European Proceedings of
Social and Behavioural Sciences
EpSBS

www.europeanproceedings.com
e-ISSN: 2357-1330

DOI: 10.15405/epsbs.2021.04.71

CDSES 2020

IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin

THE MIGRATION ATTRACTIVENESS FACTORS OF THE RUSSIAN FAR EAST REGION

Elena Oleinik (a)*, Alena Zakharova (b), Elena Yurchenko (c)
*Corresponding author

(a) Far Eastern Federal University, 8, Sukhanova St., Vladivostok, Russia, oleinik.elena@gmail.com
(b) Far Eastern Federal University, ,8 Sukhanova St., Vladivostok, Russia, zakharovaalena@mail.ru
(c) Far Eastern Federal University, 8, Sukhanova St., Vladivostok, Russia, alenagr@mail.ru

Abstract

Migration processes induce by the uneven development of regions. The Far Eastern region is Russia's largest by land area and the least populated federal district. Despite its economic indicators' steady growth, one of this territory's most significant problems is its population decline. Several econometric models were used to identify causes and factors influencing this region's migration attractiveness. Modeling results allowed for drawing the following conclusions: the most significant factor is per capita income growth and per capita gross regional product adjusted for climatic conditions. Due to its vast territory and severe climate, the Far East's economic growth centers are cities. Such measures as allocation to Russian nationals of one-hectare land plots at no charge and options to buy new housing at low residential mortgage rates are factors that should have promoted the region's migration attractiveness. It was found that the number of issued loans is decreasing simultaneously with the growth of a mean residential loan size, which indicates a reduction of real incomes of the population and a decrease of potential for accumulation of the first installment sum. Therefore, despite adopted development programs, population outflow will continue. Improving the Far Eastern region's migration attractiveness is an objective that requires the engagement of regional (municipal) authorities, business, and population.

Keywords: Econometric model, migration attractiveness, migration factors

https://doi.org/10.15405/epsbs.2021.04.71
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Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

The migration processes are often induced by the uneven development of regions: growing differences in quality of life and wage levels, raising the labor market's disproportions. There are other reasons triggering migration processes such as war conflicts, unfavorable climatic or environmental conditions. As for migration processes in Russia, they are primarily motivated by economic considerations.

1.1. Analysis of migration flows in Russian regions of the Far Eastern Federal District

are significantly differentiated in terms of economic development and living standards. The Far Eastern Federal District (FEFD) is the largest federal district in Russia, occupying 40.6% of its total area. However, its population accounts for as little as 5.6% of Russia's total population. At first glance, according to the Federal state statistics service of the Russian Federation all key economic indicators are rather stable in the Far Eastern region and their growth rate exceeds relative values for Russia as a whole.

A comparative dynamic of FEFD key economic indicators in 2019 (% change over the previous year):

- Gross regional product - 119.3;
- Industrial production index - 106.2;
- Production of minerals - 106.6;
- Processing industries - 112.4;
- Electric power generation, gas and steam - 104.1;
- Foreign trade turnover - 106.1.

In 2019, mean nominal wage was above Russia’s average by 24% and 8.2% higher than in 2018. 1,576 billion rubles of capital investments was sunk in 2019 in FEFD’s economic and social development or 103.3% compared with the preceding year.

The Far East is characterized by three migration flows:

– intra-regional flow, i.e., migration from small towns to largest regional centers and to urban areas from rural areas. Such flows are typical of the Republic of Sakha (Yakutia), Khabarovsk Krai and Chukotka Autonomous District (2011–2016) which is explained by commissioning of new facilities requiring additional workforce;

–inter-regional flow is directed mostly out of FEFD to Russia’s southern, central and northwestern regions. Table 1 presents the structure of outgoing inter-regional migration flows from Primorsky Krai which is FEFD’s leader in terms of population mobility (Ivashina & Ryabokon, 2017);

Table 1. The structure of outgoing inter-regional migration flows from Primorsky Krai by RF federal districts, thousands of people

RF constituent member	2000	2004	2006	2008	2009	2010	2011	2013	2014	2015
Central FD	3.15	2.86	3.3	2.79	2.54	3.42	3.08	3.03	2.58	2.45

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Southern FD	1.32	1.3	1.28	1.38	1.3	1.8	2.03	2.17	2.05	1.67
Volga FD	1.22	1.22	1.21	1.08	1.01	1.4	1.25	0.99	0.9	0.7
Siberian FD	1.91	1.8	1.99	1.9	1.7	2.23	2	1.7	1.36	1.12
Khabarovsk Krai	2.08	2.1	1.99	2.08	1.73	2.1	2.15	1.87	1.88	1.58

– external migration flow is typical of Khabarovsk Krai, Primorsky Krai and Sakhalin Oblast. A migration surplus was registered in Primorsky Krai in 2010–2012 in connection with large-scale construction projects on the eve of the Asia Pacific Economic Cooperation (APEC) summit.

Population densities in many Far Eastern administrative regions are extremely low (less than 1 person/sq. km in some of them). Although FEFD is of much importance for Russia's economic development, according to the Russian Federation's Federal state statistics service, it is a region where a significant population outflow has been observed in the last years (Table 2).

Table 2. Overall data on population migrations in FEFD, 2019

Administrative region	Number of arriving persons	% change on 2018	Number of outgoing persons	% change on 2018	Migration surplus (+) or loss(-), persons
Russian Federation	4,743,373	96.6	4,457,581	93.1	+285,792
Far Eastern Federal District	330,375	100.6	342,106	94.6	-11,731
Republic of Buryatia	45,382	110.2	44,383	97.0	+999
Republic of Sakha (Yakutia)	42,449	100.3	42,766	94.5	-317
Trans-Baikal Krai	29,068	99.3	34,587	94.3	-5,519
Kamchatka Krai	14,190	95.6	15,779	101.5	-1,589
Primorsky Krai	79,949	102.6	79,888	96.8	+61
Khabarovsk Krai	51,069	96.0	54,130	93.1	-3,061
Amur Oblast	29,604	100.7	29,598	90.3	+6

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Administrative region	Number of arriving persons	% change on 2018	Number of outgoing persons	% change on 2018	Migration surplus (+) or loss(-), persons
Magadan Oblast	7,915	111.7	8,664	88.9	-749
Sakhalin Oblast	20,440	84.0	21,510	87.3	-1,070
Jewish Aut. Oblast	4,281	121.6	5,319	100.4	-1,038
Chukotka Aut. District	6,028	111.6	5,482	106.2	+546

A dynamic of incoming and outgoing migration flows is presented below (Figure 1). The migration balance has remained negative since 1997. The graph also shows the ratio of migration balance on the preceding year (right scale, %).

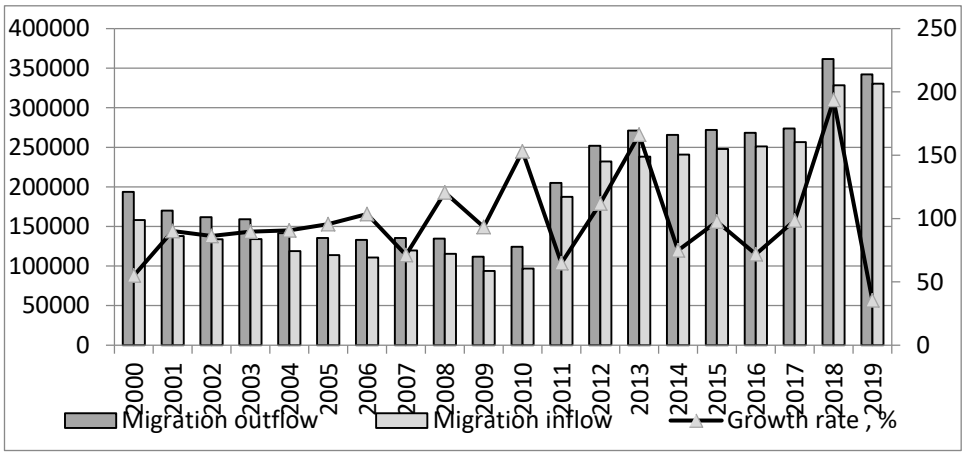

Figure 1. A dynamic of migration flows in FEFD, persons

A maximum population migration outflow was observed in 2018 – 361.6 thousand people. Its intensity considerably decreased in 2019 but migration balance remained negative and amounted to -11.7 thousand people. Some analysts (Kiselyov et al., 2018) note that a trend is distinguishing the Far East from Russia's rest federal districts – long-term population decline. Moreover, migration processes should be considered as an indicator of a region's economic development (Motrich & Izotov, 2018).

1.2. Literature review of same aspects migration's factors and modelling

The causes giving rise to migration processes in various countries are in focus of studies. Some authors (Ryazantsev, 2019) point out that China's successful economic development experience proves that the demographic resource can be an additional competitive edge for a country. And U.S. and Canadian experiences shows that deployment of labor resources in comfortable areas and use of temporary mobility forms (back-to-back rotation, temporary labor migration) open up additional

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opportunities for a region's development. It is stated in a paper by Gerber (2006) that a real wage increase positively affects a net migration flow while an unemployment rate change does not have any significant effects. The following factors driving a population outflow are highlighted in another paper (Ryazantsev & Khramova, 2018): “poverty traps”, i.e., inability to leave one’s region of residence even when willing so because of lack of funds to do so, and another strong pushing factor is regional unemployment rate. Other significant factors may be ethnic and marriage migration (Vorobyeva et al., 2016).

Migration process forecasting requires a review and careful selection of factors for the model. First econometric models were based on the following observation: the scale of migration flows positively correlates with population numbers in communities (or countries or regions) and negatively correlates with the distance between them. In the long run the level of migration growth will depend on a territory's economic development compared with other regions and states and variation of the donor region's children percentage and the strength of ethnic links (Lifshits, 2016). In other studies (Demidova et al., 2018) and (Danilenko et al., 2018), their authors investigate migration attractiveness versus unemployment rate by groups of regions. Another paper (Prokhorov & Epstein, 2016) notes that a high arrival intensity indicating at a territory’s attractiveness may reveal itself simultaneously with a high intensity of population outflows and suggests a special coefficient eliminating the contradicting nature of these two indicators. Another authors (Khavinson & Kulakov, 2017) present in their paper gravitational model-based results for math simulation of a dynamic of structured and interacting populations of a “resource — consumer type”. Another paper (Frisman et al., 2019) presents the key idea and approaches used in current mathematical biology to model a “prey — predator” system with community structure and harvesting. It was found in papers (Sardadvar & Vakulenko, 2017) and (Vakulenko, 2016) that, according to econometric modeling results using panel data, migrant outflows from regions lead to growth and equalization of per capita incomes and equalization of wages.

2. Problem Statement

Migration attractiveness is defined as a generalized characteristic of a region's promising outlook for potential migrants based on social, economic and climate-geographic factors. It is important for the redistribution of labor resources and population between regions. We provide in a table below FEFD's key

social indicators in addition to its economic indicators according to the Federal state statistics service of the

Russian Federation and Russian News Agency data to understand the reason for this region’s low migration

attractiveness (Table 3). Highlighted by color are the highest/lowest values of FEFD administrative

territories among all Russia’s regions.

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Table 3. Social and economic indicators of FEFD

Indicator	FEFD as macro-region	Minimum value among macro-region's administrative territories	Maximum value among macro-region's administrative territories	Russia
Population density, people/km²	2.90	0.07 Chukotka Aut. District	11.51 Primorsky Krai	8.60
Cost of minimum food product set in February 2020, rubles	5,409.91	4,452.70 Republic of Buryatia	10,551.44 Chukotka Aut. District	4,160.94
Cost of minimum food product set in February 2020, % of Russia's total	130.02	107.01	253.58	100.0
Percentage of public utilities costs in average family's consumer expenditures, 2018, %	10.90	7.31 Trans-Baikal Krai	15.12 Kamchatka Krai	9.60
Social expenditures of consolidated budget per one resident, 2019, thsd rubles	44.50	17.51 Chukotka Aut. District	106.31 Sakhalin Oblast	54.58
Mean price of an apartment unit with floor area of 60 sq. m as of the beginning of 2020, millions of rubles	4.10	2.92 Magadan Oblast	7.10 Sakhalin Oblast	8.80 Moscow City
Integral index of infrastructure development (max 10 points)	5.44	4.84 Republic of Buryatia	6.02 Chukotka Aut. District	5.59
Sub-index of social development	5.68	4.97 Republic of Buryatia	7.17 Chukotka Aut. District	5.42
Index of energy infrastructure development	4.96	4.70 Chukotka Aut. District	5.55 Primorsky Krai	5.02
Quality of life (maximum 100 points, Moscow – 79.2)	40.07	28.20 Jewish Aut. District	46.41 Kamchatka Krai	46.41
GRP, 2018, billions of rubles	5,204.20	55.80 Jewish Aut. District	1,179.7 Sakhalin Oblast	84,976
Per capita GRP, 2018, thsd rubles	634.20	305.73 Trans-Baikal Krai	2,407.9 Sakhalin Oblast	578.7
Industrial production index, % change over preceding year	106.00	99.82 Kamchatka Krai	114.2 Magadan Oblast	102.4

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Percentage in foreign trade turnover, 2019, %	5.67	0.02 Jewish Aut. District	2.62 Sakhalin Oblast	100.000
Percentage of capital investments, 2019, %	8.16	0.08 Sakhalin Oblast	1.97 Republic of Buryatia	100.000

The territory of the Far Eastern Federal District is characterized by sharp environmental contrasts casing a broad variance of data in Table 4. The lack of labor resources hampers its social and economic development and aggravates disproportions between FEFD regions.

3. Research Questions

Industrial production growth in FEFD has been 23% since 2013 when the target-specific federal program “Economic and Social Development of the Far East and Baikal Region through 2025” was adopted and launched, while growth in Russia as a whole was 8.3% (Kozlov, 2019). In particular, this program aims to solve one of the region's greatest problems – population decline. It is expected that population inflows will also be driven by development of Rapid Development Areas and Special Economic Zones. To attract people to FEFD and ensure the Far East's social and economic development, the "Far Eastern Hectare" program was launched. It provides for allocation of one-hectare land plots to Russian nationals at no charge in any FEFD's administrative territory. Its key purpose is to attract people to FEFD as permanent residents. Also in process is a governmental residential mortgage program providing benefits for people buying or building homes in the Far Eastern Federal District, which offers residential mortgage loans at rates 4.5 times lower than Russia's average. Why do people still keep leaving this territory?

4. Purpose of the Study

This study aims to investigate population outflow trends using econometric analysis and identify which specific factors or their combinations influence migration processes in FEFD.

5. Research Methods

This paper makes use of econometric models described in (Degtyareva, 2018) and (Tikhomirov, 2017).

We suggest using the Holt — Winters adaptive model (Hyndman et al., 2008), a modification of the exponential smoothing method, for short-term forecasting and assessment of population outflows from the Far Eastern region. Its representation in the form of an additive combination of the linear trend with a seasonal component will be taken as a series model.

A Holt — Winters model-based forecast for p periods in the future is determined by expression (1):

$$\widehat{\boldsymbol{X}}_{\boldsymbol{t+p}} = (\boldsymbol{F_t} + \boldsymbol{pC_t})\boldsymbol{M_{t+p-k}} \quad (1),$$

where k – number of phases in a full seasonal cycle,

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X_t – original time series.

The updating of the coefficients is performed as follows (Formulas 2):

$$\begin{cases} F_t = \alpha_F \frac{X_t}{M_{t-k}} + (1-\alpha_F)(F_{t-1} + C_{t-1}) \\ C_t = \alpha_C(F_t - F_{t-1)} + (1-\alpha_C)C_{t-1} \\ M_t = \alpha_M \frac{X_t}{F_t} + (1-\alpha_M)M_{t-k} \end{cases} \quad (2),$$

where α_F, α_M and α_C are parameters of adaptation. Each parameter belongs to [0;1] interval. The closer is a parameter to 1, the larger weighting is assigned to the latest observations. A criterion for parameter selection is minimization of the model's mean relative error. Initial values F_0 and C_0 are estimated using the least square method (3):

$$X_t=F_0+C_0t+\varepsilon_t \quad (3).$$

In order to forecast population outflows by FEFD administrative regions and address factors influencing migration, we suggest using a fixed effects model that rests on a panel data structure thus allowing for taking account of non-measurable individual differences of objects. The fixed effects model treats each economic unit as "unique" which cannot be treated as a result of random selection from some general assemblage. Such approach is quite justifiable when considering countries or large regions.

Let's introduce the following denotations: $\boldsymbol{i = 1, \dots, n}$ – numbers of objects; $\boldsymbol{t = 1}$, ..., T – moments of time; k – number of features; x_{it} – set of independent variables (dimension vector k); y_{it} – dependent variable for economic unit i at the moment of time t; ε_{it} – respective error. Lets' also denote the following:

$$\boldsymbol{y_i} = \begin{bmatrix} \boldsymbol{y_{i1}} \\ \dots \\ \boldsymbol{y_{iT}} \end{bmatrix}, \boldsymbol{X_i} = \begin{bmatrix} \boldsymbol{x'_{i1}} \\ \dots \\ \boldsymbol{x'_{iT}} \end{bmatrix}, \boldsymbol{\varepsilon_i} = \begin{bmatrix} \boldsymbol{\varepsilon_{i1}} \\ \dots \\ \boldsymbol{\varepsilon_{iT}} \end{bmatrix}, \boldsymbol{y} = \begin{bmatrix} \boldsymbol{y_1} \\ \dots \\ \boldsymbol{y_T} \end{bmatrix}, \boldsymbol{X} = \begin{bmatrix} \boldsymbol{X_1} \\ \dots \\ \boldsymbol{X_n} \end{bmatrix}, \boldsymbol{\varepsilon} = \begin{bmatrix} \boldsymbol{\varepsilon_1} \\ \dots \\ \boldsymbol{\varepsilon_n} \end{bmatrix}$$

where y and X are panel ("integrated") observations and errors; y and ε – vectors with a dimension of nT1; X – regressor matrix with a dimension of $nT'k$. The fixed effects model for panel data denoted as above is described by the following equation (4):

$$\boldsymbol{y_{it} = \alpha_i + x'_{it} \cdot \beta + \varepsilon_{it} \quad \beta \in \mathbb{R}^k, \alpha_i \in \mathbb{R}\ (i = 1, \dots n)} \quad (\boldsymbol{4})$$

The value α_i expresses an individual effect of object i, not dependent on time t, with regressors x_{it} containing no constant.

We used a combined model looking as (5) to model volumes of residential mortgage loans – this is an additive model of multiple linear regression and time series model for residuals.

$$Y_{vif}=F1_t+F2_t+\varepsilon_t= a_0+a_1x_1+\dots+a_nx_n+ARIMA(p,i,q)+\varepsilon_t \quad (5)$$

$F1_t = a_0+a_1x_1(t)+\dots+a_nx_n(t)$ – multiple regression where $x_1(t)\dots x_n(t)$ are factors significantly influencing Y_{vif}.

We used the variance inflation factor (VIF) to identify linearly independent factors. This indicator allows for evaluation of variance growth of a given regression rate, occurring due to high correlation of factors. The higher is this indicator for a factor, the stronger is linear relation between it and other factors. This indicator is calculated by formula (6), where $\mathbf{R_j^2}$ is the factor's determination coefficient j relative to all the rest ones.

$$\boldsymbol{VIF = \frac{1}{1-R_j^2}} \quad (6)$$

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To eliminate multi-collinearity, we excluded factors with too high VIF values from the model. Generally, a critical VIF value is 5; however, this indicator is equal to 10 in some sources. Data are subject to pre-standardization.

An integrated moving average model is applied to residuals of the multiple regression model: $F2_t = Y_t\text{-}F1_t = ARIMA(p,d,q)$. The autoregressive integrated moving average model *ARIMA(p,d,q)* can be represented by equation (7), where p and q are whole numbers governing its order and d is a finite difference operator order.

$$\Delta^d \boldsymbol{X_t} = \boldsymbol{c} + \sum_{\boldsymbol{i=1}}^{\boldsymbol{p}} \boldsymbol{a_i}\, \Delta^d \boldsymbol{X_{t-i}} + \sum_{\boldsymbol{j=1}}^{\boldsymbol{q}} \boldsymbol{b_j \varepsilon_{t-j}} + \boldsymbol{\varepsilon_t}, \qquad (7)$$

where ε_t is a stationary time series, c is a constant, a_i – AR model parameters (autoregression rates), b_j – MA model parameters (moving average model coefficients), and Δ^d is a finite difference operator of the time series of d-order.

6. Findings

A source of data for model construction was materials posted on the websites run by the Federal State Statistics Service in 1998–2018.

6.1. Migration outflow forecasting

The model (1–2) was used for short-term forecasting and evaluation of the population outflow from the Far Eastern region. The forecasted variable F_t was population outflow from FEFD. We obtained a Holt — Winters model described by a system of equations (8). The model implemented in the R-Studio program is adequate to input data and has no seasonality.

$$\begin{cases} \boldsymbol{F_{t+h} = l_t + hb_t + S_{t+h-n}} \\ \boldsymbol{l_t = 0.996(y_t - S_{t-n}) + 0.002(l_{t-1} + b_{t-1})} \\ \boldsymbol{b_t = 0.8934(l_t - l_{t-1}) + 0.1088 b_{t-1}} \\ \boldsymbol{S_t = 0} \end{cases} \qquad (8)$$

The forecasted population outflow from FEFD in 2020 and confidence intervals:

	Point Forecast	Lo 80	Hi 80	Lo 95	Hi 95
2020	285,674	25,0681.1	320,666.9	232,156.9	339,191.1

The actual outflow in 2019 was 342,106 people by data of the Federal State Statistics Service. The forecasted model-based reduction is 56,432 people (within 17%). We believe that the forecasted migration outflow reduction is related to COVID-19 travel restrictions rather than any expected improvement of the region's migration attractiveness due to the ongoing social and economic development of FEFD.

6.2. Identification of migration attractiveness factors

We used a fixed effects panel regression (4) to identify factors influencing the region's migration attractiveness. The region's administrative territories made up the panel for the period of 1997–2017. In this period, FEFD did not include Trans-Baikal Krai and Republic of Buryatia as yet. Values of outgoing

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migration flows by each administrative territory were considered as a dependent variable. To obtain a significant model, we constructed an artificial variable *Vrp_Climat=Vrp_Persan*Climat* that characterizes per capita GRP adjusted for a "correction" reflecting the territory's climate severity. *Climat* is a categorical variable characterizing climatic conditions of FEFD administrative territories and has the following values: 1 – for Chukotka Autonomous District; 2 – for Magadan Oblast and Republic of Sakha (Yakutia); 3 – for Khabarovsk Krai; 4 – for Sakhalin Oblast and Amur Oblast, Kamchatka Krai and Jewish Autonomous Oblast; 5 – for Primorsky Krai. *Vrp_Persan* is per capita GRP. The model includes a factor *Dohod_pers* – "region's mean per capita income". The model was implemented using the Gretl econometric software package (Figure 2).

Factor	Regression rate	STE	t-statistic	p-value	
const	9,78758	0,0378981	258,3	1,38e-200	***
d_Dohod_pers	-5,82676e-05	1,61486e-05	-3,608	0,0004	***
d_Vrp_Climat	-0,150199	0,0722223	-2,080	0,0393	**

Figure 2. Fixed effects panel regression rates

The dependent variable *l_out* is the logarithm of outgoing migration flows by each administrative region of FEFD, and factor variables *d_Dohod_pers* and *d_ Vrp_Climat* are absolute increments of variables "region's mean per capita income" and "per capita GRP adjusted for climatic conditions". All other factors were excluded from the panel regression as non-significant, having a non-interpretable plus-minus sign or high value of vif-factor. The minus sign before coefficients indicates at an inverse relation between variables. The most significant value is per capita income increment in each of the administrative territories under consideration. The coefficients are less than 1 and, therefore, are well interpretable: as the dependent variable is in logarithms, antilogs need to be calculated for regression rates for correct interpretation of results. The outcome will be as follows: an increase of income increment by 1 ruble will reduce population outflow by 5.8e-05 per cent, and an increase of per capita GRP adjusted for climatic conditions by 1 ruble will reduce population outflow by 0.15 per cent. The constant value shows that the impact of non-observed factors will keep migration outflows at a level of 9.79% annually. The panel regression has identified economic factors that curb migration outflows. An annual increment of per capita GRP adjusted for climatic conditions is the most significant factor for improving the Far Eastern region's migration attractiveness.

6.3. 6.3 Modeling of residential mortgage loan volume

Residential mortgage loan programs may contribute to the improvement of the territory's migration attractiveness. We used a combined model (5) for the simulation of residential mortgage loan volumes. All computations were performed in the R-Studio program. Input data were materials posted on the websites run by Primorsky Krai Office of the Federal State Statistics Service. This administrative region of FEFD was selected because it accounts for 23% of all residential mortgage loans issued in FEFD. An effective indicator is volume of issued residential mortgage loans (Y). Factor features are as follows: X1 – average weighted per cent rate; X2 – subsistence level; X3 – unemployment rate; X4 – mean price of

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1 square meter of floor area in the housing market; X5 – per capita monetary income. There is no strong linear relation between factors X1, X3 and X4 and they can be included in the model. The values of variance inflation factors (VIF) and of regression rates are presented in Table 4.

Table 4. Variance inflation factors and regression rates for factor features

Coefficients	X1	X2	X3	X4	X5
VIF	2.4190	19.7596	2.4983	4.3791	15.6743
Regression rate	5.84	–	-346.8	0.08	–
p-value	0.0758	–	0.0106	–	7.44E-12

All regression rates are significant in line with the Student criterion and the equation as a whole is significant in line with the Fisher criterion (p-value is 8.65E-16). The strongest influence on the volume of issued residential mortgage loans is produced by factor X5 – per capita monetary income. Then we computed random component values for our combined model $\mathrm{E}vif = \mathrm{Y}_{\mathrm{actual}} - \mathrm{Y}_{\mathrm{vif}}$ and built an ARIMA model for it.

The time series *Evif* is stationary according to results of an augmented Dickey — Fuller test, therefore, d=0. When selecting parameters p and q for this model, the Akaike criterion and mean square error value assume a minimum value in ARIMA (1,0,0). Therefore, the combined regression model looks as follows:

$$\mathrm{Y} = 112.778 + 5.8413\mathrm{X}_1 - 346.811\mathrm{X}_3 + 0.08\mathrm{X}_4 + 0.75\mathrm{Evif}_{\mathrm{t}-1} + \varepsilon_{\mathrm{t}} \quad (9)$$

Box — Pierce statistic computations yield values larger than 0.1 which shows that residuals are white noise.

According to our forecast, a quarterly increment of the volume of issued residential mortgage loans will be 124.5 million rubles. At first glance, there are prerequisites for stabilizing the region's population number and migration outflow reduction. But, residential mortgage loan volumes grow against the background of reducing population numbers, which means than local residents enter into residential mortgage deals for buying housing outside the Far East. This is mostly Moscow, St. Petersburg and Krasnodar, i.e., population outflow is ongoing. Simultaneously, the average amount of a residential mortgage loan is growing, thus reducing the volume of monies people can spend on buying a home.

7. Conclusion

Migration outflow is a systemic problem caused both by economic and social reasons. A high wage level is proportional to high prices for goods and public utilities which make impossible any savings, qualified medical services or education of children, while severe climate hardships are not compensated by personal income of the region’s residents. Taken together with growing mobility of people, all this drives the migration outflow. According to RosStat data, the highest cost-of-living index

in 2017 was registered in Petropavlovsk-Kamchatski and Anadyr – 1.58. Comparison with other regions would form an idea of prices in the Far East. For reference, this index is 1.27 in Moscow and 0.99 in Krasnodar. Real disposable personal incomes have dropped to 94.2% since 2015 and the number of people with incomes below subsistence level has accordingly grown. Given high housing prices, an effective behavior pattern for the region's residents is to sell their rather expensive real estate in the Far East and search for more suitable options in other regions.

A low unemployment rate (4-5%) shows that there is no deficit of jobs because everybody willing to work even for small money is working. Any further population outflow will give rise to a serious workforce deficit. The Interestedness of developers and borrowing of residential mortgage loans by population might help to reduce population outflows from FEFD. In general, residential mortgage crediting is a promising factor of improvement of the region's migration attractiveness. Still, population decline in FEFD requires the solution for economic, ecological, and social problems and cannot be solved only by reducing residential mortgage loan rates. The key factor reducing the region's migration attractiveness is the lack of an infrastructure capable of ensuring migrants' social adaptation willing to join the Far Eastern Hectare program. FEFD administrative regions and municipalities have to cope with a budget deficit and cannot provide financing through local infrastructure projects. A target-specific priority-level governmental program must meet the Far East's demand for all transport services at the federal budget's expense.

A comprehensive approach should be applied to the problem of improving FEFD's migration attractiveness: not only efficient migration policies with a focus on practical rather than theoretical aspects of their implementation but also improvement of the quality of life, major investments in the development of the region's social sphere and infrastructure.

Acknowledgments

This paper has been prepared with support of the Russian Foundation for Fundamental Research. Grant number 19-010-00085 A.

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