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► **To cite this version:**

| Ly Dai Hung. Inflation Structure in Vietnam Economy. 2022. hal-03863173

HAL Id: hal-03863173

<https://hal.science/hal-03863173>

Preprint submitted on 21 Nov 2022

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INFLATION STRUCTURE IN VIETNAM ECONOMY

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Abstract

Objective:

The paper investigates the structure of inflation in the Vietnam economy, as a developing economy with a strong record of low inflation and high economic growth rate over recent years, even during the recent Covid-19 pandemic.

Methodology:

The paper uses a quantitative analysis which investigates the quarterly dataset of inflation for the Vietnam economy over 1990-2021. The inflation is decomposed into three main components including core inflation, energy inflation and food inflation.

Findings:

The evidence records that the main driver of inflation in the Vietnam economy is the food inflation. Moreover, both energy and food inflation tends to have a large deviation over time. This illustrates the impact of the world commodity market on domestic inflation. The core inflation, however, is quite stable over time, reflecting the effectiveness of monetary policy in the Vietnam economy.

Implications:

The results implies that the food inflation can be a prioritized objective for the Vietnam economy to stabilize the domestic inflation. Moreover, the monetary policy, which affects the core inflation, needs to be combined with the fiscal policy, which affects the energy inflation.

Keywords: Inflation Rate; Economic Growth; Pandemic; Quantitative Analysis; Qualitative Analysis; Vietnam economy.

INTRODUCTION

The inflation rate plays an important role on the macroeconomic stability of an economy. When the inflation is kept to be at a low rate, the macroeconomic environment can stimulate the economic activities, while there still exists an increase of price to encourage the production by firms. Currently, when there is a concern about the risk of stagflation in the world economy (World Bank, 2022), the role of inflation and especially its relationship with the economic growth is at the central point of both academic and policy discussion. During the stagflation period, an economy can have a high inflation rate combined with a low economic growth rate. Then, the public policy, including both monetary and fiscal policy, would have a less space to carry out.

The current paper aims to analyze the structure of inflation rate, and its relationship with the economic growth rate in the Vietnam economy. The choice of Vietnam as a focal case relies on the reason that this economy is a developing economy with a high economic growth rate at average of 6.4% over a long time period of 30 years from 1990 to 2020. Moreover, this economy has been successful in keeping the inflation rate to be less than 4% since 2015. The combination of high economic growth and low inflation rate raises a typical case for the analysis of inflation structure.

The evidence records that the main driver of inflation in the Vietnam economy is the food inflation. Moreover, both energy and food inflation tends to have a large deviation over time. This evidence illustrates the impact of the world commodity market on domestic inflation. The core inflation, however, is quite stable over time, reflecting the effectiveness of monetary policy in the Vietnam economy. As a result, there exist a clear divergence of core inflation with the economic growth, along with a trade-off between the energy inflation and economic growth. The food inflation exhibits both a divergence with economic growth over the 2008-2017 period but a trade-off over the 2018-2020 period.

The paper employs a quantitative analysis method which decomposes the headline inflation rate into three components, including the core inflation, energy inflation and food inflation over a period of 2008-2020. The decomposition is useful to shed a new light on the structure of inflation fluctuation over time. Moreover, the

time period of 2008-2020 also witnesses the structural break during the current Covid-19 pandemic which happens in the Vietnam since 2019.

The paper is structured as follows. After the first section on Introduction, the second section on Analysis Framework presents the data description. Then, the empirical evidence records the results on the structure of inflation rate and its relationship with the economic growth. The paper closes with the fourth section on Conclusion.

ANALYSIS FRAMEWORK

The paper employs a time-series data sample of Vietnam economy over Q2/2008-Q4/2020. This time period covers the key events of Vietnam such as the participation in the world trade organization (WTO) in 2006, the global financial crisis in 2008, and the current Covid-19 pandemic since 2020.

The first variable is the inflation rate (*Hcpi*) is measured by the change of consumer price index (CPI) over time. The CPI is explored from the World Bank's Global Inflation Database. Then, the inflation rate is decomposed into three main categories, including (i) Core inflation rate (*Ccpi*); (ii) the energy inflation rate (*Ecpi*); and (iii) Food inflation rate (*Fcpi*). In particular, the energy inflation rate reflects the price of energy. The food inflation rate reflects the price of food. And the core inflation rate is the inflation component of the overall inflation after subtracting for the energy and food price. This core inflation reflects the effectiveness of monetary policy.

Table 1 : Descriptive Statistics

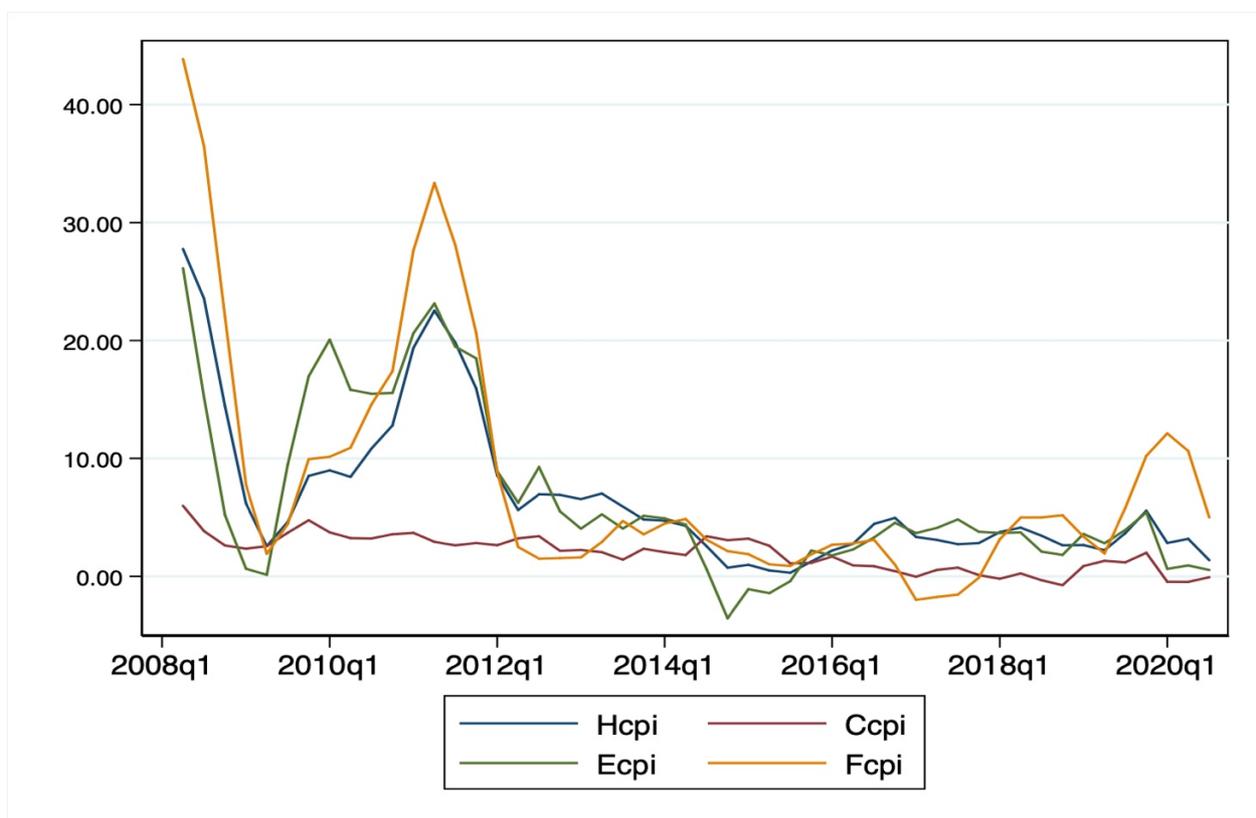
Variables	Observation	Mean	Std.Dev	Min	Max
Headline Inflation (<i>Hcpi</i>)	50	6.7	6.3	0.3	27.7
Core Inflation (<i>Ccpi</i>)	50	1.9	1.5	-0.7	5.9
Energy Inflation (<i>Ecpi</i>)	50	6.6	7.1	-3.5	26.1
Food Inflation (<i>Fcpi</i>)	50	8.1	10.2	-1.9	43.8
Economic Growth (<i>VNgdp</i>)	50	5.7	1.3	0.3	7.4

The second variable is the economic growth rate (*VNgdp*). This variable is the growth rate of real gross domestic product (GDP) in constant 2010 national price. The data is from the Vietnam General Statistics Office (GSO, 2022).

Table 1 shows the descriptive statistics for the variables in the data sample. For the inflation rates, the food inflation has both a highest mean and largest standard deviation while the core inflation has a lowest mean and standard deviation. Compared with these variables, the economic growth has quite high mean at 5.7% but with a low standard deviation at 1.3%. In brief, the data sample offers a quite large variation for the analysis of inflation structure in the Vietnam economy.

EMPIRICAL EVIDENCE

Figure 1: Inflation Rate by Components

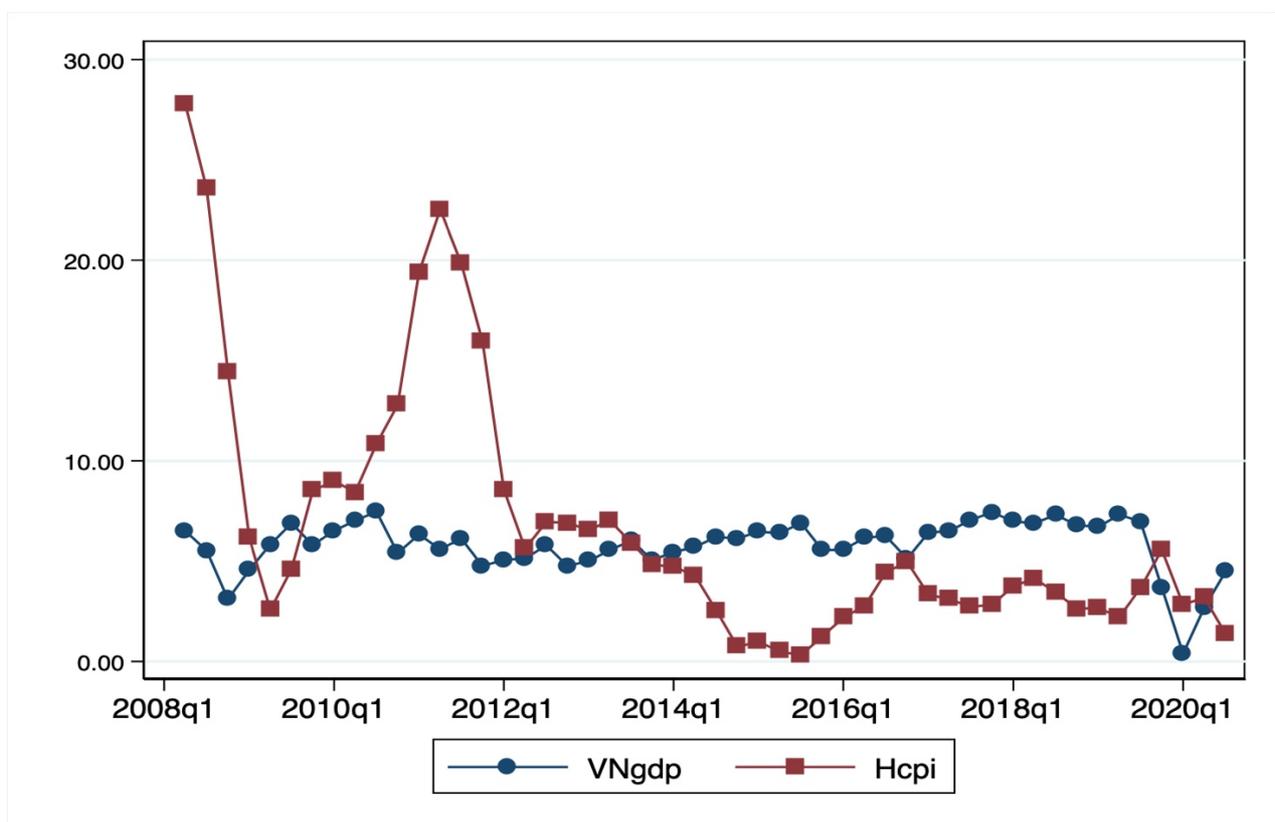


Source : World Bank Global Inflation Database (2022) and Vietnam General Statistics Office (2022).

In the Vietnam economy, the energy and food inflation rate tends to fluctuate with a larger variation than the core inflation rate. As the Figure 1 shows, the food inflation rate has a largest fluctuation and play a most important role on driving the

headline inflation rate. And the energy inflation also has high deviation, contributing a crucial role on shaping the headline inflation pattern. This evidence is consistent to the fact that both the food and energy are the commodity goods whose prices are affected by the world market (De Gregorio, 2012). And among these two types of good, the food can be a part stabilized by the domestic suppliers in the Vietnam economy, especially the rice and agriculture goods. The oil price, however, depends mostly on the relative supply and demand forces in the world economy.

Figure 2: Inflation Rate and Economic Growth



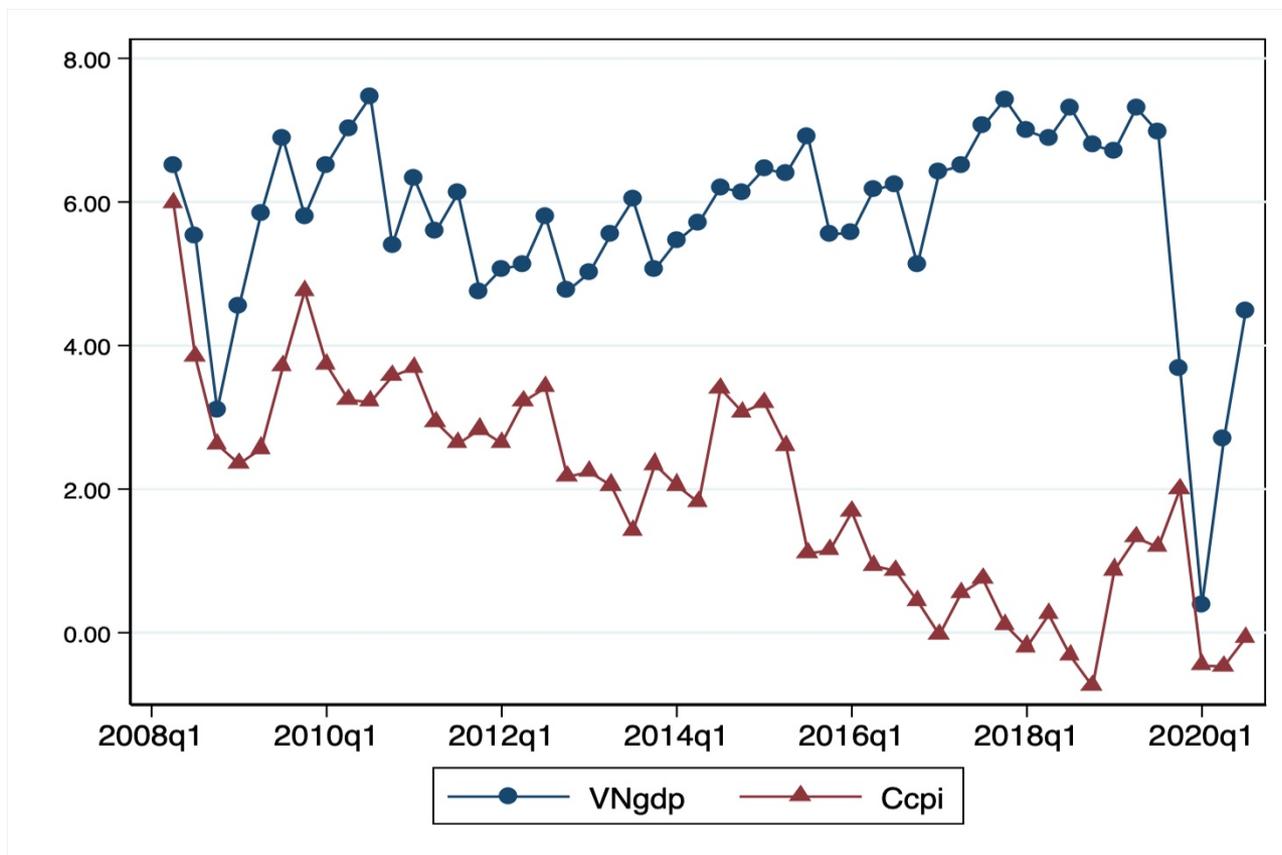
Source : World Bank Global Inflation Database (2022) and Vietnam General Statistics Office (2022).

Next, we focus on the relationship between the inflation rate and economic growth in the Vietnam economy. As a well-known result on both theory and evidence, there exists a trade-off between the inflation and economic growth, since a demand shock raises both the price level and output growth rate (Lucas, 1973; Hung, 2021).

The headline inflation rate has a trade-off relationship with the economic growth rate in the Vietnam economy over the 2008-2014 period, as the Figure 2 shows. The next period of 2015-2020, however, witnesses a low inflation rate below 4% associated a high economic growth rate above 6%. Thus, the trade-off between the inflation rate and economic growth seems to be weaker since the first quarter of 2015 in the Vietnam economy.

In order to detect the source of trade-off between the inflation and economic growth, we decompose the headline inflation into three sub-components, including the core inflation, the energy inflation and food inflation rate.

Figure 3: Core Inflation Rate and Economic Growth

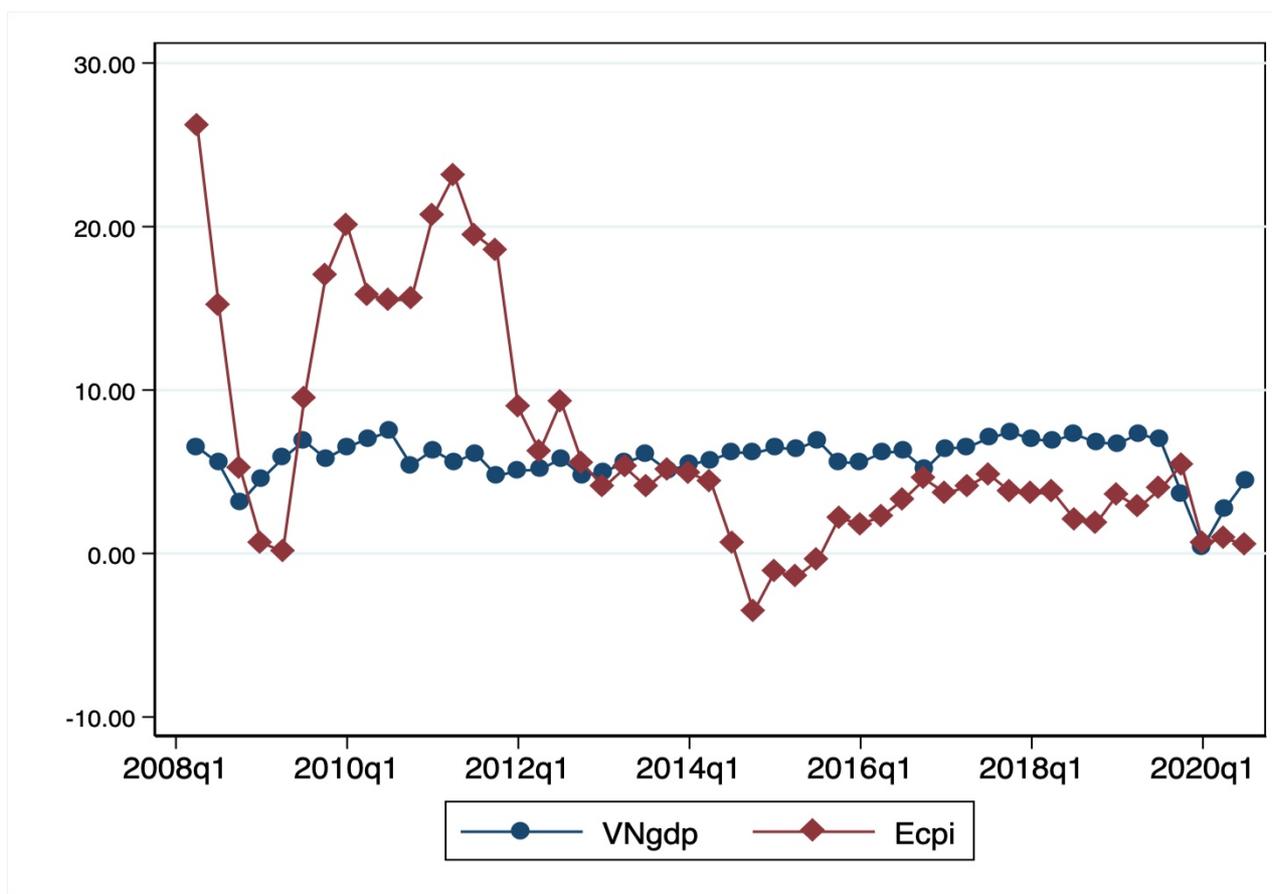


Source : World Bank Global Inflation Database (2022) and Vietnam General Statistics Office (2022).

The core inflation rate is depicted in the Figure 3. For most of the time period from Q1/2008 to Q4/2019, there exists a divergence of core inflation and economic

growth rate. In particular, the core inflation rate tends to reduce while the economic growth rate tend to improve with a slight increase. The reduction of core inflation rate can be due to the effectiveness of monetary policy in the case of Vietnam economy. In fact, the credit growth rate has been reduced to less than 20% per year since 2015. The economic growth rate, however, is still stable and even goes up. The reason can rely on the investment-based strategy which includes the stimulus of public investment and also encouragement of foreign direct investment (FDI). As the data collected from Vietnam GSO (2022), on average, each quarter has 3.56 billion USD of disbursed FDI investment. This large investment has contributed significantly on the economic growth of Vietnam economy (Hung, 2021).

Figure 4: Energy Inflation Rate and Economic Growth



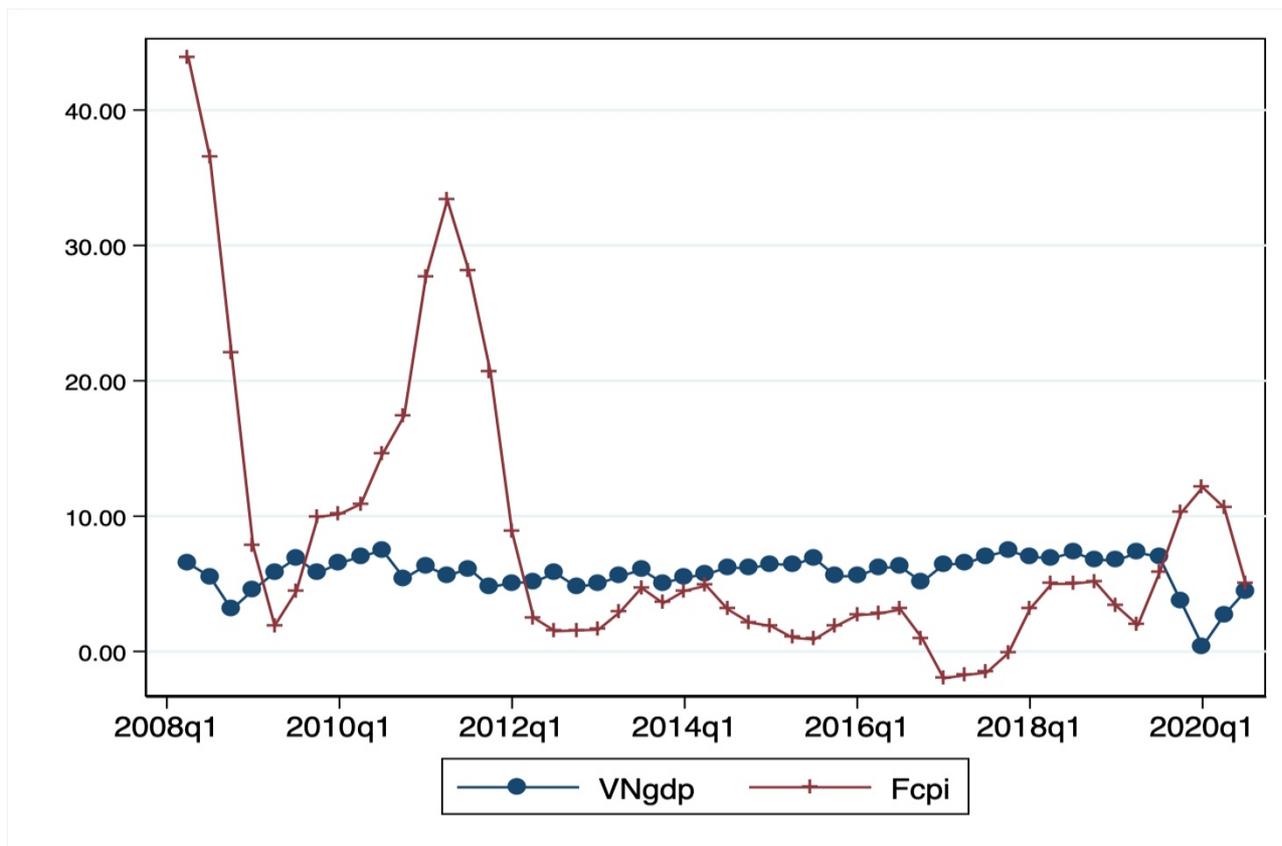
Source : World Bank Global Inflation Database (2022) and Vietnam General Statistics Office (2022).

The energy inflation rate tends to increase along with the economic growth, as shown in the Figure 4. After a period of large fluctuation over 2008-2012, the energy

inflation rate tends to be quite stable around 5% from 2013 to present. This tendency results in a clear trade-off between the inflation and economic growth rate: a high inflation rate is associated with high inflation rate.

The pattern of food inflation rate can be thought as a combination of core inflation and energy inflation. As Figure 5 records, the food inflation rate is similar to the core inflation in the sense that these two components of inflation rate tend to reduce over time from 2008 to 2017. This reduction results in the divergence of food inflation with economic growth rate. But the food inflation rate is also similar to the energy inflation in the sense that its value tends to go up against since 2018 to 2020. This tendency raises the trade-off between the food inflation and economic growth rate.

Figure 5: Food Inflation Rate and Economic Growth



Source : World Bank Global Inflation Database (2022) and Vietnam General Statistics Office (2022).

CONCLUSION

The paper uses a quantitative analysis which investigates the quarterly dataset of inflation for the Vietnam economy over 2008-2020. The inflation is decomposed into three main components including core inflation, energy inflation and food inflation.

The evidence records that the main driver of inflation in the Vietnam economy is the food inflation. Moreover, both energy and food inflation tends to have a large deviation over time. This illustrates the impact of the world commodity market on domestic inflation. The core inflation, however, is quite stable over time, reflecting the effectiveness of monetary policy in the Vietnam economy. As a result, there exist a clear divergence of core inflation with the economic growth, along with a trade-off between the energy inflation and economic growth. The food inflation exhibits both a divergence with economic growth over the 2008-2017 period but a trade-off over the 2018-2020 period.

The results implies that the food inflation can be a prioritized objective for the Vietnam economy to stabilize the domestic inflation. Moreover, the monetary policy, which affects the core inflation, needs to be combined with the fiscal policy, which affects the energy inflation.

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