Macroeconomic Impact of Natural Disasters in Albania

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Abstract

This paper has aim to take a general look at the impact that natural disasters have on a country's economy. Further expanding concretely in the impact caused by the earthquake of November 26, 2019, in the economy of Albania. This paper studied macroeconomic indicators over the past few years, forecasts for their progress before the natural disaster, and how they are projected to change after that. Damages and losses will be analyzed according to specific sectors of the economy as well as the impact on the main affected municipalities. The paper presents the authors conclusions and recommendations regarding the actions to be taken to help with the least harmful way of the earthquake.

Key words: macro, impact, natural, disaster
J.E.L. classification: E01, E10, E37, F62, F64

1. Introduction

Macroeconomic impact is also called secondary impact (Benson and Clay 2000: 12, Murlidharan and Shah 2003: 21f) includes impact on economic variables such as: Gross domestic product, consumption, inflation, debt level, reallocation of state resources for assistance and reconstruction (Mechler 2004a: 36). Macroeconomic impact is a matter of the impact of economic performance as a whole, both for short-term and long-term periods. However, the net effect on macroeconomic variables from a catastrophe is the final product of direct and indirect effects: (Rose 2004: 15, ECLAC 2003: 71, Otero and Marti 1995: 16-18). In addition, the magnitude of the positive or negative effects on macroeconomic performance cannot be directly determined: (Albala-Bertrand 1993a: 57ff).

Albania is a country exposed from time to time to natural disasters, such as earthquakes, floods, droughts and landslides. The threats posed by the above catastrophes can result in morbidity or loss of life among people, damage and destruction of property, damage to infrastructure and economy, environmental damage and damage to the agricultural sector. The cost of damage has a negative impact on the country's macroeconomic situation. Albania ranks 41st in the world for vulnerability to landslides, 43rd for earthquakes and 58th for drought risk: 2009 Global Assessment Report. Albania is also exposed to a number of environmental problems inherited from the time of the centralized economy. These include bio-diversity damage, soil erosion, specific sectorial problems (water, air and soil pollution), and the continued existence of high-risk areas related to environmental pollution. Currently, these problems come as a result of the lack of implementation of institutional and legal systems.

2. Literature review

Influence on a country's economy. Natural disasters can have an impact on the overall performance of an economy in a state (example: negative effects on growth rates, balance of payments or debt levels) (Hochrainer 2006. page 33) In most cases, the catastrophe must strike with

considerable force to have an impact on performance, but it happens that even if only the main activity of an economy is hit, which would bring a "negligible" loss for a powerful state, can affect macroeconomic performance (JM Albala Bertrand). Natural disasters cause considerable budgetary pressures, including the narrow and short-term fiscal impact and the country's development complications in a broader framework and long-term period (Benson and Clay 2003). However, some economists allude to the opposite effects of these catastrophes, even arguing that catastrophes can be a positive shock. This view has been put forward by Stewart and others (2001: 15-16): "The developmental costs of war are greater than the destruction associated with natural disasters, for two reasons. First, natural disasters tend to destroy homes and infrastructure, but have less of an effect on productive capacity and do not affect human capital, labor power (unless there is a loss of life, of course). "Second, while social and organizational capital remains untouchable and natural disasters tend to be relatively short-lived, investment makes the country recover as quickly as possible, and may even have a multiplier effect on the economy as a whole." This argument relies heavily on a multi-state empirical analysis of the impact of single catastrophic events on overall levels of economic growth and other macroeconomic factors undertaken: (Albala-Bertrand 1993). From his several-year study he concluded that GDP is not affected, and that GDP growth is easily positive stimulated by these events. A theoretical explanation for this contradictory finding at first glance has been given by (Aghion and Howitt,1998) in an endogenous model of growth through a process of destruction.

Meanwhile, (Noy 2009) undertook another study in many states using Emergency Data Database (EM-DAT) data for a number of 109 states in the period 1970-2003. The results show that in developing countries natural disasters have a negative impact on GDP growth of approximately 9%. (Hochrainer 2009) treated it as a projection of GDP and then compared it to the actual value of GDP after the disaster. Based on his model of 225 major natural disasters from 1960 to 2005, he found that the negative impact on GDP lasts up to 5 years, with an average reduction of 4% compared to a base of 5 years after the disaster. Another study (Benson and Clay, 2004) highlights a major impact on macroeconomics from a natural disaster depending on the size of the country which is the center. So, if the event takes place in a large, urbanized center or in the metropolis, it will have major economic consequences. Assessing the macroeconomic impact includes taking a different perspective and assessing the aggregate impact on economic variables such as gross domestic product (GDP), consumption and inflation as a result of disasters, and reallocating government resources for facilitation and reconstruction efforts. (ECLAC 2003, Chhibber and Laajaj 2008) consider that an earthquake can most likely result in "build-back" or "build-back-better" because the reconstruction considered can attract prosperity and eventually lead to technological change.

Table no. 1. Impact on macroeconomic indicators of a natural disaster

Macroeconomic Indicators	**Expected change**
GDP	Immediate decline in GDP growth in the year the event occurs. Growth in GDP growth next year. Slowdown in the second and / or third year
Agricultural Sector	Significant decline in production (in the case of hurricanes, floods or landslides).
Processing Sector	Decreased activity due to interruption of transport; reduction of production capacity.
Service Sector	Decline due to suspension of transport and payment system.
Export of goods	Reduction of the growth rate in the year of the event. Next year it returns to previous levels. In the following years it is a continuation of the next year.
Import of goods	Significant increase in the growth rate in the year of the event.

	Return to pre-disaster level in the following year. In the following years a further decline, most likely caused by declining revenues.
Gross Fixed Capital Formation	Sharp increase in the year after the event.
Inflation rate	Low growth caused by cessation of production and distribution and increase in transport costs.
Public finances	Deficit deteriorates as a result of lack of tax revenues and increased public spending.
Trade balance	Deficit as a result of declining exports and increased imports, associated with weakening production capacity and strengthening public and private investment in reconstruction.

Source: Adapted from Hoch Rainer, 2006 World Bank document. (GFDRR, May 2015)

Impact on the Albanian economy. Albania's economy and population are exposed to earthquakes and floods, with earthquakes that have a higher risk of a more severe impact, but with a lower probability of event (GFDRR 2015). The average annual earthquake-stricken population in Albania is about 200,000, and the average annual GDP affected is about $ 700 million. The average annual earthquake and capital loss caused by earthquakes is $ 50 million and about $ 100 million World Bank document. (GFDRR, May 2015), respectively. Victims and capital losses caused by an earthquake of higher intensity but less frequently may be substantially greater than the annual average.

Such was the earthquake of November 26, 2019, with a magnitude of 6.3 on the Richter scale, with an epicenter 22 km from the city of Durres. The earthquake has been described as the strongest to hit Albania in the country in 30 years. It caused extensive damage in 11 municipalities in the country, including the two most populous and urbanized (Tirana, Durres). The most affected municipalities were: Shijaku, Durrës, Kruja, Tirana, Kamza, Kavaja, Kurbini, and Lezha. As a result of the catastrophe, 202,291 people were affected, directly and indirectly, 51 of whom lost their lives tragically. Moreover, 17,000 people lost their homes as a result of the collapse.

3. Research methodology

This paper is based on data published by the European Commission regarding the situation in Albania before and after the earthquake Albania Post Disaster Recovery. Specifically, the overall impact on the economy and the concrete impact on macroeconomic factors have been analyzed and brought. The data published by this report were specifically analyzed, and then processed to compile the graphs in this paper and to construct the tables.

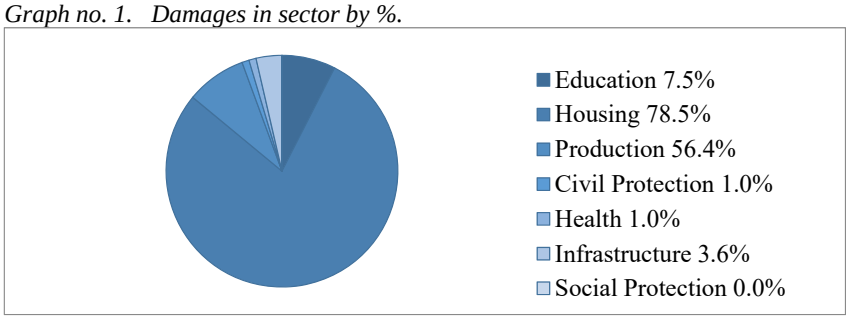
The publication of the World Bank regarding the countries at risk for floods and earthquakes, in which Albania is also involved Country Risk Profiles for Floods and Earthquakes, has also been taken into account. Based on the expected impact of disasters in our country, data have been presented on macroeconomic factors and how they are expected to change after the earthquake. The variety of data obtained from the reports of the World Bank and the European Commission, makes this paper even closer to the reality in which we are and creates a higher reliability

4. Findings

The Albanian economy has seen a significant slowdown in 2019, with more Albanians leaving the country and fewer returning within borders. A problematic year, with increased pressures and a halved economic growth, this is because the country was characterized by natural disasters. Regarding the impact, it will have on the economy, it is predicted that the negative effects will extend for a medium to 3-to-5-year period.

4.1 Total losses and losses. The estimate shows that the total effect of the disaster in the 11 affected municipalities is about 121.21 billion ALL (985.1 million Euros), of which 103.84 billion ALL represent the value of destroyed physical assets and 17.37 billion ALL refer to losses.

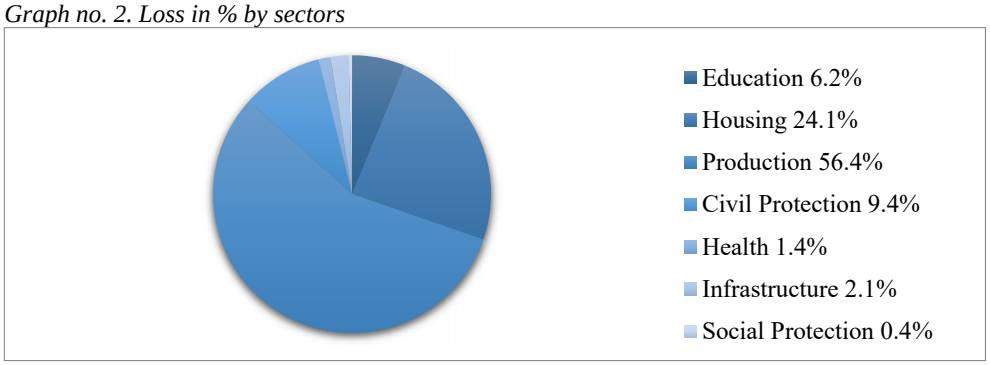
Graph no. 1. Damages in sector by %.



Source: European Commission

Numerous damages were caused in the Housing sector (78.5%) followed by the Production sector (8.4%) and the Education sector (7.5%). Referring to losses, the Production sector holds the highest percentage (56.4%), followed by Housing (24.1%) and Civil Protection (9.4%). Referring to the ownership of the effects, 76.5% are private and 23.5% public.

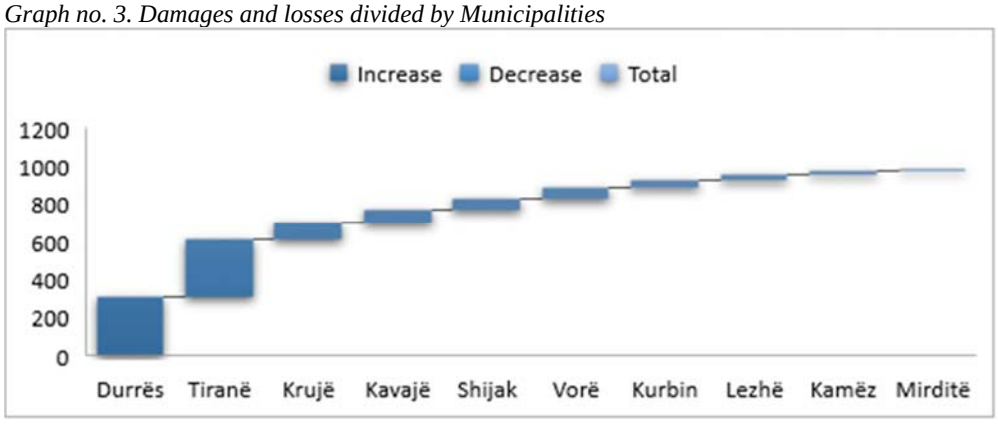
Graph no. 2. Loss in % by sectors



Source: European Commission

The total value of assets destroyed or damaged in the 11 affected municipalities turns out to be about 843.9 million Euros (103.8 billion ALL), and the total value of losses is estimated at about 141.2 million Euros (17.4 billion ALL). Both give us a total of 985.1 million Euros (121.2 billion ALL).

Graph no. 3. Damages and losses divided by Municipalities

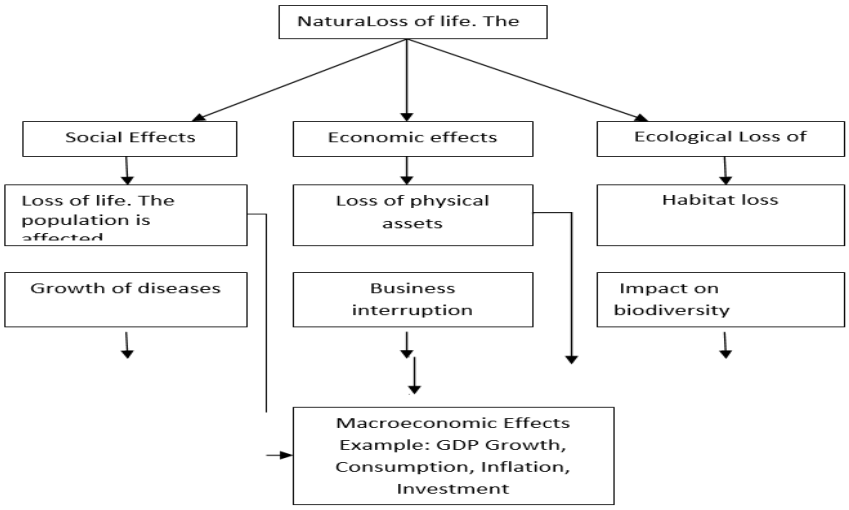


Source: European Commission

According to the above data, we observe that the most damaged municipality is the Municipality of Durrës, with an estimated damage of 310.2 million euros, followed by the Municipality of Tirana, with an estimated damage of 303.5 million euros. Translated as a percentage, the most urbanized municipalities (Tirana and Durrës) together account for the vast majority of damages and losses (62%). The rest is supplemented by the other 9 municipalities affected by the disaster.

4.2 Macroeconomic impact. The quake is estimated to have caused an impact which is equivalent to 6.4% of GDP in damage and 1.1% of GDP in loss. Damage accounts for about 26.4% of gross fixed capital, implying a limited capacity of Albania to achieve full reconstruction in the short term.

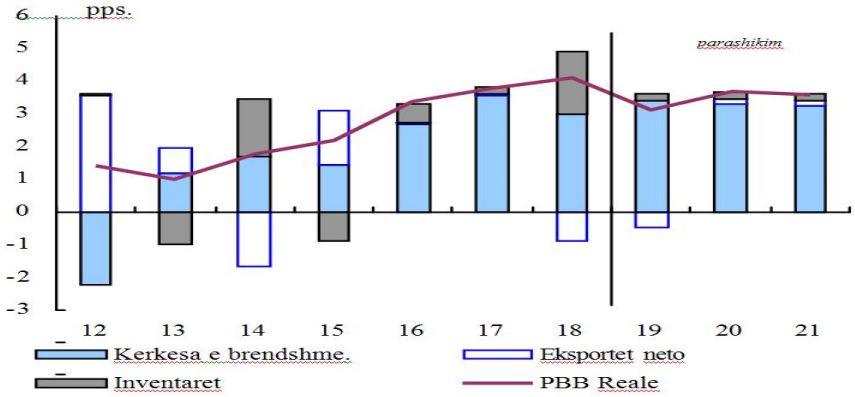
Figure no. 4.2.1: The state of the economy before the catastrophe,



Source: Authors' own contribution

After a 4.1% expansion in 2018, annual growth was projected to slow to 2.9% in 2019. A drastic drop in rainfall in the first half of the year halted the production of electric energy in the middle and was projected to bring a decrease of GDP growth by half a percentage point. In addition to rising political tensions, rising domestic demand led to an increase in 2019. Net exports reduced growth by 0.4 percentage points, as "sleeping" growth among market partner's limited traditional exports, while energy exports fell. Job creation, higher wages and consumer credit continue to drive private consumption, which contributed 2.1% to GDP growth.

Figure no. 4.2.2 Albania - Real GDP growth and contributions



Source: European Economic Forecast - autumn 2019

Meanwhile, investments increased thanks to better conditions for credit and government spending on infrastructure, contributing 0.5% points to GDP growth. Employment continued to rise, while unemployment reached a record low of 11.4% in the third quarter of 2019. Inflation decreased compared to the end of 2018, thanks to low inflation imported by Albania's trading partners and the appreciation of the Albanian currency (Albanian currency in Albanian language, ALL). Income tax on personal income and social security contributions flourished easily, supported by higher wages and efforts to reduce informality. Prior to the quake, the budget deficit was projected to reach 1.9% of GDP, while public debt was projected to fall to 66% of GDP in 2019. Energy shock and declining foreign demand exposed the country's external weaknesses. As a result of the energy shock, the current account deficit was expected to increase from 6.8% of GDP in 2018 to 8% in 2019.

The impact of the disaster on GDP. The losses caused by this earthquake will slow economic growth by 0.5% in 2019, and 0.3% in 2020. Calculations for Damage Assessment and Losses show that tourism and real estate activities have been hit hardest by the earthquake; and significant damage has been caused to education, health, manufacturing, and trade. The assessment of the impact on GDP growth is based on the calculation of production losses at the sector level, taking into account the low economic income from other sectors. In nominal terms, GDP in 2020 is estimated to decrease to 12.06 billion Albanian currency (98 million Euros). The quake is expected to hit net exports strongly, mainly through declining tourism revenues and imports, with rising imports of construction materials. The decline in wealth in Albanian families in cooperation with the reduction of employment will have an impact on private consumption. On the other hand, repairing the damage and rebuilding will most likely lead to a larger investment increase than previously planned. The earthquake is thought to have no significant impact on inflation, given the low inflation rate in Albania and its trading partners.

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The impact of the earthquake on the Balance of Payments. Assuming extensive funding in the form of government grants for reconstruction in the amount of ALL 7 billion (EUR 56.9 million) in line with the approved 2020 budget, the earthquake is projected to be a moderate impact on the current account deficit in 2020. The current account deficit is thought to be 7.3% of GDP from a pre-earthquake 7.1% basis, as the amount of grants partially offsets the expansion of the trade deficit.

The trade balance ratio - GDP is expected to expand to 3.8% (compared to the base), which will be partially offset by an increase in current transfers by 0.1% this year (mainly official grants, while remittances are projected to remain at the same level). Exports are projected to decline as a result of the loss of foreign visitors - estimated at around 5.1 billion Albanian currency (41.3 million Euros), and production. Imports on the other hand are expected to increase by 38 billion Albanian currency (308.8 million Euros) as a result of the emergency response and recovery activities in 2020.

Macroeconomic indicators	2018	2019	2020	2021		
Period	current	Calculations before the earthquake	Calculations after the earthquake	Anticipation before the earthquake	Prediction after the earthquake	prediction
Production and prices						
GDP (mil EUR)	12,783	13,741	13,733	14,420	14,322	15,080
GDP growth rate (%)	4.1	2.9	2.4	3.4	3.2	3.6
Inflation (%)	2.0	1.4	1.4	2.1	2.1	2.4
Deflator (%)	0.9	0.8	0.8	1.1	1.1	1.7
Fiscal Indicators						
Total income (mil EUR)	3,656	3,847	3,759	4,042	4,101	4,177
Total income (% of GDP)	27.6	28	27.4	28	28.6	27.7
Tax revenue (mil EUR)	3,286	3,567	3,498	3,739	3,740	3,938
Non-tax revenue (mil EUR)	370	280	260	302	360	239
Costs (mil EUR)	3,732	4,115	4,026	4,277	4,425	4,463,82
Costs (% of GDP)	29.2	29.9	29.3	29.7	30.9	29.6
Foreign Sector						
Current account balance (mil EUR)	-861	-1,102	-1,102	-1,018	-1,042	-1,086
Exports (mil EUR)	4,059	4,253	4,253	4,724	4,682	4,886
Growth rate (%)	11.1	4.8	4.8	11.1	10.1	4.4
Imports (mil EUR)	5,819	6,363	6,363	6,694	6,733	6,801.30
Growth rate (%)	7.8	9.4	9.4	5.2	5.8	1.0

Table no. 2 Macroeconomic Indicators. Source: European Commission

Source: European Commission

5. Conclusions and Recommendations

The year 2020, in which we are currently, was expected to be a difficult year for the Albanian economy. Amid efforts and plans to rebuild homes damaged by the quake, the "COVID-19" pandemic crisis has put further pressure on the Albanian government's budget. Despite this and the government's plan to recover the economy from this crisis, we must not forget the natural disaster which caused an economic panic in our country. Another factor that has negatively affected the country's economy this year is the lack of major projects such as the TAP Pipeline or the Devoll cascade, which is nearing completion.

Reconstruction of dwellings should be the first priority, as this sector, housing has been the most affected of all sectors. It remains to be seen in the coming weeks about the government's plan to revive tourism, not only after the earthquake, but also after the pandemic.

The recommendations of this study regarding the issue of natural disaster of November 26, 2019, would be the following:

• The most important thing is to start rebuilding the apartment as soon as possible.

• To secure property from these disasters I would suggest the application by the government of compulsory property insurance. (Here we may encounter problems, as this would lead to an increase in the basic property insurance fee).

• The government should devise a specific plan to help provide families with economic hardship (as not all families can afford it).

• A key point in which I think there is a need for improvement in our country, is transparency with the funds and grants received at the Donors' Conference, or gift funds benefited from private foundations associated with this disaster.

• I would suggest setting up an "agency" to oversee construction within permitted standards and basic construction norms. It should especially be applied to multi-store buildings and near the most vulnerable seismic areas.

• Review and amendment of the Fund for Civil Emergencies, in order to successfully cope with natural disasters and the consequences that they bring to the economy of our country.

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