

DOI: 10.26794/2587-5671-2026-30-2-198-212

UDC 339.727.22;339.727.24(045)

JEL C1, F21, O47

Russia's Economic Integration in Investment to APEC for its Economic Growth under Sanctions

H.-S. Lee¹, A.N. Kurbatskii², P.I. Nagornyy³¹ Peoples' Friendship University of Russia named after Patrice Lumumba, Moscow, Russian Federation;² Lomonosov Moscow State University, Moscow, Russian Federation;³ Primakov National Research Institute of World Economy and International Relations, Russian Academy of Sciences, Moscow, Russian Federation

ABSTRACT

This paper examines the effect of replacing Russia's traditional investment partners with APEC economies on the income growth of Russian regions. The relevance of the study is explained by the fact that the restructuring of Russia's foreign economic relations has increased the importance of alternative sources of investment and their contribution to regional development. The **purpose** of the study is to assess how inward and outward foreign direct investment linked to APEC countries influence regional income and wage dynamics, with particular attention to the differences between developed and developing APEC economies. The analysis is based on panel data from Russian regions for the period 2014–2021 and uses econometric **methodology**, including Fixed Effects models, and One- and Two-step GMM models to estimate the relationship between changes in the structure of foreign direct investment and regional economic performance. The **results** show that a higher share of inward FDI from APEC countries in total inward FDI to Russia is associated with increased regional income and wages. This positive effect is becomes stronger for inward FDI from developing APEC economies. Outward FDI coming from Russia to APEC countries has no statistically significant effect on regional growth. The study **concludes** that expanding investment cooperation with developing APEC countries is a more effective strategy to support Russian regional economies during sanctions than relying on developed APEC or non-APEC partners. Its **practical significance** lies in supporting policies aimed at attracting FDI into priority sectors, especially manufacturing.

Keywords: Russia; Western sanctions; growth theory; Asia-Pacific; regional integration; Foreign Direct Investment (FDI); Outward Foreign Direct Investment (OFDI); Inward Foreign Direct Investment (IFDI)

For citation: Lee H.-S., Kurbatskii A.N., Nagornyy P.I. Russia's economic integration in investment to APEC for its economic growth under sanctions. *Finance: Theory and Practice*. 2026;30(2):198-212. DOI: 10.26794/2587-5671-2026-30-2-198-212

Экономическая интеграция России в сфере инвестиций в АТЭС для обеспечения экономического роста в условиях санкций

Х.-С. Ли¹, А.Н. Курбацкий², П.И. Нагорный³¹ Российский университет дружбы народов имени Патриса Лумумбы, Москва, Российская Федерация;² Московский государственный университет имени М.В. Ломоносова, Москва, Российская Федерация;³ Национальный исследовательский институт мировой экономики и международных отношений имени Е.М. Примакова Российской академии наук, Москва, Российская Федерация

АННОТАЦИЯ

В данной работе исследуется, как замена традиционных инвестиционных партнеров России странами Азиатско-Тихоокеанского экономического сотрудничества (АТЭС) влияет на доходы российских регионов. **Актуальность** исследования обусловлена тем, что реструктуризация внешнеэкономических связей России повысила значимость альтернативных источников инвестиций и их вклад в региональное развитие. **Цель** исследования – оценить, как входящие и исходящие прямые иностранные инвестиции (ПИИ) из стран АТЭС влияют на динамику региональных доходов и заработной платы. Особое внимание уделено различиям в экономических показателях между развитыми и развивающимися странами АТЭС. Анализ основан на панельных данных по российским регионам за 2014–2021 гг. Используется эконометрическая **методология**, включая модели с фиксированными эффектами, одно- и двухшаговые модели GMM для оценки взаимосвязи между изменениями в структуре прямых

иностранных инвестиций и региональными экономическими показателями. **Результаты** исследования показывают, что более высокая доля поступающих ПИИ из стран АТЭС в общем объеме входящих ПИИ в Россию связана с ростом региональных доходов и заработной платы. Этот положительный эффект усиливается для входящих ПИИ из развивающихся стран АТЭС. Исходящие ПИИ из России в страны АТЭС не оказывают статистически значимого влияния на региональный рост. Исследование приходит к **выводу**, что расширение инвестиционного сотрудничества с развивающимися странами АТЭС является более эффективной стратегией поддержки российской региональной экономики в условиях санкций, чем опора на развитые страны АТЭС или на партнеров, не входящих в АТЭС. Его **практическое значение** заключается в поддержке политики, направленной на привлечение прямых иностранных инвестиций в приоритетные сектора, особенно в обрабатывающую промышленность. **Ключевые слова:** Россия; западные санкции; теория экономического роста; Азиатско-Тихоокеанский регион; региональная интеграция; прямые иностранные инвестиции (ПИИ); исходящие прямые иностранные инвестиции (ОППИ); входящие прямые иностранные инвестиции (ВППИ)

Для цитирования: Lee H.-S., Kurbatskii A.N., Nagornyy P.I. Russia's economic integration in investment to APEC for its economic growth under sanctions. *Финансы: теория и практика*. 2026;30(2):198-212. DOI: 10.26794/2587-5671-2026-30-2-198-212

INTRODUCTION

Russia has actively participated in APEC initiatives, particularly related to energy and logistics cooperation. At the 13th summit, held in 2005, the country identified the energy sector as a priority area for its economic cooperation with Asia-Pacific countries and put forward several initiatives in this area. The ultimate goal of these initiatives was to create a unified energy system linking Europe and Asia. However, above all, the main goal of Russia's cooperation with APEC countries is to stimulate the development of the eastern regions. In 2006, the Center for Scientific, Technological, Innovation, and Technology Cooperation was established in Vladivostok. This center was not only to become a platform for cooperation between Asian countries, but also to attract foreign investment to the region. As the Russian government officially addressed the Pivot to the East policy, after 2012, Russia has taken full advantage of its participation in the APEC forum, hosting the APEC Summit in Vladivostok. In subsequent years, the country actively further promoted issues related to the development of innovation clusters and cooperation in the field of public procurement [1]. The Russian government introduced multiple policy mechanisms to attract investments mainly from neighboring Asia-Pacific countries, including free ports and special economic zones [2].

Considering that the development of the Russian Far East involves vast territories and various sectors, the neighboring Asian capitals may play a critical role. However, since 2022, due to the increased fragmentation processes and an aggravated political situation, Russia's cooperation with APEC countries in many areas was significantly less active and no serious progress has been achieved. Out of 20 APEC partner countries, 9 countries have participated in the sanctions against Russia, which means there are barriers to

cooperate with APEC countries and thereby the future focus of the cooperation with APEC should be made at non-sanctioning APEC countries. In this sense, our study measures the effects of Russia's economic cooperation in investments with 9 developed (participants of the sanctions) and 11 developing (non-sanctioning) APEC countries in addition to the aggregate effects from the whole APEC countries. The main purpose of the study is to see the effects of replacing Russia's investment partners with APEC countries from non-APEC countries. This topic of the study reflects the ongoing geopolitical situation, which is thereby a highly relevant and untouched topic, and may expand the previous studies in Russia's cooperation with APEC [3–5]. On the other hand, previous studies have shown that inward and outward FDI can promote economic growth through knowledge transfer, profit returns, and improved global value chains. In this sense, our study models the growth driven by IFDI and OFDI [6].

LITERATURE REVIEW

Strengthening and deepening economic ties between geographically close countries often becomes a significant impetus for their development. Governments create a business environment that is favorable to foreign partners, while paying attention to the interests of their own companies, allowing not only increasing cross-border trade and investment, but also forming new value chains, creating jobs and opportunities for development in countries. Numerous studies have been conducted to identify the impact of accession to integration associations and trade agreements on countries' economies. Multiple studies have focused on the significant impact of APEC's accession on its member states' economies [7, 8]. However, it is also argued that the effects of joining APEC are heterogeneous depending on

the level of economic development. Participation in APEC has a positive impact on the economies of all member countries, but developing countries benefit most. Arzhaev and Turko [9] argue, however, that developed APEC countries (which sell manufactured goods) gain more benefits than developing APEC members (who sell raw materials).

Meanwhile, there are discussions dedicated to the prospects of deepening economic relations between Russia and APEC. Various papers estimate the significance of cooperation between Russia and Asia-Pacific countries for the Russian economy. The strengthening of economic relations with APEC members is considered extremely important for the development of the Far East, a remote region from the economic center of western Russia [2]. Previous studies have shown that Russia's accession to APEC focuses on China, in particular. Pishchik et al. [3] note that Russia's role in the Asia-Pacific depends largely on China, and deepening cooperation with China is an opportunity to solve the problem of underdevelopment in the Far East. Lukin [10] and Torkunov et al. [11] also emphasize the importance of strong ties between Russia and China.

Recently, other member states of APEC have also received attention for the development of the Russian economy through limited studies. For instance, Huyen and Van Quyet [12] addressed that Vietnam is also one of the most important APEC countries for Russia to strengthen its influence in the Asia-Pacific region. Lee et al. [5] concluded that to enhancing Russia's service trade with APEC economies has a positive impact on economic growth of Russia and it is important for Russia to develop economic relations with APEC countries to compensate for the weakening of economic ties with the European countries. On the other hand, some studies have shown skepticism about Russia-APEC relations and their development [4, 6]. In a recent study by Chiotan et al. [13], it was demonstrated that in order to successfully develop integration ties, countries need to solve their political and economic problems.

In addition, it is worth exploring previous studies, which specifically focus on the relationship between sanctions and FDI. When considering the impact of sanctions on FDI, attention should also be paid to the immediate aspect. Thus, Drapkin et al. [14] in their work consider the indicators of Russian investment in different regions of the world noting that Russian companies have significantly underinvested in Latin American countries, Africa and Asia (relative to the potential

level), so the sanctions imposed on Russia hit the investment flows harder, than they could. Gould-Davies [15], studying the sanctions imposed after 2014 on Russia, notes that for an economy as large as Russia, sanctions in principle cannot quickly affect its international trade and financial flows, so they should be seen more as an instrument of gradual pressure to increase the country's technological backwardness and influencing the behavior of its elites. McDaniel and Ghei [16] also talk about the importance of the long-term effects of sanctions. On the one hand, the authors note that in the short term, sanctions harm not only Russia, but also countries that had close economic ties with the country before their introduction. Important long-term impact of sanctions is also mentioned by Sonnenfeld et al. [17]. Markus [18] draws attention to the long-term effects of sanctions on investment flows. Like previous authors, he notes that sanctions in the long run may lead to Russia's gradual exclusion from international value chains. Kalotay [19] is also talking about the different impacts of different types of sanctions on FDI. He points out, that excluding Russia from SWIFT, freezing its assets, and restrictions on its vessels and aircraft have had the most significant impact on both inbound and outbound FDI. The significance of the impact of sanctions on foreign investors decisions is also highlighted in the work of McLean, Ryu and Wang [20]. Panibratov and Gaur [21] also discuss the significant impact of sanctions on investment flows, but they also note that foreign companies are more likely to withdraw capital from Russia than Russian companies from abroad, since it is more difficult for the Russian firms to adapt to the ongoing changes. Another article by Panibratov and Chen [22] describes similar results. An unusual way to estimate the flow of economic resources in Russia was used by Li and Li [23]. The researchers studied the brightness of night lights in Russian cities and concluded that sanctions led to an increase in brightness in the large cities, industrial centers, and border cities with "friendly".

To summarize the literature review, first, the positive effects of deepening economic ties among APEC member states have been previously revealed but it seems that their benefits are not equally enjoyed. Second, if we narrow the scope of this line of study to the case of Russia, multiple studies agreed that Russia's accession to APEC is crucial for the development of the Russian Far East. Third, political factors are identified as a significant factor in the further integration of APEC. For Russia, this

is actually the main factor but such factors have not been considered yet. Our study can provide new insights. Our study uses econometrics as the main methodology and empirically proves the effects of that Russia's main investment partnerships are replaced by those of APEC countries, which has a positive impact on income growth in the Russian states. Secondly, taking into account the current sanctions, we will measure their effects between sanction-participating APEC countries and sanction-non-participating APEC countries.

HYPOTHESIS DEVELOPMENT

According to the Cobb-Douglas function of Eq. (1),

$$Y = AL^\alpha K^\beta. \quad (1)$$

Y (output) depends on A (productivity) and production inputs, which are L (labor) and K (capital). Under this function, economic growth can be achieved by either enhancing productivity or increasing production inputs (i.e., labor and capital). Regardless of the investing countries, IFDI increases production inputs. However, an increase in productivity highly depends on the spillover effects. Countries with higher technology generate higher spill-over effects. The ranking of highly technologically developed countries varies depending on the publications that rank them. Generally the top 10 list consists of East Asian, Western, and Northern European countries, and the US, which are half APEC and half non-APEC countries. The effects of APEC's investments in Russia are uncertain.

Hypothesis 1 (H1): The impact of the increase in the proportion of IFDI from APEC countries in the Russian regions (compared to the total IFDI in the Russian regions) on the income growth of the Russian regions is unclear.

As revealed in previous studies, OFDI also creates reverse-spillover effects on the productivity growth of home countries [24]. However, due to the reasons discussed in *H1*, the expected effects of increasing the OFDI ratio towards APEC countries from the whole OFDI on the income growth of the Russian states are also uncertain.

Hypothesis 2 (H2): The impact of the increase in the proportion of OFDI from Russia in APEC countries (compared to the total OFDI from the Russian regions) on the income growth of the Russian regions is unclear.

In addition, it is expected that between developed and developing APEC countries, the investments from the former may create more spillover effects resulting from the advanced technologies, know-how and managerial skills. In this sense, we can posit the following hypothesis:

Hypothesis 3 (H3): The cooperation in FDI with the developed APEC countries will bring stronger positive effects than that with developing APEC countries.

METHODOLOGY, MODEL SPECIFICATION AND DATA

Baseline Fixed Effects Model

For the regression analysis, panel data was constructed for the 80 Russian regions during 2014–2021. The aim of this study is to reveal the effects of that Russia's investment partners being replaced by APEC countries from other foreign countries on the income growth of the Russian regions. In this regard, our baseline models were formulated according to the following Eqs. (2) and (3):

$$\begin{aligned} Grw_GRP_{it} \text{ (or } Grw_Wage_{it}) &= \beta_0 + \beta_1 IFDI_APEC_ratio_{it} \text{ (or } IFDI_APEC_ratio_Adj) + \\ &+ \beta_2 Capital_{it} + \beta_3 Ln_POP_{it} + \beta_4 Openness_{it} + \mu_i + \varepsilon_{it}, \end{aligned} \quad (2)$$

$$\begin{aligned} Grw_GRP_{it} \text{ (or } Grw_Wage_{it}) &= \beta_0 + \beta_1 OFDI_APEC_ratio_{it} \text{ (or } OFDI_APEC_ratio_Adj) + \\ &+ \beta_2 Capital_{it} + \beta_3 Ln_POP_{it} + \beta_4 Openness_{it} + \mu_i + \varepsilon_{it}, \end{aligned} \quad (3)$$

where Grw_GRP_{it} is the growth rate of GRP per capita. $IFDI_APEC_ratio_{it}$ is IFDI stocks from APEC in the Russian regions divided by the total FDI inflows in Russia. The $OFDI_APEC_ratio_{it}$ is OFDI stocks (from the Russian regions to APEC countries) ratio. If it becomes larger, it means that APEC investments take larger portion of total investment inflows (outflows) in (from) Russia and APEC investments are substituted for non-APEC countries' investment. On the other hand, approximately 30% of FDI into (from)

Russia is veiled in terms of source (destination) countries. In this sense, we measured the APEC's FDI ratio effects after erasing these veiled FDI from the total FDI of Russia as well, which are noted as *IFDI_APEC_ratio_Adj* and *OFDI_APEC_ratio_Adj*.

The reason why we separately constructed IFDI and OFDI models is because of collinearity. When IFDI and OFDI were in the same model, their VIFs reached to more than 300, indicating serious multicollinearity considering that the generally accepted threshold for VIF is less than 10 and to include them in one model may seriously reduce the reliability of the model. In this context, IFDI and OFDI models are separately constructed instead of being incorporated into a single FDI model.

Capital_{it} is a fixed capital ratio compared to GRP. *Ln_POP_{it}* is a logarithm of the number of populations. *Openness_{it}* is a trade openness. These are used as control variables. μ_i is a state fixed effect. ϵ_{it} is an error term. To capture the regional heterogeneity reflecting the current Western sanctions, models for developed and developing countries, where the former are joining the sanctions while, the latter are not joining the sanctions, are additionally constructed. The standard for categorizing the developed and developing countries is followed by the IMF.

The System GMM

On the other hand, per capita GRP and FDI may have a problem of endogeneity. This is because it is quite uncertain whether an increase in per capita GRP promotes FDI or vice-versa. While, our study aims to reveal the causality from FDI flows to per capita GRP. In this sense, to resolve the issue of the potential endogeneity, the following system GMM models are established according to Eqs. (4) and. (5)*:

$$Grw_GRP_{it} (or Grw_Wage_{it}) = \beta_1 Grw_GRP_{it-1} (or Grw_Wage_{it-1}) + \beta_2 IFDI_APEC_ratio_{it} (or IFDI_APEC_ratio_Adj) + \beta_3 Capital_{it} + \beta_4 Ln_POP_{it} + \beta_5 Openness_{it} + \epsilon_{it}, \quad (4)$$

$$Grw_{GRP_{it} (or Grw_{Wage_{it}})} = \beta_1 Grw_{GRP_{it-1} (or Grw_{Wage_{it-1}})} + \beta_2 OFDI_APEC_ratio_{it} (or OFDI_APEC_ratio_Adj) + \beta_3 Capital_{it} + \beta_4 Ln_POP_{it} + \beta_5 Openness_{it} + \epsilon_{it}. \quad (5)$$

On the other hand, for the robustness checks, the above models were constructed with an alternative dependent variable of *Grw_Wage_{it}*, which is the growth rate of the average wage, as well.

The description of variables is presented in *Table*, while the summary statistics are shown in *Appendix 1*. The nominal values are converted to real values by applying the Russian GDP deflator (2015 = 100) from the World Bank's world development indicators and they are all converted to US dollars by applying the annual average exchange rate from the Central Bank of Russia. The growth rate is calculated for values in US dollars (constant in 2015) The FDI data sets are obtained from the Central Bank of Russia, while the other variables are collected from the Federal State Statistics Service of Russia.

RESULTS

Appendix 1 presents the results from the baseline state fixed effects "IFDI" regression models. First of all, the ratio of IFDI from all APEC countries shows a positive correlation with the per capita GRP and average monthly wage at a 5% significance level. It indicates that when main investors in the Russian regions are substituted by APEC countries from other non-APEC countries, it generates positive effects on the regional income growth. Therefore, H1 is rejected.

On the other hand, when IFDI is considered only from the developed APEC countries, its significant positive effects disappear. However, when it is considered from the developing APEC countries alone, its positive effects (at a 1% significance level) increase as the values of coefficients become larger. This implies that it is not developed but developing APEC countries' investments to create positive effects on regional economic growth in Russia. Thereby, H3 is rejected.

While, *Appendix 2* presents the results from the baseline state fixed effects "OFDI" regression models. The results consistently show that the effects of OFDI are insignificant excluding FE.6 (support for H2), although its coefficients are positive. This indicates that OFDI to APEC countries is not utilized well to

* We applied no constant options due to missing constant in multiple models.

Description of Variables

Variable	Description
Grw_GRP_{it}	The growth rate of per capita GRP of the Russian regions
Grw_Wage_{it}	The growth rate of monthly average wage of the Russian regions
$I(O)FDI_APEC_ratio(_Adj)_{it}$	I(O)FDI stock from (to) the APEC in (from) the Russian regions divided by the (adjusted) total I(O)FDI stock in (from) Russia
$I(O)FDI_APEC_ratio(_Adj)_developed_{it}$	I(O)FDI stock from (to) the developed APEC countries in (from) the Russian regions divided by the (adjusted) total I(O)FDI stock in (from) Russia
$I(O)FDI_APEC_ratio(_Adj)_developing_{it}$	I(O)FDI stock from (to) the developing APEC countries in (from) the Russian regions divided by the (adjusted) total I(O)FDI stock in (from) Russia
$Capital_{it}$	Fixed capital investments of the Russian states divided by the GRP of the Russian regions
Ln_POP_{it}	A logarithm of the Russian regions' population
$Openness_{it}$	Trade volumes divided by the GRP of the Russian regions

Source: Central Bank of Russia. URL: https://www.cbr.ru/statistics/macro_itm/external_sector/iip; Federal State Statistics Service of Russia. URL: https://www.rosstat.gov.ru/statistics/vneshnyaya_torgovlya (accessed on 18.03.2026).

Note: For FDI variables, if it is written as APEC, then it includes 20 APEC countries (excluding Russia). If it is written as "developed", then it includes 9 developed APEC countries (Australia, Canada, Hong Kong, Japan, New Zealand, Singapore, Republic of Korea, Taiwan, The United States). If it is written as "developing", then it includes 11 developing APEC countries (Brunei, Chile, China, Indonesia, Malaysia, Mexico, Papua New Guinea, Peru, The Philippines, Thailand, Vietnam).

promote the regional economic growth of the Russian regions.

Our results are consistent when the key variable is adjusted to one, which adjusts the APEC FDI ratio by considering the veiled FDI in (from) Russia.

For the robustness checks, the one-step and two-step system GMM models are additionally constructed, and the results are described in Appendices 3–7. Under the one-step system GMM estimator, IFDI ratios from APEC countries are positively associated with dependent variables. IFDI ratio from developing APEC countries shows strong positive effects consistently, and its coefficients are larger than that from APEC countries. Significant and positive associations with an average monthly wages only appear in GMM.7, GMM.11 and GMM.12. The results from the two-step system GMM is more or less similar results, and system GMM estimations commonly support the main findings of baseline fixed effect models.

OFDI ratio also shows insignificant effects in general (excluding GMM.11, GMM.12, GMM.23 and

GMM.24 models). In this sense, the main findings are generally consistent with the baseline fixed effects models.

CONCLUSIONS

This study delves into the impact of Russia's investment partnerships with APEC countries based on panel data for the period 2014–2021. Since 2012, Russia has strengthened the economic cooperation with the Asia-Pacific countries to find a new growth engine and develop the Far Eastern territories. Also, since 2014, due to the ongoing geopolitical events and sanctions, Russia has particularly redirected its economic partnerships from the European countries to other third countries including some member states in APEC, and this trend has only intensified during the period under review. To reflect this situation, this study measures the impact when Russia's investment partner is substituted by developed and developing APEC countries from other non-

APEC countries on the income growth of the Russian regions.

From the state fixed effects and the system GMM regressions, the following findings were obtained. First, it is not OFDI to APEC but IFDI from APEC promotes economic growth in the Russian regions. Second, attracting more FDI from APEC countries rather than other non-APEC countries leads to economic growth in these regions. Third, however, the positive effects disappear with FDI from the developed APEC countries, while they strengthen with FDI coming from developing APEC countries. This means that investments from the developing APEC countries practically help to develop Russian local economies.

From these results, some policy insights are provided. Strengthening partnerships with developing APEC countries could be a good option for the Russian economy to overcome faced economic adversities under ongoing sanctions. Many Russian industries are currently empty after Western companies left, and they are waiting for new entrants. The government ought to provide favorable conditions to induce FDI from developing APEC countries in the industries that they intensively need to develop, such as manufacturing.

At the same time, to achieve significant positive effects from OFDI, the sectors of Russian outward FDI need to be diversified and an investment aimed at reverse spillover effects should be increased.

On the other hand, the authors acknowledge the following research limitations. The IFDI and OFDI datasets of Russia are quite veiled in terms of the real sources of the investments. As mentioned above in the methodology and data section, large amounts of FDI are confidential and have characteristics such as trans-shipping, round-tripping or fictitious FDI (e.g., FDIs from (to) Cyprus). Due to these limitations, it was difficult to measure true amounts of FDI from (to) APEC countries and thereby results shown in this study should be interpreted with a certain degree of uncertainty. Despite this, the results obtained from this study are still valid based on the available official datasets, as an initial attempt to provide insights for the cooperation with APEC countries with a concern of on-going sanctions. As soon as more accurate datasets become available and time spans are expanded, the follow-up study should continue in this vein to obtain more mathematically accurate coefficients with reduced error ranges.

ACKNOWLEDGEMENTS

A. N. Kurbatskii gratefully acknowledges the support of the Russian Science Foundation under grant No. 25-18-00319 “Economic and demographic analysis of the population quality of life in Russia”, <https://rscf.ru/project/25-18-00319/>. Lomonosov Moscow State University, Moscow, Russian Federation.

БЛАГОДАРНОСТИ

А. Н. Курбацкий благодарит Российский научный фонд за финансовую поддержку данного исследования в рамках гранта № 25-18-00319 «Экономико-демографический анализ качества жизни населения России», <https://rscf.ru/project/25-18-00319/>. Московский государственный университет имени М. В. Ломоносова, Москва, Российская Федерация.

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ABOUT THE AUTHORS / ИНФОРМАЦИЯ ОБ АВТОРАХ



Han-Sol Lee — PhD, Assoc. Prof., Department of Marketing, Faculty of Economics, Peoples' Friendship University of Russia named after Patrice Lumumba, Moscow, Russian Federation

Хан-Сол Ли — PhD, доцент кафедры маркетинга экономического факультета, Российский университет дружбы народов имени Патриса Лумумбы, Москва, Российская Федерация

<https://orcid.org/0000-0002-7846-2374>

Corresponding author / Автор для корреспонденции:

li-kh@rudn.ru



Aleksei N. Kurbatskii — Cand. Sci. (Phys. and Math.), Head of the Department of Econometrics and Mathematic Methods of Economics, Moscow School of Economics, Lomonosov Moscow State University, Moscow, Russian Federation

Алексей Николаевич Курбацкий — кандидат физико-математических наук, заведующий кафедрой эконометрики и математических методов экономики Московской школы экономики, Московский государственный университет им. М. В. Ломоносова, Москва, Российская Федерация

<https://orcid.org/0000-0001-6478-8034>

akurbatskiy@gmail.com



Pavel I. Nagornyy — Senior Research Assistant, Center for Energy Research, Primakov National Research Institute of World Economy and International Relations, Russian Academy of Sciences, Moscow, Russian Federation

Павел Игоревич Нагорный — старший лаборант-исследователь, Центр энергетических исследований, Национальный исследовательский институт мировой экономики и международных отношений имени Е. М. Примакова Российской академии наук, Москва, Российская Федерация

<https://orcid.org/0009-0000-2973-0419>

PavelNagornyi@yandex.ru

Authors' declared contribution:

H.-S. Lee — problem statement, critical analysis of literature, econometric analysis, tabular and graphical presentation of the results and their description.

A.N. Kurbatskii — development of the article concept, formation of the research conclusions.

P.I. Nagornyy — data collection, preparation of the list of sources.

Заявленный вклад авторов:

Х.-С. Ли — постановка проблемы, критический анализ литературы, эконометрический анализ, табличное и графическое представление результатов и их описание.

А.Н. Курбацкий — разработка концепции статьи, формирование выводов исследования.

П.И. Нагорный — сбор данных, подготовка списка источников.

Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

Конфликт интересов: авторы заявляют об отсутствии конфликта интересов.

The article was submitted on 30.05.2025; revised on 30.06.2025 and accepted for publication on 18.03.2026.

Статья поступила в редакцию 30.05.2025; после рецензирования 30.06.2025; принята к публикации 18.03.2026.

The authors read and approved the final version of the manuscript.

Авторы прочитали и одобрили окончательный вариант рукописи.

Baseline State Fixed Effects "IFDI" Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	FE.1	FE.2	FE.3	FE.4	FE.5	FE.6	FE.7	FE.8	FE.9	FE.10	FE.11	FE.12
Constant	18.55*** (7.02)	18.52*** (7.03)	18.11** (7.06)	18.11** (7.06)	17.01** (6.95)	17.31** (6.95)	13.89* (7.35)	13.86* (7.35)	13.53* (7.38)	13.52* (7.38)	12.51* (7.29)	12.78* (7.29)
IFDI_APEC_ratio	80.69** (34.07)						71.95** (35.64)					
IFDI_APEC_ratio_Adj		47.92** (21.02)						42.82** (21.98)				
IFDI_APEC_ratio_developed			56.53 (38.75)						52.13 (40.49)			
IFDI_APEC_ratio_developed_Adj				35.71 (24.49)						32.75 (25.59)		
IFDI_APEC_ratio_developing					364.73*** (106.81)						311.87*** (112.01)	
IFDI_APEC_ratio_developing_Adj						241.93*** (70.08)						209.17*** (73.48)
Capital	-0.82*** (0.16)	-0.82*** (0.16)	-0.82*** (0.16)	-0.82*** (0.16)	-0.78*** (0.16)	-0.79*** (0.16)	-0.49*** (0.17)	-0.49*** (0.17)	-0.49*** (0.17)	-0.49*** (0.17)	-0.46*** (0.17)	-0.47*** (0.17)
Ln_POP	-1.31*** (0.50)	-1.31*** (0.50)	-1.28** (0.50)	-1.28** (0.50)	-1.20** (0.50)	-1.22** (0.50)	-0.98* (0.52)	-0.98* (0.52)	-0.96* (0.53)	-0.96* (0.53)	-0.89* (0.52)	-0.91* (0.52)
Openness	-0.23*** (0.07)	-0.23*** (0.07)	-0.23*** (0.07)	-0.23*** (0.07)	-0.23*** (0.07)	-0.23*** (0.07)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)
Obs.	560	560	560	560	560	560	560	560	560	560	560	560

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.

Note: Standard errors are in parentheses (* $p < .1$, ** $p < .05$, *** $p < .01$).

Baseline State Fixed Effects "OFDI" Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	FE.1	FE.2	FE.3	FE.4	FE.5	FE.6	FE.7	FE.8	FE.9	FE.10	FE.11	FE.12
Constant	17.63** (7.05)	17.65** (7.05)	17.62** (7.05)	17.64** (7.05)	17.67** (7.03)	17.79** (7.03)	13.10* (7.37)	13.12* (7.37)	13.10* (7.37)	13.12* (7.37)	13.01* (7.35)	13.20* (7.35)
OFDI_APEC_ratio	7.39 (7.54)						7.00 (7.88)					
OFDI_APEC_ratio_Adj		4.62 (4.55)						4.38 (4.75)				
OFDI_APEC_ratio_developed			7.36 (7.60)						7.01 (7.94)			
OFDI_APEC_ratio_developed_Adj				4.61 (4.61)						4.38 (4.81)		
OFDI_APEC_ratio_developing					1013.17 (676.53)						745.85 (707.44)	
OFDI_APEC_ratio_developing_Adj						520.47* (303.48)						453.55 (317.27)
Capital	-0.81*** (0.17)	-0.81*** (0.17)	-0.81*** (0.17)	-0.81*** (0.17)	-0.83*** (0.17)	-0.83*** (0.17)	-0.48*** (0.17)	-0.49*** (0.17)	-0.48*** (0.17)	-0.48*** (0.17)	-0.49*** (0.17)	-0.50*** (0.17)
Ln_POP	-1.24** (0.50)	-1.24** (0.50)	-1.24** (0.50)	-1.24** (0.50)	-1.25** (0.50)	-1.26** (0.50)	-0.93* (0.53)	-0.93* (0.53)	-0.93* (0.53)	-0.93* (0.53)	-0.92* (0.52)	-0.93* (0.52)
Openness	-0.23** (0.07)	-0.23** (0.07)	-0.23** (0.07)	-0.23** (0.07)	-0.23** (0.07)	-0.23** (0.07)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)
Obs.	560	560	560	560	560	560	560	560	560	560	560	560

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.
 Note: Standard errors are in parentheses (* p < .1, ** p < .05, *** p < .01).

The One-Step System GMM "IFDI" Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	GMM.1	GMM.2	GMM.3	GMM.4	GMM.5	GMM.6	GMM.7	GMM.8	GMM.9	GMM.10	GMM.11	GMM.12
Grw_GRP(-1)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.03 (0.04)	-0.03 (0.04)						
Grw_Wage(-1)							0.18*** (0.06)	0.16*** (0.05)	0.15*** (0.04)	0.14*** (0.04)	0.22*** (0.07)	0.21*** (0.07)
IFDI_APEC_ratio	75.62** (36.87)						274.89* (161.84)					
IFDI_APEC_ratio_Adj		47.21** (23.52)						150.10 (101.25)				
IFDI_APEC_ratio_developed			90.92** (45.96)						203.14 (174.85)			
IFDI_APEC_ratio_developed_Adj				56.53* (29.22)						112.00 (102.79)		
IFDI_APEC_ratio_developing					255.61** (114.15)						1268.49** (519.78)	
IFDI_APEC_ratio_developing_Adj						170.24** (76.79)						894.58** (359.38)
Capital	-3.06*** (0.75)	-3.06*** (0.75)	-3.11*** (0.74)	-3.09*** (0.74)	-2.72*** (0.80)	-2.76*** (0.78)	0.17 (0.33)	0.14 (0.29)	0.10 (0.25)	0.09 (0.22)	0.42 (0.43)	0.39 (0.43)
Ln_POP	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.06*** (0.01)	0.07*** (0.01)	0.05** (0.02)	0.04* (0.02)	0.03* (0.02)	0.03* (0.02)	0.07*** (0.03)	0.07*** (0.03)
Openness	-1.21*** (0.36)	-1.17*** (0.35)	-1.14*** (0.34)	-1.11*** (0.33)	-1.16*** (0.33)	-1.15*** (0.33)	-2.82* (1.64)	-2.33 (1.50)	-1.62 (1.20)	-1.40 (1.07)	-4.36*** (1.67)	-4.37*** (1.65)
AR(2)****	0.12	0.11	0.11	0.10	0.08	0.08	0.06	0.01	0.00	0.00	0.99	0.99
Obs.	480	480	480	480	480	480	480	480	480	480	480	480

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.

Note: Standard errors are in parentheses (* $p < .1$, ** $p < .05$, *** $p < .01$). Blundell-Bond (1998)'s system GMM estimations. **** AR(2) of GMM.8, GMM.9 and GMM.10 is less than 0.05 and thereby the results in these models can be unreliable.

The Two-Step System GMM “IFDI” Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	GMM.13	GMM.14	GMM.15	GMM.16	GMM.17	GMM.18	GMM.19	GMM.20	GMM.21	GMM.22	GMM.23	GMM.24
Grw_GRP(-1)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.03 (0.04)	-0.03 (0.04)						
Grw_Wage(-1)							0.29*** (0.10)	0.26** (0.11)	0.22* (0.11)	0.20* (0.10)	0.33*** (0.06)	0.32*** (0.07)
IFDI_APEC_ratio	74.98** (36.28)						525.39*** (196.58)					
IFDI_APEC_ratio_Adj		46.86** (23.24)						314.60* (162.41)				
IFDI_APEC_ratio_developed			90.27** (45.39)						446.91 (457.40)			
IFDI_APEC_ratio_developed_Adj				56.15* (28.94)						242.85 (293.07)		
IFDI_APEC_ratio_developing					253.39** (113.13)						1956.96*** (559.43)	
IFDI_APEC_ratio_developing_Adj						168.94** (76.16)						1261.76*** (346.61)
Capital	-3.06*** (0.73)	-3.05*** (0.73)	-3.11*** (0.73)	-3.08*** (0.74)	-2.73*** (0.81)	-2.77*** (0.78)	0.48 (0.45)	0.43 (0.46)	0.30 (0.51)	0.25 (0.49)	0.59 (0.48)	0.52 (0.47)
Ln_POP	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.02)	0.07*** (0.01)	0.10*** (0.03)	0.09** (0.04)	0.06 (0.05)	0.05 (0.05)	0.11*** (0.02)	0.11*** (0.02)
Openness	-1.20*** (0.36)	-1.16*** (0.35)	-1.14*** (0.33)	-1.10*** (0.33)	-1.16*** (0.34)	-1.15*** (0.33)	-5.63*** (2.08)	-4.98* (2.57)	-3.44 (3.24)	-2.88 (3.14)	-6.38*** (1.19)	-6.42*** (1.11)
AR(2)	0.12 480	0.11 480	0.11 480	0.10 480	0.08 480	0.08 480	0.89 480	0.91 480	0.23 480	0.06 480	0.59 480	0.58 480

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.
 Note: Standard errors are in parentheses (* p < .1, ** p < .05, *** p < .01). Blundell-Bond (1998)'s system GMM estimations.

The One-Step System GMM "OFDI" Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	GMM.1	GMM.2	GMM.3	GMM.4	GMM.5	GMM.6	GMM.7	GMM.8	GMM.9	GMM.10	GMM.11	GMM.12
Grw_GRP(-1)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.02 (0.04)						
Grw_Wage(-1)							-0.27*** (0.07)	-0.28*** (0.08)	-0.28*** (0.08)	-0.28*** (0.08)	-0.21** (0.08)	-0.24*** (0.08)
OFDI_APEC_ratio	12.35 (8.17)						6.44 (4.78)					
OFDI_APEC_ratio_Adj		8.20 (5.17)						3.46 (2.98)				
OFDI_APEC_ratio_developed			12.62 (8.26)						6.34 (4.80)			
OFDI_APEC_ratio_developed_Adj				8.37 (5.23)						3.42 (3.01)		
OFDI_APEC_ratio_developing					425.92 (365.36)						725.47** (312.74)	
OFDI_APEC_ratio_developing_Adj						305.43 (256.44)						404.14** (201.32)
Capital	-3.35*** (0.56)	-3.38*** (0.56)	-3.33*** (0.56)	-3.38*** (0.56)	-2.99*** (0.65)	-3.11*** (0.58)	-0.09 (0.48)	-0.04 (0.45)	-0.08 (0.47)	-0.02 (0.45)	0.21 (0.52)	-0.19 (0.60)
Ln_POP	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.02 (0.01)
Openness	-1.15*** (0.41)	-1.11*** (0.38)	-1.12*** (0.40)	-1.10*** (0.38)	-1.12*** (0.49)	-1.14** (0.49)	-0.42 (0.29)	-0.34 (0.27)	-0.40 (0.28)	-0.33 (0.26)	-1.10** (0.48)	-0.93** (0.45)
AR(2)	0.14	0.14	0.14	0.14	0.07	0.08	0.81	0.84	0.82	0.84	0.54	0.72
Obs.	480	480	480	480	480	480	480	480	480	480	480	480

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.
 Note: Standard errors are in parentheses (* $p < .1$, ** $p < .05$, *** $p < .01$). Blundell-Bond (1998)'s system GMM estimations.

The Two-Step System GMM “OFDI” Regression Models

Dep. Var.	Grw_GRP						Grw_Wage					
	All APEC		Developed APEC		Developing APEC		All APEC		Developed APEC		Developing APEC	
	GMM.13	GMM.14	GMM.15	GMM.16	GMM.17	GMM.18	GMM.19	GMM.20	GMM.21	GMM.22	GMM.23	GMM.24
Grw_GRP(-1)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)	-0.01 (0.04)						
Grw_Wage(-1)							-0.27*** (0.08)	-0.28*** (0.08)	-0.27*** (0.08)	-0.28*** (0.08)	-0.19** (0.08)	-0.23*** (0.08)
OFDI_APEC_ratio	12.39 (8.17)						6.44 (4.79)					
OFDI_APEC_ratio_Adj		8.23 (5.18)						3.45 (2.99)				
OFDI_APEC_ratio_developed			12.66 (8.27)						6.34 (4.81)			
OFDI_APEC_ratio_developed_Adj				8.40 (5.24)						3.41 (3.01)		
OFDI_APEC_ratio_developing					424.78 (365.50)						700.26** (334.46)	
OFDI_APEC_ratio_developing_Adj						304.35 (256.25)						397.82** (201.76)
Capital	-3.35*** (0.56)	-3.39*** (0.57)	-3.34*** (0.56)	-3.39*** (0.57)	-2.98*** (0.64)	-3.11*** (0.58)	-0.06 (0.49)	-0.01 (0.47)	-0.05 (0.49)	3x10-4 (0.47)	0.22 (0.51)	-0.15 (0.60)
Ln_POP	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.02 (0.01)
Openness	-1.13*** (0.41)	-1.11*** (0.38)	-1.12*** (0.40)	-1.10*** (0.38)	-1.12*** (0.49)	-1.14** (0.49)	-0.42 (0.29)	-0.34 (0.27)	-0.41 (0.28)	-0.33 (0.27)	-1.09*** (0.49)	-0.93*** (0.45)
AR(2)	0.14	0.14	0.14	0.14	0.07	0.08	0.86	0.88	0.87	0.88	0.53	0.69
Obs.	480	480	480	480	480	480	480	480	480	480	480	480

Source: Authors' calculations based on data from the Federal State Statistics Service of Russia and the Central Bank of Russia.
 Note: Standard errors are in parentheses (* p < .1, ** p < .05, *** p < .01). Blundell-Bond (1998)'s system GMM estimations.