Why is there a growth rate of population in large cities? What explains the constant migration of individuals from rural areas to cities, and from small cities to large ones? What incentives might they have? Among the multitude of explanations, which appeal, for example, to the consumer qualities of urban services (Glaeser et al., 2001) or the development of the creative class (Jacobs, 1969), urban economists often consider this issue, including from the perspective of characteristics of urban labor markets.

In economic terms, cities are first and foremost a zone of concentration of economic agents and firms. In this regard, both economists focusing on cities and administrators directly involved in urban management pay great attention to labor markets and the state of the workforce (Glaeser, Saiz, 2003). Labor markets have a unique characteristic: individuals determine the supply, while firms determine the demand. This inversion plays an important role in the competitiveness of urban economies as a whole: the workforce describes the position of urban society, which in turn becomes a determinant in the localization of worker-oriented firms (Gordon, Turok, 2005).

Large body of work in urban economics is dedicated to estimation of urban wage premium, which is traditionally described as wage differentials of workers of different labor market size. The premium occurs not only for average wage levels, but researchers find that identical workers gain this premium in larger and denser labor markets due to agglomeration economies (Ciccone, Hall, 1993; Glaeser, 1998, Combes et al., 2008; Carlsen et al., 2016).

The motivation of major research in the field, described by Glaeser and Mare (1994), and followed by Yankow (2006), is stated quite transcendental: getting an understanding of sources of the premium must answer the question why cities exist. While all of that is true for market economy, where firms and labor do allocate due to market reasons, applying the same logic to post-socialist cities must be explored, as non-market forces formed an urban economy. Thus, studying urban wage premium in post-socialist regions might give us some insights about continuing processes of urbanization and specifics of transformation of urban economies.

Existing empiric studies do not study presence of urban wage premium in Russian cities, a little is said in urban economics about agglomeration economies in Russian cities from in relation to urban labor markets. This paper aims to cover that gap in the research field. The study design follows classical works (e.g. Glaeser, Mare, 1994; Yankow, 2006), where estimation of the premium was conducted with consideration of individual observable and job characteristics. The study employs almost the only one existing microeconomic data for Russian individuals — data of the Russian Longitudinal Monitoring Survey of HSE on the Economic Situation and Health of the Population, using datasets from 2014 to 2019. We estimate urban wage premium for several groups of observations of labor market sizes: for cities with population over 1 million people, with population over 250 thousand people, with population over 50 thousand people, and Moscow (separately). Observations with population size of settlements below 50 thousand people are classified as "non-urban settlements". The methodology of the empirical part is based on constructing a series of regression models, in which explanatory variables of different nature are iteratively included: individual socio-demographic characteristics of workers, job characteristics, and, due to the existing interregional differences in life expenses, we include regional coefficients in the model to leverage interregional differentials in wages that might be caused by that.

We estimate the urban wage premium with consideration of observable characteristics of workers. Regression model is the following [1]:

[1] $$\ln W_{it} = \sum_{n=1}^{N} \alpha_n CHARACTERISTICS_{int} + \sum_{m=1}^{4} \beta_m URBAN_{imt} + \sum_{g=1}^{G} y_g YEAR_{igt} + \epsilon_{it}$$

where *lnW* is the logarithm of workers' hourly wage, the dependent variable, *CHARACTERISTICS* is a vector of individual characteristics of workers and their job, *YEAR* is a set of dummy-variables representing the observation years 2014-2019, *URBAN* includes 4 dummy-variables representing different city population groups, β represents the coefficients of the difference in the logarithm of workers' wage size in cities compared to workers in "non-urban settlements", and ε represents the error-term. The ordinary linear regression model [1] includes, on the first iteration, individual demographic characteristics and experience (1), then we added education level of individuals (2) as a proxy for human capital (to test the hypothesis of worker sorting in space), followed by the introduction of employment characteristic variables and more detailed individual characteristics (3), and on the final iteration, firm size (number of employees) is included to test agglomeration economies in firm concentration (4).

The key result of the regression analysis was the determination of the urban wage premium sizes for different urban labor market sizes, taking into account a wide range of controlled worker and job characteristics. Thus, the premium for Moscow is about 53.6%, for cities with population over 1 million people is estimated about 23.1%, for large cities — 8.8%, and for small cities — 6.8%. The results differ somewhat from those already obtained by researchers for European and American regions: premium values (without consideration of fixed effects) are estimated to be approximately twice as low for the capital and cities with population over 1 million people, and 1-2% lower for "large cities" (Yankow, 2006; D'Costa, Overman, 2014).

The obtained results allow us to make several conclusions:

1. There is a significant difference in sizes between the premiums of Moscow and cities over 1 million people: the urban wage premium in Moscow exceeds the premium in cities with a population of over 1 million people by 2.5 times, which may indicate the super-monocentricity of both the economy and the labor market in Russia. Such a gap in premium size has not been found in existing studies of the premium in studies of monocentric regions.
2. Sorting of human capital between local labor markets is either not observed or not captured by the identified worker characteristics, which needs to be explored in the later studies.
3. Premium estimations allow us to make conclusions about adaptation of Russian cities to market economy, though we cannot state, for sure, if the premium arises from agglomeration economies, as it was confirmed by various studies on the US and European data, given we could not confirm human capital accumulation in cities or sorting of that.

The study attempts to estimate the size of urban wage premium for Russian cities of different population sizes. The presence of the premium allows us to make conclusions about transformation of Russian urban labor markets as post-socialist ones in the market economy. Though we could not succeed in confirming agglomeration economies as the source of the premium, due to available dataset limitations, as well, we successfully found large premium in Moscow labor market, and comparable sizes of premia of large and small cities to similar markets in other regions.

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