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Macroeconomic effects of the Covid-19 Pandemic in Germany and the European Monetary Union and economic policy reactions

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Macroeconomic effects of the Covid-19 Pandemic in Germany and the European Monetary Union and economic policy reactions

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Abstract

The Covid-19 pandemic hitting the world in 2020 also caused a high death toll in Germany and in the European Monetary Union (EMU) at large. The health crisis worldwide and the precautions against Covid-19 rapidly induced a demand and supply recession simultaneously. The Covid-19 crisis was marked as the worst crisis since the Great Depression of the 1930s. It hit the EMU in an unfortunate moment, when economic growth was already low before the Covid-19 crisis started. The effects of the Great Financial Crisis and Great Recession 2008/2009 were not overcome at the beginning of the Covid-19 recession. Mega-expansionary monetary policy was still in place stimulating bubbles in stock and real estate markets in an overall constellation of partly very high levels of private and public debt. Macroeconomic policies in form of expansionary monetary policy, large-scale fiscal stimuli, and public guarantees, in Germany and the EMU smoothed the disastrous economic and social effects of the pandemic. Overall, the stabilisation policy during the Covid-19 pandemic in Germany was successful and prevented escalating inequalities. But the pandemic intensified long-lasting problems which have to be solved in the future. Public debt quotas cannot increase permanently without leading to an economically fragile situation. It also shows the need for a fiscal union in the EMU as an equal partner for the European Central Bank (ECB). In early 2022, the ECB is in a difficult situation. Price shocks drove the inflation rate up, but restrictive monetary policy as a response to such shocks slowdown growth and lead to unemployment.

Keywords: Covid-19 crisis; Germany, EU, fiscal policy, monetary policy

JEL codes: E61, F62, I18

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1. Introduction

The Covid-19 pandemic hit Europe and the European economies hard and led to the deepest recession after World War II. The policy reaction after the outbreak of pandemic of the 27 countries belonging to the European Union (EU) and even of the 19 countries which in addition are members of the European Monetary Union (EMU) was not coordinated. In early 2020, when the pandemic started, basically each country alone tried to solve the mounting problems which came with the pandemic. Some of the EMU- / EU-countries, for example Austria, first ignored the pandemic, but then introduced hard border controls also vis-à-vis other EU countries. This violated one of the basic principles of the EU, namely the freedom of free movement of people within the EU. A number of other countries in the EU introduced border controls as well, including Germany which in March 2020 introduced them vis-a-vis France, Austria, Luxembourg, Denmark, and Switzerland. Each country introduced their own protective measures against Covid-19 like curfews, rules to wear masks, travel bans or closing of schools, restaurants, cultural institutions, or sports facilities.

To understand the relative mess of the European anti-Covid-19 policy one has to understand the governance structure of the EMU / EU. The political power centre of the EU is the European Council with the heads of governments of the Member States.[1] The different ministries of the EU countries have their own councils. The most powerful council in the field of economic policy is the Economic and Financial Affairs Council (ECOFIN) as the assembly of finance and economics ministries of EU Member States. The Euro Group as an informal subgroup of the ECOFIN comprising of EMU members is responsible for all important joint economic decisions in the EMU. Of course, the Euro Group dominates ECOFIN. But this shows that the EMU has no clear own governance structure, the latter is embedded in the governance of the EU. The EU Commission is a kind of government of the EU, but has only limited power. The European Parliament has a number of rights, but its power is limited as well. For example, new laws, as far the EU has the right to implement them, can only be passed by the European Council and the European Parliament together. But in all key areas the European Council decides alone. To sum up: The EMU and EU have a complicated governance structure and Member States have been reluctant to transfer power to the European centre.

The EMU has, except for the European Central Bank (ECB), no own supranational independent and powerful governance structure. Thus, the EMU is a monetary union without all the usual elements of a monetary union. Monetary unions are in almost all cases nation states. The EMU is not. For example, in the economic sphere the EMU has no common fiscal policy, common tax policy, common labour market regulations or common social security policy. The EMU is a halfway finished house and not very well prepared for heavy storms in form of financial

[1] Decisions in the Council are taken with qualified majority. For a majority 55% of member states which at the same time represent 65% of total population of the EU is needed. The most important decisions have to be taken unanimous.

crises, deep recessions, or politically controversial migration waves. And this was also shown in the case of the Covid-19 pandemic (Heine / Herr 2021a, 2021b, 2022).

Looking at macroeconomic policy only in the field of monetary policy, an independent, quick, and coherent EMU strategy has been followed from the beginning of the pandemic. This is not surprising as the national central banks in the Member States of the EMU have no own power and only the ECB decides about monetary policy. In the EMU for fiscal policy complicated rules exist which regulate and in substance reduce the national space for active fiscal policy. In 2011 the already existing Stability and Growth Pact was tightened and in 2012 the Fiscal Compact was added. The aim of the Stability and Growth Pact is to enforce that budget deficits are not higher than 3% of gross domestic product (GDP) and public debt not higher than 60% of GDP. According to the Fiscal Compact a structural budget deficit of maximum 0.5% of GDP is allowed. If the public debt quota is above 60%, policies to reduce public debt have to be followed. A strong fiscal centre and a common fiscal policy do not exist in the EMU. EU countries outside the EMU anyhow follow their own fiscal policy. However, under the pressure of the Covid-19 crisis for the first time relevant joint fiscal measures were taken on the EMU level including a small step towards a fiscal union.

In the next section we analyse the economic situation in Germany and the EMU before the beginning of the Covid-19 pandemic. Section three give an overview about the development of Covid-19 incidences, vaccination and deaths in Germany and Europe. Section four shows the overall macroeconomic developments. In section five monetary policy is discussed in more detail. The debate about fiscal policy follows in section six. The last section concludes.

2. Long-term trends towards a more fragile economy

Already before the Covid-19 crisis hit the EMU a number of fragilities had accumulated, which are attributed to long-term financialization tendencies. These fragilities became especially evident after the Great Financial Crisis and Great Recession of 2008-2009.

The first one of these fragilities is the exploding debt quotas (gross debt in percent of GDP). An Allianz-publication (2021: 34) called it “debt man walking”. In many countries also in the EMU debt quotas increased substantially. And this is not only the case for public debt, but also for private. Germany is almost an exception with only a moderate increase of total debt to GDP between 1995 and 2020 (see Table 1). In France, for example, private and public debt to GDP increases from 231% in 1995 to 443%, in Italy from 242% to 364%, in Spain from 198% to 360% and so on. In the Unites States of America (USA) total debt to GDP also reached in 2020 almost 400%. These increases of debt quotas reflect a global trend and are part of the financialization which developed from the 1980s on (Detzer et al. 2017; Allianz 2021). This trend is not only observable in the area of domestic indebtedness, but also between countries and especially indebtedness of emerging economies (Akyüz 2017). Increasing debt quotas can develop over a long period of time. But it is unavoidable that with increasing debt quotas the economic constellation becomes more fragile. External shocks but also endogenous instabilities like real estate bubbles or interest rate hikes can trigger an explosion of non-performing loans. Take France and let us assume interest rates for all loans increase to 8%. In this case gross interest payments increase over 35% of GDP. Of course, many debtors may also keep monetary wealth and earn interest, but in spite of this the effect of sharply increasing interest rates would be disastrous. Allianz (2021: 47f.) reports that in the EU even before the Covid-19 crisis 22% of the population were estimated to be at risk of over-indebtedness, in Germany 13%, in Italy 33%, in Bulgaria 47% or Greece 69%.

Table 1: Private* and public gross indebtedness in per cent of GDP 1995, 2008 and 2020

	1995			*2008*			*2020*		
	Private	Public	Total	Private	Public	Total	Private	Public	Total
Germany	154	54	208	175	71	246	177	79	256
France	164	67	231	208	83	291	297	146	443
Italy	123	119	242	170	113	283	180	184	364
Spain	130	68	198	274	48	322	212	148	360
Greece	49	98	147	127	118	245	139	238	377
Portugal	160	76	230	291	85	376	254	157	411
USA	163	94	357	224	102	326	236	161	397

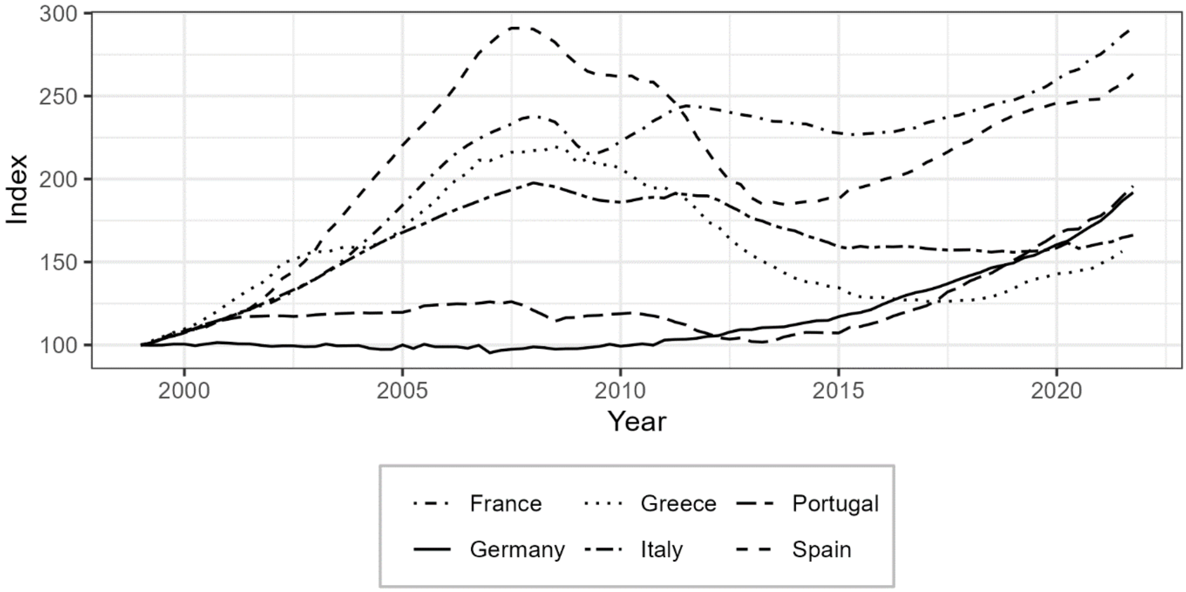
* Private households and non-financial companies

Source: OECD (2022), Trading Economics (2022)

Increasing debt quotas is a global problem. The International Monetary Fund reports that global debt to GDP in the year 1970 was 26.6% for private households, 50.8% for non-financial firms, 25.5% for public households and as total 129.9%. This increased in 2020 to its maximum so far, 57.96% for private households, 98.4% for non-financial firms, 99.4% for public households and a total of 255.7 (IMF (2022a: Chapter 2). The IMF warns especially from the strongly increasing private debt which could not only lead to financial crises but can reduce GDP growth even in case a financial crisis does not break out. "Financially constrained households and vulnerable firms, which have grown in number and proportion during the COVID-19 pandemic, are expected to cut spending … , especially in countries where the insolvency framework is inefficient and fiscal space limited." (IMF 2022a: 58)

A second and closely related fragility to the above presented problem of high and increasing debt quotas are real estate and stock market bubbles. Figure 1 shows the development of a huge real estate bubble in many European countries before the Great Financial Crisis in 2008 – driven by speculation, innovations to finance subprime loans and strong credit expansion. The bubble imploded and real estate prices substantially dropped. As real estate bubbles involve typically a high credit expansions non-performing loans sharply increased when the bubble came to an end.

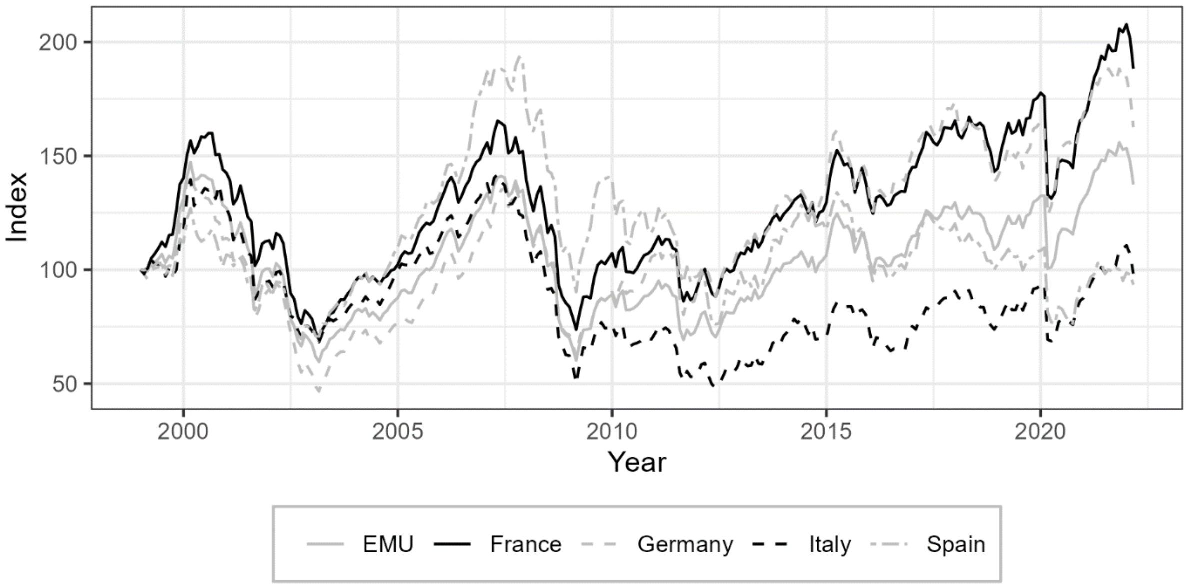
Figure 1: Real estate prices in selected EMU countries, 1999 - Q1 2022, index 1999=100



Source: OECD (2022)

In stock markets, a similar picture is presented. Figure 2 shows the dot-com bubble at the end of the 1990s and its collapse. A new stock market bubble developed before the Great Financial Crisis and again made place for a sharp collapse of stock market prices. In the EMU as whole stock prices at the beginning of the Covid-19 pandemic were higher than the peaks in the two bubbles before. This was especially the case in Germany and France. In some EMU countries stock markets after their collapse 2008 did not recover, especially in Greece and Spain. Development in the USA followed a similar pattern as in the EMU with a new bubble after the Great Financial Crisis (OECD 2022; see for details Detzer et al. 2017).

Figure 2: Share price development in EMU and selected EMU countries, 1999 – Q1 2022, index 1999= 100



Source: OECD (2022)

Noteworthy is that after the collapse of asset prices especially after around 2015 in many countries new bubbles started to develop, also in the USA. A big exception is Greece and also Italy. But after the Great Recession also Germany and Portugal showed substantial increase in real estate prices. One driver of the bubbles in the 2010s were the ultra-expansionary monetary policy in the EMU (see below). Nominal interest rates for bank deposits and government bonds were zero or even negative as well as real interest rates. This stabilised cash-flows of indebted companies, private households, and governments. But these interest rates put holders of monetary wealth in despair. The normal reaction to this is flight in “concrete gold”, shares and foreign currencies. For Europeans flight in foreign currency is, at least until now, not a prime option as the USA, which issue the US dollar as the main competitor of the euro, followed comparable policies as in the EMU. This leaves first of all real estate and shares. Even during the Covid-19 crisis real estate and stock market prices approached values party above levels before the Great Financial Crisis.

Low interest rates in the EMU and other developed countries after the Great Financial Crisis stimulated capital flows to the Global South as investors were searching for investment with positive returns and under this pressure accepted higher risks (Akyüz 2017). External debt of low- and middle-income countries increased from 16.1% of their gross national income (GNI) in 2008 to 29.1% in 2020. From this country group in 2020 low-income countries had the highest quota with 39.0% and upper middle-income with 27.6% of GNI the lowest (World Bank 2022).[2]

[2] In 1970 external debt to GNI in low- and middle-income countries had a value of 10.9% and increased to 37.7% in 1999 and then came down until 2008 to start rising again (Word Bank 2022). In the long period of increasing debt quotas fell the Latin American debt crisis in the 1980s with the following long

To sum up: Due to deregulation and financialization tendencies during the last decades the economic situation in the EMU as well on a global level became comparatively fragile with the potential of a deeper crisis when the Covid-19 pandemic hit the world in 2020. The negative effects of the Great Financial Crisis were not overcome in the EMU and long-term developments towards instability were not solved.

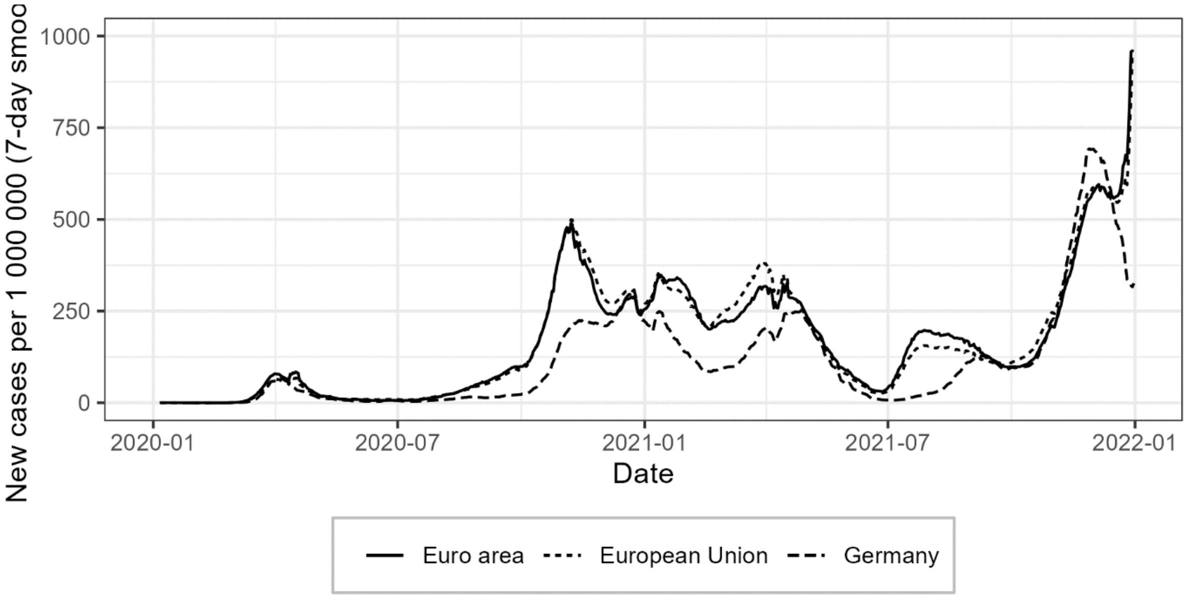
3. Covid-19 incidences, deaths and vaccination in Germany and the EU

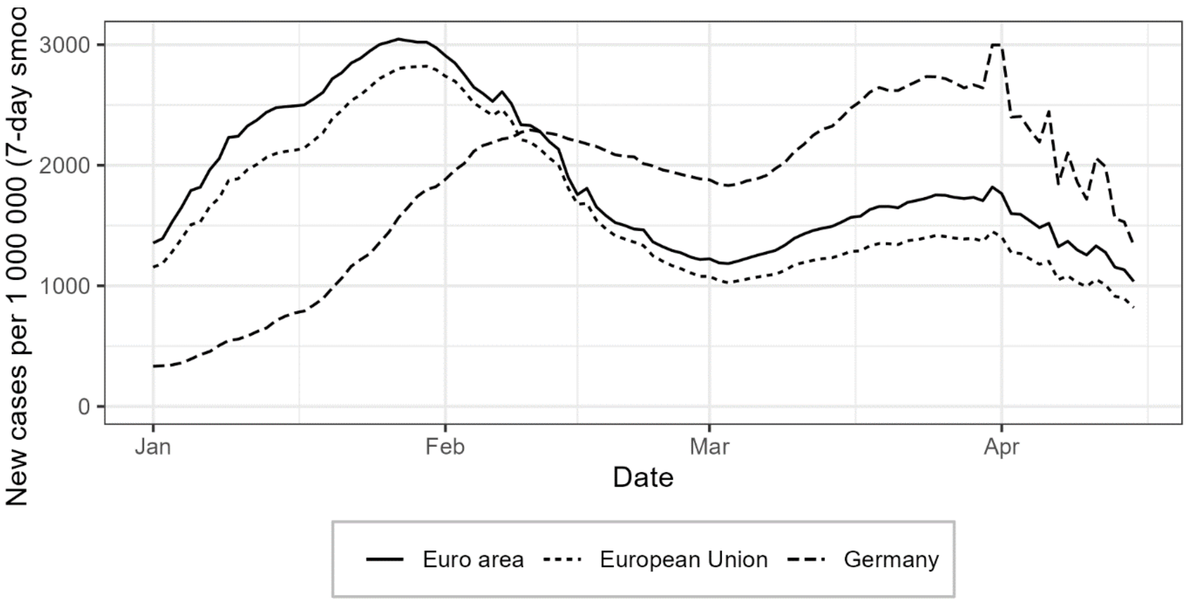
Figure 3 shows the development of the Covid-19 pandemic in Germany, the EMU and EU. The numbers of newly confirmed Covid-19 cases per 1,000,000 persons show several waves. A first comparatively small wave developed early 2020. Two big waves developed in the winter 2020/21 and 2021/22. In the winter 2020/21 the Delta variant of Covid-19 became dominant. In Germany and Europe most governments hoped that in summer 2021 the Covid-19 pandemic would be over. However, in winter 2021/22 the new Omicron variant spread and led to a new wave. Germany overall reported slightly less cases relative to the EU and EMU averages. The Omicron variant of Covid-19 is much more infectious and led to much higher numbers of affected persons (see the lower part of Figure 3).

In 2020 no vaccine against Covid-19 was available. Vaccination started slowly in early 2021 first with a shortage of vaccine. Towards the end of the year vaccine was sufficiently available and around 70% of population in Germany, the EMU and EU was fully vaccinated (see Figure 4). The percentage of vaccinated persons in Germany was slightly less than in the EMU. In Germany the non-vaccinated part of the population includes young children or persons who for medical reasons cannot be vaccinated. But a study at the end of 2021 reveals that two third of the not vaccinated population could be vaccinated but is against it. A survey by the Forsa-Institute showed three main motivations against vaccination. Firstly, people deny the existence of Covid-19; secondly, people believe that Corona restrictions by the government are a pretext for more government control; thirdly people believe that media reports are one-sided, not all experts are listened to and that the restrictions of basic rights are more dangerous than Covid-19 (Bückmann 2021). An anti-vaccination movement developed in Germany as well as in other countries which mixed partly with extreme right-wing organisations and various esoteric groups sceptical against the political system in general. Additionally undocumented persons as well as migrants with limited command of the German language were hard to reach for vaccination (Garrelts 2021).

stagnation, the Mexican debt crisis in 1994, the Asian debt crisis in 1997 or the Russian debt crisis in 1998 – only to mention a few.

Figure 3: Daily new confirmed Covid-19 cases in Germany, EMU and EU, 2020.01-2022.04

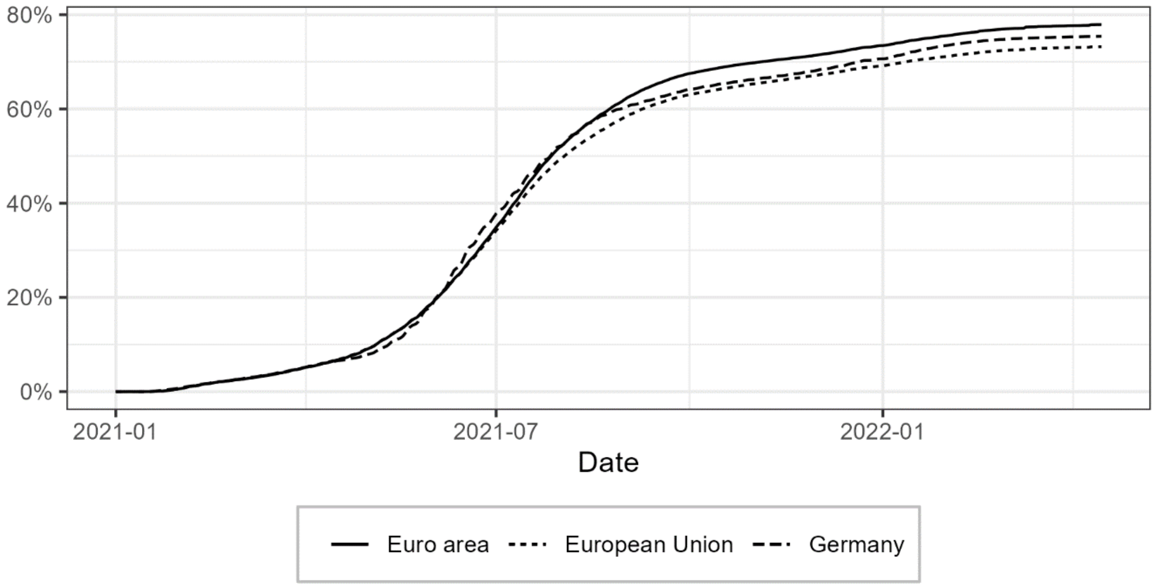




The above figure shows the first Covid-19 wave, the Delta wave and the beginning of the Omicron wave, the figure below shows the development of the Omicron wave 2022.

Source: GitHub (2022); Ritchie et al. (2022)

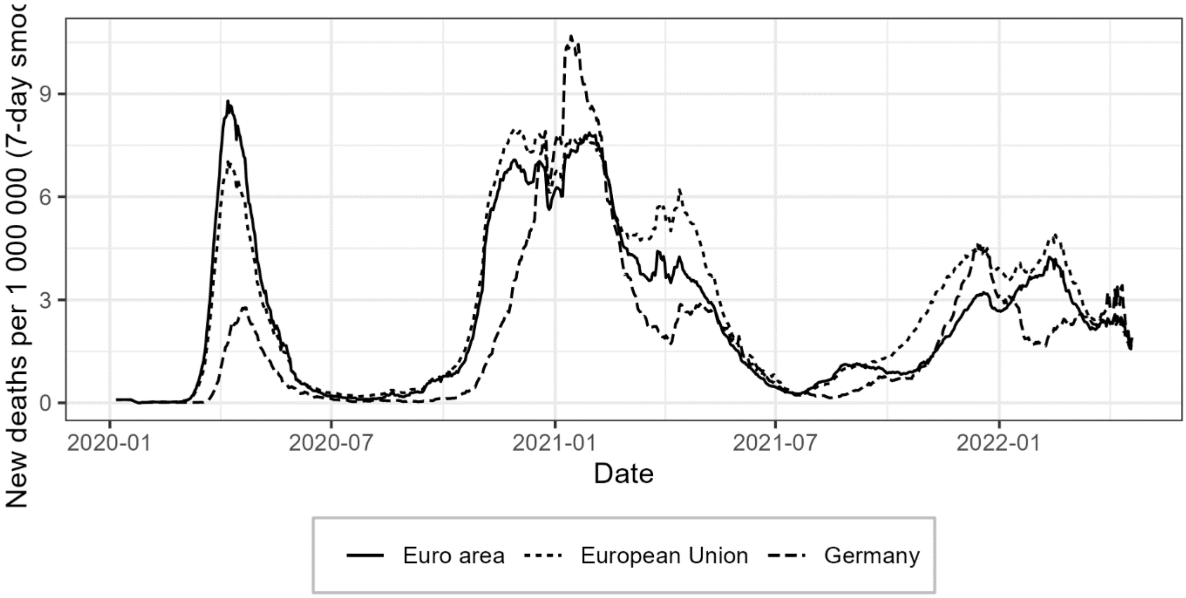
Figure 4: Number of people fully vaccinated in Germany, EMU and EU– per 100 000 persons, 2021.01-2022.04



Source: GitHub (2022), Ritchie et al. (2022)

The number of people died as a result or with Covid-19 increased sharply during the first wave of the pandemic in early 2020 in spite of relatively low incidences. Incidences in winter 2020 /21 were much higher than in spring but vaccination helped to reduce the number of severe illnesses and death resulting from Covid-19. Incidences of the Omicron version of Covid-19 exploded in early 2022. However, relatively high vaccination and the mostly mild course of the disease of the Omicron version kept death toll relatively low (see Figure 5). Germany suffered from less death during the first wave but was close to EU and EMU figures in the second and third wave. In Germany overall in 2020 and 2021 around 0.14% of the population died with Covid-19 (Statista 2022). But not only the death rates are alarming. Studies show that in Germany more than 40% of persons getting Covid-19 suffered more than half a year on symptoms like heart problems, concentration disorders, shortness of breath, chronic fatigue, or other symptoms. Social and economic costs of long-Covid are substantial (Zeit Online 2022).

Figure 5: Daily confirmed Covid-19 death per 1,000,000 persons in Germany, EMU and EU, 2020.01-2022.04



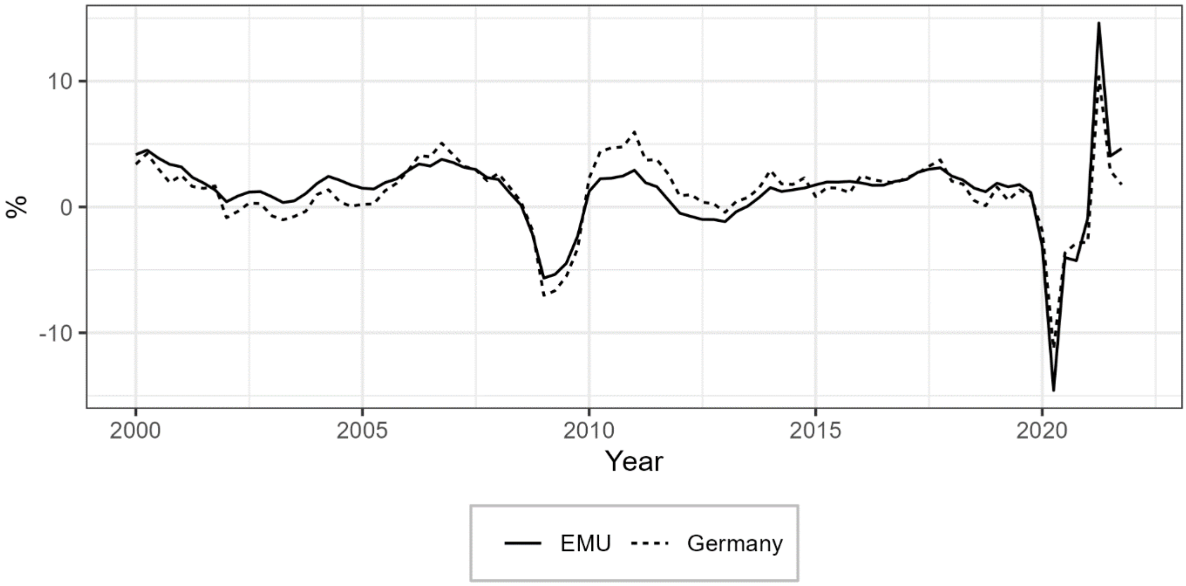
Source: GitHub (2022), Ritchie et al. (2022)

4. Macroeconomic development before and during the Covid-19 crisis

GDP, investment, export surpluses and employment

After the Great Financial Crisis in 2008 the Great Recession followed in 2009 which was in the EMU countries and Germany the biggest recession after World War II. The economy in the EMU recovered quickly, but overall economic development in the EMU was poor (see Figure 6). The average annual growth rate of real GDP in the EMU between 2010, the year of recovery from the Great Recession, and 2019, the year before the Covid-19 crisis started, was only 1.36%. In 2019 GDP growth in the EMU was only 1.2% and independent of the pandemic a cyclical slowdown was on the way (see Eurostat 2022). Italy, for example, was caught in a long-term stagnation and Greece could not recover from its big crisis. The problem in the EMU was not only the repercussion of the Great Recession, but the so-called sovereign debt crisis in a number of EMU countries which started in 2010. Greece, Portugal, Spain, Cyprus, and Ireland needed help as their governments had increasing problems to finance themselves over private financial markets. Fiscal deficits were high due to low tax revenues and higher expenditures last not least to support the collapsing national financial systems. Help came from the Troika (IMF, ECB, and the EU Commission). The medicine was fiscal consolidation combined with structural, mainly neoliberal reforms. Other countries, afraid of the Troika dictate, followed austerity policy without being officially forced to do it. Germany performed during this period better than the EMU average. Before 2008 it did not suffer, as almost all European countries, from a real estate bubble (Heine / Herr 2021a).

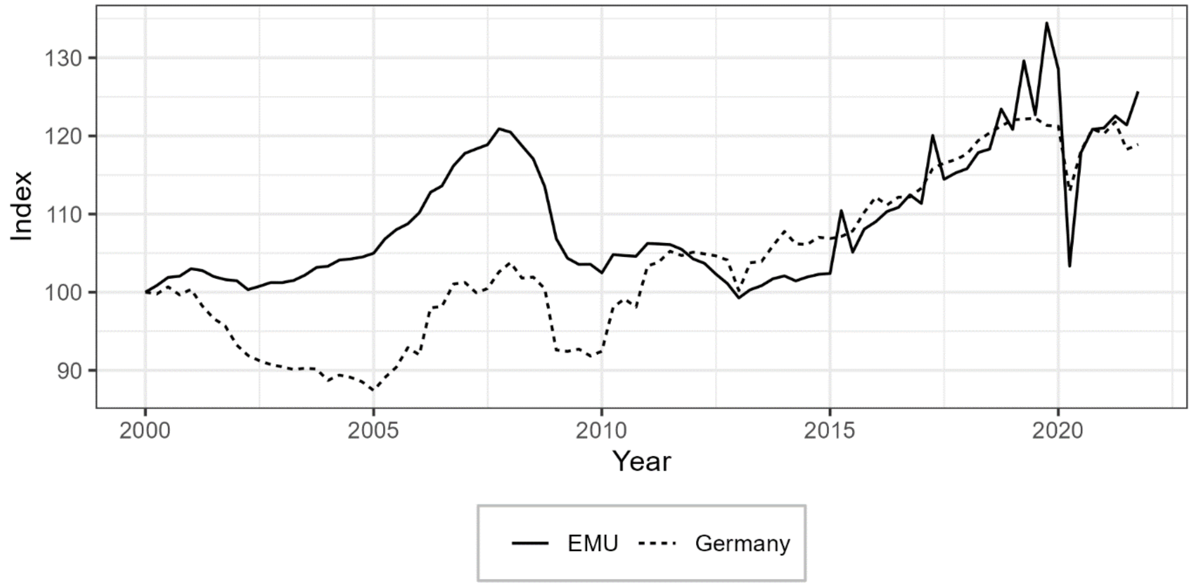
Figure 6: Real GDP growth rates in Germany and the EMU, annual percentage change, 2000 -2021



Source: Eurostat (2022)

Development of real gross fixed capital formation supports the general picture (see Figure 7). The EMU as a whole suffered after the Great Recession from a long period of shrinking and then stagnating gross capital formation. Germany performed in contrast to the situation before the Great Recession better and after 2010 could realise increasing investment in fixed capital.

Figure 7: Real gross fixed capital formation in Germany and the EMU, 2000-2021, index 2000 = 100

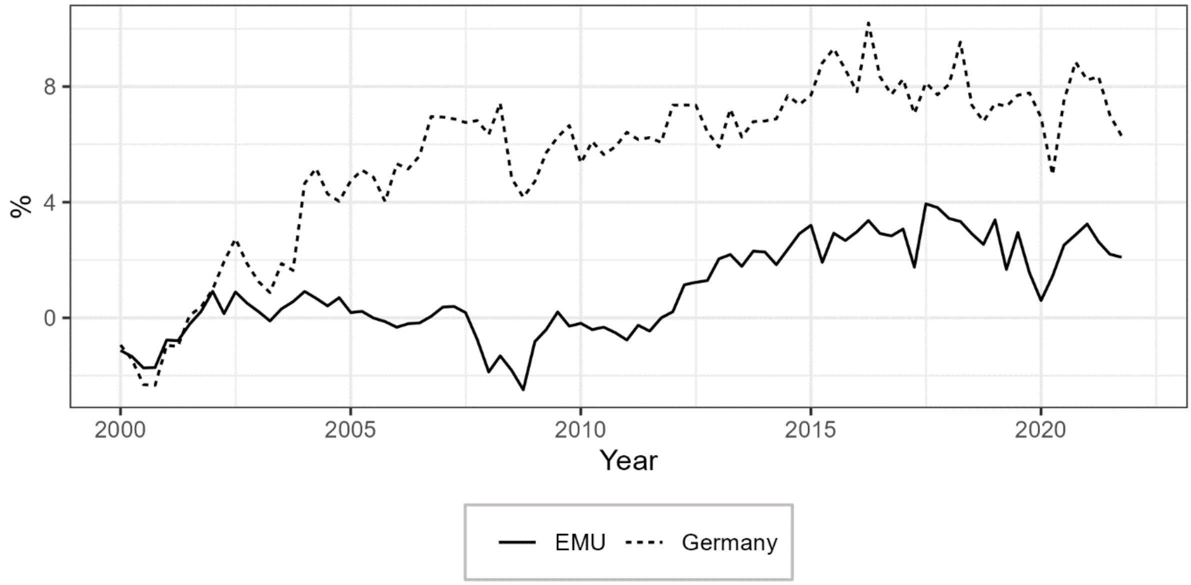


Source: OECD (2022)

After the Great Financial Crisis, the EMU has been able to use current account surpluses to stimulate its economy (see Figure 8). Before the current account of the EMU was more or less balanced. For a currency union of the size of the EMU[3] current account surpluses of 3% or more are very high and push other countries in the world economy in current account deficits and by this reduce their GDP and employment. The high surpluses must be considered as a factor which substantially stabilised demand and GDP in the EMU also during the Covid-19 crisis.

[3] In current US dollars the GDP of the EMU has around the size of China. The USA has a GDP which is around one third bigger than the one of the EMU (World Bank 2022).

Figure 8: Current account balance of Germany and EMU in per cent of GDP, 2000 – 2022

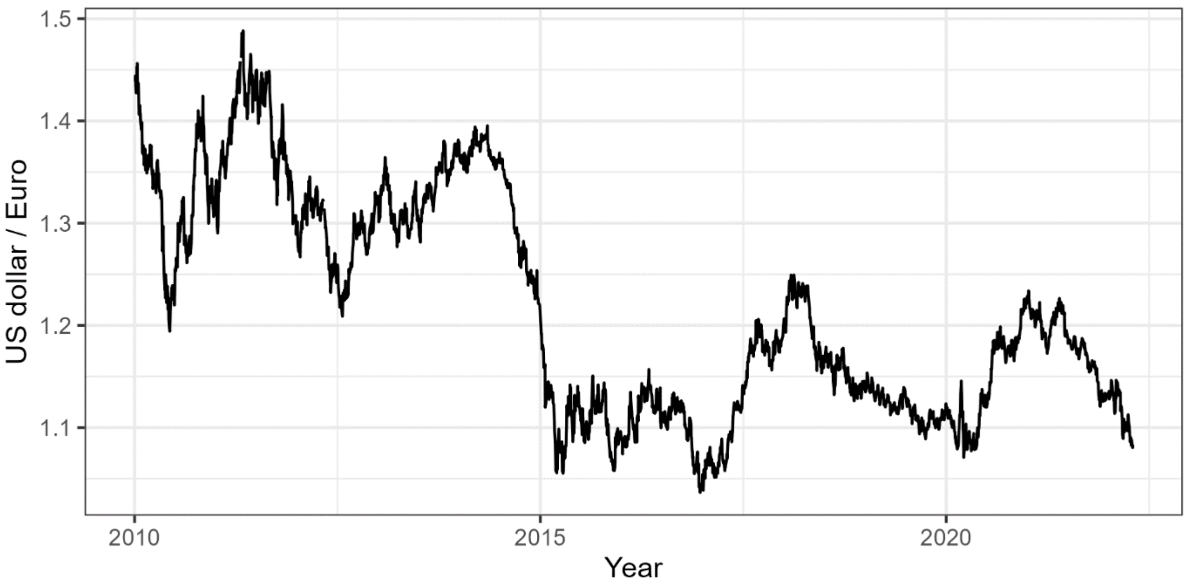


Source: OECD (2022)

The current account surpluses of Germany – measured in per cent of current GDP the fourth biggest country in the world (World Bank 2022) – with values of partly much higher than 7% of GDP are extremely high and make Germany to one of the countries in the world which substantially disturbs balanced current accounts and increases GDP and employment at the cost of other countries. It is obvious that without such surpluses the economic challenges of Germany to overcome the Covid-19 crisis would have been much bigger.

The high current account surpluses in the EMU and Germany are based on growth differentials with relatively low GDP growth rates in the EMU compared to the rest of the world. But the strong depreciation of the euro in 2014 added to the increasing current account surpluses of the euro area and Germany (see Figure 9).

Figure 9: Development of euro-dollar exchange rate 2010-.2022.0.4*

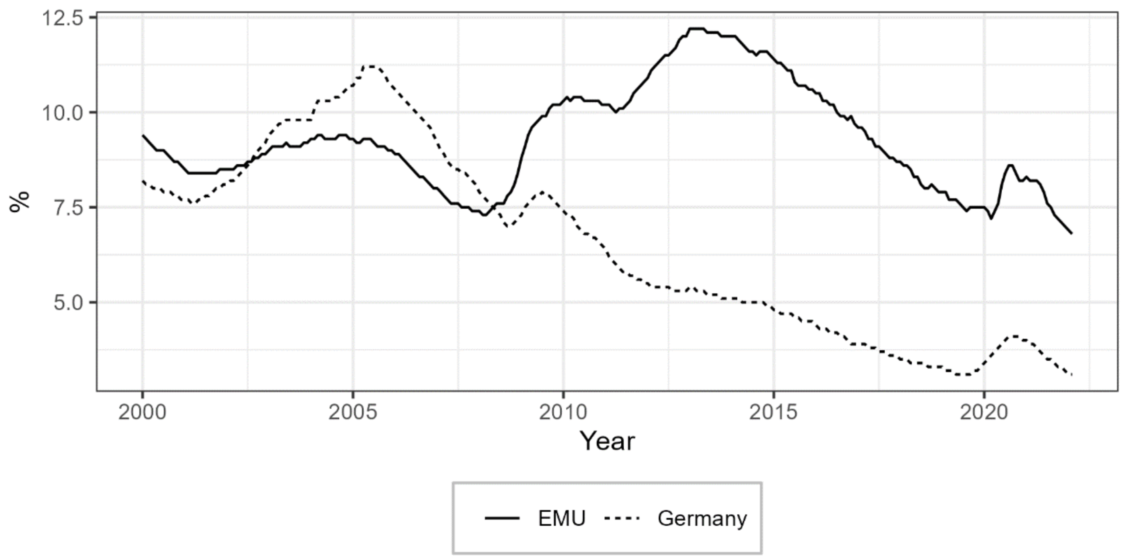


* decrease means depreciation of euro

Source: ECB (2022a)

After the Great Recession in the EMU unemployment rates jumped to levels well above 10% with unemployment rates of over 25% in Greece and Spain (OECD 2022). Rates could then be reduced in the EMU to around 7.5% before the Covid-19 crisis started (see Figure 10).

Figure 10: Unemployment rate in Germany and the EMU, 2000-2021



Source: OECD (2022)

In Germany unemployment rates increased after 2000 until 2005 and then more or less continuously decreased until 2019. During the Great Recession in 2009 unemployment rates did not substantially increase. The overall reduction of unemployment in Germany after 2006 has several reasons. Firstly, GDP growth was relatively good compared to other EMU countries. Secondly, demographic factors helped to reduce unemployment. From 2000 until 2019 population in Germany only increased from 82.1 Mio. to 83 Mio; because of aging in the same period the number of retired persons increased from 23 Mio. to 25.8 Mio. persons. Thirdly, in the early 2000s major deregulations in labour markets were implemented, so-called Harz reforms. These led not only to a massive increase of the low-wage sector, but to an increase of part-time employment. From 2000 until 2019 the number of fully employed persons increased from 29.1 Mio. to 29.9 Mio, whereas as part time employment increased from 6.9 Mio. to 11.2 Mio. (Trading Economics 2022; Statista 2022).

The Covid-19 recession

The Covid-19 recession was bigger than the Great Recession in the year 2009 (see Figure 6). In 2020 real GDP in the EMU decreased by 6.4%, in Germany 4.6%, Spain 10.8%, Greece 9.0%, Italy 8.9%, Portugal 8.4% and France 7.9%. In 2021 real GDP recovered and growth rates were 4.6% in Germany and 5.3% for the euro area (Eurostat 2022). This means the decrease of GDP in 2020 could not be compensated in 2021. It was lower than in 2020 expected.

The Covid-19 pandemic has caused a demand and supply crisis at the same time. Supply in some sectors of the economy fell suddenly to very low levels or even zero. This was mainly caused by lockdowns for example of restaurants, hairdressing salons, cultural institutions, or trade-fairs. Air traffic, to give another example, drastically shrunk. In other sectors demand broke down as households suffered from lower income, higher uncertainty about future economic and health development and a lack of opportunities to go shopping. Saving rates in the EMU and also in Germany increased after the outbreak of the Covid-19 crisis (Statista 2022).

But there were sectors with stable development or even increasing production. Statistics show that between the first quarter of 2020 and first quarter of 2021 employment in agriculture, construction, information and communication, real estate and housing, financial services and insurance remained almost stable whereas employment in manufacturing, retail, transport and catering trade, corporate services and other services partly shrunk substantially. An increase in employment took place in the sectors of public services, education, and health. Also, workplaces in the sector of online shopping and related logistic services increase (Gartner et al. 2021).

On the supply side after the outbreak of the Covid-19 crisis many global value chains (GVCs) got into disorder (Spence 2021). Lack of intermediate goods reduced production in Germany and Europe as a whole. Obvious explanations of this are complete lockdowns of harbours in China or other Asian countries which followed a zero-Covid-strategy. Also, in a number of crisis sectors employees left their jobs and did not return when job offers increased again. Examples are the lack of harbour workers or lorry drivers in the USA or employees in the catering business. Jobs in these sectors were not sufficiently paid, working conditions in many cases precarious and dangerous to catch a Covid-19 disease. There was no incentive to go back to the job.

But there are more fundamental problems in GVCs. Michael Spence (2021), a Nobel laureate in economics, compares GVCs with the weather system. The latter is extremely complex and produce frequent distortions like hurricanes or heat waves. GVCs can also become extremely complex systems which are organised in a decentral way, follow a microeconomic optimisation – for example just in time production – and try to minimize waste. GVCs systematically lead to underinvestment in resilience because the private returns of such investments are much smaller than the benefits for the system-wide returns. But distortions in such networks quickly lead to delayed responses, shortages, backlogs, and bottlenecks. And distortions of the system only become visible when distortions hit the system.[4]

Distortions in GVCs occurred in Germany and globally on a number of products, from toners for printers over construction timber and paper to a great number of intermediate goods for many industries. Distortions in GVCs added substantially to supply shortages also in Germany. The most famous example is the global shortage of semiconductor chips for car production which led to massive reductions in production. For example, Opel closed its factory early October 2021 for several months and VW in Germany had to switch to short-term work because of missing intermediate goods (Welt 2021). On a global level the automotive industry needs around 15% of world's semiconductor output, personal electronics like smartphones need around 50%. Car manufacturer after the beginning of the Covid-19 crisis reduced their orders for semiconductors in expectation that car sales would go down for a longer period. When car sales picked up again semiconductor producers had switched to semiconductors for personal electronics (Ward 2021). In Germany in August 2021 80% of firms in the automotive industry complained that they were confronted with shortages of intermediate goods and that this would impede production. The maximum of these kind of distortions in similar surveys before 2020 was around 20% for the automotive sector. The electronic equipment sector, machine building, rubber and plastic industry and electronic industry were affected in the same way, in all these sectors around 80% of firms complained about shortages of intermediate goods. In mid-2021 the sector for fabricated metal products, the chemical industry and building material sector reported shortages which were all still over 50%; in metal production and the food staff still over 30% of firms complained about shortages of intermediate goods (Deutsche Bank Research 2021).

In 2009/10, the Great Recession, as well in 2020/21, the Covid-19 crisis, increases in unemployment rates in Germany compared with the reduction of GDP were very moderate (see Figure 10). What plays a role here is that in Germany there are legal restrictions to fire persons quickly and also motivation by firms to keep qualified staff in a crisis. But the main explanation is the programme of reduced hours compensations by the government. In this programme the state-run Federal Employment Agency substantially supported by transfers by the federal

[4] Spence (2021) recommends a global supervision of GVCs to make them more resilient.

government pays the wages of employees who have no work in their firms. Employees keep their status as employed persons in their company with all the rights involved with this status. The general rule is that companies with problems can apply for reduced hours compensations at the Federal Employment Agency for maximum 12 month whereas the working time can be cut to zero. The short-time working allowances is 60% of the last net remuneration for persons without children. With children it increases to 67% of the last net remuneration. Under certain conditions the payment can be increased after four months. During the Covid-19 crisis the potential duration for short-time work allowances was extended to 24 months (ESRB 2021; (Ifo Institute 2022).

Depending on the concrete situation, firms added own money to short-time working allowances by which employees could get 80% or higher percentages of their usual net income. In bigger firms works councils negotiated such payments with management. In April 2020 after the lockdown including, for example in the automotive industry, the persons covered by the short-time work allowance jumped to 6 Mio. persons, around 14% of all full and part-time employees in Germany at that time. The number of workers covered by the programme decreased during summer 2020 but were still over 3 Mio. in winter 2020 /21. In December 2021 still almost 2.3% of the workforce was covered by the programme (Ifo Institute 2022).

More or less in the whole EMU the short-time work allowance instrument was used, albeit in different forms and periods of coverage, and even supported by a special EU programme as a reaction to Covid-19 crisis (ESRB 2021; see below). In fact, some European countries like Germany, Belgium, Italy, and Austria have a long tradition of short-time work allowance, for instance in Germany dating back to the early 20th century taking in the late 1990s its present form (Schulten / Müller 2020). Some other European countries, such as Bulgaria, Czechia, Hungary, and Poland introduced this instrument relatively recently, after the Great Financial Crisis (EC 2010).

In countries like Brazil or India the informal sector or shadow economy is high. A large proportion of the population earns its total income in the informal economy and is not part of the formal economy. For comparison it is important to look at the German situation. In Germany, informal work[5] covers workers who illegally do not pay taxes or social security contributions and illegal employment in form of workers without work permit. These types of work exist especially in the meat industry, cleaning, construction as well as in the transport and logistics sectors (BMF 2022). But almost all workers and small businesses which are part of the shadow economy have one food in the formal economy and are covered by formal policies to stabilise their income in case of crises. The Corona crisis increased the shadow economy in Germany in 2020, as workers, self-employed and firms with income losses increasingly turned to informal economic activities to compensate for income losses. The annual rise in the shadow economy was estimated to be 9% for Germany in 2020, compared to a rise in the USA of 27%, in Austria 18% or in Spain 12%. In Germany the size of the shadow economy decreased again slightly in 2021 and reached a level of 9.5% of official GDP. In comparison in 2021 the shadow

[5] Schwarzarbeit

economy in the USA was estimated to be 5.9% of official GDP, in Spain 16.9% and in Italy 20.1% (Losse 2021; Schneider 2022).

Looking at the distributional effects of the Covid-19 crisis tax data and also data from the Germany Socioeconomic Panel (SOEP) show that the Gini coefficient for disposable income did not change substantially in Germany during the Covid-19 crisis.[6] For net income it increased from around 0.3 in the early 1980s to 0.37 in 2015 and then decreased slightly, also in 2020 (Dany-Knedlik / Kriwoluzk 2021).[7] The explanation for the somewhat surprising result is that in Germany the Gini coefficient increases in boom phases and decreases in downturns. This is because in downturns and also during the Covid-19 crisis the income of well-earning self-employed and profits of companies decreased whereas the income of poorer households is at least partly stabilised by the social safety net and government policies (Dany-Knedlik / Kriwoluzk 2021).[8] During the Covid-19 crisis the number of persons in Germany receiving basic income support, so called unemployment benefits II , did not increase.[9] Actually the number decreased from 4.1 Mio. 2018 to 3.8 Mio. 2021 (Statista 2022). Obviously short-time work allowance and also support for small firms including self-employed stabilised income also for low-income households. During the Covid-19 pandemic masses of people slipped down to the basic government support scheme.

The fact that in Germany overall income inequality did not increase during the Covid-19 pandemic does not mean that poorer households were not massively affected. There were certain groups without sufficient support. An example here are self-employed artists without own company premises. In addition, it has to be seen that during the Covid-19 crisis overall income substantially dropped and that this affected lower-income households more. A survey by the trade union supported Hans-Böckler-Foundation found out that employees with low wages generally were much more affected by losses in wage income than employees with high wages. Surveys also showed that unemployed persons, and here especially long-term

[6] Expectations that the Covid-19 crisis would substantially increase income inequality in Germany (for example Kohlrausch et al. 2020) was not supported.

[7] It is noteworthy that in Germany from the 1980s until 2020 the first decile did not change its relative income position, whereas deciles two to seven had to except lower percentages on total income. The big winner was the tenth decile (Dany-Knedlik / Kriwoluzk 2021). The introduction of statutory minimum wages in 2015 certainly had a positive effect on the first decile.

[8] Taking data from OECD (2022) for the Gini-coefficient for disposable income Germany had a value of 0.289 (2018). Compared with other European countries Germany is more unequal than some Scandinavian countries (Finland 0.261 (2019, Norway 0.269 (2019)), has around the same position as France 0.292 ((2019) and is more equal than Italy (0.330 (2018)) or Spain (0.320 (2019)). Substantially more unequal is the Gini-coefficient for disposable income in the United States (0.395 (2019)), not comparable to South Africa (0.618 (2017), Brazil (0.481 (2016)) of India (0.495 (2011)).

[9] Unemployment benefits II (also called Hartz IV) get any household in Germany with no sufficient income and only very small property. The government transfer is measured in a basket of goods which covers only the basic necessities. Transfers in addition cover the costs for a flat.

unemployed, as well as persons depending on government transfers got Covid-19 infection much more frequently than working people. Or learning-lags caused by school closings are mainly concentrated in poor households and reduce future mobility in society further (DGB Bundesvorstand 2021: 82ff.). And there are other negative social developments. For example, criminality increased during the Covid-19 pandemic including domestic violence especially against women. The latter increased sharply by 20% between 2019 and 2020 (Tagesschau 2021).[10]

Overall Germany and other European countries managed to alleviate the negative social impacts of the Covid-19 crisis to a large extent. In the Global South this was not the case. High shares of informal work and limited fiscal and monetary space led to a sharp increase of inequality in countries in the Global South and also increases inequality between countries. In many countries especially poor households and small firms became over-indebted and could not service their debt (World Bank 2022a). It has to be seen that these developments do not take into account the high energy and cereal prices connected with the war in the Ukraine which started February 2022.

The danger of stagflation

After the Great Recession and especially the years before the Covid-19 crisis inflation rates in the EMU and in Germany were very low. After 2012 inflation rates went down to around zero and there was the danger that the EMU would slide in a deflationary development (see Figure 11). Over longer periods the ECB could not realise its inflation target of below but close to two percent.[11] Economic development in the EMU was poor. Given this constellation the ECB started super expansionary monetary policy (see below).

Several factors came together to push the EMU in an almost deflationary constellation. Firstly, oil prices went sharply down (see Figure 12). Oil prices (and prices for other natural resources which are linked to the oil price like gas prices) have a substantial impact on the price level as oil and other natural resources are intermediate goods in almost all production. Figure 9 shows that in mid-2014 the value of the euro vis-à-vis the US dollar, which had been the seven years before around that level, depreciated around 30% until early 2015. Then the exchange rate remained with some fluctuations around that level. This depreciation compensated to a large extent the falling oil prices which are denominated in US-dollar. Overall, the depreciation in this period prevented that the EMU was pushed in a deflationary development.

Secondly, increases of nominal unit-labour costs were in this period very low. During the so-called sovereign debt crisis beginning 2010 the Troika enforced in crises countries a policy of internal devaluation, that means a policy to cut wage costs to regain competitiveness within the EMU. In Germany and other countries not in crisis wages increased only moderately so that

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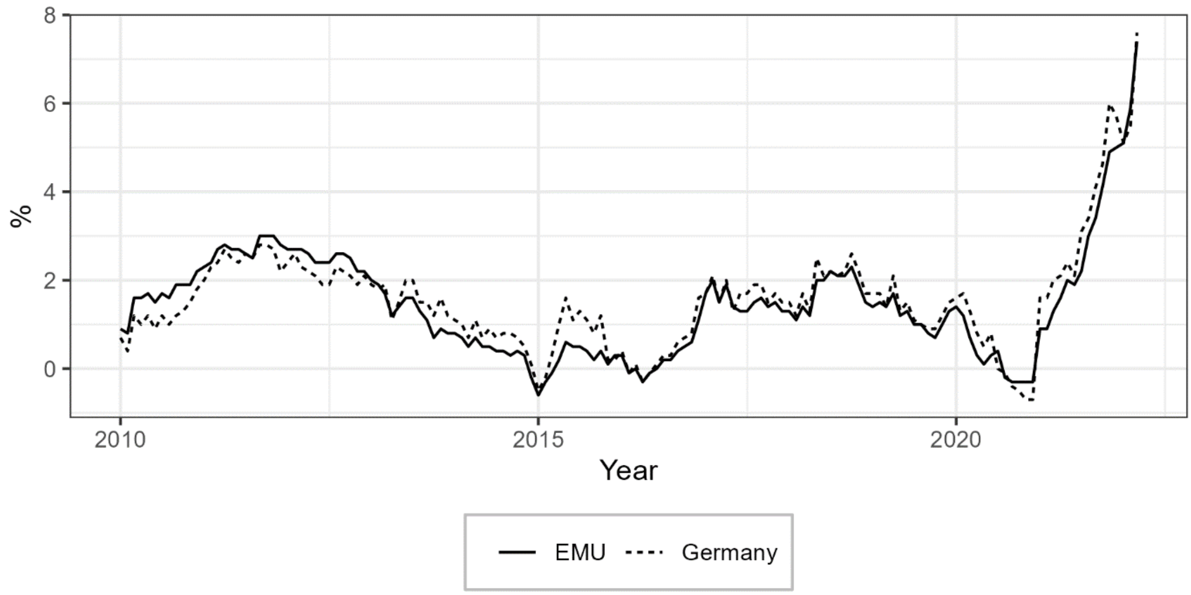
[10] Covid-19 pandemic will increase global wealth inequality substantially. It can be expected that this effect also can be found in Germany (Allianz 2021). Concrete data are until now not available.

[11] In 2021 the ECB revised its target to 2% with the inflation rate fluctuating around 2%.

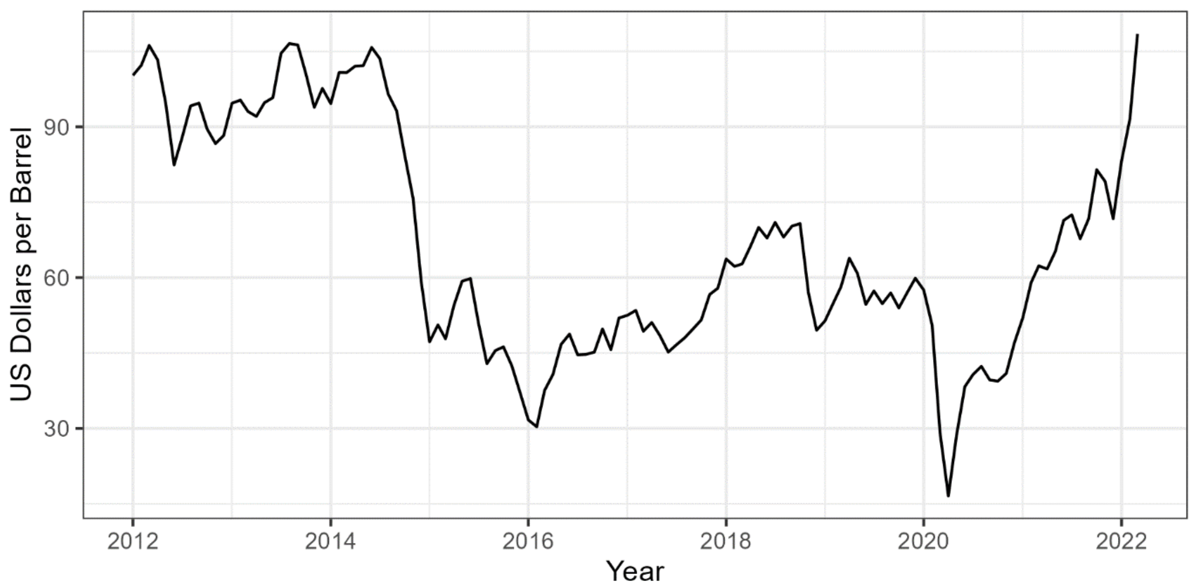
insufficiently increasing nominal wages, respectively nominal unit-labour costs, added to the low inflation rate (Heine / Herr 2021a; Herr 2009).

Figure 11: Inflation rates in Germany and the EMU, annual change, monthly values, 2010 until 2022.0.4



Quelle: Eurostat (2022)

Figure 12: Oil spot price (Crude Oil Price West Texas Intermediate), US-dollar per barrel, 2012 – 2022



Source: FRED (2022)

In the second half of 2021 inflation rates started to increase unexpectedly as most experts and also central bank expected that the era of low inflation rates would continue. In March 2022 monthly annual inflation rate in the EMU increased to 7.5% and in Germany even 7.3% (see Figure 11). The most important inflation drivers are substantially increasing prices for natural resources, especially for heating oil and fuel. The price index for heating oil and fuel dropped in the first half of 2020 by 16% and increased in 2021 then by 51%. The oil price reaches levels existing after 2010 (see Figure 12). Increasing oil prices are mainly the result of increasing global demand and at the same time the refusal of the Organization of the Petroleum Exporting Countries (OPEC) countries to increase production quotas. The War in Ukraine additionally pushed up natural resource prices.

Other factors added to the increasing inflation rate. Shortages in GVCs remained and led to higher prices for intermediate goods. Also, food prices increased more than the average consumer price index. Here reduced exports of cereals from Russia and Ukraine played a role.

Uncertainty about the development of the inflation rate during the next years is high. If supply shortages caused by GVCs remain this could become an own serious inflation driver. Also further increasing natural resource prices caused by high demand, oligopolistic supply and higher taxes related to ecological transformation could lead to further inflation. Most dangerous is that falling real wages caused by inflation trigger compensating nominal wage increases. In such a constellation, to a certain extent comparable to the 1970s, a wage-price spiral could develop with further increasing inflation rates. The ECB in such a situation would find itself in a difficult situation. Fighting against inflationary pressure, which is always combined by demand contraction, is very costly in respect to GDP-growth and employment (see below the debate about monetary policy). The small depreciation of the euro in 2021 added to increasing costs of natural resources. A special effect to explain the increasing inflation in 2021 was the increase of the value added tax in Germany in early 2021 by 3% after it was temporary cut in Germany in the second half of 2020as one of the instruments to stimulate demand (Statistisches Bundesamt 2021).

Economic policy is confronted with a difficult situation. Restrictive monetary policy would bring down economic growth and at least not immediately reduce the drivers of the inflation. Not to react could lead to wage-price spiral comparable with the 1970s. In spring 2022 the ECB did not give up its very expansionary monetary policy in spite of high inflation.

Economic shocks can bring bubbles to an end. The war in Ukraine which started in late February 2022 has the potential of such a shock. But substantial interest rate increase can also trigger the end of asset price bubbles. The problem for the ECB is that in case the USA turns to restrictive monetary policy a weak euro further increases the inflation rate as imports increase in price. The Fed Funds Rate already increased in March 2022 from zero to 0.25%. In such a scenario together with the end of the bubbles an explosion of non-performing loans may happen and a slowdown of GDP growth. In the short- and medium-term fiscal stimulation which is also linked to the Ukrainian war can stabilise GDP growth and economic development.

5. Monetary policy in the EMU

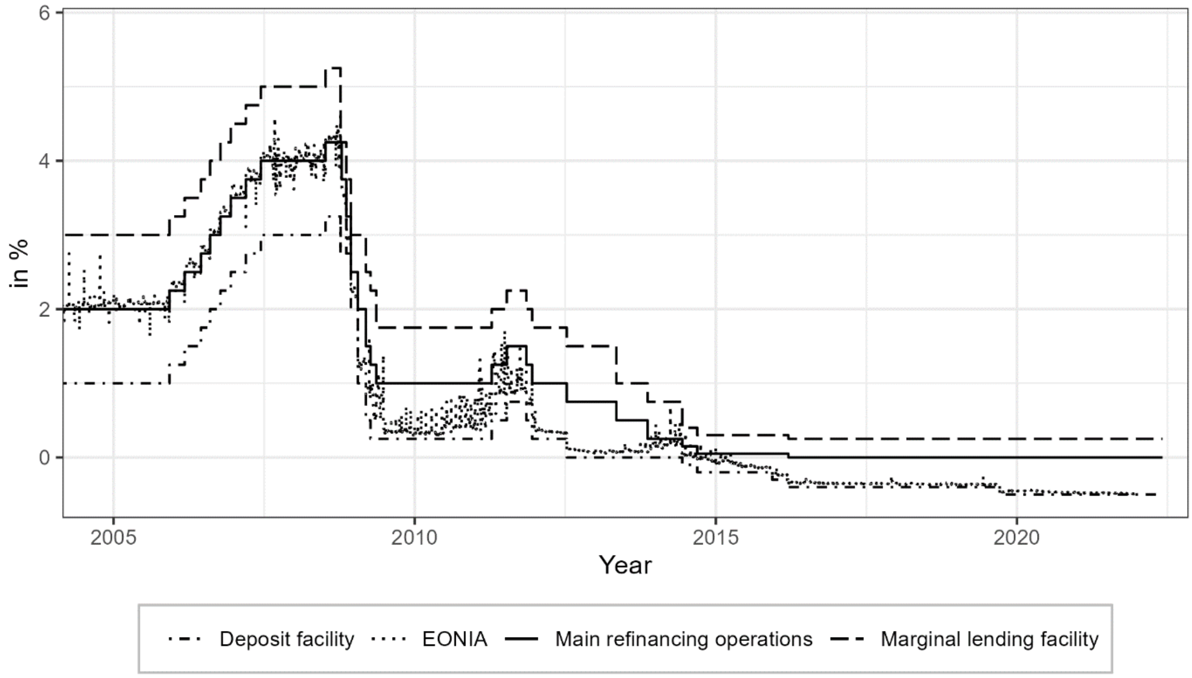
The ECB is, as mentioned, the only truly powerful supranational institution in the EMU. Each central bank belonging to the EMU sends the nationally appointed president of the central bank in the Governing Council of the ECB. The Council in addition includes the six members of the Executive Board which are appointed by the European Council. Monetary policy decisions are taken in the Governing Council according to simple majority principle.[12] This implies that Germany or the German central bank cannot play any dominating role in the ECB. Before the foundation of the ECB the German Bundesbank dominated monetary policy not only in Germany, but in whole Europe as the head of a D-Mark block (Heine / Herr 2021a, 2022).

The policy measures taken by the ECB during the Covid-19 crisis have to be seen in the context of the monetary policy before Covid-19. Recovery of the EMU after the Great Recession was poor and in 2010 the so-called sovereign debt crisis developed. The euro was on the edge of a collapse as a number of governments were not able to refinance themselves and the created funds by EMU governments to support the countries – the temporary European Financial Stability Facility (EFSF) founded in May 2010 which in September 2012 became the permanent European Stability Mechanism (ESM) – was not sufficient. Finally, in July 2012 the newly appointed president of the ECB, Mario Draghi, announced that the ECB would take over the function as a lender of last resort also for public households under the condition that governments would follow the conditionalities of the ESM or more specifically the Troika. In September the same year the ECB implemented the Outright Monetary Transaction Programme which allowed the ECB to buy unlimited government bonds of EMU countries under the condition that the country follows the conditionality of the ESM.

With this intervention the so-called sovereign debt crisis was over, but inflation rates dropped substantially below the inflation target of the ECB (see above). As a consequence, the ECB cut refinancing rates. The main refinancing rate reached 0.05% in September 2014 and zero per cent in March 2016 and has been remaining on this level until today (April 2022). Banks can refinance themselves unlimited for this interest rate as long as they can offer collateral. But there is no shortage of collateral as their quality was stepwise reduced as well. The deposit facility, the interest rate banks get when they hold deposits with the central bank, became zero in July 2012 and dropped stepwise to -0.5% in September 2019 and remains at this level until today. The marginal lending rate, the open discount window, lost its importance as banks could refinance themselves by the main refinancing channel. Money market interest rates in the EMU, the EOINA (Euro Over Night Index Average) became close to the deposit facility (see Figure 13).

[12] The EMU has presently 19 member states. To keep the number of persons in the Governing Council relatively small a complicated rotating procedure is used. The five biggest countries, including Germany, have 4 votes and rotate. The remaining 14 countries have 11 votes and rotate as well. All members are allowed to join meetings.

Figure 13: Refinancing rates of the ECB and money market interest rate in the EMU, 2005 – 2021



Source: ECB (2022a)

In March 2015 the ECB started with its unconventional monetary policy, also called quantitative easing.[13] This means it started to buy a certain net quantity of assets each month to pump central bank money in the economy. The purpose was to bring down also long-term interest rates to very low levels, stimulate credit expansion to the private sector and give sufficient room to refinance public households. Table 2 shows the volume of the Asset Purchase Programme (APP). APP was reduced to zero in January 2019, but relaunched again in October the same year, also before Covid-19 hit the economy. The explanation is that the economy in the EMU which in general could only reach a weak recovery after the Great Recession cooled down again. Thus, Covid-19 pandemic hit the EMU in an unfortunate moment. In March 2020 when the Covid-19 crisis started net purchase of the APP were increased to 140 billion. The programme is still running.

Table 3 shows the stock of intervention of the APP as well as the used subprogrammes. By far the most important subprogramme has been the programme to buy government bonds, the PSPP, with a volume end 2021of 3124 billion euro. Obviously, the ECB massively bought government bonds and indirectly refinanced public households. It has to be stressed that intervention in the framework of the APP had to be allocated among EMU member countries more or less according to the capital quota of the equity of the ECB which reflects GDP shares of the EMU countries of the EMU-GDP. To small extent also bonds issued by international organisations were bought. Greek bonds were excluded because collateral quality of Greek

[13] The central banks of some advanced economies, such as the Bank of England, Bank of Japan, the US Federal Reserve and Swiss National Bank, had engaged in quantitative easing already in 2008-2009 (Benassy-Quere et al. 2009).

bonds was considered too low. End 2021 the ECB held 634 billion euro of German bonds, on second place came France with 516 billion euro; bonds of international organisations amounted 276 billion euro (ECB 2022b).

Table 2: The Asset Purchase Programme (APP), monthly net purchases by the ECB

Period	**Monthly net purchases, in billion euro**
March 2015 -March 2016	60
April 2016 - March 2017	80
April 2017 – December 2017	60
January 2018 – September 2018	30
October 2018 – December 2018	15
January 2019 – October 2019	0
November 2019 – February 2020	20
March 2020 - ongoing	140

Allocation according to capital quotas of EMU countries on ECB equity
Source: ECB (2022a)

Table 3: Stock of intervention of the APP and subprogrammes end 2021

EMU countries on ECB equity	**Holdings in December 2021, in billion euro**
ABSPP (Asset-backed securities purchase programme)	28
CBPP3 (Covered Bond Purchase Programme 3)	298
CSPP (Corporate Sector Purchase Programme)	310
PSPP (Public Sector Purchase Programme)	2,487
Total APP (Asset Purchase Programme)	3,124

Source: ECB (2022b)

The other smaller programmes under APP had the purpose to keep secondary markets for some financial markets liquid and to stimulate credits to the private sector. In addition, there were specific programmes outside APP to refinance commercial banks with negative interest rates if they expanded credit to the private sector (see for details Heine / Herr 2021a).

When the Covid-19 pandemic hit Europe further programmes were started by the ECB (for an overview see Schnabel 2021). The biggest is the Pandemic Emergency Purchase Programme (PEPP). In March 2020 it was decided that PEPP should have a net volume of 750 billion euro, this was increased by 600 billion euro and in December the same year by 500 billion euro to a total of 1850 billion euro. Until April 2022 the ECB bought under PEPP assets with a value of 1696 billion euro. The type of assets under PEEP were the same as under the APP. However, there were two modifications. Firstly, the ECB had not to stick strictly to the country quotas for interventions as in the APP. Secondly, Greek government bonds became eligible for interventions. The biggest role played again purchases of government bonds, end March 2022 with a volume of 1666 billion euro. The stock of German government bonds end March 2022 was 409 billion euro, for France, for example, 302 billion euro, Italy 281 billion euro or Greece 39 billion euro (ECB 2022c).

Already in September 2019 the ECB decided to introduce Targeted Longer-Term Refinancing Operations (TLTRO III). The first TLTRO was launched in 2014. In this programme banks get especially attractive refinancing when they give credits to non-financial corporations and households except loans to households for housing purchases. Refinancing interest rates in this programme were substantially negative. Under TLTRO III interest rates dropped to -0.5% below the interest rate for the deposit facility which became in September 2010 -0.5%. In March and April 2020 TLTRO III was further extended. Also new Longer-Term Refinancing Operations (LTRO) were introduced to guarantee the liquidity of the money market. In April in addition to TLTRO III an additional programme with the same purpose and logic was introduced, the Pandemic Emergency Longer-Term Refinancing Operations (PELTRO). In December 2020 the PELTRO was extended.

In March and April 2020 additional swap-agreements, that means agreements by the ECB to get foreign currency from foreign central banks in exchange for newly created own central bank money up to a certain amount, were agreed. A network of such agreements was established between the ECB and the FED (the central bank of the USA), the Bank of England, Bank of Canada, and the Swiss National Bank. The ECB had in addition swap agreements with the Danish, the Croatian, the Bulgarian and Chinese central banks. The ECB had also repo agreements with other central banks which offered the possibility of these central banks to get euro against mainly government bonds.

In April 2020 the quality of collaterals which were needed for refinancing of financial institutions by the ECB was eased. Haircuts[14] for collaterals were reduced to prevent a shortage of collaterals for refinancing operations.

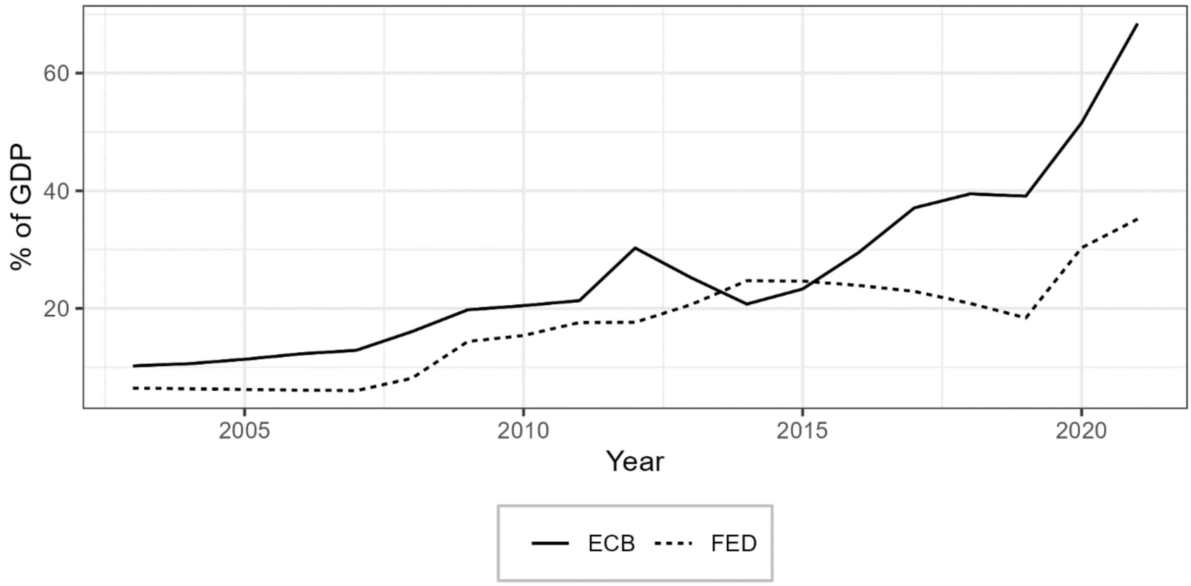
In March 2020 the ECB, which takes over the banking supervision in the EMU, reduced the equity which commercial banks had to hold in their capital and liquidity buffers. At the same time a liquidity coverage (holding liquid assets in relation to potential liquidity needs) relief for banks until end 2021 was decided. Between September 2020 and March 2022, the leverage

[14] For example, in case of a haircut for a collateral in form of a government bond or a credit to a company with a certain value only for 80% of this value central bank money can be get.

ratio, equity holding of the bank to total bank assets, was reduced. These measures gave banks more room for credit expansion and made it easier to digest non-performing loans.

Taking all these programmes together it is no surprise that the balance sheet of the ECB reflecting created central bank money exploded. Starting with a balance sheet of around 10% of GDP in 2003 the first wave of increases came with the Great Financial Crisis and Great Recession 2008/09, followed by the sovereign debt crisis before 2012. Then unconventional monetary policy after 2014 increased the balance sheet of the ECB drastically. Before the balance sheet of the ECB could be reduced it exploded during the Covid-19 crisis and reached early 2022 around 70% of GDP (see Figure 14). One can see that after 2014 the FED was able to reduce its intervention in per cent of GDP, but during the Covid-19 crisis also massively intervened to stabilise the economic system. There are more extreme cases. The Bank of Japan after several decades of crisis reached in 2021 a balance sheet of around 125% of GDP (Trading Economics 2022).

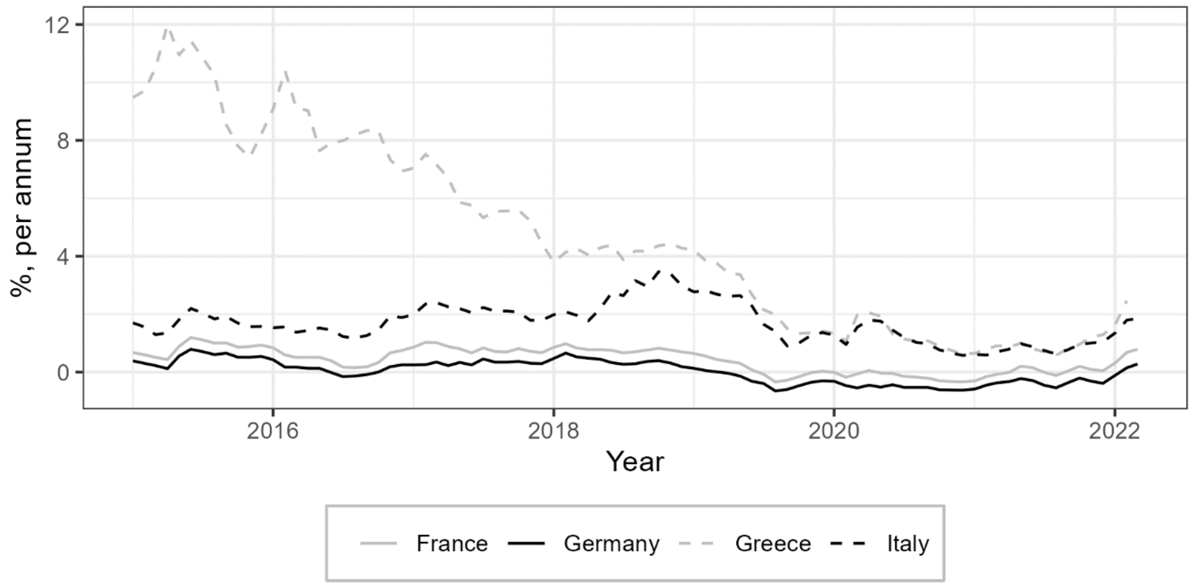
Figure 14: Balance sheet of ECB and Federal Reserve in per cent of GDP of own GDP 2003 - 2021



Source: ECB (2022a), FRED (2022)

The combination of the refinancing rate by the ECB of zero, the negative deposit facility rate and the excessive unconventional monetary easing led to extremely low long-term interest rates. In a number of EMU countries government bonds with a maturity of 10 years could even be issued with negative interest rates (see Figure 15). The German government has been benefiting from 2016 on from extremely low interest rates which became in 2019 negative – public households got money when they took a credit. French government bonds also showed very low interest rates. For Italy and Greece interest rates are a bit higher and positive, but also in historical perspective very low. Long-term interest rates became positive again early 2022, but with very low values.

Figure 15: Long-term interest rates for 10-year government bonds, 2015-2022.02



Source: OECD (2022)

Deposit interest rates very much depend on refinancing rates for banks, on the money market interest rate. As money market interest rates after 2012 became zero and then negative (see Figure 13), deposit interest rates became zero and later negative as well. Banks started to charge higher fees, sometimes called storage fees. As the inflation rate positive real interest rates became partly considerably negative, especially with the inflation wave starting 2021.

Overall, the ECB provided during the Covid-19 crisis and also before sufficient liquidity to banks and took over its function of lender of last resort for the financial system. Also, it tried with various instruments to stimulate credit expansion to the private sector. Refinancing rates were zero even before the Covid-19 crisis hit the EMU. In our judgement, the policy of zero-interest rate was appropriate, and the ECB reacted correctly according to the macroeconomic situation in the EMU. It followed theoretically the approach of Knut Wicksell (1898) who argued that monetary policy has to follow a natural interest rate which is given by the developments of the economy. If inflation is increasing the central bank has to increase the refinancing rate; if the inflation rate is too low the central bank has to reduce the refinancing rate.[15] And inflation rates in the years after 2012 were too low. Without zero interest rate the danger for the EMU to slip in a deflationary constellation with long-term stagnation comparable with Japan after the late 1990s would have been even higher. In 2021 inflation

[15] Mario Draghi, then President of the ECB, argued: „ If central banks did not act in this way – that is, if they did not lower short-term rates in tandem with the natural rate – market rates would be too high relative to the real returns in the economy, and investing would become unattractive. The economy would therefore be pushed away from full capacity and price stability. By contrast, by holding market rates below the real rate of return, we encourage the investment and consumption that is needed to bring the economy back to potential. " (Draghi 2016: para 11) For an evaluation of Wicksell's approach see Heine / Herr (2021a).

rates started to increase substantially above the target of 2%. However, until today (April 2022) the ECB did not increase the interest rate (see above). Obviously, the ECB has two eyes, one looking at the inflation rate and one at real GDP development. We also do not criticise this.

In addition, the ECB took over the function as lender of last resort also for public households in the EMU. For this it did not use the Outright Monetary Transaction Programme which is more suitable in acute crisis situations. Unconventional monetary policy served the implicit purpose to bring down long-term interest rates and finance public households. The APP as well as the PEPP were mainly used to buy government bonds. Taking the stock of government bonds held by the ECB and the GDP of the EMU it can be calculated that the ECB holds end 2021 around 40% of public debt. This policy also should not be criticised. The ECB used its room of manoeuvre to stabilise the EMU which otherwise probably would have broken apart.

6. Fiscal policy in Germany and the EMU

Shortly after the World Health Organization (WHO) on 11 March 2020 announced the Covid-19 outbreak as a pandemic, Germany and other European countries switched to fiscal expansion to fight against the coming recession. Additionally, on the EU-level fiscal measures were taken. We start with the EU level.

Fiscal policy reactions on EU level

On 23 March 2020 under the pressure of the Covid-19 pandemic and its economic effects ECOFIN decided to use the exception clause to allow higher fiscal deficits than were allowed in the Stability and Growth Pact and Fiscal Compact. It became obvious that only strong fiscal measures could smooth the beginning Covid-19 recession.

On 24 April 2020 the EU finance ministers agreed on three support and stimulus programmes with a volume of 540 billion euro, around 4% of the EU's GDP (Cameron 2020).

In the first programme with a size of 240 billion euro the ESM, the fund created to help EMU countries with financing problems of public households, should give additional credits to Member States. The usual strict conditionality of these credits was relaxed. However, the credits should be used to support directly or indirectly the health sector. For refinancing, the ESM had to issue own bonds. In case the ESM could not pay back its debt, each country guaranteed according to its share on the equity of the ESM, which depends on the relative size of the country - in case of Germany this is 26.9%. In this programme a central institution takes loans to give own credits to Member States. The advantage of this is that an institution like the ESM based on high credit ratings can refinance itself with much lower interest rates than many governments of Member States with a low credit rating. Otherwise, these countries would have had to paid very high interest rates or would have got no credit at all.

The second programme was related to the European Investment Bank (EIB), a multilateral bank of the EU. The EIB had to establish a fund with a volume of 200 billion euro with the purpose to give guarantees for financing small- and medium-sized enterprises. In this programme Germany also had to guarantee according to its equity share.

The third programme was the Support to Mitigate Unemployment Risks in an Emergency (SURE) with a volume of 100 billion euro. In this programme the EU Commission gives credits to Member States of the EU to support programmes with short-time work allowances and similar measures. For SURE the EU Commission had to take credits. Before the Covid-19 crisis the EU-budget was almost completely financed by transfers from Member States. To take own credits was forbidden for the European centre and a kind of taboo. In Germany, for example, there was a relatively broad consensus among politicians and public opinion that the EU should not become a "community of debt". SURE could be considered as something new for the EU and EMU. However, Member States should not be forced to accept a joint liability. For this the programme was underpinned by a system of voluntary guarantees from EU Member States according to their economic size. Germany took over guarantees (EC 2022).

In spite of these programmes the economic situation of countries in the southern part of the EMU with typically high public debt quotas and in many cases bad economic development in the past deteriorated. It became clear that the EMU was in danger to break apart. Shortly after the decision to implement SURE and the other programmes, the heads of governments of Italy, France, Belgium, Greece, Portugal, Spain, Ireland, Slovenia, and Luxemburg in a joint statement demanded: "We need to work on a common debt instrument issued by a European institution to raise funds on the market on the same basis and to the benefits of all Member States." (CNBC 2020: para 9) With this demand the already long discussed topic whether the EU Commission should have the right to take credits via so-called euro bonds was on the table again. Germany and other countries like Austria or the Netherlands had been always strictly rejecting credits taken by the European centre as steps towards a fiscal union, which was not wanted. This group of countries became weaker in their position as Britain as an opponent of deeper integration left the EU at the end 2020. Obviously impressed by the danger of a breakdown of the EMU Germany under the head of government Angela Merkel changed its opinion. On 18 Mai 2020 Merkel together with French President Emmanuel Macron presented a proposal of a 500-billion-euro-package whereas the money should be jointly raised on capital markets by all EU-countries and should be allocated as credits and transfers especially to the most hit countries in the EU. Shortly after Ursula von der Leyen, President of the EU Commission, presented a similar 750-billion-EU programme.

After tough negotiations in July 2020 the European Council decided the Next Generation EU (NGEU) program together with the EU budget 2021 until 2027. The EU-budget financed traditionally via transfer payments from Member States should have (in prices of 2020) a size of 1.211 trillion euro. In addition, the NGEU programme should be credit financed with a volume of 806.9 billion euro[16] (around 6% of EU GDP) whereas the money should be spent between 2021 and 2023. The EU budget plan until 2027 at least with respect to the volume was rather disappointing. The EU central budget remains around 1% of the GDP of the EU. For a

[16] It was usually spoken about a 750-billion-euro programme, but this sum is in 2018 prices.

currency union this is extremely low and prevents a strong fiscal centre in the EU. For the EMU no additional budgets were planned (EC 2021).[17]

Let us look closer at NGEU fiscal stimulus programme which is credit financed and has the aim to support the recovery of the EU Member States from the economic and social damages of the Covid-19 crisis (EC 2021).

- A large majority of the borrowed money (about 723 billion euro) will be allocated to EU Member States in terms of loans (385 billion euro) and grants (338 billion euro) under the Recovery and Resilience Facility. Members have to present a plan how to spend the money especially in the area of green and digital transformation. The EU Commission then assesses the plan and ECOFIN decides.

  For example, Germany applied with the German Development- and Resilience Plan (DARP) with a size of 25.6 billion euro. The program consists of three main dimensions: green transition (42% of the funds), digital transition (52% of the funds) and economic and social dimensions of transition (6% of the fund) (EC 2021).[18]

- An amount of about 50 billion euro is planned to be allocated to Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) which is designed for continuing and extending investment initiatives to recover from Covid-19 recession. The money will be added to already existing programmes and supports countries which are especially hard hit by the Covid-19 crisis in respect to youth unemployment, GDP drop etc.

- The rest of the money is spent for different smaller programmes, for example in Horizon Europe for research and innovation or Rural Development, a fund to foster regional cohesion.

What is new about the NGEU is that it implies a significant rise in borrowing by the EU Commission. Under the SURE programme guarantees by EU Member States were voluntary. In NGEU all EU countries now guarantee according to their share which is given by the relative size of their economies. Germany, for example, guarantees for 27% of the debt of the NGEU debt. It is also noteworthy that the programme includes transfers within the EU financed by debt. For raising the needed money for the NGEU programme the EU Commission uses a whole set of instruments. For example, EU green bonds are issued (Christie et al. 2021).

Fiscal policy reactions in Germany

Germany introduced in January 2011 the so-called “debt brake” which is even more strict than the fiscal rules on EMU level. The rule implies that structural net borrowing by the federal

[17] A large proportion of the money should be used to support green transformation, digitalisation and modernisation of the EU in general.

[18] (DARP) Deutscher Aufbau- und Resilienzplan. It consists of 40 measures in six focus areas, including climate change, digitalisation of the economy and infrastructure, digitalisation of education, strengthening the social participation, reinforcing a pandemic-resilient health system with modern administration and dismantling barriers to investment, which are addressed in the European Recovery and Resilience Facility (BMF 2021a).

government cannot exceed 0.35% of GDP annually, while the states are not allowed to have any structural deficit.[19] The debt brake provides a space for exceeding this limit in case of exceptional circumstances, such as emergency situations or natural disasters, and the agreement of the parliament. The Covid-19 pandemic therefore justified a larger fiscal stimulus than given by the rule. The debt brake was suspended for the years 2020 until 2022. In 2023 it has to be fulfilled again and the additionally taken credits have to be paid back. In order to bring the budget in accordance with the debt brake, the German government adopted a repayment plan from 2023 until 2042. According to this plan, 39.8 billion euro, the amount of borrowing exceeding the level of 0.35% of GDP, is supposed to be paid back annually by 2 billion euro (BMF 2021b: 14-15).

Germany initiated a variety of measures to fight against the repercussions of the pandemic on enterprises and households. Most of these measures were initiated by the federal government, but also by the states and the public development bank KfW[20]. We discuss here the most important measures, for a more detailed overview see (ESRB 2022):

- The government tried to stimulate directly aggregate demand. For example, the purchase of electric cars became more subsidized (from 3000 euro per car to 6000 euro) or in 2020 the value-added tax was cut from July until the end of the year from 19% to 16%.
- There were a number of measures to reduce the tax burden of companies (for example to allow loss carrybacks), allow moratoria for tax obligations or suspend enforcement mechanisms in case of late tax payments.
- Short-term work allowances with relatively generous payments were massively extended and massively used. Certain transfers to especially affected poor families, for example a one-time payment of 300 euro for one child, were implemented.
- A special programme was implemented to support research and production capacities in the field of Covid-19 vaccine. For example, Biontech which was of the companies developing vaccine early got a subsidy of 375 million euro.
- In special programmes the government bought vaccine and masks, supported vaccination campaigns and supported hospital and the health sector in general.
- There were several programmes to directly support SMEs. For example, firms in sectors which suffered from lockdown could apply for cash payments for running expenses or payments based on turnover in the past.
- Self-employed persons like artists could get support.

[19] This rule was supposed to apply for the federal government in 2016 and for the states 2020, until when a gradual reduction in the government borrowing was aimed at. In fact, the Germany federal government achieved the target of the debt break already in 2012 and could realise it until 2019. Then in the following years the structural deficit was higher than 0.35% of GDP (BMF 2022a).

[20] The KfW (Kreditanstalt für Wiederaufbau) Banking Group is a state-owned development bank (owned 80% by federal government, 20% by states) and is the third biggest bank in Germany. It plays a key role in German industrial policy (Dünhaupt / Herr 2020).

- The government gave large-scale guarantees for credits to the enterprise sector and also gave via the KfW own credits to companies. A big role for government guarantees and loans played the Economic Stabilisation Fund (ESF)[21] which was initiated to support companies having a relatively large impact on the German economy and the labour market. With a size of 600 billion euro, the ESF had the possibility to give credit guarantees (400 billion euro), give loans to companies (100 billion euro) and to buy equity (100 billion euro). Without guarantees and government credits banks would have stopped to give sufficient credit to companies massively affected by the Covid-19 crisis. Such guarantees were carried out by government itself, but more important was the role of KfW in this field. Moreover, additional guarantees for export credits were given.[22]
- The ESF were, as mentioned, also implemented to allow state ownership in companies. Different types of firms profited from such ownership programmes. The biggest intervention in this area was government support of the German airline company Lufthansa with a volume of 9 billion euro including an equity share of the airline company of 20% (Finanzagentur 2021). Also, start-ups were supported in this way, especially in the field of research for a vaccine against Covid-19.
- Obligations to start bankruptcy procedures in case of over-indebtedness were relaxed.

Table 4 gives an overview about adopted Covid-19 programmes until September 2021 in percent of GDP of the year 2020. After that time almost no new programmes were enacted. It should be clear that the programmes will be implemented over several years. Germany decided to implement traditional fiscal programmes to fight the Covid-19 pandemic with a volume of 15.3% of the GDP in 2020. Government programmes in the field of giving guarantees and credits or buying equity were even bigger and reached 27.8% of the GDP in 2020. Taking both types of programmes together from the countries shown in Table 4 Germany together with Italy had the highest intervention. For Italy it has to be mentioned that the country was especially hard hit by the Covid-19 pandemic. Measures against the Covid-19 crisis by the EU centre were also relatively high.

Overall interventions in the Global North have been high compared with most countries in the Global South (Dünhaupt et al. 2021). This is also supported by the relatively small, planned interventions in India and Brazil. The World Bank (2022a: 7) reports that active fiscal responses to the Covid-19 crisis until September 2021 was on average in high-income countries over 20% of GDP, in upper-middle-income countries around 10% and in low-income countries below 5% The World Bank (2022a: 6) writes: "The magnitude of the fiscal response as a share

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[21] Wirtschaftsstabilisierungsfonds

[22] The targets of KfW loans are categorized into four company groups: (i) loans for companies of all sizes (always including individual entrepreneurs and freelancers) which have been in the market for more than five years; (ii) start-up loan for companies of all sizes which have been in the market for three to five years; (iii) direct participation for syndicate financing of at least 25 million euro in working capital and investments of SMEs and large companies in the non-financial sector; (iv) instant loans for companies of all sizes which have been in the market since 1 January 2019 and have made profit in the year 2019 or between 2017 and 2019 (KfW 2021).

of GDP was almost uniformly large by any historic metric in high-income countries and uniformly small or non-existent in low-income countries." It should be no surprise that the World Bank in the same report found out that in the Global South inequality and poverty exploded.

Table 4: Adopted measures in connection with the Covid-19 pandemic 2020 until March 2022, in per cent of the GDP in 2020

Country	Normal fiscal measures*	Other measures**	Total
EU centre***	3.8	6.7	10.5
Germany	15.3	27.8	43.1
France	9.6	15.2	24.8
Spain	8.4	14.4	22.8
Italy	10.4	35.3	45.7
Greece	17.5	3.7	21.2
Portugal	10.3	4.3	14.6
Netherlands	6.0	5.7	11.7
Belgium	8.2	11.9	20.1
USA	25.5	2.4	27.9
India	4.1	6.2	10.3
Brazil	9.2	6.2	15.4
South Africa	5.3	4.1	9.4
Nigeria	2.4	0	2.4
Uganda	1.6	0.5	2.1
Bangladesh	2.3	0.1	2.4
Argentina	5.3	2.6	7.9

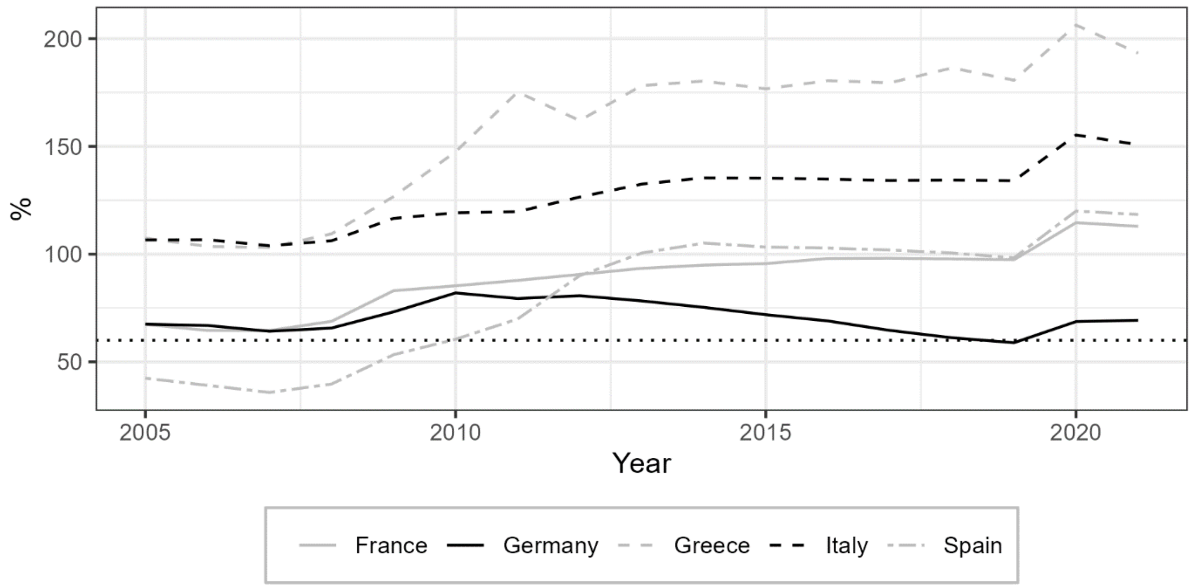
* Additional expenditures or reduced revenues, ** Give credits, buy assets, take over debt, give guarantees, buy equity, ***Also included in Member States of EU

Source: IMF (2022)

As a result of the large-scale discretionary fiscal programmes plus the automatic stabilisers in form of reduced tax revenues and high expenditures governments' deficits in percent of GDP significantly rose. In Germany the budget balance changed from a surplus of 1.5% of GDP in 2019 to a deficit of 4.3% in 2020. For 2021 a deficit of 3.7% of GDP is calculated (Statistisches Bundesamt 2022). In the EMU in 2019 the public budget deficit to GDP was 0.6% and dropped 2020 to 7.2% of GDP (see Figure 16). In 2021 a deficit of 5.5% of GDP is calculated (ECB

2022c). Some EMU countries realised very high budget deficits in 2020, for example Spain 11.0%, Greece 10.1%, Italy 9.6% or France 9.0%. The USA with its huge fiscal stimulus had in 2020 even a budget deficit of 15.3% of GDP (OECD 2022).

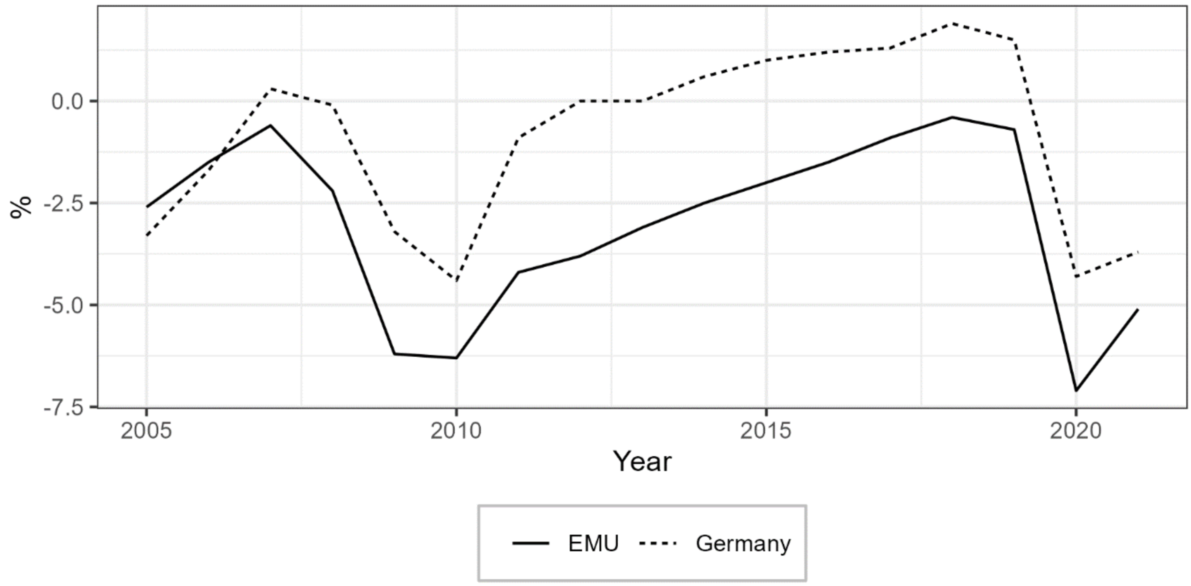
Figure 16: Budget deficits in per cent of GDP in the EMU and Germany, 2005 -2021



Source: Eurostat (2022)

Looking at public debt to GDP in Germany in 2020 a value of 78.7% was reached, in the EMU 95.8% of GDP (see Figure 17). Both values are above the target of the Stability and Growth Pact which aims debt-to-GDP ratio of 60%. Some countries are far above this target. For example, in 2020 in Greece public debt to GDP was 238%, in Italy 184%, in Spain 148% or in France 146%. In comparison, in the USA the value is 161% and in the case of Japan with 257% close to Greece (OECD 2022). The fiscal target to reduce public debt to GDP ratio to 60% by many EMU countries after the Great Recession could not be fulfilled and moved further away during the Covid-19 crisis. Germany is one of the countries with decreasing public debt quotas.

Figure 17: Public debt in per cent of GDP in selected countries, 2005- 2021



Source: Eurostat (2022)

The overall evaluation is that fiscal policy in the EMU and Germany was functional during the Covid-19 crisis. Fiscal impulses in 2020 and 2021 were strong. Also, on the EU-level fiscal policy reached a new quality as the first time substantial fiscal policy was carried out on a central level.

7. Conclusion

The Covid-19 pandemic led to the sharpest recession after World War II in Germany and also in Europe. It is a demand and supply recession at the same time. Monetary and fiscal reaction after the Covid-19 crisis in Germany and also in the EMU were enormous. The ECB continued its mega-expansionary monetary policy, on the one hand continuing with zero and partly even negative refinancing rates of commercial banks, and on the other hand very high interventions in the form of net purchases of assets, mainly government bonds. The balance sheet of the ECB exploded; showing that the ECB became a major financier of public households holding more than 40% of public debt (see above). The ECB carried out these policies under the Covid-19 recession without returning before to normal monetary policy. Since the Great Recession in 2009 the ECB has been more or less engaged keeping the euro area together. Due to a lack of a fiscal centre in the EMU, the ECB had no partner in stabilising economic development. Misled fiscal policy and poor management of the so-called sovereign debt crisis starting in 2010 pushed the ECB to more and more expansionary policy.

Fiscal policy in Germany during the Covid-19 recession including provisions of credit guarantees, government loans, and equity participation, was functional and (together with monetary policy) was able to stabilise economic development and prevent an escalation of unemployment and income inequality. Other countries in the EMU followed this kind of functional fiscal policy as well. The fetters of the Stability and Growth Pact and the Fiscal Compact on the EMU level and the debt brake in Germany were suspended quickly. A surprise was that Germany for the first time agreed to joint fiscal policy on the EU level with credits taken by the EU Commission and guarantees for such credits according to the economic size of Member States. Such programmes are planned to be an exception triggered by the severe Covid-19 recession as an external shock, but they could become the first step to a fiscal union which is urgently needed as a partner in the EMU for ECB (Heine / Herr 2021a).

This brings us to the first risk for future development. Germany has planned to go back to the debt brake with a maximal structural deficit of the federal government of 0.35% of GDP and no net debt of states. In the EMU, fiscal rules may become strict again as well. There is the danger that fiscal policy too early goes back to austerity. If this happens, the same may happen as after the Great Recession, when too early fiscal austerity led to a second recession in the EMU, and very poor economic development over many years.

A second risk is the very high public and private stock of debt with the danger of over-indebtedness. The Covid-19 crisis exacerbated the already high debt quotas. Deregulated financial markets and a huge real estate and stock market bubbles before the Great Financial Crisis and Great Recession in 2008/09 pushed many countries in the EMU in a fragile condition. Before and even during the Covid-19 crises, such bubbles developed again whereby this time also Germany was affected by a real estate bubble. Zero or negative real interest rates before and during the Covid-19 crises reinforced this development. A rise in interest rate due to an endogenously or exogenously driven factor would lead to rising non-performing loans and a burst of the bubbles, which would create a new recessionary phase. High debt-quotas may dampen consumption and investment demand.

A third risk is the sharply increasing inflation rate in the EMU after a long period of very low inflation triggered by increasing natural resource and energy prices starting in 2021 and further pushed up by the war in Ukraine starting in February 2022. Especially low-income households were affected by increasing prices as these households spend a high proportion of their income for heating, food, and transport. Avoiding second round effects of the price level jump mainly in the form of higher nominal wage increases is crucial. If the inflation rate gets out of control the ECB has to react with restrictive monetary policy with the result of stabilisation crisis – comparable to the development in the 1970s. To avoid such a development, it is of key importance that incomes policy, fiscal policy, and monetary policy, is coordinated. Trade unions could prevent too high wage increases and avoid an inflationary wage-price spiral, in exchange for a fiscal policy in support of low-income groups and a monetary policy which does only moderately increase interest rates. Institutional preconditions for income policy are in the EMU not very good.

The Covid-19 crisis has intensified long-lasting problems in the EMU, which have to be solved. Especially a fiscal union is needed in the EMU. A golden rule for fiscal policy which allows increasing net-public debt up to gross public investment could be applied. Other government expenditures could be financed by taxes. If growth in the next decade will be only moderate, or monetary policy or external shocks will trigger a recession, then economic and political problems within EMU and especially EU may escalate, and radical reforms would be needed to overcome the fragile constellation.

The Covid-19 crisis has in addition challenged the globalisation model which developed the last decades. The pandemic tiggered immediate adverse supply and demand effects also in Germany and the EMU via distortions in GVCs. It became clear that GVCs can be easily distorted with negative effects also for countries like Germany and this not only in the field of supply of medical products. Strengthening the resilience of GVCs will have to be discussed. This includes reshoring of productions. Measures to strengthen the resilience of GVCs have to be linked to ecological transformation and a new era of industrial policy. For instance, when Germany wants to reduce its dependency on battery cell production for electric cars (which were in the past mainly produced in China), the needed government support and coordination with industry is needed.

Global trade in relation to world GDP reached its maximum with the Great Financial Crisis and Great Recession and from then on stagnated. The desire to make GVCs and whole economies more resilient may further strengthen this tendency. In addition, the war in the Ukraine and the long-lasting conflict between the USA and China about their hegemonic positions will lead to policies to become economically more independent. At least in China such tendencies can be observed. This also will most likely trigger tendencies of a certain deglobalisation.

Last not least, the Covid-19 pandemic which hit the whole world showed how many countries in the Global South had only very minimal space for fiscal and monetary response to the Covid-19 recession. In comparison for example to Germany or the EMU, these countries suffered considerably more. Poverty and inequality escalated within these countries and between them and the Global North. Many of the countries in the Global South are confronted with destabilising levels of foreign debt. The Covid-19 crisis will also lead to challenges how to make the existing globalisation model more stable and fair.

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