



HIGHER SCHOOL
OF ECONOMICS

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Export Promotion Programmes as a Factor in the Growth of High-Tech SMEs: Evidence from Russia

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Motivation of the Research



NATIONAL DEVELOPMENT GOALS FOR 2030 AND 2036

Decree of the President of the Russian Federation No. 309 dated 7 May 2024

SUSTAINABLE AND DYNAMIC ECONOMY, TECHNOLOGICAL LEADERSHIP

Targets

- **ensuring an increase** in the volume of exports of non-commodity, non-energy goods by at least two-thirds by 2030 compared to the 2023 figure
- **stimulating real income growth** per employee of small and medium-sized enterprises in 2024–2030 to be 1.2 times higher than gross domestic product growth
- **increasing the revenue** of small technology companies by at least seven times by 2030 compared to 2023 levels



The need to **estimate the effects** of existing export promotion programs for high-tech small and medium-sized enterprises (SMEs) for decision-making on policy improvements

Research Problem

PURPOSE

To assess the impact of **non-financial export support measures** on the economic performance of high-tech SMEs

METHODS

Quantitative analysis of performance indicators of export-oriented firms using **propensity score matching** and **difference-in-differences** methods

HYPOTHESIS

Export-oriented SMEs receiving (1) **informational**, (2) **educational**, (3) **consulting**, (4) **promotional-organizational** support, and (5) **their mix** demonstrate higher growth in revenue and number of employees, reduction in costs than companies that did not receive such support

DATA SOURCES

- **Unified register of SMEs** receiving government support, the Federal Tax Service of Russia
- Information about companies and their financial statements from **SPARK-Interfax**
- Websites of regional **Export Support Centers**



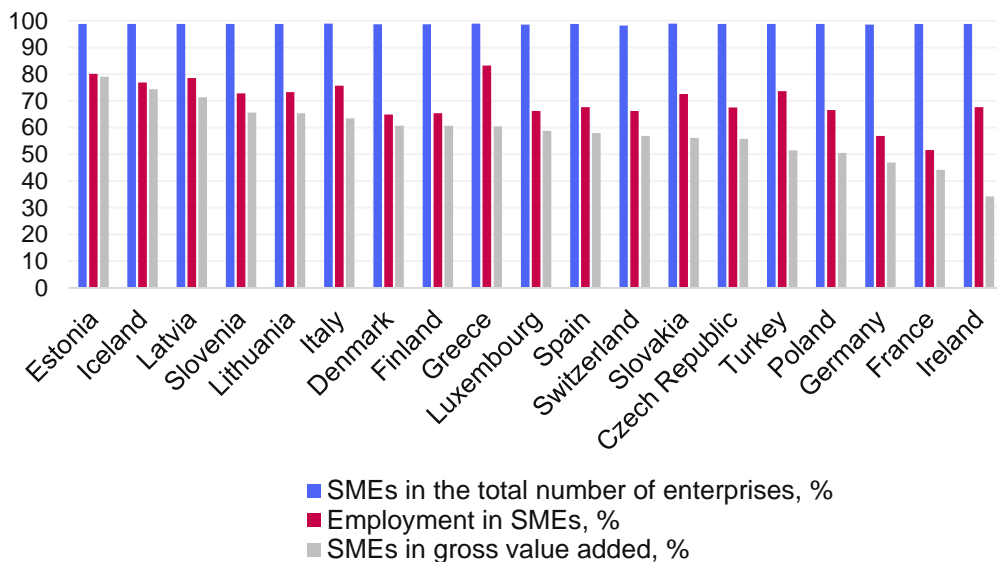
1. Theoretical Background



Role of SMEs in the Economy

Small and Medium-sized Enterprises in the World

The contribution of SMEs to the economies of European countries, 2022



Source: [OECD, 2023](#)

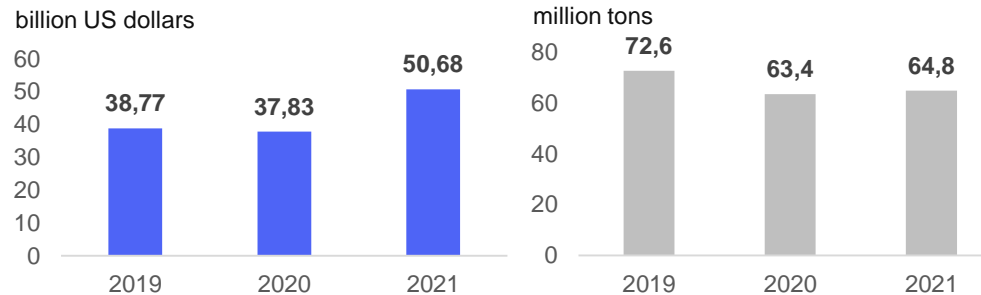
Small and Medium-sized Enterprises in Russia

6.59 million
entities in 2024
(71.5% of all commercial organizations)

21.7%
the share of SMEs in GDP in 2023

₽30.3 trillion
gross value added created by SMEs in 2023

Results of SME foreign trade for 2019–2021 (non-resource exports)



Source: [Report on the state of SMEs in the Russian Federation and measures for their development, 2024](#)

Benefits of export activities for the development of SMEs:

- Growth in productivity and profitability – «exporter premia» (Atkin et al., 2017; Revindo et al., 2019)
- Improving innovation efficiency, learning through export (Knight & Cavusgil, 2004; Love et al., 2013)
- Market diversification, increasing resilience in times of crisis (Bodlaj et al., 2020; Máñez, 2022)



Need for government support



Impact of Export Promotion Programs on SMEs' Exports

Countries	Sample and data collection method	Target variables	Methods	Support type and effects	Additional factors	Authors
<i>Developed:</i> France, Portugal, Republic of Korea, Italy, Netherlands	150–500 SMEs that received support; survey data OR	Share of exports in total production	Path analysis (path coefficients method)	<i>Educational</i> (-, n.s., +, n.s., n.s.)	<i>General firm characteristics:</i> size, age, number of employees, state/private ownership, capital	Heriqbaldi et al., 2023; Catanzaro & Teyssier, 2021; Mota et al., 2021; Mata et al., 2021; Faroque et al., 2021; Cin & Choe, 2022; Karage et al., 2021; Comi & Resmini, 2020; Imiru, 2021; Malca, et al., 2020; Jaiswal, 2023; Safari et al., 2022, Van den Berg 2022
		Duration of export activity	Structural Equation Modeling (SEM)	<i>Informational</i> (+, n.s., +, n.s., n.s., +, +)		
<i>Developing:</i> Malaysia, Bangladesh, Nigeria, Ethiopia, India, Peru, Qatar, Indonesia	200–20,000 SMEs, both supported and unsupported; data from financial statements, export declarations, statistical and customs authorities, SME development institutions	Volume of export sales (revenue)	Generalized Least Squares with random effects (GLS)	<i>Consulting</i> (+)	<i>Presence of previous foreign trade experience</i>	
		Share of export sales in total sales	Partial Least Squares Method (PLS-SEM)	<i>Financial</i> (+, +, n.s., +, +, n.s., +, +, +)		
		Export profitability	Difference-in-Differences (DID)	<i>Promotional-organizational</i> (+, +, n.s., +, +, +, +)		
		Export competitiveness (development of new products for export or adaptation of existing ones to foreign market conditions)				
					<i>Access to non-governmental export support infrastructure:</i> services of commercial and insurance banks, large trading companies	
					<i>Access to other government support measures</i>	
					<i>External economic shocks, post-crisis period</i>	

Notes: + – positive effect, – – negative effect, n.s. – not significant

Source: compiled by the author



Impact of Export Promotion Programs on SMEs' Economic Performance

Countries	Sample and data collection method	Target variables	Methods	Support type and effects	Additional factors	Authors
<i>Developed:</i> Republic of Korea, Denmark, Croatia, United Kingdom	600-21,000 SMEs, both supported and unsupported; data from financial statements, export declarations, statistical and customs authorities, SME development institutions	Total assets Sales (revenue) Operating profit Value added per employee Number of employees Total factor productivity	Difference-in-Differences with Propensity Score Matching (PSM-DID)	<i>Financial</i> (+, +, +, n.s.) <i>Consulting</i> (+, +)	<i>General firm characteristics:</i> size, age, state/private ownership <i>Presence of previous foreign trade experience</i> <i>Innovativeness:</i> registered intellectual property, R&D investments <i>Access to other government support measures</i> <i>External economic shocks, post-crisis period</i>	Hur & Yoon, 2021; Munch & Schaur, 2018; Srhoj & Walde, 2020; Akgündüz et al., 2018; Baily et al., 2023

Notes: + – positive effect, – – negative effect, n.s. – not significant

Source: compiled by the author

Research gap:

- Limited studies on the impact of non-financial support measures on SMEs' economic performance
- Insufficient attention to SMEs in high-tech industries
- Lack of estimations of export support measures during the crisis period related to lockdowns in the COVID-19 pandemic



2. Research data, methodology and results



Specifics of Supporting SMEs' Exports in Russia

The Case of the Russian Export Center and Regional Export Support Centers

Federal level

Russian Export Center (REC, Part of the VEB.RF Group) provides:

- **financial export promotion** measures (implemented through the Ministry of Industry and Trade of the Russian Federation)
- **non-financial** measures (e.g. foreign market analytics, educational courses, assistance with export deliveries, business matching)
- **comprehensive programs** (brand «Made in Russia»)

Regional level

Regional Export Support Centers (ESCs)

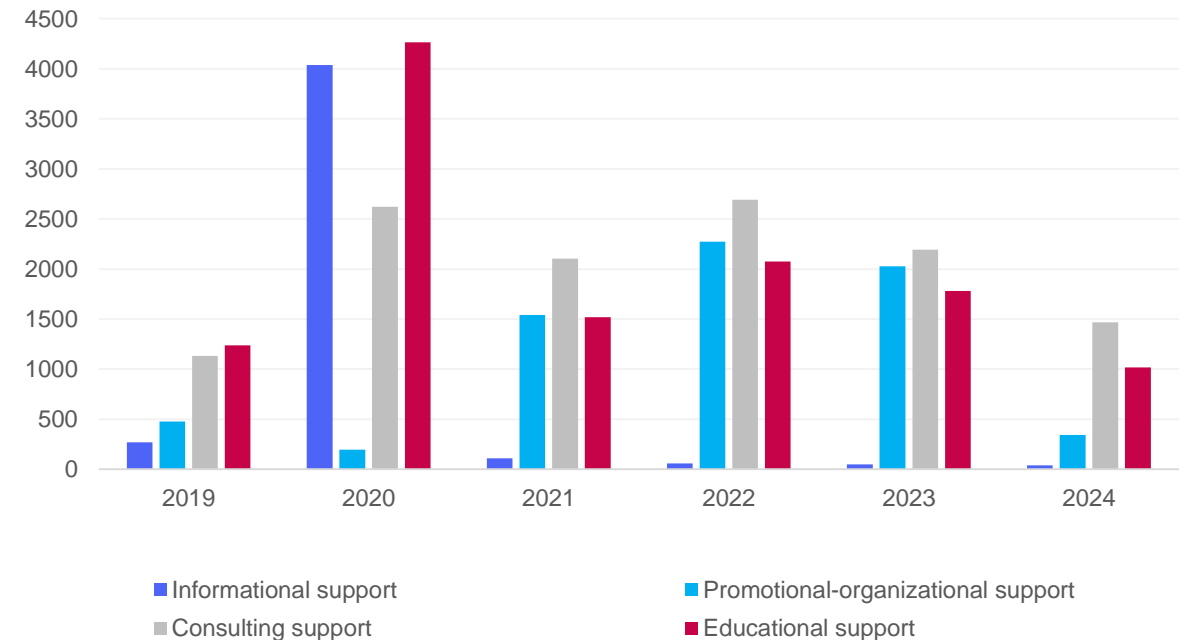
- Cover **82 regions** of the Russian Federation
- Primarily provide **non-financial support** to SMEs

Leaders in ESCs' effectiveness:

Moscow, Smolensk, Sverdlovsk, Samara, Omsk, and Kaluga Regions, and the Republic of Bashkortostan

Performance Results

Distribution of non-financial measures to support SMEs' exports, 2019–2024



Source: compiled by the author based on the Unified Register of SMEs Receiving Government Support, the Federal Tax Service of Russia



Estimated Support Measures

SUPPORT TYPES	NUMBER OF SUPPORTED SMES, 2020	HIGH-TECH SMES AMONG RECIPIENTS*
INFORMATIONAL SUPPORT	1215	28,0%
• Providing information	228	23,9%
• Linguistic support	26	5,7%
CONSULTING SUPPORT	2543	17,5%
• Comprehensive consulting services	1012	5,0%
• Consulting services in business development, marketing, sales, and procurement	786	5,7%
• Legal consulting	387	0,6%
• Consulting services for certification management and patent and licensing support	257	2,8%
• Others	719	0,5%
PROMOTIONAL-ORGANIZATIONAL SUPPORT	273	26,0%
• Organization of participation in trade fairs, exhibitions, and other events	165	15,8%
• Organization and/or implementation of business missions	125	11,4%
EDUCATIONAL SUPPORT	1856	21,0%
• Educational programs and modules	1041	15,8%
• Organization of seminars, trainings, conferences, forums, round tables, and business games	803	8,0%
• Professional training	12	0,1%

Source: compiled by the author based on the Unified Register of SMEs Receiving Government Support, the Federal Tax Service of Russia;
 * The subtotal across subcategories does not equal 100% due to the possibility of companies utilizing multiple support measures simultaneously

Research Methodology



Sample: 784 high-tech SMEs that received support (treatment group), 2678 SMEs that did not receive support (control group), data for the period 2017–2024

Analysis structure

Propensity Score Matching (PSM)

Approach:

- Calculation of the probability of companies entering the treatment group based on observed characteristics using logistic regression (**propensity score estimation**)
- Matching companies from the treatment group with those from the control group that have similar propensity scores (**nearest neighbor matching**)

Covariates: natural logarithm of revenue, staff, total expenses, and company age before support

Difference-in-differences (DID)

Approach:

- Calculation of the average difference in economic performance indicators separately for the treatment and control groups before and after the intervention
- Analysis of the difference between the average changes in performance indicators of the two groups
- Identification of factors affecting outcomes using linear regression

Helps to **eliminate the influence of time trends** and other factors, provided that the groups were similar before the intervention

Sample Formation

Treatment group

Criteria for company inclusion:

- **Classification as small and medium-sized enterprises:** average staff size in 2020 — 15–250 employees
- **Evidence of foreign economic activity:** availability of certificates and declarations of conformity with EAEU standards, participation in the “Made in Moscow” export catalog, regional exporters’ registries, information on signing the Charter of bona fide foreign economic activity participants
- **Belonging to high-tech and knowledge-intensive industries:** primary OKVED code in accordance with Rosstat Order No. 832 dated 15.12.2017

Control group

Similar criteria + application of the method PSM

Variable	Sample	Treatment group average	Control group average	t- statistics	SMD
ln_rev_0	Before PSM	18.7579	18.6806	1.6512*	0.0672
	After PSM	18.7579	18.7549	0.1219	0.0062
ln_staff_0	Before PSM	3.8972	3.4540	14.1767***	0.5461
	After PSM	3.8972	3.8887	0.2277	0.0115
ln_exp_0	Before PSM	18.7399	18.64025	2.0796*	0.0854
	After PSM	18.7399	3.9326	0.8003	0.0315
age	Before PSM	15.6990	14.2808	4.6605***	0.1857
	After PSM	15.6990	16.3724	-1.7532	0.0885

Notes: *** p<0.001, ** p<0.01, * p<0.05

Source: compiled by the author

Sample structure
by main economic
activities

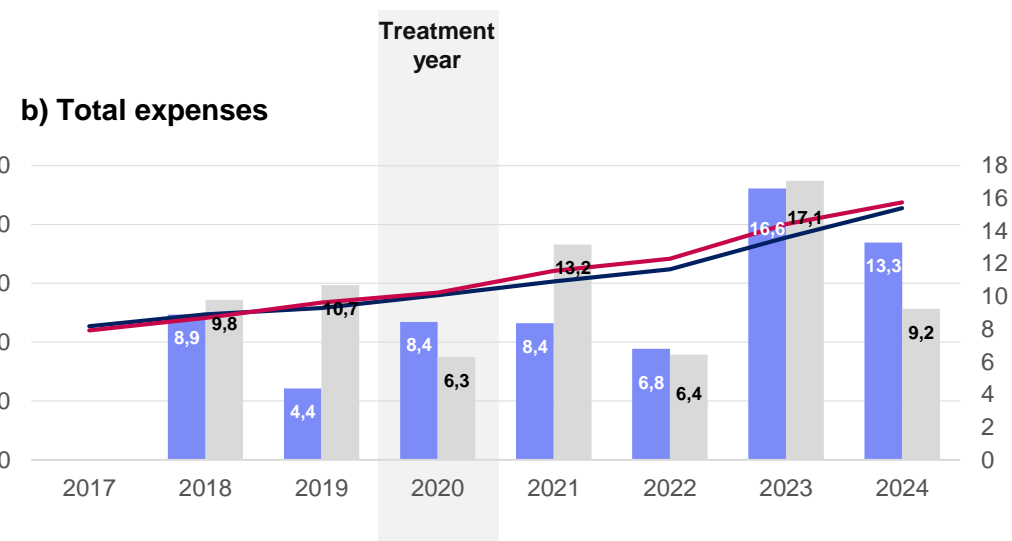
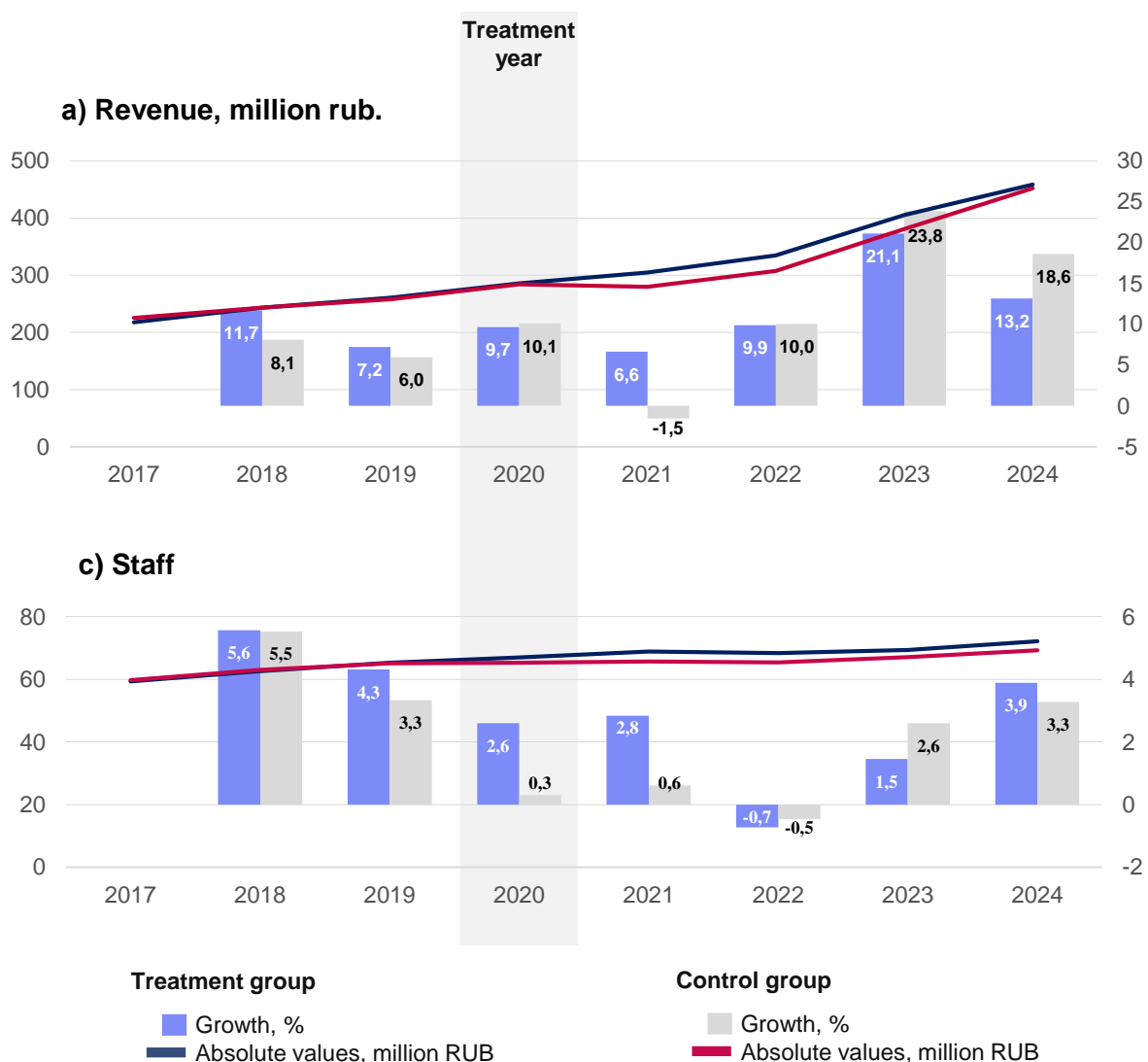
17,7% High-technology
industries

50,7% Medium-high-
technology industries

31,6% Knowledge-
intensive industries



Pre- and Post-Treatment Dynamics of SMEs Performance



- The **parallel trend assumption** is fully satisfied for all indicators
- In 2020–2021, control group showed slower revenue and employment growth with rising expenses, while treatment group maintained **stable positive dynamics**
- A noticeable gap in financial performance between the treatment and control groups persisted for **three years**, while employment remained roughly unchanged

Regression Model Specification

$$\ln Y_{i,t} = \underbrace{\alpha_i + \lambda_t}_{\text{Industry and time fixed effects}} + \overset{\text{ATT}}{\underbrace{b_1}_{\text{ATT}}} * D_{i,t} + \sum b_n * X_{i,t} + e_{i,t}$$

Variable	Description	Source
<i>lnY_{it}</i>	Economic indicators of firm i before (t = 0) and after (t = 1) government intervention:	SPARK-Interfax
ln_rev	○ Natural logarithm of average revenue in 2024 prices, RUB	
ln_staff	○ Natural logarithm of average number of employees	
ln_exp	○ Natural logarithm of total expenses in 2024 prices, RUB	
<i>D_{i,t}</i>	Dummy variable, <i>Treat_i × Post_t</i> where: <ul style="list-style-type: none"> ○ <i>Treat_i</i>=1 if company <i>i</i> belongs to the treatment group (i.e., was exposed to the intervention), and 0 otherwise; ○ <i>Post_t</i>=1 if period <i>t</i> occurs after the intervention was introduced, and 0 otherwise. 	Unified register of SMEs receiving government support, the FTS of Russia
X	Vector of control variables	SPARK-Interfax
age	Firm age, years	
ln_ta	Natural logarithm of total assets in 2024 prices, RUB	
roe	Return on capital, share	
ip	Presence of registered intellectual property (excluding trademarks) (1/0)	
site	Website presence (1/0)	
infr	Operating in a region with well-developed export support infrastructure (1/0)	Ranking of the Russian Export Center

Estimated Effects of Government Export Support

Variable	ln_rev	ln_staff	ln_exp
post	-0.0753** (0.042)	0.0589*** (0.029)	0.0369* (0.020)
treat	0.0147 (0.014)	0.0589 (0.029)	0.0284 (0.040)
treat*post (D)	0.1092*** (0.034)	0.0437* (0.018)	-0.0656* (0.029)
age	-0.0015 (0.002)	0.0139*** (0.002)	-0.0008 (0.002)
ln_ta	0.6869*** (0.015)	0.2565*** (0.010)	0.6889*** (0.015)
roe	0.0016 (0.001)	0.0002 (0.0001)	0.0006 (0.001)
ip	0.0392 (0.039)	0.0633* (0.028)	0.0391 (0.038)
site	0.1229** (0.043)	0.0886** (0.030)	0.0778* (0.040)
infr	0.0089 (0.043)	0.0255 (0.032)	0.0108 (0.042)
Time fixed effect	YES	YES	YES
Industry fixed effects	YES	YES	YES
Intercept	6.0564*** (0.272)	-0.9590*** (0.071)	5.9652*** (0.268)
N	11128	11128	11128
R ²	0.628	0.393	0.640
R ² adj.	0.628	0.392	0.639
F-statistic	996.1	587.1	980.7
p-value	0.000000	0.000000	0.000000

- A moderate effect of government export support is observed on **revenue and employment growth** of high-tech SMEs, along with a **reduction in total expenses** relative to the control group
- **Higher revenue** is more typical for organizations with larger assets and website
- **A less pronounced effect** is observed on employment, which may be due to a reduction in the hiring of new employees during the lockdown period and their outflow in 2022
- Export support had a **negative effect** on SMEs' total expenses likely due to cost optimization from acquiring knowledge about foreign markets

Notes: To ensure model robustness to heteroscedasticity and autocorrelation, standard errors clustered at the firm level were used; *** p<0.001, ** p<0.01, * p<0.05, ' p<0.1

Source: compiled by the author



Estimated Effects by Export Support Types

INFORMATIONAL SUPPORT (N=336)

Variable	ln_rev	ln_staff	ln_exp
post	-0.2019*** (0.031)	-0.3091*** (0.024)	0.2762*** (0.027)
treat	-0.0131 (0.060)	-0.1295* (0.056)	0.3258*** (0.089)
treat*post	0.1231** (0.040)	0.2112*** (0.031)	-0.2381** (0.088)

CONSULTING SUPPORT (N=424)

Variable	ln_rev	ln_staff	ln_exp
post	-0.0460* (0.022)	-0.0560*** (0.012)	0.0161 (0.018)
treat	0.0025 (0.045)	0.0018 (0.030)	0.0081 (0.040)
treat*post	0.0870* (0.038)	0.0365* (0.019)	-0.0395 (0.034)

EDUCATIONAL SUPPORT (N=373)

Variable	ln_rev	ln_staff	ln_exp
post	-0.0442* (0.020)	-0.0573*** (0.012)	0.0082 (0.018)
treat	0.0069 (0.047)	0.0251 (0.031)	0.0302 (0.014)
treat*post	0.0956* (0.042)	0.0497** (0.019)	-0.0103 (0.034)

PROMOTIONAL-ORGANIZATIONAL SUPPORT (N=69)

Variable	ln_rev	ln_staff	ln_exp
post	-0.0279 (0.019)	-0.0465*** (0.011)	0.0401 (0.052)
treat	-0.0687 (0.090)	0.0125 (0.100)	0.0122 (0.109)
treat*post	0.1169 (0.091)	0.0008 (0.053)	-0.0827 (0.070)





MIX OF SUPPORT TYPES (N=392)

Variable	ln_rev	ln_staff	ln_exp
post	0.0883' (0.059)	-0.1935*** (0.050)	0.0401 (0.052)
treat	0.2788* (0.115)	0.0256 (0.095)	0.0122 (0.109)
treat*post	0.0748 (0.071)	0.0953 (0.058)	-0.0827 (0.070)

Notes: To ensure model robustness to heteroscedasticity and autocorrelation, standard errors clustered at the firm level were used; *** p<0.001, ** p<0.01, * p<0.05, ' p<0.1
Source: compiled by the author

- Additionally, a robustness check was performed using a placebo test

Conclusions

-  A moderate **increase in revenue and employment**, along with a **reduction in total expenses**, was observed for recipients of non-financial export support in high-tech industries compared to the control group
-  Among specific types of measures, **information services** proved **most effective** in the medium term, while consulting, educational, and promotional-organizational support showed less pronounced effects
-  Additional factors contributing to SME growth included total asset availability, innovativeness (IP as indicator), and presence in digital space
-  Export support measures of the Russian Export Center and regional Export Support Centers helped **restore SME business activity after the pandemic**

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

- Lack of publicly available firm-level export data → future use of exporter surveys as a data source
- Analysis of government export support limited to 2020 → analysis of the change in effect over time and assessment of other SME support programs cross-effects



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