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FISCAL DECENTRALIZATION IN KAZAKHSTAN AND THE IMPACT ON ECONOMIC GROWTH

Abstract. This article proposes a method for assessing the effects of fiscal decentralization on economic development. The relationship between the proper level of fiscal decentralization and economic growth for 17 regions and cities of republican significance in Kazakhstan from 2010 to 2020 was evaluated using panel data. Panel cointegration and dynamic ordinary least squares (DOLS) results suggest that fiscal decentralization has a negative and significant impact on gross regional product. The study found that both income and expenditure decentralization have a negative impact on economic growth, and that further fiscal decentralization currently has a negative impact on gross regional product (GRP) growth. Given the premise that fiscal decentralization usually promotes local economic progress, this consistently significant and powerful result of our empirical analysis is surprising.

Keywords: fiscal decentralization, economic growth, Kazakhstan, DOLS, GRP.

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Аңдатпа. Бұл мақалада бюджеттік орталықсыздандырудың экономикалық дамуға әсерін бағалау әдісі ұсынылған. 2010-2020 жылдар аралығында Қазақстандағы 17 облыс пен Республикалық маңызы бар қалалар үшін бюджеттік орталықсыздандырудың тиісті деңгейі мен экономикалық өсу арасындағы өзара байланыс панельдік деректерді пайдалана отырып бағаланды. Панельдік коинтеграция және ең кіші квадраттар (DOLS) әдісінің динамикалық нәтижелері бюджеттік орталықсыздандырудың жалпы аймақтық өнімге теріс және айтарлықтай әсер ететіндігін көрсетеді. Зерттеу көрсеткендей, кірістер мен шығыстарды орталықсыздандыру экономикалық өсуге теріс әсер етеді және одан әрі бюджеттік орталықсыздандыру қазіргі уақытта жалпы аймақтық өнімнің (ЖӨӨ) өсуіне теріс әсер етеді. Фискалдық орталықсыздандыру әдетте жергілікті экономикалық прогреске ықпал етеді деген алғышартты ескере отырып, біздің эмпирикалық талдауымыздың бұл тұрақты және тиімді нәтижесі таң қалдырады.

Түйін сөздер: фискалды орталықсыздандыру, экономикалық өсу, Қазақстан, ДҚКК, ЖӨӨ.

Аннотация. В этой статье предлагается метод оценки влияния бюджетной децентрализации на экономическое развитие. Взаимосвязь между надлежащим уровнем бюджетной децентрализации и экономическим ростом для 17 областей и городов республиканского значения в Казахстане в период с 2010 по 2020 год была оценена с использованием панельных данных. Панельная коинтеграция и динамические результаты по методу наименьших квадратов (DOLS) свидетельствуют о том, что бюджетная децентрализация оказывает негативное и значительное влияние на валовой региональный продукт. Исследование показало, что децентрализация как доходов, так и расходов оказывает негативное влияние на экономический рост, и что дальнейшая бюджетная децентрализация в настоящее время оказывает негативное влияние на рост валового регионального продукта (ВРП). Учитывая предпосылку о том, что фискальная децентрализация обычно способствует местному экономическому прогрессу, этот неизменно значительный и действенный результат нашего эмпирического анализа вызывает удивление.

Ключевые слова: фискальная децентрализация, экономический рост, Казахстан, ДОЛС, ВРП.

Introduction

Last decades, fiscal decentralization, which involves the transfer of government fiscal responsibilities to sub-government, attract researchers or policymakers attentions due to effectiveness of this system, as has been shown by the experience of developing countries such as China, Finland and the OECD countries. Since it itself includes several advantages, for example, local taxes are needed to allow local governments to change the quantity and quality of their services according to local preferences, and there is more effective accountability for funds received at the local level than for fiscal transfers coming from the center. Also, if the local government relies on transfers, there is a danger that local politicians may waste money ineffectively.

The theoretical prediction that fiscal decentralization improves government performance and spurs economic growth is one reason for this interest. The argument is that decentralization contributes to economic growth in a country because local government shows better public service than central government because it takes into account local needs and preferences, and over time, this will lead to economic growth. However, there are concerns in the world that decentralization reforms will be implemented quickly or go too far, and this may threaten macroeconomic control and stability, such situations have been encountered in the case of China.

Decentralization of state power and, as a consequence, decentralization of state functions and resources, are the predominant trend in the development of modern states. The processes of centralization and decentralization are

characteristic to one degree or another for all states, regardless of the form of government in them. Decentralization processes also take place in traditionally centralized countries: in countries with highly centralized power, such as the kingdoms of Jordan and Morocco (Bird & Ebel, 2006), in the countries of Central and Eastern Europe, in the fiscal system of which the influence of the Soviet political course was traced (Sagan, 2011), in Iran- a country with limited democracy (Samimi, 2010), in Indonesia, which made an economic breakthrough (Yulindra, 2012), in China - a country with a socialist economic system (Zhang, Zou, 1998), in Pakistan - a country with a military regime (Malinovskaya, 2012) and others. In Kazakhstan, reforms on fiscal decentralization are just beginning to move forward.

The government has created several programs over the years. Some of them were stopped in the development process, and some were successfully implemented. For the first time, one of the solutions proposed by the government was mentioned in the development program of Kazakhstan until 2030, first announced in the President's Address to the people of Kazakhstan in 1997, then President Nazarbayev at the time highlighted the importance of decentralizing power and delegating authority from the center to lower levels of government, as well as the transfer of public responsibilities from the center to local authorities and the state to the private sector. The state's decentralization program was adopted in accordance with this speech, and in 2001, in the regions of the Republic of Kazakhstan, experimental elections of akims of the village were held. In addition, to optimize the situation with fiscal decentralization in 2008, a new budget code of the Republic of Kazakhstan was adopted. This code helped to clarify the function, source of income and expenditure of local government regions. In accordance with this code, the local budget received individual income tax, land tax, property tax, and excise taxes on alcohol produced in Kazakhstan. In addition, from the beginning of 2020, corporate income tax began to flow to the local budget.

Research Problem

Inefficiency of budget expenditures is one of the main problems of state planning and management in Kazakhstan. Annually, the Accounts Committee of the Republic of Kazakhstan publishes a report on billions of unused tenge, at a time when many areas are underfunded. One of the solutions to this problem is the decentralization of state budgets and the empowerment of local government bodies. Government of Kazakhstan is expected that the latest reform should lead to an increase in local budget revenues and stimulate local executive bodies to expand the tax base by creating an enabling environment for doing business. Regions will be able to keep CIT income from SMEs and use them for their priority expenses. At the same time, the new reform in its implementation may stumble upon the following barriers - mechanical implementation of the reform by local authorities without understanding its goals and objectives, unwillingness to stimulate the development of local SMEs, corruption. An

important risk for the successful implementation of the reform is the coronavirus pandemic, which has led to a catastrophic drop in tax revenues to the republican budget and may lead to the cancellation of the reform at its early stage. In this regard, the role of timely analysis of the results of the reform.

Research Question

- What is the impact of fiscal decentralization to economic growth in Kazakhstan?

Literature review

Over these 70 years, the work of scholars on fiscal decentralization can be divided into 4 categories: economic growth; deficit and debt; the size of the public sector; inequality (Slavinskaite, Novotny, & Gedvilaite, 2020). Category 1 scholars have sought to link fiscal decentralization to economic growth in a country and to determine its impact. Category 2 papers examine the impact of fiscal decentralization on government deficits and on government debt. Category 3 includes works on the issue of public choice, taking into account the size of the public sector. Category 4 includes works on inequality that can arise in localities after fiscal decentralization reforms.

Since the XXI century, scientists have focused on the relationship between fiscal decentralization and economic development of the state. Scientists often use Borro's endogenous growth model to determine the impact of fiscal decentralization on economic growth, where Cobba-Douglas's production function has several variables (Barro, 1990; Zhang & Zhou, 1998; Akai & Sakata, 2002; Qiao et al., 2008; Filippetti & Sacchi, 2016; Ganaie et al., 2018; Yedgenov et al., 2020).

The results of numerous works concerning the relationship between budget decentralization and economic growth in the intercountry and regional perspectives are quite contradictory. Some researchers have identified the positive impact of fiscal decentralization on economic growth (Iimi, 2005; Qiao et al., 2008; Filippetti & Sacchi, 2016; Yedgenov et al., 2020), while others have identified negative impact (Zhang & Zhou, 1998; Xie et al., 1999) and some researchers have found both negative and positive relationships between the two (Akai & Sakata, 2002; Ganaie et al., 2018).

One of the earliest and most famous works was published by Davoodi and Zou (1998), in which they investigated the possibility of increasing economic growth rates by decentralizing spending powers. These authors have proposed an analytical approach that is often used by others as a starting point. This approach shows that not only the volume of total government spending is important for economic growth, but also how these expenditures are distributed among different levels of government, so they tested the hypothesis that it is possible to maximize economic growth through optimal redistribution of budget expenditures without changing the total share of the budget in GDP. Their empirical results show that there is no clear relationship between spending

decentralization and economic growth for developed countries. For developing countries, a negative but very weak impact has been identified.

Zhang and Zou (2001) used panel data collected from 16 major states in India from 1970 to 1994, and in the end they found a positive relationship between economic growth and fiscal decentralization. Akai and Sakata (2002) using panel data from 1992 to 1996 in the United States identified a positive effect between fiscal decentralization and economic growth, noting that the positive effect was due to historical and traditional factors. Iimi (2005) the use of the instrumental variables method with cross- country information from 1997 to 2001, the observe determined that fiscal decentralization has a significant and positive effect on boom charge of GDP.

Yedgenov *et al.* (2020) estimated how fiscal decentralization impacts GDP per capita growth using an instrumental variable approach based on geographical characteristics. The study found that a 10% increase in decentralization, as measured by the share of subnational governments' expenditures/revenues in total government expenditures/revenues, is associated with a 0.4 percentage point increase in GDP per capita growth. The study revealed that the impact of decentralization on economic growth was more pronounced in developed countries compared to developing ones, where the results were statistically insignificant. Despite the economic benefits of decentralization demonstrated in previous studies, the impact of such reforms on the economic development of post-Soviet Central Asian states, including Kazakhstan, remains largely unexplored.

A brief review of the above literature shows that the results are not uniform. As Akai and Sakata (2002) point out, cross-country research has the disadvantage of bringing together countries with significant differences in politics, history and culture, which, if all of the above factors are not taken into account, creates uncertainty in the relationship between fiscal decentralization and economic growth. Given these perspectives, this study seeks to analyze the relationship between fiscal decentralization and growth, with reference to Kazakhstan.

Data

A dataset was collected for 14 regions and 3 cities of republican significance for the period 2010-2020, although the sample varies depending on the specification since in 2017 the South Kazakhstan region was renamed to the Turkistan region and the city of Shymkent received republican significance. Data on variables was collected from the official websites of the Ministry of Finance of the Republic of Kazakhstan and the National Bureau of Statistics. The variable descriptions and sources are listed in the Table 2. All other variables are in natural logarithm form, except fiscal decentralization indicators.

Table 2. Description of variables used in regressions.

	Description	Symbol
1	Gross regional product	LnGRP
2	Population	LnPop
3	Total natural resource production	LnTNR
4	The ratio of the region's own revenues (without transfers) to the total revenues of the general government*	A1
5	The ratio of region’s expenditure to general government expenditure	A2
6	The ratio of the region's own revenues to the total revenues	A3
7	The ratio of the region's own revenues to the total expenditure	A4
8	Arithmetic average of A1 and A2	A5
9	(Region exp. − region revenue)/Gen. govt. revenue	A6

Source: computed by author

*Notes: *General government = state govt. + republican govt.*

Table 3 provides a descriptive statistics about the variables used in the study. In total, there are 149 observations for each variable. The largest mean has the LnGRP. LnTNR has the highest variation between groups, in general the indicators of fiscal decentralization have not so much difference in variability.

Table 3. Descriptive statistics

	LNGDP	LNPOP	LNTNR	A1	A2	A3	A4	A5	A6
Mean	14,41	13,69	12,05	0,01	0,02	0,40	0,40	0,02	0,00
Median	14,39	13,56	12,51	0,01	0,02	0,36	0,35	0,01	0,00
Maximum	16,05	14,54	15,80	0,03	0,06	0,94	0,92	0,03	0,01
Minimum	12,86	13,13	5,96	-0,01	0,01	-0,22	-0,17	0,01	0,00
Std. Dev.	0,59	0,39	2,29	0,01	0,01	0,21	0,21	0,01	0,00
Skewness	0,01	0,72	-0,66	0,62	1,43	0,23	0,41	0,85	2,91
Kurtosis	3,18	2,46	2,74	3,96	5,30	3,59	3,37	2,83	17,47
Jarque-Bera	0,21	14,78	11,38	15,2	83,7	3,5	4,95	18,19	709,9
Probability	0,90	0,00	0,00	0,00	0,00	0,17	0,08	0,00	0,00
Sum	1146,4	2139,9	1794,9	1,5	3,5	59,9	60,1	2,5	0,03
Sum Sq. Dev.	52,38	22,02	773,35	0,00	0,01	6,61	6,57	0,00	0,00
Observations	149	149	149	149	149	149	149	149	149

Sources: computed by author

Methodology

A variety of variables impact a country's production, according to the literature on growth. Not only physical costs but also the country's management structure have an impact on the efficient allocation of resources. Cobb–Douglas (C–D) production functions have been extensively used to model and comprehend complex issues. As a result, we employed a basic model based on the C–D production function in this study to investigate the impact of various indicators of fiscal decentralization on economic development.

$$Y_{it} = A_{it} L_{it}^{\alpha} K_{it}^{\beta}$$

where Y, L and K is Gross regional product (GRP), the population and total natural resource production. The effect of technology is represented by A (Solow's residual). The degree of technology is influenced by a variety of things. The manner in which the government participates in economic activity has an impact on resource allocation efficiency. Government action, both in terms of spending and revenue generation, impacts the direction in which labor and capital are used indirectly, in addition to directly effecting the production function. As a result, we used Ait in this analysis to account for the influence of fiscal decentralization policies as well as other unobservable factors. Equation (1) is transformed into logarithmic form to allow for linear estimation:

$$ln(Y_{it}) = \ln(A_{it}) + \alpha \ln(L_{it}) + \beta \ln(K_{it})$$

$$\mathrm{y_{it}} = \theta_{\mathrm{it}} + \alpha \mathrm{l_{it}} + \beta \mathrm{k_{it}}$$

The model may be structured as follows by dividing it (or $\ln(Ait)$) into observable shocks to indicate fiscal decentralization ($fdit$) and unobservable components to imply error term (εit):

$$y_{it} = \vartheta f d_{it} + \alpha l_{it} + \beta k_{it} + \varepsilon_{it}$$

$$\vartheta = f(sd, rd)$$

Expenditure and revenue decentralization are represented by sd and rd, respectively. That is, ϑ represents the degree to which decentralization of expenditure and revenue will effect production yit. As a result, the panel regression model I'll estimate looks like this:

$$lnGRP_{it} = \beta_i + \beta_{1i} fd_{it} + \beta_{2i} lnTNR_{it} + \beta_{3i} lnPop_{it} + \varepsilon_{it}$$

where t= 2010, …….. ,2020 and i=1, ,17.

The Pedroni (2004) cointegration test is used to find the long-run equilibrium between the variables. For panel estimation to estimate the long-run coefficients used the dynamic ordinary least squares (DOLS) method developed by Stock and Watson (1993) and improved by Kao and Chiang (1999, 2001). To account for endogeneity and serial correlation in the series, the DOLS estimator employs both the lags and leads of the independent variables. The basic DOLS regression looks like this:

$$Y_{it} = \alpha_i + X'_{it}\beta + \sum_{j=-k}^{k} \Phi_{ij} \Delta X_{it+j} + \varepsilon_{it}$$

where X is the total number of independent variables. The coefficients of current, lead, and lag differences are represented by Φij.

To validate the robustness of calculated coefficients, we used the Kao and Chiang's (2001)weighted pooled DOLS estimator.

Results

Panel Cointegration

According to the Pedroni (1999, 2004) test (a panel analogue of the cointegration test), the panel cointegration of the selected variables is checked in three modes (with the inclusion of an individual constant (a model that takes into account the panel data structure), with the inclusion of an individual constant and an individual trend (a model of incoherent regression), without the inclusion of individual constants and individual trend (generalized data models). The test statistics for all of the models employed in the study are listed in Table 4. The null hypothesis that proves the no of cointegration is mostly rejected at the 1% and 5% significance levels

Table 4. Panel cointegration

		Panel v-Statistic	Panel rho-Statistic	Panel PP-Statistic	Panel ADF-Statistic	Group rho-Statistic	Group PP-Statistic	Group ADF-Statistic
M1	Statistic	0,34	0,80	-4,34	-4,14	2,44	-6,50	-4,51
	Prob.	0,37	0,79	0,00	0,00	0,99	0,00	0,00
M2	Statistic	0,71	0,96	-5,02	-4,41	2,27	-6,41	-5,22
	Prob.	0,24	0,83	0,00	0,00	0,99	0,00	0,00
M3	Statistic	-0,61	2,02	-1,24	-1,56	3,75	-1,07	-0,82
	Prob.	0,73	0,98	0,11	0,06	1,00	0,14	0,21
M4	Statistic	-1,00	1,85	-1,60	-1,72	3,64	-1,53	-0,69
	Prob.	0,84	0,97	0,05	0,04	1,00	0,06	0,25
M5	Statistic	0,69	0,97	-3,46	-3,50	2,58	-5,85	-3,71
	Prob.	0,25	0,83	0,00	0,00	1,00	0,00	0,00
M6	Statistic	-0,57	1,80	-1,36	-0,61	3,56	-1,67	-0,37
	Prob.	0,71	0,96	0,09	0,27	1,00	0,05	0,36

Source: completed by author

Dynamic ordinary least square (DOLS)

The long-run coefficients of DOLS, which are given in logarithmic form and may be read as growth rates for fiscal decentralization indicators and elasticities for other variables, reported in Table 5. We also incorporate a few other factors in our empirical estimation to assess the robustness of our core revenue and

spending decentralization indicators as predictors of state domestic product. For this, I got the population and the total production of natural resources, since it is well known that the overwhelming part of Kazakhstan's GDP is accounted for by oil and natural resources, therefore, the main influence on the volume of GRP should be. The empirical results of DOLS can be interpreted as follows. The main conclusion is that the first estimated coefficient of indicators that are used as a measure of income decentralization are negative and statistically significant at the 10% significance level, and the rest of the income decentralization indicators are also negative, but they are not statistically significant (see Table 5), while also all the estimated coefficient of the indicator of decentralization of expenditures are negative and statistically significant at 1% (see Table 5). Thus, the preceding findings suggest that decentralization of revenue and expenditure is inversely correlated with regional economic growth, implying that increased centralization of income and expenditure helps to growth. The fact that there is a negative relationship between income and spending decentralization and economic development defies popular belief regarding fiscal decentralization. These findings, in particular, show that providing the federal government more budget autonomy boosts growth. These findings back with the theory that nations with little central government revenue autonomy are more prone to macroeconomic volatility, which can stifle growth (Ahmad, Tanzi, & Gao, 1995).

Table 5. Dynamic OLS estimation

	M1	M2	M3	M4	M5	M6
A1	-10,08* [7,21] (0,10)					
A2		-18,36** [4,78] (0,00)				
A3			-0,14 [0,24] (0,55)			
A4				-0,14 [0,25] (0,58)		
A5					-16,22** [8,68] (0,07)	
A6						29,73** [14,55] (0,04)

LnPop	4,86* [0,31] (0,00)	4,21* [0,25] (0,00)	4,84* [0,34] (0,00)	4,76* [0,33] (0,00)	4,58* [0,36] (0,00)	4,41* [0,39] (0,00)
LnTNR	0,47* [0,05] (0,00)	0,49* [0,04] (0,00)	0,45* [0,06] (0,00)	0,45* [0,06] (0,00)	0,46* [0,05] (0,00)	0,46* [0,06] (0,00)
R Square	0,93	0,95	0,94	0,94	0,94	0,94
Adj. R Sq.	0,88	0,91	0,89	0,90	0,90	0,89

Sources: computed by author
*Notes: ** and * means significant at the 1% and 10%, respectively. Values in parenthesis contain standard error. Values in bracket contain p value.*
#Panel method: Weighted estimation
#Automatic leads and lags specification (based on SIC criterion, max=)*
#Long-run variance weights (Bartlett kernel, Newey-West fixed bandwidth)

Based on the results, we can say that the general fiscal decentralization in Kazakhstan has a negative impact on GRP, that is, the central government collects revenue better than the regional government and is more efficient in spending it. In addition, the lack of development of administrative decentralization may be the reason for the negative impact of fiscal decentralization on economic growth and corruption in Kazakhstan, which has a negative impact on regional revenues. We can view corruption as a manifestation of over-patronage, job reservations, and suspiciously close ties between politics and business. This, in turn, negatively affects the development of the general system of decentralization at the regional level and this also leads to a decrease in foreign investment in the regional budget.

In Kazakhstan, on average, 55% of regional budget revenues are interbudgetary transfers, which means that the local budget is insufficient to finance regional spending plans. The vast majority of local government programs must be reimbursed through transfers. This, in turn, does not provide local authorities with sufficient incentives to effectively spend budget funds. This is one of the reasons for the negative relationship between fiscal decentralization and economic growth.

As for the expected coefficients of other factors, the LnTNR coefficient is positive in all models and significant at 1 per cent. Thus, the natural resource production that it is one of the main factors in determining the gross regional product, and LnPop is positive and significant in all models at the 1% significance level. It should also be noted that all modules have R Squared more than 0.93, and Adjusted R Squared more than 0.88. We can conclude that with a high degree of confidence all models reflect the real state of affairs.

Conclusion

Fiscal decentralization reforms are underway in developing countries. Therefore, the relationship between fiscal decentralization and economic growth has been a topic for discussion and debate. In theory, fiscal decentralization helps the region provide efficient public services and contributes to the region's development, thus leading to economic growth. However, from the literature review, we see an incomplete picture of the relationship between them since some identified a positive relationship, and some a negative one. This study uses panel data from 14 regions and 3 cities for the period 2010-2020 to determine the impact of fiscal decentralization on GRP growth in Kazakhstan. The Dynamic ordinary least square was used to estimate long-term coefficients. The study revealed a negative and significant relationship between fiscal decentralization and gross regional product in Kazakhstan. Simply put, it has been found that the central government is more efficient in collecting and spending money than the local government. Given the current stage of economic growth in Kazakhstan, when the central government is constantly constrained due to limited resources for public investment in national priorities such as highways, railways, power plants, telecommunications and energy, the result of this study is somewhat understandable. Infrastructure projects of such national significance can significantly impact the region's development more than other projects. Since expenditure decentralization has a negative relationship with the region's economic growth.

Findings outlined in this study have some implications for transition and developing countries seeking fiscal decentralization. When determining the level of fiscal decentralization in the country, the ratio of income and expenditure in the region, we must first take into account the stage of economic development of the state. Because the central government may be the most effective body in the implementation of public investment with national externalities at this stage of economic development. Another important point is that if the share of the region in the revenue and expenditure budget is too high, further fiscal decentralization may have only a negative impact on economic growth. This proves only the relevance of the theory proposed by Prudhomme (1995).

Finding a balance between centralization and decentralization is especially important in the context of achieving the main goal of public administration - ensuring the sustainability of economic development. It seems that each country has its own optimal level of decentralization, contributing to a long-term trend towards economic growth, and economic growth is negatively influenced by both a high level of decentralization and a high level of centralization.

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