

countries implemented milder fiscal stimuli.<sup>8</sup> In subsequent years all countries except Japan reduced the public debt burden (Table 2.6).

**Table 2.6. General government gross debt (% of GDP) 2019–2022**

Country	2019	2020	2021	2022
France	97.4	114.7	112.6	111.1
Germany	58.9	68.0	68.6	66.5
Hungary	65.3	79,3	76.8	76.4
Italy	134.1	154.9	149.8	144.7
Japan	236.4	258.7	255.4	261.3
Poland	45.7	57.2	53.8	49.6
Spain	98.2	120,4	118.4	112.0
The US	108.7	133.5	126.4	121.7

Source: (IMF, 2023a).

It is worth mentioning that the first IMF estimations of the future debt levels were published in October 2020. They underestimated the debt in 2020–2022 only for Hungary and the US. In all other cases and for all years the 2020 IMF projections based on national data were overestimated. It reflects the pessimism at national and IMF levels prevailing at the pandemic's beginning. In times of uncertainty this cognitive bias was almost universal and significantly contributed to the oversized scale of fiscal stimuli implemented.

Table 2.7 presents central banks' policy measures implemented and kept operational during COVID-19. The European Central Bank was the only bank that did not change its reserve stance. All analysed banks followed the quantitative easing policy providing liquidity to their banking systems and fiscal authorities. In all cases, the most important were lending operations and asset purchases. These policies (Table 2.7), together with the interest rate policy (Figure 2.5), were expansionary, adding stimuli to the activist fiscal policies.

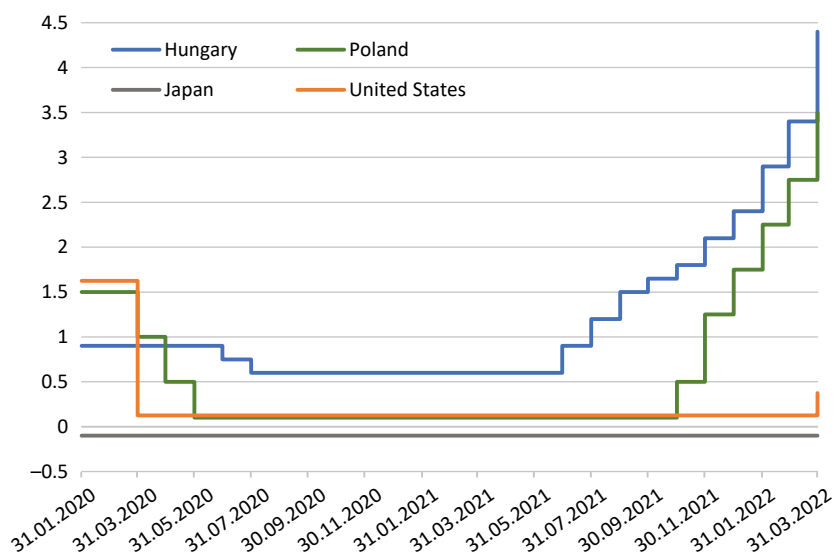
The central bank policy rate is the rate set by the central bank to signal its policy stance. It is the rate at which the central bank lends funds (typically short-term) to commercial banks (Moessner & Nelson, 2008). Figure 2.5 shows that in 2020–2022Q1 Bank of Japan (BOJ) and the European Central Bank (ECB) kept their policy rates unchanged at  $-0.5\%$  and  $0.0\%$ , respectively. It meant that both institutions ran expansionary monetary policy. In March 2020, the first month of

<sup>8</sup> In some EU Member States such as Poland and Hungary the scale of actual fiscal expenditure required attention because even before COVID-related spending sizable public expenditure was not recorded within the public finance framework.

**Table 2.7. Synopsis of central banks' policy measures in 2020 (March)–2022 (March)**

Central banks	Reserve policy	Lending operations	Asset purchases	Foreign exchange
Bank of Japan	✓	✓	✓	✓
Central Bank of Hungary	✓	✓	✓	✓
European Central Bank		✓	✓	✓
Federal Reserve	✓	✓	✓	✓
National Bank of Poland	✓	✓	✓	✓

Source: (BIS, 2023).

**Figure 2.5. Central bank policy in 2020–2022Q1. Monthly, end period**

Source: (BIS, 2023).

the pandemic affecting most countries, the US Federal Reserve (FED) reduced its policy rate to 0.125 and maintained that level until March 2022, when it was increased to 0.375% (Figure 2.5). The National Bank of Poland (NBP) began its series of rate reductions in March 2020 down to 1.0% and continued lowering the rate to 0.1%. In the face of inflationary pressures, NBP changed its policy stance

and began increases in October 2021. In March 2022, the NBP policy rate reached 3.5%. The Hungarian bank began mild reductions in June 2020 but, due to the rising inflation, was the first to begin tightening its monetary policy in June 2021. At the end of 2022Q1, its interest rate was 4.4% (Figure 2.5).

Fiscal and monetary policy measures designed and implemented to overcome the negative shock caused by the pandemic were unprecedented in modern peaceful times (Kowalski, 2022). Sharma (2021) estimated that in the USA, the actual scale of anti-crisis fiscal packages (as a percentage of GDP) in 2020 alone amounted to as much as 13% (for comparison: during the Great Depression, it was 4%, and in 2007–2009 the packages reached 7%). According to Sharma's preliminary estimates, combined fiscal and monetary stimuli could reach the equivalent of 28% of GDP in the US and in other developed economies, an average of 40%. The reactions of fiscal authorities and central banks should be seen in the context of economic globalisation, which was vital for low inflation in the pre-COVID time. The pandemic was the second blow to globalisation in eleven years, forcing policymakers and businesses to reconsider their strategies.

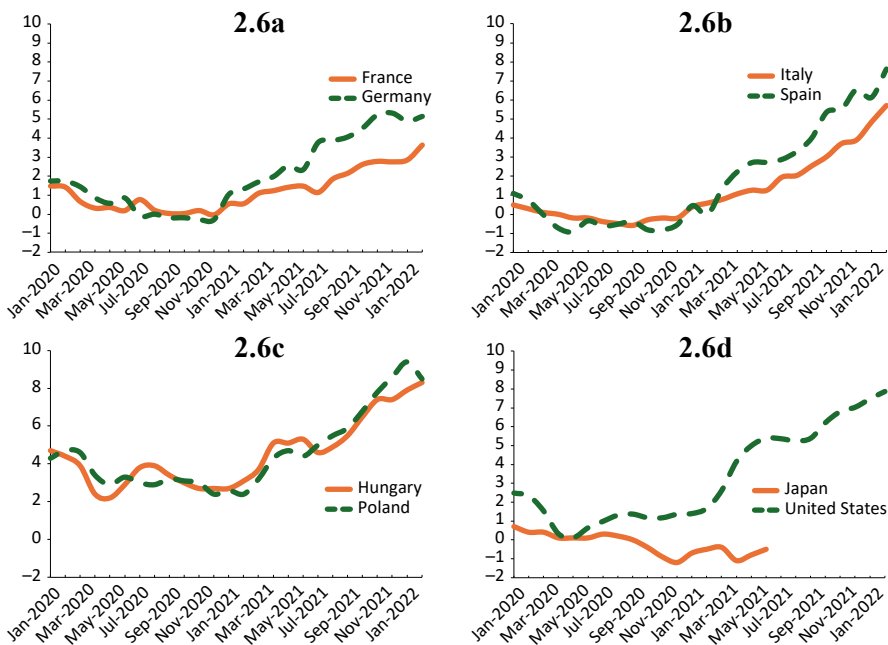
## 2.4. Reactions of national economies

The empirical analyses of the two years of reactions of the eight economies to COVID-19 and the stabilisation policy measures are focused on seven dimensions. These are inflation, industrial production and the unemployment rate—all expressed by monthly data. The other three dimensions: GDP growth rate and shifts in GDP expenditure structure are analysed quarterly. The real effective exchange rate, a simple proxy of international competitiveness, complements the analyses of the economies' reactions. The time series (Figures 2.6, 2.7, 2.8, 2.9, 2.10, 2.11 and 2.12) are embedded in the SRAS/LRAS/AD framework discussed in Section 2.

As follows from the model (Figures 2.1 & 2.2), in 2020, the expansionary economic policies did not transform into higher consumer price inflation. It is particularly evident in the case of four EMU countries (Figures 2.6a & 2.6b). In Hungary and Poland, the inflation dynamic was different (Figure 2.6c). In earlier years, the Polish government and central bank followed expansionary fiscal and monetary policies that led to a revival of inflation expectations and finally to higher inflation. In a certain sense, that was also the case in Hungary. The inflationary pressure gathered in 2021 and continued in 2022. The COVID-19 disruption did not change Japanese behaviour of prices, whereas, in the US, its rate sharply declined in reaction to COVID-19-related disturbances and then began to grow<sup>9</sup> (Figure 2.6d).

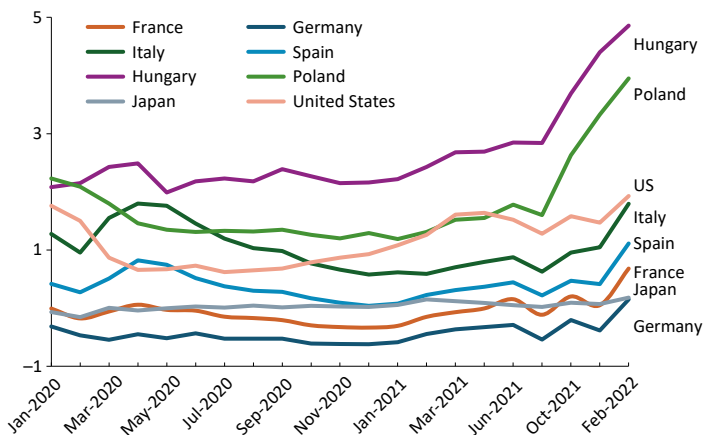
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<sup>9</sup> See the recent studies of Ball et al. (2022) and Harding et al. (2023).



**Figure 2.6 (a–d). Consumer prices in 2020 (January)–2023 (March), monthly. Growth on the same period of the previous year**

Source: based on (OECD, 2023).



**Figure 2.6e. 10-year bond yield in 2020 (January)–2022 (February)**

Source: (OECD, 2023).

The dynamic changes in inflation were reflected in shifts in 10-year bond yields (Figure 2.6e). They represent market long-term interest rate and reflect agents' expectations of the future inflation. Up to August 2021 they were stable, but later, due to new information of inflation hikes the yield increased the most for the Hungarian and Polish bonds. The dynamics of market long term interest rates signals the yields that market requires purchasing Treasury bonds. It also shows the power of credibility that can only be earned by deeds. In Figure 2.6e it is marked by the gap between T-Bonds issued by Germany and French, Spanish or Italian T-bonds.

All European economies had troughs and industrial dynamics peaks in the same months. After the trough in March 2020, all recorded volatile growth (Figures 2.7a, 2.7b & 2.7c). German, Polish and Spanish industrial production dynamics showed a similar pattern (Figures 7a, 7b & 7c)—their volatility was milder than in France, Italy and Hungary. Analysing the reaction of industrial production, it needs to be noticed that Japan and the US had the lowest variance (Figure 2.7d). It could be linked to how Japan coped with the pandemic (section 1). A relatively



**Figure 2.7. Industrial production in 2020 (January)–2023 (March), monthly. Growth on the same period of the previous year**

Source: based on (OECD, 2023).

**Table 3.3. VAR system, lag order: 2, equation: seasonal differences of GDP (Lithuania)**

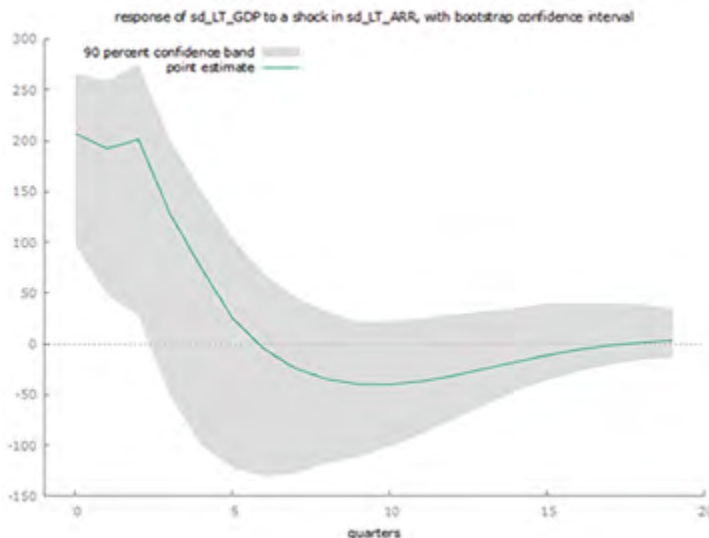
	Coefficient	Standard error	<i>t</i> -ratio	<i>p</i> -value
const	70.3763	71.9492	0.9781	0.3325
sd_LT_ARR_1	0.000161091	0.000658892	0.2445	0.8078
sd_LT_ARR_2	-0.0003327	0.00055338	-0.6013	0.5503
sd_LT_GDP_1	0.971198	0.244442	3.973	0.0002 ***
sd_LT_GDP_2	-0.321578	0.283523	-1.134	0.2619
sd_LT_UNP_1	-225.061	49.2443	-4.570	<0.0001 ***
sd_LT_UNP_2	185.893	50.4154	3.687	0.0005 ***
sd_LT_CONS_1	-0.421663	0.537257	-0.7848	0.4361
sd_LT_CONS_2	0.673413	0.477496	1.410	0.1644
CRISIS	300.973	150.740	1.997	0.0511 *
Mean dependent variable	653.2516		S.D. dependent variable	871.7541
Sum squared residual	7282654		S.E. of regression	374.2339
<i>R</i> -squared	0.842902		Adjusted <i>R</i> -squared	0.815711
<i>F</i> (9, 52)	31.00030		<i>p</i> -value( <i>F</i> )	7.30e-18
rho	-0.065786		Durbin-Watson	2.107672

Source: own work.

The *R*-squared value of the model is 0.842902, which means that about 84.29% of the variation in the dependent variable, „sd\_LT\_GDP”, is explained by the independent variables in the model. The adjusted *R*-squared value takes into account the number of predictors in the model and can be a more accurate measure when comparing models. In this case, it is 0.815711, which indicates that about 81.57% of the variation in „sd\_LT\_GDP” is explained by the model, taking into account the number of predictors.

The Durbin-Watson statistic is used to detect the presence of autocorrelation in the residuals from a regression analysis. The Durbin-Watson statistic ranges from 0 to 4, with a value around 2 suggesting no autocorrelation. The statistic in this model is 2.107672, which suggests that there is minimal autocorrelation, indicating a good model fit.

Afterwards, we calculated IRF (Impulse Response Function) showing response of „sd\_LT\_GDP” to a shock in „LT\_ARR” which was chosen as a GDP



**Figure 3.4. Response of GDP in mln EUR (seasonal differences) to a shock in Foreign Tourist Arrival (seasonal differences) for Lithuania**

Source: own work.

change to external shocks affecting tourist arrivals and the main measure of economies' resilience to shocks as stated earlier. The IRF is shown in Figure 3.4.

The IRF suggests that a shock to „LT\_ARR” initially leads to a positive effect on „sd\_LT\_GDP” which crosses to the negative side after 5 quarters and eventually becomes insignificant after about 20 quarters. This indicates that shocks to „LT\_ARR” have a temporary and diminishing impact on „sd\_LT\_GDP”, with the effects essentially disappearing after about 20 quarters. The model's coefficients for „sd\_LT\_ARR\_1” and „sd\_LT\_ARR\_2” are not statistically significant, suggesting that „LT\_ARR” does not have a significant impact on „sd\_LT\_GDP” in the short term. The lack of significance in the model aligns with the IRF's finding of the temporary nature of the effect.

Based on the VAR model and the IRF, it appears that the Lithuanian economy shows some resilience to shocks in „ARR”. Shocks to „ARR” have a temporary impact on „sd\_LT\_GDP” that fades out over time.

### 3.4.3. Spain

In case of Spain, we built the following model taking GDP (mln EUR) as an endogenous variable (Table 3.4).

**Table 3.4. VAR system, lag order: 3, equation: seasonal differences of GDP (Spain)**

	Coefficient	Standard error	<i>t</i> -ratio	<i>p</i> -value
const	979.056	2201.51	0.4447	0.6586
sd_SP_ARR_1	-0.00066874	0.000825627	-0.8100	0.4220
sd_SP_ARR_2	0.000411014	0.000791302	0.5194	0.6059
sd_SP_ARR_3	-0.00175075	0.000613299	-2.855	0.0064 ***
sd_SP_GDP_1	-0.490385	0.730647	-0.6712	0.5054
sd_SP_GDP_2	-0.238363	0.723632	-0.3294	0.7433
sd_SP_GDP_3	0.550329	0.620679	0.8867	0.3798
sd_SP_UNP_1	-5117.29	3348.70	-1.528	0.1332
sd_SP_UNP_2	4399.43	5676.50	0.7750	0.4422
sd_SP_UNP_3	-533.790	3117.25	-0.1712	0.8648
sd_SP_CONS_1	1.51070	0.940157	1.607	0.1148
sd_SP_CONS_2	0.287409	0.968817	0.2967	0.7680
sd_SP_CONS_3	0.120291	0.890260	0.1351	0.8931
CRISIS	-27.8930	4145.28	-0.006729	0.9947
Mean dependent variable	4440.803		S.D. dependent variable	16302.02
Sum squared residual	6.66e+09		S.E. of regression	11901.02
<i>R</i> -squared	0.582524		Adjusted <i>R</i> -squared	0.467051
<i>F</i> (13, 47)	5.044708		<i>p</i> -value( <i>F</i> )	0.000018
rho	-0.025781		Durbin-Watson	2.045900

Source: own work.

The VAR model for Spain's GDP („sd\_SP\_GDP”) provides a comprehensive look at the influences on economic output. An overall *F*-statistic of 5.044708 and the corresponding *p*-value of 0.000018 strongly suggests the model as a whole is statistically significant at the 5% level. This indicates that the variables in the model jointly have a meaningful effect on the dependent variable, „sd\_SP\_GDP”.

Examining individual coefficients, only „sd\_SP\_ARR\_3” is statistically significant, as its *p*-value of 0.0064 is less than 0.01, making it significant at the 1% level. The rest of the coefficients including „CRISIS”, all lags of „sd\_SP\_GDP”, „sd\_SP\_UNP” and „sd\_SP\_CONS” are not statistically significant at the 5% level, as their *p*-values are all greater than 0.05.

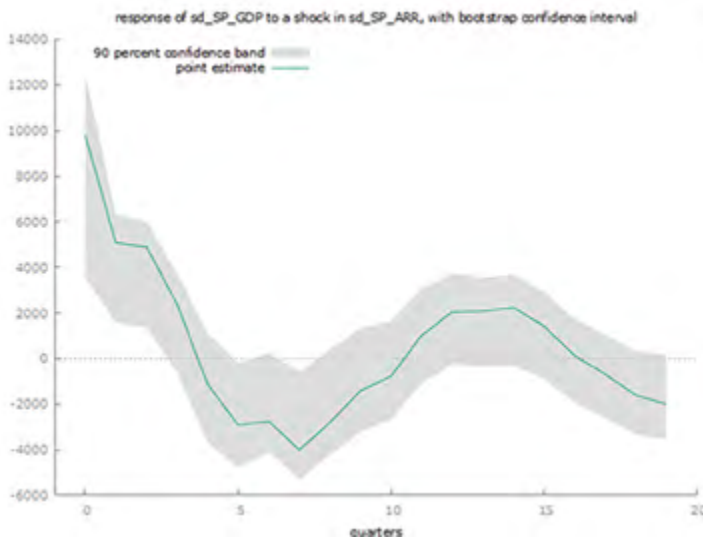


The  $R$ -squared value of this model is 0.582524, suggesting that approximately 58.25% of the variation in „sd\_SP\_GDP” can be explained by the variables in the model. However, the adjusted  $R$ -squared, which takes into account the number of predictors in the model, is substantially lower at 0.467051, indicating that about 46.70% of the variation in „sd\_SP\_GDP” can be explained when considering the number of predictors.

The Durbin-Watson statistic, used to detect autocorrelation in the residuals, is 2.045900, which is close to 2, suggesting there is little autocorrelation. This implies that the model does a good job capturing the time-dependent structure of the data.

In terms of the  $F$ -tests of zero restrictions, only all lags of „sd\_SP\_ARR” are statistically significant at the 5% level, with a  $p$ -value of 0.03. This suggests that the changes in arrivals („sd\_SP\_ARR”) at all lags are jointly significant in predicting „sd\_SP\_GDP”. Other variable groups are not significant. The „CRISIS” variable is not statistically significant, which suggests that the „CRISIS” variable does not significantly affect Spain’s GDP within this model.

As in case of previous countries, we calculated IRF showing response of SP\_GDP to a shock in SP\_ARR. However, unlike the previous cases the IRF oscillates around zero and doesn’t converge to zero during twenty quarters after the shock (Figure 3.5).



**Figure 3.5. Response of GDP in mln EUR (seasonal differences) to a shock in Foreign Tourist Arrival (seasonal differences) for Spain**

Source: own work.

The observed oscillatory behavior indicates that a shock to „SP\_ARR” creates disturbances in „SP\_GDP” that persist and fluctuate around zero rather than converging smoothly towards zero. This suggests that changes in „SP\_ARR” have an ongoing, alternating impact on „SP\_GDP” over the examined period of 20 quarters, instead of a gradual fading effect observed in the previous countries.

Comparing the IRF to the VAR model’s results, the third lag of „SP\_ARR” („sd\_SP\_ARR\_3”) is statistically significant in the model. This is consistent with the IRF’s indication of ongoing effects, as this significant lagged effect might contribute to the persisting influence of „SP\_ARR” shocks over multiple periods.

In terms of resilience to crises, the coefficient for „CRISIS” in the VAR model is not statistically significant, suggesting that within the model’s structure and data, crises don’t significantly impact „SP\_GDP”. However, it’s worth noting that real-world resilience to crises is multifaceted and may not be fully captured by this model.

In terms of resilience to shocks in „ARR”, the persistence of effects in the IRF suggests that Spain’s economy shows some sensitivity to such shocks. Yet, the oscillatory response implies a pattern of adjustment and adaptation, possibly indicating some level of resilience in managing these shocks over time.

#### 3.4.4. Portugal

In case of Portugal we built the following model taking GDP (mln EUR) as an endogenous variable (Table 3.5).

The Portuguese GDP model („sd\_PT\_GDP”) shows a few notable statistical relationships, but most of the variables in the model are not statistically significant based on their respective  $p$ -values being greater than 0.05.

Starting with the overall model significance, the  $F$ -statistic of  $F(17, 42) = 5.056726$  and its corresponding  $p$ -value of  $9.50e-06$  suggests that the model is statistically significant at the 1% level. This means that jointly, the independent variables significantly affect the dependent variable, „sd\_PT\_GDP”.

Among the independent variables, only „sd\_PT\_GDP\_1” has a  $p$ -value less than 0.05 ( $p$ -value = 0.0465), indicating it’s statistically significant at the 5% level. This implies that the first lag of the Portuguese GDP has a significant effect on the current period Portuguese GDP.

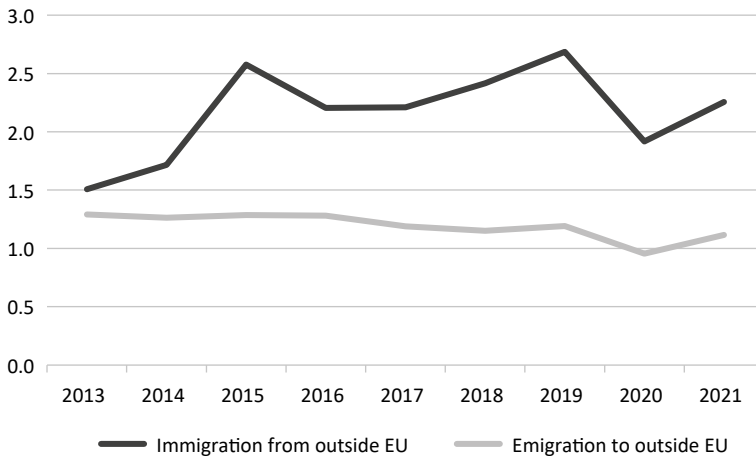
Most of the other variables including all lags of „sd\_PT\_ARR”, „sd\_PT\_GDP” (except the first lag), „sd\_PT\_UNP”, „sd\_PT\_CONS”, and „CRISIS”, are not statistically significant at the 5% level as their  $p$ -values are greater than 0.05.

The model’s  $R$ -squared value is 0.671784, meaning that about 67.18% of the variation in the dependent variable, „sd\_PT\_GDP”, can be explained by the independent variables in the model. The adjusted  $R$ -squared value is 0.538934,

Europe has been a popular destination for migrants for many years. On 1 January 2022, 23.8 million citizens of non-member countries were residing in a EU Member State, representing 5.3 % of the EU population. In addition, 13.7 million persons living in one of the EU Member States on 1 January 2022 were citizens of another EU Member State. In absolute terms, the largest numbers of non-nationals living in the EU Member States on 1 January 2022 were found in Germany (10.9 million), Spain (5.4 million), France (5.3 million) and Italy (5 million). Non-nationals in these four Member States collectively represented 71 % of the total number of non-nationals living in the EU (Eurostat, 2023b).

Analysing the impact of the pandemic on the size of migration flows in the EU, it should be noted, that in 2020, an estimated 1.9 million immigrants to the EU from non-EU countries and 1.2 million people previously residing in one EU Member State migrated to another Member State. About 956,000 people emigrated from the EU to a country outside the EU. To compare, in 2019 there were 2.7 million immigrants to the EU from non-EU countries and about 1.2 million emigrants from the EU to a country outside the EU. In 2021, 2.3 million immigrants came to the EU from non-EU countries and 1.4 million people previously residing in one EU Member State migrated to another Member State. On the other hand, about 1.1 million people emigrated from the EU to a country outside the EU and more than 1.2 million moved from an EU country to another EU country in 2021 (Figure 5.1)

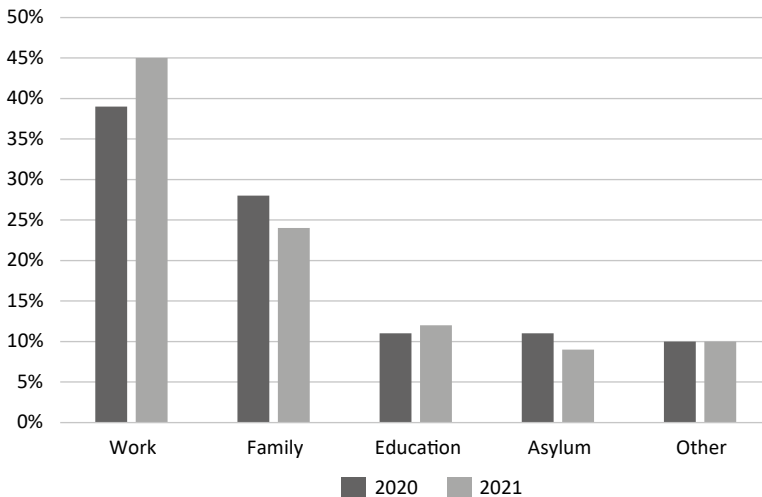
Among non-EU nationals residing in the EU with a valid residence permit at the end of 2021, the majority had residence permits issued for family or professional



**Figure 5.1. Immigrants from outside EU and emigrants to outside EU, EU, 2013–2021 (million)**

Source: (Eurostat, 2023b).

reasons. Analysing the first residence permits issued in 2020, we can observe a decrease in their number to 2.25 million compared to 3 million issued in 2019. This decline is due to the travel restrictions put in place to limit the spread of the COVID-19 virus. In 2021, 2.95 million first residence permits were issued in the EU, which is almost the number before the outbreak of the COVID-19 pandemic. The pandemic had a particularly negative impact on residence permits for educational reasons—their share decreased from 13% in 2019 to 11% in 2020. In 2021, there was a particularly large increase in the number of permits for professional reasons, the share of which increased from 39% in 2020 to 45% in 2021. The reasons for issuing the first residence permits in 2020 and 2021 are presented in Figure 5.2.



**Figure 5.2. Reason for issuing the first residence permit in the EU in 2020 and 2021**

Source: based on (European Commission, 2023).

The largest number of first residence permits in 2020 were issued to citizens of Ukraine—their number decreased compared to 2019: from 756,574 to 601,227. However, in 2021 the number of first residence permits exceeded the pre-pandemic number and reached 875,783.

The COVID-19 pandemic has had a particularly significant impact on refugees. The number of new asylum applications submitted in 2020 in OECD countries decreased by 31%. It was the biggest drop since the beginning of the 1990s. In the case of the EU, this meant limiting new applications to 416.6 thousand. (214.7 thousand less than in 2019) and a return to the pre-2015 level (Kugiel, 2021). In 2021, 632.3 thousand applications were submitted in the EU. applications, of

which 537.3 thousand applications were submitted for the first time. This represents an increase of 34% compared to 2020, but a decrease of 10% compared to 2019, before the COVID-19 pandemic (European Commission, 2023).

Moreover, pandemic restrictions prompted UNHCR to halt the resettlement of refugees from camps to safe third countries. As a result, in 2020 the least people were resettled in history: 34.4 thousand (down by 64% from 120,000 in 2019). At the same time, the pandemic has not reduced the number of forcibly displaced people. According to the UNHCR Office, the number of people forcibly displaced in 2020 has increased to 82.4 million, of which 26.4 million are refugees. At the end of 2020, 10% of the population lived in the EU. all refugees in the world. Due to less help from the countries involved in the fight against the pandemic, refugees felt the greatest health and economic effects of the pandemic (Torre, 2020).

The COVID-19 pandemic turned out to be a factor limiting irregular migrations. According to Frontex's data, the number of detected illegal attempts to cross the EU's external border in 2020 was 125.1 thousand. This represents a decrease of 12% compared to 2019 and the lowest percentage in seven years (Frontex, 2021). In April 2020, when the strictest restrictions were in force in the EU countries, less than 1.5 thousand were detected. border crossings, and in May 4.6 thousand. This number began to grow as restrictions were lifted (Kugiel, 2021). In 2021, 199,900 cases of illegal border crossings were recorded (increase of 58% compared to 2020). In 2022, around 330,000 irregular border crossings were detected at EU's external border, according to preliminary calculations. This is the highest number since 2016 and an increase of 64% from the previous year. After the pandemic-induced low in 2020, this was the second year in a row with a steep rise in the number of irregular entries (Frontex, 2023).

### **5.3. Impact of migration flows on the labor market in Europe during the COVID-19 pandemic**

The pandemic caused socio-economic problems that affected communities, companies and organizations around the world, affecting financial markets and the global economy. Reducing migration has negatively affected the economies of the host countries, especially those sectors that exploit the mobility of people. Countries with a high proportion of migrants faced labor shortages in sectors such as healthcare (e.g., 33% of doctors in the UK are foreigners), agriculture (in Italy 11% of workers are migrants) and services (18% of those employed in Germany) (Kugiel, 2021).

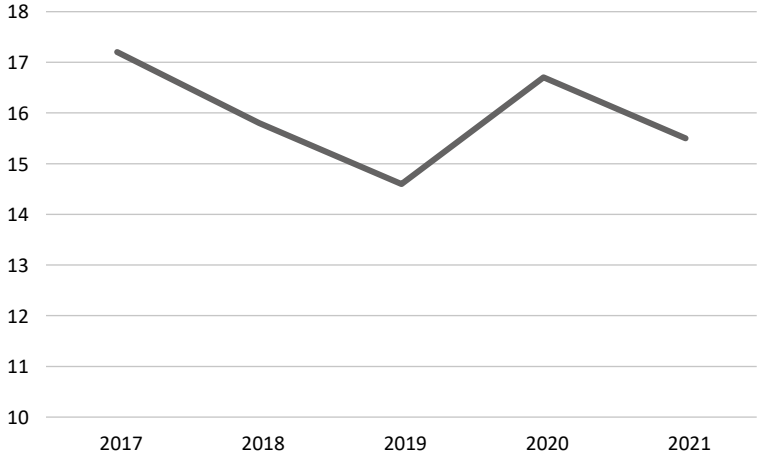
In 2020, 189.1 million people aged 20 to 64 were employed in the EU internal market. 4.6 percent of all employed people were from outside the EU (8.6 million).

The employment rate in the EU among the working-age population was higher in 2020 for EU citizens (73.3%) than for non-EU citizens (57.6%). Many non-EU nationals are “essential workers”. In 2020, non-EU nationals were over-represented in some sectors of the economy, such as: accommodation and food services (employment of non-EU nationals was 11.4% vs. 3.8% of EU nationals), office administration and support activities (7.1% vs. 3.7%), household work (6.5% vs. 0.7%) and construction (8.6% compared to 6.4%). In terms of occupations, non-EU nationals were over-represented in the following occupational groups: cleaners and helpers (non-EU nationals employed 11% vs. 3.1% of EU nationals), personal service workers (9% vs. 4.2%), personal care workers (5.1% vs. 2.9%), construction workers (5.8% vs. 3.6%), auxiliary workers in mining, construction, industry and transport (5.6% vs. 2.4%) (European Commission, 2023). The functioning of these sectors was particularly threatened during the period of greatest restrictions on people’s mobility.

The global health and economic crisis that began in 2020 put an end to a decade of progress for migrants in the labor market. In a study conducted by OECD, in Q2 2020, on average across the 28 countries considered (including European countries, Canada, United States), employment (as a proportion of the working age population) fell relative to the same quarter of the year before by 3.3 percentage points for the foreign-born and 2.3 percentage points for the natives. Declines (for both migrants and natives) were generally smaller in European countries than in Canada and US, because they relied heavily on job retention schemes. Nevertheless, migrants saw large drops in employment in some European countries as well. In Spain, e.g., where migrants are particularly overrepresented in temporary jobs, their employment fell by more than 8 percentage points—against a drop of just over 3 percentage points for the native-born. In Italy, the considerable use of job retention schemes (and a ban on layoffs) did not prevent employment of foreign-born from falling 4 percentage points, against 1 percentage point for natives (OECD, 2021).

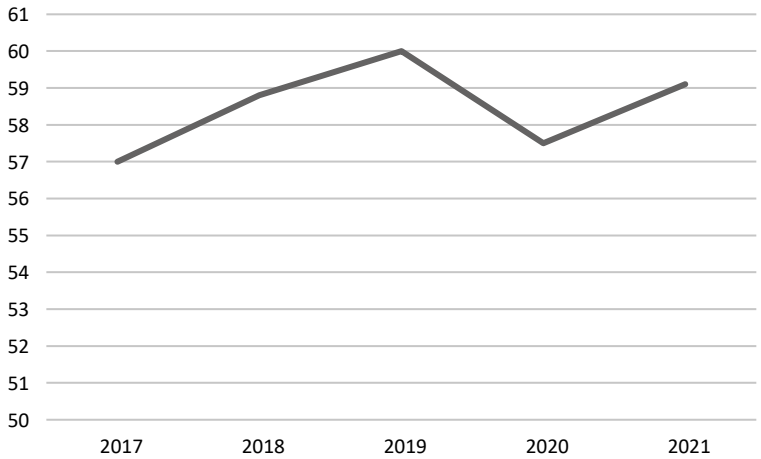
In general, in the EU, in the year of the beginning of the pandemic, i.e. 2020, we can observe an increase in unemployment among people with citizenship of a non-EU country (Figure 5.3). However, when it comes to the level of employment, there is a noticeable decrease in 2020 compared to previous years (Figure 5.4).

Part of the overexposure of migrants to the crisis is explained by their higher concentration in sectors hit harder by the crisis, such as domestic services and hospitality. In the EU, immigrants account for more than a quarter of employment in the hospitality industry (OECD, 2020). The number of migrants in the EU employed in hospitality dropped by nearly 15% between 2019 and 2020, compared with 12.5% for the native-born (OECD, 2021). Besides their sectoral concentration, migrants face a number of additional vulnerabilities in the labour market. They



**Figure 5.3. Unemployment rate in the EU among non-EU citizens (%)**

Source: based on (Eurostat, 2023c).



**Figure 5.4. Employment rate in the EU among non-EU citizens (%)**

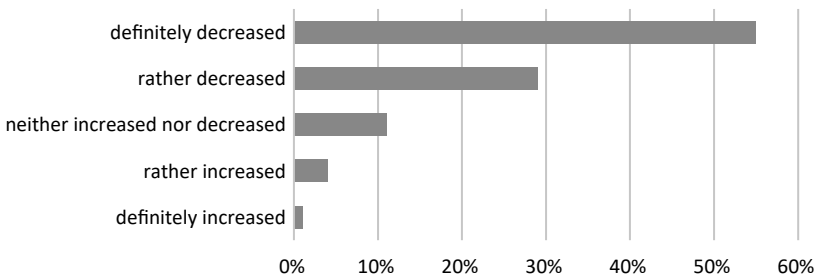
Source: based on (Eurostat, 2023a).

are overrepresented among employees with temporary contracts and low wages and typically have fewer networks to rely upon in times of economic downturn. (OECD, 2020, 2021).

Most of the decline in employment at the beginning of the pandemic translated into an increase in inactivity for both migrants and the native-born. This

## 7.2. The impact of the economic situation on the competitiveness of Polish carriers

Based on the authors' survey results from a sample of 87 trucking companies of all sizes, it was found that shortly after the pandemic outbreak the respondents pointed to a drastic decrease in transportation (Figure 7.1), which was the result of decline in orders. In total, over 80% of respondents recorded a decrease in transport, including a significant decrease marked by over 50% of them.



**Figure 7.1. Change in the volume of transport by Polish road carriers just after the outbreak of the pandemic**

Source: own work.

The difficult market situation related to a smaller number of orders was aggravated by problems resulting from provisions in commercial contracts and general regulations. This applies both to the financial obligations of transport operators and their debtors. The authors' own research showed that the law does not sufficiently protect carriers against situations of failure to comply with the contract of carriage (or its implementation with a delay) due to emergency situations such as a pandemic.

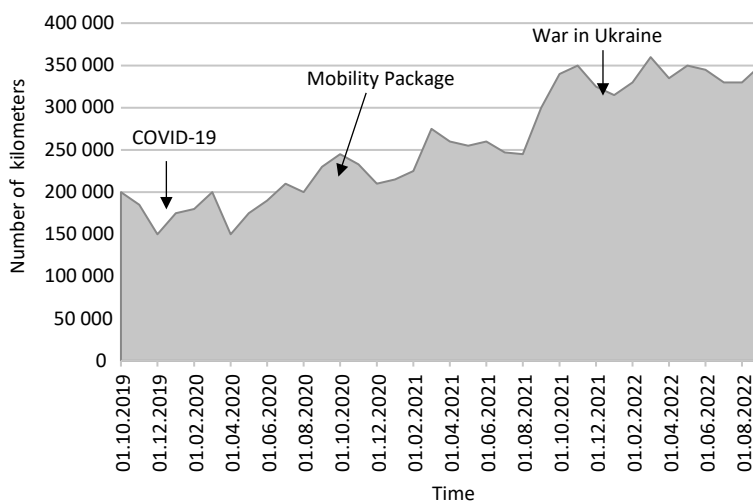
Over 80% of respondents claimed that the law does not sufficiently protect carriers in a situation where the contract cannot be performed. This is related to financial penalties and solvency problems. Due to the fact that the previous crises were of a different nature, there were also no relevant clauses in contracts. Transport companies regularly signal huge problems with payment unreliability of their business partners. The report of the Economic Information Bureau (BIG) stated that representatives of this industry had the greatest problem with arrears exceeding 60 days (44.1%) (BIG InfoMonitor, 2020).

Referring to the current research (SPOTDATA, 2022),<sup>1</sup> which also covers Polish road transport companies operating in foreign and Polish markets, it should be

<sup>1</sup> A total of 83 units of various sizes were surveyed, including micro enterprises which account for more than 80% of the market share.



noted that despite the pandemic crisis and the subsequent difficult challenges related to legislative changes and the war in Ukraine, Poland is the leader of the European road transport market in terms of the volume of transport work performed. Since 2010, there has been particularly strong growth in orders performed in the mode of cabotage and cross-trade transport (SPOTDATA, 2022). In both types of transport, Poland's share is about 40%. More than 60% in terms of tonnage and more than 80% in terms of the value of cargo exported from Poland is transported by road. Thus, the road transport market has steadily increased despite temporary slumps caused by the outbreak of the COVID-19 pandemic, introduction of successive provisions of the Mobility Package or the outbreak of war in Ukraine. This is illustrated in Figure 7.2, taking into account the number of kilometres travelled by Polish carriers. It can be concluded that the dynamics of the increments would have been much higher in other geopolitical and economic circumstances.



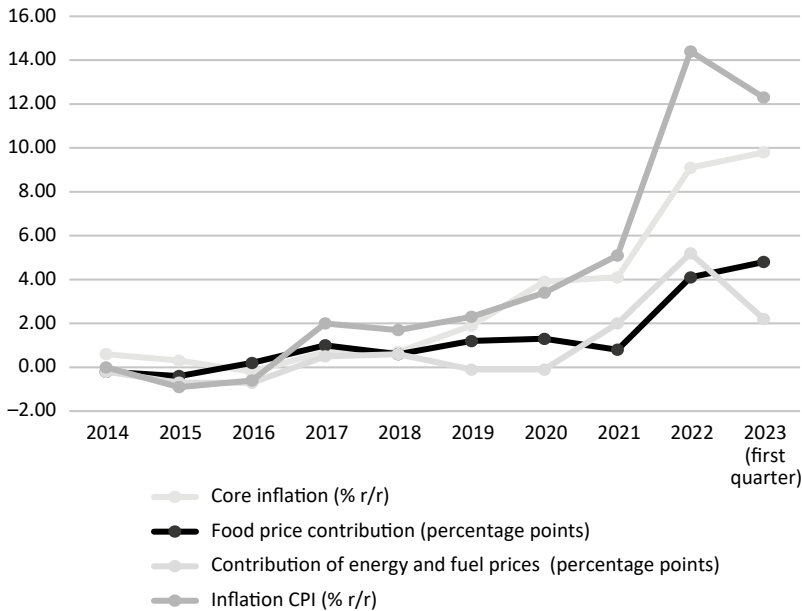
**Figure 7.2. Transport operations of the Polish TSL industry based on data from the GBox and 4Trans systems**

Source: based on data from Inelo Group's 4Trans 2022 system database (PITD, 2023, p. 8).

In 2020–2021, the volumes of cargo transported and freight work performed were at similar levels. Nevertheless, taking into account previous years, an increase in dynamics in both areas under discussion is noticeable. Given that after the outbreak of the pandemic in Poland, many sectors of the economy slowed down in March 2020, the transport industry did not see similar increases as in previous years; yet, there were no drastic declines either.

International transports by Polish carriers in Russia, Ukraine and Belarus accounted for a negligible percentage. As a result, recent geopolitical events have not significantly affected the volume of transport performed.

In Europe, the growth rate of freight work is estimated to slow to 0.7% per year in domestic traffic and 2.1% in international traffic (Oflakowski, 2023). The slowdown in order volumes will be accompanied by inflationary pressures, even though inflation is currently slowing down. The average annual inflation in 2022 was 14.4% (Statistics Poland). According to various sources, this figure is likely to fall to around 10%–13.5% in 2023. Despite improvement in some economic indicators (Figure 7.3) and good long-term prospects, freight demand is currently held back by consumer purchasing power.



**Figure 7.3. Inflation in Poland, food, energy and fuel prices**

Source: based on (PKO Bank Polski, 2023).

It is estimated that producer inflation has already peaked, however, consumer inflation will peak in the first quarter of 2023, and the rate will remain in double digits until the end of 2023 (AXI IMMO, 2022; European Commission, 2023). Ultimately, this is expected to translate into weaker freight dynamics. It can be concluded that the Polish economy has avoided entering a technical recession at the beginning of 2023. According to Nicodème (2023) the Polish economy was

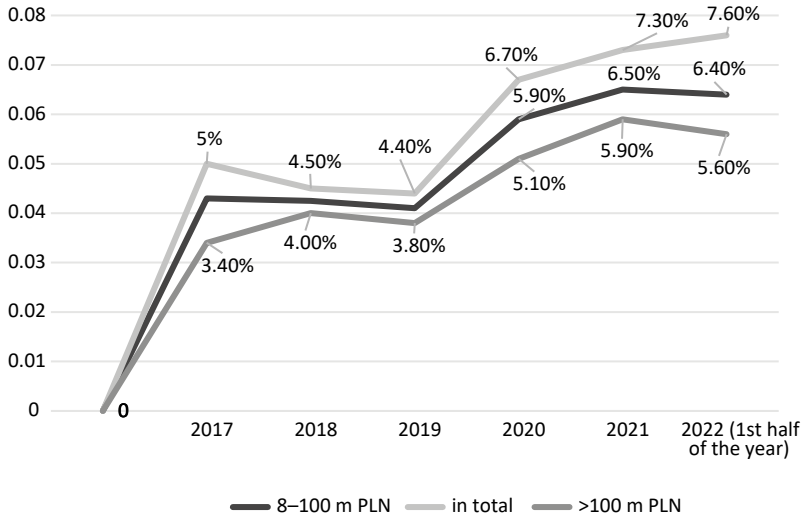
growing significantly before the pandemic, recording an increase of 4.7% of its GDP in 2019. The COVID-19 pandemic made the GDP fall by 2.7% in 2020, but a strong rebound was forecast for the upcoming years: +4% in 2021 (in reality it was 6.8%) and +5.4% in 2022 (in reality it was 4.9%). In addition, it is positive that the market for warehouse space in Poland remains at a stable, high level. This is influenced by the price as well as geographic and quality attractiveness of this market segment compared to Europe. The current more than 50% share of speculative space may decrease slightly in the future, due to higher requirements for pre-let contracts. Nevertheless, regardless of the internal structure of this type of space, its supply is growing, which generates demand for warehouse services and, consequently, for transportation. This trend is also expected to be reinforced by the trend of reshoring (i.e. the practice of transferring the organization's production capacity to the same market where the end product is used or sold), and thus shortening supply chains (Hadwick, 2022). This should result in some freight work being shifted to trucking in the future. According to a Reuters report (Hadwick, 2022), Poland, next to Germany, has the most to gain from shortening the supply chains due to its strategic location in Europe and access to other markets (the Schengen area and EU).

### 7.3. Costs of transport activities

The authors' primary research just after the outbreak of the pandemic indicated that the vast majority of companies at the time were settling at 3%–4% profitability. Only a few entities indicated profitability of more than 10%. Based on supporting data from Santander (2022) it may be noted that despite the economic turmoil, profitability was more slowly increasing among larger entities (Figure 7.4).

Current research conducted by SGH Warsaw School of Economics and published in the form of annual reports shows that in times of crisis, regardless of the reasons, freight companies and small businesses have the hardest time in the transport, shipping and logistics (TSL) sector. The situation is different for larger entities. In the freight market, twenty largest companies registered in Poland (led by Hegelmann Transporte, GEFECO, Adampol S.A., SKAT Transport sp. z o.o. sp.k., Fresh Logistics Polska sp. z o.o.) reported revenue growth ranging from 7% to 76% in 2021 compared to a year earlier, with more than half reporting revenue growth of up to 20% (27. edycja rankingu firm TSL, 2022). Considering that the largest company at that time of the year had revenue of 1,283,438,673 PLN, these are high increases.

Due to the increase in fuel prices, wage costs, energy costs and fleet purchases, companies were forced to raise freight rates during the period under review,



**Figure 7.4. Operating profitability of carriers employing more than 9 people in Poland by revenue**

Source: (Santander Bank Polska, 2022).

as evidenced by the latest survey conducted by Inelo and the Polish Institute of Road Transport using the CAWI (Computer-Assisted Web Interview) method on a sample of 89 respondents (PITD, 2023). For example, the price of diesel fuel in Q4 2020 was PLN 4.15 per litre, and in Q4 2022 it was already PLN 7.99, 192.5% up from the initial price (Transcash, 2023).

It is worth pointing out that the spot market reacts faster to the aforementioned changes in the economic situation than the contract market. Therefore, it can be predicted that with the declining purchasing power, spot prices will fall first. In the PITD survey (2023), 44% of respondents indicated that they expected spot rates to increase relative to contract rates, and 40% indicated that they did not anticipate such an increase. Thus, opinions in this area are divided. Increasing competitiveness in the freight market is difficult, in the first place, for the companies which largely concentrate their turnover on the spot market. In the situation of contract or fixed haulage, where there are no formal long-term contracts and the routes in question are traditionally operated by specific carriers, these companies are in a more favourable position despite lower rates.

There is a perception in the transportation community that freight increases have not been sufficiently adequate to match real increases in operating costs (Figure 7.5). This situation is also described by Poliak et al. (2021) who cite much earlier sources and refer to the European Union policy. They write that carrier costs increase faster than the price of transport (Ross, 2015, za: Poliak