

Devidze, Nestan

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PUBLIC–PRIVATE PARTNERSHIPS IN GEORGIA AND IMPACT ASSESSMENT OF INFRASTRUCTURE

Nestan Devidze

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Nestan Devidze is an impact investments manager for South Asia and Southeast Asia based in Bangkok, Thailand.

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Please contact the authors for information about this paper.

Email: nestandevideze@gmail.com

Asian Development Bank Institute
Kasumigaseki Building, 8th Floor
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

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Abstract

This research study aimed to assesses the impact of infrastructure based on the evaluation of infrastructure provision's effect on public finance, presenting the case of Kutaisi International Airport in Georgia. In the case, we assessed the impact of the airport on the public finances of the region in which is located and its spillover effects on the related regions. For the assessment, we obtained regional quarterly tax data for the years 2011–17 from the Ministry of Finance of Georgia. We differentiated between three groups of taxes: total taxes, business taxes, and property taxes. We utilized the data to exploit the difference-in-difference (DiD) approach, assessing the impact of the airport on tax revenues for the group of affected regions relative to a control group of unaffected regions. We further distinguished effects for the short term (2013), medium term (2014–15), and long term (2016–17). We found statistically significant increases in the growth rates of all three groups of tax revenues in at least one phase, with the magnitude of the increase being up to 29 percentage points relative to the group of control regions. The results of the empirical study suggest that the reconstruction of the airport had a positive impact on the tax revenues of the state. The paper further discusses the current state of infrastructure financing in Georgia and outlines the importance of greater involvement of the private sector in infrastructure financing through public–private partnerships (PPPs). Consequently, the paper assesses the recent developments in the PPP policy of Georgia and benchmarks it against internationally recognized best practices. It defines the challenges faced by PPPs and provides recommendations for further improvement of the PPP-friendly environment in the country. Finally, the paper discusses the development of the approach to enable the government to use the incremental tax revenues to fill the viability gap for infrastructure projects by increasing the rate of return for private investors.

Keywords: public–private partnerships, transportation investment, infrastructure, public infrastructure, state revenue

JEL Classification: L33, E6, H54, H71, O22, R42

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1. INTRODUCTION

1.1 The Increasing Need for Private Investments in Infrastructure

Georgia's strategic location and ample natural resources create huge possibilities for its economic development, yet the country's economic growth cannot keep pace with its growth ambitions. The average annual GDP growth during the last three years, 2015–7, fell to 3.5%, while the average growth in the years 2010–4 was 5.6% (Ministry of Finance of Georgia (MoF) 2018), the decline being mainly due to external factors. However, according to the Global Competitiveness Report 2017–2018 (World Economic Forum (WEF) 2018), an inadequate supply of infrastructure is one of the main factors hindering economic growth. Georgia scored 4.2 out of 7 for the “adequate supply of infrastructure” and ranked 69th among 137 economies (WEF 2018). Although the ranking had improved from 75th since the preceding year, the country still faces substantial challenges due to the insufficient level of infrastructure. For instance, the lack of adequate roads blocks opportunities for one of the most rapidly growing sectors in the country—tourism. Likewise, access to a water supply in rural areas demolishes opportunities for agricultural development.

During previous years, Georgia has taken steps to improve its business environment. Considerable changes took place in the local regulatory framework in various areas in 2016–17, including a tax reform that placed Georgia high on the list of the countries with the most liberal tax policies. Nevertheless, proper infrastructure is one of the most important conditions to make the country attractive to investors and to utilize its full economic potential. To bring the infrastructure to the desired level of development, one of the most challenging factors is financing. The main sources for infrastructure project financing have been donor financing and concessional lending. However, the shrinking fiscal gap creates a need for the active involvement of the private sector in infrastructure financing.

The Government of Georgia (GoG) has outlined the importance of greater inclusion of the private sector in infrastructure financing and expressed its intention to promote infrastructure financing through public–private partnerships (PPPs). For the successful development of PPPs, it is crucial to ensure that the government has the capability to procure and manage such projects and to create a clear and transparent regulatory framework.

The GoG has taken considerable measures to create a PPP-friendly environment. With the support of multilateral development banks (MDBs), it has established a PPP regulatory framework, which it has followed with a PPP law and extensive secondary legislation. A dedicated PPP unit is in the process of formation. Despite these important developments, the country still faces numerous challenges to bring PPPs to the desired scale. One of the main constraints hindering private investors from investing in infrastructure is the low rate of return of infrastructure projects; this is not only a national but a global problem. The major source of income for most infrastructure projects is fees from the users. At the same time, the fact that infrastructure has to be accessible to the public sets bounds to the tariffs, therefore limiting the return to private investors. To address the problem, Yoshino and Abidhadjaev (2016) presented an approach to measure the impact of infrastructure on public finance, based on which the government can decide to implement an incremental increase of the tax revenues to inject viability gap funding into the infrastructure investors.

1.2 The Scope of the Study

The research study therefore sought to explore and investigate the following. Section 2 presents the case study measuring the impact of Kutaisi International Airport on the tax revenues of the surrounding regions—Imereti and two other regions in West Georgia that have received treatment from the airport. We use a modified difference-in-difference method to measure the increase in the revenues derived from the total taxes and then break the revenues down into business taxes and property taxes. Furthermore, we discuss a potential way for the government to return the incremental revenue to the infrastructure investors. Section 3 analyzes the major points related to infrastructure financing in Georgia: the current state of infrastructure financing, barriers, incentives, and legislative framework. Section 4 provides a detailed overview of the state of PPPs in Georgia with the following aims:

- To analyze the current state of PPPs in infrastructure provision, including a review of ongoing PPP projects and the challenges and opportunities facing PPPs.
- To assess the newly established PPP law together with subsequent secondary legislation.
- To provide policy recommendations for further promoting PPPs for infrastructure projects with the aim of achieving a pipeline of sustainable and effective projects.

The final section provides a concluding statement.

2. EVALUATION OF THE EFFECT OF INFRASTRUCTURE ON PUBLIC FINANCE: THE CASE OF KUTAISI INTERNATIONAL AIRPORT IN GEORGIA

Georgia is highly reliant on transportation for two reasons: it is a transit country and tourism has been one of the main contributors to the growth of the economy in previous years. Therefore, it is crucial for the country to have the proper infrastructure for transportation and logistics.

While focusing on the development of innovative methods to fill the infrastructure gap, the need to assess the achievement of development outcomes has become essential for multiple reasons. For developing countries like Georgia, the budget constraints on infrastructure spending are especially tight. Considering the underdeveloped capital market, the government has to ask multilateral development banks (MDBs) or donor organizations for support. To evaluate and present the future impact of the proposed infrastructure project, the government needs to prepare itself with the tools to assess the impact accurately (Yoshino and Pontines 2015). However, due to the shrinking fiscal gap, many countries, including Georgia, are not able to increase their public debt; hence, the GoG has emphasized the need for greater involvement of the private sector in infrastructure financing through PPPs. One of the major challenges to attract private investment in infrastructure is the low rate of return of public infrastructure projects (Yoshino and Abidhadjaev 2017). The instrument for the government to fill the viability gap is an additional return that it can guarantee to the private sector in the form of capital grants or various types of subsidy. For the government to make a sensible decision regarding viability gap funding (VGF), it requires tools and methodologies to assess the impact of infrastructure provisioning on public finance.

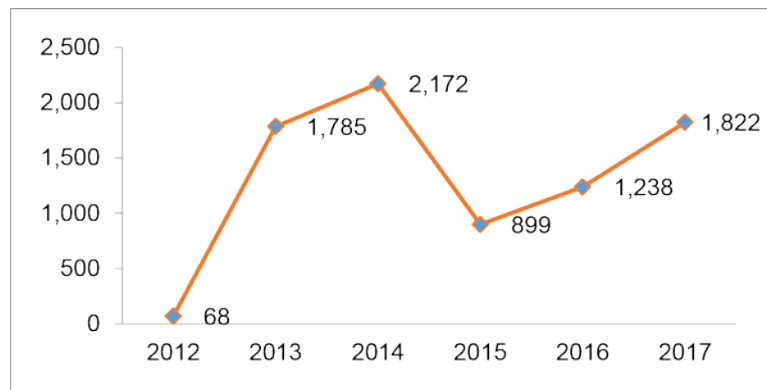
The revenues that infrastructure projects generate are not limited to their operational revenues. An upgraded infrastructure stimulates the economy and creates new employment and new opportunities for local enterprises. After accurately measuring the spillover effects of the infrastructure, the government may take the decision to return part of the tax revenue to private investors. This kind of approach will raise the rate of return and make infrastructure investments more attractive to private investors (Yoshino and Abidhadjaev 2017).

Below, we present a microeconomic case study that examined the impact of Kutaisi International Airport on the public finance of the region in which it is located and two neighboring regions. The expectation is that the provision of the new infrastructure in the form of an international airport has increased the flow of the tourists, prompting an improvement in economic performance. After the opening of the airport, the number of tourists visiting Kutaisi and its surrounding areas increased significantly. Consequently, it stimulated the overall economic activity. The activity of hotels, restaurants, and shops has experienced high growth. The revenues of the local tourist attractions have grown as well; furthermore, the increased demand for transportation has created new employment opportunities for locals.

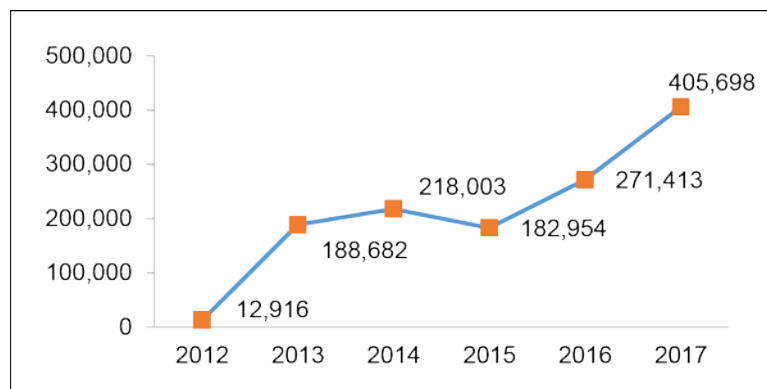
We used a modified difference-in-difference method to measure the increase in the revenues derived from the total taxes and then broke the revenues down into business taxes and property taxes.

2.1 Kutaisi International Airport

Kutaisi International Airport is the first international airport in the region of Imereti and the second international airport in West Georgia. The airport underwent rebuilding in 2012, after which it started to attract a growing number of flights. The airport is fully owned by the state-owned United Georgian Airports (UAG), and the state fully financed the project of renovating the airport. The total cost of the project amounted to nearly USD 26.5 million, and the state budget financed it entirely. The focus of Kutaisi International Airport is on offering cost-efficient airline services. Its strategic location makes it an alternative airport for the region. Kutaisi International Airport is located within 200 kilometers from Tbilisi and is connected to Armenia, Azerbaijan, the Russian Federation, and Turkey within a radius of 300 km. As of 2017, the airport has served more than 400,000 passengers, and the number of passengers has increased rapidly since its reopening in 2012. Currently the airport serves five airlines with 18 destinations and has high growth prospects with the support of the ongoing project of the new terminal. The majority of the passengers served (54% as of October 2018) has consisted of foreign visitors. After the opening of Kutaisi International Airport, the number of tourists visiting the surrounding regions increased, together with the revenues from international tourism receipts that the region generates. The overall effect of the infrastructure has been an increase in economic activity, which has led to increased tax revenue for the government. Figure 1 and Figure 2 show the number of flights that Kutaisi International Airport has hosted and the number of passengers whom it has served since its reopening.

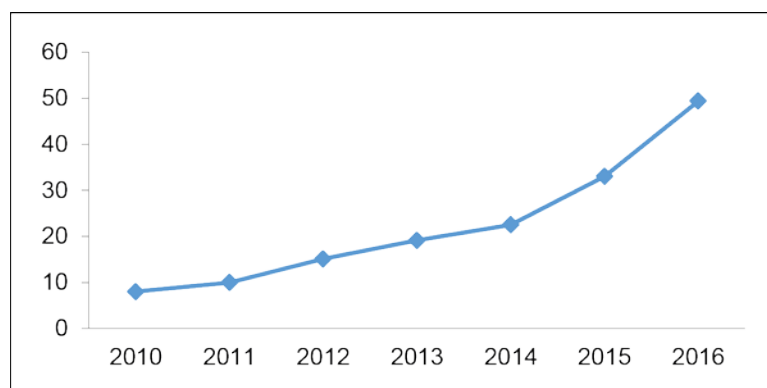
Figure 1: Number of Flights Kutaisi International Airport Has Hosted

Source: Authors' own based on data from Kutaisi international Airport. Statistics. <http://www.kutaisi.aero/Statistics?year=-1> (accessed September 2018).

Figure 2: Number of Passengers Kutaisi International Airport Has Served

Source: Authors' own based on data from Kutaisi international Airport. Statistics. <http://www.kutaisi.aero/Statistics?year=-1> (accessed September 2018).

Figure 3 reflects the increase in value added for the hospitality sector in the region of Imereti, where Kutaisi International Airport is located.

Figure 3: Value Added for the Hospitality Sector in Imereti for the Years 2010–16

Numbers in millions of USD.

Source: Authors' own based on data from the National Statistics Office of Georgia.

2.2 The Difference-in-Difference Approach (DiD)

The difference-in-difference (DiD) approach enabled us to see the effect of a particular infrastructure project by computing the difference over time (before and after intervention) and across different regions. The key DiD method assumption is that, without the policy or the project, the changes in outcomes (i.e., trends) between the beneficiaries, or the affected group, and the non-beneficiaries, or the non-affected group, are the same over time (Yoshino and Abidhadjaev 2017).

2.2.1 Our Modified DID Model

The DiD approach helped us to measure the difference between the “actual” outcome and the alternative outcome. For this purpose, we divided the data into control and treated groups on the basis of geography and time. The result should reflect the difference between pre-intervention and post-intervention data. After observing the changes in both groups over time, the DID coefficient could be calculated, which served as a measure of the impact. The DiD coefficient indicated the additional quarterly growth rate in tax revenues (compared with the same quarter in the previous year) relative to non-treated regions. From the total of 11 regions in Georgia, we selected three regions as the beneficiaries of the treatment; the selection criteria were not straightforward and took several factors into account. The first and most important criterion was geography; we estimated that the presence of the airport increased the flow of tourists to the neighboring areas. Another criterion for selection was the presence of tourism attractions in the region. Even though it might be easy to access geographically, the region should also be attractive to foreign visitors to affect their decision making. Lastly, we excluded the region of Adjara. It met both criteria; however, it is served by Batumi International Airport and this makes it hard to distinguish the impact of the two airports. The regions included in the treatment group are as follows:

- Imereti—the region where the airport is located. Imereti is attractive to tourists due to its natural, ancient, and religious sites. The tourism sector has been experiencing a rise in the region recently, and we estimated that one of the reasons for this could be better connectivity.
- Racha-Lechkhumi, Kvemo Svaneti—a mountainous region in West Georgia, neighboring Imereti. Racha has high tourism potential and a trend of growing tourism. A local airport opened in Ambrolauri, the administrative center of the region, in January 2017. The airport has received a very limited number of flights until now, and most passengers reach it by road. The distance to Ambrolauri from Kutaisi International Airport is 94 kilometers, so it is easily accessible by car or public transport.
- Samegrelo-Zemo Svaneti—a region in North-West Georgia, where the tourism sector has experienced high growth recently. The region is accessible only by road and a local airport, which receives flights from Kutaisi International Airport and the local airport in Natakhtari. Kutaisi International airport is the nearest airport to the region, at a distance of 219 kilometers from Mestia, the town that is the most popular tourist destination in the region.

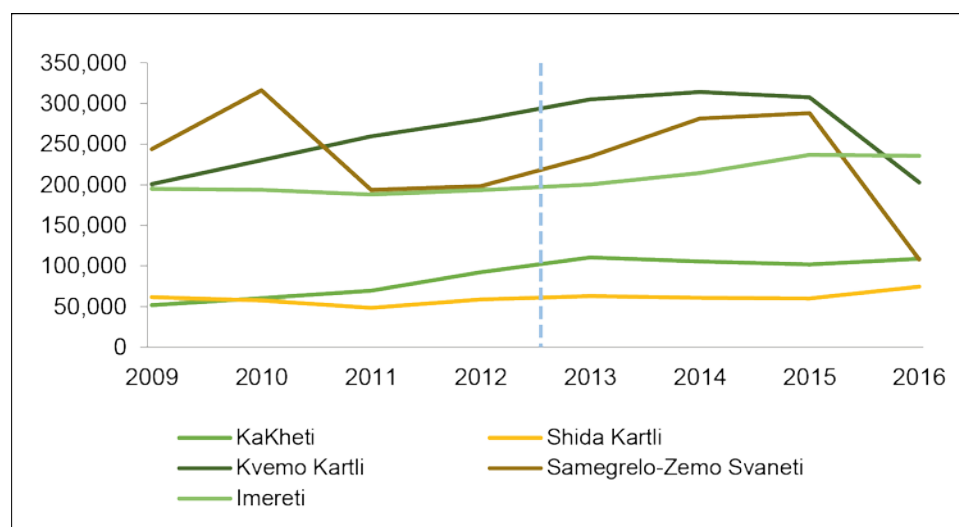
As a control group, we used the group of three other regions. We selected three regions in East Georgia that international or local airports do not serve. All of them have tourism potential; however, in most of the areas, the lack of tourism infrastructure and poor connectivity may hinder the growth. Tourists mainly access the regions by the road from Tbilisi. We estimated that they do not receive treatment from Kutaisi

International Airport. However, the overall growth in the tourist flow to the country might affect it, and that is hard to measure.

- Kakheti—a region in East Georgia with a high tourist flow but accessibility only by road. The nearest airport to the region is Tbilisi International Airport, and the distance from the central town to Tbilisi International Airport is around 85 kilometers. Kutaisi International Airport, 300 kilometers away, is reachable. The airport currently does not serve the region itself.
- Shida Kartli—a region in East Georgia with religious and historic sites. The region already receives a growing flow of tourism, mostly arriving through Tbilisi. The distance from Kutaisi International Airport to the center of the region is 160 kilometers.
- Kvemo Kartli—a region in East Georgia with a relatively small tourism sector and infrastructure. However, it has high tourism potential due to the presence of ancient sites. The region has poor road connectivity, and the airport does not serve it. The distance from Kutaisi International Airport is around 300 kilometers. The region is mainly accessible from East Georgia, and we believe that it does not receive treatment from Kutaisi International Airport.

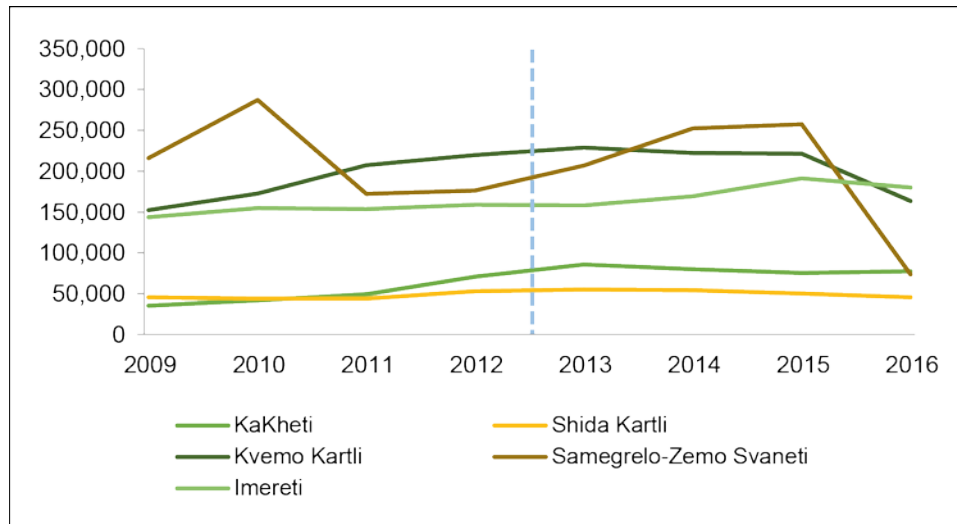
We observed the trends in the selected regions to ensure that the parallel trend assumption holds. The figure below presents the growth in revenues from the three types of taxes in the observed regions. We can see that the growth of the taxes in the regions followed similar trends in the pre-intervention period. Figure 4 reflects the trends for all six selected regions.

Figure 4: Total Taxes for the Observed Regions for the Years 2011–17
(In GEL)



Source: Authors' own based on data from the MoF.

Figure 5: Business Taxes for the Observed Regions for the Years 2011–17
(in GEL)



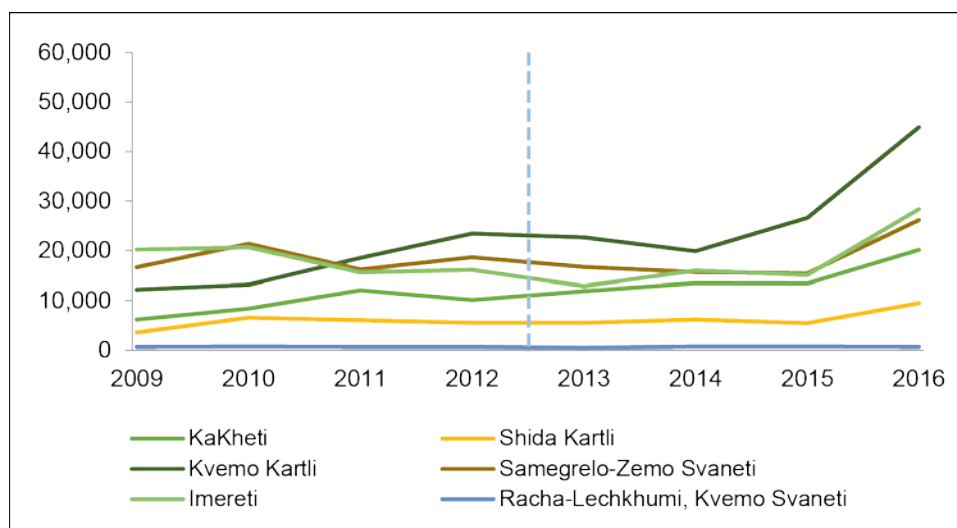
Source: Authors' own based on data from the MoF.

The Tax Code of Georgia envisions six types of taxes within two groups: state and local.

The government imposes five taxes at the state/national level: corporate income tax, personal income tax, value-added tax, excise tax, and customs tax. It levies property tax at the local level under normative acts of local self-governance bodies.

For our analysis, we included in the business taxes corporate income tax, personal income tax, value-added tax, excise tax, and customs tax, which registered entities collect, excluding government entities, NGOs, diplomatic entities, and political organizations.

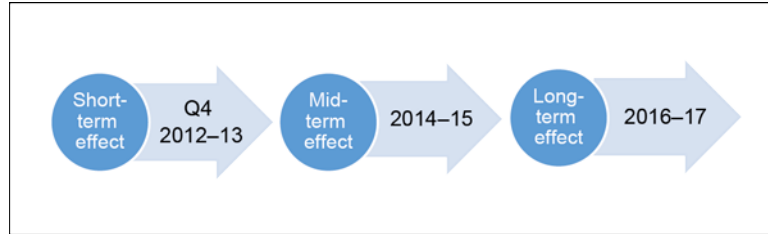
Figure 6: Property Taxes for the Observed Regions for the Years 2011–17
(in GEL)



Source: Authors' own based on data from the MoF.

We further differentiated between three time periods as we wanted to see the effect on the different phases after the completion of the project. Since the number of passengers served has been increasing gradually over time, we differentiated between short-term, medium-term, and long-term effects:

Figure 7: Phases for the DID Analysis



A number of different factors might have affected the level of economic activity in the sector. For this reason, we included the macro-level control variables that could have affected the economic outcomes of the region. Based on the estimated effect and on the availability of the data, we selected the following macro-level control variables in the observed regions: the total labor force, foreign direct investments (FDIs), and bank lending (total outstanding portfolio). Finally, we specified three equations for the three groups of taxes: total taxes, business taxes, and property taxes. The equations are as follows:

Model 1 (the dependent variable is total tax)

$$Gt_{it} = a + X'_{it} * \beta + \delta_1 * T + \delta_2 * R + \delta_3 * D_{13} + \delta_4 * D_{14-15} + \delta_5 * D_{16-17} + \varepsilon_{it}$$

Model 2 (the dependent variable is business tax)

$$Gb_{it} = a + X'_{it} * \beta + \delta_1 * T + \delta_2 * R + \delta_3 * D_{13} + \delta_4 * D_{14-15} + \delta_5 * D_{16-17} + \varepsilon_{it}$$

Model 3 (the dependent variable is property tax)

$$Gp_{it} = a + X'_{it} * \beta + \delta_1 * T + \delta_2 * R + \delta_3 * D_{13} + \delta_4 * D_{14-15} + \delta_5 * D_{16-17} + \varepsilon_{it}$$

Gt, Gb, and Gp are dependent variables representing quarterly growth relative to the previous year's same quarter with the following meanings: Gt is the growth rate of total tax; Gb is the growth rate of business tax; and Gp is the growth rate of property tax. X' includes three independent variables: the quarterly growth rate of FDI, the quarterly growth rate of loans outstanding in GEL, and the quarterly growth rate of the labor force. T is a binary independent variable that takes the value of 1 if the quarter of observation falls after the opening of the airport (quarter 4 of 2012) and the value of 0 if it belongs to the previous period. R is a treatment binary variable that takes the value of 1 for regions in the treatment group and the value of 0 for the control regions. D is a difference-in-difference binary variable, indicating whether the observation belongs to the treated regions and the respective time periods.

2.3 Data

We compiled a panel data set of tax revenues encompassing six regions of Georgia for the 9-year period between 2009 and 2017. To ensure better accuracy of the statistical model, we used quarterly tax data. For the independent variables, we were able to obtain annual data, which we converted into quarterly data based on the assumption that each quarter contributed equally to the year-end results.

As the main purpose of the study was to assess the impact of Kutaisi International Airport on public finance, we obtained quarterly data for the different types of the tax from the Revenue Service Department of the Ministry of Finance (MoF) of Georgia. We collected regional-level data on revenues from total taxes, business taxes, and property taxes. For the control variables, we included data from the National Statistics Office of Georgia regarding the total labor force and FDI. From the National Bank of Georgia (NBG), we obtained data indicating outstanding lending from banks in the observed regions.

Table 1 contains descriptive statistics for the dependent and macro control variables for the five selected regions, divided into two groups: the treated region and the group of four control regions.

From the data, we observed that the average growth in total taxes and business taxes was higher for the group of control regions than for the treated regions. However, the growth had accelerated compared with the pre-treatment period.

The data deployed have two important limitations. The major limitation is that the data obtained are regional-level data. For a more accurate analysis, we would have preferred to use district-level data as broad regional data allow other unrelated factors to influence the results. However, district-level data are not available from the database of the Revenue Service Department of the MoF. The other limitation of the model is that we obtained the tax data on a quarterly basis while the data for the control variables were only available on an annual basis. We had to convert the annual data manually into quarterly indicators.

2.4 Empirical Results

We constructed the model with robust estimations that enabled us to gain more accurate outcomes and avoid biased results. To estimate the coefficients in the model, we used linear regression and the difference-in-difference technique. Based on our data, we tried to build models using random-effect and fixed-effect regressions. Afterwards, we performed the Hausman test (Hausman 1978) to determine which method provides greater efficiency. The Hausman test indicated that the unit-specific heterogeneity is uncorrelated with all the regressors in the model, the individual effects are random and follow a normal distribution, and the difference in coefficients is not systematic. Accordingly, we decided to rely on the results provided by the random-effect model.

Table 1: Descriptive Statistics for the Dependent and Control Variables in our Modified Did Model

Variable Name	Sample Size	Mean	Std Deviation	Min.	Max.
All regions					
Total taxes (GEL '000)	210	35,907.81	25,395.59	1,748.16	94,449.90
Business taxes (GEL '000)	210	28,513.87	21,113.30	779.92	87,725.23
Property taxes (GEL '000)	210	3,584.56	4,164.43	9.99	26,957.78
FDI (GEL '000)	195	14,268.30	30,523.61	-126,719.40	151,343.00
Labor force ('000)	210	180.71	87.77	16.90	320.70
Loans outstanding (GEL '000)	210	182,423.90	159,411.70	427.54	822,581.40
Growth rates					
Total taxes	186	4.5%	22.1%	-75.5%	70.5%
Business taxes	186	4.7%	26.6%	-79.5%	89.1%
Property taxes	186	18.8%	72.9%	-96.3%	322.2%
FDI	171	91.9%	3,089.9%	-4,301.3%	39,400.6%
Labor force	186	-0.6%	2.5%	-5.0%	6.9%
Loans outstanding	186	38.5%	33.3%	-13.4%	268.4%
Treatment regions:	Imereti, Samegrelo Zemo Svaneti, and Racha-Lechkhumi Qvemo				
Total taxes (GEL '000)	105	36,872.49	27,241.37	1,748.16	94,449.90
Business taxes (GEL '000)	105	30,423.22	23,836.20	779.92	87,725.23
Property taxes (GEL '000)	105	3,327.72	3,760.04	9.99	20,254.09
FDI (GEL '000)	90	19,284.97	36,469.57	-126,719.40	151,343.00
Labor force ('000)	105	175.49	120.04	16.90	320.70
Loans outstanding (GEL '000)	105	178,369.10	189,571.30	427.54	822,581.40
Growth rates					
Total taxes	93	1.1%	25.4%	-75.5%	70.5%
Business taxes	93	1.1%	31.1%	-79.5%	83.0%
Property taxes	93	15.9%	79.8%	-96.3%	322.2%
FDI	78	-119.4%	652.9%	-4,301.3%	1,360.9%
Labor force	93	-1.6%	1.5%	-5.0%	2.4%
Loan outstanding	93	39.7%	39.3%	-4.0%	268.4%
Control regions:	Kakheti, Shida Kartli, and Kvemo Kartli				
Total taxes (GEL '000)	105	34,943.14	23,496.85	11,243.63	89,337.00
Business taxes (GEL '000)	105	26,604.52	17,897.02	7,666.13	66,135.61
Property taxes (GEL '000)	105	3,841.41	4,536.59	231.01	26,957.78
FDI (GEL '000)	105	9,968.30	23,649.88	-66,111.67	114,774.10
Labor force	105	185.92	31.91	133.90	242.20
Loans outstanding (GEL '000)	105	186,478.80	122,874.20	25,217.44	497,496.60
Growth rates					
Total taxes	93	8.0%	17.7%	-48.8%	65.0%
Business taxes	93	8.4%	20.7%	-43.5%	89.1%
Property taxes	93	21.8%	65.7%	-85.3%	296.4%
FDI	93	269.0%	4,149.1%	-3,304.4%	39,400.6%
Labor force	93	0.4%	2.8%	-4.6%	6.9%
Loans outstanding	93	37.3%	26.2%	-13.4%	94.1%

Source: Author's calculations.^{1 2}

¹ The data on the labor force in Imereti region were originally merged with those on the neighboring region of Racha-Lechkhumi. Using the ratio of the labor force to the total population and the data on the total population for both regions, we were able to separate the numbers for the labor force into the two regions. We removed the outlier in the total tax revenue for Imereti in the first quarter of 2011.

² We translated the FDI data from USD into GEL with the average official exchange rate for each quarter.

Table 2: Hausman Test Results

Coefficients	Fixed Effect (b)	Random Effect (B)	Difference (b-B)	Sqrt (Diag(V_b- V_B))
FDI	0.00	0.00	0.00	0.00
Labor force	-0.74	-0.95	0.21	0.28
Loans outstanding	0.08	0.10	-0.02	0.02
Time	-0.04	-0.04	0.00	0.01
DiD13	0.26	0.25	0.00	0.01
Did14_15	0.18	0.18	0.00	0.03
DiD16_17	0.05	0.05	0.00	0.02

Test: The difference in coefficients is not systematic.

$\chi^2 = (b-B)'[V_b - V_B]^{-1}(b-B) = 1.16$.

Prob > $\chi^2 = 0.9919$.

Source: Author's calculations.

The model provided the following results. We could see relatively high quarterly growth in all types of taxes for at least one phase in the treated regions compared with the group of control regions in the given time period. The impact on total taxes and business taxes was statistically significant for the first two brackets of time: the short and medium terms. The impact was insignificant for both types of taxes for the long-term period, which might be a result of the change on the national level in the method of tax accounting that occurred in 2016. From the results, we could conclude that, after the provision of infrastructure, the rate of the growth in taxes accelerated. The effect was the strongest in the short term. For the property taxes, we observed a significant positive effect only in the medium term.

The only significant macro control variable that the analysis revealed was FDI, which showed a negative effect on the growth of total taxes. We estimated that this might be a time lag effect as investments might not immediately affect economic activity. The labor force and outstanding amount of bank loans showed an insignificant effect; we assumed that this is the result of the data limitation that section 1.4 mentioned. We obtained tax data on a quarterly basis but data for the control variables were available only on an annual basis. We manually converted annual data into quarterly indicators, which might have resulted in inconsistent quarterly data for the control variables.

The highest relative growth for total taxes and business taxes manifested in the short term with a growth magnitude of 25 and 28 percentage points, respectively. Property taxes displayed the highest coefficient in the medium term, with growth of 29 percentage points.

Table 3 presents a summary of the DiD analysis, including the estimated DiD coefficients:

Table 3: Results of the Did Estimations

Random-Effect GLS Regression	Number of Obs. = 171 Number of Groups = 6					
	Estimated Coefficient for the Growth Rate of Total Taxes		Estimated Coefficient for the Growth Rate of Business Taxes		Estimated Coefficient for the Growth Rate of Property Taxes	
Growth rate of FDI	-0.0009***	(0.00)	-0.0005***	(0.00)	0.0059***	(0.00)
Growth rate of labor force	-0.95	(1.04)	-0.41	(0.93)	2.65	(0.57)
Growth rate of loans outstanding in GEL	0.10	(0.1)	0.16	(0.10)	-1.06	(0.52)
Time	-0.04	(0.03)	-0.08	(0.03)	-0.59*	(0.13)
Treated	-0.18***	(0.05)	-0.19***	(0.04)	-0.23**	(0.08)
DiD13	0.25***	(0.04)	0.28***	(0.05)	0.08	(0.09)
DiD14_15	0.18***	(0.05)	0.21***	(0.04)	0.29**	(0.08)
DiD16_17	0.05	(0.11)	0.11	(0.11)	0.38	(0.26)
Constant	0.07	(0.06)	0.00	0.06	0.98***	(0.26)
R-sq.:						
Within	0.05		0.05		0.28	
Between	0.48		0.65		0.28	
Overall	0.07		0.07		0.28	

Significance level: *** p < 0.01; ** p < 0.05; * p < 0.1.

Note: Standard errors are in parentheses.

Source: Author's calculations.

3. CURRENT STATE OF INFRASTRUCTURE FINANCING IN GEORGIA

3.1 Major Sources of Infrastructure Financing

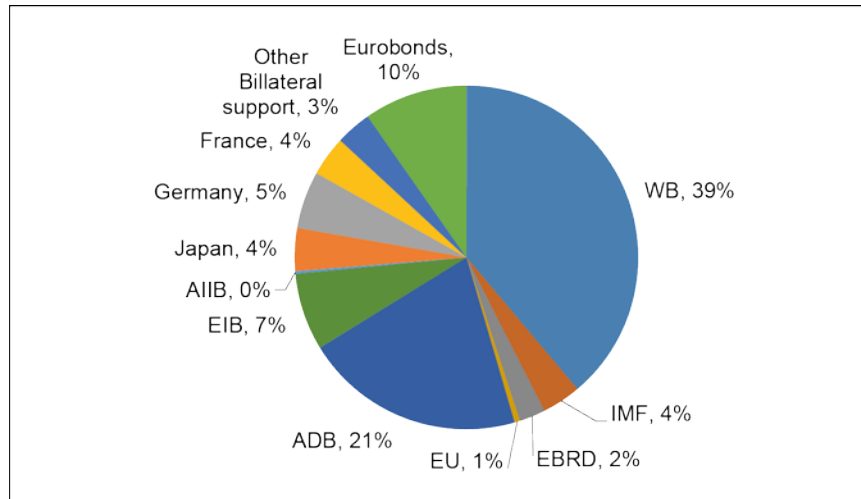
Historically, the major sources of infrastructure financing in Georgia have been donor financing and concessional loans. However, state budget resources and privatization have played an important role in infrastructure financing, particularly in the last decade. This paper briefly reviews the current state of infrastructure financing through different sources and presents the current regulatory framework for public spending.

3.1.1 External Debt and Donor Financing

The major sources of financing for infrastructure projects in the past have been donor financing and concessional loans. About 60% of public debt funds infrastructure projects (United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) 2017). Of the multilateral lenders, the World Bank followed by ADB have provided the largest amount of public debt, specifically 60% of the total government external debt as of August 2018 (MOF 2018). The largest bilateral support has come from Germany-Kreditanstalt für Wiederaufbau (KfW), followed by Japan International Cooperation Agency (JICA) and France. The European Bank for Reconstruction and Development (EBRD) and International Finance Corporation (IFC) have invested heavily in Georgian infrastructure, mostly in the private sector. As for the donor funds, according to the MoF, USAID and the EU have provided the greatest support (UNESCAP 2017).

Figure 8 shows the external public debt statistics by the share of each lender as of September 2018.

Figure 8: External Public Debt Statistics: By the Lenders' Share in the Total Debt

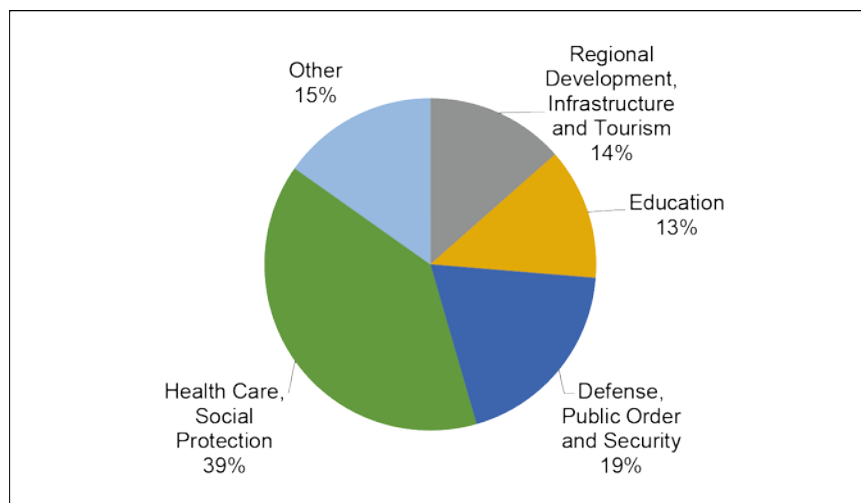


Source: Authors' own based on data from the MoF (2018).

3.1.2 State Budget Resources

The 2017 revenues for the general government amounted to 28.7% of the GDP. The tax revenue was equal to 25.7% of the GDP, while the current expenditure amounted to 29.6% of the GDP, and the government allocated 13.5% of the total budget outlays to the regional development, infrastructure, and tourism sectors in 2016 (MoF 2018). This rate will increase; according to a plan that the Government of Georgia has set out, it will direct 19.9% of the total expenditures of 2018 to the above-mentioned sectors in the future. Figure 9 presents the sectoral share of the state budget outlays in 2016.

Figure 9: State Budget Outlays by Purpose



Source: Authors' own based on data from the MoF.

3.1.3 Privatization

One of the key reforms of the last decade was the privatization of state-owned enterprises. We can consider the process in Georgia as complete to a large extent. However, privatization, optimization, liquidation, the development of bankruptcy procedures, and an increase in transparency remain goals for the state to accomplish. In 2017, the revenue from the privatization of SOEs and public property amounted to USD 39.4 million.

The state-owned JSC partnership fund (PF) played a major role in the reform of SOEs. The government created the PF in 2011, consolidating the ownership of large Georgian SOEs operating in the transportation and energy sectors. The purpose of the PF was to promote investments in Georgia by providing co-financing (equity, mezzanine, etc.) in projects at their initial stage of development (UNESCAP 2017).

3.1.4 Eurobonds

In 2008, the Government of Georgia issued its first USD-denominated Eurobonds on the London Stock Exchange. In 2011, it refinanced its Eurobonds maturing in 2013 with the issuance of 10-year Eurobonds. Despite high interest from investors in the new issuances, the government is reluctant to attract further financing from international markets as it has access to concessional borrowing from international financial institutions (IFIs). However, it may return to the market to refinance the Eurobonds maturing in 2021 (UNESCAP 2017).

3.1.5 Legislative Framework

In 2011, Georgia adopted the Economic Liberty Act (ELA), which came into force in 2014. The ELA sets the following upper limits:

- State debt—60% of the GDP;
- Budget deficit—3% of the GDP;
- Expenditures—30% of the GDP (the ratio of expenditures plus the increase in non-financial assets of the consolidated budget to the GDP should not exceed 30%).

Since Georgia signed an Association Agreement with the EU in 2014, the fiscal rule framework should consider the EU fiscal governance framework. A technical assistance report from the IMF (2018) outlined some fields that need improvement in fiscal reporting. The overall intention is to move gradually toward the European standards of fiscal governance.

3.2 A Favorable Climate for Infrastructure Investments in Georgia

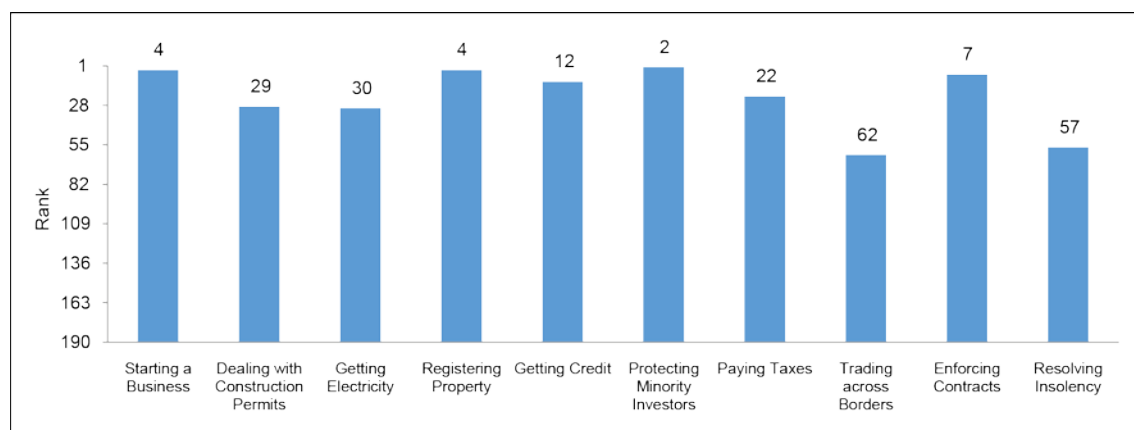
3.2.1 A Business-Friendly Environment as a Major Incentive for the Private Sector to Invest in Georgia

- **Ease of doing business.** Georgia occupies the ninth position in the global ranking of the ease of doing business, according to Deutsche Bank 2018 data. It takes fourth place in the ranking of starting a business. In 2016–17, Georgia undertook a reform that improved the protection of minority investors, the ease of obtaining electricity, and the resolving of insolvency.

- **Liberal tax policy.** Following the tax reform that the government approved in 2017, Georgia occupies the 22nd place in the global ranking of the World Bank (WB). According to the WB, Georgia made it easier to pay taxes by abolishing the additional annex to corporate income tax returns and by improving the efficiency of the online system used for filing VAT returns.
- **Corruption-free government.** Georgia is the 46th least corrupt nation out of 175 countries, according to the 2017 Corruption Perceptions Index of Transparency International. The corruption rank in Georgia averaged 76.06 from 1999 until 2017, reaching an all-time high of 133 in 2004 (Transparency International 2018).
- **Free capital and profit repatriation.** Georgia has no restrictions on the conversion and repatriation of capital and profit.

Figure 10 presents the global ranking for areas of doing business for Georgia:

Figure 10: Global Ranking of Doing Business in Georgia



Source: Author's own based on data from World Bank Group (2018).

3.2.2 Potential to Develop a Logistical Hub

The Government of Georgia has been discussing ambitious infrastructure projects that will transform the country into a logistical hub for the Chinese-led New Silk Road project. The Chinese Government expects traffic of USD 24 trillion worth of commodities by 2030 and is engaged in an infrastructural effort allocating almost a billion dollars as of today to developing the infrastructures necessary to activate the various corridors. The “One Belt and Road Forum,” which took place in November 2017 in Tbilisi, discussed the expansion plan of this huge logistics network.

In 2016, the government launched a four-item spatial plan that expects investment of 3.5 billion dollars to develop transit connections through Georgia. According to the plan, the government aims to construct two logistics centers near the two largest cities of Georgia, Tbilisi and Kutaisi, to upgrade 550 km of motorways, and to establish a railway network that will connect the center of the country with the Black Sea coast, where it will develop the new deep-sea port of Anaklia.

3.2.3 Free Trade Agreements (FTAs) Promoting Trade

To date, Georgia has signed FTAs with Commonwealth of Independent States (CIS) countries and the Association Agreement (“AA”) with the EU, which it signed and ratified in 2014, including the Deep and Comprehensive Free Trade Agreement (“DCFTA”). Additionally, on 27 June 2016, Georgia signed an FTA with European Free Trade Association (EFTA) countries, giving Georgian products duty-free access to the markets of Iceland, Liechtenstein, Norway, and Switzerland. It has also applied for General Schemes of Preference for Georgia with the US, Canada, and Japan, resulting in lower tariffs on 3,400 goods exported from Georgia. (Invest in Georgia, 2018).

In May 2017, the government signed a Free Trade Agreement between Georgia and the People’s Republic of China (PRC). From 1 January 2018, Georgia can export a number of products to the PRC with zero tariffs, no additional customs fees, and no transition period.

3.2.4 Growing Free Industrial Zones

Four free industrial zones (FIZs) are currently operational in Georgia. Private companies operate all the FIZs. Businesses that have registered in free industrial zones benefit from certain tax exemptions:

- If a company produces goods for export in an FIZ, it is exempt from all taxes except personal income tax (20%), which it pays from employees’ salaries.
- If a company imports products from an FIZ to another territory of Georgia, in addition to personal income tax, it has to pay VAT and 4% of its revenue from national sales.

The Anaklia Development Consortium is working on the master plan to develop a special economic zone (SEZ) as a complement to the Anaklia deep sea water port. The consortium foresees the building of a city on 2,000 hectares of the territory, to which the Constitution of Georgia will give special regulatory status.

4. CURRENT STATE OF PPPS WITH ASSOCIATED CHALLENGES AND PROSPECTS

4.1 Historical Evidence of PPPs in Georgia

In 2016, the GoG emphasized the importance of greater inclusion of the private sector in infrastructure financing and expressed its intention to promote infrastructure financing through PPPs. In the PPP law (GoG 2018), which it published in May 2018, the GoG recognized the benefits that PPPs can bring to the state.

Despite the fact that the term PPP became prevalent only recently in Georgia, during the last decades, the country has run several projects that fit the definition of a PPP. Although there is no database for the accounting of PPP projects on the national level, to combine the information from the different sources, 14 PPP projects are currently in progress. Most of these are in the energy sector, followed by the transport sector, which includes ports, airports, and so on. The previous partnerships have used different PPP schemes.

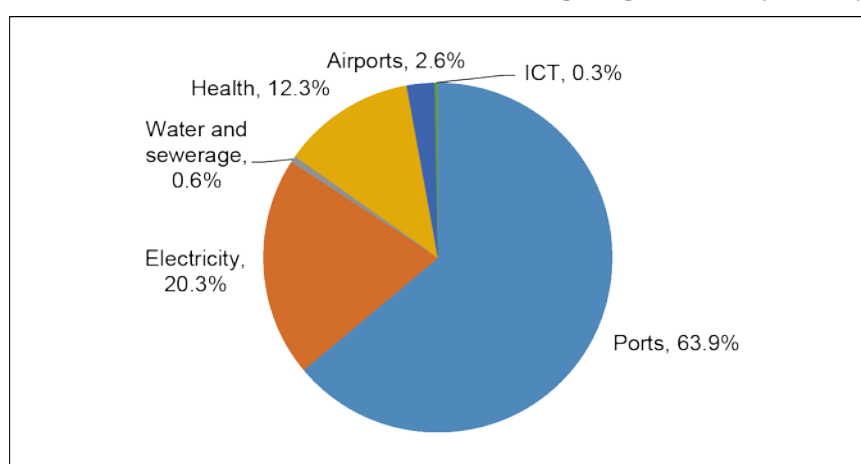
Table 4 lists the active PPPs in Georgia, while Figure 11 breaks down the total values of the ongoing PPP projects by sectoral share.

Table 4: List of Active PPP Projects in Georgia

Financial Closure Year	Project	Sector	Value in USD (Million)
2017	New Deep Sea Water Port of Anaklia	Ports	2,500
2017	Mestiachala 1 and 2 HEPPs	Electricity	65
2017	Gardabani Wastewater Treatment Plant and Water Supply Infrastructure Rehabilitation	Water and Sewerage	25
2016	Tbilisi Cluster Healthcare Transformation Project	Health	500
2015	Shuakhevi 187MW Hydropower Plant	Electricity	417
2011	Anadolu Paravani HPP	Electricity	157
2011	Georgia Urban Enerji Ltd.	Electricity	157
2007	Batumi International Airport	Airports	29
2006	Batumi Seaport	Ports	92
2006	Tbilisi International Airport	Airports	77
2004	Khador Hydro Electric Project	Electricity	27
1993	Egrisi	Information and Communications Technology ICT	12

Source: Author's own based on data from the PPP knowledge lab, InfraPPP, October 2018).

Figure 11: Breakdown of the Total Value of Ongoing PPP Projects by Sector



Source: Author's own based on data from PPP knowledge lab, InfraPPP.

Georgia only outlined the importance of PPPs as an alternative way of financing infrastructure in 2013. Before 2016, no policy or legal framework defined the rules for procuring and managing PPPs; accordingly, the public sector followed no formal procedures. In all cases, the government provided final approval; however, the identification, announcement, and procurement of the projects did not follow any universal framework. Until today, there has been no public entity dedicated to PPP development, and there were generally no requirements for the research and socioeconomic analysis of the projects until June 2016.

Despite the non-existence of a universal legal framework, for certain fields that have implemented a number of PPP projects, the government has adopted framework resolutions providing rules applying to PPP projects in those particular fields only. There was no principle regulatory body for PPPs; in practice, the Government of Georgia

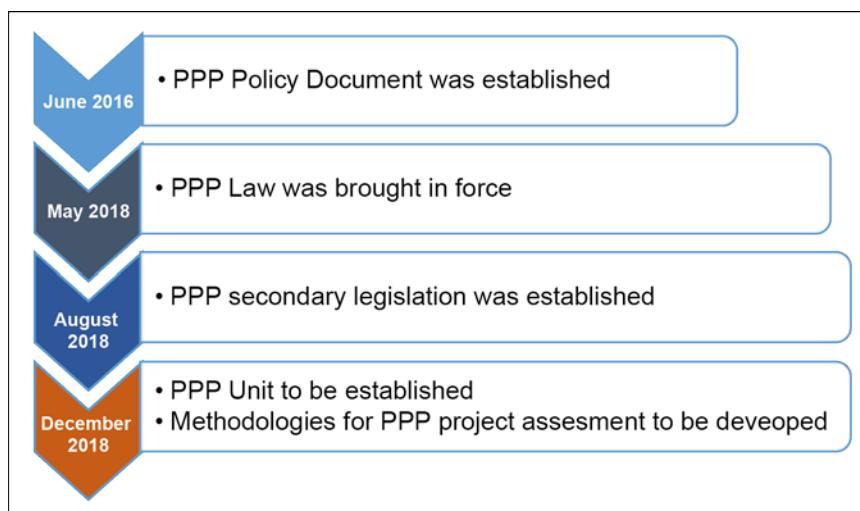
cooperated with the respective ministries for particular PPP cases (Çakmak Publishing 2016).

4.2 Recent Developments of the PPP Policy

According to the Organisation for Economic Co-operation and Development (OECD 2012), one of the most important factors that investors consider when deciding to allocate resources to infrastructure in a given country are a clear institutional framework, transparent bidding and awarding procedures, a robust rule of law, and the absence of political interference. Remarkably, private investors are not comfortable with investing in projects with greater public intervention with financial support that typically triggers a higher probability of political interference in project management and contract renegotiation.

Following the government's decision to promote PPPs, it initiated the process of implementing specific legislative framework in 2014. In 2015, the Ministry of Economy and Sustainable Development of Georgia (MOESD), with technical assistance from ADB and EBRD, started work on the PPP law. Figure 5 presents the timeline of developments since 2016.

Figure 12: Recent Developments of the PPP Policy of Georgia



Source: Author's own based on data from the GoG.

4.2.1 PPP Policy Document

The Ministry of Economic and Sustainable Development of Georgia introduced a new framework in June 2016, with technical assistance from ADB and EBRD. The PPP assessment factors that the policy outlined were the following:

- Transparency—publicly available information about possibilities for PPPs and ongoing projects
- Foreseeability—clear and predictable rules
- Non-discrimination—fair and equal treatment of all foreign and domestic entities
- Value for money—ensuring maximal efficiency to reach the goals set through the evaluation of the balance between expected revenues and expenditures

- Assessment and allocation of risks—adequate distribution of responsibilities and risks between parties
- Fiscal affordability—setting financial responsibilities in a way that does not create fiscal risk

The framework outlined well the priority sectors for PPPs (GoG 2016):

- Transport
- Social infrastructure (health care, education, etc.)
- Communal services (energy, water, waste management, etc.)
- Other sectors (tourism, sport infrastructure, IT, etc.)

4.2.2 PPP Law

The PPP law represents a comprehensive document that creates legislation for procuring and managing PPPs. The law covers both concession and non-concession agreements. The document clarifies the definition of a PPP and presents eligibility criteria. It further describes each phase of a PPP project and defines relevant bodies for preparing, approving, procuring, and management PPP projects:

The procuring authority of a PPP project can be any relevant ministry or public entity. It is the authority that is the main body in the initiation and management of the PPP projects.

The Ministry of Finance (MoF), according to the law, acts as the fiscal authority. The analysis that the MoF conducts includes fiscal affordability assessment, value-for-money analysis, and fiscal risk assessment. Based on this analysis, the MoF will provide its recommendations to the GoG, which should further include these in the process of preparation of the agreement or in the case of any modifications to the agreement throughout the life cycle of the project (GoG 2018a).

4.2.3 PPP Unit

According to the law, the PPP unit had to be operational by December 2018. The PPP unit needs to be the independent public entity that will be under the direct supervision of the prime minister. Initially, the unit will comprise up to ten people from different fields of expertise: finance, legal, and procurement. The focus is on bringing in staff from the private sector who are skilled in financing/structuring long-term infrastructure projects.

The main responsibilities of the PPP unit are the following:

- Consulting the procuring authority with legal documentation of the tender and the project itself.
- In the case of need, the recruitment, hiring, and monitoring of a consultant for the PPP project.
- Monitoring of the project.
- Capacity building for a procuring authority.
- Creation and management of the PPP database.
- Development of the standards of PPP agreements.

The PPP unit does not have the power to initiate a project; however, the government will encourage it to identify possible projects that the respective body can later initiate (GoG 2018a).

4.2.4 Secondary Legislation

The secondary legislation is a government decree, which it prepared in accordance with the PPP law. The document aimed to define the rules for implementing each phase of a PPP. It identified the following stages of a PPP project and provided comprehensive guidelines for managing every phase:

- Inception and identification of the project
- Preparation
- Finding the private counterparty
- Project implementation
- Post appraisal of the project (GoG 2018b)

4.2.5 Methodological Guidelines for Leading PPPs

The MoF in conjunction with the PPP unit aims to establish methodological guidelines, which will act as guidance for a procuring authority in each phase of the project implementation. The guidelines will be in accordance with international best practices and based on the “Legislative Guide on Privately Financed Infrastructure Projects” by the United Nations Commission on International Trade Law (UNCITRAL 2001).

The concept of the methodologies is in place by this time. However, it is important that the PPP unit reviews the draft and makes any necessary inputs. Accordingly, the process will conclude only after the PPP unit becomes active.

4.26 Assessment of the Current Policy by Benchmarking It against International Good Practices

In June 2018, the World Bank published a comprehensive study report, “Procuring Infrastructure Public–Private Partnerships.” It designed the report to help governments improve their PPP regulatory quality. By benchmarking the regulatory frameworks of economies around the world against internationally recognized good practices in procuring PPPs, the assessment identified areas for improvement in the preparation, procurement, and management of PPPs (WB 2018a).

The study involved 135 economies that had at least one PPP practice. Georgia was part of the study. The second column of Table 5 presents the WB’s assessment. Considering that a number of reforms have taken place since it published the report, we decided to reassess the policy according to the benchmarked criteria that the WB established. Table 5, Table 6, Table 7, and Table 8 present a summary of indicators against the benchmarked practices learned from the study for the management of the different stages of PPPs. Columns 3 and 4 provide the reassessment together with comments.

It is notable that, since the policies have experienced important upgrades only recently, we are not able to make conclusions based on real cases. The assessment relies purely on what the law defines and respective public documents.

Table 5: Summary of Indicators for Georgia against the Benchmarked Practices in the Preparation Phase of PPPs

Phase 1: Preparation of PPPs	2016 According to the WB (2018)	Sep. 2018	Comment
Central budgetary authority's approval	Yes	Yes	Before and after tendering. Before the new legislation, the MoF as a budgetary authority was involved only before tendering. With the updated law, the MoF provides the recommendation after tendering as well, before the GoG makes its final decision.
Fiscal treatment of PPPs	No	Yes	
PPPs' prioritization consistent with public investment prioritization	Yes	Yes	
Economic analysis assessment	Yes	Yes	
Fiscal affordability assessment	Yes	Yes	
Risk identification	Yes	Yes	
Comparative assessment (value for money analysis)	Yes	Yes	
Financial viability or bankability assessment	Yes	Yes	The document mentions that the project will gain acceptance only if there are opportunities for the private sector to attract funding. However, there is no defined procedure for market sounding.
Market sounding and/or assessment	Yes	Yes	
Environmental impact analysis	Yes	Yes	
Assessments included in the RFP and/or tender documents	No	No	
Draft PPP contract included in the RFP	No	Yes	The secondary legislation requires the RFP to include a sample of the agreement.
Standardized PPP model contracts and/or transaction documents	No	No	None of the new policy documents mention standardized PPP models. The reason behind this is to leave flexibility around the models or types of PPP.

Source: Author's own based on data from "Procuring Infrastructure Public-Private Partnerships" (WB 2018a) and the author's research.

Table 6: Summary of Indicators for Georgia against the Benchmarked Practices in the Procurement Phase of PPPs

Procurement of PPPs	2016 According to the WB (2018)	Sep. 18	Comment
Evaluation committee members required to meet specific qualifications	No	No	The law defines the public entities that must have representation on the evaluation committee. The secondary legislation published in August 2018 defines the framework of the evaluation committee. However, the policy requires no specific qualifications.
Public procurement notice of the PPP that the procuring authority issues	Yes	Yes	
Foreign companies permitted to participate in PPP bidding	Yes	Yes	
Minimum period of time to submit the bids	Yes	Yes	The law mentions that the time given for bidding should be sufficient for bidders to analyze the RFP and to prepare the bids accordingly.
Availability of various procurement procedures	Yes	Yes	The procurement may happen through tendering or direct negotiation only in the sector that the law defines.
Direct negotiation not discretionary	Yes	No	Direct negotiation is only permissible in the energy sector.
Tender documents detail the procurement procedure	Yes	Yes	
Tender documents specify prequalification/shortlisting criteria	Yes	Yes	
Clarification questions for the procurement notice and/or the RFP	Yes	Yes	
Pre-bidding conference	No	Yes	The law allows pre-bidding meetings. The meetings can be private with a single bidder or collective with a group of bidders.
Financial model submitted with the proposal	Yes	Yes	
Proposals evaluated solely in accordance with published criteria	Yes	Yes	
Treatment when receiving only one proposal	No	No	
Publication of the award notice	Yes	Yes	The electronic system for PPPs will publish the award notice (after the establishment of the system). It will also appear on the website of the procuring authority and the PPP unit (after the establishment of the website).
Notification of the result of the PPP procurement process	Yes	Yes	
Standstill period	No	Yes	
Negotiations with the selected bidder restricted	No	No	
Publication of contract	Yes	Yes	

Source: Author's own based on data from "Procuring Infrastructure Public-Private Partnerships" (WB 2018a) and the author's research.

Table 7: Summary of Indicators for Georgia against the Benchmarked Practices in the Phase PPP Contract Management

PPP Contract Management	2016 According to the WB (2018)	Sep. 18	Comment
System to manage the implementation of the PPP contract	Yes		The methodology is in the process of development.
System for tracking the progress and completion of construction works	Yes	Yes	The agreement needs to define this. The general methodology is in the process of development.
Monitoring and evaluation system of the PPP contract implementation	Yes	Yes	
Foreign companies permitted to repatriate income	Yes	Yes	
Change in the structure (stakeholder composition) of the private partner and/or assignment of the PPP contract regulated	No	No	
Modification/renegotiation of the PPP contract (after the signing of the contract) regulated	Yes	Yes	
Circumstances that may occur during the life of the signed PPP contract regulated	Yes	Yes	
Dispute resolution mechanisms	Yes	Yes	The type of dispute resolution mechanism is subject to the negotiation between the parties. The agreement can predefine the dispute resolution mechanisms.
Lenders' step-in rights	No	Yes	Only the case of the replacement of a private entity mentions lenders' rights.
Grounds for the termination of a PPP contract	No	No	

Source: Author's own based on data from "Procuring Infrastructure Public–Private Partnerships" (WB 2018a) and the author's research.

Table 8: Summary of Indicators for Georgia against the Benchmarked Practices in the Management of Unsolicited Proposals (USPs)

Unsolicited Proposals (USP)	2016 according to WB (2018)	Sep. 18	Comment
Regulation of USPs	No	Yes	Only the energy sector allows unsolicited proposals.
Assessment to evaluate USPs	No	Yes	The assessment of USPs will take place according to the two core criteria: <ul style="list-style-type: none"> • Whether the project corresponds to social needs. • Whether the project creates added value or brings innovation.
Vetting procedure and/or prefeasibility analysis of USPs	No	Yes	
Evaluation of the consistency of USPs with other government priorities	No	Yes	
Competitive PPP procurement for USPs	No	Yes	In this case, the procurement might proceed according to the standard procurement procedure. In a case in which the awarded bidder is not the initiator of the proposal, the initiator will receive compensation for all related research and preparation costs.
Minimum period of time to submit the bids	No	No	

4.3 The Main Challenges that the Country Faces in Developing PPPs Successfully

4.3.1 The Challenge of Creating a Pipeline of Bankable Projects

“The issue of bankability of infrastructure projects has long been a topic of discussion by the development and investors’ communities and is one of the key bottlenecks in attracting private capital to meet the global infrastructure gap and to provide millions of people with the key services they lack. The B20 task force on infrastructure confirms the investment gap in infrastructure is not the result of a shortage of capital. Real long-term interest rates are low, there is ample supply of long-term finance, interest by the private sector is high, and the benefits are obvious. However, a number of factors hold back investment in terms of financing and funding. One of those factors is to find bankable and investment-ready projects” (Rana 2017).

The major step during the inception of a PPP project is to identify a bankable project that will make the project self-sustainable and bring financial benefit to the private counterparty. The facts that Georgia is a lower-middle-income country and that it has a relatively small population make it difficult to compensate for the investment in infrastructure development. However, the strategic location of Georgia and its booming tourism industry open the door for opportunities.

4.3.2 Low Awareness of PPPs among Government Officials, the Business Sector, and the Public

The concept of PPPs is still very new to the Georgian society. Government departments have little experience in preparing and managing PPP projects. There may be a misunderstanding of the PPP concept among the government officials whom the government bodies already leading the PPP projects employ. The awareness among the public and the business sector is low as well. It is likewise important that the business sector is aware of the concept and the opportunities and benefits that it offers. As it is possible to view the business sector as the potential private counterparty of a PPP project, the understanding and trust in a PPP may play a crucial role in ensuring its involvement.

Among the core responsibilities of the PPP unit will be capacity building and increasing the awareness among the society and the public sector. The recommendation section will discuss the latter issue.

4.3.3 Inadequate Skill Set of Workers

The Global Competitiveness Report 2017–2018 (WEF 2018) stated that the most problematic factor in doing business in Georgia is the inadequately educated workforce. The quality of education ranked 101st of 137 nations, and on-the job training ranked 131st (WB 2018b).

Generally, leading successful PPPs requires government officials to have the essential skills to initiate, prepare, and lead complex projects. To reach the desired level of proficiency, a long-term approach is necessary. The PPP unit will address this issue further. The unit will comprise high-level professionals who are skilled in preparing and managing large projects. The team will address the problem through continued capacity building programs for the relevant public entities.

Likewise, one of the responsibilities of the PPP unit is, in the case of need, to help the procuring authority to find a consultant. The PPP unit will assess case by case the complexity of the projects in relation to the skill set of the workers. Whenever it identifies the need, it will invite external consultants to become involved in the preparation or management of the projects.

4.3.4 The Challenge of Attracting Long-Term Financing and an Underdeveloped Domestic Capital Market

For large infrastructure projects, the income of which stretches over a long period, it can be challenging to attract financing adjusted to their needs. In Georgia, the major source of funding has been local banks historically. However, the availability of long-term financing from commercial banks can be limited. The issuance of corporate bonds can be a better option for PPPs to attract funding as they offer more flexibility and the ability for the issuer to set its preferred terms. The facts that the capital market of Georgia is at a low stage of development and that it is possible to appraise its activity as low can be hindering factors for PPPs.

Moreover, the instability of the local currency (GEL) creates currency risks for long-term projects that receive funding in a foreign currency and generate income in the local currency. Due to the high costs, hedging cannot be an efficient way to eliminate risk. Thus, raising funds in the local currency is the only currency risk-free alternative for some long-term infrastructure projects.

Capital market development is a priority on the national level as the local market is currently underdeveloped. The most-traded instruments are government bonds, and commercial banks mostly own these bonds (with a few exceptional holdings of institutional investors). The secondary market is shallow. Currently, in the local capital market, there is a lack of institutional players that can provide an alternative source of financing for companies. The government, together with the National Bank, has elaborated a capital market development strategy and action plan. There are a number of structural reforms that should contribute directly or indirectly to capital market development. The ongoing work related to the introduction of a pension system is the most important reform that can facilitate capital market development (UNESCAP 2017).

In March 2016, the Ministry of Economy and Sustainable Development of Georgia (MESDG) introduced a plan for the reform of the pension system together with a supplementary pension scheme. According to the document, the private pension system will follow the defined contributions principle. A study (Finanzgruppe Sparkassenschiiftung für International Kooperation 2017) presented the scheme according to which it will allocate the pension assets to the different pools of investment. According to the possible composition of pension fund assets, the system will invest 41.7% of the assets in bonds and 32.8% in enterprises' shares, which are available through public offering. The reform of the capital market and pension system will enable the private sector to gain better access to long-term financing on the local market.

4.4 Recommendations for the Successful Promotion of PPPs in Georgia

The study revealed possible policy actions that will further encourage the development of PPPs in Georgia. The following paper provides recommendations for the government and presents relevant international practices.

4.4.1 To Raise Awareness of PPPs among Government Officials and in the Business Sector

As indicated earlier, the low awareness among government officials remains a challenge for the successful development of PPPs. The paper strongly recommends launching a capacity-building program that will address the government officials who are or will potentially be in charge of the implementation of the PPP projects. The program can be in the form of training sessions that will cover the essential materials regarding the characteristics of PPPs as well as the policies and procedures necessary to manage each phase of PPPs. Ideally, the program should consist of several modules, as in the case of India, to address officials' need for different depths of knowledge.

Several countries have undertaken similar actions in the form of seminars and training. India has provided dedicated training of public functionaries at the state and municipal levels. It implemented the training program with funding support from KfW. The courses aimed at five different categories of audience members distinguished in terms of their role in the PPP context as well as their specific need/purpose in the PPP context, that is, increasing awareness, obtaining a better understanding, and acquiring proficiency in the application of PPP skills (UNESCAP 2015).

To raise public awareness and make information available to the public or the business sector, it is equally important to create an information dissemination channel. The international practice is to establish a PPP website, on which, together with the PPP database and relevant updates, external users will be able to access policies, guidelines, information brochures, and updates regarding PPPs.

4.4.2 To Develop Robust Methodologies for the Assessment of PPPs

Due to the lack of experience on the national level in preparing PPP projects, it will be highly beneficial to establish specific methodologies for each of the PPP assessment factors that the PPP policy document defines. The methodologies will help to focus on key criteria for the assessment. It is necessary to consider that different sectors of infrastructure might require different approaches. For particular assessment factors, it can be useful to have separate guidelines for the each of the prioritized PPP sectors.

Different countries, including Canada, Germany, Ireland, Lithuania, the Netherlands, New Zealand, Peru, Philippines, Slovakia, South Africa, and the United Kingdom, have developed specific methodologies for performing assessments (WB 2018a). However, there is no consensus around the world on the methods of conducting socio-economic analysis of projects. Some countries have focused on qualitative factors, whereas others have developed quantitative assessment methodologies. A good example of a country that conducts thorough socioeconomic impact assessments is Austria, which has established a comprehensive set of variables for assessment. Austria has developed tools for economic, fiscal, and environmental impact assessment (WB 2018a).

It is equally important to share the methodologies for assessment with the private sector. These will act as a guideline for preparing suitable projects on each side of the partnership.

4.4.3 To Develop a Market-Sounding Procedure

As it is possible to view funding as one of the major challenges that PPPs currently face in Georgia, developing a market-sounding procedure will help the government to assess correctly the ability of a project to attract financing and consequently will provide the private counterparty with easier access to the fundraising process.

Through market-sounding exercises, important feedback from the lender community can inform the project preparation phase and shape the risk allocation matrix in a market-acceptable manner. The lending market and the appetite of lenders can vary over time due to various factors. These include legal and regulatory matters, global interest rate regimes, and capital market conditions. As such, bringing lenders' feedback on board can be very useful for making a project bankable. An infrastructure project that has a risk-sharing protocol based on broad-level, early feedback from the lending community will be more likely to raise the required funding with fewer complications. Multilateral development banks have an important role to play in helping governments to develop such protocols and improve the bankability of potential PPP projects (WB 2017).

4.4.4 To Promote Project Development Facilities

A number of countries have established project development funds or facilities (PDFs) to strengthen their PPP programs. PDFs provide the specialized resources necessary to conduct studies, design and structure a PPP, and procure a PPP. They call on a revolving fund to meet the up-front cost of developing a PPP, a cost that is normally higher than that of a project delivered in the conventional way. PDFs also provide

governments with a tool for demonstrating good practice standards in project development (ADB 2016).

Despite the operational model differing according to countries, the core function of PDFs is to provide a professional service that generates high-quality studies and other transaction advisory support. In the case of the Philippines, the PDF facilitates the pre-investment activities of potential PPP projects, such as prefeasibility and feasibility studies, to develop a pipeline of viable projects. PDFs mainly cover the full phase of the project preparation, which projects normally recover from successful bidders afterwards. The operation of the PDF as a revolving fund enables the benefits of the PDF to sustain over a number of project cycles.

As for India's case, the fund provides up to 75% of the project development expenses from the feasibility/structuring stage. It provides assistance in the form of interest-free loans from the government, which it recovers from the successful bidder.

In the case of Georgia, where the identification of bankable projects to create a robust pipeline remains one of the main challenges, there are strong recommendations to promote the creation of a PDF, adjusting the structure and operational model to the current needs. It is possible to base the PDF within the PPP unit, so the PPP unit would provide strategic guidance to the PDF, or, alternatively, to establish it as an autonomous entity.

4.4.5 To Raise the Rate of Return on Infrastructure Projects through Viability Gap Funding

One of the major challenges in attracting private investment in infrastructure globally has been the low rate of return of public infrastructure projects (Yoshino and Abidhadjaev 2017). The instrument for the government to fill the viability gap is an additional return that it can guarantee to the private sector in the form of a capital grant or various types of subsidy. For the government to make a sensible decision regarding viability gap funding (VGF), it needs to assess the potential impact of infrastructure provisioning on the economy. In Section 1, we presented the case of Kutaisi International Airport as an example of infrastructure impact assessment.

5. CONCLUSION AND POLICY IMPLICATIONS

Georgia has recognized the importance of the involvement of the private sector in infrastructure financing. It has taken important steps to develop a respective PPP policy and to create a PPP-friendly environment; it is also important to bring this into practice.

The expectation is that the reforms of the capital market and pension system will act as encouraging factors for private infrastructure investments. Moreover, the overall positive investment climate of Georgia together with the growing free economic zones and the government's plan to increase the importance of Georgia in the global transit corridors create opportunities for successful infrastructure development.

However, to attract private investments successfully and fill the remaining infrastructure gap, the country will need to overcome the challenges that it still faces. It will be crucial for the government to mobilize its intellectual resources and maintain an active course.

In our empirical study, we evaluated the impact of infrastructure based on the evaluation of the effect of infrastructure provision on public finance, presenting the case of Kutaisi International Airport in Georgia. In the case, we assessed the impact of the airport on the public finances of the region in which it is located and its spillover effects on the related regions. For the assessment, we obtained regional quarterly tax data for the years 2011–17 from the Ministry of Finance of Georgia. We differentiated between three groups of taxes: total taxes, business taxes, and property taxes. We utilized the data to exploit the difference-in-difference (DiD) approach, which assessed the impact of the airport on tax revenues for the group of affected regions relative to a control group of unaffected regions. We further distinguished the effects for the short term (2013), medium term (2014–15), and long term (2016–17). We found statistically significant increases in the growth rates of all three groups of tax revenues in at least one phase, with the magnitude of the increase being up to 29 percentage points relative to the group of control regions.

The highest relative growth for total taxes and business taxes manifested in the short term, with a growth magnitude of 25 and 28 percentage points, respectively. For property taxes, the growth encouraged by the infrastructure procurement reached 29 percentage points in the medium term.

It is necessary to mention that our empirical model has two important limitations. The major limitation is that the data obtained were regional-level data. We realize that district-level data would have provided better-quality results as broad regional data allow other unrelated factors to influence the results. However, district-level data are not available from the database of the Revenue Service Department of the MoF. Another limitation of the model is that we obtained tax data on a quarterly basis, while the data for the control variables were available only on an annual basis. We manually converted the annual data into quarterly indicators. We assume that this might be the reason for the insignificance of the effect of the labor force and bank lending.

As a result of the empirical study, we concluded that the airport had a positive impact on the tax revenue. The findings from our case suggest that infrastructure investments may boost public revenues. The conclusion might serve as a basis for governments to think of an approach whereby the incremental tax revenues will revert to the infrastructure investors. As Yoshino and Abidhadjaev (2017: 146) mentioned, “If the rate of return on infrastructure is increased by injecting spillover tax revenues generated in areas surrounding infrastructure investments, much more long-term private capital could be forthcoming for infrastructure investment.”

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