
332.14+330.43

: , 2017, 1 (93), . 78–100

M. . , . .

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2005–2013 . -

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[3].

([5; 7; 18], (knowledge spillover), [6; 14].

[21], [12], 1992 [11]

([17]. [25].

19], [20] [8;

$R\&D_{i,t} -$

$SocFilter_{i,t} -$

$Spill_{i,t} -$

$ExtSocFilter_{i,t} -$

$ExtGDPpc_{i,t} -$

$i,t -$

» « (SocFilter) «

1) $(rd_l), \%$

2) $(agri_l_n), \%$

3) 30 $(young), \%$

4) $(unemp), \%$

5) 2009–2013 $(high_ed), \%$

46%

2

300;

0,5;

:

, 2017, 1 (93)

(component score coefficient matrix)	SocFilter	SocFilterIn
<i>unemp</i>	0,165	-0,555
<i>high_ed</i>	0,581	-
<i>rd_l</i>	0,450	0,214
<i>agri_l_n</i>	-0,263	-
<i>young</i>	-	0,210
<i>indust</i>	-	0,552

30 , , -
 » (. 1), -
 0,5. -
 2 « » (SocFilterIn) -
indust (-
) *agri_l_n*. -
 41% . -
 1 , -
 , .
Spill. , , .
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 , [2].
 (accessibility index), [24].
 :

0,8; 0,00001;
 ; ;
 - 0 0,05; - -
 - 0,5.

$$A_i = \prod_j g(W_j) f(c_{ij}), \quad (2)$$

$g(W_j)$ – (impedance function); $f(c_{ij})$ – (activity function);

$$f(c_{ij}) = \frac{1/d_{ij}}{\prod_j 1/d_{ij}}, \quad (3)$$

d_{ij} – i, j [20].

ExtSocFilter.

[19].

ExtSocFilter

Spill,

SocFilter (*SocFilterIn*).

ExtGDPpc.

(2),

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«B

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3

2000 .

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(1) $K(\dots), L(\dots) \subset A(\dots)$.
 K, L

(1)

\mathbb{R}^2 ,
 « » « »

SocFilterIn
 L , (1)

1.

2.

. 2014»),
2005–2013 .

80

(« 4

(1)

$\log(y_{i,t})$.

. 2.

1 2

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) [13].

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4

5

(1)

«		», 80		, 2005–2013	
		1,	2,		
		- 640	- 640		
2		-16,947*** (1,823)	-10,002*** (1,692)		
1		2,402 (1,691)	-		
	1	-	-0,017 (0,098)		
	1	1,077 (1,625)	-		
1		-	-1,341 (1,776)		
	1	56,118*** (6,191)	-		
1		-	5,182*** (1,200)		
	1	14,462** (4,198)	-		
	1	-	-15,539*** (3,430)		
1		0,000027** (0,000011)	0,00000 (0,0000)		
		147,898*** (20,774)	117,694*** (18,544)		
		F(6,79) = 44,49 [0,0000]	F(6,79) = 22,08 [0,0000]		
R ²		0,0256	0,0499		

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vce(robust));

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 [16].
 (1) -
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 1, 2.
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ExtGDPpc 1
 0,000027 . . .
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 . R² 1 2,56%.
 2, ,
 : R² = 4,99%.
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7 , [9].

(K)

R^2 .

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-
3

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[1]

100 « »⁸

2009–2011 .

R^2 ,

(L

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« , , 1 » «
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« 1 » « 1 » (>0,75).

3

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8

3

100 .

« » , 80		- « , 2005–2013 .
		3, - 640
2		-14,556*** (1,644)
	1	2,976** (1,485)
	1	-2,234 (2,124)
	1	40,500*** (5,737)
1	-	-11,579** (3,259)
	1	-4,53 10 ⁻⁶ (0,0000)
1		-0,048 (0,031)
,	1	0,368*** (0,076)
		127,057*** (17,500)
		F(8,79) = 29,24 [0,0000]
R ²		0,0743

:
 vce(robust);
 ** , *** - 5%- 1%- ;
 (3) : 1)
 sigmamore: Chi2(8) = 161,75, Prob > chi2 = 0,0000; 2) F-
 : F(79,552)=3,60, Prob>F=0,0000; 3)
 (xttest3): chi2(80) = 1208,36, Prob > chi2 = 0,0000; 4)
 (xtserial): F(1,79) = 12,875, Prob > F = 0,0006.

2,98 . . .

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0,37 . . .

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(p-value = 0,126),

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R²

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7,43%.

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(omitted variable bias)

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[4].

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(1),

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Stata 12⁹,

MM

.4¹⁰.

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[20].

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10

xtabond2 [22].

AR(1)

«		», 80	, 2005–2013	–
			– 560	
	1		–0,028 (0,049)	
	2		–0,275*** (0,054)	
		1	–11,206*** (2,688)	
			1,038* (0,529)	
()	0,750 (2,166)	
			–0,117 (2,108)	
–			–18,964*** (4,206)	
			0,0001*** (0,00002)	
			124,930*** (28,530)	
–		AR(1) (p-val)	0,000	
–		AR(2) (p-val)	0,313	
		(p-val)	0,000	
		(p-val)	0,323	
–		(p-val)	0,380	
–			79	

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GMM

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10% - 1%-

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// . -2012. - .6, 4. - .20–31.
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M.A. Kaneva, G.A. Untura

**THE RELATIONSHIP BETWEEN R&D, KNOWLEDGE
SPILLOVERS AND DYNAMICS OF ECONOMIC GROWTH
OF THE RUSSIAN REGIONS**

The current study examines interrelations between economic growth in the Russian regions, scientific research, and innovation activities. To analyze the relationship, we used an econometric modeling technique: a fixed effects panel regression and the Arellano–Bond model based on data for the period from 2005 to 2013. In the study, we tested hypotheses about significant effects of knowledge and socioeconomic conditions on regional growth, used expenditure on R&D and expenditure on technological innovations as measures of knowledge spillovers for their analysis, and calculated socioeconomic spillovers based on a socioeconomic filter. Regression results demonstrated a possible competition for labor in the manufacturing sector when this indicator was included in the socioeconomic filter. Our findings also confirmed the significance and positive effect of expenditures on technological innovations and their spillovers on economic growth in regions. Moreover, knowledge spilled more efficiently to regions with greater absorptive capacity, as well as among regions with a similar growth rate. We concluded that knowledge spillovers can have significant influence on the GRP growth rate. The results of the study can be used by regional governments when formulating innovation policies.

Keywords: economic growth; GRP; R&D; region; knowledge spillovers; technological innovations; dynamic modeling

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