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Testing the Relationship between Taxes, Investments, Government Spending, Economic Growth, Entrepreneurship and the Impact of Covid-19

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Abstract

In this paper we examined the relationship between taxes, investments, government spending, economic growth and the impact of Covid -19. Thus, we used the negative impact of Covid -19 and our purpose is to highlight using empirical econometric analysis the impact of taxes which affects endogenous economic growth such as investments in combination with Covid-19 consequences. In order to estimate our empirical models and conclude to reliable results we used GMM models using taxation and spending as instrumental variables. It's a fact that, last decades economic crisis and also health crisis drove several countries on deficits and decreases on economic growth. Most researchers focus on tax measures in such theoretical and empirical aspects to support the view that governments must make adjustment with regard to taxation which affect growth conversely. Bibliography supports that, entrepreneurship in countries with high tax rates appeared disorganized and this affect negatively on economic growth in combination with Covid-19. To be more specific, the main question of this research paper is to estimate by using empirical methods if Covid-19 affects so negatively economic growth on EU countries such as the economic crisis. To measured it, we made two dummy variables which we used in the same GMM estimation model. In this way we put emphasis on the question which reduce economic growth more Covid -19 or economic crisis.

Keywords: tax policy, fiscal policy, economic growth, economic crisis
Jel codes: E62,O38.

1. Introduction

Thus, we used the negative impact of Covid -19 and our purpose is to highlight the impact of taxes which affect endogenous economic growth such as government spending in combination with Covid-19 consequences by using empirical econometric analysis. In order to assess our empirical models and conclude to reliable results we used GMM models using taxation and spending as instrumental variables. For our estimation method we made dummy variable which we used in the GMM estimation model. In this way, we put emphasis on the question regarding how Covid-9 affected GDP, taxation and entrepreneurship. On the other hand we measured the impact of doing business and total tax revenues in 2020 for high income countries according to World Bank classification.

Last decades economic crisis that prevails in several countries creates the need to find its causality and the reason why economies have been showing deficits in their budgets for a long time. Economic growth is a great concern to both researchers and governments. Due to the latest economic crisis that Europe is experiencing, several efforts have been made to normalize it and avoid member it and avoid member states of European Union

from situations of austerity and social uneven distribution of resources. Economic development is one of great concern to both researchers and governments. Due to the latest economic crisis that Europe is experiencing, several efforts have been made to normalize it avoid member states of the European Union from situations of austerity and social uneven distribution of resources.

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Taxation in both Greece and other countries which have deficits create an environment of uncertainly as far as businesses are concerned and generally the social status of each country. Most researchers focus on tax measures in such theoretical and empirical aspects to support the view that governments must make adjustment with regard to taxation which affect growth conversely. Entrepreneurships in countries with high tax rates are disorganized and they aren't efficient due to the high cost. A crucial growth variable is investment of physical capital. Investment is proven to have a dramatic impact both on national and international scale. Countries with high rates of investment prosper compared to countries with low percentage of investment. Thus, through the literature review which is presented below it is evident that entrepreneurs are discouraged from preserving a new start-up business. Additionally, the decrease of investments and increase of taxes have a negatively impacted in productivity among young people. The objective of this paper is to analyse fiscal policy aiming to promote economic growth. More specifically, with our empirical model we managed to exclude conclusions in which way some of fiscal parameters affects growth.

2. Literature review

Arnold, J. (2008),in accordance with the previous study, focused on the affects of tax neutral changes on the tax structure. In his model used panel data for 17 OECD countries from 1970 until 2004. In his sample GDP was the dependent variable and the others explanatory variables are human capital, direct and indirect taxation, population growth etc. He concluded that governments should managed their fiscal policy focused on taxation policy.

Another research paper study the relationship between technological growth for each country and the impact of taxation on growth. One more supporting review for the necceserity of technological growth on economic growth was De Mello το 1999. Davide Furceri, Georgios Karras(2014), used twenty three data for developing and developed countries and he conclude that οιforeign direct investment greatly boosts growth.

Chang, T., W. R., & Caudill, S.B.(2002), examined in which way tax changes affects on economic growth. Most economic revenues had achieved with changes on taxes and especially on consumption taxes. Results showed that increased taxation makes it difficult not only for economic growth but also for investment, resulting in the contraction of growth. In addition, high corporate taxation slows down growth.

Ferede & Dahlby (2012), studied the impact of taxation in Canada provinces using panel data from 1977-2006 with five-year averages. Ferede & Dahlby(2012), also supported that sale tax rate affect positively on GDP because it was associated with private investment. Taxes that inhibit investment are property taxes etc.

Lee, Y and Gordon, R. (2005), who used a sample of 17 OECD countries for 1988-2011 to draw conclusions about ways in which governments could encourage entrepreneurial activity. Entepreneurship is associated with risk taking by entrepreneurs. Entrepreneurship is associated with risk taking by entrepreurs.With the data they collected and with a panel analysis they used as variables the corporate tax rate and the loss of government revenue due to non-payment of corporate taxes by entrepreneurs. Therefore, in sample of the examined countries, they concluded that the higher the corporate tax rate, the most difficult it is to pay taxes to the government.

In addition, researchers argue that a country with a high corporate tax rate makes it difficult for its citizens to take business risks and automatically loses the opportunity to compete with other countries for foreign direct investment. (Mendoza, E.G., Razin, A., & Teasa, L.L.,1994)

Tosun, M.S. and Abizadeh, S. (2005), examine overall taxation in its broadest sense and its effects on GDP. Their study focuses on the US with a view to having a mechanism of taxation for the purpose of long – term growth. The method used to investigate the above is panel data. They attempted to explain the effects of taxation on growth. To carry out their research they used a sample from 7 OECD countries and they include time series for personal and corporate income tax rates and consumption. They conclude that tax on capital profits appears

low percentage of savings and these causes reduce of growth. Devereux & Griffith (2002), study the effect of corporate taxes on capital location and foreign direct investment. Based on the literature review carried out by the researchers, they concluded that the most important factors that examine the relationship between capital in an economy and its tax rates is the total stock of capital and the distribution of equity capital.

Lucas, R.E. (1988), summarizing their research the researchers argue that the decisions of companies to invest and to find the most suitable location for foreign direct investment are largely influenced by corporate taxes. Summarizing their research, the researchers argue that the decisions of companies to invest and to find the most suitable location for foreign direct investment are largely influenced by corporate taxes.

This study was primarily concerned with tax revenues from dividends because throught the above a financial market of a country restributes resources from investment activity with reduced growth to investment activity with reduced growth to investment activity with high growth. In addition, the adjustment of tax rates is necessary, the reduction of taxes on companies as well as on consumption will lead to significant levels of development and social welfare. (Solow.R.M., 1970)

3.Data &Methodology

We used the following function for our GMM model. Our variables for the OLS models are the following:

Lgdp=bo+b1taxgs_+b2corruption+b3lnew_business_rate+b4lg_gov_exp+b5dummy +uit

- ✓ LGDP
- ✓ Taxes on goods and services (% value added of industry and services)
- ✓ Corruption
- ✓ New business density rate
- ✓ General government final consumption expenditure (current US$)
- ✓ Dummy=0 2012-2018 prior to Covid-19
- ✓ Dummy=1 2019-2022 during Covid-19
- ✓ We used panel data from OECD database from 2018-2022 for 37 OECD countries.

Our country list is the following: Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Lithouania, Luxembourg, Latvia, Malta, Netherlands, Norway, New Zealand, Poland, Portugal, Slovenia, Sweden, Ukraine, United States.

Table 1. Descriptive Statistics

	LGDP	LGOVSPEND	LTAXES_GS	LNEW_BUS_DESNITY	CORRUPTION
Mean	10.48601	24.92521	2.404916	1.739745	7.972332
Median	10.67055	25.12154	2.618843	1.897879	8.000000
Maximum	11.59725	28.90361	3.184385	3.381567	10.00000
Minimum	9.403858	21.33691	-0.984164	-0.732444	4.000000
Std. Dev.	0.564103	1.774068	0.802600	0.844448	1.245319
Skewness	-0.299342	-0.046497	-2.680176	-0.581237	-0.169968
Kurtosis	1.922174	2.401173	10.35213	2.818742	3.134254

The table above shows the descriptive statistics for the seven independent variables which took place in this sample. In particular, presented the average values for the lowest and highest values for kyrtosis, skewness and for the other statistical indices.

Table 2. GMM estimations

Dependent Variable: LGDP	**GMM1**	**GMM2**	**GMM3**	**GMM4**	**GMM5**	**GMM6**
LGDP(-1)	0.266198 (0,0226)***	0.2526 (0,000)***	0,1183 (0,0127)***	0.1374 (0,021)***	0.1405 (0,0089)***	0.10795 (0,000)***
LGOVSPEND	0.785136 (0,017)***	0.7944 (0,000)***	0,8219 (0,006)***	0.7715 (0,0137)***	0.7212 (0,0000)***	0,810534 (0,0000)***
LTAXES_GS	0.162370 (0,0895)*	0,0569 (0,0569)	0,1077 (0,076)	0,1083 (0,0462)**	0.405 (0,0000)***	
LNEW_BUSI_DENSITY	0.181679 (0,021)***	0,2082 (0,0109)***			0.06072 (0,0000)***	
CORRUPTION	0.013354 (0,002)***			0.0213 (0,0026)***	0.005 (0,0019)***	
DUMMY	-0.066890 (0.0000)***	-0.0685 (0,0019)***	-0,0296 (0,0022)***	-0.0366 (0,0019)***		-0.0326 (0.000)***
AR(1)	0.9974	0.0222**	0.9999	0.9988	0.7936	0.1979
AR(2)	0.9997	0.6729	0.9998	0.9919	0.059	0.1275

- ***indicates significant at the 1% level
- **indicates significant at the 5% level.
- *indicates significant at the 10% level.

Source: Our calculation

4. Estimated results

Economic growth and all components affected negatively or positively is an issue which has occupied the international literature a lot. According to Solow –Swan and Kuznets theories economic growth depends on physical and human capital. In this research paper we analyzed the impact of taxation, entrepreneurship, government spending, corruption such as exogenous impact on economic growth. Using GMM model we concluded that Covid-19 in combination with other variables led to serious repercussions on GDP. Likewise, corruption has a detrimental effect on GDP. Moreover it is imperative that corruption, taxation and entrepreneurship should be better controlled by governments to encourage economic growth. In this paper it is obviously that tax on income is statistically important such as bibliography refers. Specifically, one increase on tax on income reduces GDP negatively by 0,006. In a macroeconomic function it is very important to oversse the productivity. In accordance with the previous bibliography theories we concerned that productivity increase GDP a lot and this make productivity index very curious due to exclude reliable results. Furthermore, investment variable is very important for economic growth and in our empirical results we concerned that this variable

affects positively and statistically important in our estimation model. The most previous studies used to use only tax and spend variables to exclude conclusions about the relationship between macroeconomic variables and growth. We decided to use investments due to their importance in our conclusion goals. In the other hand in a following research we can use a sample of countries which are rich in investments and capital profits. Also in this paper we use economic crisis as a dummy variable because we want to highlight the impact of crisis on growth in comparison with investments and taxis. In a following paper we also can use COVID-19 such as a dummy variable.

5. Conclusion

Economic growth and all components which affect negatively or positively on it is an issue which has occupied the international literature a lot. This paper was carried out with the aim of drawing conclusions throught an analysis with panel data for 23 European countries. More specifically, this paper in first part we analysed economic models to exclude results for economic growth. Last decades European Union countries deal with economic countries which had economic crisis. Governments should encourage economies using fiscal policies which aim to normalization debt and finally economic growth. In our theoretical part we analysed economic growth theories such are Solow –Swan and Kuznets theories. In our literature review we found that taxation on goods and services affects negatively on economic growth. To be more specific in bibliography analysis except from taxes research findings also emphasized that investments, labour productivity and consumption on unelastic goods may influent economic growth. It depends on profile of each country for example how rich or poor due to Gross Domestic Product is.

We managed to exclude reliable results because we used a sample with a lot of observations and this is necessary when panel data used. Furthermore, using eighteen regressions we have a better view of all variables and the influence in the dependent variable. This paper have agreed with previous studies that taxes on income affects negatively economic growth in addition with investments and labor productivity which affects positively economic growth.

In conclusion, it is generally accepted that, European Union countries characterized by economic inequality between them. In is true that it is extremely difficult to compare the economy of Spain, Portugal and Greece with economies such as Switzerland, Germany and Scandinavia countries. For this reason it is curious to divide countries by their economic profile in a following paper.

References

Arnold, J. (2008), “Do tax structures affect aggregate economic growth? Empirical evidence from a panel of OECD countries”, Economics Department Working Papers No.643, OECD.

Afonso, Antonio, Rault, Christophe (2009) “Spend and tax: a panel data investigation for the EU”, Economics Bulletin, 29(4): 2542-2548.

Chang, T., W. R., & Caudill, S.B.(2002), Tax and spend, spend and tax, or fiscal synchronization: new evidence for ten countries, Applied Economics,34(12), 1553-1561

Davide Furceri, Georgios Karras(2014), “Tax changes and economic growth: Empirical evidence for a panel of OECD countries”

Ferede, E and Dahlby, B. (2012), “The impact of tax cuts in Economic growth: Evidence from the Canadian provincies”, *National Tax Journal,* 65 (3), 563-594

Lee, Y and Gordon, R. (2005), “Tax Structure and Economic Growth”, *Journal of Public Economics,* 89, 1027-1043.

Lucas, R.E. (1988), “On the Mechanics of Economic Development”, *Journal of Monetary Economics*, 22, pp. 3-42

Mendoza, E.G., Razin, A., & Teasa, L.L.(1994). Effective tax rates in macroeconomics Cross-sountry estimates of tax rates on factor incomes and consumption. *Journal of Monetary Economics,* 34(3),297-323.

Mertens, K., & Ravn, M. O. (2019). The dynamic effecrs of personal and corporate income tax changes in the United States. The American Economic Peview, 109(7), 2679-2691.

Solow, R.M. (1970), *Growth theory: An Exposition,* Oxford University Press, Oxford.

Tosun, M.S. and Abizadeh, S. (2005), “Economic growth and tax components: an analysis of tax changes in OECD”, *Applied Economics,* 37,2251-2263.