.496
HS21	-0.024***	0.834	-0.149	-0.569	-0.42
HS22	-0.042***	0.803	-0.346	-1.118	-0.772
HS23	-0.017***	0.572	-0.197	-0.41	-0.213
HS24	-0.013*	0.213	-0.163	-0.304	-0.141

HS50	-0.003**	0.365	0.245	0.131	-0.114
HS51	-0.00047	0.003	0.151	0.137	-0.014
HS52	-0.006	0.075	-0.172	-0.239	-0.067
HS53	0.002	0.124	-0.00316	0.0555	0.05866

*Source: Authors' own calculation. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, "2017-2001" refers to results of NRCA (2017) minus NRCA (2001)*

## 5. Conclusion

From 2001 to 2017, the number of agricultural products with a comparative advantage has increased from the EU27 standpoint whereas it has decreased from the viewpoint of China (see the last rows of Table 1 and Table 2). For the EU27, the trade specialisation is in animal originated products (HS05); wool, animal hair; horsehair yarn and woven fabric (HS51); and vegetable textile fibers; paper yarn and woven fabrics of paper yarn (HS53) which always shows a comparative advantage. Also, one should be aware of the fact that the EU27 has gained new trade specialisation in meat and edible meat offal (HS02) and dairy products, birds' eggs, honey, edible products of animal origin (HS04), all products gaining a comparative advantage in recent years. China is specialized in animal originated products (HS05); vegetables plaiting materials (HS14); silk (HS50); wool, animal hair; horsehair yarn and woven fabric (HS51); and vegetable textile fibers; paper yarn and woven fabrics of paper yarn (HS53).

Trade specialisation of both the EU27 and China in the agricultural sector has risen during the three periods and this is in line with economic development, especially in the framework of more open and market-orientated foreign trade policies of China as well as the by structural change. The degree of mobility of specialisation in both the EU27 and China in the agricultural products trade area is relatively high with two similar mobility indexes implying an unstable trade specialisation pattern for both countries. For the EU27, it is worth noting that the products that have a strong comparative advantage have a lower probability than China to stay in the strong comparative advantage group. For China, it is hard for those products having a medium comparative advantage to increase their comparative advantage and to move into the strong comparative advantage category.

These results imply the following: first, both the EU27 and China should find effective ways to enhance the comparative advantage for those products that have a weak comparative advantage and try to reduce the probability that they will fall into the comparative disadvantage group. Second, both the EU and China should enhance their trade complementarity; this is shown by the products where the EU27 has a comparative advantage corresponding to a comparative disadvantage for China and vice versa. Therefore, meat and edible meat offal (HS02); dairy products, birds' eggs, honey, edible products of animal origin (HS04); preparations of vegetables, fruit, nuts or other parts of plants (HS20) are the products for the EU27 which should be traded more with China while lac; gums, resins and other vegetable saps and extracts (HS13); vegetable plaiting materials (HS14); and silk (HS50) are the products for China that

should be traded more with the EU27. For the future, as the estimates show, most of the agricultural products tend to lose their comparative advantage while only a few products tend to gain a comparative advantage. This trend works for both the EU27 and China and it indicates that the EU27 and China should focus on changing more sustainable development methods in the agricultural sectors especially in the case of China. The natural-resource-intensive advantage for China will not last very long in the future and China should find new comparative advantage in the agricultural sector and at the same time maintain a comparative advantage in the traditional products.

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### **Appendices: HS agricultural product classification at 2-digit level**

HS01 Live animals

HS02 Meat and edible meat offal

HS03 Fish, crustaceans, molluscs, and other aquatic invertebrates

HS04 Dairy products, birds' eggs, honey, edible products of animal origin

HS05 Animal originated products

HS06 Live trees and other plants; bulbous, root; cut flowers and ornamental foliage

HS07 Edible vegetables and certain roots and tubers

HS08 Edible fruit and nuts; peel of citrus fruit or melons

HS09 Coffee, tea, mate and spices

HS10 Cereals

HS11 Milling products; malt, starches, inulin, wheat gluten

HS12 Oil seeds and oleaginous fruits; various grains, seeds and fruit, industrial or medicinal plants; straw and fodder

HS13 Lac; gums, resins and other vegetable saps and extracts

HS14 Vegetables plaiting materials

HS15 Animal or vegetable fats, waxes, oils, and their cleavage products

HS16 Meat, preparations of fish or crustaceans, molluscs or other aquatic invertebrates

HS17 Sugars and sugar confectionery

HS18 Cocoa and cocoa preparations

HS19 Preparations of cereals or milk; pastrycooks' products

HS20 Preparations of vegetables, fruit, nuts or other parts of plants

HS21 Various edible preparations

HS22 Beverages, spirits and vinegar

HS23 Food industries, residues and wastes thereof; prepared animal fodder

HS24 Tobacco and manufactured tobacco substitutes

HS50 Silk

HS51 Wool, animal hair; horsehair yarn and woven fabric

HS52 Cotton

HS53 Vegetable textile fibers; paper yarn and woven fabrics of paper yarn

## Islamic Financial Literacy: Evidence from Jordan

Demeh Daradkah\* • Ahlam Abdallah Aldaher\*\* • Haitham Rafie Shinaq\*\*\*

**Abstract** This study aims to test the extent of financial literacy in Islamic banking services in Jordan, and to test the effect of demographic variables: (gender, age, monthly income, region of residence, level of education, field of study, and occupation) on Islamic financial literacy via Ordered Logistic Regression, as well as, testing the differences in Islamic financial literacy among the averages of categories of demographic variables using non-parametric tests.

In order to achieve these goals, the study designed and distributed a questionnaire to a sample of 385 individuals from Jordan. The study found that 19.5% of Jordanians have a low level of Islamic financial literacy, 45.2% and 35.3% of Jordanians have an average and high level of Islamic financial literacy, respectively.

The study found a positive effect of the level of education, region of residence and the field of the study on the level of Islamic financial literacy. In which individuals with a higher educational qualification, “Humanities and Social Science” specialization, and individuals in northern and central Jordan possess a higher level of Islamic financial literacy. On the other hand, the study found a statistically significant difference between the averages of the categories: educational level, field of study, and region of residence.

Therefore, the study recommended the Central Bank of Jordan and the legislators to increase the general level of financial literacy and Islamic financial literacy in particular. Through, targeting segments that showed a low level of Islamic financial literacy. These results also have important implications for policy makers and academics.

**Keywords:** Islamic financial Literacy, Islamic banking services, demographic variables, Jordan.

**JEL Classification:** G21, G53, J10.

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Demeh Daradkah\*(✉), Ahlam Abdallah Aldaher \*\*, Haitham Rafie Shinaq \*\*\*

\* Associate Professor, Department of Banking and Finance, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid- Jordan.  
e-mail: dima\_daradkeh@yahoo.com

\*\* Lecturer, Department of Banking and Finance, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid- Jordan.  
e-mail: ahlam.aldaher@yu.edu.jo

\*\*\* Master of Banking and Finance, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid- Jordan.”  
e-mail: haithamshinaq@yahoo.com

## Introduction:

Literacy has taken great interest and has been applied and studied in many fields. For instance, some studies focused on computer literacy, such as (Ainley *et al.*, 2016; Kim and Lee, 2013; Rohatgi *et al.*, 2016; and Wecker *et al.*, 2007), some others studied the statistical literacy like (Callingham and Waston, 2005; Watson and Callingham, 2003; and Watson, 2006), while Baker (2006) concentrated on health literacy. Similarly, a respectable number of studies have been conducted on Financial Literacy (Beal *et al.*, 2003; Volpe *et al.*, 1996; Schagen and Lines, 1996; and Chen and Volpe, 1998).

“Financial Literacy”, “Financial Knowledge” and “Financial Education” are all terms used inter-changeably in previous studies. Noctor *et al.*, (1992) defined financial literacy as «the ability to take effective decisions regarding using and managing funds». Thus, Kim (2001) defines financial literacy as «the knowledge that all individuals must acquire in order to live in modern society». In addition, Servon and Kaestner (2008) define financial literacy as «people’s capability to understand and use the skills and knowledge related to their financial interests in order to achieve the best use of funds». The financial system is large and broad, and consists of many financial institutions, in which banks dominated the financial system for decades, and mobilized funds from suppliers to demanders (Rose *et al.*, 2013). Individuals play a crucial role in the financial system, where they are net suppliers (Gitman *et al.*, 2015). Therefore, individuals must have a certain level of financial literacy. Numerous studies suggest that a low level of financial literacy leads to loss of confidence in financial system and its services (Albaity and Rahman, 2019; Shen *et al.*, 2016; Karlan *et al.*, 2014; Jäntti *et al.*, 2014; Gerardi *et al.*, 2010). Furthermore, the latest global financial crisis (2007-2008) was due to the low financial literacy (Kiss *et al.*, 2016; Cueva and Rustichini, 2015; and Wolfe-Hayes, 2010). As per an expanded report to measure the level of financial literacy on a worldwide basis, it was found that only 24% of Jordanian adults are financially literate (Klapper *et al.*, 2016). These results are in line with the global level of financial literacy, in which it was low, regardless of the stage of economic development of the country (Al-Tamimi and Bin Kalli, 2009). In 2003, the Organization for Economic Co-operation and Development began implementing a project to increase the level of financial literacy and knowledge. As this international tendency toward enhancing the level of global financial literacy, the central bank of Jordan has taken some actions to boost the level of public financial literacy, the most important action was touting financial literacy courses to students in schools.

The Jordanian banking sector consists of conventional commercial banks and Islamic commercial banks. As the number of operating banks in Jordan reached 24 by the end of 2018, the number of conventional commercial banks reached 20 (7 of them are foreign banks) and 4 Islamic commercial banks (including one foreign Islamic bank). Islamic banks in Jordan succeeded in achieving rapid growth, as the total assets of Islamic banks reached JD 7,950.44 million, constituting 16.37% of the total assets of banks operating in Jordan and owns 23.67% of the total direct credit facilities to banks operating in Jordan and constitutes 17.28% of the total deposits of banks operating in Jordan (Jordan Banking Association Report, 2018).

Given the importance of the Islamic banking industry, one may be surprised that Islamic financial literacy has been largely ignored in existing literature review. However, most of the works so far focused on Southeastern Asia such as (Albaity and Rahman, 2019; Setyowati *et al.*, 2018). Antara *et al.*, (2016) defined Islamic financial literacy as the knowledge and skills to understand Islamic financial contact. Therefore, the objective of this study is to measure the level of Islamic Financial Literacy with Islamic banking services in Jordan, determine the effect of demographic variables on Islamic financial literacy, and identify whether there is differences in the level of Islamic financial literacy between groups of each demographic variable.

The study consists of five sections, besides this introduction. Section Two, reviews empirical literature related to the study. Section three; discusses the data and methodology used in the study, and is followed up by the analysis of section three. Conclusions and Recommendations are stated in section five.

## Literature Review

A numerous number of literatures are concerned with measuring, evaluating and determining the level of financial literacy (Volpe *et al.*, 1996; Schagen and Lines, 1996; and Chen and Volpe, 1998). Schagen and Lines (1996) measures the level of financial literacy in the United Kingdom in terms of financial markets and instruments, financial decision-making and planning, and individuals' attitudes towards money management and saving. The results revealed that the majority of individuals were financially literate. However, some groups such as single parents and students have shown low confidence dealing with their financial matters. Volpe *et al.* (1996) and Chen and Volpe (1998), measured the level of financial literacy of the students in the United State, and they found that students specialized in business and finance are more financial literate than other students.

Successive literature examined the level of financial literacy for students from Australia, in which Beal and Delpachitra (2003) found a good level of financial literacy among students. However, students specialized in business related disciplines have a higher financial literacy level than other students. In addition, Worthington (2006) examined the effect of demographic variables on financial literacy. He found that financial literacy level is affected by age, education, gender, and occupation. Thus, he found that males have a higher level of financial literacy than females.

For United Arab Emiratis, Al-Tamimi and Bin Kalli (2009) assessed the level of financial literacy and determined the factors that affected investment decision and financial literacy by distributing 290 questioners. They documented that financial literacy level is affected by income level, education level, workplace activity, and gender. They also indicated that females have a lower level of financial literacy than males.

On the other hand, (Setyowati *et al.*, 2018; Bunyamin and Mutlu, 2017; Zaman *et al.*, 2017; Rahim *et al.*, 2016; Abdullah and Abdul Razak, 2015; and Bin Abdullah *et al.*, 2015) measure the level of Islamic financial literacy. For instance, Setyowati *et al.* (2018) measured the level of Islamic financial literacy in Indonesia by distributing

313 questionnaires, they found that 64.66% of individuals are Islamic financially literate. Consistently, Bunyamin and Mutlu (2017) documented that 58% of individuals in “Trabzon Turkey” are Islamic financially literate. In “Lahore, Pakistan” Zaman *et al.* (2017) measured the level of Islamic financial literacy, and determined the factors that affect the adoption of Islamic banking services by distributing 300 questionnaires. Their study found that 40% of individuals have knowledge of banking services, 43% are satisfied with the role of the Banking Legislative Council, 50% believe that Islamic and conventional banks focus on the same goals, and 42% believe that the religious factor is the main driver for dealing with Islamic banks.

Rahim *et al.* (2016) examined the determinants of Islamic financial literacy for students from the University of Utara in Malaysia using exploratory factor analysis. They found that Islamic financial literacy is affected by religiosity, hopelessness and financial satisfaction. In addition, Abdullah and Abdul Razak (2015) inspected common concepts for Islamic financial literacy. The study found the importance of explaining all the investment concepts used by Islamic banks to the public. Bin Abdullah *et al.* (2015) examined the factors affecting Islamic banking services in Kuala Lumpur. They found that it is affected by financial literacy and parents’ investment points of view. Recently, Albaity and Rahman (2019) examined the level of Islamic financial literacy in the UAE, they found that the level of Islamic financial level is high, and it is affected by gender, income level, and working experience.

Overall, there are strong literatures that support the importance of financial literacy and their determinants. However, most of these empirical works so far focused on conventional financial literacy, and Islamic financial literacy has been largely ignored, especially in Jordan. Therefore, this study tries to fill in the gap in the literature by measuring the level of financial literacy with Islamic banking services in Jordan, and determines the effect of demographic factors that affect financial literacy with Islamic banking services.

## **Data and Methodology**

The population of the study consists of all residents in Jordan, which reached 9.7 million at the end of 2018, where females representing 49.36% of the total population. However, the sample size has been calculated based on a formula discussed by Cochran (1963). As per the calculation result, for the sample to be representative. The sample must be 384 or above.

The study has utilized a stratified random sampling approach, in which the population was divided into three subgroups depending on the concentration of the population in those areas; Northern Region, Central Region, and Southern Region, then a random sample was chosen from each subgroup. Hence, 450 closed ended questionnaires were distributed, where 411 questionnaires were retrieved, with a response rate of 91%. However, only 385 questionnaires (111 questionnaires were collected from the Northern Region, 244 questionnaires from the Central Region, and 30 questionnaires from the Southern Region) were appropriate and suitable for data analysis. Therefore, the

actual response rate was 85%. The study designed closed –ended questionnaires. They consist of two parts; part one asks about demographic characteristics of the respondent (gender, age, monthly income, region of residence, level of education, field of study, and occupation), part two includes 18 questions asking about financial literacy of Islamic banking services, in which each question has three choices; “Yes”, “No”, and “Don’t know”, added to exclude ambiguity.

Islamic banks “*are financial institutions that undertake financial operations under the basis of Islamic law (sharia’ law), that prohibit the use of Riba(interest)*”(Roy, 1991), and in which it provide several services either Profit Loss Sharing (PLS) services or Non-Profit Loss Sharing services: “*Profit Loss Sharing (PLS), in which it derived from Mudaraba (profit-sharing) and Musharaka (joint venture). Non-Profit Loss Sharing (Non-PLS), in which is derived from Murabaha (cost plus), Ijarah (leasing), Bai’ muajjal (deferred payment sale), Bai’ Salam (forward sale), and Istisna (contract manufacturing* «(Grassa, 2012).

To ensure the validity of the questionnaire, the study was designed based on previous studies such as (Al-Tamimi and Bin Kalli, 2009; Setyowati *et al.*, 2018; and Albaity and Rahman, 2019). Also, it was reviewed by experts in the field, where it was revised according to their comments. Finally, a pilot study was conducted by distributing a random sample of 50 questionnaires, where they found it simple and easy to be understood and answered. Cronbach’s Alpha was used to ensure the reliability of the questions. According to Shelby (2011), the acceptable factor loading must be 70% or above. The achieved score was 88% which indicate high level of internal reliability. The study used, Ordered Logistic Regression model, to test the effect of demographic variables on the level of financial literacy with Islamic banking services, which was introduced by Walker and Duncan (1967) and later modified by McCullagh (1980). Hence, the study built a 3-point Likert scale,( Low, Average, and High) ,based on the respondent’s answers, in which individuals who scored 6 correct answers or less are scaled low, individuals who scored 7 to 12 correct answers are scaled average, and individuals who scored 13 correct answers and more are scaled high. Therefore, the following model is applied;

$$FL_i = \beta_0 + \beta_1 GN_i + \beta_2 Age_i + \beta_3 INC_i + \beta_4 RR_i + \beta_5 EDU_i + \beta_6 Field_i + \beta_7 OCC_i + e_i$$

Where: *FL* denotes Islamic Financial Literacy, *GN* stands for gender, *Age* denotes for age, *INC* is the monthly income level, *RR* denotes for region of residence, *EDU* denotes for level of Education, *Field* represents field of study, *OCC* denotes for occupation,  $\beta_0$ - $\beta_7$  are the coefficients, and  $e_i$  denotes for disturbance.

## Results of Analysis

Table (1), describes the demographic characteristics of the respondents of the study, where the sample is diversified in terms of respondents’ demographic variables such as gender, age, income level, region of residence, education level, field of study, and occupation.

As for gender, 54.3% of the respondents are males and 45.7% of the respondents are females. This is due to the fact that 50.64% of the populations in Jordan are males. Regarding age, it ranges from 18 to older than 54, where 44.9% of the respondents are between 18 and 29, 29.1% of them are between 30 and 41, 18.7% are between 42 and 53, and only 7.3% are over 54. This is relatively compatible with the population's age structure in Jordan, where the total of Jordanians who fall into the age group (0-14) years represents 35.5% of the total population, 60.7% of the total population fall between the ages of 15-64 years, and only 3.8% is over the age of 65 years (World Bank, 2017).

**Table 1.** Demographic Variables of the respondents of the study.

<b>Demographic Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Males	209	54.3
Females	176	45.7
<b>Age</b>		
from 18 to 29	173	44.9
from 30 to 41	112	29.1
from 42 to 53	72	18.7
54 or more	28	7.3
<b>Monthly Income Level</b>		
less than JD 400	183	47.5
between JD 400 and JD 800	146	37.9
more than JD 800	56	14.5
<b>Region of Residence</b>		
Central region	244	63.4
Northern region	111	28.8
Southern region	30	7.8
<b>Level of Education</b>		
Higher -Education	87	22.6
Bachelor Degree	206	53.5
Diploma	44	11.4
High-School or below	48	12.5
<b>Field of Study</b>		
Humanities and Social Sciences	247	64.2
Scientific Disciplines	115	29.9
Medical Sciences	23	6.0
<b>Occupation</b>		
Public sector	137	35.6
Private sector	98	25.5
Self-employed	32	8.3
Retired	31	8.1
Unemployed	87	22.6

The sample also contains respondents from various income levels, 47.5% of the respondents have an income less than JD 400 per month, and 37.9% of the respondents' monthly income falls between JD 400 and JD 800, and only 14.5% of respondents have an income more than JD 800 per month. In addition for region of residence, 63.4% of



respondents are from the central region, 28.8% are from the northern region, and only 7.8% are from southern region. This is because the sample was selected based on a stratified random sampling approach that relied on population concentration according to governorates, where around 28% of the population dwells the Northern Region which consist of 4 Governorates, namely: (Irbid, Ajloun, Jerash, and Mafraq), about 63% of the population dwells the Central Region which includes 4 Governorates, namely: (Amman, Balqa, Madaba, and Zarqa), and the rest of the population lives in the Southern Region, which has the lowest population density and includes; (Aqaba, Karak, Ma'an, and Tafilah) (Department of Statistics,2018).

In addition, the sample includes respondents with different education levels; it was noted that 12.5% of the sample has a high school education or less, 11.4% are diploma holders, 53.5% are bachelor degree holders, and 22.6% are higher degree holders. 64.2% of the respondents are specialists in "humanities and social sciences", 29.9% of the respondents are specialists in scientific disciplines, and only 6% are specialists in medical sciences. Therefore this diversity implies that the sample contains different occupations, as 35.6% of the sample worked in the private sector, 25.5% worked in the public sector, and 8.3% are self-employed. On the other hand, 22.6% of the respondents are unemployed and 8.1% of them are retired.

Table (2) presents the frequencies and percentages of respondents' answers of Islamic financial literacy. The results suggest that the majority of answers are correct; only five questions were answered correct by less than 50 percent of respondents. Those questions are related to deposits, financing, and Islamic contracts. The lowest percentage were related to Islamic contracts (Ba' Salam, and Bai' Muajjal), and to foreign currencies in Islamic banking. This is because transactions are not familiar. Only 42.90 percent of respondents believe that the Islamic banking financing is free-of interest, and 46.20 percent of respondents believe that the Islamic banking pays returns on deposits; this indicates the incompetence to realize the scope of the transactions.

**Table 2.** The frequencies of the respondents' answers of the questionnaire questions.

Questions	Frequencies	Percentage (%)
<b>1. Islamic banks provide financial services that comply with the principles of Islamic Sharia?</b>		
Yes	227	59.00
No	53	13.80
Don't Know	105	27.30
<b>2. Services provided by Islamic banks differ from services provided by conventional banks?</b>		
Yes	223	57.90
No	93	24.20
Don't Know	69	17.90

Questions	Frequencies	Percentage (%)
<b>3. You can deposit and invest your money in Islamic banks?</b>		
Yes	247	64.20
No	48	12.50
Don't Know	90	23.40
<b>4. Clients receive a return from their deposit in Islamic bank?</b>		
Yes	179	46.50
No	66	17.10
Don't Know	140	36.40
<b>5. There are different types of deposits in Islamic banks?</b>		
Yes	231	60.00
No	11	2.90
Don't Know	143	37.10
<b>6. There are foreign currencies deposits in Islamic banks.</b>		
Yes	164	42.60
No	2	00.50
Don't Know	219	56.90
<b>7. Islamic method of finance is interest-free (without Riba)?</b>		
Yes	165	42.90
No	51	13.20
Don't Know	169	43.90
<b>8. You can obtain financing from Islamic banks that comply with the principles of Islamic Sharia?</b>		
Yes	285	74.00
No	16	4.20
Don't Know	84	21.80
<b>9. Clients can buy the goods in an Islamic finance trade credit management (Murabahah)?</b>		
Yes	223	57.90
No	31	8.10
Don't Know	131	34.00
<b>10. Islamic bank lends and share money with clients according to loss profit sharing (Musharakah)?</b>		
Yes	314	81.60
No	14	3.60
Don't Know	57	14.80

Questions	Frequencies	Percentage (%)
<b>11. Islamic bank invests with you to start-up a new business according to Profit Loss Sharing (Mudarabah)?</b>		
Yes	238	61.80
No	11	2.90
Don't Know	136	35.30
<b>12. Islamic bank provides industrial banking (Istisna)?</b>		
Yes	249	64.70
No	6	1.60
Don't Know	130	33.80
<b>13. Islamic bank provides charitable services as (Qarad Hassan), in which the borrower is required only to repay the original amount of principal?</b>		
Yes	225	58.40
No	9	2.30
Don't Know	151	39.20
<b>14. Islamic bank provides lease banking ( Ijarah)?</b>		
Yes	236	61.30
No	9	2.30
Don't Know	140	36.40
<b>15. Islamic bank provides agricultural banking (Muzaraha)?</b>		
Yes	225	58.40
No	52	13.50
Don't Know	108	28.10
<b>16. Islamic banks finance, repair, and irrigate agricultural lands, and share the client in output and profit (Musakah)?</b>		
Yes	272	70.60
No	6	1.60
Don't Know	107	27.80
<b>17. Islamic bank provides an Islamic financing contract in which full payment is made in advance for specific good (Ba' Salam)?</b>		
Yes	117	30.40
No	20	5.20
Don't Know	248	64.40
<b>18. Islamic bank provides an Islamic financing contract in which the seller sells certain specific goods that comply with the principles of Islamic Sharia for buyer at an agreed price and date in the future (Bai' Muajjal)?</b>		
Yes	164	42.60
No	12	3.10
Don't Know	209	54.30

Thus, in terms of the level of Islamic financial literacy, the results suggest that 35.3% of the respondents have high level of Islamic financial literacy, 45.2% has an average level of Islamic financial literacy, and 19.5% has a low level of Islamic financial literacy. These results indicate that most of the respondents are educated, and knowledgeable of Islamic banking services. These results are consistent with the results of (Albaity and Rahman, 2019; Setyowati et al.,2018), who found the same results for UAE, and Indonesia, respectively.

In terms of the relationship between the level of Islamic financial literacy and demographic variables, Table (3) shows the results of ordered logistic regression (OLR). These results suggest that education level, positively and statistically affects the Islamic financial literacy (at a critical level of 10%), in which the odds of respondents with a higher-level of education have higher Islamic financial literacy. 2.02 times more than respondents with a high-school education or below (reference group). This finding is consistent with the results of (Al-Tamimi and Bin Kalli ,2009; and Worthington ,2006) who found that respondents with a higher-level of education are more financial literate. In addition, the results suggest that the field of the study positively and statistically affects the Islamic financial literacy, (at a critical level of 5%). The odds of respondents with “humanities and social sciences” specialized field have a higher Islamic financial literacy, 2.35 times the respondents with medical sciences specialists field, (reference group). This may be due to the fact that the respondents with “humanities and Social Sciences” specialized field are more knowledgeable and educated about Islamic banking services and products related to banking in general and Islamic banks in particular. This finding is consistent with the results of (Beal and Delpachitra ,2003; Volpe *et al.*, 1996; and Chen and Volpe ,1998), who found significant effects of field of study on financial literacy in different countries around the world.

Furthermore, the results revealed that the region of residence positively and statistically affects the Islamic financial literacy, (at a critical level of 5%). The odds of respondents from the central and northern regions have a higher Islamic financial literacy, 2.83 and 2.65 times, respectively than respondents from the southern region (reference group). On the other hand, the results suggest no effect of the gender, age, income level, and occupation, on the level of Islamic financial literacy. These results are contrasting with Worthington (2006) who found that gender, age, and occupation are among the factors that affect the levels of financial literacy.

**Table 3.** Ordered Logistic Regression

Variables	Variables Categories	Odds Ratios	Coefficient	Sig.
Gender	Male	1.21	.197	.384
	Female	reference group	0	-
Age	from 18 to 29	0.62	-.476	.348
	from 30 to 41	0.82	-.195	.696
	from 42 to 53	0.71	-.331	.489
	54 or more	reference group	0	-

Variables	Variables Categories	Odds Ratios	Coefficient	Sig.
<b>Monthly Income</b>	less than JD 400	0.75	-.278	.424
	between JD 400 and JD 800	1.1	.101	.759
	more than JD 800	reference group	0	-
<b>Region of Residence</b>	Central region	<b>2.83</b>	<b>1.041</b>	<b>.007</b>
	Northern region	<b>2.65</b>	<b>.975</b>	<b>.018</b>
	Southern region	reference group	0	-
<b>Education Level</b>	Higher- education	<b>2.02</b>	<b>.706</b>	<b>.069</b>
	Bachelor degree	1.69	.527	.127
	Diploma	0.77	-.255	.537
	High-School or below	reference group	0	-
<b>Field of Study</b>	Humanities and Social Sciences	<b>2.35</b>	<b>.858</b>	<b>.046</b>
	Scientific Disciplines	1.16	.156	.724
	Medical Sciences	reference group	0	-
<b>Occupation</b>	Public sector	0.73	-.302	.524
	Private sector	0.9	-.104	.797
	Self-Employed	1.33	.290	.373
	Retired	0.7	-.347	.209
	Unemployed	reference group	0	-
Pseudo R-square (Nagelkerke)		0.103072		

Note: all assumptions have been checked before running the model. Tests results available upon request.

The results of this study reveal that Islamic financial literacy is affected by education level, field of study, and region residence. In this section, additional tests were conducted to confirm the main results, and to test if there are any differences in the level of Islamic financial literacy with regards to the study demographic variables. Therefore, the study employed non-parametric tests (“Mann-Whitney U” and “Kruskal -Wallis H”), which are widely accepted and recommended for testing non-normally distributed data (Cleophas and Zwinderman, 2011). The normal distribution results of the study variables are given upon request.

Table (4) illustrates the results of Mann Whitney U test for gender group, in which it reveals no statistically significant differences in the levels of Islamic financial literacy of respondents from different gender groups, as ( $p = .695$ ); It also shows that males’ mean rank is extremely close to that of females, which indicate that there is no difference between the two groups in terms of the level of Islamic financial literacy.

**Table 4.** Non-parametric test: Mann-Whitney Test

Gender		Rank		
Mann-Whitney U	17997.000	Descriptive	N	Mean Rank
Wilcoxon W	33573.000	males	209	194.89
Z	-.392	females	176	190.76
Asymp. Sig. (2-tailed)	.695	Total	385	

In addition, Table (5) illustrates the results of Kruskal-Wallis H test for age, monthly income, region of residence, level of education, field of study, and occupation group, it being clearly evident from the table that there are statistically significant differences between the answers of respondents with different levels of education, fields of study, and regions of residence groups. Thus, age, monthly income, and occupation didn't seem to matter in Islamic financial literacy.

**Table 5.** Non-parametric test: Kruskal Wallis Test

<b>Age</b>		<b>Education Level</b>	
Chi-Square	1.402	Chi-Square	9.650
df	3	df	3
Asymp. Sig.	.705	Asymp. Sig.	.022
<b>Monthly Income</b>		<b>Field of Study</b>	
Chi-Square	4.224	Chi-Square	9.947
df	2	df	2
Asymp. Sig.	.121	Asymp. Sig.	.007
<b>Region of Residence</b>		<b>Occupation</b>	
Chi-Square	4.885	Chi-Square	4.075
df	2	df	4
Asymp. Sig.	.087	Asymp. Sig.	.396

## Conclusions and Recommendations

Islamic financial literacy plays an important role in enhancing the acceptability of Islamic banking (Ahmad and Haron 2002). Therefore, the main objective of this study is to determine the level of financial literacy with Islamic banking services in Jordan, as well as, determine whether the demographic factors (gender, age, monthly income, region of residence, level of education, field of study, and occupation) affect Islamic financial literacy. It was found that 35.3% of the participants have high level of Islamic financial literacy, 45.2% have average Islamic financial literacy, and 19.5% have low Islamic financial literacy. According to the results of ordered logistic regression, the Islamic financial literacy level was found to be affected by level of education, Field of study, and region of residence. Respondents with a High level of education, "humanities and social sciences" specialists, and residents in the central and northern regions have the highest Islamic financial literacy. However, respondents with a high-school education or below, medical sciences specialists and residents on the southern region have the lowest Islamic financial literacy. These findings are also upheld when using alternative non-parametric tests. The results are based on the answers of 385 individuals from the northern, central, and southern regions in Jordan.

The study recommends the Central Bank of Jordan and Jordanian legislators focus on the groups that showed the lowest level of Islamic financial literacy and try to increase their level of literacy. In addition, the result of this study holds important implications for

Islamic bank managers, financial policy makers, and researchers. Further research can be conducted on financial literacy to point out the differences between the characteristics of services provided by conventional and Islamic banks, as it has been noticed that many individuals are confused between the services provided by each type of bank. Finally, the study can be extended to compare the level of Islamic financial literacy in countries of the Middle East.

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CEEUN was launched in Vienna and its first meeting took place at the Institution that was founded by Friedrich August von Hayek and Ludwig von Mises, two great thinkers and economists: the Austrian Institute for Economic Research. Now the scenario is completely different. From 2005 on, a worldwide regional approach looking to Asia,

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*Senior Research Fellow, Institute of Southeast Asian Studies, Vietnam Academy of Social Sciences; **Tran Khanh**, University International Business and Economics, Beijing; **V. Panchenko**, Director of Dnipro Development Agency, Dnipro City, Ukraine; **V. Panchenko**, Faculty Shanghai Administration Institute, Shanghai, PRC; **Vera A. Adamchik** University of Houston-Victoria, USA; **W.N.W. Azman-Saini** Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor, Malaysia; **Walter Morana**, Master's Degree in International Relations at LUISS Guido Carli University, Freelance researcher at the Research Centre on International and European Organizations (CROIE LUISS; **Wang Li Hong**, Northwest University, Shan Xi, China; **Wang Ziming**, Chinese Academy of Social Science, University of International Business and Economics, Beijing, PRC; **Wei Zhao**, Associate Professor of International Management ESSCA Ecole de Management, Angers, France; **Xiao Wei**, China Institute for Actuarial Science & School of Insurance, Central University of Finance and Economics, Beijing, China; **Yang Furong**, University of International Business and Economics, Beijing, PRC; **Yuan Miao**, University of International Business and Economics, Beijing, China; **Yukiko Muramoto**, Graduate School of Humanities and Sociology, The University of Tokyo, Japan; **M. Rubtsova**, PhD (econ.), Associated professor, Associated professor at International Business Department, Institute for International Relations at Kyiv National Taras Shevchenko University, Ukraine, Kyiv.*

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