Research Paper

Fiscal decentralization and economic growth: The case of Ukraine

Accepted 1st August, 2020

ABSTRACT

The study reveals a current situation on fiscal decentralization in Ukraine and its potential link to economic growth in the early stages of fiscal reform. Controlling for other alongside reforms, we checked the relationship between fiscal decentralization and the regional economic growth in a panel of 24 regions in a unitary state for more recent period 2014 - 2017. We applied the regional-level data set within the fixed-effects panel framework. The same analysis was employed to two groups of the regions categorized into two subsets according to GRP per cap growth means. Most importantly, the findings provided evidence that fiscal decentralization has a slightly cynical, statistically significant impact on regional economic growth in Ukraine. Identifying a detrimental causal relationship, from a policy perspective, we assumed that policy makers should be aware of the financial compromises when pushing ahead hasty administrative and fiscal reforms towards more decentralization. Besides, the following findings provide interest for future research in unitary ex-communist countries in transitioning processes to decentralization.

Key words: Fiscal decentralization, regional economic growth, countries in transition, revenue, local autonomy.

INTRODUCTION

Over the last several decades, fiscal decentralization (FD) changed into a central concern in many countries all around the world, especially in developing countries and countries in transition. FD is a widely spread concept in the theory of public finance, as well as a measure of reforming the public sector. Yet, in Ukraine, it is inconsistent. The empirical analysis of the relations between FD and economic growth gained in-depth scrutiny of many economists. Investigation on intergovernmental structure across different countries defines disparity in the degree of FD when comparing industrialized countries and countries with economies in transition. FD is often a constituent of a multi-faced reform on liberalizing and improving the efficiency of the public sector. Studies in this regard are numerous (Bird and Wallich, 1993a; Bird and Wallich, 1994; Lin and Liu, 2000; Tiebout, 1956; Musgrave, 1959; Oates, 1985, 1999; Brennan and Buchanan, 1980; Martinez-Vazquez and Thirsk, 2011; Kaiser, 2006; Schumacher, 1993; Rodden et al., 2003). The main factor that prompts countries in transition to switch to decentralization is the necessity to achieve better public management, and, external factors, to mention the impact of international organizations, policy perspectives, etc.

When analyzing the essence of FD, the first name that bears mentioning is Oates (1999), author of the decentralization theorem. Oates, along with Tiebout (1961), Samuelson (1954), Musgrave (1959), and Buchanan (1957), founder of fiscal federalism theory as a derivative theory of the public sector economy. In his 1985 study, Oates applied a cross-section sample of industrialized and developing countries. As such, he showed a drastic difference in terms of government spending and revenues, along with striking contrast in both the size and structure of the public sector comparing two groups of countries.
FD Initiative was launched by the Organization for Economic Co-operation and Development (OECD), the World Bank, the Council of Europe, the United Nations Development Program, the United States Development Assistance Agency, and so on. Thus, for the new members, decentralization becomes a chance to reveal real reforms aimed at the democratization and liberalization of public administration. So far, regarding the Central and Eastern European countries with transitive economies, the process of FD also reveals many problems and contradictions. The main objective is to resume economic growth while preserving the entire system of social guarantees in the provision of public goods (de Silva et al., 2009).

Thus, carrying out FD in the former socialist countries was marked by some progress. Still, the degree of decentralization varies significantly depending on: the degree of development of public systems, the fairness of the redistribution of financial resources, the quality of the dialogue between the central government and local authorities, and the strength of the political, economic and financial situation of the regions. To continue, researchers also highlight the “image-building” point: the new democratic governments aimed at getting rid of the phenomena associated with the communist past, one of which was extremely centralized governance (Sergeev, 2018; Rodrigues-Pose and Krøjer, 2009).

That is the experience of developing countries with transitive economies (India, Argentina, Brazil, Ukraine etc.), where local authorities were unable to solve the tasks shifted down adequately. Various reasons affect this issue (mainly due to the lack of necessary institutional conditions) and generally led to the discrediting of decentralized government (Larina, 2013; Shah, 2006; de Silva et al., 2009). In turn, federal states demonstrate the effectiveness of decentralization. As such, it is federal states where the degree of budget decentralization is high and macroeconomic indicators are stable. According to experts, those countries, in most cases, industrialized ones, increasingly approach the balance of “centralization – decentralization” (Martinez-Vazquez and Boex, 1999; Shah, 2010; Larina, 2013; Lunina, 2016; Samimi et al., 2010; Schultz, 2016; Shah, 2006; Tiebout, 1956; Volokhova, 2014). These achievements are based, first of all, on the politically correct, socially, and economically justified rules and mechanisms for coordinated distribution of powers and resources at the levels of administration.

We conjecture so far that FD is not a universal approach that unambiguously conducts to positive changes and fosters economic growth. But first, its effectiveness depends on local specifics, and on many other factors, those research has not receive much attention yet. The following study focuses on the analysis of the FD and its influence on the microeconomic indicators. In brief, comprehending the very place of fiscal reform in the growth process is crucial for reform prospects in transition economies, and is a vital concern of our research.

The particular aim of this study is to evaluate FD impact on economic growth in Ukraine in the initial period 2014–2017 that may appear similar for countries in transition with relevant conditions. The novelty and appropriateness of the research origins in the creation of a particular model that highlights the correlation between FD and regional growth for a shorter period striking off all the possible discrepancy including necessary control variables in the analysis and providing assessment of its consistency for countries in transition based on empirical findings.

Resting upon the review of the relevant literature, we provided a conceptual model and research hypotheses. The study is organized as follows: the methodological part develops the overall design and research model on data analysis, instruments, and verification of the validity of those instruments; The results sum up the initial results and validates the research hypotheses; The conclusion presents limitations, and outlines the future research perspective.

LITERATURE REVIEW

One of the trends in the ex-communist Eastern European countries is the transformation towards the decentralization of the fiscal (budgetary) system. FD is actively supported and promoted by the European Union (EU) and its institutions. Since deeper decentralization, as a rule, means a reduction in the central government apparatus, and therefore, leaves fewer opportunities for the state intervention in the economy. The FD as a multifactorial and multicomponent phenomenon, characterizes the development of modern inter-budgetary relations of any country, regardless of the degree of economic development or type of government.

The numerous empirical findings on the relationship between FD and economic growth, both from a cross-country and regional framework are contradictory and rely on the theory of Oates’s FD and Cobb-Douglas production function. To highlight, those outcomes depend entirely on methods applied (cross-section, panel data, time series), definitions of the FD trend and control variables, time horizon, etc. Researchers mostly proceed towards the topic in a comparative approach, referring to between countries’ comparisons, and in a long–perspective analysis, what we suppose may cause inconsistent results.

The main feature of those studies is the use of panel data for a large sample of countries for a discordant time-horizon. In numerous cases, it is not taken into account that the countries differ significantly both in terms of development and structural characteristics of the economy, as well as in terms of population, spatial variable, historical, regional, political, geographic preconditions, etc. For instance, several studies conclude that decentralization has
a positive effect on reducing regional inequality in more developed countries and negatively conducts to economic growth in developing countries (Rodríguez-Pose and Ezcurra, 2009). Kaiser (2006) emphasizes that the content of decentralization differs from country to country.

Until now, no consensus exists on the method that should be applied to determine which FD variables have a significant effect on economic growth, which sample is sufficient and which is not. Consequently, model uncertainty is arguably the most significant limitation of exploring data procedures. Typically, in our research, we developed a small sample size and set of models to generate data. The reason for that is the insignificance of the differences, which is relatively helpful to check and explain the actual effect of FD on regional growth, omitting various economic, social, geographical, political irregularities that may cause biased estimates and lead to a bounded conclusion.

Davoodi and Zou (1998) argued that the benefits and costs of FD should not affect annual growth fluctuations. They suggested estimating the regression from data averaged over five years. Meloche et al. (2004) asserted that given small sample size may result in limited degrees of freedom. Naumets (2003) suggests the omission from the regression of the factors that potentially lead to biased estimates. Nevertheless, to avoid the issue of omitted variable bias in the empirical analysis, it is necessary to include control variables in growth regressions. Anyway, FD is one of the essential institutional factors, but it is not a primary determinant of economic growth. Therefore, omitting from the regression analysis, the human capital or investment variable may also cause a bounded conclusion.

Barro (2001) suggests human capital variable as positively correlated to economic growth. According to Piven (2012), Buletsa (2015), the priority indicators for the socioeconomic development of the region are GRP and income of the population.

The studies on FD and growth relations are various. Some of them provided evidence that FD is effective in bringing about economic growth (Mankiw et al., 1992; Martinez-Vazquez and McNab, 2006; Akai and Sakata, 2002; Slavinskaite, 2017; Chu and Zheng, 2013; Yang, 2016; Kwon, 2011; Freinkman and Yossifov, 1999; Park et al., 2019; Lin and Liu, 2000; Buletsa, 2015). It boils down to the Oates ‘decentralization theorem’ (Oates, 1993: 240), the Leviathan hypothesis (Brennan and Buchanan, 1980: 211), the ability-to-pay approach (Musgrave, 1983), and the productivity enhancement hypothesis (Martinez-Vazquez and McNab, 2006).

There are other researchers who empirically proved that FD does not foster economic growth they are, Zhang and Zou (1998), Naumets (2003), Baskaran and Feld (2013), Yushkov (2014), Rodden et al. (2003), Gocen et al. (2017) and Stegarescu (2004). The big caveat, though, as far as the ambiguous effect of FD on economic prosperity is also widely elucidated (Desai et al., 2005; Thießen, 2003; Enikolopov and Zhuravskaya, 2007; Martínez-Vazquez and McNab, 2006; Hammond and Tosun, 2009; Cantarero and Perez Gonzalez, 2009; Kvasha, 2015). Rodríguez-Pose and Krøjier (2009) studied the relation of FD and economic growth in developing countries of central and Eastern Europe. They assumed that these countries often lack appropriate institutions, legal systems, or human capital. As such, in developing countries, the trends of FD (policy innovation, transparency, a better capacity of governments to adopt policies to local needs) are not likely to cause an increase in economic growth.

This took us to the very point that despite the widespread trend on beneficial effects of FD, there is still no clear evidence proving its necessity. The study mentioned above revealed there is no clarity on the decentralization degree that leads to a certain level of efficiency. To keep it short, comparatively less developed countries in the process of transferring towards FD face on a possibility of significant risks, such as, the influence of local lobbies, crises in the institutional sphere, irrational behavior of local governments’ representatives, etc. Overall, despite considerable efforts and numerous researches, the controversy on FD and economic growth relationship remains unsolved in countries in transition.

Data and econometric model

The basic idea of the current study, is to examine the effect of FD on regional economic growth in the framework of the production-function. To verify whether the changes in the fiscal system are conducive to regional growth, we applied a fixed-effects panel data regression on regional data set in 24 Ukrainian regions (oblasts) for the relatively short period of 2014–2017. We excluded the Crimea Republic due to data unavailability reasons. Through our analyses, we covered the whole initial and most recent period of fiscal reform in Ukraine, applied the data and the four years for reasons as follows: first, these data are consistent, the most recent and up-to-date obtained from the open public reports, published by public institutions in Ukraine. The data-set covers the period from the launching FD up to now and has a practical use for reform evaluations as well as conditions of economic and social crisis. Second, the effect of FD varies depending on numerous prerequisites, such as political decisions, selected data set and data analysis techniques, spatial and temporal horizons, regional disparities, etc. The data across our observations have no striking historical or cultural differences as it is the unitary state with even economic, social, and historical baseline. To catch up with remaining regional differences in resource environment, the decentralization indicators and control variables are added to the model. Based on a theoretical approach, we yet excluded the data on Kyiv city excluded...
the data on Kyiv city due to the significant differences in its characteristics.

The data for the variables of regional economic growth and income were manually collected from the open public sources of financial and economic statistics on Ukrainian regions. Namely, the National Bureau of Statistics of Ukraine, Ministry of Finance of Ukraine; the annual budget reports by the State Treasury Service of Ukraine, Ministry of Regional Development, Construction and Housing and Communal Services in Ukraine, and Financial and Economic Analysis Office in Verkhovna Rada of Ukraine, some additional statistics were obtained from World Bank annual reports.

Following the findings of some researchers, FD is measured by various indicators: expenditure decentralization, revenue decentralization, regional autonomy, borrowing power, and inter-governmental transfers. In this study, according to Jin and Zou (2005), we evaluated the relationship between FD and regional economic growth from three perspectives:

1) the FD measurements
2) the relationship between revenue and expenditure decentralization
3) levels of government.

The following are FD variables:

**DEC_rev**: Share of regional revenues in total state and regional revenues, %.

**Decentr1**: The share of local revenues (with no transfers) in local expenditures (autonomy of local budgets), %.

Nowadays, researchers widely modified popular economic growth models, in our research, we are fortifying at the most common analytical framework to intercorporate FD to regional growth is the Barro's model. So that, following Xie et al. (1999) Davoodi-Zou model, we also modified a production-function based framework of Mankiw et al. (1992); Lin and Liu model; Barro's and Cobb-Douglas production function; Akai and Sakata model, a government in an adopted Davoodi-Zou model is defined to have two tiers, state and local (regional). Notwithstanding, omitting human capital from the regression analysis may cause measurement errors and poor estimates. Barro (2001) suggests human capital as positively correlated to economic growth. Li and Liu (2005), Lin and Liu (2000) and Jin et al. (2005) applied quite the same conditioning variables in their regression analysis. By this, they confirmed a conditional convergence hypothesis that FD has a significant contribution to economic growth, and found evidence that fiscal incentives positively influence economic performance in China. Hsiao (2003) assumes to apply the fixed-effect model in cases when data sample contains a population variable. To check for the bias of result estimates, we conducted the Hausman specification test, to check for the insignificance of group effects, we performed the F-test.

The equalization is estimated by the fixed method on panel data regression on regional data set so that in general, the growth regression is adopted, as follows:

$$GRP_it = \alpha_0 + \alpha_1Decentralization_it + \alpha_2X_it + \delta^iSi + \mu_i + \lambda_i + \varepsilon_it,$$  

Overall, our panel data covered the 2014–2017 period in Ukrainian regions, where i refers to region i; t refers to time; GRPi represents the average annual per capita growth rate of gross regional product (GRP) for 2014-2017; Decentralization represents indicators of FD in region i; Xit is control variable comprising region characteristics which is a set of control variables (following Lin and Liu, 2000; Akai and Sakata; Yushkov, 2015). Si is a vector of 1 (= 24) region fixed effects (region dummies), the parameters are scalars, mu accounts for unobservable individual effect not included into regression, lambda is region-invariant and denotes unobservable time effect, and epsilon is an error term, which is assumed to be normally distributed, homoscedastic, and independent across observations.

Basically, we regressed the FD indicators as independent variables to test the effect of FD on economic growth. Thus, control variables: population growth rate over the period 2014–2017, the number of big, medium and small enterprises in the total population. Also, to capture the effects of accompanying reforms that are not directly evaluated due to the shortage of adequate proxies and to control for omitted variables bias, the year dummies are added to the regression models. And finally, to examine the impact of FD on the economic growth of different regions, we checked on two subsets of regions categorized into two groups according to the economic development by GRP per capital: so-called ‘developed regions’ and so-called ‘not-developed regions’. Besides, BUSINESS variable represents the meaningful reform for small business that has been implemented alongside with FD in 2014-2017, and may potentially correlate. The line of argument highlights it is sufficient to control for such a possibility when checking the direct effect of FD on economic growth.

The research hypotheses are denoted by H1-H4, as follows:

**Hypothesis 1 (H1):** Oates and his economic theory predicts that FD positively contributes to economic growth so we can assume that regional economic growth is alike, \( \alpha_1 > 0 \).

**Hypothesis 2 (H2):** The productivity enhancement hypothesis (Martinez-Vazquez and McNab, 2006) BUSINESS variable has a positive effect on GRP percap, the number of big, medium and small enterprises in total
population shows the transparency and regional economy openness, regional integration, and institutional factors contribute to regional economic growth.

Hypothesis 3(H3): Population as the measure of human capital quality increases economic growth, we expect POP to influence GDP growth positively.

Hypothesis 4 (H4): The ability-to-pay approach, Musgrave (1983), FD differently influences economic growth in regions depending on the level of economic development.

Econometric analyses include fixed effect framework, descriptive statistics, t-tests, Hausman test, Lagrange Brush-Pagan test, Wald test, Frees (1995), and Friedman (1937) test, Pesaran’s (2004) CD test, etc. The routine performed a subsequent scenario:

(1) Preliminary testing the impact of FD on economic growth in a fixed-effect framework.
(2) Various model testing hypothesis 1 - 4. For data analysis, we manually created a data set that was exploited employing the Stata software package, version 13.0 (StataCorp LP).

RESULTS AND DISCUSSION

The relationship between FD and economic growth has been a widely covered area of research in the last several decades. Typically, we developed a small set of models to generate the data. Besides, Hsiao (2007) defines that panel data is advantageous for the evaluation of social programs and “it can allow the individual-and/or time-specific effects to be correlated with explanatory variables” (Hsiao, 2007: 9). In our study, we applied the fixed-effects framework because it accounts for the unobserved heterogeneity, the entire set of time-invariant factors, is implicitly controlled throughout fixed effects.

Earlier in this research, we applied panel data for four periods to investigate the effect of fiscal reforms on regional economic growth under the new fiscal regime. Thus, the data allow us to control for variables or measures we cannot observe like national policies, local regulations, and the data also account for individual heterogeneity. So, the simple endogenous growth model describes the way FD affects per capita GRP growth in developing countries on an early stage of reform. Alongside setting up the conceptual model, we confirmed the systematic difference in the fixed effect and random effect estimates, the Hausman test suggests that the fixed effect model is preferable.

The Oates theory predicts that FD influences economic growth so that $a_1 > 0$. To avoid the potential inflow from the loss of freedom per excessive number of variables of the model, as follows: the estimated coefficient, in our case $N>T$: $24>4$, so four independent variables were included in the regression equation since the number of observations (24) should be 5-6 times the number of factors (Kvasha, 2015). For panel analysis, all variables were included in the equation together.

To better reflect various local socioeconomic conditions, two different coefficients of decentralization were introduced, and these are the local autonomy and revenue decentralization. The estimated coefficients of FD are statistically significant but negative at all the levels, which is consistent with the empirical studies of Jin and Zou (2005), Zhang and Zou (1998), Lin and Liu (2000), Kvasha (2015), Akai and Sakata (2002), and also supports the findings of Davoodi and Zou (1998), Yushkov (2014), Naumets (2003), and Rodrígues-Pose and Kraijer (2009).

To improve the adequacy of the conducted research, we considered the effect of FD along with the likes of economic growth factors: the functions of labor and capital, nonlinear impact, the alongside reforms, time horizon, and economic inequality. In this case, as with single-factor regression, significant indicators are obtained for GRP per capita, population growth variable, and both variables of decentralization. Kvasha (2015) concludes that it is required to add functions of capital and decentralization as independent variables, often, but not always, the labor function is added to similar regression models. Thus, the addition of labor function increases the significance of the coefficients models 2-7 (Table 1), which emphasizes the correctness of the selected indicators. The F-statistic was used to test the overall fit of the model. Table 1 represents the basic information on GRP per capita regression results, the detailed discussion is as follows.

To test the overall fit of the model or the slope coefficients in the regression model, we applied the F-statistic. Pesaran’s (2004) CD test checks the assumption that the cross-sectional units are independent and strongly rejects the null hypothesis of no cross-sectional dependence (De Hoyos and Sarafidis, 2006). To move on, we got the average absolute correlation of the residuals’ correlation as 0.521, which is a high value. Next, we reinforced the results by Frees (1995) and Friedman (1937) test and confirmed the null of cross-sectional independence and multicollinearity in the fixed-effect model. Wald test for group-wise heteroscedasticity in fixed-effects also rejected the null.

First, to control for the quality of regional human capital, we used a population variable that rejects the expected positive effect far more and is statistically insignificant in regressions equations; statistically significant coefficients (%) for population variable we got in (4) and (3), (5) models in Table 1, and (3), (4), (6-7) in Table 2. Thus, we considered the economic growth factors and dummies for years to show the time effects likes, which proved some dummies vary because of the year, but remained the same in different regions. These results explain the population is a reduced benefit of regional human capital, which may be
the consequence of high migration rate (both internal and external), negative population growth rate within the country, and also, does not fully reflect the quality of a labor force. R-squared is still rather high due to the specific estimation for the fixed-effect model. The choice between the fixed-effect model and the random-effect model is supported by the Hausman test and Lagrange Brush-Pagan test. Specifically, the F-test shows the statistical significance of the effect of the independent variables on the dependent variable.

Secondly, our second hypothesis is confirmed, BUSINESS variable has an ambiguous effect on GRPperc, so the number of big, medium and small enterprises in total population shows that the transparency and regional economy openness, regional integration, and institutional factors contribute to regional economic growth (as well as social investments into infrastructure), and in the context of the economic crisis positively influence the short-term rate of economic growth (Table 1, models (2), (5-7); Table 2, model (2). Interestingly, that BUSINESS along with other accompanying reforms that are not directly evaluated due to the shortage of adequate proxies (Table 2 with year dummies, models (3-7); Table 1, model (3) with year dummies) appeared to show negative impact on per cap GRP.

The BUSINESS variable is added to the regression to better control the FD measure, as all these reforms represent partial aspects of the diverse reform effort in Ukraine since 2014. The BUSINESS variable stands for the reforms in support for small and medium-sized businesses, it helps to evaluate the direct influence of FD on per capita GRP. As such, we confirmed that institutional arrangements do matter.

To continue, the reform of FD alongside giving more autonomy, revenue, and expenditure powers to the regions, decreasing fiscal and administrative pressure on business layers is conducive to economic growth. Anyway, the BUSINESS variable shows irrelevant results solely in one year lagged FD (Table 1, model (4); When comes to dummies, that When comes to dummies, that were added to control exogenous macroeconomic shocks and time effects, basically under crisis and unfavourable environment, business institutions turn to be negatively determinant to per cap GRP growth rates.

The conceptual regression results are explained by an appropriate data set that has no historical or cultural variation. Thus, the results gained here may be useful to describe the likely effects of FD reforms in post-communist countries with transition economies. It is necessary to draw some attention to the negative correlation of both FD variables with per cap GRP in regions. If local authorities spend more on low pro-growth effects policies, such as social welfare, whereas the state spends more on growth-enhancing policies, such as infrastructure, which explains a negative, endogenous relationship between FD and economic growth. We also considered the possibility that the vast and lasting economic, institutional, and social crisis, beginning from 2013, along with the initiation of FD reformsations, takes time. And to also control and correct the likelihood of erroneous rejections of the null hypothesis, we attribute local autonomy as FD function lagged for one and two fiscal periods that are given in Tables 1-2 (5) and (4) regression equations.

Note that those estimates for FD are different from the ones in other models, and FD variables lagged for two periods, show insignificant regression results on revenue decentralization (Table 1), and population functions (Table 2). To check for autocorrelation, we ran the Wooldridge test, which rejects the null Prob> F = 0.2178. Here we assumed a one-period lag to be set optimal for the variable. With these, we ran specific tests (Wald, Pesaran, Friedman) to check quasi-extreme multicollinearity, group-wise heteroscedasticity, and found cross-sectional independence to be an issue. Note that, the presence of all results mentioned above pushes a meaningful analysis of the distributed lag structure. Nevertheless, after adding local autonomy variables lagged by one and two periods, we still got negative and insignificant estimations. The remarkably similar results we obtained after specifying a delta in local autonomy FD variable and its one-period lagged measure. Besides, estimated standard errors grew bigger that rings a bell of multicollinearity.

The current study also provides a way to apply an appropriate nonlinear transformation to specify the basic model, to observe the possibility of a nonlinear correlation between the per capita regional growth and the degree of FD as to local autonomy. From this standpoint, we checked the robustness of the outcomes to a logarithmic estimation on the local autonomy variable. Using a similar technic, we reran the basic regression model representing the Decentr1 variable in a log form – (6) model of Tables 1 to 2.

Besides, we checked for the sensitiveness of the estimates between “developed” and “not-developed” regions, so-called recipients regions and donors. The GRP percapdummy variable equals one for “developed” regions and equals 0 for “non-developed” ones. After running the fixed-effect regression-based strictly on the Hausman test shown in Table 1 (7) model, the primary findings are the following: the POP variable is statistically insignificant; the BUSINESS changed into 1566.211 units, but remains on the edge of significance 0.051; Decentr1 (-0.8318147); DEC_rev to (-25.27041) are negative and significant; GRP percapdummy estimation results 12.9431 that is positive and statistically significant. These estimates could trigger the regional growth rate per capita in developed regions should increase for 12.9431% in response to local autonomy decentralization to raise from 0 to 100 percent. After checking the same test, but adding year dummies the estimates hardly vary, and R² = 0.762 grew a bit bigger as shown in Table 2.
The coefficient for an added dummy is positively conducive to notice that here we are covering only the recent four years of the FD reform. Regression results show that in Ukraine, “developed” regions tend to financial autonomy faster than “non-developed.” Anyway, we do not have strong evidence that the new fiscal policy pushes the findings.

So far, the necessity to test for exogeneity of FD variable remains arguable. Doubtfully, the FD connection to per capita GRP remains weak, and the tendency of low-income regions to more depend on transfers, and donor regions to tend to fiscal freedom may cause the FD measure to be exogenous. To explain this, we assumed the local autonomy FD variable to be stable, because the time horizon is relatively short and represents the very time fiscal arrangements have changed. Moreover, the sample has no within-region variations over time as the adjustments to the Budget Code and the Tax Code were first made in 2014, and their implementation is still proceeding. Durban-Wu-Hausman test for potential endogeneity bias of the FD and the BUSSINESS variables rejected the null with no strong evidence to regard the measures endogenously determined. However, we found the year dummies to indirectly capture the effects of the other reforms conducted at the same time, to somehow control institutional arrangements those accompanied FD reform.

Up to this point, the research findings reveal the initial limited financial competence of local authorities, the tendency to finance day-to-day consumption, and low administrative capacities. These obstacles do not allow the efficient usage of local tax potential and hinders the provision of local public goods with accounting for the needs of the population, and is detrimental to regional economic growth.

CONCLUSIONS

These days, Ukraine undergoes a bunch of administrative, political, social, and fiscal reforms, every step of those needs thorough evaluation. The critical concern of the study was to evaluate and depict the mechanism beyond FD and its economic linkages to provide shreds of evidence able to support specific evaluation of its consistency for countries in transition.

The theoretical approach enabled us catch sight of FD as a popular area of modern research, thus so eventually depend on the methods applied, definitions dependent, and independent variables, etc. Consequently, model uncertainty and serious constraints on data availability are arguably the most significant limitation of exploring data procedures. The other weaknesses lie in the data output from the Autonomous Republic of Crimea, and additional restrictions in the statistical observations of Donetsk and Luhansk regions and relatively short time-horizon, data availability, and restrictions on the variables.

Based on empirical results of the analyses conducted, we highlighted FD to be a multifaceted process that may potentially affect the accuracy of research findings, hence, we may conclude as follows: FD is slightly detrimental and significant to GRP per capita in Ukraine; alongside reforms to improve the business environment in Ukraine show ambiguous effect on regional economic growth; institutional factor caused by the vertical and horizontal fiscal imbalance does matter; local government in “developed” regions (as to GRP per capita dummy) have more tendency to fiscal autonomy and have more fiscal power than in “not-developed” regions.

To comment on the obtained results, we faced the fact that regional revenues and fiscal autonomy failed to deliver fast economic growth in regions as it was widely expected. Furthermore, decentralization may have resulted in a deceleration of regional per capita economic growth. Also, the other reforms may have a far more fast and tangled impact on growth across regions. Several factors may explain this adverse effect. Firstly, as Davoodi and Zou (1998) and Zhang and Zou (1998) argued that FD may conduct negatively to economic growth in the early stages of reforms. The central government still constrains local authorities, and their administrative capability is insufficient to respond to the preferences of residents to meet local needs. Secondly, Yushkov (2015) doubts the fact that public expenditures are excessively decentralized. In turn, municipalities lack sufficient revenue resources. So, fiscal policy-growth effects are more related to the functional composition of government spending or type of tax rather than FD itself. By so, regions lack adequate resources to secure spending programs and go on with subsidies. These may be helpful to close a loop on the Ukrainian case.

“Nevertheless, FD is referred to more effective innovation policy, investment policy, transparency, and local governments’ proficiency to meet local needs and adopt fiscal policies. This range of problems rules out the factors to connect to economic performance, especially in countries lacking institutional development and legal systems. Thus, regional economic growth degrees in Ukraine are hard to specify as a direct outcome of FD’ (Kovalchuk and Zhang, 2020: 65). Finally, the changes FD provoked should be viewed as intricate, and the tentative findings of the current research revealed that FD hindered per capita GRP growth in Ukraine, this causes a need for further research.

ACKNOWLEDGMENTS

This research was performed through the guidance of my supervisor Zhang Donghui, Ph.D. of Economics, Professor of School of Economics, Shandong University, PRC. However, any errors, irregularities, or shortcomings in the study are entirely my responsibility.
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Cite this article as:
Anna K (2020). Fiscal decentralization and economic growth: The
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### Table 1: Growth Rate of GRP per capita Regression results.

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<td>-0.927***</td>
<td>-0.887***</td>
<td>-0.631**(0.227)</td>
<td>-1.167**(0.439)</td>
<td>2.641***</td>
<td>(0.825)</td>
<td>-0.832***</td>
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<td>(0.223)</td>
<td>(0.176)</td>
<td>(0.227)</td>
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<td>2824.172* (1440.256)</td>
<td>1873.929* (1046.571)</td>
<td>-2408.1* (1275.564)</td>
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<td>-3285.824* (1739.907)</td>
<td>1532.415 (1943.074)</td>
<td>5220.193** (2049.39)</td>
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<td>1566.211** (618.692)</td>
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<td>Year Dummy</td>
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<td>NO</td>
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<td>NO</td>
<td>NO</td>
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### Appendix 2

**Table 2**: Growth Rate of GRP per capita Regression results (Year Dummies).

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<td>LAG1</td>
<td>LAG2</td>
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<td>-0.631***(0.227)</td>
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<td>2.736***(0.947)</td>
<td>2.901(18.275)</td>
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<td>1691.981(1034.266)</td>
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<td>-59.947***(24.177)</td>
<td>13.249***(3.046)</td>
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<td>0.674(1.023)</td>
<td>-59.947***(24.177)</td>
<td>13.249***(3.046)</td>
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<td>0.674(1.023)</td>
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<td>R-squared</td>
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**Note:** (1) FD on GRP fixed effect; (2) Fixed Effect with economic factors; (3) year dummies; (4) local autonomy (FD) lagged for one period; (5) local autonomy (FD) lagged for two periods; (6) local autonomy (FD) is introduced in log form; (7) dummy for developed regions per GRP per cap. Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1. 

**Created by Author.**