**Annotation «Regional government expenditure efficiency evaluation for housing and utilities in Russia»**

The paper provides an efficiency evaluation method for consolidated regional budget expenditures in the field of housing and utilities services for the expenditures on utilities services and landscaping. Providing efficiency measure reflects ability of the regional authorities to produce goods at the lowest cost. Additionally, paper shows that expenditures transparency is one of the factors that have a positive impact on the public good efficiency. Transparency measured here as a share of the state procurements in expenditures as an alternative to capital funding and other expenditures.

There are number of problems with budget expenditures efficiency evaluation: we can’t observe the market price of the goods produced, since often only the state produces them, we don’t have an indicator of the result of the state's activity (as opposed to the indicator of profit for private firms), we don’t have indicators of the service provision quality. Therefore we evaluate efficiency with the DEA method (data envelopment analysis) [[1]](#footnote-1), which allows us to assess the comparative regional efficiency without introducing the production function directly. This approach is widely used[[2]](#footnote-2) for the public goods provision efficiency evaluation in the field of the urban environment[[3]](#footnote-3)[[4]](#footnote-4)[[5]](#footnote-5), which is to some extent analogous to housing and communal services. However, there is luck of researcher for Russian case.

In this research, we use a two-step approach, which is widespread in the literature: at the first step, using the DEA method, the efficiency of budget expenditures is estimated, and at the second step, the obtained efficiency estimation is used as a dependent variable for regression.

In efficiency evaluation per capita expenditures of the consolidated regional budget are used as input by the subsections utilities services and landscaping, corrected for the regional construction costs and summed up for the period 2015-2019. The indicators of the share of water, heating and sewerage networks that do not require replacement in the region for 2019 and the results of assessing subsections 3 and 4 of the urban environment quality index for 2019 are used as an output. Data on the urban environment quality index are aggregated at the regional level based on cities with a population of more than 50 thousand people indicators weighted to the population.

As a result of the assessment, we get 17 regions with maximum efficiency (equal to 1), and 12 regions with efficiency less than 0.3. The average efficiency is 0.61 with a standard deviation of 0.28.

As a variable of interest in the regression, the share of public procurement expenditures in the subsection of utilities services and landscaping is used. At the same time, the obtained efficiency assessment is controlled by factors that do not reflect the ability to effectively manage finances but affect the complexity of the provision of housing and communal services. Factors include: the average temperature in January, population density in cities, the share of housing and communal services paid for by the population, the utilities state in year 2015, dependence of regional budget expenditures on federal transfers. Regression is estimated using OLS and a tobit-model (to account for the restriction by 0 and 1 of the dependent variable).

The regression results show that the budget expenditures transparency really influences the efficiency of the housing and communal services: an increase in the share of public procurement in the field of utilities leads to an increase in the efficiency of service provision, all other being equal, the result is significant at the 1% significance level.

For the robust check we estimate the same separately for the utilities services and landscaping subsections, results also show a significant positive effect from a share of public procurement increase. Also, we use the share of other expenditures which is the least transparent instrument for spending funds instead of the share of public procurement,. The results show a significant negative impact of the share of other expenditures for the utilities sector efficiency at the 1% level, which confirms the earlier conclusion.

Thus, the work demonstrates that the transparency of the distribution of budget expenditures is associated with their efficiency.

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3. Afonso A., Fernandes S. Measuring local government spending efficiency: Evidence for the Lisbon region //Regional Studies. – 2006. – Т. 40. – №. 1. – С. 39-53. [↑](#footnote-ref-3)
4. Shih J. S. et al. Economies of scale and technical efficiency in community water systems. – 2004. – №. 1318-2016-103367. [↑](#footnote-ref-4)
5. Teresa Balaguer-Coll M., Prior D. Short-and long-term evaluation of efficiency and quality. An application to Spanish municipalities //Applied Economics. – 2009. – Т. 41. – №. 23. – С. 2991-3002. [↑](#footnote-ref-5)