

THE RELATIONSHIP BETWEEN INFLATION AND GROSS DOMESTIC PRODUCT: ALBANIA CASE

Alba Ramallari *, Flora Merko **

* Corresponding author, Faculty of Business, Department of Economic Sciences, University Aleksandër Moisiu, Durrës, Albania

Contact details: University Aleksandër Moisiu, Lagjia 1, Rr. Currilave, Durrës, Albania

** Faculty of Business, Department of Economic Sciences, University Aleksandër Moisiu, Durrës, Albania



Abstract

How to cite this paper: Ramallari, A., & Merko, F. (2023). The relationship between inflation and gross domestic product: Albania case. *Corporate Law & Governance Review*, 5(1), 83–91. <https://doi.org/10.22495/clgrv5i1p7>

Copyright © 2023 by Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). <https://creativecommons.org/licenses/by/4.0>

ISSN Online: 2664-1542

ISSN Print: 2707-1111

Received: 17.10.2022

Accepted: 24.03.2023

JEL Classification: A1, E3, E40, E43, E20

DOI: 10.22495/clgrv5i1p7

This paper shows the relationship between inflation and gross domestic product (GDP) and their effects on the country's economy, as well as changes that have occurred in the economic growth of our country by studying the changes in GDP and inflation. In this paper, we make an attempt to understand what happens to GDP when it encounters problems, such as inflation, in the development and growth phases and what government policies are chosen in this regard. In the economy of our country there are several external factors that influence, but what is important is that even though the present situation lays out controlled inflation, there is, however, an incentive for economic growth. Through the analytical studies we show that in the current economy, there is an increase in GDP generated not only from the increase in prices but from an increase in production, consumer consumption, and development of markets and investments, and this impact may not appear directly but after a period of time, two years or more. The important issue is upholding sustainable development of the country's economy. This remains the economic objective to manage economic problems, simultaneously promoting stability and economic growth in our country.

Keywords: GDP Growth, Inflation, Economy, Development, Capital, Consumption

Authors' individual contribution: Conceptualization — A.R.; Methodology — A.R.; Investigation — A.R. and F.M.; Formal Analysis — A.R.; Data Curation — A.R. and F.M.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The aim of this paper is to analyse the input and output of inflation and gross domestic product (GDP) from which economic issues are manifested including inevitable internal and external factors and their fluctuations over time. We choose to treat this paper on Albania, as it is our country and the recent changes have affected our entire society and economy. But even though the years pass, there is still the difficulty of collecting adequate data that affect us every day.

In countries like ours, no matter how small the impact of inflation is, it reflects changes and impacts our consumption expenditures. But not in all situations it happens like this. There are cases

when inflation is not only felt in consumption baskets but also affects investment levels. Certainly, not in all cases inflation is seen as problematic, but the impact it has on economic growth levels and other situations is looked at. In the macroeconomic policies that are implemented, sustainable economic growth and price stability are required, at the same time, in developing countries, efforts are made to give strength to local people in instruments, whether consumption or trade. This is exactly what Umaru and Zubairu (2012) presented when they gave arguments in cases where inflation could be harmful or related to economic growth.

In the material of Nakamura et al. (2016), the fact was presented that even though the situation in China was passing inflation, the consumption

basket continued to have its overestimated yield. As a result, this does not constitute a problem in the growth of GDP.

There are also others who have presented cases of countries where economic studies have been so in-depth that they have managed to determine a level of inflation that is optimal to have stable economic growth and that the government has the duty to act and change the fiscal policy and even instruct the bank to stand by for changes if inflation deviates too far from the set level (Dinh, 2020a). This is because if inflation were to increase more than the level expected, it would cause the possibility of growth to decrease. On this theory of inflation and its variability gap, Dinh (2020b) presented the results that the relationship between inflation is so close that sometimes it is positive and sometimes negative because it happens that economic growth is related to inflation, but not necessarily inflation to the rate of economic growth.

The variables inflation and GDP are important for any economy. In Albania, the study of their changes has often had to be taken into consideration. Although with a long transition period, about 30 years, the progress of policies that enable development and exit from the transition period is still being discussed in the country. Internal factors tend to balance, but in the continuous development of foreign relations, important macroeconomic parameters are also influenced by the problems of foreign, and international markets, as we get full benefits from them.

What we are most interested in is that in cases of increasing GDP, it is not an increase caused by high prices, but increases thanks to the increase in production, or consumption baskets. Recently, there has been an increase in the level of prices and, as a result, inflation, while in the evaluation parameters with GDP and the economic situation of the country, it is presented as non-problematic. In fact, those who feel the price change the most are consumers with low incomes or those whose purchasing power is not always the same since they do not have a permanent income.

Keeping in mind the close connection that the increase in prices presents with changes in economic growth, that is, in the change of GDP, we present the research questions:

RQ1: Is GDP affected by inflation in our country?

RQ2: What is the factor that creates inflation usually or significantly and has a direct impact on GDP?

RQ3: How should the government intervene through policies?

RQ4: How to create a very reliable situation for possible investments?

Throughout the topic, the situation in the country has been theoretically analyzed, taking into account factors, such as the pandemic or the change in product conditions as a result of tensions in the world, government reactions to mitigate the difficulties encountered, and attempts to continue the progress of economic development. This is also noted in the created model, where the main emphasis is given to the possibility of economic growth through the continuation of the upward trend of GDP, encouraging investment and entrepreneurship with domestic capital certainly presenting changes in inflation closely related to the consumption basket.

The remainder of the paper is organized as follows. Section 2 reviews the literature. Section 3 explains the data and methodology. Section 4 summarizes the results and discusses the findings, explaining the difficulties encountered for collect data. Section 5 gives conclusions and future research perspectives.

2. LITERATURE REVIEW

It has often been emphasized in the latest reviewed economic history that economic growth is an endogenous result of the economic system. Based on country-by-country studies, growth was linked to economic parameters such as high levels of savings and investments, a workforce that emphasized special education, that is, qualifications, and other adjustments that enabled the replacement of technological advances where they were absent.

However, the study of the links between economic growth and the inflation rate is also treated as one of the central subjects of macroeconomic research and policy. There is no clear definition for the relationship between economic growth and inflation, but there are many controversial issues and findings regarding this relationship and the stages of their progress.

The research done to look at the nature of the relationship between inflation and growth showed three possible forms of relationship that these parameters had with each other. There are cases when they appear connected in the same direction, there are cases when they appear in opposite directions and their action is nullified, and there are cases when they are independent of each other.

A study conducted by Paul et al. (1997) shows that there is no causal relationship between inflation and economic growth in 40% of countries, inverse relationships in about 20% of countries, and a unidirectional relationship in the rest of the countries. Moreover, the relationship between inflation and economic growth has been studied for developing countries and countries that are already developed. There, the changes were seen because a negative relationship between inflation and economic growth was found for industrial and developed countries. On the contrary, a positive relationship between inflation and economic growth was found in developing countries.

During studying the relationship between inflation and economic growth for 145 countries, Ghosh and Phillips (1998) found a positive relationship between inflation and economic growth. This relationship detained better when inflation is low, but this relationship turned negative when inflation started to rise at a high rate.

Barro (1990) used a data set consisting of several macroeconomic variables including inflation. He found that inflation has negatively affected growth by reducing investments and reducing the rate of productivity growth. Barro (1990) used 30 years of data, from 1960 to 1990, for 100 countries and concluded that other variables are more important in economic growth than inflation. He emphasized that the increase in average inflation by 10% per year leads to a decrease in the growth rate of real GDP per capita by 0.2%–0.3% per year and a decrease in the ratio of investments to GDP by 0.4%–0.6%.

In his study on the threshold level of inflation for Pakistan, Mubarik (2005) found that inflation above the threshold level affects economic growth negatively. But, inflation below the estimated level is conducive to economic growth.

We know the fact that inflation and expected inflation affect the rate of return on capital and investments and also affect the accumulation effect itself or investment if they are to be presented in increasing values. This gives more importance to the fact of expectations. It promotes the element of anticipation in order to avoid damage that causes serious problems. The reasons are that in many cases instability brings problems. For this reason, there is a special role in forecasting, which enables preparation. Kallandranis et al. (2020) show that the rate of inflation and the economic situation of the country is often the cause of changes in capital investments. But, the most important element is to take measures and predict what will happen with the rates of change and with the capital. The uncertainty associated with volatile and unpredictable high inflation has been found to be one of the main determinants of business investment decisions in the world's major economies, but also the fiscal policies. Other studies show that, as inflation is related to GDP, taxation is also related. A policymaker with established targets can create unexpected inflation, which can reduce employment and increase government revenue. But when people understand the policymaker's objectives, these actions are no longer surprise and can no longer occur in a repeatable manner. The results are improved if the rules determine future policy choices in the right way. A negative correlation was found between growth and inflation by Demi et al. (2021).

Kormendi and Meguire (1985) estimated a growth equation with data and found that the effect of inflation on the growth rate is negative, but this effect is attenuated if the variables under study include the rate of investment. This would show that the effect of inflation is manifested mainly in the reduction of investments but not in the productivity of capital.

Grier and Tullock (1989) estimate a model that excludes the investment rate and several measures of nominal volatility, such as the inflation rate, price acceleration, and the standard deviation of inflation. The results vary according to the group of countries in question, but for the Organisation for Economic Co-operation and Development (OECD) only inflation variability appears to have a significant and negative effect on growth.

Starting from these main studies, the connection between inflation and economic growth shows that inflation affects more in the long term, but there are also other manifestations where inflation has a significant effect on economic growth in the short term as well (Fischer, 1993). While Briault (1995) has emphasized that it is very difficult to derive the relationship between inflation and GDP as a repeatable action in the same way.

We cannot always claim that we have made the right determinations because, sometimes, they seem to change in real-time. In the world, countries change their expectations in different situations. In 2017, in a study done on the relationship between inflation and GDP growth in Pakistan, it was found that there was no link between inflation and economic growth (Nazir et al., 2017). Meanwhile, it is

reported that, as a result of the increase in inflation and the devaluation of the local currency, the rates of economic growth will decrease (World Bank Group, 2022).

Inflation weakens the efficiency of factors that are used by market economies. Many authors have found a negative correlation between growth and inflation.

Even in the analytical study carried out for Bangladesh, Shapan (2016) emphasized that inflation and GDP are not only related, but this relationship continues for the long term.

However, there are other economists who choose to carry out their study with segments, giving importance to how much they differ from the set target and what policy should be implemented for stabilization (Dinh, 2020b).

In addition to these, there are other authors who study the GDP-inflation relationship as the most delicate issue and must be seen in detail before the balancing movement is realized. Barnes (2021) emphasizes the fact that the inflation-GDP relationship is as delicate as the situation of a patient before surgery and therefore must be analyzed with all the details before acting. At the same time, other authors see it as an assumed situation that awaits a reaction. It is possible to create a direct link between inflation and growing GDP and try to present that if we have an increase in GDP, we will also have an increase in inflation and divide the situation into scenarios that can prove that these variables are related to each other and that any change in production will directly or indirectly affect in inflation. The key to this is the way in which the emerging problem is managed. Precisely this constitutes an added value of the material because it shows that even though there is an inflationary situation, policies should be encouraged that bring the possibility of product growth and the country's policy should be in the form of determining who is the closest indicator to reduce the problem and balance it.

3. METHODOLOGY

In order to be even more convinced of the connection between inflation and GDP, in addition to the theoretical side, it is important to prove it with the data on inflation and GDP growth in our country.

The data are mainly obtained from the Central Bank, Instat, and the World Bank. Data were tabulated and processed by the authors into percentages and analyzed with EViews 10 software.

The data were collected from 1996 to 2021, to create a clear picture of the relationship between the parameters in the country.

We want to clarify whether the variables inflation, capital, net export, and consumption have an impact on GDP growth or not and if they have an impact, whether it is positive or negative. The most important variable for us is inflation, and we want to look at its impact on GDP, but that alone cannot explain the change in GDP, as we also want to prove that even though a country has inflation, it can still have the opportunity to have economic growth as a result of new investments that come from capital or from the opportunity to increase consumption due to the calculation of GDP with expenditure method, where GDP is equal to the sum of consumption plus investments plus government expenditures plus net export ($GDP = C + I + G + NX$).

In order to prove the responsiveness and impact of inflation on GDP and on GDP growth in the created models, it was thought that the variables would be placed one after the other in 3 forms until reaching the final, most complete model, which will show more clearly and the causal relationship between GDP growth dependent on inflation, the consumption basket, as well as the trade balance. We created a data table with the factors which affect mostly the growth in our country.

For our model to reflect the situation as close as possible to reality, all data were put into percentage changes. There is almost no basis for these data in our country and therefore they were calculated by the authors before they were placed in the model. In our model, the data for 26 years were included, starting from the model created by Salamai et al. (2022), where the fact that they had received many years (49) reduced the coefficient R^2 to 0.21 close to 21%.

Table 1. Data collected for thee models

Year	K (%)	GDPGROWTH (%)	NX (%)	C (%)	CPI (%)
1996	18.06379	9.099999	0		-54.0595
1997	16.65951	-10.92	-9.58358	-17.4502	-38.8164
1998	19.7426	8.829424	14.85761	-5.74448	-26.1863
1999	19.73469	12.8908	57.672	2.609639	-25.8988
2000	30.79626	6.946217	-10.6591	4.365422	-25.8618
2001	34.98867	8.293313	0.234307	4.58972	-23.5579
2002	35.26406	4.536524	-6.26401	6.951778	-17.6179
2003	33.89686	5.528637	6.645642	9.014667	-17.2192
2004	34.19675	5.514668	10.26764	3.764308	-15.3318
2005	36.86968	5.526424	8.071651	5.398898	-13.328
2006	35.69752	5.902659	8.221301	5.752191	-11.2733
2007	34.46197	5.98326	-0.27348	11.61779	-8.67118
2008	35.77842	7.500041	-8.24795	9.47504	-5.63827
2009	34.55785	3.354289	5.851782	1.049632	-3.49917
2010	30.30867	3.706938	19.76653	1.947863	1
2011	31.41358	2.545406	0.487824	1.63128	3.429123
2012	28.32855	1.417243	6.987738	0.125774	5.530382
2013	28.0525	1.002018	2.232625	1.967292	7.57516
2014	25.67469	1.774449	-3.10599	3.247506	9.324187
2015	25.81905	2.218726	3.844559	0.898823	13.15185
2016	25.22383	3.314981	4.420476	2.437851	12.73623
2017	25.05255	3.802227	4.887646	2.531195	15.05927
2018	23.91018	4.01936	1.628794	2.899772	17.39274
2019	23.0126	2.088063	0.346145	2.326509	19.04926
2020	23.20013	-3.48163	-8.07205	-2.89206	20.97891
2021	24.11568	8.544083	14.80718	4.616897	23.44866

Source: Institute of Statistics (Instat, 2022).

4. RESULTS AND DISCUSSION

We start with the Granger test for the reason that we have doubts that the connection of the variables is not direct, but it should also be seen in time.

Precisely this is argued by Granger (1969, as cited in Talwar & Srivastava, 2018) that in economics, the future should be studied based on a previous time series.

Table 2. The study of the Granger causality test

Null hypothesis	Prob.	Results
INF does not Granger cause GDPGROWTH.	0.0063	Reject
GDPGROWTH does not Granger cause INF.	0.0196	Reject
K does not Granger cause GDPGROWTH.	0.1214	Not reject
GDPGROWTH does not Granger cause K.	0.0003	Reject
NX does not Granger cause GDPGROWTH.	0.0191	Reject
GDPGROWTH does not Granger cause NX.	0.1046	Not reject
GDPGROWTH does not Granger cause CON01.	0.8773	Not reject
CON01 does not Granger cause GDPGROWTH.	0.0004	Reject

Source: The created and evaluated model (See Table A.1 in Appendix).

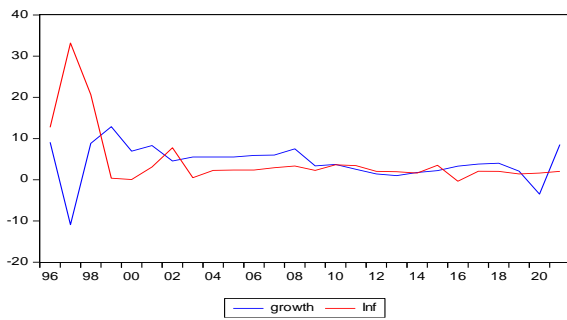
Setting the level of significance at 5%, and based on the p-values, we discovered that:

1. There is a two-way causal relationship between inflation and GDP growth.
2. There is a one-way relationship between the growth of GDP and capital, and specifically, changes in the growth of gross GDP affect changes in capital.
3. There is a one-way causal relationship between NX and GDP growth, changes in NX are reflected by changes in GDP growth.

4. Between consumption and GDP growth, there is a one-way causal relationship, changes in consumption are reflected by changes in GDP growth.

The connection between GDP growth and inflation results in lag time lags 2 and this is, perhaps, more likely to prove the theory and our current case that even though we have an increase in the price level and a period with moderate inflation, there is still positive efforts to increase GDP.

Figure 1. The relationship between GDP growth and inflation



Model 1

$$GDPGROWTH = 4.407 - 0.552 * INF + 0.421 * INF(-1) \quad (1)$$

Table 3. Validity of the Model 1

Problem	Test	P-value	Base hypothesis	Results
Serial correlation	Breusch-Godfrey	0.6136	No serial correlation	Not reject
Heteroskedasticity	Glejser	0.4457	No heteroskedasticity	Not reject
Normality	Jarque-Bera	0.83	Residuals have a normal distribution	Not reject

Source: Authors' calculation.

Based on the p-values, the hypotheses are valid and therefore the model is suitable for analysis, the variables do not present correlation problems and thus are worth including in a model.

In the following model, we have decided to present the dependence of GDP growth not only on inflation but also on the trade balance.

The relationship between GDP growth, inflation, and trade balance NX are presented in Appendix.

Model 2

$$GROWTH = 4.119 - 5.33e - 11 * D(NX) - 0.5524 * INF + 0.43010 * INF(-1) \quad (2)$$

Table 4. Validity of the Model 2

Problem	Test	P-value	Base hypothesis	Results
Serial correlation	Breusch-Godfrey	0.8377	No serial correlation	Not reject
Heteroskedasticity	Glejser	0.7134	No heteroskedasticity	Not reject
Normality	Jarque-Bera	0.405	Residuals have a normal distribution	Not reject

Source: Authors' calculation.

Based on the p-values, the hypotheses are valid and therefore the model is suitable for analysis.

Thirdly, we decided to include consumption in our model, along with inflation. Thus, we get:

Model 3

$$GROWTH = 148.74 - 0.6054 * INF + 0.314 * INF(-1) - 6.2862 * LOG(CON01) \quad (3)$$

See Table A.6. in Appendix for the relation between GDP growth, consumption, and NX.

The model is significant based on the p-value of the statistic, which is 0 and is less than the 5% significance level. Based on the p-values, the hypotheses are valid and therefore the model is suitable for analysis.

The short-term impact is negative, but it changes with delays, as the graph shows (See Table A.2 in Appendix for the relation between GDP growth and inflation).

The model is significant based on the p-value of the Fisher statistic, which is 0 and is less than the significance level of 5%. Likewise, the partial coefficients are important because the p-values of the student statistics are 0. The level of explanation of the model is 52%. The relationship appears negative between inflation and GDP growth, but in time lag 2, it changes direction, which proves what is really happening in the country and that there is a possibility of growth as a result of changes in stabilization policies.

We did the Jarque-Bera test and other tests to show the importance of the model and understand the relation between GDP and inflation.

The model is significant based on the p-value of the Fisher statistic, which is 0 and is less than the 5% significance level. Also, the partial coefficients are important because the p-values of the student statistics are 0. The level of explanation of the model is 60%.

The model shows that although exports have increased in recent years, it appears that imports have also increased, and as a result, we have a slight negative relationship. Precisely to mitigate this, European Union (EU) programs (<http://www.azhbr.gov.al/project/>) have started to be applied in the country in the form of development funds in order to highlight our production and commercial advantages.

Also, the partial coefficients are significant because the p-values of the student statistics are 0. The level of explanation of the model is 62%. Compared to the other two models, this model clarifies the reality more than those, perhaps, because it is closely related to consumption and GDP, with the aim of increasing the standard of living. It also shows that, in our country, consumption and its change represent direct changes in GDP, especially when consumption changes due to price changes.

This is a model that best represents what we were trying to achieve. We conclude that inflation and GDP affect each other and that the increase in GDP and consumption does not come only from the increase in income but also from the fact that the product in production and circulation has also increased.

Table 5. Validity of the Model 3

Problem	Test	P-value	Base hypothesis	Results
Serial correlation	Breusch-Godfrey	0.5225	No serial correlation	Not reject
Heteroskedasticity	Glejser	0.6174	No heteroskedasticity	Not reject
Normality	Jarque-Bera	0.818	Residuals have a normal distribution	Not reject

Source: Authors' calculation.

Based on the p-values, the hypotheses are valid and therefore the model is suitable for analysis.

In our country, there has been an increase in prices, but the concept of growth and sustainability has continued to remain the main focus. But, even though we have an increase in GDP, the positive thing is that we have an increase in consumption, and this is not only from the increase in prices but also from production because it can be seen that the capital has increased. And, at the same time, domestic production and domestic demand have increased.

In the created model, there are data that show us the fact that even in difficulties and in a period where the increase in prices is evident as a phenomenon, there is still a positive trend of GDP growth, which leads to economic growth. In the moments when the problem in the economy can be managed by sensitizing policies or with expansionary tendencies, there will definitely be positive results. As in other models, in our model, value is given to the GDP-inflation link, but it is not conceived as a single or one-time event, it gives an impact even after a certain period (Shapan, 2016). Also, the variability can be of different sizes and at different times from the time of the initial action (Talwar & Srivastava, 2018).

5. CONCLUSION

At the end of this study, we can emphasize that there is a close relationship between inflation and GDP, especially when we are interested in GDP growth.

What results from the theory is that more often there is a one-way connection, so inflation affects growth but not the opposite. In the created econometric model, what is noticed especially in our country is that we have a two-way causal relationship.

The most important thing is that the model created with the collected data clarifies the relationship between inflation, consumption, and NX with GDP growth and gives us a clear picture that

these three are elements that influence GDP growth, their elasticities are different because some influence more and some influence less.

Perhaps, being a developing country gives more chances for this kind of causal connection to happen, because the real impact is not directly observed but has a time span of two years. Related to Dinh (2020b), Shapan (2016), and Salamai et al. (2022), GDP is affected by inflation with changes and with time-capability, even in our country the GDP-inflation relationship appears in the same way with intervals in which, although they affect growth, leave room for it to happen. What is worth emphasizing is the fact that consumption has an important impact and as a developing country, it is very important to improve the standard of living of the community. It is worth noting that Albania is a country that, in order to develop, sees and validates positive signals in trade relations. Such elements bring not only an increase in GDP, but at the same time, they renew the credibility of our country and the policies it follows in action. What is more important is that even in the situation with inflation, we have growth, which shows the possibility of continuous development. Consumers may begin to demand higher wages, and corporations may accommodate them, offsetting this cost by raising prices, and so the cycle of connecting the markets will continue until the mechanisms bring it to the desired balance.

Here, this article leaves room for ongoing studies on how we can influence the growth of commercial advantages with the aim of increasing trade, and how we can increase the income of individuals with the aim of increasing the consumption basket. And also, how we can keep inflation targeted so that its costs are well-managed in countries where the parameters are always in motion. It is not easy to calculate their percentage changes. The important thing is that this paper can be an added value because it shows that there is a possibility of economic development of the country even from the management of the most difficult situations.

REFERENCES

- Andrés, J., & Hernando, I. (1999). Inflation and economic growth: Some evidence for the OECD countries. In *Proceedings of the NBER Conference on "The Costs and Benefits of Achieving Price Stability"*, Federal Reserve Bank of New York (pp. 364-385). National Bureau of Economic Research. <https://www.nber.org/books-and-chapters/costs-and-benefits-price-stability>
- Asamoah, E. S., & Puni, A. (2021). Corporate governance and financial performance of listed companies: A case of an emerging market. *Corporate Governance and Sustainability Review*, 5(3), 8-17. <https://doi.org/10.22495/cgsrv5i3p1>
- Barnes, R. (2021, June 29). The importance of inflation and GDP. *Investopedia*. <https://www.investopedia.com/articles/06/gdpinflation.asp>
- Barro, R. J. (1990). Government spending in a simple model of endogenous growth. *Journal of Political Economy*, 98(5), 103-125. <https://doi.org/10.1086/261726>
- Batayneh, K., Al Salamat, W., & Momani, M. (2015). The impact of inflation on the financial sector development: Empirical evidence from Jordan. *Cogent Economics & Finance*, 9(1), Article 1970869. <https://doi.org/10.1080/23322039.2021.1970869>
- Bauknecht, D., Bischoff, T. S., Bizer, K., Führ, M., Gailhofer, P., Heyen, D. A., Proeger, T., & von der Leyen, K. (2020). Exploring the pathways: Regulatory experiments for sustainable development — An interdisciplinary approach. *Journal of Governance & Regulation*, 9(3), 49-71. <https://doi.org/10.22495/jgrv9i3art4>
- Briault, C. (1992). The costs of inflation. *Quarterly Bulletin*, 441-448. <https://urlzs.com/CwuGS>

8. Demi, A., Xhaferri, S., Uku, S., Shahini, S., & Lushi, A. (2021). The impact of fiscal policies on Albanian economic growth: The case of value-added tax [Special issue]. *Journal of Governance & Regulation*, 10(4), 311-325. <https://doi.org/10.22495/jgrv10i4siart11>
9. Dinh, D. V. (2020a). Impulse response of inflation to economic growth dynamics: VAR model analysis. *The Journal of Asian Finance, Economics and Business*, 7(9), 219-228. <https://doi.org/10.13106/jafeb.2020.vol7.no9.219>
10. Dinh, D. V. (2020b). Optimal inflation threshold and economic growth: Ordinal regression model analysis. *The Journal of Asian Finance, Economics and Business*, 7(5), 91-102. <https://doi.org/10.13106/jafeb.2020.vol7.no5.091>
11. Fischer, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics*, 32(3), 485-512. [https://doi.org/10.1016/0304-3932\(93\)90027-D](https://doi.org/10.1016/0304-3932(93)90027-D)
12. Gamariel, G., Bomani, M., Musikavanhu, L., & Juana, J. (2022). Foreign direct investment and export diversification in developing countries. *Risk Governance and Control: Financial Markets & Institutions*, 12(1), 74-89. <https://doi.org/10.22495/rgcv12i1p6>
13. Ghosh, A. R., & Phillips, S. T. (1998). *Inflation, disinflation, and growth* (IMF Working Paper No. WP/98/68). International Monetary Fund. <https://doi.org/10.2139/ssrn.882344>
14. Granger, C. W. J. (1969). Investigating causal relations by econometric models and cross-spectral methods. *Econometrica*, 37(3), 424-438. <https://doi.org/10.2307/1912791>
15. Grier, K. B., & Tullock, G. (1989). An empirical analysis of cross-national economic growth, 1951-1980. *Journal of Monetary Economics*, 24(2), 259-276. [https://doi.org/10.1016/0304-3932\(89\)90006-8](https://doi.org/10.1016/0304-3932(89)90006-8)
16. Institute of Statistics (Instat). (2022). *Supply and use tables, 2019*. <http://www.instat.gov.al/al/temat/ekonomi-dhe-financ%C3%AB/tabelat-e-burim-p%C3%ABrdorimeve-dhe-input-output/>
17. Johnson, S. (2022, January 24). The global economy disrupted: Higher inflation and slower growth in the 2022 outlook. *S&P Global Market Intelligence*. <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/global-economy-disrupted-higher-inflation-slower-growth-2022.html>
18. Kallandranis, C., Kalantonis, P., & Aljandali, A. (2020). Corporate fixed investment and internal liquidity: Evidence from Greek listed companies. *Corporate Governance and Sustainability Review*, 4(2), 68-76. <https://doi.org/10.22495/cgsrv4i2p7>
19. Kormendi, R. C., & Meguire, P. G. (1985). Macroeconomic determinants of growth: Cross-country evidence. *Journal of Monetary Economics*, 16(2), 141-163. [https://doi.org/10.1016/0304-3932\(85\)90027-3](https://doi.org/10.1016/0304-3932(85)90027-3)
20. Mubarak, Y. A. (2005). Inflation and growth: An estimate of the threshold level of inflation in Pakistan. *State Bank of Pakistan Research Bulletin*, 1(1), 35-44. <https://www.sbp.org.pk/research/bulletin/2005/Article-3.pdf>
21. Nakamura, E., Steinsson, J., & Liu, M. (2016). Are Chinese growth and inflation too smooth? Evidence from Engel curves. *American Economic Journal: Macroeconomics*, 8(3), 113-144. <https://doi.org/10.1257/mac.20150074>
22. Nazir, S., Saeed, S., & Muhammad, A. (2017). *Threshold modeling for inflation and GDP growth* (MPRA Paper No. 79649). Munich Personal RePEc Archive. <https://mpra.ub.uni-muenchen.de/id/eprint/79649>
23. Paul, S., Kearney, C., & Chowdhury, K. (1997). Inflation and economic growth: A multi-country empirical analysis. *Applied Economics*, 29(10), 1387-1401. <https://doi.org/10.1080/00036849700000029>
24. Roncaglia de Carvalho, A., Ribeiro, R. S. M., & Marques, A. (2018). Economic development and inflation: A theoretical and empirical analysis. *International Review of Applied Economics*, 32(4), 546-565. <https://doi.org/10.1080/02692171.2017.1351531>
25. Salamai, A. A., Faisal, S. M., & Khan, A. K. (2022). The relationship between inflation and GDP with reference to oil based economy. *Journal of Multidisciplinary Research and Growth Evaluation*, 3(1), 375-380. <https://doi.org/10.54660/anfo.2022.3.1.21>
26. Shapan, C. M. (2016). Inflation and its impacts on economic growth of Bangladesh. *American Journal of Marketing Research*, 2(1), 17-26. <http://www.aiscience.org/journal/paperInfo/ajmr?paperId=2477>
27. Stanners, W. (1995). Inflation and growth. *Cambridge Journal of Economics*, 20(4), 509-512. <https://doi.org/10.1093/oxfordjournals.cje.a013630>
28. Talwar, S., & Srivastava, S. (2018). Integration of GDP and FDI in economies at different stages of growth. *Theoretical Economics Letters*, 8(11), 2199-2219. <https://doi.org/10.4236/tel.2018.811144>
29. Umaru, A., & Zubairu, A. A. (2012). Effect of inflation on the growth and development of the Nigerian economy (An empirical analysis). *International Journal of Business and Social Science*, 3(10) [Special Issue], 183-191. https://ijbssnet.com/journals/Vol_3_No_10_Special_Issue_May_2012/19.pdf
30. World Bank Group. (n.d.). *GDP (current US\$) — Albania*. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=AL&view=chart>
31. World Bank Group. (2018). *Western Balkans regular economic report, No. 14, Fall 2018: Higher but fragile growth*. International Bank for Reconstruction and Development/The World Bank. <https://doi.org/10.1596/32088>
32. World Bank Group. (2022a). *A World Bank Group flagship report: Finance for an equitable recovery*. International Bank for Reconstruction and Development/The World Bank. <https://openknowledge.worldbank.org/server/api/core/bitstreams/e1e22749-80c3-50ea-b7e1-8bc332d0c2ff/content>
33. World Bank Group. (2022b). *World Bank: Pakistan's economy slows down while inflation rises amid catastrophic floods*. <https://www.worldbank.org/en/news/press-release/2022/10/06/world-bank-pakistan-s-economy-slows-down-while-inflation-rises-amid-catastrophic-floods>

APPENDIX

Table A.1. Granger test

Null hypothesis	Obs.	F-statistic	Prob.
INF does not Granger cause GROWTH.	24	6.68752	0.0063
GROWTH does not Granger cause INF.		4.86785	0.0196
K _t does not Granger cause GROWTH.	24	2.36114	0.1214
GROWTH does not Granger cause K _t .		12.7189	0.0003
NX does not Granger cause GROWTH.	24	4.91343	0.0191
GROWTH does not Granger cause NX.		2.54795	0.1046
GROWTH does not Granger cause CON01.	24	0.13184	0.8773
CON01 does not Granger cause GROWTH.		12.0881	0.0004

Table A.2. The relationship between GDP growth and inflation

Dependent variable: <i>GROWTH</i>				
Method: Least squares				
Date: 01/28/23				
Time: 19:07				
Sample (adjusted): 1997–2021				
Included observations: 25 after adjustments				
HAC standard errors and covariance (Bartlett kernel, Newey–West fixed bandwidth = 3.0000)				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistic</i>	<i>Prob.</i>
Constant	4.407306	0.899800	4.898097	0.0001
<i>INF</i>	-0.552130	0.082578	-6.686201	0.0000
<i>INF(-1)</i>	0.421613	0.081264	5.188164	0.0000
R-squared	0.563023	Mean dependent variable		4.033526
Adjusted R-squared	0.523297	S.D. dependent variable		4.501406
S.E. of regression	3.107935	Akaike info criterion		5.217961
Sum squared residuals	212.5038	Schwarz criterion		5.364226
Log-likelihood	-62.22451	Hannan–Quinn criterion		5.258529
F-statistic	14.17292	Durbin–Watson statistic		1.503963
Prob. (F-statistic)	0.000111	Wald F-statistic		22.36243
Prob. (Wald F-statistic)	0.000005			

Table A.3. The validity of the Model 1

<i>Breusch–Godfrey serial correlation LM test</i>			
F-statistic	0.500499	Prob. F(2,20)	0.6136
Obs. * R-squared	1.191608	Prob. Chi-squared(2)	0.5511
<i>Heteroskedasticity test: Glejser</i>			
F-statistic	0.838427	Prob. F(2,22)	0.4457
Obs. * R-squared	1.770563	Prob. Chi-squared(2)	0.4126
Scaled explained SS	1.410159	Prob. Chi-squared(2)	0.4941

Table A.4. The model of GDP growth, inflation, and NX

Dependent variable: <i>GROWTH</i>				
Method: Least squares				
Date: 01/28/23				
Time: 19:49				
Sample (adjusted): 1997–2021				
Included observations: 25 after adjustments				
HAC standard errors and covariance (Bartlett kernel, Newey–West fixed bandwidth = 3.0000)				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistic</i>	<i>Prob.</i>
Constant	4.119993	0.689839	5.972397	0.0000
<i>D(NX)</i>	-5.33E-11	1.81E-11	-2.947162	0.0077
<i>INF</i>	-0.552448	0.071578	-7.718127	0.0000
<i>INF(-1)</i>	0.430102	0.065925	6.524124	0.0000
R-squared	0.657052	Mean dependent variable		4.033526
Adjusted R-squared	0.608059	S.D. dependent variable		4.501406
S.E. of regression	2.818113	Akaike info criterion		5.055659
Sum squared residuals	166.7770	Schwarz criterion		5.250679
Log-likelihood	-59.19574	Hannan–Quinn criterion		5.109749
F-statistic	13.41124	Durbin–Watson statistic		2.076019
Prob. (F-statistic)	0.000041	Wald F-statistic		22.92987
Prob. (Wald F-statistic)	0.000001			

Table A.5. The validity the Model 2

<i>Breusch–Godfrey serial correlation LM test</i>			
F-statistic	0.178730	Prob. F(2,19)	0.8377
Obs. * R-squared	0.461657	Prob. Chi-squared(2)	0.7939
<i>Heteroskedasticity test: Glejser</i>			
F-statistic	0.459662	Prob. F(3,21)	0.7134
Obs. * R-squared	1.540491	Prob. Chi-squared(3)	0.6730
Scaled explained SS	1.437882	Prob. Chi-squared(3)	0.6967

Table A.6. The model for the relation between GDP growth, inflation, and consumption

Dependent variable: <i>GROWTH</i>				
Method: Least squares				
Date: 01/28/23				
Time: 19:57				
Sample (adjusted): 1997-2021				
Included observations: 25 after adjustments				
HAC standard errors and covariance (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistic</i>	<i>Prob.</i>
Constant	148.7436	38.42315	3.871198	0.0009
<i>INF</i>	-0.605495	0.084826	-7.138042	0.0000
<i>INF(-1)</i>	0.314337	0.092948	3.381878	0.0028
<i>LOG(CON01)</i>	-6.286208	1.682693	-3.735801	0.0012
R-squared	0.667739	Mean dependent variable		4.033526
Adjusted R-squared	0.620273	S.D. dependent variable		4.501406
S.E. of regression	2.773857	Akaike info criterion		5.024002
Sum squared residuals	161.5800	Schwarz criterion		5.219022
Log-likelihood	-58.80002	Hannan-Quinn criterion		5.078092
F-statistic	14.06774	Durbin-Watson statistic		2.099897
Prob. (F-statistic)	0.000030	Wald F-statistic		24.14247
Prob. (Wald F-statistic)	0.000001			

Table A.7. The validity the Model 3

<i>Breusch-Godfrey serial correlation LM test</i>			
F-statistic	0.671864	Prob. F(2,19)	0.5225
Obs. * R-squared	1.651280	Prob. Chi-squared(2)	0.4380
<i>Heteroskedasticity test: Glejser</i>			
F-statistic	0.607711	Prob. F(3,21)	0.6174
Obs. * R-squared	1.997022	Prob. Chi-squared(3)	0.5730
Scaled explained	1.817082	Prob. Chi-squared(3)	0.6112

Figure A.1. Series results

