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INFLATION AND MAIN DETERMINING FACTORS IN NON-EURO CEE COUNTRIES DURING THE PERIOD 2020-2022. AN EMPIRICAL ANALYSIS

Abstract. *Maintaining a low level of consumer price index, which is beneficial for a country economy, requires a mix of economic measures undertaken by most central banks and other decision factors. The optimal strategies need to know in advance the impact of each factor that could determine the inflation evolution. This research aims at analysing the influence and correlations between inflation determinants in the non-euro area of Central and Eastern European countries, taking into consideration also the impact of nominal effective exchange rate, during the Covid-19 pandemic period. The data was drawn from the Eurostat databases for the period Q1 2020-Q2 2022. Pearson's correlation coefficients were calculated between all pairs of selected variables in all countries, and the analysis of the principal components was used because of multicollinearity issues. The authors found that the most significant correlation is between the Harmonised Index of Consumer Prices (HICP) and interest rate (IR) in both directions in all typical countries except Bulgaria, where the national currency is pegged to EUR. Moreover, there are significant correlations between all variables and the principal components of inflation are different with each country, suggesting different measures against the persistence of a medium or high level depending on each country's economic characteristics.*

Keywords*: Cee Countries, Inflation Determinants, Inflation Correlation, Interest Rate, Exchange Rate, Trade Balance, Net Financial Worth, Labour Cost*

JEL Classification: E31, E40

1. Introduction

Inflation has been raising many debates among researchers, experts, and the general public during the history and especially on the occasion of international shocks. Despite some divergent opinions regarding the causes or channels leading to the emergence of inflation, it is generally agreed that inflation is caused by three

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primal causes: (i) aggregate demand over supply; (ii) the cost-push effect resulted from the rising of labour costs, increased prices of intermediate goods, shortages of resources due to unexpected events or general depletion, etc.; (iii) populist practices such as public wages growth, indexation and other similar shocks occurring generally in the proximity of elections. All primal causes lead to an increase in the monetary mass and hence the inception of inflation (Păun and Topan, 2014).

Although there is an abundance of researches in the literature which studied the factors triggering or developing inflation in developed countries, the situation is different in the case of transition or emergent economies and especially as to the group of non-euro area of Central and East European (CEE) member states. Our paper will try to fill in this gap and aims at finding the correlation coefficients between HICP, which is considered the official measure of consumer price inflation in the EU and the most relevant variables, identified and disseminated, such as interest rate (IR), nominal effective exchange rate index (NEERI), labour cost index (LCI), the share of trade balance in gross domestic product (TB_GDP) and the share of financial net worth in GDP (NFW_GDP) inside the non-euro group of countries during the period Q1 2020-Q2 2022. According to the European Commission's Convergence Report (European Commission, 2022), Croatia is joining the euro zone starting with 1st of January 2023 and thus we excluded it from the non-euro group. Therefore, data was drawn only for Bulgaria, Czechia, Hungary, Poland and Romania from the Eurostat databases (European Commission, 2022).

The authors' research is based on 3 hypotheses:

- The most significant correlation is between the HICP and IR variables (H1);
- There are significant correlations between all selected variables (H2);
- The two compounded variables revealed by the principal components analysis are unique at the country level (H3).

Our findings illustrate there is a very large and positive correlation between IR and HICP (at least 0.852) for all countries in the group except Bulgaria, which national currency LEV is pegged to EUR in order to prepare the accession to the eurozone in 2024. However, very large correlations occur in our model between HICP and all variables with the following exceptions: LCI in Czechia, Hungary and Romania, the above-mentioned special case of Bulgaria, and NFW_GDP in Bulgaria and Romania. LCI significantly correlates with NEERI in Poland and there is no correlation in Czechia and Romania; LCI significantly correlates with IR in Hungary, Poland and Romania; LCI significantly correlates with TB_GDP in Hungary and Poland and there is no correlation in Czechia; LCI significantly correlates also with NFW_GDP in Poland, correlations taking place also in the rest of the countries. NEERI significantly correlates with IR in all countries except Romania, where there is a small correlation; NEERI significantly correlates with TB_GDP in Czechia and Poland, and there is a small correlation in Bulgaria and Romania; NEERI significantly correlates with NFW_GDP in Hungary and Poland,

there is a small correlation in Czechia, and no correlation in Romania. IR significantly correlates with TB_GDP in all countries except Bulgaria, where we have a small correlation; IR significantly correlates with NFW_GDP in Czechia, Hungary, Poland and there is a small correlation in Bulgaria and Romania. TB_GDP significantly correlates with NFW_GDP in all countries except Romania, where we have a small correlation. Based on principal components analysis, the authors found out the variables are allocated into components in different patterns depending on every country specific macroeconomic situation, being mixed with a different loading factor.

The paper is organised as follows: in the second section we will shortly review the most recent articles regarding inflation, the main factors impacting its evolution and some relevant particularities of CEE countries, the third section will consist of our methodology and data used in our research, the fourth section includes our results, and the last section concludes.

2. Literature review

The inflation phenomenon, at a low level, is essential for a well-functioning economy. Thus, businesses get profitable and urge consumers to spend their money as soon as possible (not waiting anymore for lower prices before making acquisitions), higher consumption being crucial for economic growth (aggregate demand gets larger and triggers the increase of production). There are empirical studies demonstrating there is no long-run correlation between output growth and inflation (Ericsson, Irons and Tryon, 2001) or an optimal threshold of inflation rate can be intended for economic development (Akinsola and Odhiambo, 2017). By contrary, the persistence of a medium, high level or combined, may have severe effects for the economy: besides the purchasing power loss for all actors, either public, private, or households, a 10% p.p. per year prices growth will reduce the propensity to invest by 0.4-0.6 p.p. and will lower the growth rate of GDP per capita by 0.2-0.3 p.p. per year (Barro, 1995). The latter could lead to a huge missing amount of money which could have been earned yearly by large economies otherwise if the inflation rate could have been kept under control. Studying the relation between economic development and level of inflation, Roncaglia de Carvalho, Ribeiro, and Marques (2018) found that the persistence of inflation, growth of terms of trade, degree of openness to trade were positively correlated with inflation, while heightened levels of GDP per capita, share of high-tech exports in total exports, and unemployment growth correlate negatively with the lower inflation rates. Although a positive but insignificant effect of inflation on growth has been indicated in the literature if the inflation rates vary below a certain threshold, 1% for developed to 11% for developing countries (Ghosh and Phillips, 1998), Gillman and Harris (2010) demonstrate the inflation rate and its evolution negatively affect growth across all their econometric models.

Depending on the economic context or central banks' objectives on short-, medium-, or long-term, the decision factors might opt out for inflation target (IT) policies. It is worth mentioning that most central banks in developed countries and more and more emerging economies already make use of them. The output growth is basically the same in the targeting and non-targeting groups of countries, while the inflation rate is about half of the level on average in IT regimes (5.4 p.p.), compared to a 9.6 p.p. in case of non-IT economies (Aizenman, Hutchison and Noy, 2011). The same study empirically shows that the average level of nominal IR is 3.7 p.p. less in the IT group compared with the non-IT one, a slightly smaller difference than the 4.2 p.p. difference in inflation rates between the two regimes, indicating a higher average short-term real interest rates in the IT countries. Cabral, Carneiro and Mollick (2020) investigated the effects of developing states policies including a mix of tight monetary policies, fiscal discipline, flexible exchange rate regimes, and large international foreign exchange reserves. They reached to the conclusion that the countries adopting them could easier endure the impacts of economic and financial crisis. The authors demonstrate the IT countries show lower average inflation (3.97%) compared to the non-inflation targeters (6.27%), lower nominal interest rates (6.41%) than their counterparts (7.15%) and surprisingly a significant lower exchange rate volatility (0.28% compared to 0.73% resulted in case of non-IT group). However, (Egilsson, 2020) warns about maintaining a high interest rate for a long time, the research suggesting that even if a wider interest rate differential (from the Federal Reserve interest rate) can dampen inflation in the short run, a persistent one can lead to responses such as currency depreciation, inflation, wage level erosion, or some combination of these, i.e., chronic spiral of inflation and falling exchange rate.

Investigating the effects of inflation on both of nominal and real interest rate, Argyropoulos and Tzavalis (2021) showed that inflation rate shocks affect significantly both the nominal and real interest rates and also the inflation evolution impact on nominal interest rates is of the same magnitude independently of the maturity interval. Ferrara et al. (2021) added fiscal policy into the equation and found out a positive spending appreciates the real exchange rate, induces a trade balance deficit, generating inflationary pressures, and an increase in the nominal interest rate. The currency movements which might be influenced by country characteristics (such as central bank credibility, trade openness, etc.) amplify their impact on consumer prices and suggest alternative monetary policy responses depending on shocks and the macroeconomic situation (Ha, Marc Stocker and Yilmazkuday, 2020). Their study demonstrates, by means of an estimation of structural factor-augmented vector autoregression models for 55 countries, that a lack of exchange rate flexibility may boost the global shocks, generate speculative attacks, and impede the stabilisation of the inflation rate. Mehtiyev, Magda and Vasa (2021) analysed the correlation between currency devaluation and inflation in 182 countries and found out there was a high degree of correlation during the period 2018-2019 (a Pearson

correlation coefficient of 0.723). Examining the historical link between labour costs and inflation in Europe over 1995-2019, Boranova et al. (2021) reached the conclusion that the wages growth impact was higher before 2009 and weakened thereafter, sectors getting more and more exposed to competition, which forced the companies to look after buffers such as lowering the profit margins, negotiating cheaper inputs, or improving labour productivity. According to the study conclusions, there is also a passthrough ratio that considers the response of wages to their own growth of about 1/3. Kordalska and Olczyk (2022) expect even a higher growth of wages in the near future in CEE countries, as the reliance on cheap labour has reached its limits and the development path could be that of establishing domestic multinationals, adopting technology policies, massive state investment in infrastructure, and human capital. Economists often point out the trade balance as a main driver of crises and fluctuations. Barthélemy and Cléaud (2018) consider that a country with an increasing tendency to consume domestic goods rather than foreign ones undergoes inflationary pressures due to higher aggregate demand compared to a constant supply. The authors estimate the impact of the imbalanced development of international trade to the euro-area inflation to an average of −0.7 p.p. and also a 1.4 p.p. higher Euribor-3M. Rajković et al. (2020)'s findings demonstrate that during the economic crisis, the real exchange rate impact on the current account was diminished, which thereby constrained the applicability of devaluation as an appropriate measure for the reduction of fiscal imbalances. Sharma and Dahiya (2022) analysed the most important determinants of output in USA, China and India and identified the monetary mass, trade openness, exchange rate and interest rate as the factors with the largest impact on both their wholesale and consumer price inflation.

Covering the years following the accession of CEE countries into the European Union, from 2004 until 2018, Dobrzanski and Grabowski (2019) demonstrated that all the analysed improved in terms of both pure and structural productivity, due to the price liberalisation, removal of most of tariff barriers, strict fiscal policy, competitive exchange rates, privatisation of state companies or deregulation. Neumeyer and Perri (2005) studied the business cycles in emerging economies, finding that the emerging economies are more volatile than the developed ones in terms of output (more than twice as volatile in developing economies), the average of real interest rates volatility is 40% higher, and in the case of net exports 54% higher. Petrović, Mladenović and Nojković (2011) drew distinction between the triggering and development of inflation factors and tried to identify the triggering ones. Thus, output gap to Germany, elections, exchange rate regime appear as triggers in developed countries, while budget deficit, food price, and output gap take a part in emerging economies. Authors noticed also that in case of developing countries, the centre of gravity of the factors impact has been moving from the demand-side to the supply-side shocks.

3. The materials and methods

The first step of analysis explores for five non-euro European Union countries (Bulgaria, Czechia, Hungary, Poland, and Romania) 6 variables, namely inflation, labour cost index, nominal exchange rates index, day-to-day interest rate, the share of trade balance in GDP and of net financial worth in GDP. These variables were extracted from the Eurostat database for the period Q1 2020-Q2 2022 and defined as follows:

1. inflation – HCIP
2. labour cost index – LCI
3. nominal exchange rate index – NEERI
4. da-to-day interest rate – IR
5. the share of trade balance in GDP – TB_GDP
6. the share of net financial worth in GDP – NFW-GDP

The countries could be described based on those 6 variables and also a correlation between these variables could be made for each of the 5 countries. Pearson correlation is a measure of association between ordered pairs of continuous measurements from two groups (Voineagu at al., 2007). It has been calculated considering bivariate correlation between any 2 variables on following formula:

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

where x_i and y_i are the values of the two variables and $\overline{x}$ and $\overline{y}$ are the mean of their values.

The second step of the analysis is conducting the multivariate linear regression (MLR) analysis on forward/stepwise selection method based on 5 of the variables in order to determine their influence on HCIP. MLR is the statistical method that uses explanatory variables to forecast the effect on the dependent variable. The aim of MLR is to shape the linear rapport amid the input variables and the response variable.

Due to multicollinearity issues, some of the variables are excluded from the models. In order to deal with that extent, analysis of principal components (PCA) is a proper method to obtain fewer components, orthogonal and uncorrelated that mix those 5 variables. This stage is the third one. The purpose of PCA is to decrease the complexity of the data and to display the information in fewer dimensions whenever all variables are numerical (Boboc, 2007). It is mathematically set as an orthogonal linear conversion that projects the data to a novel frame of reference (that is built the by principal components) to get the highest variance explained by this projection of the information.

The fourth step of the analysis is to re-build the multivariate regression analysis with HCIP as the independent variable, but this time based on the principal components revealed by ACP.

4. Results

Figure 1 shows the evolution of HICP in the selected group of countries compared to the average values (AVG). As we can notice, there are similarities in the non-euro CEE countries, HICP reduces slightly until the end of Q4 2020 and starts to increase with an exponential trend until the end of Q2 2022. The lowest values are generally registered in Bulgaria, a country with a special monetary policy, and the highest recent values in Czechia. It is worth mentioning that Hungary performed better in stabilising the index of consumer prices in 2022.

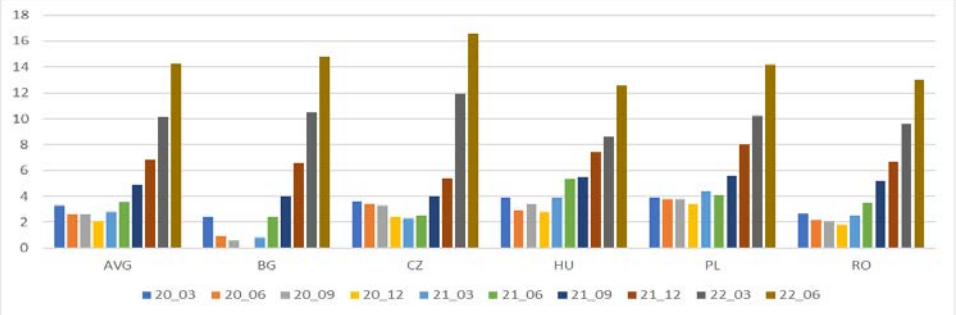

Figure 1. HICP
(authors' calculation based on Eurostat, [PRC_HICP_MANR], accessed on 5 August 2022)

All six variables are correlated during the period Q1 2020 – Q2 2022 as per the correlation matrix shown in Table 1 for each of the analysed countries.

Table 1. Correlation matrix

		LCI	NEERI	IR	TB_GDP	NFW_GDP
Bulgaria	**HICP**	0.718*	.b	-0.110	-0.686*	-0.620
Czechia		0.285	0.738*	0.952**	-0.666*	0.829**
Hungary		0.537	-0.843**	0.964**	-0.772**	0.804**
Poland		0.775**	-0.789**	0.953**	-0.879**	0.870**
Romania		0.566	-0.735*	0.852**	-0.719*	0.292
Bulgaria	**LCI**		.b	-0.282	-0.521	-0.473
Czechia			-0.095	0.234	-0.046	0.411
Hungary			-0.483	0.708*	-0.659*	0.345
Poland			-0.636*	0.752*	-0.890**	0.895**
Romania			0.044	0.816**	-0.290	0.584

		LCI	NEERI	IR	TB_GDP	NFW_GDP
Bulgaria	**NEERI**			.b	.b	.b
Czechia				0.753*	-0.755*	0.511
Hungary				-0.883**	0.473	-0.673*
Poland				-0.640*	0.851**	-0.701*
Romania				-0.297	0.537	0.032
Bulgaria	**IR**				-0.284	-0.399
Czechia					-0.651*	0.843**
Hungary					-0.769**	0.763*
Poland					-0.790**	0.815**
Romania					-0.662*	0.360
Bulgaria	**TB_GDP**					0.942**
Czechia						-0.642*
Hungary						-0.722*
Poland						-0.903**
Romania						*0.383*

Authors' calculations based on Eurostat databases, last accessed on 14 November 2022

Note: *. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

I. In Bulgaria, there is a significant correlation between HICP and LCI and also between HICP and TB_GDP. As NEERI is a constant, the national currency being pegged to EUR, the correlations with other variables cannot be computed. We noticed a very high degree of positive correlation at the 0.01 level between TB_GDP and NFW_GDP (a 0.942 coefficient).

II. In Czechia, HICP correlates significantly with all other variables except LCI, the highest coefficient being calculated in case of IR (0.952). NEERI has almost the same degree of correlation with IT and TB_GDP and insignificant correlation with NFW_GDP. There is a negative significant correlation between IR and TB_GDP and a positive one between IR and NFW_GDP. In opposition to Bulgaria, the significant correlation between TB_GDP and NFW_GDP is negative, and the authors should raise the topic of surplus and deficits registered by the international trade. Thus, Czechia recorded yearly and also in the analysed period a high surplus Bulgaria and Romania high deficits, Poland and Hungary surpluses before Q3 2021 and deficits afterwards.

III. In Hungary, there is a very high degree of correlation between HICP and all other variables except LCI, the highest Pearson coefficient being for IR (0.964). We may notice a significant correlation between LCI and IR and also between LCI and TB_GDP. NEERI has the highest degree of correlation with IR among all analysed countries and also correlates significantly with NFW_GDP.

IV. In Poland there is a significant correlation at the 0.05 level and 0.01 level between all variables, the highest degree of correlation occurring between HICP and IR (a Pearson coefficient of 0.953) and between TB_GDP and NFW_GDP (a Pearson coefficient of -0.903).

V. The same pattern of very strong correlation between HICP and IR can be noticed also in Romania (a Pearson coefficient of 0.953), and thus our first hypothesis (H1) is confirmed, IR has the largest impact on the HICP evolution (and vice versa) in our relevant current condition (except Bulgaria). However, our calculations show no correlation between LCI and NEERI, NEERI and NFW_GDP or a low level of correlation between LCI and TB_GDP or between NEERI and IR.

We will further on investigate the relation between variables and will highlight the strength of correlation during the analysed period of time in a visual manner. Figure 2 illustrates the strength of correlation between HICP and the other 4 variables with highest Pearson coefficient, namely IR, TB_GDP, NFW_GDP, and NEERI.

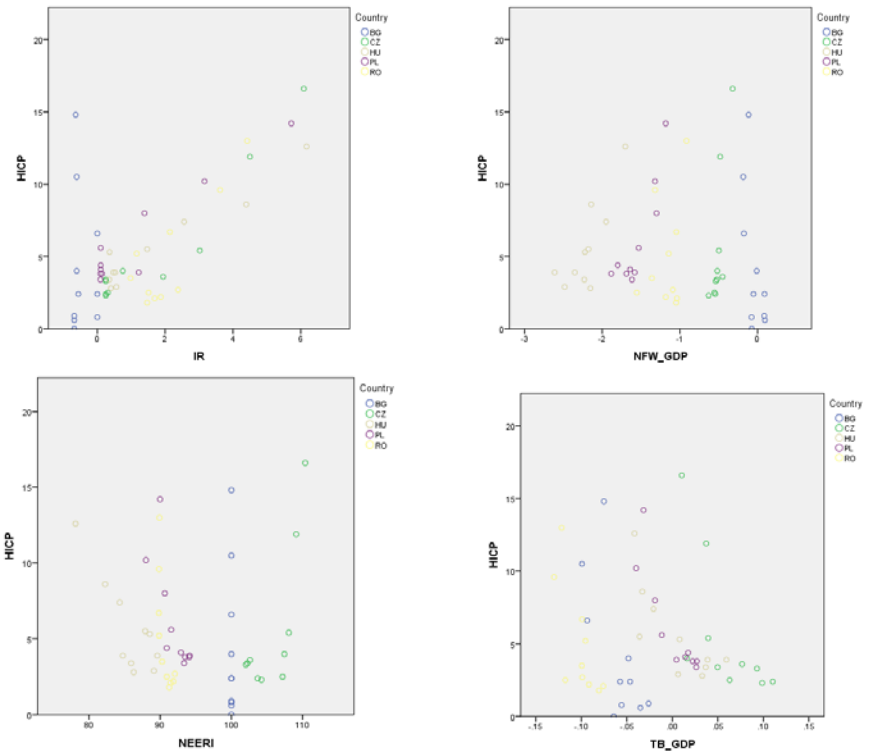

Figure 2. Correlation degree between HICP and 4 variables by country

Figure 3 shows a weaker correlation between IR and NEERI in case of Polonia and Romania and between NEERI and TB_GDP in case of Hungary.

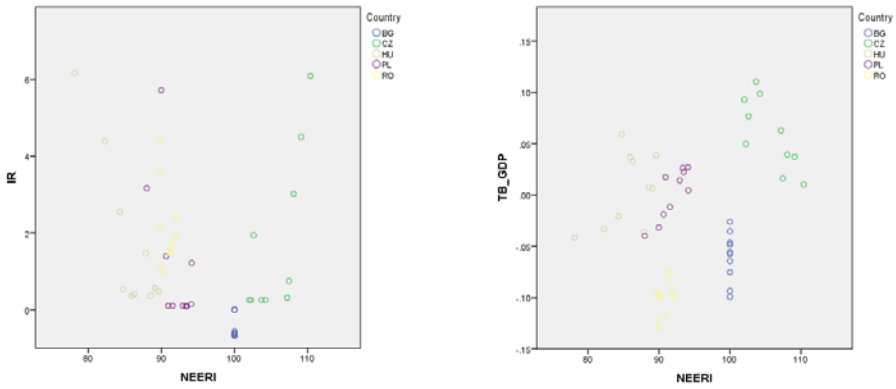

Figure 3. NEERI correlation with IR and TB_GDP by country

A few other strong correlations can be seen in the case of IR with TB_GDP and also TB_GDP with NFW_GDP (Figure 4).

Therefore our second research hypothesis (H2) is partially confirmed, the Pearson correlation coefficients indicating a significant correlation between all variables with several exceptions: the special financial framework of Bulgaria, HICP correlation with LCI in Czechia, Hungary and Romania, HICP correlation with NFW_GDP in Romania, LCI correlation with other variables in Czechia and Romania, NEERI correlation with NFW_GDP in Czechia, TB_GDP in Hungary and IR, TB_GDP and NFW_GDP in Romania, IR and NFW_GDP, TB_GDP and NFW_GDP also in Romania.

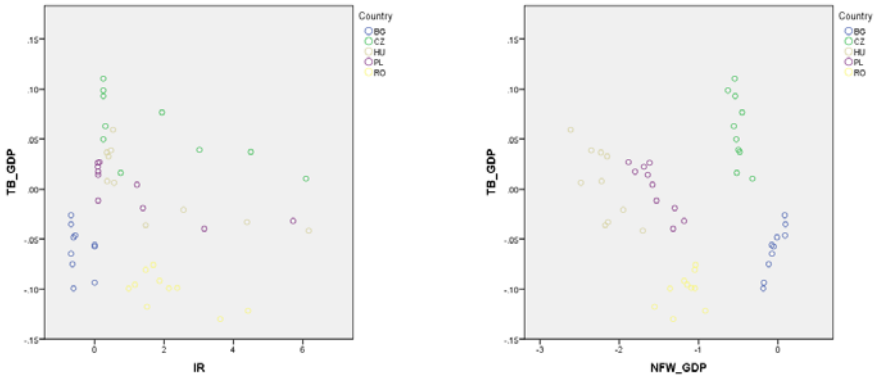

Figure 4. TB_GDP correlation with IR and NFW_GDP by country

In order to estimate the impact in HCIP, a stepwise multiple linear regression analysis is used with LCI, NEERI, IR, TB_GDP, NFW_GDP as exogenous variables. The regression model chosen was the one that respected multicollinearity diagnosis recommendation and is described in Table 2.

Table 2. Regression models

Countries / Variables	Bulgaria	Czechia	Hungary	Poland	Romania
Constant	-4.73	1.72	52.22	53.70	202.29
LCI	0.93				
- Sig	0.019				
NEERI			-0.54	-0.54	-2.23
- Sig			0.004	0.016	0.000
IR		2.17		1.45	2.39
- Sig		0.000		0.000	0.000
TB_GDP			-41.25		
- Sig			0.012		
NFW_GDP					
R square	**0.52**	**0.91**	**0.89**	**0.96**	**0.98**

Authors' calculations based on Eurostat databases, last accessed on 14 November 2022

As many of the variables were excluded from the models due to multicollinearity reasons, a PCA is welcomed in order to create fewer dimensions uncorrelated in order to have more of the variables impact upon HCIP.

Based on PCA, using the varimax method 2 factors were retained with the following load factors in Table 3:

Table 3. Rotated component Matrix

Countries	Component	LCI	NEERI	IR	TB_GDP	NFW_GDP
Bulgaria	1	-0.689	N/A	-0.262	0.960	0.954
	2	0.626	N/A	-0.915	0.102	0.213
Czechia	1	-0.007	0.915	0.885	-0.885	0.760
	2	0.958	-0.173	0.299	-0.004	0.535
Hungary	1	0.186	-0.853	0.785	-0.533	0.900
	2	0.953	-0.269	0.580	-0.699	0.209
Poland	1	0.883	-0.360	0.832	-0.731	0.865
	2	-0.347	0.929	-0.344	0.652	-0.425
Romania	1	0.939	0.033	0.785	-0.105	0.805
	2	-0.156	0.729	-0.576	0.962	0.394

Authors' calculations based on Eurostat databases

Note: "Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization."
Rotation converged in 3 iterations.

The projection of data on the first two principal components preserves an important part of total inertia, more than 82% reaching even 92% for Poland and Bulgaria. The following attribution of the variables in dimensions is shown in Table 4.

Table 4. PCA components and variance

Countries / Variables	Bulgaria	Czechia	Hungary	Poland	Romania
LCI	1	2	2	1	1
NEERI		1	1	2	2
IR	2	1	1	1	1
TB_GDP	1	1	2	1	2
NFW_GDP	1	1	1	1	1
Total Variance explained (%)	91.52	86.07	86.44	91.81	82.51
Component 1	59.37	62.49	72.36	57.68	48.66
Component 2	32.15	23.59	14.08	34.13	33.85

Authors' calculations based on Eurostat databases

Having the two new dimensions, we could rebuild the MLRs in order to try to obtain better and exhaustive models for determining the impact on HCIP.

Table 5. Regression models based on principal components

Countries / Variables	Bulgaria	Czechia	Hungary	Poland	Romania
Constant	4.30	5.54	5.63	6.14	4.93
Component 1	-3.62	4.14	2.64	2.74	2.13
Component 2		1.59	1.34	-1.94	-2.86
R square	**0.54**	**0.85**	**0.91**	**0.87**	**0.89**

Authors' calculations based on Eurostat databases

For Bulgaria and Hungary, we have reached models with R square better than previous ones, while for the other 3 countries, the models based on components have a lower determination coefficient even if the variables included are robust ones. Tables 4 and 5 demonstrate our third research hypothesis is confirmed, the two compounded variables revealed optimally by the principal components analysis are unique at country level, the first grouped component variables explaining the total variance being LCI, TB_GDP and NFW_GDP in case of Bulgaria, NEERI, IR, TB_GDP and NFW_GDP in case of Czechia, NEERI, IR and NFW_GDP in case of Hungary, LCI, IR, TB_GDP and NFW_GDP in case of Poland and LCI, IR and NFW_GDP in case of Romania.

5. Conclusions

Our paper aims at bringing some light on the current inflation (during the COVID-19 pandemic) developing factors in the non-euro area of CEE countries, which were previously identified and revealed by the academic literature and also at testing if there are any correlations between them. We used the Eurostat databases in order to extract quarterly data related to consumer price index, labour cost index, short-term interest rate, the nominal effective exchange rate, trade balance, and net financial worth for the latest relevant period of time (2020-2022). Unfortunately, our research is limited in case of Bulgaria and relevant time series length but we reveal some robust findings for other analysed countries, which might eventually be used in further researches in other countries to establish the optimal strategy for stabilising the prices index or just be enriched with more recent or larger data.

Our study confirms the results found by Argyropoulos and Tzavalis and also the ones of Mehtiyev, Magda and Vasa and partially the findings of Ferrara et al. in case of Czechia, Hungary, and Poland. The LCI have a strong correlation with HICP only in case of Poland and Bulgaria but no correlation is identified in Czechia, Hungary and Romania.

Starting from the scientific hypothesis and applying the proposed research methodology, the authors found that H1 hypothesis is confirmed in typical non-euro CEE countries (Czechia, Hungary, Poland and Romania). IR has the largest impact on the HICP evolution and vice versa, as the Pearson's correlation coefficients show very strong and positive correlations which range between 0.852 in case of Romania and 0.964 in case of Hungary. This means a higher inflation leads to higher interest rates (set by central banks following the Taylor rule), but an interesting finding which can be seen otherwise as our contribution is that the relationship is in both directions, and therefore simply raising the interest rates may trigger an inflationary spiral. This is in line with the above-mentioned Egilsson's research.

Our second hypothesis (H2) is partially confirmed as there are generally significant correlations among all variables with several exceptions, namely LCI in most of the models, HICP correlation with NFW_GDP in Romania, NEERI correlation with NFW_GDP in Czechia, TB_GDP in Hungary and IR, TB_GDP and NFW_GDP in Romania, IR and NFW_GDP, TB_GDP and NFW_GDP also in Romania. We found that every analysed country has a unique pattern of components explaining most of the HICP variation: LCI, TB_GDP and NFW_GDP in case of Bulgaria, NEERI, IR, TB_GDP and NFW_GDP in the case of Czechia, NEERI, IR and NFW_GDP in the case of Hungary, LCI, IR, TB_GDP and NFW_GDP in the case of Poland, and LCI, IR and NFW_GDP in the case of Romania.

Thus, the H3 hypothesis is confirmed, which suggests that every country needs a different economic policy depending on the specific HICP

determinants in order to cool down the inflation and mitigate its negative effect. Given the high level of interdependence between the variables, the authorities, according to their specific activity and their direct or indirect actions, should use an optimal mix of measures in order to prevent both the deflation and a persistent high inflation.

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