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## Assessment of the fiscal effect of the tax reform options until 2019: the case of Russia

**Abstract.** The upcoming period is marked for Russian tax system with crucial reforms and restructuring. By 2019, the national tax reform of value added tax (VAT) and insurance premiums is expected to be completed. Three options of the proposed changes in tax rates will be considered in this article, as well as possible fiscal consequences for the national economy will be calculated. The purpose of the article is to assess fiscal effect of the three options for tax reform conducted until 2019. Computational-analytical method was used as the main one. Possible fiscal consequences for the national economy were calculated on the basis of three options of the proposed changes in tax rates. The study was conducted on the example of four taxes: value added tax, corporate income tax, personal income tax, and insurance premiums. Based on the calculations, the possible consequences of changes in tax rates are determined taking into account possible changes in consumer behaviour, systems approach to the investigation of the tax system, and the appearance of the feedback loop effect.

**Keywords:** Tax Reform; Tax; Value Added Tax; Corporate Income Tax; Personal Income Tax; Insurance Premiums; System Approach; Consumer Behavior; Feedback Loop Effect; Russian Fiscal Policy

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**Оцінка фіскального ефекту варіантів податкової реформи в Росії до 2019 року**

**Анотація.** Російську податкову систему очікують кардинальні реформи й реструктуризація. До 2019 року передбачено завершення національної податкової реформи в частині ПДВ і страхових внесків. У статті розглянуто три варіанти передбачуваних змін податкових ставок і розраховано можливі фіскальні наслідки для економіки країни. В якості основного методу застосовано розрахунково-аналітичний. На основі трьох варіантів передбачуваних змін податкових ставок розраховано можливі фіскальні наслідки для економіки країни. Дослідження проведено на прикладі чотирьох податків: податку на додану вартість, податку на прибуток організацій, податку на доходи фізичних осіб та страхових внесків. Визначено можливі наслідки в результаті зміни податкових ставок з урахуванням можливої зміни поведінки споживачів, системного підходу до дослідження податкової системи й виникнення ефекту петлі зворотного зв'язку.

**Ключові слова:** податкова реформа; податок; податок на додану вартість; податок на прибуток організацій; податок на доходи фізичних осіб; страхові внески; системний підхід; поведінка споживачів; петля зворотного зв'язку; російська податкова політика.

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**Оценка фискального эффекта вариантов налоговой реформы в России до 2019 года**

**Аннотация.** Российскую налоговую систему ожидают кардинальные реформы и реструктуризация. К 2019 году предполагается завершение национальной налоговой реформы в части НДС и страховых взносов. В данной статье рассмотрены три варианта предполагаемых изменений налоговых ставок и рассчитаны возможные фискальные последствия для экономики страны. В качестве основного метода применялся расчетно-аналитический. На основе трех вариантов предполагаемых изменений налоговых ставок рассчитаны возможные фискальные последствия для экономики страны. Исследование проведено на примере четырех налогов: налога на добавленную стоимость, налога на прибыль организаций, налога на доходы физических лиц и страховых взносов. На основе проведенных расчетов определены возможные последствия в результате изменения налоговых ставок, с учетом возможного изменения поведения потребителей, системного подхода к исследованию налоговой системы и возникновения эффекта петли обратной связи.

**Ключевые слова:** налоговая реформа; налог; налог на добавленную стоимость; налог на прибыль организаций; налог на доходы физических лиц; страховые взносы; системный подход; поведение потребителей; эффект петли обратной связи; российская налоговая политика.

1. Introduction

The upcoming three-year period is marked for the Russian tax system as a period of crucial reforms and restructuring. By 2019 the national tax reform of value-added tax (hereinafter VAT) and insurance premiums is expected to be completed. We consider three options of the changes in tax rates.

Option 1. Compulsory payments to the social insurance system at the rate of 22% with levying from the entire payroll (cancellation of «thresholds»), increase of the VAT rate to 20%, and abolition of preferential rates in the 10% (hereinafter «option 1»).

Option 2. Aggregate payments to the social insurance system at the rate of 21% with levying from the entire payroll (cancellation of «thresholds»), VAT at 21%, and cancellation of preferential rates in the 10% change (hereinafter «option 2»).

Option 3. Aggregate payments to the social insurance system at the rate of 21% with levying from the entire payroll (cancellation of «thresholds»), VAT at 20%, while maintaining preferential rates, applying trade fee in all regions, and raising the personal income tax to 15% (hereinafter «option 3»).

2. Purpose of the research is to assess the fiscal effect of three options for tax reform conducted until 2019 in Russia.

3. Brief Literature Review

The issues of taxation, fiscal policy and reforms are widely discussed in scholarly research. It is worth to mention the handbook edited by Greg N. Gregoriou (2007) on policy, practice, standards, and regulation in international taxation, and study of public finances by R. Tresch (2014).

The issues of tax and fiscal reforms are investigated in their different aspects in the researches by A. Keinsley (2016) for the USA, Z. Yang (2016), and W. Xing & J. Whalley (2014) for China, J. R. Afonso, E. C. Araújo & B. G. Fajardo (2016) for Brazil, K. Gangl, B. Torgler, E. Kirchler & E. Hofmann (2014) for Austria, P. Semerád (2016) for the Czech Republic, and I. Hajdúchová, M. Sedláčiková & I. Vizslai (2015) for Slovakia.

4. Results

From the standpoint of theoretical foundation for the chosen forecasting methodology, we accepted the following:

1. When choosing the industries for investigation, the size of employees' wages was taken into account.
2. The entities of the industries under investigation are not paying the trade fee, thus this fiscal payment was excluded from the calculation of the effectiveness of the third option of the tax reform.
3. During the calculations, the analysed indicators were indexed for the inflation rate planned for 2017 (4%).
4. Evaluation of tax reform options effectiveness was estimated by the computational-analytical method, used in conditions of multi-optional planned events and insufficient verifiability of data.

The methodology of calculation of the final changes is based on the following indicators:

1. The change of taxes and fees volume paid by the industry (in %), calculated by the following formula:

$$Dvt = \frac{V_{nr}}{V_{d2016}} * 100, \tag{1}$$

where *Dvt* - changes of taxes and fees volume paid by the industry,

*V<sub>nr</sub>* - planned amount of revenues from taxes and fees in the industry after the tax reform,

*V<sub>d2016</sub>* - volume of taxes and fees received (only taxes considered under this option are taken) for a certain industry in 2016.

2. The share of taxes with the changing tax rates in the total amount of taxes and fees received for certain industry (in %), calculated according to the following formula:

$$Dvt = \frac{V_{nr}}{V_{d2016}} * 100, \tag{2}$$

where *Dvt* - changes of taxes and fees volume paid by the industry,

*V<sub>nr</sub>* - planned amount of revenues from taxes and fees for the industry after the tax reform,

*V<sub>d2016</sub>* - total amount of taxes and fees received from a certain industry in 2016.

Actual data of the taxes and fees levied into the budget of Russian Federation in 2016 according to the data of the Federal Tax Service of Russia was used in the calculation. The exchange rate of the Central Bank of Russia was used for transferring results in euro, the period taken is from December 31, 2016 to January 9, 2017 (63.8111 RUB/EUR).

Thus, according to option 1, due to the payments to the Pension Fund of Russia (PFR), Social Insurance Fund (SIF), Federal Compulsory Medical Insurance Fund (FCMIF), total volume of falling out revenues in the six selected industries will total for 19.27 billion euro, with the corporate income tax at 3.86 billion euro; the volume of additional revenues from VAT, taking into account the changes proposed in option 1, will amount 55.56 billion euro.

Consequently, the total amount of budget losses will be 17.56 billion euro, or 16.4% of the tax revenues for the industries selected.

Under the option 2 total volume of fall short revenues for the selected industries as a result of the changes in the tariffs of insurance premiums of PFR, SIF, FCMIF would be 21.68 billion euro, and corporate income tax - 4.34 billion euro; the volume of additional revenues from VAT would amount up to 7.15 billion euro. Thus, the total amount of budget losses would account for 18.87 billion euro, or 17.6% of the tax revenue for the industries selected.

The assessment of the cumulative economic effect of option 3 led us to the following conclusions:

1. The amount of the falling out income for the six industries analysed due to the payments to PFR, SIF, FCMIF will be 21.68 billion euro.

Tab. 1: Estimated income from payments to Pension Fund of Russia (PFR), Social Insurance Fund (SIF), Federal Compulsory Medical Insurance Fund (FCMIF), VAT, and corporate income tax in the consolidated budget of the Russian Federation, million euro (Options 1-3)

Industries	Option 1			Option 2			Option 3			
	Payments to PFR, SIF, FCMIF	VAT	Corporate income tax	Payments to PFR, SIF, FCMIF	VAT	Corporate income tax	Payments to PFR, SIF, FCMIF	VAT	Personal income tax	Corporate income tax
Real estate transactions, renting and service provision	12,447.77	10,003.76	4,049.46	11,881.97	10,537.89	3,936.30	11,881.97	8,596.00	8,467.12	3,936.30
Manufacturing	11,794.67	10,907.9	7,413.919	11,258.55	1,1485.46	7,306.69	11,258.55	9,431.10	8,041.82	7,306.69
Public administration and military security; Compulsory social security	9,637.506	640.8262	-649.858	9,199.44	699.15	-737.47	9,199.44	261.33	6,571.03	-737.47
Transport and communication	7,373.89	4,932.502	2,422.084	7,038.71	5,199.24	2,355.05	7,038.71	4,197.92	5,027.65	2,355.05
Education	6,416.482	377.9543	-398.066	6,124.82	414.35	-456.40	6,124.82	130.16	4,374.87	-456.40
Financial activities	5,323.036	2,042.266	7,344.153	5,081.08	2,158.90	7,295.76	5,081.08	1,663.83	3,629.34	7,295.76
Total	52,993.36	28,905.21	20,181.69	50,584.57	30,494.99	19,699.93	50,584.57	24,280.36	36,131.83	19,699.93

Source: Calculated by the authors

2. The drop in income from corporate income tax, produced by the increase in the costs accepted for calculating this tax in the form of insurance premiums, will be up to 4.34 billion euro.
3. The volume of additional revenues from the value-added tax will account for 0.934 billion euro.
4. The volume of additional income from the income tax will be 6.022 billion euro.

Thus, total budget loss under option 3 will account for 19.06 million euro, or 17.75% of the tax revenue for the industries selected. Our calculations showed that option 2 would lead to the biggest loss to the budget.

Further evaluation of the tax reforms efficiency has been conducted (Table 2).

Tab. 2: Assessment of the effectiveness of tax reform options, %

Industries	Option 1		Option 2		Option 3	
	1*	2**	1*	2**	1*	2**
Real estate transactions, renting and service provision	88	63	87	63	88	79
Manufacturing	90	49	90	49	90	59
Public administration and military security; Compulsory social security	72	50	68	48	81	79
Transport and communication	86	63	86	63	88	80
Education	72	47	68	45	81	75
Financial activities	89	73	88	72	90	87

Notes: \* - indicator of effectiveness evaluation shows changes in the volume of taxes and fees paid by industry (methodology 1).  
 \*\* - share of taxes with varying tax rates in the total amount of taxes and fees received from a particular industry (methodology 2).

Source: Calculated by the authors

According to methodology 1, in the tax revenues for single industry the most significant reductions in fiscal payments are in education and public administration, with transport and communications at the second, real estate transactions, renting, and service provision at the third, financial activities at the fourth, and the least losses are in manufacturing - 90%. Thus, the largest losses will be laid on the industry, whose goods, products and services are currently levied at a reduced tax rate of VAT.

According to the methodology 2, in the percentage of total tax revenues for single industry the most significant cuts in volume of fiscal payments showed by education, with manufacturing at the second place, public administration at the third, the fourth place - real estate transactions, renting and service provision, as well as transport and communications, financial activities closes up the list. On the one hand, it confirms the conclusion we obtained when evaluating the effectiveness of the first method, on the other hand, it shows that the least profitable, socially oriented and socially significant industries will suffer the greatest losses.

To assess the possible effects of VAT and insurance premiums tax reform we used a systems approach. Apparently, the decision to reform the tax system should be based on a systems approach, which is usually used in management and systems thinking. The system is considered as a whole item, and at the same moment as collection of its parts and relations between those parts. We may claim the following results of the tax reform effects: possible option changes in tax rates, considering the parts of the tax reform separately (Table 3).

Tab.3: Possible impacts of changes in tax rates

Change in tax rates	Impacts
Total mandatory payments to the social insurance system at a rate of 21-22% with levying from all payrolls (the abolition of «thresholds»)	Budget revenue loss, reduction of cash flows for the population social security, increase of the attractiveness of investment in business structures
VAT rate increase up to 20-21% and preferential rates of 10% are cancelled	Increase of goods cost, inflation, increase in the tax burden on the end user
Application of trading fees in all regions	Increase of goods cost, inflation, increase in the tax burden on the end user
Personal income tax increase up to 15%	Reduction of available funds of the population, reduction of the individual savings

Source: Compiled by the authors

The general trend of changes in tax rates leads to the following conclusion: predominance of indirect taxation ultimately increases the tax burden on the end user. During the first phase of implementation of the reform the increase of indirect taxes has a positive impact on producers, releasing free cash flows necessary for production development, making the country economy more attractive for investors.

During tax reforms, two rules of the systems management theory must be observed:

1. Taxes and taxation is a system, precluding stability and sustainability of its function, and of its elements' interaction.
2. Within taxation system the effect of the feedback loop emerges, which can have both positive and negative impact.

The mechanism of balancing feedback adjusts the difference between real and desired state of the system. After two years of the test application, the revenues will be the same as if the tax rates are not changed at all. It will just change the source of tax payments: after implementation of the tax reform, tax burden will increase for the end user (population of the country), but the main goal - economic development - will not be achieved.

According to M. Weber's classification system, the tax authorities identify the behaviour of the taxpayer-producer of the goods as goal-oriented behaviour. In particu-

lar, the expectation of certain behaviour from other people, goal-oriented behaviour, based on understanding, explanation of the motives and intentions of others, suggests the use of funds saved on taxes for production development.

As proven by the institutional economy, the behaviour of an individual does not take into account the preferences of other individuals who may affect his decisions. Often taxpayer's behaviour can be classified as opportunistic, where opportunism is the strongest form of motivation. According to new institutional economy, opportunism means adherence to one's interests including, but not limited to, such obvious tricks of deception as lies, theft, and fraud. The purpose of the taxpayer's opportunistic behaviour is to reduce the tax rate. Therefore, the conflict of interests interferes tax reform objectives. The main problem is that the state assumes that money released due to the reduction of insurance payments will be used for production development, while business entities can use it for non-production purposes. The companies may use money to create better conditions for top management, or to increase administrative apparatus, to increase wages for top managers, etc. As a result, production development would not be achieved, and the increase of indirect taxes will lead to some negative consequences.

The end-consumer's behaviour will also change, as the institutional economy is concerned, due to increase in the tax rates of VAT and personal income tax. According to M. Weber, there are four «ideal types» of behaviour [2, 628-629]: goal-rational, value-rational, traditional, and affective.

The behaviour of the Russian end-consumer can be classified as traditional, and the behaviour of the taxpayer - as optimising. Due to income reduction (an increase of personal income tax rate by 2%) and increase of prices (the application of a trade charge and the increase of VAT up to 20-21%), common habit to increase money saving will emerge. It will lead to further growth of market competition, and to difficulties in sales markets. Negative consequences will also be connected with low efficiency of marketing tools used by Russian producers, comparing to Western companies, as well as due to the short-term period of habit formation (3 months). Moreover, after 8-10 months the

habits are turning to routine, as R. Nelson and S. Winter put it, established practice, an order of actions.

We should notice that internationally the practice of transferring the tax burden from production to consumption is a general trend for over the past 10-15 years. However, unlike in Russia, the tax manoeuvre includes VAT and corporate income taxes, but not the insurance premiums, which are the main pension systems worldwide. For instance, corporate income tax rate is constantly decreasing in Switzerland in the last years. Typical rates of corporate income tax in different cantons (regions) of Switzerland varies from 8 to 10.5% (KPMG, 2012), that makes it highly competitive comparing to the other European countries. In many OECD countries personal and corporate tax rates are reduced, while the taxation base and the contributions to social security system are increased. At the same time, there is general trend since 2006 to increase VAT rates, and it produces some positive effect. However, all OECD countries, excluding Australia and New Zealand, levied compulsory social insurance contributions on labour incomes, demonstrating strong general upward trend (Johansson et al, 2008).

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