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2022 Country Report - Croatia

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Recommendation for a COUNCIL RECOMMENDATION

on the 2022 National Reform Programme of Croatia and delivering a Council opinion on the 2022 Convergence Programme of Croatia

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European Commission

Croatia

2022 Country Report



ECONOMIC AND EMPLOYMENT SNAPSHOT

Croatian economy recovered from the COVID-19 shock and despite rising uncertainties economic growth should remain solid

Prior to the COVID-19 crisis, Croatia's economy showed positive trends. Growth was steady, while public finances improved substantially and public and private indebtedness declined. Growing export market shares showed that Croatia's companies were gaining in competitiveness. Both employment and investment levels increased, helping Croatia's economy to converge towards EU standards.

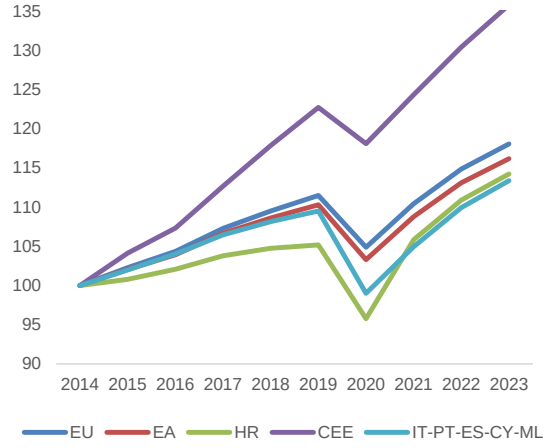
Croatia's economy was heavily hit by the crisis, but it has been recovering strongly. In 2020 Croatia took a major hit from the COVID-19 crisis, as well as from the two devastating earthquakes, causing real Gross Domestic Product (GDP) to fall by 8.1%. In line with the European Commission's Winter Interim Forecast, Croatia's real GDP expanded by 10.2% in 2021, completing a full V-shaped recovery. Growth was mostly supported by a better-than-expected performance of the tourism sector and robust consumer spending.

Growth is expected to remain robust in the medium term. In 2022 GDP growth is forecast at 3.4%, supported mostly by domestic demand, while net exports should play more neutral role. Rising inflation is set to affect consumer spending, but stable labour market developments, trends in consumer lending and expected solid tourism season suggest that consumption will keep a solid contribution to GDP growth. Investment activity should be supported by the expected acceleration of post-earthquake reconstruction in the Banovina region and Zagreb, favourable financing conditions and the implementation of the reforms and investments from the national recovery and resilience plan (RRP). On the external side, more muted demand from Croatia's main trading partners suggests that export growth of goods will weaken, but remain stable, while exports of services are expected to reach their pre-pandemic level this year, supported in large part by tourism. In 2023, real GDP growth is forecast to be around 3% (see Annex 19).

Stronger potential growth is still hampered by low productivity. Low allocative efficiency, a cumbersome business environment and an inefficient public sector continue to have a major impact on total factor productivity (see Annex 9 and Annex 11). Labour productivity growth is low, especially for a converging economy. Medium-term productivity could be boosted by several measures included in the RRP, as explained in Chapter 2.

Macroeconomic imbalances have receded considerably. In November 2021, the Commission published its ninth Alert Mechanism Report (AMR 2022) under the Macroeconomic Imbalance Procedure (MIP see also Annex 17), which concluded that an In-Depth Review (IDR) was still warranted for Croatia. In the updated scoreboard including figures until 2020, the net international investment position (NIIP), unit labour cost (ULC) growth, house price growth and general government gross debt indicators were above their indicative thresholds. However, the 2022 in-depth review noted a fast resumption of the unwinding of imbalances after the crisis.

Graph 1.1: **GDP level 2014=100, HR vs EU and CEE**



Source: Eurostat

Croatia has significant regional disparities. There are large differences in GDP levels among Croatian counties, in particular between the capital and the rest of the country. In 2018 the City of Zagreb accounted for 34% of national GDP, while making up only 19.4% of the total population, according to the latest census. GDP per capita data shows that most of the population (67%) lives in areas with a GDP per capita below 60% of the EU average. In 2020 GDP per capita in Zagreb was 118% of the EU average, while in in the counties in eastern Croatia, it was only 36% of the EU average. These disparities reflect very diverse labour market outcomes. There has also been a significant decrease in the overall population, with poorer regions, especially in eastern Croatia, having experienced much higher rates of decline due to outmigration and ageing (see Annex 15).

Labour-market and social conditions are improving

Despite recent progress, the Social Scoreboard, supporting the European Pillar of Social Rights, has identified employment and social challenges in Croatia. Croatia's economic recovery before the pandemic showed a steady increase in the employment rate (persons aged 20 to 64). Unscathed during the crisis, in 2021, the employment rate increased to 68.2%, but remained well below the EU average of 73.1% in the 20-64 age group.. Job preservation schemes, supported by EU programmes (1), helped cushion the impact on employment levels. However, the COVID-19 pandemic strongly affected youth employment, which suffers from particularly high levels of involuntary temporary employment (25% in 2020, compared to the EU average of 12.2.% in the 15-29 age group). The not in education, employment and training (NEET) rate is still above the EU average (14.9% against 12.3% in the EU in 2021 in the 15-29 age group), as is the disability employment gap (32.9% against 24.5% in the EU in 2020;see Annex 12. In 2021, the unemployment rate increased marginally to 7.6%, 1 percentage point above the all-time low reached in 2019 and above the EU average of 7%.

Employment rates vary widely across educational attainment groups. In 2021, the employment rates of low-qualified and medium-skilled workers (respectively 421% and 67.1% against 54.9% and 72.8% in the EU) considerably lagged behind that of high-qualified workers (84.1% against 85% in the EU), and all are clearly lower than the EU average. This drives home the importance of strengthening upskilling and reskilling measures, to help reduce skills mismatches and the resulting severe labour shortages. There are also significant regional differences in employment levels and security, as well as in education, with differing participation rates in early childhood education and care, and lower percentages of pupils in general secondary schools (see Annex 13).

Poverty levels in Croatia are falling, but challenges in the social protection system remain. In 2020, the at-risk-of-poverty or social exclusion (AROPE) rate further decreased. It is currently slightly below the EU average (at 20.5% against 21.9% in the EU). The poverty gap and the persistent at-risk-of-

(1) European Instrument for temporary support to mitigate unemployment risks in an emergency, European Social Fund, Recovery assistance for cohesion and the territories of Europe

poverty rate in 2020 (28.0% and 12.9% respectively) remained well above the EU average.

Public finances are on the adjustment path

According to the 2022 Spring Economic Forecast, the general government deficit is set to narrow to 2.9% of GDP in 2021 from 7.4% in 2020, thanks largely to Croatia's strong economic recovery and the gradual phasing out of support measures, such as tax exemptions and deferrals, liquidity and job support measures. For the next period, the general government deficit is expected to remain below the 3% threshold, reaching 1.8% in 2023.

The general government debt to GDP ratio is expected to decrease in the coming years. It is projected to decrease from 79.8% in 2021 to around 73% in 2023. The projected fall in the debt ratio is driven by the denominator effect of Croatia's solid GDP growth, the phasing out of COVID-19-related measures, falling interest rate expenditures and some other debt-reducing stock flow adjustments.

With the COVID-19 measures being phased out, the implementation of the reforms and investments in the RRP will also help weather the pandemic's budgetary impact. In 2020 and 2021 the government took several measures to support job preservation and ensure liquidity for companies. Immediate support for economic activity is no longer needed, so the focus has shifted to boosting long-term economic growth by implementing the RRP, whose investment will be funded through EU grants amounting to 11.6% of GDP (see Chapter 2).

The government adopted an ambitious fiscal package aimed at taming inflationary pressures. Against background of an increase on April 1st administered prices of gas and electricity for households, the Croatian government adopted various measures to address the impact of rising energy prices on vulnerable households and companies. The package (amounting to 0.6% of GDP) comprises various measures including a reduction of the VAT rate on gas and various other energy products, direct subsidies to households and small and medium-sized enterprises (SMEs), social transfers to vulnerable groups (with special one-off measures for pensioners with income below a certain threshold), as well as a limitation of the charges incorporated in the electricity prices and subsidies for farmers and fishermen.

Croatia is improving its position on the SDG scoreboard

Croatia performs well or is improving on most of the UN Sustainable Development Goals (SDGs). Croatia's performance is improving on most SDG indicators for environmental sustainability, fairness of economy and society, productivity and macroeconomic stability. However, significant challenges remain in a few areas, such as gender equality (SDG 5) and good health and well-being (SDG 3). Annex 1 contains more detailed information.

Economic spill-overs of Russia's invasion of Ukraine

Direct effects of the war in Ukraine on the Croatian economy are limited due to its relatively weak exposure. In 2021, goods exports to Ukraine and Russia accounted for 0.4% and 1.2% of total exports respectively, while input-output data shows that both the value-added generated in Croatia to meet final demand in Russia and the value-added generated in Russia to meet final demand in Croatia are among the lowest in the EU. Financial flows data shows that Russian assets in Croatia in 2020 stood at 1% of GDP, while Croatian assets in Russia stood at only 0.1% of GDP. The resolution of the Croatian subsidiary of Sberbank, which was

sold to Hrvatska Poštanska Banka has further reduced the Croatian financial sector's exposure to shocks. There are some large Croatian companies exporting or operating factories in Russia, but none of them are so exposed to this market to lead to severe liquidity problems. Russian and Ukrainian tourists accounted for around 2% of foreign tourists in Croatia in 2021. Croatia's energy supply sources are relatively diversified and it does not depend heavily on Russian oil and gas (see Chapter 3). As Croatia has its own fertilizer production it is somewhat less exposed to potential bottlenecks than some other EU countries. However, some upward pressures on food prices are expected.

The Croatian authorities implemented various measures to tame the pressures on inflation coming from surging energy prices. In March 2022, the HICP inflation rate in Croatia accelerated to 7.3% (compared to 7.8% in the EU and 7.4% in euro area, with the strongest contribution coming from energy prices. Similar developments are expected in the upcoming months. The government reacted to mitigate the inflationary impact of increased energy prices by first temporarily limiting the price of petrol and diesel, followed by a temporary cut in the excise duties on these products and at beginning of March with the fiscal package detailed in the previous section.

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

The Croatian RRP is an ambitious one (11.6% of GDP), aimed at accelerating the green and digital transitions and reinforcing Croatia's economic and social resilience. It also addresses long-standing challenges identified in the 2019 and 2020 country-specific recommendations and the 2030 National Development Strategy. It includes a total of 202 measures, 146 crucial investments and 76 reform measures planned to be implemented by the end of 2026, to help Croatia emerge stronger from the COVID-19 pandemic and the two major earthquake events that hit the regions of Zagreb and Banovina in 2020.

Key challenges for the green transition include the reduction of the number of regulatory and administrative barriers to higher uptake of renewable energy sources and to swiftly make the building stock more energy-efficient. Reforms and investments aim to promote energy efficiency and renewable energy, including hydrogen, sustainable mobility, circular economy, protection of biodiversity and ecosystems and efficient water management. The largest contributions are allocated to the energy-efficient renovation of buildings, including those damaged in the 2020 earthquakes, as well as to sustainable and innovative mobility. Other important investments target projects implemented by companies to improve their performance as regards energy and resource-efficiency, as well as to contribute to the development of the green economy.

The digital transition will be accelerated by developing digital processes and skills in public administration, education and business, as well as by reducing remote rural areas' digital divide. Flagship investments concern the digitalisation of businesses contributing to business competitiveness and productivity, and to the development of workers' digital skills to increase their employability. Digital investments in the public sector target the setting up of online procedures and e-services, the digitalisation and improvement of the efficiency of public administrations, in particular in the areas of health and justice. Other important actions are planned for the education, transport and energy sectors, as well as for research and innovation (R&I). Digital connectivity and infrastructure in remote rural areas will be increased to reduce the urban-rural digital divide.

Economic growth and resilience will be boosted by leveraging private investment, lifting regulatory and administrative constraints and accelerating the development of the green and digital economies. On top of financial support for micro, small and large companies, mostly through revolving funds, priority is being given to the development of an innovation framework, as well as to the development and sustainability of various sectors such as tourism, agriculture and transport. New business plans will be designed and infrastructure built to deliver on Croatia's circular economy and energy efficiency objectives.

Policy measures and the development of appropriate skills are meant to match current and future labour market demand, with priority being given to the development of skills necessary for the green and digital transitions. A system of vouchers for re/upskilling and the uptake of new skills for the green and digital transitions will be developed. Active labour market policies will make vulnerable groups more competitive and employable, which is a priority in Croatia.

The conditions and attractiveness of R&I will be improved. Reforms and investments seek to consolidate the public science base,

incentivise high-quality research and improve the efficiency of R&I programmes, support research careers and attract foreign researchers, as well as helping students develop the necessary skills and making them employable. The plan includes measures for creating closer links between relevant R&I actors and the business sector. Even so, there is still room for improvement.

Structural improvements are planned to make public administration, the judiciary and state assets more efficient and resilient. Civil service procedures will be revamped to recruit, retain and remunerate civil servants, as well as to improve the quality of public services at all levels of government. Reforms will be implemented to better design, implement and evaluate policies and projects, improve the prevention of and fight against corruption and conflict of interest, and put in place reliable management and control of EU funds. Other measures are aimed at strengthening the fiscal and anti-money laundering framework, increasing the efficiency of public procurement and improving the management of state assets. In the area of the judiciary, the handling of court proceedings will be reformed and improved, and electronic communication in courts further developed. Reforms will be implemented to optimise the system of local and regional government units, through functional mergers of business processes and digitalisation and physical mergers.

The efficiency, quality, accessibility and financial sustainability of the Croatian healthcare system will be strengthened. Key measures include the restructuring and reorganisation of essential health services, further use of joint procurement, standardisation of services and education of specialised medical staff. Access to primary healthcare and tele-medicine in rural, remote and island areas will be further developed.

The reduction of poverty and integration of vulnerable groups is being tackled by developing family and community-based services. Policies aimed specifically at integrating and activating vulnerable groups will be improved by enhancing the capacity of the Public Employment Service. Reforms aim to support the process of deinstitutionalization for vulnerable groups and transition to community-based long-term care, the creation of harmonised quality standards in specific services, and the strengthening of social mentoring services. In parallel, investment in infrastructure, equipment and capacities will ensure a better access to institutional care for the persons whose well-being depends on it.

Reforms are planned to develop early childhood education, extend mandatory instruction time, and better align secondary, tertiary and adult education with market needs. Reforms will be implemented to ensure that all children between age 4 and primary school age, especially those from socio-economically disadvantaged groups, are able to participate in early childhood education and care, with a positive impact on the activity rate and work-life balance of parents, primarily mothers. Mandatory instruction time will be increased at primary and lower secondary education levels. Reforms are also planned to improve the quality and labour market relevance of secondary vocational, higher and adult education.

Territorial fragmentation will be tackled by strengthening territorial and social cohesion. Planned measures include expanding and upgrading the network infrastructures connecting Croatia's regions, as well as developing new electronic services and improving the regulatory framework. Significant investment is planned to renovate and rehabilitate public sewerage networks and water supply networks, and improve flood protection in risk areas. The management and physical infrastructure of road, rail and maritime transport will be improved to make less densely populated areas more accessible and better connected. The power grids of six islands will be connected to the mainland. Priority will be given in the overall implementation of the plan to investment in less developed regions.

Box 1 lists key reforms and investments expected to be completed by the end of 2022. The list is not exhaustive and further

quantitative information on the RRP and its implementation is presented in Annex 2.

Box 1:

Key deliverables expected under the RRP in 2022

- Increasing the uptake of renewable energy sources and introducing a premium-based support system, including adopting the Hydrogen Development Strategy
- Improving the legal framework for the water sector
- Adopting the Waste Management Plan for the period 2023-2028
- Adopting the National Plan for the Development of Railway Infrastructure and the National Management Plan for Railway Infrastructure and Service Facilities
- Adopting a new Agricultural Land Consolidation Act
- Adopting the Strategy for the Development of Sustainable Tourism by 2030
- Amending the centralised system of selection for state administration
- Providing incentives for voluntary functional and physical mergers of local government units
- Adopting the Digital Croatia Strategy 2030
- Adopting amendments to the Act on the Protection of People Reporting Irregularities
- Adopting the model for the financing of early childhood education and care
- Adopting a new Science and Higher Education Act
- Adopting the Law on Tackling Undeclared Work and the new Labour Law
- Adopting the new Social Welfare Act
- Amending the HealthCare Act and Compulsory Health Insurance Act
- Adopting the Programme for the Energy Renovation of Public Sector Buildings 2021-2030
- Getting the contracts signed for the energy renovation of public and multi-dwelling buildings

FURTHER PRIORITIES AHEAD

The RRP addresses important national challenges, through the adoption and implementation of structural reforms and key investments, as outlined in Section 2. However, in line with the economic snapshot presented in Section 1 and the annexes to this report, as well as in the context of recent international developments, Croatia faces a set of additional challenges, presented below. Complementary structural measures will be needed to address these.

Stepping-up decarbonisation and the green transition

Croatia's economy is decarbonising, with varying speed across sectors. Croatia is one of the EU countries with the lowest greenhouse gas emissions (GHG) per capita. However, its GHG intensity continues to be significantly higher than the EU average (513 against 271 g CO_2-eq/EUR_{2015} in the EU in 2020). Croatia has set itself an indicative 2030 target of reducing its GHG emissions in the EU Emission Trading System sectors by at least 43% by 2030 compared to 2005 levels. This is in line with the current target for the EU as a whole. If all additional measures are to be implemented, Croatia is expected to overachieve its binding 2030 GHG emissions reduction target for sectors not currently covered by the EU ETS (buildings, road transport, small industry, waste, agriculture, to name a few). However, given the share of these emissions is higher than in the EU-27 (68% against 61% in 2019), there is room for further reductions.

The Croatian long-term strategy for decarbonisation adopted in June 2021 does not contain a commitment to climate neutrality by 2050. Instead, it sets a goal of reducing GHG emissions by between 57% and 73% (excluding land use and forestry) compared to the 1990 baseline. Given the increased EU-level ambition set in the Climate Law and the objective of climate neutrality by 2050, Croatia will probably face a much steeper reduction curve after 2030.

Croatia has exceeded its 2020 target for renewable energy, bur the uptake of wind and solar power remains slow. With a 31% share of energy from renewable sources in gross final consumption of energy in 2020, Croatia has outperformed the 20% EU target. Removing bottlenecks to investments in renewable energy, and further investments in electricity grid and storage, are key for reducing fossil fuel dependency and the exposure to energy price shocks. This would also help decrease dependency on imported energy, including Russian gas. In addition, Croatia has committed to a phase-out of coal for electricity production by 2033. The deployment of small-scale renewables in particular can help diversify supply while providing attractive returns on investment for households and local communities. However, a stronger roll-out is hampered by administrative, regulatory, and technical barriers, including lengthy procedures for administrative authorization and permitting, insufficient or unattractive access to the grid, complex and uncoordinated procedures not systematically aligned with Croatia's energy development strategy. The development of "one-stop shops" would improve the transparency and understanding of the procedures for the households. Association with energy communities is hindered by a rigid framework, inter alia among other things from the point of view of limits to energy sharing and the requirement to stay within the administrative bounds of fragmented local government units. On a larger scale, the regulations for ground-mounted photovoltaic systems are overly restrictive, hindering efficiency and reducing the scope for

investments. Permitting-granting procedures are rigid, particularly for changes to the projects.

Croatia has a diversified structure of gas and oil supply and depends less than other EU countries on imports of Russian hydrocarbons. In 2021, the imports from Russia via Hungary, accounted for 22% of the country's total natural gas supply, whereas 57% of gas was imported from other countries through the liquid natural gas terminal (operating since the beginning of 2021) and 21% was produced domestically. .. The dependence on Russian oil is also not pronounced: 9% of total oil imports comes from Russia, while the majority of oil supply is covered by imports from Azerbaijan (37%), Italy (14%) and Slovenia (11%) (2) (3).

Croatia has significant potential to increase its energy efficiency, in particular in the building sector. Its building renovation rate is currently low, with 0.7% in 2020. However, it has stepped-up its investment plans for energy renovation in private and public buildings, aiming to reach a renovation rate of 3% by 2030 (4). While achieving the latter is a necessary step to achieve the objectives of decarbonisation of the building stock (5), a further acceleration seems warranted by the new geopolitical developments. Current investments to improve the energy efficiency in the building sector rely heavily on grants and subsidies (6); the pace of renovation would be accelerated by the use of other financial and fiscal instruments such as favourable loans and public guarantees, tax exemptions and tax reductions or mixed schemes with support from the private sector. In part due to the relatively ineffective incentive scheme, much of the renovation efforts result in only minor energy efficiency improvements (below the threshold of what is considered energy-efficient renovation). Meanwhile, Croatia is faring relatively well in terms of light and medium renovation. As a whole, energy efficiency measures reduce energy consumption, and therefore can help reduce dependence on Russian fossil fuels.

The transport sector continues to be the largest contributor to GHG emissions, accounting for more than 27% of total emissions in 2019 (22% in the EU). There has been a sharp increase in the emissions in recent years and they are projected to continue to rise. The share of renewable energy sources in the transport sector (5.9 % in 2019) is also one of the lowest in the EU, and well below the 2020 target of 10%. The transport sector is, along with agriculture and industry, a major contributor to air pollution, which continues to be a concern in spite of improvements in recent years (see Annex 5). Stepping-up investments and incentives to promote sustainable public transport would help reduce greenhouse gas emissions. In particular, the share of rail passenger use is less than half of the average level in Western European countries.

The uptake of electric vehicles is still very slow because purchasing incentives, subsidies and car scrapping schemes are limited. The share of newly registered electric cars (battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) is one of the lowest in the EU, with 1.47% for BEV and 0.62% for PHEV in 2020 (7) Stimulating the purchase of zero-emission vehicles coupled with the further roll-out of adequate and matching recharging and refuelling infrastructure would support a faster uptake. Discouraging the use of older vehicles in

(2) Eurostat sources

(3) An important share of HR's total oil imports is refinery feedstock. HR is highly dependent on Russian imports for these, with 72% of total refinery feedstock imports coming from Russia.'

(4) This is a significant improvement compared to past and current trends: see Castellazzi, L., Zangheri, P., Paci, D., Economidou, M., Labanca, N., Ribeiro Serrenho, T., Zancanella, P. and Broc, J., Assessment of second long-term renovation strategies under the Energy Efficiency Directive, 2019, JRC114200.

(5) See Zangheri, P., Armani, R., Kakoulaki, G., Bavetta, M., Martirano, G., Pignatelli, F. and Baranzelli, C., Building energy renovation for decarbonisation and Covid-19 recovery, 2020, JRC122143.

(6) 2021 JRC report on Progress of the Member States in implementing the Energy Performance of Buildings Directive.

(7) EEA, 2020, https://www.eea.europa.eu/data-and-maps/figures/new-electric-vehicles-by-country

business and corporate fleets could also contribute to reducing GHG emissions.

Progress on the circular economy and waste management is crucial for Croatia's green transition. The circular (secondary) use of materials in Croatia was 4.8% in 2014 and 5.1% in 2020, compared to the EU average of 12.8%. Croatia has started implementing circular economy-related reforms such as the adoption of a new Waste Management Act in July 2021 and the update of the National Waste Management Plan 2017-2022. However, it still has no comprehensive circular economy strategy.

Croatia has improved its waste and water management practices in recent years, but significant challenges remain. The municipal recycling rate has improved strongly in recent years. However, it was still well below the EU average in 2020 (34.3% against 47.8% in the EU), and the 2020 target of 50%. Irregular and substandard landfills continue to operate, including ones where municipal waste is landfilled without any treatment. Targeted investments and reforms to upgrade the existing recycling and waste treatment infrastructure, would help accelerate the transition to a more circular and resource-efficient economy. Water pollution also remains a challenge, mainly due to the inadequate practices in the agricultural sector and discharges not connected to the sewerage network.

Targeted taxation policies could improve environmental sustainability. Environmental taxes already play an important role in Croatia's tax mix, including, for example, landfill taxes in the revised waste management plan 2017-2022. Extending tax policies to the water sector or introducing emissions-based taxes could accelerate climate and energy transitions.

Croatia is among the most biodiverse EU countries, but is struggling to maintain its ecosystems in good condition and to restore good conditions in them. The territorial protection network is largely complete, with 36.7% of the national land area of Croatia covered by Natura 2000 in 2021 (against an average of 18.1% in the EU). However, in 2018, only 39.2% of habitat assessments and only 7.1% of Croatia's protected species showed good conservation status. Investment needs are estimated at EUR 1.25 billion for 2021-2027 to improve the management of Natura 2000 sites, better protect species and restore habitats, including those that are important for climate change mitigation and adaptation.

Croatia is one of the Member States more vulnerable to climate risks. A swift implementation of the newly adopted Strategy on Climate Change Adaptation is of utmost importance when it comes to the capacity to adapt to droughts and floods, the reduction of water levels, forest fires and heatwaves. In this context, Croatia's extensive reliance on hydropower as a source of renewable energy may pose a long-term risk with regard to electricity generation. Within the Multi-annual Financial Framework 2021-2027, funds will allow Croatia to enhance climate change adaptation, risk prevention and disaster resilience. Amongst other things, the goal is to improve fire protection and strengthen the risk management system in order to increase resilience to natural and man-made disasters through the strengthening of all civil protection components.

Addressing the demographic and labour-market challenges

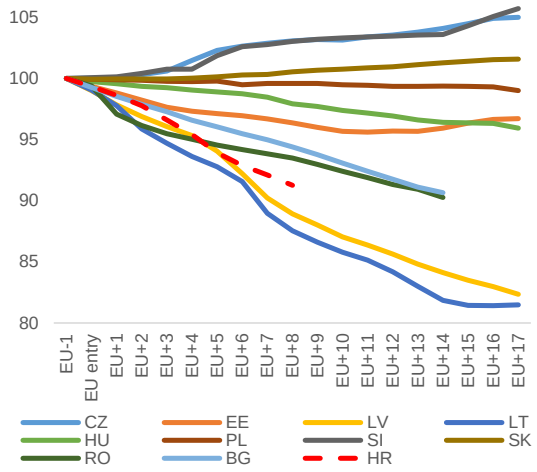
Croatia's labour market is facing challenges related to the strong population decline. According to the first results of the 2021 census, Croatia's population has dropped to 3.89 million, well below the projected levels due to emigration, and low birth rates resulting in an ageing population. Croatia's population decline since joining the EU has been steeper than other EU countries' population decline. The recent deceleration of net outward migration from Croatia can be attributed in part to greater immigration (see Graph 3.1).

Negative population trends can have major impacts on key economic variables.

These include potential growth, the sustainability of pension and healthcare systems, and labour productivity. The impacts' relevance depends mainly on the age and education level of those who migrate.

Addressing the brain drain could help alleviate Croatia's negative demographic trends and boost economic growth. In 2020, the share of 20-64 year-old citizens born in Croatia, but living in a different EU country, was the third highest in the EU (117 per 1000 population) for all education levels and the fifth highest for those with tertiary education (20 per 1000 population). Both groups' increases over the last decade are among the highest in the EU (8). This has resulted in labour shortages, particularly in small and medium-sized enterprises, while employment in research and development remains low. (9). Total R&D expenditure as % of GDP at national level was one percentage point less than the EU27 average in 2020 (1.3% against 2.3%), while being unequally distributed across regions. The share of doctoral graduates remained below the EU average in 2021 (48.1%), with a worrying decline between 2014 and 2021 (10). In 2021, ICT specialists accounted for a lower percentage of the workforce in Croatia than the EU average (3,6% against 4.5%) (see Annex 8) (11). Dedicated measures to address this problem would help reduce the brain drain and contribute to economic growth and contributing to achieve the 2030 EU headline target on employment.

Graph 3.1: **Population trends post-EU accession: HR and CEE10**



Source: Eurostat, CBS, Commission estimate

Tackling late payments

Late payments have been a major issue in Croatia's economy. Only 35% of business-to-business payments were made on time in Croatia in the fourth quarter of 2020; 45% of Croatian SMEs consider payment delays to be one of their three biggest problems (compared to 35% in the EU (12). It took SMEs on average 66 days to get paid in 2021, compared to 54.6 for the EU. Such long payment delays tend to spread across the economy: when businesses are paid late, they delay payments to their own suppliers. This has a knock-on effect on other supply chains. Late payments due to debtors' liquidity challenges (5% above the EU average) are expected by 53% of Croatian businesses, with 57% saying they have accepted longer payment terms than they are comfortable with (compared to 49% on average in the EU) (13).

Late payments are particularly problematic in the public sector. The average number of days it took for payments from the public sector-to-business was 59

(8) Knowledge Centre on Migration and Demography (KCMD) Data Portal

(9) World bank (2020): National Development Strategy Croatia 2030 Croatia 2030: Roadmap for a Better Future

(10) European Innovation scoreboard, 2021

(11) Digital Economy and Society Index, 2022

(12) Flash Eurobarometer of February-April 2020

(13) Intrum (2021), *European Payment Report 2021*: https://www.intrum.com/publications/european-payment-report/european-payment-report-2021/

compared to 50 days for business-to-business payments and 29 days in consumers-to-business transactions. This indicates that actual payments in the public sector are 29 days above the 30-day limit in the Late Payments Directive. Although the RRP addresses some structural deficiencies through more efficient procurement procedures, there is a need to closely monitor developments in the healthcare sector where the issue is particularly problematic, not only for liquidity in the economy but also for mid-term fiscal sustainability.

KEY FINDINGS

Croatia's Recovery and Resilience Plan (RRP) includes measures to address a series of its structural challenges, through:

- Supporting to the green transition through the promotion of energy efficiency and renewable energy, sustainable mobility, the circular economy, the protection of biodiversity and ecosystems, efficient water management, investments in building renovations, and the decarbonisation of businesses

- Accelerating of the digital transition through the development of digital processes and skills in public administration, education and business, the reduction of the digital divide between urban and remote rural areas

- Boosting the economic recovery by leveraging private investment, lifting regulatory and administrative constraints, accelerating the development of the green and digital economies, as well as incentivising research and innovation (R&D&I)

- Implementing labour market policies and developing appropriate skills to match current and labour market demand, prioritising the development of skills necessary for the green and digital transitions

- Further improving the efficiency and resilience of public administration, the judiciary and the management of state assets

- Strengthening the quality, efficiency, accessibility, and financial sustainability of the healthcare system

- Developing family and community-based services to reduce poverty and the integration of vulnerable groups

- Increasing the share of children in early childhood education and care, of pupils going to one-shift schools in primary school, and to general secondary school. Improving the quality of education and increasing its labour market relevance.

- Tackling territorial fragmentation to strengthen the territorial and social cohesion.

Beyond the reforms and investments in the RRP, Croatia would benefit from the following:

- Reinforcing and complementing reforms and investment to decarbonise the economy, contain energy consumption, enhance energy-efficiency and step-up the green transition

- Fostering investments in renewable energy, including at small-scale and from sources such as wind, solar and geothermal, to reduce fossil fuel dependency and exposure to energy price shocks

- Taking action to reverse the demographic decline and brain-drain, while meeting its labour market needs

- Tackling late payments to businesses, since these are detrimental to economic recovery and growth.

ANNEXES

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ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

This annex assesses Croatia's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 Sustainable Development Goals (SDGs) and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fighting inequalities and tackling climate change, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set which was developed to monitor progress on SDGs in an EU context.

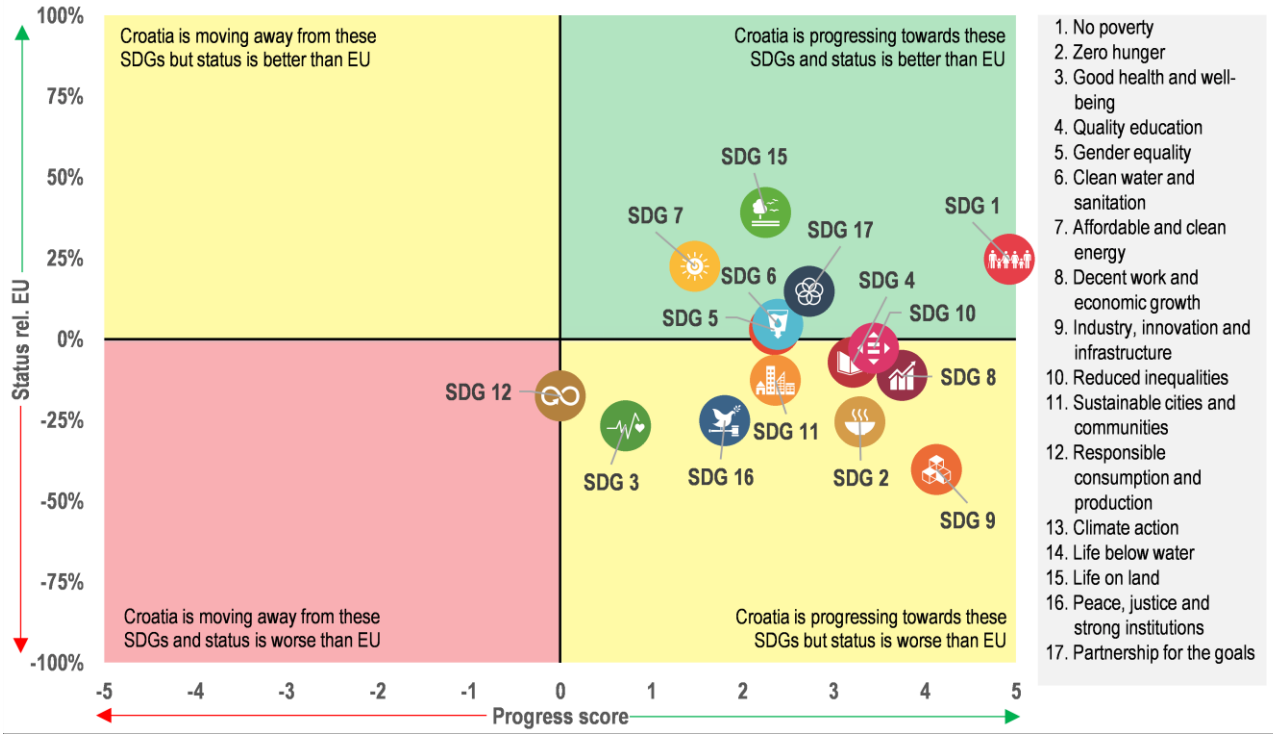
Croatia performs very well or is improving on most SDG indicators related to *environmental sustainability* (SDG 2, 6, 7, 9, 11, 12, 13, 15). The 'Share of renewable energy in gross final energy consumption' improved from 29 % in 2015 to 31 % in 2020, significantly above the EU average (22.1 %). However, there was no improvement in primary or final energy consumption per head. On 'Sustainable cities and communities' (SDG 11), Croatia has made some progress with regards to the share of recycling of municipal waste, from 18 % in 2015 to 34,3 % in 2020, but is still well below the EU average on this indicator (47.8% in 2020). RRP measures to improve waste management practices further aim to increase performance in this area.

Croatia performs very well or is improving on most SDG indicators related to *fairness (SDG 1, 2,* 4, 8, 10), but needs to catch up on others (SDG 3, 5). On "Quality education", Croatia increased participation in early childhood education and care (from 3 years until the start of primary school) to 78,8% in 2020, up from 69,5% in 2015. Its tertiary education rate has increased from 32.8% in 2016 to 35,7% in 2021, but remains below the EU average of 41.2%. It has also improved on several employment indicators, such as the 'long-term unemployment rate' (6,6% in 2016, 2.1 % in 2021) or the 'Number of young people not in employment or education' (19.9 % in 2016, 14.9% in 2021), notwithstanding a recent deterioration in both indicators (see Annex 12 for further explanations). Component 4.1 of the RPP includes measures to further tackle unemployment, notably by implementing of active labour market policies (ALMP) to boost employment and self-employment linked to the green and digital transitions.

Croatia is improving on SDG indicators related to productivity (SDG 4, 8, 9). However, research and development and innovation (R&D&I) remain a challenge. Croatia is steadily increasing its share of gross development product allocated to R&D activities (from 0.83% in 2015 to 1.25% in 2020), but it remains among poor R&D performers compared to the EU average of 2.32%. Croatia has made significant progress on the indicator 'Share of households with very high capacity network (VHCN) coverage', increasing from 10.1% in 2015 to 51,7% in 2021. The number of people with at least basic digital skills is above the EU average (63% compared to 54% in 2021). Investments under component 2.3 of the RRP will further improve Croatia's digital infrastructure, while dedicated measures under component 3.2 will enhance R&D&I.

Croatia is improving on some SDG indicators related to macroeconomic stability (SDG 8, 16). It has improved on most indicators related to 'economic growth' and 'employment' (SDG 8). For example, it has increased its investment share of GDP from 19.3% in 2015 to 22.3% in 2020, reaching the EU average. Components 2.6 and 2.9 of the RRP include measures to better prevent and penalise corruption, in particular locally. Strengthening the fiscal framework further is expected to further enhance macroeconomic stability.

Graph A1.1: **Progress towards SDGs in Croatia in the last five years**



(1) For detailed datasets on the various SDGs see the annual ESTAT report 'Sustainable development in the European Union', https://ec.europa.eu/eurostat/product?code=KS-09-22-019; Extensive country specific data on the short-term progress of Member States can be found here: Key findings - Sustainable development indicators - Eurostat (europa.eu).

Source: Eurostat, latest update of 28 April 2022. Data mainly refer to 2015-2020 and 2016-2021.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU efforts to support its recovery from the COVID-19 pandemic, fast forward the twin transition and strengthen resilience against future shocks. Croatia submitted its recovery and resilience plan (RRP) on 14 May 2021. The Commission's positive assessment on 8 July and Council's approval on 28 July paved the way for disbursing € 6.3 billion in grants under the Recovery and Resilience Facility over the period 2021-2026. The financing agreement and operational arrangement were signed on 22 September 2021 and 9 February 2022 respectively. Croatia submitted its first payment request in March 2022. The key elements of the Croatian RRP are set out in Table A2.1.

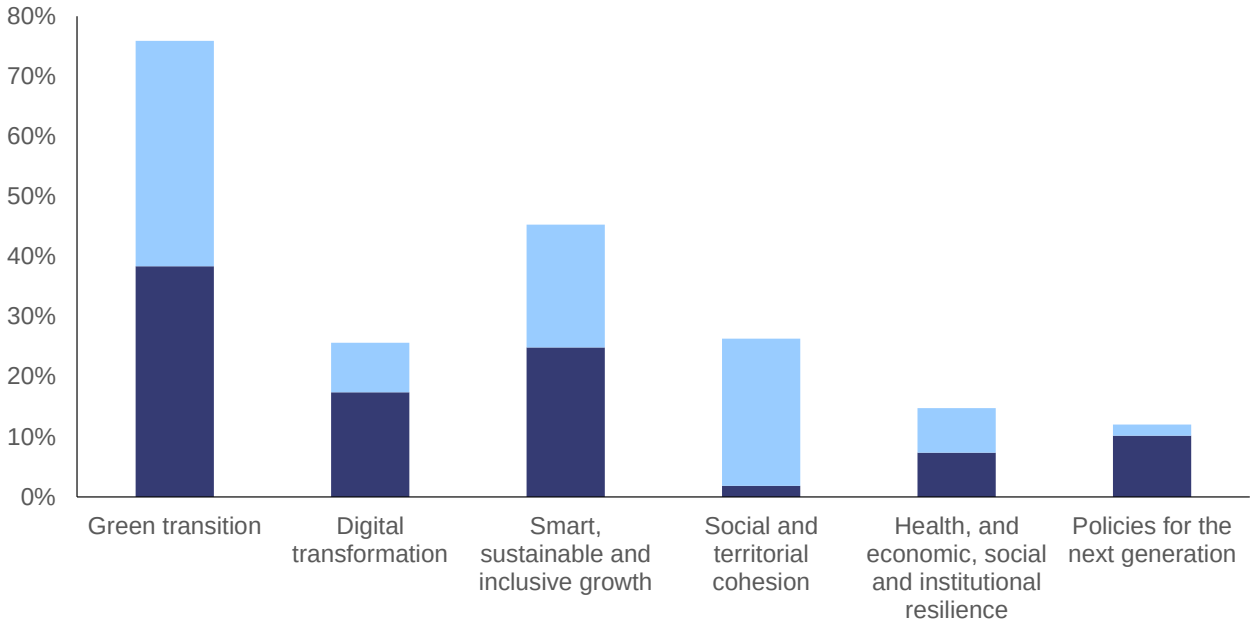
The progress Croatia has made in implementing its plan is published in the Recovery and Resilience Scoreboard**.** The Scoreboard also gives a clear overview of the progress made in implementing the RRF as a whole, in a transparent manner.

Table A2.1:**Key elements of the Croatian RRP**

Total allocation	EUR 6.3 billion in grants (11.6% of 2019 GDP)
Investments and Reforms	146 investments and 76 reforms
Total number of Milestones and Targets	372
Estimated macroeconomic impact (1)	Raise GDP by 1.9%-2.9% by 2026 (0.6% in spillover effects)
Pre-financing disbursed	EUR 818 million (September 2021)
First instalment	Croatia submitted its first payment request in March 2022

(1) See Pfeiffer P., Varga J. and in 't Veld J. (2021), "Quantifying Spillovers of NGEU investment", European Economy Discussion Papers, No. 144 and Afman et al. (2021), "An overview of the economics of the Recovery and Resilience Facility", Quarterly Report on the Euro Area (QREA), Vol. 20, No. 3 pp. 7-16.
Source: European Commission

Graph A2.1: **Share of RRF funds contributing to each policy pillar**

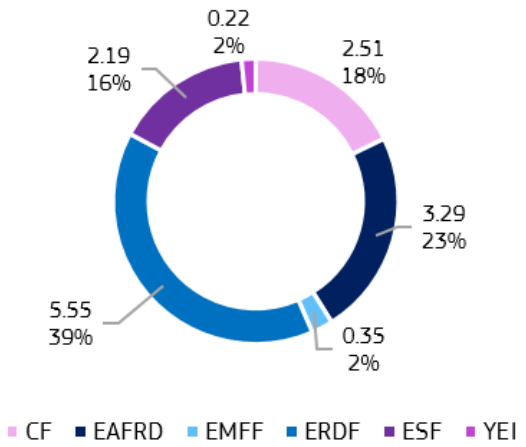


(1) Each measure contributes towards two policy areas of the six pillars, therefore the total contribution to all pillars displayed on this chart amounts to 200% of the estimated cost of the Croatian RRP. The bottom part represents the amount of the primary pillar, the top part the amount of the secondary pillar. https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html
Source: European Commission

The EU's budget of more than EUR 1.2 trillion for 2021-2027 is the investment lever to help implement EU priorities. Underpinned by an additional amount of about EUR 800 billion through NextGenerationEU and its largest instrument, the Recovery and Resilience Facility, it represents significant firepower to support the recovery and sustainable growth.

In 2021-2027, EU cohesion policy funds (14**) will support long-term development objectives in Croatia by investing EUR 9.26 billion (**15**).** This includes EUR 185.9 million from the Just Transition Fund directed at alleviating the socio-economic impacts of the green transition in the most vulnerable regions. The 2021-2027 cohesion policy funds partnership agreement and programmes take into account the 2019-2020 country-specific recommendations and investment guidance provided as part of the European Semester. In addition, Croatia will benefit from EUR 3.4 billion support for the 2023-27 period from the Common Agricultural Policy, which supports social, environmental, and economic sustainability and innovation in agriculture and rural areas, contributing to the European Green Deal, and ensuring long-term food security.

Graph A3.1: **ESIF 2014-2020 Total budget by fund (EUR billion, %)**



Source: European Commission

In 2014-2020, the European Structural and Investment Funds (ESIF) allocated EUR 12.09 billion (16**) from the EU budget to Croatia, with another EUR 14.10 billion from national financing** (Graph 3.1). This represents around 4.07% of GDP for 2014-2020 annually and 91.07% of public investment (17). By 31 December 2021, 122% of the total ESIF budget was allocated to specific projects and 59% was reported as spent, leaving EUR 5.84 billion to be spent by the end of 2023 (18). Among the 11 objectives, the most relevant ones for cohesion policy funding in Croatia are improving capacity for R&D&I, the competitiveness of SMEs, environmental protection and resource efficiency, network infrastructure in transport and energy and sustainable and quality employment, social inclusion, education and vocational training (EUR 4.1 billion in total). By the end of 2020, cohesion policy investments supported over 12 000 firms, created over 12 000 new direct jobs, and reduced the energy consumption of public buildings by more than 81 million kWh/year.

Cohesion policy funds are already substantially contributing to the Sustainable Development Goals (SDGs). In Croatia, Cohesion policy funds are supporting 11 of the 17 SDGs with up to 95% of the expenditure contributing to the attainment of the goals.

The REACT-EU instrument (Recovery Assistance for Cohesion and the Territories of Europe) under NextGenerationEU provided EUR 561.5 million of additional funding to 2014-2020 cohesion policy allocations for Croatia to ensure a balanced recovery, boost convergence and provide vital support to regions following the impact of the coronavirus outbreak. REACT-EU support in Croatia focuses on the purchase of vaccines, making a contribution to short-term work schemes, improving primary healthcare, strengthen education, training and skills development, promote energy efficiency,

(14) European Regional Development Fund (ERDF), European Social Fund+ (ESF+), Cohesion Fund (CF), Just Transition Fund (JTF), Interreg.

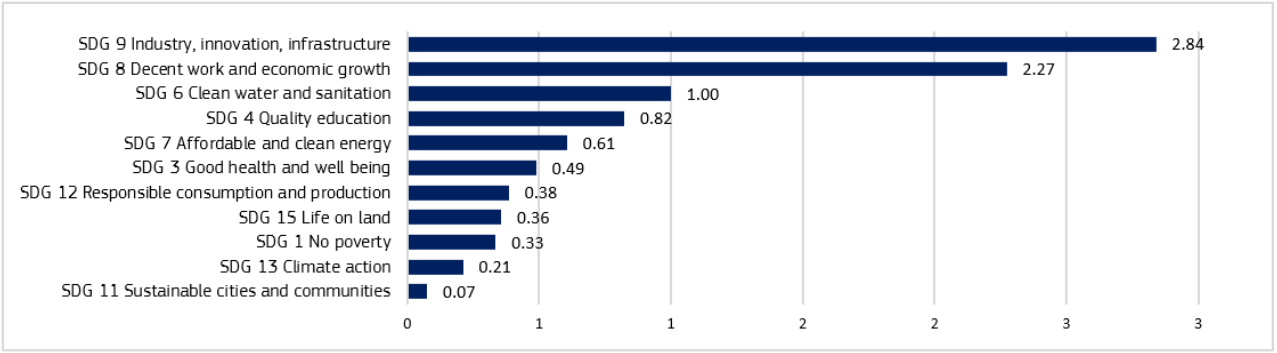
(15) Current prices, source: Cohesion Open Data.

(16) ESIF includes cohesion policy funds (ERDF, ESF+, CF, Interreg), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF). According to the 'N+3 rule', the funds committed for the years 2014-2020 must be spent by 2023 at the latest (by 2025 for EAFRD). Data source: Cohesion Open Data, cut-off date 31.12.2021 for ERDF, ESF+, CF, Interreg; Cut-off date 31.12.2020 for EAFRD and EMFF.

(17) Public investment is gross fixed capital formation plus capital transfers, general government.

(18) Including REACT-EU. ESIF data on https://cohesiondata.ec.europa.eu/countries/HR

Graph A3.2: **Cohesion policy contribution to the SDGs (EUR billion)**



Source: European Commission

support business competitiveness and reduce material deprivation with direct food deliveries.

The Coronavirus Response Investment Initiative (19**) provided the first EU emergency support to Croatia in relation to the COVID-19 pandemic.** It introduced extraordinary flexibility enabling Croatia to re-allocate resources to meet immediate public health needs (EUR 47 million) and support enterprises (EUR 388 million). For instance, Croatia shifted resources to purchase protective equipment and healthcare material, reinforce healthcare staff, support working capital and provide small loans for Small and Medium Enterprises (SMEs). Croatia also benefited from the temporary 100% EU financing of incurred cohesion policy measures, with approximately EUR 199 million in 2021 from 100% co-financing.

Croatia received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance short-time work schemes and similar measures. The Council granted financial assistance under SURE to Croatia in September 2020 for a maximum of EUR 1.02 billion, which was disbursed by 16 March 2021. SURE is estimated to have supported approximately 40% of workers and 35% of firms for at least one month in 2020 and 15% of workers and 20% of firms in 2021, primarily in accommodation and food services, manufacturing, and wholesale and retail trade. Croatia is estimated to have saved a total of EUR 0.16 billion on interest payments as a result of SURE's lower interest rates.

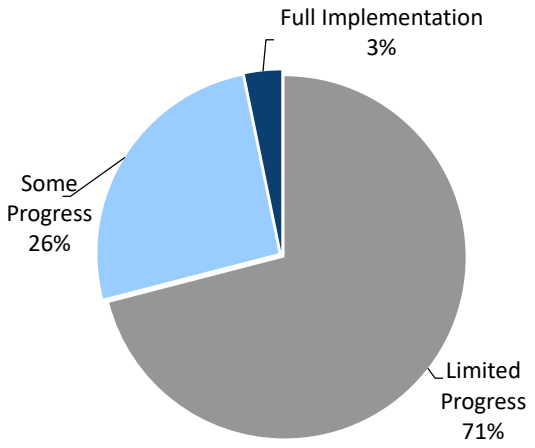
The Commission provides tailor-made expertise through the Technical Support Instrument (TSI) to help Croatia design and implement growth-enhancing reforms, including those needed for it to implement its RRP. Since 2016, Croatia has received assistance through 103 technical support projects. Projects delivered in 2021 aimed for example to raise awareness and standards of fighting bribery in international business transactions, improving the governance and management of state properties, or building capacity to carry out expenditure reviews. The Commission also assisted Croatia in implementing specific reforms in the RRP reforms, such as the implementation of reconstruction of buildings damaged by earthquakes. In 2022, new projects will start to support, among others, the fiscal sustainability of the healthcare system. The country will also benefit from additional support for implementing the RRP, for which it will transfer resources in accordance with Article 7 of the TSI Regulation, to strengthen its innovation procurement capacities, optimise and digitalise its administrative processes and promote foreign direct investments.

(19) Re-allocating ESIF resources according to Regulation (EU) 2020/460 of the European Parliament and of the Council of 30 March 2020, and Regulation (EU) 2020/558 of the European Parliament and of the Council of 23 April 2020.

ANNEX 4: PROGRESS IN THE IMPLEMENTATION OF COUNTRY-SPECIFIC RECOMMENDATIONS

The Commission assessed the 2019-2021 country-specific recommendations (CSRs) (20) **addressed to Croatia in the context of the European Semester.** The assessment takes into account the policy action taken by Croatia to date (21), as well as the commitments in the Recovery and Resilience Plan (RRP) (22). At this early stage of the RRP implementation, overall 29% of the CSRs focusing on structural issues in 2019 and 2020 have recorded at least "some progress", while 71% recorded "limited" (see Graph A4.1). Considerable additional progress in addressing structural CSRs is expected in the years to come with the further implementation of the RRP.

Graph A4.1: **Croatia's progress on the 2019-2022 CSRs (European Semester cycle)**



Source: European Commission

(20) 2021 CSRs: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H0729%2811%29&qid=1627675454457 2020 CSRs: EUR-Lex - 32020H0826(11) - EN - EUR-Lex (europa.eu)

2019 CSRs: EUR-Lex - 32019H0905(11) - EN - EUR-Lex (europa.eu)

(21) Incl. policy action reported in the National Reform Programme, as well as in the RRF reporting (bi-annual reporting on the progress with implementation of milestones and targets and resulting from the payment request assessment).

(22) Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRPs. The CSR assessment presented here takes into account the degree of implementation of the measures included in the RRP and of those done outside of the RRP at the time of assessment. Measures foreseen in the annex of the adopted Council Implementing Decision on the approval of the assessment of the RRP which are not yet adopted nor implemented but considered as credibly announced, in line with the CSR assessment methodology, warrant "limited progress". Once implemented, these measures can lead to "some/substantial progress" or "full implementation", depending on their relevance.

Table A4.1:**Summary of 2019, 2021 and 2022 CSRs**

Croatia	Assessment in May 2022*	RRP coverage of CSRs until 2026
2019 CSR1	**Limited Progress**	
Reinforce the budgetary framework and monitoring of contingent liabilities at central and local level.	Some Progress	Relevant RRP measures planned as of 2021, 2022, 2023 and 2025
Reduce the territorial fragmentation of the public administration and streamline the functional distribution of competencies.	Limited Progress	Relevant RRP measures planned as of 2022, 2023 and 2025
2019 CSR 2	**Limited Progress**	
Deliver on the education reform and improve both access to education and training at all levels and their quality and labour market relevance.	Some Progress	Relevant RRP measures planned as of 2021, 2022, 2025 and 2026
Consolidate social benefits and improve their capacity to reduce poverty.	Limited Progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2025
Strengthen labour market measures and institutions and their coordination with social services.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024, 2025 and 2026
In consultation with the social partners, introduce harmonised wage-setting frameworks across the public administration and public services.	Limited Progress	Relevant RRP measures planned as of 2023 and 2024
2019 CSR 3	**Limited Progress**	
Focus investment-related economic policy on research and innovation,	Limited Progress	Relevant RRP measures planned as of 2022, 2024, 2025 and 2026
sustainable urban and railway transport,	Limited Progress	Relevant RRP measures planned as of 2022, 2024, 2025 and 2026
energy efficiency, renewables and environmental infrastructure, taking into account regional disparities.	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025 and 2026
Increase the administration's capacity to design and implement public projects and policies.	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023 and 2025
2019 CSR4	**Limited Progress**	
Improve corporate governance in State-owned enterprises and intensify the sale of such enterprises and non-productive assets.	Limited Progress	Relevant RRP measures planned as of 2021, 2024 and 2026
Enhance the prevention and sanctioning of corruption, in particular at the local level.	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2024, 2025 and 2026
Reduce the duration of court proceedings and improve electronic communication in courts.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024 and 2026
Reduce the most burdensome parafiscal charges	Some Progress	Relevant RRP measures planned as of 2022, 2023 and 2024
and excessive product and services market regulation.	Some Progress	Relevant RRP measures planned as of 2022, 2023 and 2024
2020 CSR1	**Limited Progress**	
In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable
Enhance the resilience of the health system. Promote balanced geographical distribution of health workers and facilities, closer cooperation between all levels of administration and investments in e-health.	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025 and 2026

(Continued on the next page)

Table (continued)

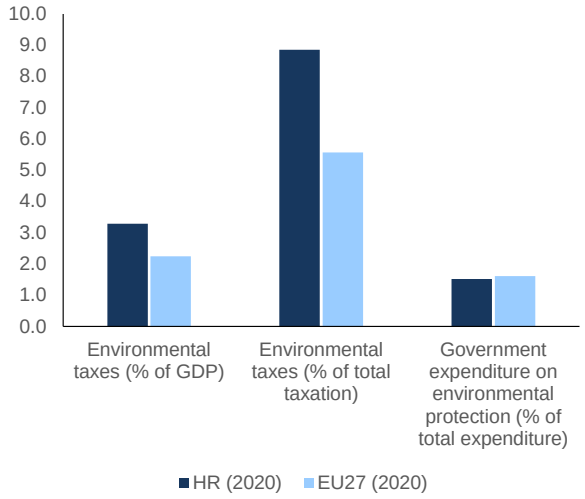
2020 CSR2	**Some Progress**	
Strengthen labour market measures and institutions	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024, 2025 and 2026
and improve the adequacy of unemployment benefits and minimum income schemes.	Limited Progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2025
Increase access to digital infrastructure and services.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024, 2025 and 2026
Promote the acquisition of skills.	Some Progress	Relevant RRP measures planned as of 2021, 2022, 2023 and 2026
2020 CSR 3	**Some Progress**	
Maintain measures to provide liquidity to small and medium-sized enterprises and the self-employed.	Full Implementation	Relevant RRP measures planned as of 2022, 2025 and 2026
Further reduce parafiscal charges and	Some Progress	Relevant RRP measures planned as of 2022, 2023 and 2024
restrictions in goods and services market regulation.	Some Progress	Relevant RRP measures planned as of 2022, 2023 and 2024
Front-load mature public investment projects	Limited Progress	Relevant RRP measures planned as of 2021 and 2022
and promote private investment to foster the economic recovery.	Limited Progress	Relevant RRP measures planned as of 2022, 2024, 2025 and 2026
Focus investment on the green and digital transition, in particular on environmental infrastructure,	Limited Progress	Relevant RRP measures being planned as of 2021, 2022, 2023, 2024, 2025 and 2026
sustainable urban and rail transport,	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2024, 2025 and 2026
clean and efficient production and use of energy	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025 and 2026
and highspeed broadband.	Some Progress	Relevant RRP measures planned as of 2023 and 2026
2020 CSR 4	**Limited Progress**	
Reinforce the capacity and efficiency of the public administration to design and implement public projects and policies at central and local levels.	Limited Progress	Relevant RRP measures planned as of 2021, 2022, 2023 and 2025
Improve the efficiency of the judicial system.	Limited Progress	Relevant RRP measures planned as of 2022, 2023, 2024 and 2026
2021 CSR1	**Some Progress**	
In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment. Keep the growth of nationally financed current expenditure under control.	Some Progress	Not applicable
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Substantial Progress	Not applicable
At the same time, enhance investment to boost growth potential *Pay particular attention to the composition of public finances, both on the revenue and expenditure sides of the budget, and to the quality of budgetary measures, to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, notably supporting the green and digital transition.*	Some Progress	Not applicable
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including by strengthening the coverage, adequacy, and sustainability of health and social protection systems for all.	Limited Progress	Not applicable

* See footnote 22

Source: European Commission

The European Green Deal intends to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. This Annex offers a snapshot of the most significant and economically relevant developments in Croatia in the respective building blocks of the European Green Deal. It is complemented by Annex 6 on the employment and social impact of the green transition and Annex 7 on the circular economy aspects of the Green Deal.

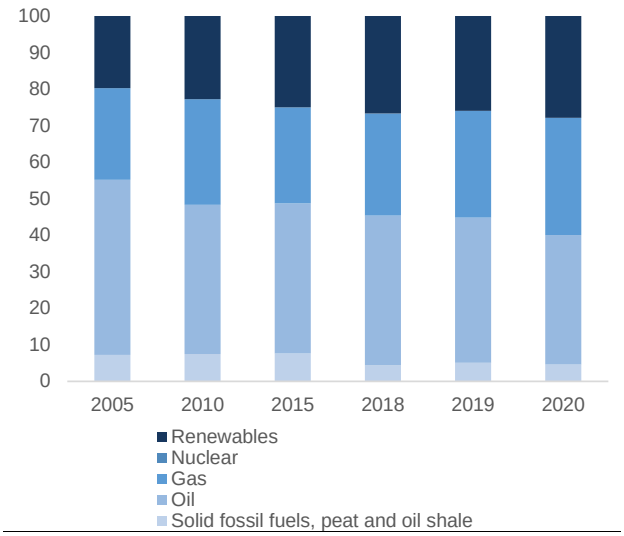
Graph A5.1: **Fiscal aspects of the green transition: taxation and government expenditure on environmental protection**



Source: Eurostat

Croatia has met its European greenhouse gas (GHG) reduction target for 2020 and is set to achieve the current 2030 target for non-ETS sectors. By 2020 the country's total GHG emissions had decreased considerably compared to 1990, although less than in the EU as a whole. However, GHG intensity continues to be significantly higher than the EU average. Croatia reached its the 2020 target for sectors not covered by the EU emissions trading system (such as buildings, road transport, agriculture, small industry and waste). If all additional measures are implemented, Croatia is set to achieve the current 2030 targets and to just about reach the proposed target under the Fit for 55 package for non-ETS sectors. However, its transport sector emissions, especially road transport emissions, have increased sharply in recent years and are projected to continue to increase, which poses a risk for meeting the latter target. In its long-term strategy for decarbonisation strategy, Croatia has set itself the goal of reducing GHG emissions by between 57% and 73% by 2050 (excluding land use and forestry) but faster decarbonisation will be needed for Croatia to be climate-neutral by 2050. Croatia has allocated 40.3% of its RRP to climate objectives. The plan also features crucial reforms and investments to step-up the transition to a more sustainable, low-carbon and climate-resilient economy (23).

Graph A5.2: **Thematic – Energy: Share in energy mix (solids, oil, gas, nuclear, renewables)**



(1) The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste..
Source: Eurostat

Croatia is recording high revenues from environmental taxation, both as a share of total taxation and compared to GDP. Of the environmental taxation categories, only tax collections on resources and pollution are smaller than in the EU on average (24). Government expenditure on environmental protection is a smaller share of total government expenditure in Croatia than in the EU on average. Croatia is exposed to climate related risks such as floods, wildfires or droughts that affect primarily agricultural, water and energy sectors. Due to the

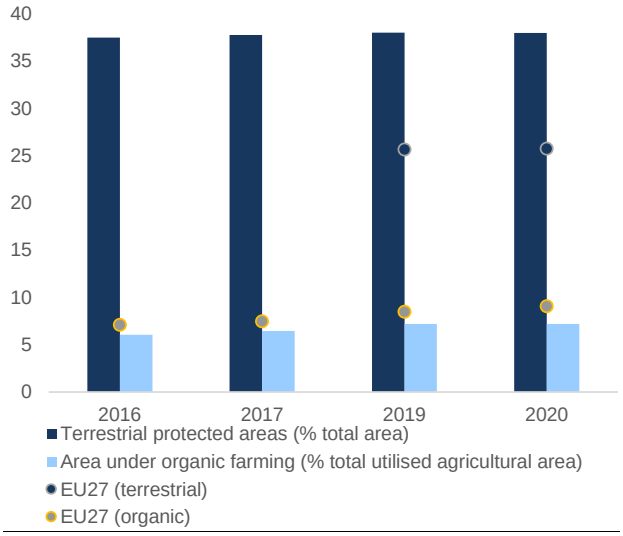
(23) The share of financial allocation contributing to climate objectives has been calculated using Annex VI of the RRF Regulation.

(24) For more information on taxation see Annex 18.

pronounced insurance gaps, public finances are also exposed to such risks.

Croatia's energy mix has improved in recent years, but remains heavily reliant on fossil fuels. The fossil component represents 67% of the mix (32% which is gas and 35% oil and petroleum products). In 2020, Croatia brought its share of energy from renewable sources to 28% in gross inland energy consumption. However, because of administrative barriers to permit-granting procedures for their deployment, wind and solar energy account for only 2.1% of the energy mix (13% and 1% respectively of the total installed electricity generation capacity), while solid biofuels represent 17% of the total energy mix. Lately, roughly two thirds of Croatia's electricity has been coming from renewables, predominantly hydropower (between 40% and 60% depending on whether it is a dry/moist year). In 2020 Croatia also relied on natural gas for 71% of its heat and on primary solid biofuels for up to 24%.

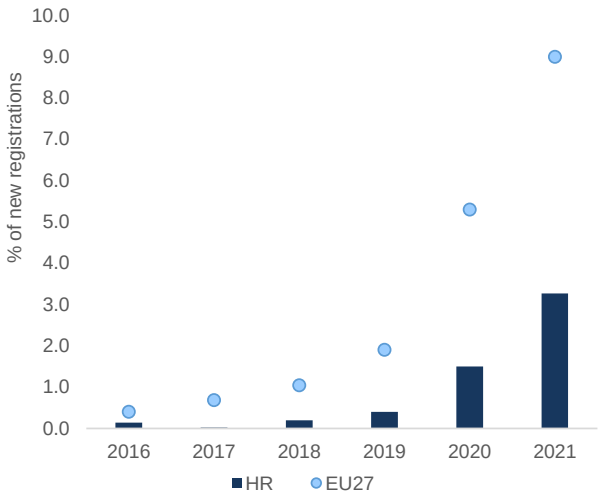
Graph A5.3: **Thematic – Biodiversity: Terrestrial protected areas and organic farming**



Source: For terrestrial protected areas data for 2018, and data for the EU average (2016, 2017) is lacking EEA (terrestrial protected areas) and Eurostat (organic farming).

In terms of biodiversity and ecosystem health, Croatia has a rich natural heritage, with an abundance of water, a remarkable coast, natural parks and diverse marine and terrestrial ecosystems. By 2021, 38.1% of the national land area of Croatia was covered by Natura 2000 (against an EU average of 25.74%). There are still gaps in the marine environment, but the land network can be considered largely complete. Nevertheless, data from 2018 show that only 39.2% of habitat assessments and only 7.1% of Croatia's protected species have a good conservation status. Croatian forests and wooded land cover 58% of its territory, more than 25% of the assessments of forests reveal bad to poor status.

Graph A5.4: **Thematic – Mobility: Share of zero emission vehicles (% of new registrations)**



(1) Zero emission vehicles (passenger cars) include battery and fuel cell electric vehicles (BEV, FCEV).
Source: European Alternative Fuels Observatory

In terms of pollution, the emissions of key air pollutants have decreased significantly in Croatia over the last few years, but Croatian air quality continues to give cause for concern. The latest available annual estimates from the European Environment Agency point to about 1,064 years of life lost per 100,000 inhabitants due to air pollution by PM2.5 fine particulate matter concentrations, and 42 years due to pollution by nitrogen dioxide concentrations.

Regarding the greening of mobility, there is room for improvement. There is still a lot of potential to increase the share of zero-emission passenger cars in new registrations in Croatia. Action should also be taken to further increase the speed of fleet renewal through scrapping schemes where support for the purchase of a zero-emission vehicle as a replacement of an old vehicle, with incentives also for the retrofitting of old vehicles, or measures to disincentivise the use of older vehicles in business and corporate fleets. There is a need to accelerate a shift towards more sustainable transport modes by increasing the number of passengers travelling by rail and

commuting by public transport and active modes, including by improving the quality of energy-efficiency of the fleet and of the services. Rail's modal share in passenger land transport is around 2.5%, well below the EU average (of 8%), while rail's modal share in freight land transport is 21%, slightly higher than the EU average of 19%. More must be done to complete the construction of the Trans-European Transport Network (TEN-T) core network by 2030, in particular the rail network, which is lagging behind in terms of modern connections and TEN-T compliance.

Table A5.1:**Indicators underpinning the progress on EU Green Deal from macroeconomic perspective**

						Target	Distance		Target	Distance	
			2005	2019	2020	2030	WEM	WAM	2030	WEM	WAM
Progress to policy targets	Non-ETS GHG emission reduction target [1]	MTCO2 eq; %; pp [1a]	18.1	-8%	-9%	-7%	5	11	-17%	-5	1

									National contribution to 2030 EU target
			2005	2016	2017	2018	2019	2020	
Progress to policy targets	Share of energy from renewable sources in gross final consumption of energy [1]	%	24%	28%	27%	28%	28%	31%	36%
	Energy efficiency: primary energy consumption [1]	Mtoe	9.1	8.0	8.3	8.2	8.2	7.8	8.2
	Energy efficiency: final energy consumption [1]	Mtoe	7.2	6.6	6.9	6.9	6.9	6.5	6.9

			CROATIA						EU		
			2015	2016	2017	2018	2019	2020	2018	2019	2020
Fiscal and financial indicators	Environmental taxes (% of GDP)	% of GDP	3.3	3.4	3.5	3.5	3.5	3.3	2.4	2.4	2.2
	Environmental taxes (% of total taxation)	% of taxation [3]	9.1	9.3	9.4	9.4	9.2	8.9	6.0	5.9	5.6
	Government expenditure on environmental protection	% of total exp.	1.36	1.41	1.37	1.45	1.44	1.52	1.66	1.70	1.61
	Investment in environmental protection	% of GDP [4]	0.50	0.52	0.49	0.47	-	-	0.42	0.38	0.41
	Fossil fuel subsidies	EUR2020bn	0.11	0.14	0.16	0.15	0.16	-	56.87	55.70	-
	Climate protection gap [5]	score 1-4	2.4 out of 4 (slight increase from historical level of 2.3). This is a low/medium risk category (4 being a high risk).								
Climate	Net GHG emissions	1990 = 100	75	76	79	76	76	75	79	76	69
	GHG emissions intensity of the economy	kg/EUR'10	0.53	0.52	0.51	0.48	0.46	0.49	0.32	0.31	0.30
	Energy intensity of the economy	kgoe/EUR'10	0.19	0.18	0.18	0.17	0.17	0.17	0.12	0.11	0.11
Energy	Final energy consumption (FEC)	2015=100	100.0	100.8	105.1	104.0	104.9	98.3	103.5	102.9	94.6
	FEC in residential building sector	2015=100	100.0	99.1	98.5	94.6	92.1	93.7	101.9	101.3	101.3
	FEC in services building sector	2015=100	100.0	102.3	107.1	109.1	109.5	99.2	102.4	100.1	94.4
Pollution	Smog-precursor emission intensity (to GDP) [4]	tonne/EUR'10 [6]	1.85	1.74	1.72	1.65	1.58	-	0.99	0.93	-
	Years of life lost caused due to air pollution by PM2.5	per 100.000 inh.	1110	1219	1216	1337	1064	-	863	762	-
	Years of life lost due to air pollution by NO2	per 100.000 inh.	105	60	77	23	42	-	120	99	-
	Nitrate in ground water	mg NO3/litre	-	-	-	-	-	-	21.7	20.7	-
Biodiversity	Terrestrial protected areas	% of total	-	37.5	37.8	-	38.0	38.0	-	25.7	25.7
	Marine protected areas	% of total	-	9.1	-	-	9.5	-	-	10.7	-
	Organic farming	% of total utilised agricultural area	4.9	6.1	6.5	6.9	7.2	7.2	8.0	8.5	9.1

			2000-2006	2006-2012	2012-2018	00-06	06-12	12-18
Biodiversity	Net land take	per 10,000 km2	16.5	8.0	7.0	13.0	11.0	5.0

			2015	2016	2017	2018	2019	2020	2018	2019	2020
Mobility	GHG emissions intensity of transport (to GVA) [7]	kg/EUR'10	0.72	0.69	0.75	0.73	0.81	0.92	0.89	0.87	0.83
	Share of zero emission vehicles [8]	% in new registrations	0.2	0.1	0.0	0.2	0.4	1.5	1.0	1.9	5.4
	Number of plug-in electric vehicles per charging point		2	3	2	2	2	5	8	8	12
	Share of electrified railways	%	37.3	37.2	37.2	37.2	37.1	-	55.6	56.0	-
	Congestion (average number of hours spent in road congestion per year by a representative commuting driver)		26.0	23.7	23.7	24.0	23.1	-	28.9	28.8	-

			Year	HR	EU
Digital	Share of smart meters in total metering points [9] - electricity	% of total	2018	2.3	35.8
	Share of smart meters in total metering points [9] - gas	% of total	2018	0.0	13.1
	ICT used for environmental sustainability [10]	%	2021	74.9	65.9

(1) The 2030 non-ETS GHG target is based on the Effort Sharing Regulation. The F55 targets are based on the COM proposal to increase EU's climate ambition by 2030. Renewables and Energy Efficiency targets and national contributions under the Governance Regulation (Regulation (EU) 2018/1999). (2) Distance to target is the gap between Member States' 2030 target under the Effort Sharing Regulation and projected emissions, with existing measures (WEM) and with additional measures (WAM) respectively, as a percentage of 2005 base year emissions. (3) Percentage of total revenues from taxes and social contributions (excluding imputed social contributions). Revenues from the ETS are included in environmental tax revenues (in 2017 they amounted to 1.5% of total environmental tax revenues at the EU level). (4) Covers expenditure on gross fixed capital formation to be used for the production of environmental protection services (i.e. abatement and prevention of pollution) covering all sectors, i.e. government, industry and specialised providers. (5) The climate protection gap indicator is part of the European adaptation strategy (February 2021), and is defined as the share of non-insured economic losses caused by climate-related disasters.
(6) Sulphur oxides (SO2 equivalent), Ammonia, Particulates < 10µm, Nitrogen oxides in total economy (divided by GDP).
(7) Transportation and storage (NACE Section H). (8) Zero emission vehicles include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (9) European Commission Report (2019) "Benchmarking smart metering deployment in the EU-28".
(10) European Commission (2021). Each year the DESI is re-calculated for all countries for previous years to reflect any possible change in the choice of indicators and corrections to the underlying data. Country scores and rankings may thus differ compared with previous publications..

Source: Eurostat, JRC, European Commission, EEA, EAFO.

The green transition not only encompasses improvements to environmental sustainability, but also includes a significant social dimension. While measures in this regard include the opportunity for sustainable growth and job creation. It must also be ensured that no one is left behind and all groups in society benefit from the transition. Croatia's green transition can benefit from recent policy measures and has the potential to support quality job creation; at the same time, lower-income groups are likely to face the biggest challenges.

Croatia's Recovery and Resilience Plan (RRP) outlines important reforms and investments to support a fair green transition. The adoption of new active labour market policy (ALMP) measures is expected to boost employment and self-employment linked to the green and digital transitions, and increase the competitiveness and employability of the labour force in line with labour market needs. Such measures will be implemented in combination with a newly established voucher system, which aims to support lifelong learning and the acquisition of new skills, in particular green and digital skills. In both cases, the focus will be on the activation of vulnerable groups in the labour market. As part of the initiative related to the renovation of buildings, the RRP envisages the publication of a National Skills Development Plan. This plan will promote the acquisition of green skills in the context of Croatia's energy and post-earthquake renovation, on the basis of a review and by adapting existing educational programmes. ESF+ (25) and Just Transition Fund programmes will provide further green transition support. Croatia's integrated national energy and climate plan (NECP) of December 2019 only partially addresses the impact of transition on the economy, the labour market and socio-economic conditions. It points to the development of a programme for the elimination of energy poverty, including: (i) the provision of consulting services for energy-poor citizens, (ii) monitoring energy poverty and (iii) increasing energy efficiency. However, the programme does not report on the specific number of households affected.

Croatia has slightly reduced its carbon footprint. Key energy-intensive industries remain below the EU average, but the size of the green economy is slightly above the EU average and has further potential to create quality job. The greenhouse gas (GHG) emissions intensity of the Croatian economy decreased slightly between 2015 and 2020 (in terms of gross value added), but is 78% above the EU average. The average carbon footprint per worker in Croatia amounts to 10.44 tons of GHG emissions (against 13.61 in the EU) (see Figure 1). Petroleum refineries and fossil-fuel-based energy production have been identified as declining sectors (26) and transformations are expected in the chemicals and cement sectors, which will require the upskilling and reskilling of workers. Croatia's energy-intensive industry, including metals, chemicals and paper (27), provides jobs for 2% of the total employed workforce, for whom upskilling and reskilling opportunities will be particularly important (see Annex 15). The environmental goods and services sector already employs a relatively large share of the employed population (2.3% against 2.2% in the EU) (28). Wind and solar energy potential as well as energy efficiency improvements offer further opportunities for green jobs (29). At the same time, however, labour shortages have been identified in the energy sector (30).

As for the social aspect of the green transition, ensuring access to transport and energy services appears to be overall less of a challenge in Croatia, but the risk of poverty in rural areas remains high. A relatively high share of the population at risk of poverty lives in rural areas (24.2% against 18.7% in the EU) (31). The share of the population unable to keep their homes warm enough decreased from 9.9% in 2015 to 5.7%, below the EU average of 8.2% in

(25) European Social Fund +

(26) SWD(2021) 275 final.

(27) 2020 European Semester: Overview of Investment Guidance on the Just Transition Fund 2021-2027 per Member State (Annex D)

(28) There is currently no common EU-wide definition of green jobs. The environmental goods and services sector (EGSS) accounts only report on an economic sector that generates environmental products, i.e. goods and services produced for environmental protection or resource management.

(29) https://publications.jrc.ec.europa.eu/repository/handle/JRC126047

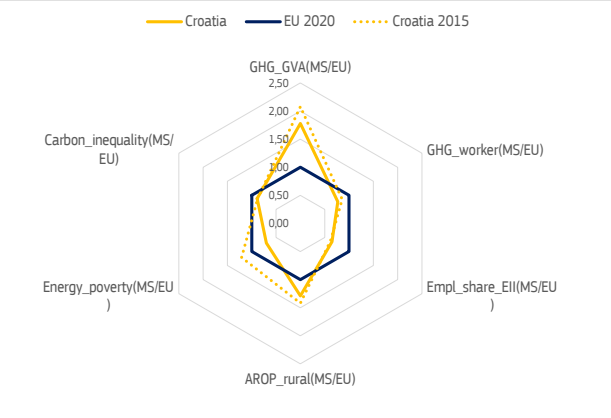
(30) Eurofound, 2021

(31) Based on COM(2021) 568 final (Annex I) As as a proxy for potential transport challenges in the context of the green transition (e.g. due to vulnerability to fuel prices) (see COM(2021) 568 final).

2020. Lower-income groups are affected the most (see Figure 2). Consumption patterns vary across the population: the average carbon footprint of the top 10% of emitters is about 5 times higher than that of the bottom 50% of the population (5.3 times in the EU).

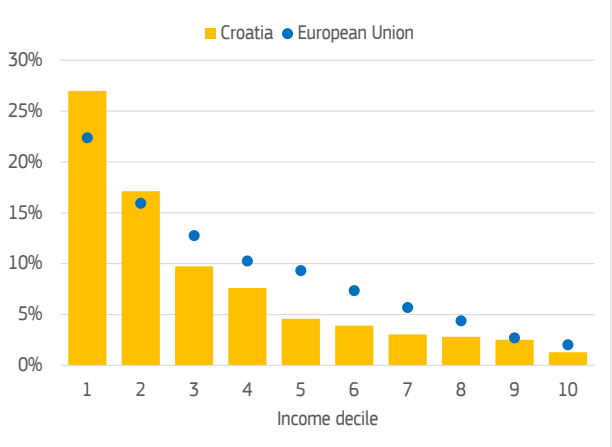
Tax systems are the key to ensuring a fair transition towards climate neutrality (32**).** Croatia's revenues from total environmental taxes increased slightly from 3.33% of the Gross Domestic Product (GDP) in 2015 to 3.46% in 2019, but decreased again to 3.28% in 2020 (against 2.24% in the EU). The labour tax wedge for low-income earners (33) decreased from 32.8% in 2015 to 31.3% in 2019 (also 31.3% in 2021), compared to 31.9% in the EU in 2021 (see Annex 18).

Graph A6.1: **Fair green transition challenges**



(1) Numbers are the normalised indicator performance, signifying factors relative to EU27 average
Source: Eurostat, World Inequality Database

Graph A6.2: **Energy poverty by income decile**



Source: Eurostat EU-SILC survey (2020)

(32) COM(2021) 801 final.

(33) Tax wedge for a single earner at 50% of the national average wage (Tax and benefits database, European Commission/OECD).

ANNEX 7: RESOURCE EFFICIENCY AND PRODUCTIVITY

The efficient use of resources is key to ensuring competitiveness and open strategic autonomy, while minimising the environmental impact. The green transition presents a major opportunity for European industry by creating markets for clean technologies and products. It will have an impact across the entire value chains in sectors such as energy and transport, construction and renovation, food and electronics, helping create sustainable, local and well-paid jobs across Europe.

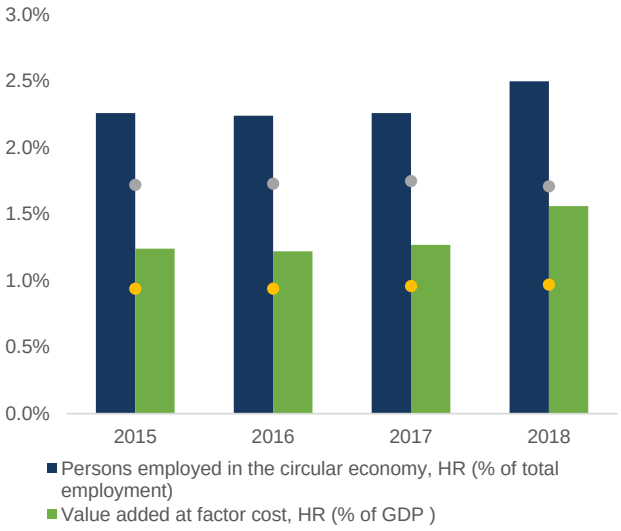
Croatia has made some progress in circular secondary material usage over the past decade (5.1% in 2020). However, it is still lagging significantly behind the EU average (12.8%). It has included in its Recovery and Resilience Plan (RRP) circular economy-related reforms such as a new legal framework to facilitate waste prevention, reuse and recycling, reform to make the tourism sector more sustainable, with a new tourism model that contributes to the green transition and adheres to circular economy principles, and the development of a framework for the design and implementation of green urban renewal strategies aimed at developing models for the circular management of space and buildings. Nevertheless, Croatia would benefit from a more comprehensive circular economy strategy.

Resource productivity in Croatia (1.8 purchasing power standards (PPS)/kg in 2020) remains significantly below the EU average (2.23 PPS/kg) and has not been improving over in recent years. Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help minimise negative impacts on the environment and reduce dependency on volatile raw material markets.

Croatia's economic growth is not yet decoupled from its generation of waste. It has made slow but steady progress over the past decade on increasing its municipal recycling rate. Despite this, the municipal recycling rate for 2020 was 34.3%, far below the 2020 target of 50% recycling of municipal waste. Moreover, there are indications that a significant number of irregular and substandard landfills, including municipal waste being landfilled without any treatment, operate in Croatia, undermining the country's green transition. Despite efforts to close and remedy illegal dumping sites, there remains scope for improvement.

A successful transition to a circular economy requires social and technological innovation as full circular economy potential can only be reached when social and technological innovation are implemented across all value chains. This makes eco-innovation an important enabling factor for the circular economy. Croatia ranked 21st in the list of EU countries with a total score of 86 in the Eco-Innovation Scoreboard of 2021.

Graph A7.1: **Economic importance and expansion of the circular economy: employment and value added in the Circular Economy sectors**



Source: Eurostat

Table A7.1:**Selected resource efficiency indicators**

SUB-POLICY AREA	2015	2016	2017	2018	2019	2020	EU27	Latest year EU 27
Circularity								
Resource Productivity (Purchasing power standard (PPS) per kilogram)	1.7	1.7	1.9	1.9	1.9	1.8	2.2	2020
Material Intensity (kg/EUR)	0.6	0.6	0.5	0.5	0.5	0.6	0.4	2020
Circular Material Use Rate (%)	4.6	4.6	5.2	5.0	5.2	5.1	12.8	2020
Material footprint (Tones/capita)	12.0	12.3	13.1	13.5	14.2	-	14.6	2019
Waste								
Waste generation (kg/capita, total waste)	-	1286	-	1355	-	-	5234	2018
Landfilling (% of total waste treated)	-	47.6	-	42.0	-	-	38.5	2018
Recycling rate (% of municipal waste)	18.0	21.0	23.6	25.3	30.2	34.3	47.8	2020
Hazardous waste (% of municipal waste)	-	3.2	-	3.1	-	-	4.3	2018
Competitiveness								
Gross value added in environmental goods and services sector (% of GDP)	1.6	1.5	1.5	1.4	1.4	1.5	2.3	2019
Private investment in circular economy (% of GDP)	0.2	0.1	0.1	0.2	-	-	0.1	2018

Source: Eurostat

The Digital Economy and Society Index (DESI) monitors EU Member States' digital progress. The areas of human capital, digital connectivity, the integration of digital technologies by businesses and digital public services reflect the Digital Decade's four cardinal points (34). This Annex describes Croatia's DESI performance.

The Recovery and Resilience Plan (RRP) includes digital investments of a total share of 20.4%. A large part of these digital investments focuses on the digitalisation of public administration to increase the provision and quality of digital public services. There are also reforms and investments in area of connectivity with dedicated measures to provide access to very high capacity networks in rural areas.

The lack of ICT specialists is a key human capital challenge for Croatia. ICT specialists account for a lower percentage of the workforce in Croatia than the EU average. The percentage of female ICT specialists is slightly above the EU average. The lack of specialists is also felt on the labour market with 68% (35) of businesses (compared to 55% in the EU) recruiting or trying to recruit ICT professionals reporting problems finding suitable candidates. Shortages of ICT specialists can directly limit businesses' capacity to innovate or provide new digital services and products.

Croatia has a mixed performance in digital connectivity. Fixed very high-capacity networks (VHCN) coverage including fibre to the premises is steadily increasing, however it is still significantly below the EU average. Penetration of 100Mbps services and the related broadband price index are both well below the EU average (16% compared to 41% at EU average and 57% compared to 73% at EU average). Croatia has assigned all 5G spectrum in the pioneer bands (5G readiness at 100%), but still is below EU average 5G coverage.

Croatian businesses perform well in integrating digital technology. The share of SMEs with at least a basic level of digital intensity is still below the EU average). However; Croatian businesses are taking good advantage of the opportunities in digital technologies offer. For example, the use of Artificial Intelligence and cloud are all above the EU average while the use big data has reached the same level as EU average.

Croatia is still underperforming in digital public services. Croatia scores below the EU average in terms of the availability and usage of digital online services, for both citizens and particularly on those for businesses. The usage of digital public services for citizens and for businesses stand at respectively at 69% (EU average of 75%) and 68% (EU average of 82%).

(34) 2030 Digital Compass: the European Way for the Digital Decade Communication, COM (2021) 118 final.

(35) Source: Eurostat – European Union Survey on ICT Usage and eCommerce in Enterprises

Table A8.1:**Key Digital Economy and Society Index Indicators**

Human capital	Croatia DESI 2020	Croatia DESI 2021	Croatia DESI 2022	EU DESI 2022	EU top-performance DESI 2022
At least basic digital skills	**NA**	**NA**	**63%**	**54%**	**79%**
% individuals			2021	2021	2021
ICT specialists	**3.2%**	**3.7%**	**3.6%**	**4.5%**	**8.0%**
% individuals in employment aged 15-74	2019	2020	2021	2021	2021
Female ICT specialists	**21%**	**18%**	**21%**	**19%**	**28%**
% ICT specialists	2019	2020	2021	2021	2021
Connectivity					
Fixed Very High Capacity Network (VHCN) (	**43%**	**47%**	**52%**	**70%**	**100%**
% households	2019	2020	2021	2021	2021
5G coverage (*)	**NA**	**0%**	**34%**	**66%**	**99.7%**
% populated areas		2020	2021	2021	2021
Integration of digital technology					
SMEs with at least a basic level of digital in	**NA**	**NA**	**50%**	**55%**	**86%**
% SMEs			2021	2021	2021
Big data	**10%**	**14%**	**14%**	**14%**	**31%**
% enterprises	2018	2020	2020	2020	2020
Cloud	**NA**	**NA**	**35%**	**34%**	**69%**
% enterprises			2021	2021	2021
Artificial Intelligence	**NA**	**NA**	**9%**	**8%**	**24%**
% enterprises			2021	2021	2021
Digital public services					
Digital public services for citizens	**NA**	**NA**	**69**	**75**	**100**
Score (0 to 100)			2021	2021	2021
Digital public services for businesses	**NA**	**NA**	**68**	**82**	**100**

(*) The 5G coverage indicator does not measure users' experience, which may be affected by a variety of factors such as the type of device used, environmental conditions, number of concurrent users and network capacity. 5G coverage refers to the percentage of populated areas as reported by operators and national regulatory authorities.

Source: Digital Economy and Society Index

This Annex provides a general overview of the performance of Croatian research-development and innovation system. According to the 2021 edition of the European Innovation Scoreboard[1], Croatia is an emerging innovator. It has been reducing the gap between it and the EU innovation leaders. Total Research and Development (R&D) intensity reached 1.25% of the Gross Domestic Product (GDP) in 2020, still below the EU average but with a clear upward trend. More balanced regional distribution of R&D expenditure remains a challenge.

The framework conditions for businesses to innovate and invest in R&D require further improvement. Progress has been made and businesses' R&D expenditure increased to 0.6% in 2020 from 0.4% in 2015, but it remains fairly low (EU average 1.53%). Public sector support for businesses has been especially low (0.038% in 2019, compared to the EU average of 0.196%), although signs of significant relative increases have been noted since 2018. To improve these conditions and promote business innovation, Recovery and Resilience Facility reforms aim, among other things, to analyse the existing R&D tax incentive scheme and amend and complement the legal framework for R&D tax incentives to encourage the private sector to increase its R&D investment intensity.

Croatia continues to produce scientific outputs of modest quality and struggles to foster science-business cooperation. The share of the country's scientific publications among the top 10% most cited scientific publications worldwide has been increasing since 2013 (4.0% in 2018, compared to 2.7% in 2010), but remains below the EU average (9.9% in 2018). Regarding science-business cooperation, public-private scientific co-publications have increased, but are also still below the EU average (8.1% compared to the 2020 EU average of 9.05%). Public expenditure on R&D financed by businesses (% of GDP) remains notably low. To tackle these and related challenges, the Croatian RRP contains wide-ranging reforms, revamping the funding system of universities and public research organisations, strengthening research careers, and improving the efficiency of R&D and innovation support programmes in order to promote knowledge transfer and the commercialisation of innovation. Building on the RRP, additional measures would be welcome to strengthen the links between relevant R&I actors (such as the Croatian Science Foundation and HAMAG-BICRO). This would help to encourage science-business cooperation and pave the way towards a stable steering of R&I programmes.

Table A9.1:**Key research, development and innovation indicators**

Croatia	2010	2015	2018	2019	2020	Compounded annual growth 2010-20	EU average
Key indicators							
R&D Intensity (GERD as % of GDP)	0.74	0.83	0.95	1.08	1.25	5.4	2.32
Public expenditure on R&D as % of GDP	0.41	0.40	0.49	0.55	0.65	4.7	0.78
Business enterprise expenditure on R&D (BERD) as % of GDP	0.32	0.42	0.46	0.53	0.6	6.3	1.53
Quality of the R&I system							
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	2.7	3.6	4.0	:	:	4.9	9.9
PCT patent applications per billion GDP (in PPS)	0.8	0.4	0.5	:	:	-6.9	3.5
Academia-business cooperation							
Public-private scientific co-publications as % of total publications	7.5	6.9	7.7	8.5	8.1	0.7	9.05
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.030	0.033	0.007	0.080	0.030	-0.02	0.054
Human capital and skills availability							
New graduates in science & engineering per thousand pop. aged 25-34	11.8	12.8	15.0	15.9	:	5.0	16.3
Public support for business enterprise expenditure on R&D (BERD)							
Total public sector support for BERD as % of GDP	0.013	0.005	0.024	0.038	:	12.5	0.196
Green innovation							
Share of environment-related patents in total patent applications filed under PCT (%)	16.7	12.8	7.4	:	:	-9.6	12.8
Finance for innovation and Economic renewal							
Venture Capital (market statistics) as % of GDP	0.003	0.006	0.006	0.004	0.006	7.3	0.054
Employment in fast-growing enterprises in 50% most innovative sectors	2.6	3.3	4.0	4.2	:	5.5	5.5

Source: European Commission, OECD

Productivity growth is a critical driver of economic prosperity, well-being and convergence over the long run. A major source of productivity for the EU economy is a well-functioning single market, where fair and effective competition and a business friendly environment are ensured, in which small and medium enterprises (SMEs) can operate and innovate without difficulty. Businesses and industry rely heavily on robust supply chains and are facing bottlenecks that bear a negative impact on firms' productivity levels, employment, turnover and entry/exit rates. This may impact the Member States' capacity to deliver on Europe's green and digital transformation.

Croatia's labour productivity lags behind that its regional peers (36). Despite having increased from 2019 to 2021 (1.7% a year against 0.5% for the EU), its level remains below the EU average and varies widely across regions. Croatia has a low performance in skills shortages (19% of firms report labour shortages against 14% in the EU), total factor productivity, and allocative efficiency and this impacts on its productivity gap.

Despite improvements, Croatia performs poorly when it comes to its business environment. Late payments are a major barrier to SMEs' resilience and growth (48% of SMEs experienced payment delays in the past 6 months against 32% for the EU). They were the second most significant barrier for SMEs and start-ups according to the 2020 Eurobarometer (37). Access to finance has improved thanks to the successful loan programmes of the Croatian Bank for Reconstruction and Development, and a cooperative project with the European Investment Fund establishing a new venture capital fund. However, access to equity remains constrained, especially for SMEs (0.06 compared to 0.18 for the EU). The Recovery and Resilience Plan (RRP) includes measures to create financial instruments for micro-businesses and SMEs, as well as equity and quasi-equity instruments. Although an average public procurement performer compared to the EU, Croatia's score for SME participation in public procurement procedures is below the EU average. To address this situation, the Croatian RRP includes measures on drafting guidance to improve SMEs' participation in public procurement.

Although the Croatian economy is well integrated into the single market, barriers remain. Despite recent reforms, several professions (lawyers, architects, engineers, tax advisers) face higher regulatory restrictions than their EU counterparts. The RRP is expected to tackle such restrictions by removing at least 50 regulatory requirements based on Croatia's second and third action plans on the liberalisation of services markets.

Overall, the Croatian economy has been relatively less affected than other EU economies by global supply chain disruptions. This is because Croatia relies a bit less on extra-EU imports and depends less on key raw materials than the EU average. This is partly explained by the low share of manufacturing in its economy. Only 15% of firms reported shortages in materials or equipment in 2021 (against. 26% for the EU average). Public investments have been sustained by the uptake of EU funds, but business investment remained lower than in the EU (2020), partly because the business environment is so restrictive, because the state is so present in the economy and Croatia's venture capital market is so underdeveloped. The RRP includes measures to reduce para-fiscal charges burdening businesses and the number of non-strategic state-owned companies.

(36) Regional peers include HU, PL, SI

(37) Flash Eurobarometer 486

Table A10.1:**Key Single Market and Industry indicators**

POLICY AREA	INDICATOR NAME	DESCRIPTION	2021	2020	2019	2018	2017	Growth rates	EU27 average(1)
HEADLINE INDICATORS									
Economic structure	Value added by source (domestic)	VA that depends on domestic intermediate inputs, % [source: OECD (TiVA), 2018]				64,83			**62,6%**
	Value added by source (EU)	VA imported from the rest of the EU, % [source: OECD (TiVA), 2018]				22,74			**19,7%**
	Value added by source (extra-EU)	% VA imported from the rest of the world, % [source: OECD (TiVA), 2018]				12,4			**17,6%**
Cost competitiveness	Producer energy price (industry)	Index (2015=100) [source: Eurostat, sts_inppd_a]	122,6	95,2	102,8	101,7	94,8	**29,3%**	**127,3**
RESILIENCE									
Shortages/supply chain disruptions	Material Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	15	9	5	8	11	**36%**	**26%**
	Labour Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	19	15	34	30	25	**-24%**	**14%**
	Sectoral producer prices	Average (across sectors), 2021 compared to 2020 and 2019, index [source:Eurostat]						**2,4%**	**5,4%**
Strategic dependencies	Concentration in selected raw materials	Import concentration a basket of critical raw materials, index [source: COMEXT]	0,14	0,15	0,13	0,12	0,13	**8%**	**17%**
	Installed renewables electricity capacity	Share of renewable electricity to total capacity, % [source:Eurostat, nrg_inf_epc]		69,30	64,60	59,10	58,80	**18%**	**47.8%**
Investment dynamics	Net Private investments	Change in private capital stock, net of depreciation, % GDP [source: Ameco]		1,6	3,9	4	4,2	**-61,9%**	**2,6%**
	Net Public investments	Change in public capital stock, net of depreciation, % GDP [source: Ameco]		1,8	1,1	0,2	-0,6	**-400%**	**0,4%**
SINGLE MARKET									
Single Market integration	Intra-EU trade	Ratio of Intra-EU trade to Extra-EU trade, index [source: Ameco]	3,05	2,74	2,84	2,65	2,45	**24%**	**1,59**
Professional services restrictiveness	Regulatory restrictiveness indicator	Restrictiveness of access to and exercise of regulated professions (professions with above median restrictiveness, out of the 7 professions analysed in SWD (2021)185 [source: SWD (2021)185; SWD(2016)436 final])	6				6	**0%**	**3,37**
Professional qualifications recognition	Recognition decisions w/o compensation	Professionals qualified in another EU MS applying to host MS, % over total decisions taken by host MS [source: Regulated professions database]	57						**45%**
Compliance - cooperation EC and MS	Transposition - overall	5 sub-indicators, sum of scores [source: Single Market Scoreboard]		Below average	Above average	Above average	Below average		
	Infringements - overall	4 sub-indicators, sum of scores [source: Single Market Scoreboard]		Above	On average	On average	On average		
Investment protection	Confidence in investment protection	Companies confident that their investment is protected by the law and courts of MS if something goes wrong, % of all firms surveyed [source: Flash Eurobarometer 504]	49						**56%**
BUSINESS ENVIRONMENT - SMEs									
Business demography	Bankruptcies	Index (2015=100) [source: Eurostat, sts_rb_a]	n.a.	n.a.	n.a.	n.a.	n.a.	**n.a.**	**70,1**
	Business registrations	Index (2015=100) [source: Eurostat, sts_rb_a]		110,4	151,2	140,6	125	**-11.7%**	**105,6**
Access to finance	Late payments	Share of SMEs experiencing late payments in past 6 months, % [source: SAFE]	48	50,7	50,2	n.a.	n.a.	**-4%**	**45%**
	EIF Access to finance index - Loan	Composite: SME external financing over last 6 months, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0,65	0,71	0,54	0,28	**130,6%**	**0,56**
	EIF Access to finance index - Equity	Composite: VC/GDP, IPO/GDP, SMEs using equity, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0,06	0,09	0,08	0,05	**19,4%**	**0,18**
	% of rejected or refused loans	SMEs whose bank loans' applications were refused or rejected, % [source: SAFE]	2,7	9,9	6,3	5	0	**n.a.**	**12,4%**
Public procurement	SME contractors	Contractors which are SMEs, % of total [source: Single Market Scoreboard]	51	51	47	48	48	**6,3%**	**63%**
	SME bids	Bids from SMEs, % of total [source: Single Market Scoreboard]	41	41	37	50	53	**-23%**	**70,8%**

(1) Latest available data

Source: See above in the table the respective source for each indicator in the column "description"

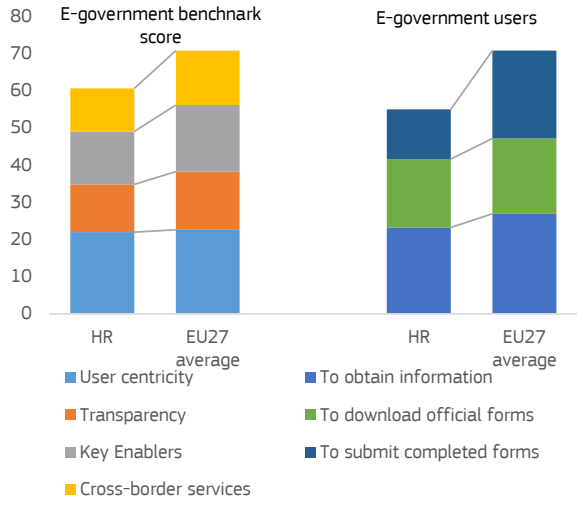
Good administrative capacity enables economic prosperity, social progress and fairness. Public administrations at all government levels deliver crisis response, ensure the provision of public services and contribute to building resilience for the sustainable development of the EU economy.

The effectiveness of public administration in Croatia is ranked significantly below the EU27 average[1]. The high level of fragmentation as well as insufficient financial and administrative capacities of the local government, result in wide disparities in public service provision. The recovery and resilience plan (RRP) aims to incentivise mergers of local authorities, improve the public administration´s efficiency and strengthen policy making.

Croatia's policy-making has significant room for improvement. Performance on the evidence-based policymaking indicator is below the EU average, in particular regarding ex ante and ex post evaluation of legislation, reflecting ministries' limited analytical capacity. The RRP aims to enhance coordination among relevant ministries and improve regulatory impact assessment processes.

Croatia lags behind on e-government indicators and on selected fiscal framework indicators, despite some progress recently. The share of e-government users has increased in recent years (from 47 % in 2017 to 55% in 2021), but remains much more below the EU average than other aspects of the e-government benchmark indicator (graph A11.1). The RRP contains various measures to digitalise public administration, enhance interoperability and increase the provision and quality of digital public services. However, it lacks targeted measures for the development of digital skills in public administration. Performance is also below the EU average for the mandate of independent fiscal institutions and the design of the national medium-term budgetary framework (graph A11.2). However, the new Budget Act adopted in December 2021 (also part of the RRP) has strengthened the coherence and guiding power of the medium-term budgetary framework. Croatia is generally an average public procurement performer, but its score is below the EU average in several dimensions. The main reasons for this are the relatively high shares of contracts awarded in cases where there was just a single bidder and the low share of centralised purchasing. The RRP addresses both of these matters.

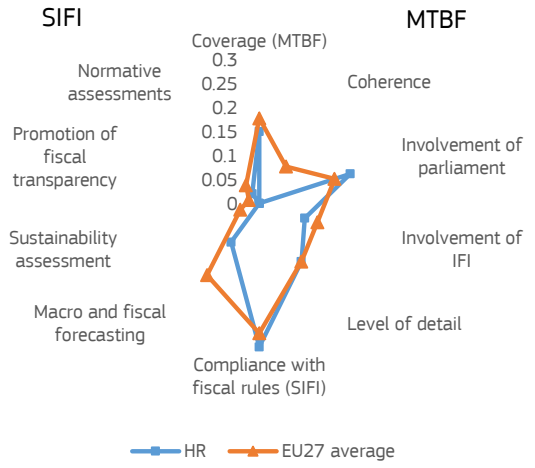
Graph A11.1: **E-government benchmark scores (lhs) and e-government users (rhs)**



Source: Eurostat (ICT use survey) and E-government benchmark report

The RRP includes several measures related to the civil service management. While plans for de-politicisation and to professionalise the central administration have not been fully implemented, some progress has been made in relation to the management of the internal administrative structures within ministries, which was entrusted to senior civil servants. There is also a limited participation of civil servants in adult learning. Accordingly, the RRP aims to introduce new wage and work models in the public sector, upgrade the human resource management system and put conditions in place that are conducive to mobility. It also aims to improve the recruitment process by strengthening the admission system and enhancing people's skills.

Graph A11.2: **Scope Index of Independent Fiscal Institutions (SIFI, rhs) and medium term budgetary framework (MTBF, rhs) indices**



Source: European Commission Fiscal Governance Database, 2020

There is scope for improving the efficiency and quality of justice. The justice system extended electronic communication and decreased backlogs at higher court instances, but significant efficiency and quality issues remain. The backlogs and length of proceedings continued to decrease at second instance and in the Supreme Courts, and mostly increased or stagnated at first instance courts, and remain among the most considerable in the EU. As regards the quality of the justice system administrative courts were integrated into the unified ICT system and the use of electronic communication grew, but significant room for improvement remains. Human resources shortages in human resources at the State Judicial Council and the State Attorney's Councils are being addressed with reinforcements, while targets and measures are envisaged to reduce the duration of court cases. No systematic judicial independence deficiencies have been reported.[2]

Table A11.1:**Key public administration indicators**

HR	Indicator (1)	2017	2018	2019	2020	2021	EU27
E-government							
1	Share of individuals who used internet within the last year to interact with public authorities (%)	47.0	48.0	41.0	52.0	55.0	70.8
2	2021 e-government benchmark´s overall score (2)	na	na	na	na	60.6	70.9
Open government and independent fiscal institutions							
3	2021 open data maturity index	na	na	na	na	83.7	81.1
4	Scope Index of Fiscal Institutions	25.0	25.0	42.5	42.5	na	56.8
Educational attainment level, adult learning, gender parity and ageing							
5	Share of public administration employees with tertiary education, levels 5-8 (3)	46.7	45.8	49.7	49.3	49.9	55.3
6	Participation rate of public administration employees in adult learning (3)	2.5	3.2	3.7	3.8	8.0	18.6
7	Gender parity in senior civil service positions (4)	12.8	8.0	9.4	14.2	15.2	21.8
8	Share of public sector workers between 55 and 74 years (3)	17.1	18.8	20.9	20.1	21.5	21.3
Public Financial Management							
9	Medium term budgetary framework index	0.60	0.60	0.60	0.60	na	0.72
10	Strength of fiscal rules index	-0.2	-0.2	1.4	1.4	na	1.5
11	Public procurement composite indicator	-0.3	2.7	4.7	1.7	na	-0.7
Evidence-based policy making							
12	Index of regulatory policy and governance practices in the areas of stakeholder engagement, Regulatory Impact Assessment (RIA) and ex post evaluation of legislation	1.57	na	na	na	na	1.6

(1) High values stand for good performance barring indicators #7 and 8.
(2) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services.
Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Fiscal Governance Database (# 4, 9, 10); Labour Force Survey, Eurostat (# 5, 6, 8), European Institute for Gender Equality (# 7), Single Market Scoreboard public procurement composite indicator (# 11); OECD Indicators of Regulatory Policy and Governance (# 12).

ANNEX 12: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights provides the compass for upward convergence towards better working and living conditions in the EU. The implementation of its 20 principles on equal opportunities and access to the labour market, fair working conditions, social protection and inclusion, supported by the 2030 EU headline targets on employment, skills and poverty reduction, will strengthen the EU's drive towards a digital, green and fair transition. This annex provides an overview of Croatia's progress in achieving goals under the European Pillar of Social Rights.

The employment rate in Croatia has been gradually improving since 2014, but is still significantly below the EU average (by 4.9 percentage points (pps) in 2021). The job preservation scheme has helped cushion the impact of the COVID-19 crisis. However, some vulnerabilities in the labour market persist. The rate of young people not in employment, education or training (NEET) has been steadily increasing since 2019, while prevention and outreach measures for inactive NEETs remain underdeveloped. The employment rate of people with disabilities is one of the lowest in the EU (36.9% in 2020) and the disability employment gap remains high (32.9 pps in 2020), well above the EU average (24.5 pps). This is a clear indication of the need for Croatia to tackle discrimination, by ensuring necessary workplace adaptations, and assessing the performance of the quota system in the open labour market. The gender employment gap has been steadily increasing since 2015, but improved in 2021 reaching 10.5%(0.3 pps below the EU average of 10.8%). Furthermore, the employment rates of low-skilled workers (42.1% in 2021) lags considerably behind those of medium-skilled and high-skilled workers (67.1% and 84.1%, respectively). At the same time, labour shortages highlighted the need for targeted reskilling and up-skilling of the workforce. Awarding learning vouchers to at least 30 000 beneficiaries, including those in vulnerable groups, as part of the recovery and resilience plan (RRP), will contribute to addressing this challenge. Territorial disparities in employment outcomes are large, with Slavonia and Baranja in a relatively more difficult situation. There is scope for stepping-up strategies to activate the inactive population and efforts to counter undeclared work by promoting formal employment. The EU cohesion funds will continue to support active labour market policy measures. By tackling these challenges, Croatia will be able to contribute to achieving the 2030 EU headline employment target.

Table A12.1:**Social scoreboard for Croatia**

Social Scoreboard for CROATIA		
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24) (2021)	2.4
	Individuals' level of digital skills (% of population 16-74) (2021)	63.0
	Youth NEET (% of total population aged 15-29) (2021)	14.9
	Gender employment gap (percentage points) (2021)	10.5
	Income quintile ratio (S80/S20) (2020)	4.6
Dynamic labour markets and fair working conditions	Employment rate (% population aged 20-64) (2021)	68.2
	Unemployment rate (% population aged 15-74) (2021)	7.6
	Long term unemployment (% population aged 15-74) (2021)	2.8
	GDHI per capita growth (2008=100) (2020)	110.7
Social protection and inclusion	At risk of poverty or social exclusion (in %) (2020)	20.5
	At risk of poverty or social exclusion for children (in %) (2020)	18.4
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP) (2020)	23.1
	Disability employment gap (ratio) (2020)	32.9
	Housing cost overburden (% of population) (2020)	4.2
	Children aged less than 3 years in formal childcare (% of under 3-years-olds) (2020)	20.4
	Self-reported unmet need for medical care (% of population 16+) (2020)	1.5

Critical situation | To watch | Weak but improving | Good but to monitor | On average | Better than average | Best performers

Update of 29 April 2022. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2022. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.

Source: European Commission

Croatia is facing various challenges in relation to education and training (see also Annex 13). Participation in formal childcare for children under 3 continues to increase (to 20.4% in 2020). However, the rate remains below the EU average of 32.3%. Too much focus on theoretical knowledge and not enough practical skills development in vocational education and training continues to create a mismatch between graduates' education and skills and labour market needs. By aligning new programmes with the Croatian system of occupational and qualification standards, the labour market relevance of

education and training is expected to increase, helping to reduce skills mismatches and labour shortages. Participation in adult learning over the past four weeks has been well below the EU average (5.1% against 10.8% in 2021), especially for low-qualified workers. The newly adopted Act on Adult Education should contribute to achieve the 2030 EU headline target on adult learning.

The share of the population at risk of poverty or social exclusion (AROPE) has been steadily declining in Croatia and is currently slightly below the EU average, but vulnerabilities in the social protection system are still pronounced. The AROPE rate of older people is still high (32.4% against 20.3% in the EU in 2020), especially women, and people with disabilities. The poverty gap and the persistent at-risk-of-poverty rate in 2020 (28.0% and 12.9% respectively) remained above the respective EU averages, indicating that lower-income households are not benefiting from the improved economic conditions. The risk of poverty is likely to have increased during the COVID-19 crisis according to the Eurostat Flash estimates on 2020 incomes. The already low impact of social transfers on poverty reduction further deteriorated in 2020 (23.1% against 32.7% in the EU). In particular, the minimum income benefit has a weak poverty reduction capacity, due to low adequacy and limited coverage, with both aspects envisaged to be improved under the RRP. Likewise, unemployment benefits do not provide an adequate safety net for dismissed workers, as both their coverage and adequacy are low. There are also gaps in access to social protection, indicated by the low shares of temporary contract workers (5.3% against the EU average of 40.9% in 2019) and self-employed people (4% against 12.9% in the EU in 2019) receiving benefits when they are at risk of poverty. There is scope for strengthening the provision of social services and long-term care as they do not reach many of those in need, and measures in the RRP aim to address shortcomings. Croatia is facing very rapid demographic ageing, also linked to continued emigration, which will result in challenges for the pension, healthcare and long-term care systems. The aggregate replacement ratio (ARR), 39% in 2020 is still among the lowest in the EU. By tackling these challenges, Croatia will contribute to achieving the 2030 EU headline target for reducing the number of people at risk of poverty or social exclusion. Various RRP and cohesion policy funds measures could help with this, as well as helping to support the development of social services, promote deinstitutionalisation and ease the transition to family- and community-based care.

This annex outlines the main challenges for Croatia's education and training system in light of the EU-level targets of the European Education Area strategic framework and other contextual indicators, based on the analysis from the 2021 Education and Training Monitor. Education in Croatia faces challenges with regard to low participation in early childhood educational and care (ECEC), low basic skills and tertiary education attainment (TEA). There are also regional differences and shortage of teachers in ECEC, as well as gender gaps and urban-rural divide in TEA. The participation of Roma children and pupils in education is much lower across all levels.

ECEC participation is improving, but remains low with marked regional differences. Participation in ECEC from age 3 has increased by 11.8 percentage points (pps) since 2014, but remains substantially below both the EU average and the new EU-level target. Regional differences are high, with provision especially lacking in rural municipalities: 40% lack a nursery school and more than 25% lack a kindergarten. The participation of Roma children is also much lower: 23% in 2016-2017. Challenges persist in terms of quality (i.e. Croatia lacks a quality framework and has oversized class groups, as Table A13.1 shows) and a shortage of ECEC teachers, due to unattractive working conditions.

Few pupils leave school early, but basic skills are often low. The share of early leavers from education and training is the lowest in the EU (2.4% against 9.7% for the EU), but much higher for Roma pupils and particularly Roma girls (78% for girls). The percentage of low-achieving 15-year-olds in terms of basic skills is above both the EU-level target of 15% and the EU average for all three subjects tested, and among the highest in the EU for mathematics (31.2%) and science (25.4%). Ongoing education reform supported by the RRP should improve education outcomes. The RRP also aims to increase instruction time and the percentage of pupils in single-shift schools (to 70%) in view of moving to whole-day schools.

Tertiary attainment rate (TEA) is characterized by significant gender gaps and urban-rural divide. Tertiary educational attainment, below the EU average and EU-level target, is affected by the low share of pupils in general secondary education. It also has a big gender gap (16.6 pps) and wide urban-rural divide (24.4 pps). One reason for this is that the percentage of students in general secondary schools is among the lowest in the EU (31% against 52% in the EU), and even lower in less developed counties. Pupils from 4-year Vocational Education Training (VET) programmes often aim for higher education, but are much more likely to fail the required matriculation exams than pupils from general secondary education (37.8% against

Table A13.1: **EU-level targets and other contextual indicators under the European Education Area strategic framework**

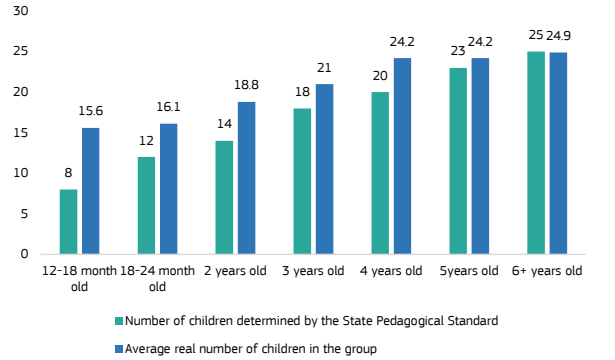
				2015		2021	
Indicator			Target	Croatia	EU27	Croatia	EU27
Participation in early childhood education (age 3+)			**96%**	**69.5%**	**91.9%**	**79.4%** [2019]	**92.8%** [2019]
Low achieving 15-year-olds in:		**Reading**	**< 15%**	**19.9%**	**20.4%**	**21.6%** [2018]	**22.5%** [2018]
		Mathematics	**< 15%**	**32.0%**	**22.2%**	**31.2%** [2018]	**22.9%** [2018]
		Science	**< 15%**	**24.6%**	**21.1%**	**25.4%** [2018]	**22.3%** [2018]
Early leavers from education and training (age 18-24)	**Total**		**< 9 %**	**2.8%** [u]	**11.0%**	**2.4%** [u]	**9.7%**
	By gender	*Men*		3.5% [u]	12.5%	3.0% [u]	11.4%
		Women		2.0% [u]	9.4%	1.8% [u]	7.9%
	By degree of urbanisation	*Cities*		1.6% [u]	9.6%	2.0% [u]	8.7%
		Rural areas		3.3% [u]	12.2%	2.5% [u]	10.0%
	By country of birth	*Native*		2.7% [u]	10.0%	2.2% [u]	8.5%
		EU-born		: [u]	20.7%	: [u]	21.4%
		Non EU-born		: [u]	23.4%	: [u]	21.6%
Tertiary educational attainment (age 25-34)	**Total**		**45%**	**30.8%**	**36.5%**	**35.7%**	**41.2%**
	By gender	*Men*		23.5%	31.2%	27.5%	35.7%
		Women		38.3%	41.8%	44.1%	46.8%
	By degree of urbanisation	*Cities*		43.1%	46.2%	47.9%	51.4%
		Rural areas		22.9%	26.9%	23.5%	29.6%
	By country of birth	*Native*		31.2%	37.7%	34.9%	42.1%
		EU-born		57.5% [u]	32.7%	49.6%	40.7%
		Non EU-born		22.2% [u]	27.0%	46.1%	34.7%
Share of school teachers (ISCED 1-3) who are 50 years or over				29.5%	38.3%	29.8% [2019]	38.9% [2019]

(1) The 2018 EU average on PISA reading performance does not include ES; b = break in time series, u = low reliability, : = not available; Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills, exposure of vocational educational training graduates to work based learning and participation of adults in learning.

Source: Eurostat (UOE, LFS); OECD (PISA).

3.9% in 2020) and to drop out of higher education. The employment rate of recent higher education graduates (77.2% in 2020, below the EU's 83.7%) is one of the lowest in the EU and decreased by 1.9 pps between 2019 and 2020.

Graph A13.1: **Pedagogical standard limit and average real number of enrolled children by age**



Source: Working in kindergartens: Results of research on working conditions in early and preschool education ´ Ivšić, Jaklin, 2020, p. 83

The overall number of pupils is rapidly decreasing as a result of population decline. Since 2013 the population of upper secondary pupils has decreased by 19.2%, and by up to 36% in rural areas. This decline of nearly 34 500 pupils in 8 years has also resulted in 11 031 empty study places at universities in 2021/2022, as the number of places has not been adjusted.

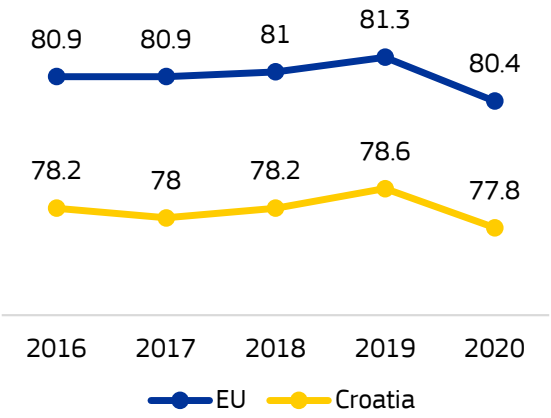
RRP reforms and investments aim to address the main issues in education. The main education reform aims to increase participation in ECEC and improve the education outcomes by increasing instruction time. This is supported by two major infrastructure investments in ECEC facilities and primary schools. Other measures seek to rebalance upper secondary education and improve tertiary educational attainment and the quality of higher education.

Especially relevant in light of the ongoing COVID-19 pandemic, resilient healthcare is a prerequisite for a sustainable economy and society. This Annex provides a snapshot of the healthcare sector in Croatia.

Life expectancy in Croatia is lower than in the EU as a whole, and fell in 2020 by more than 9 months due to COVID-19. As of 17 April 2022, Croatia reported 3.88 cumulative COVID-19 deaths per 1 000 inhabitants and 274 confirmed cumulative COVID-19 cases per 1 000 inhabitants. Treatable mortality in Croatia is far above the EU average, pointing to possible shortcomings in providing timely and effective care.

Health spending relative to the Gross Domestic Product (GDP) in Croatia was below the EU average in 2019. Moreover, health spending per head, lower in Croatia than in most other EU countries, has remained fairly constant in recent years. However, public funding as a proportion of total expenditure was 81.9 % in 2019 – higher than in most EU countries with comparative levels of expenditure. The share of public financing was higher than the EU average for all areas of care, with a higher proportion of public coverage in particular for dental care and pharmaceuticals. Public expenditure on health is projected to increase by 0.7 percentage points (pp) of GDP by 2070 (compared to 0.9 pps for the EU).

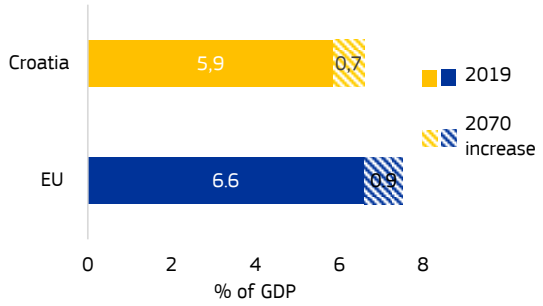
Graph A14.1: **Life expectancy at birth, years**



Source: European Commission

The geographical distribution of health care infrastructure and human resources for health varies considerably. Central Croatia has the largest numbers of facilities and healthcare workers, while there are fewer in more remote areas. People in Croatia that reported unmet medical needs due to distance was below the EU average in 2020 (1.5 %, EU 1.9%) . At the same time, a number of hospitals in close proximity offer the same types of services.

Graph A14.2: **Projected increase in public expenditure on health care over 2019-2070 (reference scenario)**



Source: European Commission

Through its Recovery and Resilience Plan (RRP), Croatia plans to invest EUR 353 million in healthcare, mainly to improve the prevention, diagnosis and treatment of cancer patients and for other specialities, the infrastructure of hospitals, to increase day care, training of nurses, and digitalisation of health services and their provisions in rural areas with moving facilities.

Table A14.1:**Key health indicators**

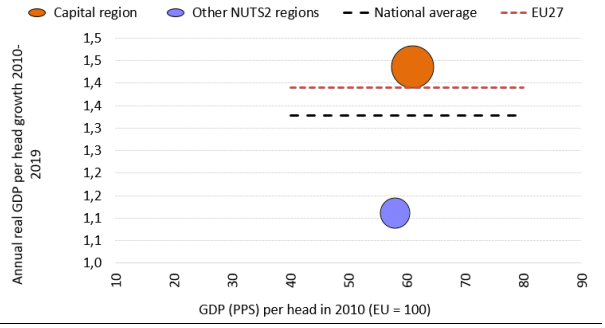
	2016	2017	2018	2019	2020	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	139.5	139.1	133.1	128.3		92.1 (2017)
Cancer mortality per 100 000 population	333.9	321.8	323.9	311.0		252.5 (2017)
Current expenditure on health, % GDP	6.8	6.8	6.9	7.0		9.9 (2019)
Public share of health expenditure, % of current health expenditure	82.5	82.5	82.0	81.9		79.5 (2018)
Spending on prevention, % of current health expenditure	3.1	3.1	3.1	3.0		2.8 (2018)
Acute care care beds per 100 000 population	348.3	350.5	350.5	354.3		387.4 (2019)
Doctors per 1 000 population *	3.2	3.4	3.4	3.5		3.8 (2018)
Nurses per 1 000 population *	6.3	6.6	6.7	6.9		8.2 (2018)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day **	17.1	16.8	17.0	16.9	14.1	14.5 (2020)

(1) Doctors' density data refer to practising doctors except for FI, EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses (imputation from year 2014 for FI) except for IE, FR, PT, SK (professionally active) and EL (nurses working in hospitals only).
Source: Eurostat Database; except: *Eurostat Database and OECD, ** ECDC.

The regional dimension is an important factor when assessing economic and social developments in the EU Member States. Taking into account this dimension enables a well-calibrated and targeted policy response that fosters cohesion and ensures sustainable and resilient economic development across all regions.

Croatia's Gross Domestic Product (GDP) per head was at 64% of the EU average in 2020, with marked regional disparities ranging from the city of Zagreb (118%) to counties in eastern Croatia, only 36% of the EU average. These disparities could create bottlenecks and slow down the country's green and digital transition.

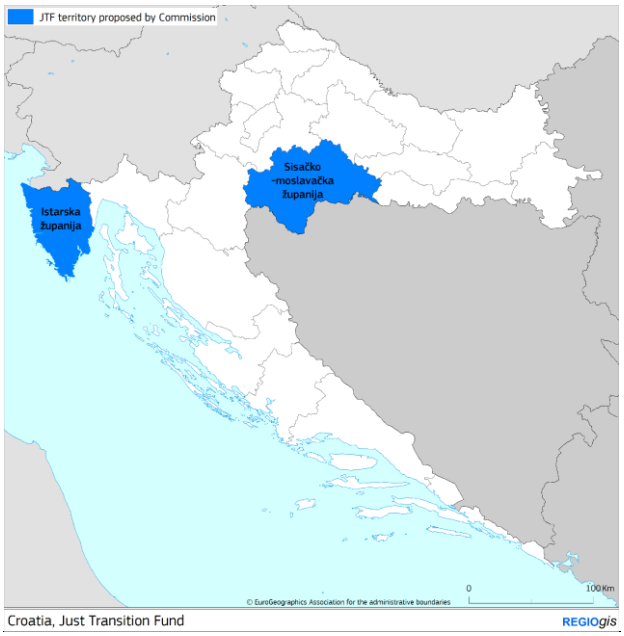
Graph A15.1: **GDP per head (2010) and GDP growth (2010-2019) in Croatia**



Source: Eurostat

Croatia's sustained catch-up with the EU average at country level hides increasing territorial disparities. Between 2014 and 2019, Croatia steadily gained ground in terms of GDP per head (in pps) compared to the EU27 average, increasing from 60% to 65%. This reveals a robust, ongoing process of convergence of the country as a whole to the EU. However, significant territorial disparities are hidden: GDP per head (in pps) against the EU average.

Graph A15.2: **Territories most affected by the climate transition in Croatia**



Source: European Commission

The gap in GDP per head between the capital region and the less developed regions of the country is linked to disparities in labour productivity. In 2019, national labour productivity measured by real gross value added per worker, was 43% of the EU average. This gap diminished in 2000-2005 and since then has remained almost constant. This suggests that the convergence process in GDP per head at national level has been achieved in recent years more through an increase in the employment base (the employment rate of people aged 20-64 increased by 9 percentage points in 2002-2020) than by means of productivity. Several factors explain the observed gaps: human capital and specialisation in high technology sectors for example or the negative impact of demographic dynamics on the country. Between 2011 and 2019, Croatia experienced a marked overall decline in population by 5.4% against EU average population growth of 1.8%, with marked differences between its capital

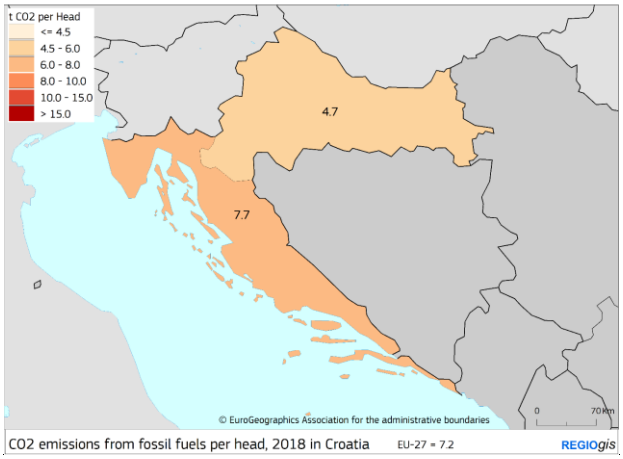
Table A15.1: **Croatia, selected indicators at regional level**

NUTS 2 Region	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	GDP per head growth	Population growth	Unemployment rate	R&D expenditure	Regional Competitiveness Index	CO_2 emissions from fossil fuels per head	Innovation performance
	EU27=100, 2019	EU27=100, 2018	Avg % change on preceding year, 2010-2019	Total % change, 2011-2019	% of active population, 2020	% of GDP, 2018	Range 0-100, 2019	tCO_2 equivalent, 2018	RIS regional performance group
European Union	100	100	1.39	1.8	7.1	2.19	57.3	7.2	
Hrvatska	65	68	1.33	-5.4	7.5	0.97	32.3		
Jadranska Hrvatska	64	69	1.11	-2.8	7.5	0.46	30.4	7.7	Emerging innovator +
Kontinentalna Hrvatska	66	67	1.44	-6.7	7.5	1.22	33.3	4.7	

Source: EUROSTAT, *EDGAR Database.

region and its remaining regions.

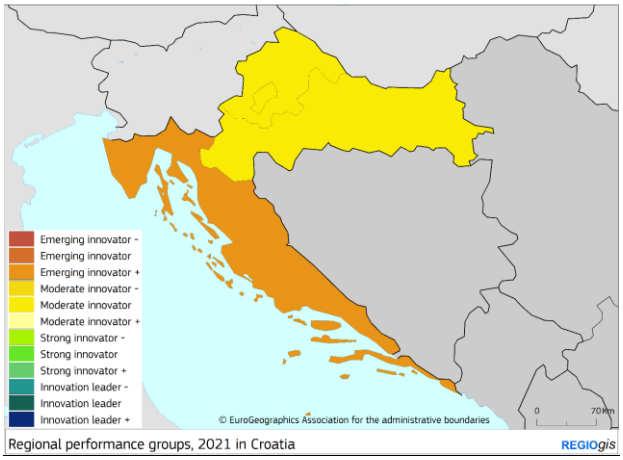
Graph A15.3: **CO2 emissions from fossil fuels per head, 2018**



Source: European Commission

Croatia is an emerging innovator with important territorial disparities. Total national R&D expenditure (0.97%) was less than half the EU27 average (2.2%) in 2018, unequally distributed across regions: only 0.5% in Jadranska Hrvatska against 1.2% in Kontinentalna Hrvatska.

Graph A15.4: **Innovation performance in Croatia**



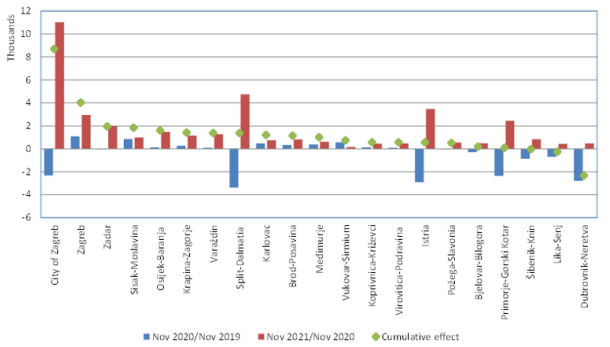
Source: European Commission

The unemployment rate is similar in both Croatian NUTS2 regions (38)**.** It is below the EU average in both regions. However, there is a difference of 3 percentage points between the rates of the Jadranska Hrvatska and Kontinentalna Hrvatska regions. There are greater disparities at county level.

The COVID-19 pandemic affected all Croatian regions in a similar way. National mortality between week 9 of 2020 and week 30 of 2021 was almost 11% higher than average mortality in the same weeks of years 2015-2019. The pandemic also affected the annual change in the employment rate, which diminished by 1.4 percentage point compared to what would be expected based on the 2015-2019 trend. The drop affected both NUTS2 regions to a similar extent, with slightly worse performance in Kontinentalna Hrvatska (-1.54 pp). The unemployment rate increased in 2020 by around 1% in both NUTS2 regions. The rate of the population in severe material deprivation increased in both NUTS2 regions by around 1.5 percentage points in 2020 compared to what would be expected based on the 2015-2019 trend.

At NUTS-3 level, counties with the highest decline in employment at the end of 2019 were those that rely heavily on tourism (e.g. Split-Dalmatia, Istria, Primorje-Gorski Kotar, Dubrovnik-Neretva, City of Zagreb). Among the counties with the highest cumulative rise in employment are four affected by earthquakes in 2020 (Sisak-Moslavina, City of Zagreb, Zagreb and Krapina-Zagorje counties).

Graph A15.5: **Decline in employment**



Source: Croatian Pension Insurance Institute

(38) Nomenclature of territorial units for statistics, https://ec.europa.eu/eurostat/en/web/nuts/nuts-maps

ANNEX 16: KEY FINANCIAL SECTOR DEVELOPMENTS

This annex provides an overview of key developments in Croatia's financial sector. The Croatian banking sector is highly concentrated and predominantly foreign-owned. Total banking sector assets accounted for 124.6% of the Gross Domestic Product (GDP) in the 3rd quarter of 2021. The five largest banks in the system own about 80.5% of the total assets. The domestic ownership of local lenders was only 8.9% in Q3 2021. The market to funding ratio was at 53.8% in 2020. This shows that the economy also relies on non-banking intermediaries. The loan-to-deposit ratio was 79% in Q3 2021 (against 86.5% in the EU).

The Croatian banking sector remained stable despite the COVID-19 pandemic. The banking solvency ratio reached 23.7% in Q3 2021 (against 19.3% in the EU). Banking sector profitability remained high with a return on equity (ROE) of 8.5% in Q3 2021 (against 7.1% in the EU). Asset quality has improved for both corporates and households while the cost-to-income-ratio has remained stable. Central bank injections of additional liquidity to the financial system (roughly 0.7% of total liabilities in Q3 2021) helped the liquidity coverage ratio (LCR) in Q3 2021. Challenges for Croatia's banking sector include a possible rise of in the number of non-performing loans with the expiration of moratoria in 2021, and the buoyant residential real estate market.

The residential real estate market exhibits medium-term vulnerabilities. The European Systemic Risk Board (ESRB) ((2022) has identified several key vulnerabilities: signs of house price overvaluation, elevated house price growth, high mortgage credit growth, signs of the loosening of lending standards. House prices show signs of overvaluation partially explained by the increase in the number of foreign buyers, and the reduction of the housing stock available to be transacted that meets anti-seismic standards. Household indebtedness is low, with lending growth of 4.9% in Q3 2021. The ESRB has warned that the current policy mix in Croatia is partially appropriate and partially sufficient for mitigating risks and suggested ensuring the quality of data on lending standards, activating other borrower-based measures and complementing the current implicit debt service-to-income limit; and, if necessary, making policy adjustments as government house subsidies and support loans may contribute to the increasing overvaluation of prices and household indebtedness.

Table A16.1: **Financial soundness indicators**

	2017	2018	2019	2020	2021
Total assets of the banking sector (% of GDP)	117,1	114,3	109,2	127,8	124,6
Share (total assets) of the five largest bank (%)	72,8	79,4	79,8	80,5	-
Share (total assets) of domestic credit institutions (%)[1]	9,2	9,4	8,9	8,9	9,0
Financial soundness indicators:[1]					
- non-performing loans (% of total loans)	8,8	7,3	5,2	5,3	4,6
- capital adequacy ratio (%)	21,4	21,1	22,5	23,2	23,7
- return on equity (%)	5,9	8,8	9,1	4,7	8,5
NFC credit growth (year-on-year % change)	5,0	2,2	4,4	5,6	2,0
HH credit growth (year-on-year % change)	4,8	5,8	7,5	2,0	4,9
Cost-to-income ratio (%)[1]	52,1	50,7	50,3	51,5	50,3
Loan-to-deposit ratio (%)[1]	82,1	82,1	82,3	78,8	79,0
Central bank liquidity as % of liabilities	0,4	0,6	0,5	1,2	-
Private sector debt (% of GDP)	96,3	92,0	88,3	98,0	-
Long-term interest rate spread versus Bund (basis points)	245,0	177,6	154,0	134,3	82,2
Market funding ratio (%)	53,4	53,6	54,8	53,8	-
Green bond issuance (bn EUR)	-	-	-	-	-

(1) Last data: Q3 2021

Source: ECB, Eurostat, Refinitiv

The Macroeconomic Imbalance Procedure matrix presents the main elements of the in-depth review undertaken for the Croatia in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances, as summarized in the Staff Working Document (SWD (2022)633 final) (39). For Member States selected in the 2022 Alert Mechanism Report it presents, separately for each source of imbalance and adjustment issue, the main findings regarding the gravity and the evolution of the identified challenges, as well as policy response and gaps.

Croatia's vulnerabilities relating to high external, private and government debt, in a context of low potential growth, have substantially improved. Croatia's private debt-to-GDP ratio decreased strongly over the period from 2010 to 2019, going from 122% to 88% of GDP. The pandemic-led sharp increase in 2020 was reversed with the strong economic rebound in 2021. The current account balance returned to a surplus in 2021, following its temporary marginal deficit in 2020. The NIIP has surpassed the prudential benchmark as well as the indicative MIP threshold of -35% of GDP in 2021. Government debt remains above the 60% threshold. In 2021, the government debt-to-GDP ratio returned back to a downward trajectory, although from a higher level than before the pandemic. Potential output growth has accelerated, although it remains below the potential growth rate of comparable new Member States.

Going forward, macroeconomic vulnerabilities in Croatia are expected to continue declining. The public debt ratio should continue declining as deficits narrow and growth continues. Private debt and NPL ratios should also stay on a downward trajectory. External imbalances are expected to further improve as the current account balance remains positive and the NIIP should strengthen further beyond the indicative -35% threshold in 2022. Potential growth should additionally accelerate in the medium term, supported by the Recovery and Resilience Plan (RRP) investments and reforms, and in turn further help the reduction of public, private and external debts. Adverse global shocks or shifts in market confidence could harm the real economy.

Measures included in the RRP and the potential euro adoption should contribute to further reductions of vulnerabilities. Croatia's RRP contains measures that should increase the efficiency and sustainability of the public sector, improve insolvency procedures and promote equity financing for the private sector, and increase the competitiveness and productivity of the Croatian economy. A new Budget act was adopted at the end of 2021, while reforms in the healthcare sector are to be implemented in 2022. As regards private debt-related measures, the Croatian authorities committed to set up new equity-based financial instruments, adopt amendments to the Bankruptcy Act and the Consumer Insolvency Act and continue with the reduction of administrative burden over the course of 2022. Also, the reform of the R&D incentive system and measures aimed at strengthening the R&D capacity of the public research sector should be implemented in 2022. Finally, a successful adoption of the euro would reduce risks from exchange rate exposures.

For those reasons, and more generally on the basis of the elements of the in-depth review undertaken for Croatia under Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances as summarised in Staff Working Document (SWD (2022)633 final), **the Commission has considered in its Communication "European Semester – 2022 Spring Package" (COM(2022)600 final) that Croatia is no longer experiencing macroeconomic imbalances.**

(39) European Commission (2022), COMMISSION STAFF WORKING DOCUMENT In-Depth Review for Croatia in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances.

Table A17.1:**Assessment of Macroeconomic Imbalances matrix**

	Gravity of the challenge	Evolution and prospects	Policy response
Imbalances (unsustainable trends, vulnerabilities and associated risks)			
Public debt	After five years of consecutive declines, Croatia's public debt-to-GDP ratio, soared to a record-high 87.3% in 2020. As the pandemic depressed economic output, shrinking the denominator, it also created a need for extra spending, which pushed the government balance deep into negative territory (-7.4% of GDP in 2020).	The public debt ratio decreased by more than 7 percentage points to 79.8% of GDP in 2021. The decrease came on the back of a V-shaped economic recovery, which grew by 10.2%, as well as the substantial phasing out of COVID-19-related spending, which helped narrow the deficit. The public debt ratio is expected to continue declining in 2022 as output increases further and public finances improve. The public deficit is expected to narrow to 1.8% of GDP by 2023, allowing debt to drop to around 73% of GDP in 2023.	Croatia's relatively prudent fiscal policy in past years has contributed to improving the credit rating into investment grade. This enabled a structural decrease in the interest rate spread, compounding the positive effect of the low interest-rate environment. As a result, the majority of Croatia's most expensive public debt has been refinanced at significantly lower rates, yielding substantial savings and improving sustainability. Croatia's possible accession to the euro area as of 1 January 2023 would further reduce the debt-associated risks, particularly the exchange rate component.
Household and corporate debt and the financial sector	After a substantial deleveraging in the period 2010-2019 (-34 pp), Croatia's private debt-to-GDP ratio increased strongly in 2020, from around 83% to 98% of GDP. The increase in both the household and corporate debt ratios has been largely driven by the substantial fall in the denominator. Foreign currency risks related to the high shares of household (45%) and corporate debt (65%) denominated in foreign currency (mainly EUR) persist, but should be seen in the context of the strong level of euroisation of Croatia's economy and the stability of the kuna. After dropping by more than 8 pps. since 2014, the NPL share increased marginally to 5.3% in 2020 as a result of the impact of the pandemic crisis.	The downward trajectory in private sector debt resumed in 2021, driven by the strong rebound of economic activity. Total private debt declined from 98% of GDP in 2020 to 91% in 2021 with both corporate and household debt ratios decreasing, to 55% and 36% of GDP, respectively. Both ratios stood below prudential thresholds. Meanwhile, the growth in mortgages accelerated in 2021, sustaining the house price rise. After a mild increase in 2020, the share of NPLs dropped to 4.3% in 2021. The share of NPLs for NFCs remains high at 9.9%, despite improving in 2021. Based on the observed trends regarding insolvency and impaired loans, mild improvements can be expected to continue. The banking sector remains stable and liquid.	Fiscal support measures to NFCs during the pandemic crisis prevented a build-up of excess debt. At the same time, policy measures like loan moratoria and special guarantee schemes cushioned the impact on loan impairment. In the context of the projected favourable economic trends, the phasing out of these measures is not expected to lead to a build-up of debt or a deterioration in NPLs, although the sectors most exposed to tourism could continue to face difficulties. Evidence suggests that the housing subsidy scheme is contributing to rising house prices.
External liabilities and trade performance	A decade-long improvement in the NIIP, from -94% in 2010 to -47% of GDP in 2019, has been briefly interrupted in 2020, with the NIIP sliding slightly to -48%. The composition of Croatia's external liabilities remained favourable as the NIIP excluding non-defaultable instruments (NENDI) improved further to nearly a balanced position of -0.3% in 2020. After a period of solid surpluses, the current account turned slightly negative in 2020, with a deficit of 0.1% of GDP. The overall economy's net lending was supported by substantial capital account surplus.	The improvements in the net international investment position (NIIP) resumed in 2021, when the NIIP improved by more than 14 percentage points to -34% of GDP, which brought it in line with the prudential benchmark (-44%) and in conformity with the indicative -35% threshold in 2022. The current account has recovered faster than expected, recording a surplus of 3.1% of GDP in 2021, largely on the back of solid trade performance, and notwithstanding a still incomplete rebound in international tourism. In the medium term, it is expected to remain in surplus, also due to further recovery in tourist activity, and despite a worsening of the energy balance that partly impacted the current account already in 2021.	Exports of services benefitted from Croatia's relatively low dependence of tourism on air travel, a high share of private accommodation and somewhat less stringent COVID-19-related measures compared to most of other EU countries. Goods exports were very fast to recover, thanks to their relatively low exposure to bottlenecks in the supply chain and the strong demand in key trading partners. Moreover, despite the strong fiscal support to real sector wages, the ULC-deflated real effective exchange rate continued to depreciate. In the medium and longer term, competitiveness is set to benefit from the implementation of the investments and reforms from the RRP aimed at further reduction of administrative burden, digitalisation, commercialization of export products, R&D incentives etc.
Potential output	The acceleration in potential output growth in 2018 and 2019 ended in 2020. The unemployment rate increased from 6.6% in 2019 to 7.5% in 2020, thus interrupting the medium-term declining trend. This in part reflected a slight increase in the activity rate in 2020, which nevertheless remained at a comparatively low level. The contribution of total factor productivity to potential growth has been low for a catching-up economy like Croatia's. Overall, potential growth has been low relative to peer countries, thus slowing Croatia's convergence with the EU.	The employment rate increased to 68.2% in 2021 as the labour market recovered from the impact of the pandemic-induced crisis. Activity and employment rates in Croatia remain among the lowest in the EU, even if preliminary census data suggest some underestimation. The economy is expected to continue adding jobs in 2022 and 2023 as output grows. Investments' contribution to growth should rise, and the resulting capital deepening is projected to add to potential output	Potential output is set to benefit from capital deepening boosted by further investments, including those planned under the RRP, the resulting job creation and productivity growth supported by wide-ranging reforms provided for in the RRP. The latter in particular include reforms related to the reduction of administrative and parafiscal burden, SOE governance, and efficiency of public administration and the judiciary.

Source: European Commission

This Annex provides an indicator-based overview of Croatia's tax system. It includes information on the tax structure, i.e. the types of tax that Croatia derives most revenue from, the tax burden for workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance and on the risks of aggressive tax planning.

Croatia's tax revenues are somewhat below the EU average in relation to the Gross Domestic Product (GDP), with the tax system relying particularly heavily on consumption taxation, and less on labour, capital, and property taxes. Total tax revenue was 37% of GDP in 2020 compared to the EU average of 40.1%. Croatia's reliance on consumption tax revenue is among the highest in the EU (18.2% of GDP in 2020 compared to the EU average of 10.8%), while revenues from labour and capital taxes are lower. Tax reform, in place since 1 January 2021, features further reductions in personal income tax rates, as well as corporate and dividend taxation. Revenue from environmental taxes is comparatively high, while revenue from recurrent property taxes is somewhat below the EU average (although higher than in most central and eastern Member States).

Croatia's labour tax burden is close to the EU average for different wage levels across the income distribution. The labour tax wedge in 2021 was very close to the EU average at various income levels, i.e. for single people on the average wage (100%) as well as at 50%, 67% and 167% of the average wage. At the same time, the ability of the tax-benefit system to reduce income inequality (as measured by the GINI coefficient) was below the EU average in 2020, indicating the system could be made even more progressive.

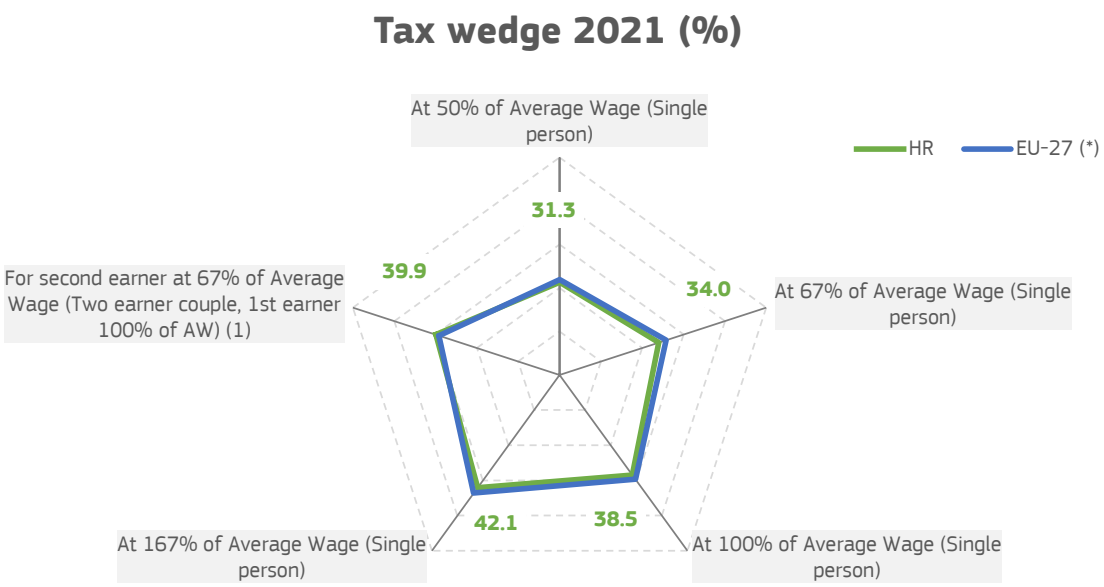
Table A18.1:**Indicators on taxation**

		Croatia					EU-27				
		2010	2018	2019	2020	2021	2010	2018	2019	2020	2021
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	35.8	37.6	37.6	37.0		37.9	40.1	39.9	40.1	
	Labour taxes (as % of GDP)	15.2	13.8	13.6	14.1		20.0	20.7	20.7	21.5	
	Consumption taxes (as % of GDP)	16.9	19.0	19.1	18.2		10.8	11.1	11.1	10.8	
	Capital taxes (as % of GDP)	3.7	4.8	4.8	4.7		7.1	8.2	8.1	7.9	
	Total property taxes (as % of GDP)	1.0	1.1	1.1	1.1		1.9	2.2	2.2	2.3	
	Recurrent taxes on immovable property (as % of GDP)	0.6	0.7	0.7	0.7		1.1	1.2	1.2	1.2	
	Environmental taxes as % of GDP	3.0	3.5	3.5	3.3		2.4	2.4	2.4	2.2	
Progressivity & fairness	Tax wedge at 50% of Average Wage (Single person) (*)		31.7	31.3	31.3	31.3	33.9	32.4	32.0	31.5	31.9
	Tax wedge at 100% of Average Wage (Single person) (*)		39.8	39.8	39.7	38.5	41.0	40.2	40.1	39.9	39.7
	Corporate Income Tax - Effective Average Tax rates (1) (*)		16.5	16.5	16.5			19.8	19.5	19.3	
	Difference in GINI coefficient before and after taxes and cash social transfers (pensions excluded from social transfers)	9.2	7.4	7.3	6.6		8.4	7.9	7.4	8.3	
Tax administration & compliance	Outstanding tax arrears: Total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		19.9	16.6				31.9	31.8		
	VAT Gap (% of VTTL)		7.4	1.0				11.2	10.5		
Financial Activity Risk	Dividends, Interests and Royalties (paid and received) as a share of GDP (%)		2.4	2.8	1.4			10.7	10.5		
	FDI flows through SPEs (Special Purpose Entities), % of total FDI flows (in and out)		0.0	0.0	0.0			47.8	46.2	36.7	

(1) Forward-looking Effective Tax Rate (OECD).
(*) EU-27 simple average as there is no aggregated EU-27 value.

Source: European Commission

Graph A18.1: **Tax wedge**



(1) The second earner average tax wedge measures how much extra personal income tax (PIT) plus employee and employer social security contributions (SSCs) the family will have to pay as a result of the second earner entering employment, as a proportion of the second earner's gross earnings plus the employer SSCs due on the second earner's income. For a more detailed discussion see OECD (2016), "Taxing Wages 2016", OECD Publishing, Paris. http://dx.doi.org/10.1787/tax_wages-2016-en
(*) EU-27 simple average as there is no aggregated EU-27 value.
Source: European Commission

Table A19.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-18	2019	2020	2021	forecast 2022	forecast 2023
Real GDP (y-o-y)	4.6	-1.8	1.9	3.5	-8.1	10.2	3.4	3.0
Potential growth (y-o-y)	3.2	0.0	1.0	2.5	1.8	2.7	2.9	2.7
Private consumption (y-o-y)	3.9	-1.8	1.0	4.1	-5.3	10.0	2.4	3.6
Public consumption (y-o-y)	4.5	0.3	1.1	3.3	4.1	3.1	2.6	2.2
Gross fixed capital formation (y-o-y)	4.7	-5.8	2.8	9.8	-6.1	7.6	6.5	8.2
Exports of goods and services (y-o-y)	6.2	-1.7	6.3	6.8	-22.7	33.3	8.4	5.5
Imports of goods and services (y-o-y)	6.2	-4.3	6.4	6.5	-12.3	14.7	8.1	8.0
Contribution to GDP growth:								
Domestic demand (y-o-y)	4.5	-2.4	1.3	5.0	-3.5	8.3	3.4	4.5
Inventories (y-o-y)	0.7	-0.6	0.7	-1.6	0.7	-4.9	0.0	0.0
Net exports (y-o-y)	-0.6	1.1	-0.1	0.1	-5.3	6.8	0.1	-1.5
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.7	-0.6	-0.3	1.2	1.2	1.2	1.4	1.0
Capital accumulation (y-o-y)	1.7	1.0	0.5	0.8	0.5	0.7	0.8	1.0
Total factor productivity (y-o-y)	0.8	-0.3	0.8	0.4	0.2	0.8	0.7	0.7
Output gap	3.3	-0.4	-1.2	3.6	-6.5	0.3	0.8	1.1
Unemployment rate	11.9	11.8	13.9	6.6	7.5	7.6	6.3	6.0
GDP deflator (y-o-y)	3.7	2.5	0.7	1.9	-0.1	3.2	3.8	2.4
Harmonised index of consumer prices (HICP, y-o-y)	2.8	2.9	0.7	0.8	0.0	2.7	6.1	2.8
Nominal compensation per employee (y-o-y)	4.8	2.0	-0.2	0.4	2.1	5.6	3.0	2.7
Labour productivity (real, hours worked, y-o-y)	2.5	0.2	1.9	-1.1	-6.8	8.9	0.3	-0.4
Unit labour costs (ULC, whole economy, y-o-y)	2.1	1.9	-1.1	0.0	9.8	-3.1	1.1	1.5
Real unit labour costs (y-o-y)	-1.5	-0.6	-1.7	-1.9	10.0	-6.1	-2.6	-0.9
Real effective exchange rate (ULC, y-o-y)	1.7	-1.1	-1.6	-3.1	.	.	.	.
Real effective exchange rate (HICP, y-o-y)	0.8	-0.7	0.7	-1.5	-0.5	0.6	.	.
Net savings rate of households (net saving as percentage of net disposable income)	0.4	0.5	2.6	3.9	7.5	.	.	.
Private credit flow, consolidated (% of GDP)	14.7	3.6	0.2	1.1	1.3	.	.	.
Private sector debt, consolidated (% of GDP)	86.0	117.4	105.5	88.3	98.0	.	.	.
of which household debt, consolidated (% of GDP)	32.3	40.3	36.5	33.8	37.6	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	53.8	77.1	69.0	54.5	60.4	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	.	.	10.5	4.6	4.7	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-5.8	-0.7	1.3	0.2	1.3	.	.	.
Corporations, gross operating surplus (% of GDP)	17.8	19.6	20.1	20.1	18.7	.	.	.
Households, net lending (+) or net borrowing (-) (% of GDP)	2.3	2.2	3.7	4.0	7.4	.	.	.
Deflated house price index (y-o-y)	9.8	-4.9	-0.1	7.8	7.3	.	.	.
Residential investment (% of GDP)	3.7	3.4	2.7	3.0	3.4	3.1	.	.
Current account balance (% of GDP), balance of payments	-7.3	-4.6	1.7	3.0	-0.1	3.1	1.5	0.1
Trade balance (% of GDP), balance of payments	-8.5	-4.1	-0.2	-0.3	-6.8	-1.2	.	.
Terms of trade of goods and services (y-o-y)	1.4	0.6	0.5	0.8	-1.6	-1.9	-2.8	-0.2
Capital account balance (% of GDP)	0.0	0.1	0.8	1.6	2.1	2.3	.	.
Net international investment position (% of GDP)	-68.9	-88.4	-74.4	-46.7	-47.8	-33.9	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (1)	-32.1	-48.8	-32.8	-1.5	-0.3	8.5	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (1)	74.2	93.1	85.7	58.0	63.3	62.1	.	.
Export performance vs. advanced countries (% change over 5 years)	30.7	-3.7	1.3	20.2	0.6	.	.	.
Export market share, goods and services (y-o-y)	-0.1	-5.8	3.8	4.4	-15.1	21.2	3.6	1.2
Net FDI flows (% of GDP)	-4.7	-2.9	-2.0	-6.1	-1.3	-3.9	.	.
General government balance (% of GDP)	-3.5	-5.7	-2.4	0.2	-7.3	-2.9	-2.3	-1.8
Structural budget balance (% of GDP)	.	.	-1.9	-1.4	-4.4	-3.1	-2.7	-2.3
General government gross debt (% of GDP)	39.1	55.6	79.6	71.1	87.3	79.8	75.3	73.1

(1) NIIP excluding direct investment and portfolio equity shares.
(2) Domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled.
Source: Eurostat, ECB, as of 2 May 2022, where available; European Commission for forecast figures (Spring forecast 2022)

This annex assesses fiscal sustainability risks for Croatia over the short, medium and long term. It follows the same multi-dimensional approach as the 2021 Fiscal Sustainability Report, updated on the basis of the Commission 2022 spring forecast.

Table 1 presents the baseline debt projections. It shows the projected government debt and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment. These projections assume that no new fiscal policy measures are taken after 2023, and include the expected positive impact of investments under Next Generation EU.

Graph 1 shows four alternative scenarios around the baseline, to illustrate the impact of changes in assumptions. The 'historical SPB' scenario assumes that the structural primary balance (SPB) gradually returns to its past average level. In the 'lower SPB' scenario, the SPB is permanently weaker than in the baseline. The 'adverse interest-growth rate' scenario assumes a less favourable snowball effect than in the baseline. In the 'financial stress' scenario, the country temporarily faces higher market interest rates in 2022.

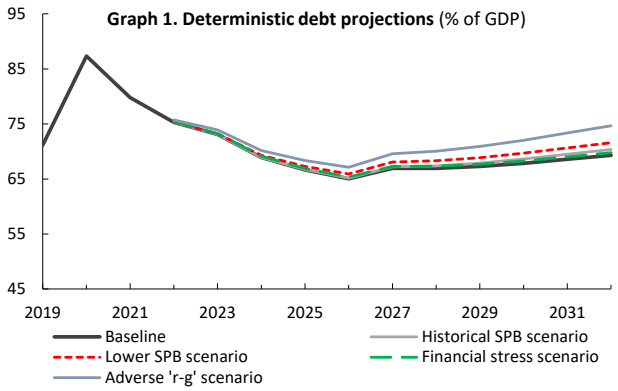
Graph 2 shows the outcome of the stochastic projections. These projections show the impact on debt of 2 000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

Table 2 shows the S1 and S2 fiscal sustainability indicators and their main drivers. S1 measures the consolidation effort needed to bring debt to 60% of GDP in 15 years. S2 measures the consolidation effort required to stabilise debt over an infinite horizon. The *initial budgetary position* measures the effort required to cover future interest payments, the *ageing costs* component accounts for the need to absorb the projected change in ageing-related public expenditure such as pensions, health care and long-term care, and the *debt requirement* measures the additional adjustment needed to

Table A20.1: **Debt sustainability analysis for Croatia**

Table 1. Baseline debt projections	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross debt ratio (% of GDP)	**71.1**	**87.3**	**79.8**	**75.3**	**73.1**	**68.9**	**66.7**	**65.0**	**66.9**	**66.9**	**67.3**	**67.9**	**68.6**	**69.3**
Change in debt	-2.2	16.2	-7.5	-4.5	-2.2	-4.2	-2.2	-1.6	1.9	0.0	0.3	0.6	0.7	0.7
of which														
Primary deficit	*-2.4*	*5.3*	*1.3*	*0.9*	*0.5*	*-0.6*	*-0.5*	*-0.2*	*1.3*	*1.3*	*1.3*	*1.3*	*1.3*	*1.3*
Snowball effect	*-1.6*	*8.4*	*-9.1*	*-4.0*	*-2.6*	*-3.6*	*-1.7*	*-1.4*	*0.6*	*-1.3*	*-1.0*	*-0.7*	*-0.6*	*-0.6*
Stock-flow adjustment	*1.8*	*2.5*	*0.2*	*-1.3*	*-0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Gross financing needs (% of GDP)	14.0	21.4	12.3	9.7	10.6	9.5	9.5	9.7	11.6	11.9	12.3	12.7	13.1	13.3

Graph 1. Deterministic debt projections (% of GDP)



Graph 2. Stochastic debt projections (% of GDP)

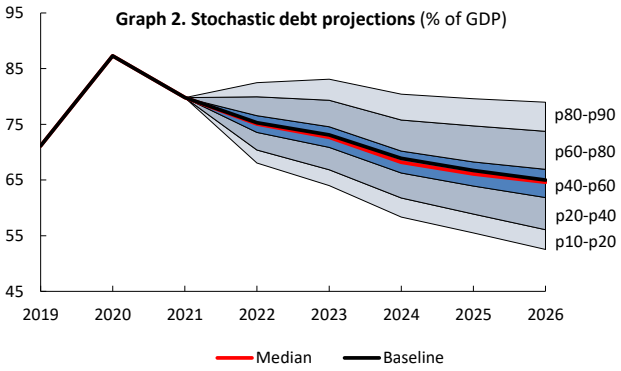


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**1.1**	**1.0**
of which			
Initial budgetary position		-0.1	1.5
Debt requirement		0.9	
Ageing costs		0.2	-0.5
of which	*Pensions*	*0.1*	*-1.1*
	Health care	*0.2*	*0.6*
	Long-term care	*0.0*	*0.2*
	Others	*-0.1*	*-0.1*

Source: European Commission

reach the 60% of GDP debt target.

Finally, the heat map presents the overall fiscal sustainability risk classification (Table A20.2)**.** The *short-term risk category* is based on the S0 indicator, an early-detection indicator of fiscal stress in the upcoming year. The *medium-term risk category* is derived from the debt sustainability analysis (DSA) and the S1 indicator. The DSA assesses risks to sustainability based on several criteria: the projected debt level in 10 years' time, the debt trajectory ('peak year'), the plausibility of fiscal assumptions and room for tighter positions if needed ('fiscal consolidation space'), the probability of debt not stabilising in the next 5 years and the size of uncertainty. The *long-term risk category* is based on the S2 indicator and the DSA.

Overall, short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A20.2).

Medium-term risks to fiscal sustainability are medium. The two elements of the Commission's medium-term analysis lead to this conclusion. First, the debt sustainability analysis (DSA) shows that in the baseline, government debt is projected to decline from 75% of GDP in 2022 to 65% of GDP in 2026 before increasing again to about 69% of GDP in 2032 (Table 1). This debt path is sensitive to possible shocks to fiscal, macroeconomic and financial variables, as illustrated by alternative scenarios (all pointing to medium risks) and stochastic simulations (Tables A20.1 and A20.2). Moreover, the sustainability gap indicator S1 signals that an adjustment of 1.1 pps. of GDP of the structural primary balance would be needed to reduce debt to 60% of GDP in 15 years' time (Table 2). Overall, the medium risks reflect the debt level, the limited fiscal consolidation space and the sensitivity to adverse shocks

Long-term risks to fiscal sustainability are medium. Over the long term, the sustainability gap indicator S2 (at 1.0 pp. of GDP) points to low risks, while the DSA points to medium risks, leading to this overall assessment The S2 indicator suggests that the projected decline in public pension expenditure relative to GDP will help stabilise debt over the long term, despite pressures stemming mainly from health care expenditure (Table 2).

Table A20.2:**Heat map of fiscal sustainability risks for Croatia**

Short term	Medium term									Long term	
Overall (S0)	Overall (S1+DSA)	S1	Overall	Debt sustainability analysis (DSA)						S2	Overall (S2+DSA)
					Deterministic scenarios						
					Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	Stochastic projections	
				Overall	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	LOW	
				Debt level (2032), % GDP	69	70	72	75	70		
LOW	MEDIUM	MEDIUM	MEDIUM	Debt peak year	2021	2021	2021	2021	2021		LOW	MEDIUM
				Fiscal consolidation space	43%	48%	49%	43%	43%		
				Probability of debt ratio exceeding in 2026 its 2021 level						9%	
				Difference between 90th and 10th percentiles (pps. GDP)						26	

(1) Debt level in 2032: green: below 60% of GDP, yellow: between 60% and 90%, red: above 90%. (2) The debt peak year indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early; yellow: peak towards the middle of the projection period; red: late peak. (3) Fiscal consolidation space measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed; yellow: intermediate; red: low. (4) Probability of the debt ratio exceeding in 2026 its 2021 level: green: low probability, yellow: intermediate, red: high (also reflecting the initial debt level). (5) The difference between the 90th and 10th percentiles measures uncertainty, based on the debt distribution under 2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.

Source: European Commission (for further details on the Commission's multi-dimensional approach, see the 2021 Fiscal Sustainability Report).