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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of France were reviewed by the Committee on 4 October 2021. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 28 October 2021.

The Secretariat's draft report was prepared for the Committee by Antoine Goujard and Priscilla Fialho with the participation of Chiara Loriaux under the supervision of Pierre Beynet. Statistical research assistance was provided by Paula Adamczyk, and editorial assistance by Jean-Rémi Bertrand.

The previous Survey of France was issued in April 2019.

Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at http://www.oecd.org/eco/surveys.

Basic statistics of France, 2020

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	67.4		Population density per km²	123.1	(38.6)
Under 15 (%)	17.7	(17.8)	Life expectancy at birth (years, 2019)	82.6	(80.2)
Over 65 (%)	20.8	(17.4)	Men (2019)	79.7	(77.6)
International migrant stock (% of population, 2019)	12.8	(13.2)	Women (2019)	85.6	(82.9)
Latest 5-year average growth (%)	0.3	(0.6)	Latest general election	June	2017
ECONOMY					
Gross domestic product (GDP)			Value added shares		
In current prices (billion USD)	2 625.1		Agriculture, forestry and fishing	1.9	(2.8)
In current prices (billion EUR)	2 300.7		Industry including construction	18.3	(26.3)
Latest 5-year average real growth (%)	-0.2	(0.8)	Services	79.8	(71.0)
Per capita (000 USD PPP)	46.7	(46.3)			
GENERAL GOVERNMENT Per cent of GDP					
Expenditure	61.7	(49.8)	Gross financial debt (OECD: 2019)**	146.5	(97.2)
Revenue	52.6	(38.9)	Net financial debt (OECD: 2018)**	94.5	(68.2)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.88		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.73		Machinery and transport equipment	34.1	
In per cent of GDP			Chemicals and related products, n.e.s.	20.9	
Exports of goods and services	27.8	(50.6)	Miscellaneous manufactured articles	13.3	
Imports of goods and services	29.9	(47.1)	Main imports (% of total merchandise imports)		
Current account balance	-1.9	(0.0)	Machinery and transport equipment	34.8	
Net international investment position	-32.5		Miscellaneous manufactured articles	16.5	
			Chemicals and related products, n.e.s.	14.7	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	50.2	(55.1)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	8.0	(7.1)
Men (OECD: 2019)	54.1	(65.6)	Youth (aged 15-24, %, OECD: 2019)	20.1	(11.8)
Women (OECD: 2019)	46.6	(49.9)	Long-term unemployed (1 year and over, %)	2.9	(1.3)
Participation rate (aged 15 and over, %)	54.5	(59.6)	Tertiary educational attainment (aged 25-64, %, 2019)	37.9	(38.0)
Average hours worked per year	1,402	(1,687)	Gross domestic expenditure on R&D (% of GDP, 2018)	2.2	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2019)	3.6	(3.9)	CO2 emissions from fuel combustion per capita (tonnes, 2019)	4.4	(8.3)
Renewables (%, 2019)	10.7	(10.8)	Water abstractions per capita (1 000 m³, 2018)	0.4	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	69.3	(61.7)	Municipal waste per capita (tonnes, 2019)	0.5	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2018, OECD: latest available)	0.301	(0.318)	Education outcomes (PISA score, 2018)		
Relative poverty rate (%, 2018, OECD: 2016)	8.5	(11.7)	Reading	493	(485)
Median disposable household income (000 USD PPP, 2018, OECD: 2017)	27.2	(23.5)	Mathematics	495	(487)
Public and private spending (% of GDP)			Science	493	(487)
Health care (2019)	11.1	(8.8)	Share of women in parliament (%)	39.5	(31.5)
Pensions (2018, OECD: 2017)	14.0	(8.6)	Net official development assistance (% of GNI, 2017)	0.4	(0.4)
Education (% of GNI, 2019)	4.9	(4.4)			

Notes: The year is indicated in parenthesis if it deviates from the year in the main title of this table. *Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.
** Public debt (Maastricht definition, as used in the main text) was at 97.6% of GDP in 2019. The Maastricht definition evaluates debt at face value and not market value as employed here. Moreover, the instrument coverage is different.
Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation, International Monetary Fund, United Nations, World Bank.

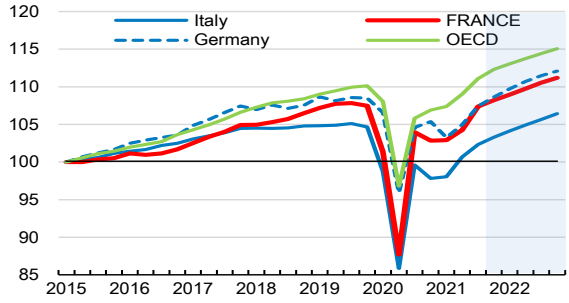
Executive Summary

Activity bounced back strongly after a deep recession

Economic policies reacted swiftly and strongly to the crisis, and activity has rebounded quickly. The recession associated with the pandemic was severe. From March 2020 to end-June 2021, sanitary restrictions tightly constrained economic activity, although their impact gradually declined, leading to a steep rebound (Figure 1).

Figure 1. The economic contraction was severe

Real GDP, index 2015Q1 = 100



Source: OECD, Economic Outlook and updates.

StatLink https://doi.org/10.1787/888934284887

Strong public support measures limited the economic and social shock. Since 2020, the short-time work scheme has protected employment and household incomes. The solidarity fund, tax deferrals, and state-backed loans have supported corporate liquidity and profitability, reducing bankruptcies. Direct fiscal support for economic activity reached 3.1% of GDP in 2020 and 4.1% in 2021. In a welcome move, the measures are becoming more selective as the recovery gains traction, and the EUR 100 billion recovery plan and the 2030 investment plan rightly focus on environmental and digital transitions.

Domestic demand is driving the recovery (Table 1). With the economy reopening, domestic demand and employment bounced back rapidly in 2021. The emergency measures and the recovery plan, combined with accommodative monetary policy, are adding support to consumption and investment. In 2022, the gradual reduction of savings accumulated during the crisis is set to sustain consumption, while exports and investment should benefit from improving external demand.

Risks remain high. Demand for some services and transport equipment depends on the health situation. The negative risks associated with private debt have also increased for some businesses and households. However, growth could surprise on the upside if household confidence improved more rapidly than expected and encouraged a greater reduction in accumulated savings.

Table 1.Domestic demand drives the recovery

Variation (%)	2020	2021	2022
Gross domestic product (GDP)	-8.0	6.8	4.2
Private consumption	-7.2	4.8	6.8
Public consumption	-3.2	6.4	1.9
Gross fixed capital formation	-8.9	12.0	3.7
Exports of goods and services	-16.1	8.2	7.5
Imports of goods and services	-12.2	7.3	8.4
Unemployment	8.1	7.8	7.6
Consumer price index	0.5	1.9	1.7
Public deficit (% of GDP)	-9.1	-8.0	-5.0
Gross debt (Maastricht definition, % of GDP)	115.1	115.2	115.3

Source: OECD, Economic Outlook and updates.

Ensuring a steady and inclusive recovery

The marked and impressive acceleration of the vaccination campaign will support a steady recovery. Yet, poor municipalities and the eldery have still comparatively low vaccination rates and efforts to reach the most exposed and vulnerable should be strengthened.

Ensuring a swift and effective implementation of the recovery plan should allow the economic rebound to turn into durable growth. For the same reason, a premature withdrawal of support for households and businesses should be avoided as it could push viable businesses into bankruptcy. However, fiscal support needs to become increasingly selective as the recovery gains traction.

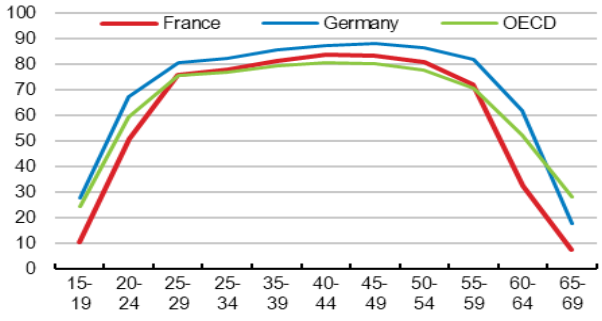
High corporate debt and heterogeneous businesses' conditions could eventually put some firms into difficulties. This calls for strengthening businesses' equity, and ensuring early and swift resolution processes for non-viable firms. Simplified preventive procedures introduced in 2021 will facilitate earlier and more effective restructuring. However, insolvency proceedings were lengthy before the crisis and strengthening the capacity of commercial courts would speed up the restructuring of distressed firms.

Boosting training and job transition support is crucial. Despite a high unemployment rate, labour market shortages have risen. Recent reforms have improved access to professional training and its quality, but the crisis has delayed their implementation. The 2021 strategy for retraining workers is welcome. Yet, even before the crisis, the school-to-work transition was difficult (Figure 2).

The foreseen expansion of the youth guarantee scheme will have to combine a financial allowance for those who need it, greater support to enter the labour market and streamlined procedures. At the same time, the financing of unemployment insurance and activation programmes appears pro-cyclical and measures should ensure that their financing is better in line with economic conditions.

Figure 2. Employment among young and older people is weak

Employment by age, as a % of the population, 2019



Source: OECD (2021), Labour Market Statistics (database)

StatLink https://doi.org/10.1787/888934284906

Reforming public finance

Public debt has increased markedly during the crisis. Developing a strategy to stabilise and gradually lower public debt is necessary to put it on a sustainable path since ageing-related expenditures are expected to increase.

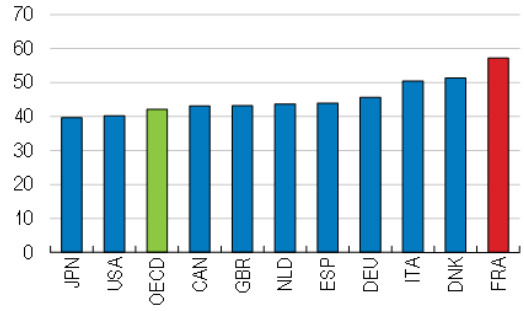
Public spending is high (Figure 3) **and some expenditures are not effective.** Educational outcomes largely reflect the family environment and business innovation does not fully reflect high R&D support. Moreover, tax expenditures such as those on overtime, reduced rates of value-added tax or fossil-fuel subsidies do not support long-term growth. It is necessary to lower gradually and significantly public spending through a medium-term consolidation strategy based on spending reviews and improved expenditure allocation.

The pension system requires further reforms. The effective age of exit from the labour market is the second lowest of all OECD countries and has an adverse effect on potential growth. At the same time, life expectancy at age 65 is the second highest of the OECD. Increasing the minimum retirement age in line with life expectancy, and better integrating older workers into firms would encourage a rise in the effective age of exit from the labour market.

The governance of public finance is fragmented across sectors and levels of government. It does not allow a full evaluation of some policies. A multiannual expenditure rule that encompasses the entire public sector, whose implementation would be assessed by the fiscal council (HCFP), would make for better coordination of sectoral expenditures. Additionally, the current debt projections are limited to 5 years and publishing long-term debt projections, whose assumptions would be validated by the HCFP, would raise awareness around sustainability issues.

Figure 3. Public spending is high

% of GDP, 2016-20



Source: OECD, Economic Outlook and updates.

StatLink https://doi.org/10.1787/888934284925

Towards more inclusive and sustainable growth

Boosting employment and productivity is a priority. Welcome reforms have lowered labour costs and increased the in-work bonus for low-paid workers, while also improving the financing and targeting of education and vocational training. However, too many workers have inadequate skills and their employment rate remains low. The measures proposed in this Survey to improve employment and productivity further could increase GDP per capita by 1.2% after 10 years.

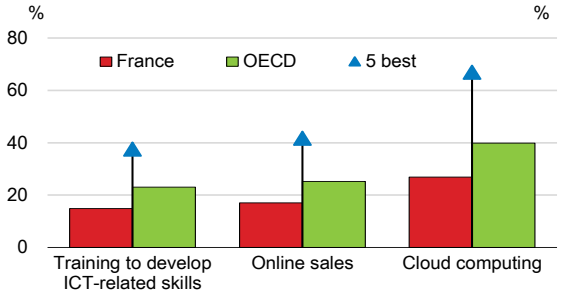
Early and initial education are key to strengthen skills and equity. Limited school closures have helped to maintain learning outcomes during the crisis, but they have weighed more on less performant children. Disadvantaged households have also less access to formal childcare, which calls for speeding up the development of additional childcare services for low-income households and in the poorest neighbourhoods. Action must be taken to lower the risk of school dropouts, as well as to improve the relationships between business and the education system. Apprenticeship could be developed further, as planned in the reform of vocational education, by increasing the share of work-based training.

The diffusion of digital technologies remains unequal, hindering productivity gains (Figure 4).

Many small businesses lags behind the adoption of these new digital technologies and will require additional support for training their workers.

Figure 4. There is room to boost firms' adoption of digital technologies

% of businesses, 2020



Source: OECD (2021), ICT Access and Usage (database).

StatLink https://doi.org/10.1787/888934284944

Efforts to support vulnerable regions and households should be stepped up. The crisis risks widening social and territorial inequalities. Providing equitable access to essential services, notably through the "France Services" network, would require to strengthen outreach and accessibility schemes by implementing a quantitative follow-up of local access to public services. The short supply of housing in dynamic areas also prevents higher housing mobility, especially for young people. Focusing support for housing supply on very densely populated areas would raise mobility and employment opportunities.

Speeding-up the green transition

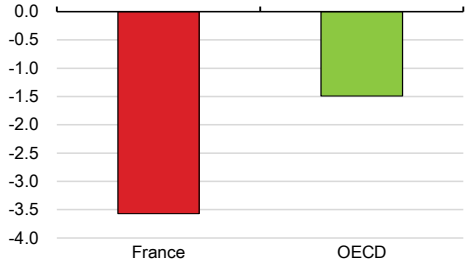
Investment in the green transition should continue to reduce greenhouse gases and pollution. The pace of transition towards a greener economy must accelerate. Even though France is one of the lowest greenhouse-gas-emitting countries in the OECD, its emissions have fallen slowly. Artificial areas, transport demand and waste are steadily increasing. Intensive agriculture and the use of chemical inputs have reduced biodiversity and deteriorated air quality (Figure 5).

The environmental transition is one of the main pillar of the recovery plan. It allocates EUR 30 billion (1.2% of 2019 GDP) to green investment. However, the transition will be successful only if the mechanisms that are put in place are effective.

Green private investment must increase, and further incentives would boost households and businesses behavioural changes. Phasing-out tax breaks and reduced rates, and subsequently rising green tax rates, notably carbon prices, are needed. To prevent an increase in inequality and to promote the social acceptability of such measures, support should be provided to the most vulnerable households and businesses. In particular, developing generous and targeted help-to-buy schemes, for cleaner equipments, would effectively complement environmental taxes.

Figure 5. Biodiversity on farmland is falling

Annual variation 2008-2019, %



Source: OECD (2021), OECD Agri-environmental indicators.

StatLink https://doi.org/10.1787/888934284963

Containing the growing demand for transport and the associated pollution should be a priority. The recent increase in electric car sales has not been sufficient to curb the rise in road transport emissions. Schemes to support the purchase of less polluting vehicles are not ambitious enough. The eligibility criteria for the conversion premium and the ecological malus scale should become more stringent.

Improving the energy efficiency of buildings would reduce energy consumption. Emissions from buildings have barely evolved. Policies to support building energy renovation works do not encourage efficient overall energy renovations. Public support should be conditional on achieving a minimum energy efficiency standard and tight controls on major projects.

Production of renewable energies must increase. France plans to reduce the share of nuclear power, which does not emit greenhouse gases. In order to comply with emission-reduction targets, renewable energies must be developed further, notably though higher support for renewable thermal energy.

Land use should take better into account the benefits of biodiversity. The environmental offset required for major development projects is not demanding enough. Land use taxes should also be reconsidered to encourage sustainable land use. In the agriculture sector, public support often comes without meaningful environmental condition. Reallocating agricultural support towards payments for agri-environmental services would encourage more sustainable practices.

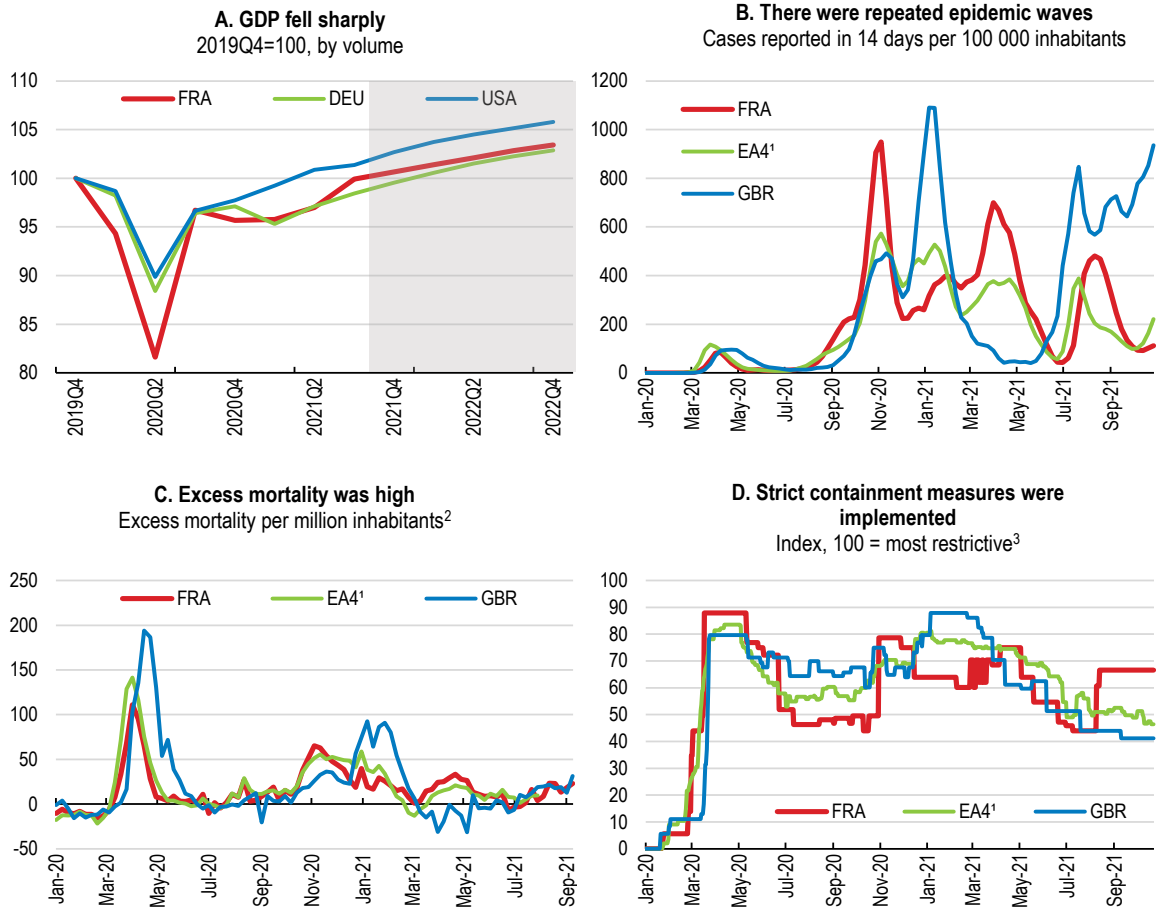
MAIN FINDINGS	KEY RECOMMENDATIONS
Ensuring a strong and resilient recovery	
Fiscal policy has responded swiftly and appropriately to the effects of the pandemic. The economic rebound has been rapid, but a premature withdrawal of policy support could raise bankruptcies and unemployment.	Provide increasingly selective fiscal support as the economic recovery gains traction.
The recovery plan, supported by EU funds, is expected to support the green and digital transitions, which should lead to a stronger and more resilient growth.	Ensure swift and effective implementation of the recovery plan.
The commercial courts and the early warning system risk not being able to deal efficiently with insolvencies when the economy emerges from the crisis. Insolvency proceedings are lengthy.	Encourage the take-up of the new, simplified preventive procedures and strengthen the capacity of commercial courts.
Strengthening the effectiveness of fiscal policy	
Public debt is historically high as a share of GDP and ageing costs, if not addressed, could put it on an unsustainable path.	Develop a strategy to stabilise and gradually lower the public debt ratio.
The projections for public debt do not cover the long term.	Publish long-term debt projections based on assumptions validated by the fiscal council.
Public spending is among the highest in the OECD and is damaging growth and debt sustainability, despite favourable borrowing costs.	Lower gradually and significantly public spending through a medium-term consolidation strategy based on spending reviews and improved expenditure allocation.
The governance of public finance is fragmented across sectors and levels of government. It does not allow a full evaluation of some policies.	Implement a multiannual expenditure rule that encompasses the entire public sector.
Tax expenditure is considerable and some new measures have been implemented (such as tax exemptions for overtime), even though evidence of their effectiveness is poor.	Reduce tax expenditure, in particular those that do not benefit low-income households or measures that encourage excessive household saving.
The effective age of exit from the labour market is low. The pension system is fragmented and pension expenditure is high.	Encourage a rise in the effective age of exit from the labour market, notably by increasing the minimum retirement age in line with life expectancy.
Recalibrating the economy for greener growth	
Help-to-buy schemes for less polluting vehicles are not ambitious enough.	Make the eligibility criteria for the conversion premium and the ecological malus scale more stringent.
Some support schemes for building renovations do not encourage efficient energy renovations.	Make aid conditional on achieving a minimum energy efficiency standard and tighten controls on major projects.
The bulk of the support to the agricultural sector comes with little environmental counterparts. The reform of the CAP should increase environmental conditionality. France has also introduced its own incentives, notably based on the second pillar of the CAP, but they remain limited.	Reallocate support to the agricultural sector towards payments for agri-environmental services.
Public acceptance of environmental taxes is low, in part due to their regressive and sectoral effects.	Link economic incentives with measures to increase their social acceptability when needed.
Exemptions and reduced rates weaken the incentives of environmental taxes. The level of the carbon price remains uneven across sectors.	Gradually withdraw exemptions and reduced rates on environmental taxes. Prioritise the progressive alignment of carbon prices across sectors while resuming the gradual upward trend of the carbon component of energy taxes.
Boosting employment and productivity	
The financing of unemployment insurance and activation programmes is pro-cyclical.	Reform the financing of job seekers's support to ensure it is in line with economic conditions.
The school-to-work transition is still complex, especially for low-skilled youth, who have been severely affected by the crisis. The authorities plan to expand the youth guarantee scheme. Apprenticeship is underdeveloped, especially at the secondary level.	Ensure that measures to expand the youth guarantee scheme combine a financial allowance for those who needs it, support to enter the labour market and streamlined procedures. Increase the share of work-based training for apprentices.
The pandemic has speeded up the transition to a digital economy, but the take-up of digital technologies by small businesses remains low.	Provide financial support for training in digital technologies for small businesses.

Enhancing equal access to opportunities	
Disadvantaged households have less access to formal childcare, making employment more difficult for women.	Speed up the development of additional childcare services for low-income households and in the poorest neighbourhoods.
Access to public services could be improved in certain rural and urban areas. The government is developing a network of regional contact points known as “France Services”.	Strengthen outreach and accessibility schemes by implementing a quantitative follow-up of local access to public services.
The short supply of housing in dynamic areas prevents higher housing mobility and employment, especially for young people.	Refocus housing supply subsidies on the most densely populated areas.

1 Key policy insights

The French economy has bounced back following an unprecedented contraction during the COVID-19 pandemic. The fall in activity in 2020 was the sharpest since the end of the Second World War. As in other OECD countries, successive waves of COVID-19 cases reduced life expectancy by around half a year in 2020 (close to the OECD average; Figure 1.1). Economic activity and employment have bounced back swiftly since May 2021. Yet, the recovery remains conditional on the full normalisation of the health situation and an effective shift to more inclusive and sustainable growth once the remaining health restrictions are lifted.

Figure 1.1. The pandemic caused a deep economic and social recession



1. EA4 is the simple average for Germany, Spain, Italy and the Netherlands.
2. Excess mortality compared to the weekly average for 2015-2019, as a proportion of the population.
3. The Oxford Index (COVID-19 Government Response Tracker, stringency index) is based on nine indicators, including closures of schools and workplaces, and travel restrictions.

Source: OECD (2021), OECD Economic Outlook: Statistics and Projections, and Mortality: Excess deaths by week, 2020 and 2021 (databases); Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford; ECDC (2021), Epidemic Intelligence, national weekly data.

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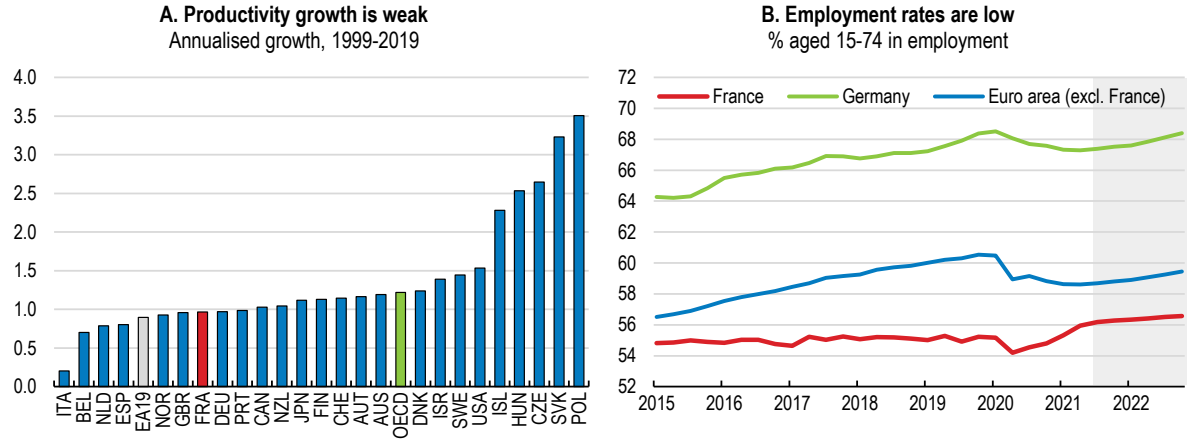
Despite effective emergency economic and social measures, the pandemic has weighed on the most vulnerable. Together with automatic budget stabilisers, the emergency measures allowed for relatively stable per capita disposable income and a minor fall in employment in 2020. However, older people, those born abroad and those living in the poorest, most densely populated municipalities were most affected by the first wave of the virus in 2020 (Insee, 2020a; Dubost et al., 2020). In early 2021, income losses were perceived as more frequent among the most vulnerable: low-income households, young people and the self-employed (Clerc et al., 2021). The number of minimum income recipients had increased sharply in the second part of 2020 and, despite a marked decline thereafter, it remained 2.8% above its 2019 level in July 2021 (Drees, 2021).

Before the crisis, the medium-term economic performance had been disappointing. As in most other advanced economies, growth in living standards as measured by per capita GDP had been constrained by the slowdown in productivity gains, while employment rates were still relatively low (Figure 1.2). Despite the rise in real wages, households' purchasing power per unit of consumption, a better way of measuring the standard of living, had been stagnant for around 10 years (Insee, 2021a). Too many low-skilled workers and young people were excluded from the labour market, and unequal opportunities weakened cross-generational social mobility (OECD, 2019a).

Figure 1.2. Improving employment and productivity are long-term challenges



Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

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France should build on the recovery plan and the reform programme under way since 2017 to ensure a steady recovery and more inclusive growth. Though the economic rebound has been strong over the summer 2021 and France has limited school closures during the epidemic waves of 2020-21, the pandemic has highlighted a number of weaknesses in the French economy, including inadequate digitalisation among small and medium-sized enterprises (SMEs), a mismatch between labour force skills and business needs and a persistently poor record in innovation (OECD, 2019a; CNP, 2019). The challenge is therefore to stimulate growth and create quality jobs while encouraging the digital and green transitions and ensuring the social acceptability of the reforms (Chapter 2; Dechezleprêtre et al., forthcoming). The key recommendations formulated in this *Survey* could generate further growth in per capita GDP, a measure close to average income, of 1.2% after 10 years.

Against this background, the main messages of this *Survey* are as follows:

- Public policy should continue to support activity while shifting the focus of support measures towards viable businesses and sectors to allow the necessary reallocations in the economy as the recovery gains traction.
- The recovery plan must encourage stronger and more sustainable growth, notably the shift to a digital economy and the green transition (Chapter 1). Structural reforms should boost productivity. Accelerating the pace of emissions reduction requires strengthened economic incentives while ensuring social acceptability.
- Policies must prevent the crisis from exacerbating unequal opportunities. Building the skills of young people and low-skilled workers, facilitating professional transition and reducing territorial disparities would promote more inclusive growth.
- Public debt is historically high and requires a medium-term fiscal consolidation plan to gradually lower spending. This strategy should be based on spending reviews and improved expenditure allocation.

1.1. The pandemic has caused an unprecedented recession

Emergency measures cushioned the impact of the crisis

The government implemented extensive direct budgetary support to households and businesses in 2020 and 2021. The cost of the emergency measures was around EUR 70 billion in 2020 (2.9% of 2019 GDP), according to the national accounts (RF, 2021a). In 2021, the measures will cost close to EUR 64 billion (2.6% of 2019 GDP) (Box 1.1), and implementation of the recovery plan would provide support amounting to 1.6% of 2019 GDP, notably through public investment (Box 1.2). The strengthened job retention scheme covered up to 29% of private-sector employees (full-time equivalent) in April 2020 at an estimated cost approaching EUR 35.5 billion between March 2020 and July 2021 (DARES, 2021a). Additionally, the solidarity fund, which was created to support small businesses and the self-employed, made payments to more than 2 million businesses amounting to EUR 36 billion - 1% of GDP - (IGF-France Stratégie, 2021a and 2021b; Secrétariat du Comité Cœuré, 2021).

Emergency income support schemes have had a major impact. The job retention scheme, whose conditions are generous in international comparison (OECD, 2021a), was extensively used, leading to a limited fall in employment during the crisis (Figure 1.3). As a result, disposable household income continued to rise in 2020 despite the fall in GDP. Combined with the drop in consumption (Table 1.2), this generated high levels of savings, which rose to close to EUR 110 billion above the pre-crisis trend at end-2020 (around 4% of GDP in 2019), a particularly high level compared to other OECD countries (Figure 1.4; OECD, 2021b; Banque de France, 2021a). Also, as budget support significantly curtailed the recession, this reduced indirectly their budgetary cost: the net cost of the six principal support measures amount to between 67% and 81% of their gross cost in 2020 (Canivenc and Redoulès, 2021).

Extensive indirect support provided liquidity to businesses. More than EUR 142 billion (5.8% of GDP) in government guaranteed loan (PGE) was made available since March 2020benefitting to close to 40% of businesses (Figure 1.6 and Box 1.3; Husson, 2021). This ranks France below Spain and Italy in terms of guaranteed loans, but above Germany and the United Kingdom (IGF-France Stratégie, 2021b). Government guarantees were targeted chiefly at SMEs and export businesses, enabling them to enjoy more favourable finance terms than other loan guarantee schemes set up in Germany, Spain or Italy (Anderson et al., 2021). Moreover, together with other mechanisms, deferrals in the payment of taxes and social contributions by businesses and the self-employed also benefited corporate cash reserves. At the same time, macro-prudential regulations were eased (Box 1.4).

Box 1.1. The main fiscal measures to support economic activity in 2020-22

The French authorities introduced many timely emergency support measures since March 2020. They were subsequently supplemented by the France Relance recovery plan and the investment plan to 2030 (Box 1.2). As a result, the planned public funding amount to close to 8.8% of 2019 GDP across the years 2020-22 (according to national account definition; Table 1.1, excluding the investment plan to 2030). Added to this are measures with no effect on the fiscal balance that total up to EUR 327.5 billion in guarantees and EUR 76 billion in cash measures for businesses.

Table 1.1. The main fiscal measures to support the economy in 2020-22

	2020 EUR billion	2021 EUR billion	2022 EUR billion	Total 2020-22 EUR billion	Total 2020-22 % of 2019 GDP
A. Emergency measures (total)[1]	***69.7***	***63.8***	***8.1***	***141.6***	***5.8***
Job retention schemes (excluding those in the recovery plan in 2021)	26.5	9.3		35.8	1.5
Solidarity fund and related support	15.9	23		38.9	1.6
Health spending	14	14.8	5	33.8	1.4
Exemptions from social contributions	5.8	2.6		8.4	0.3
Extended duration of unemployment benefits and delayed reforms of unemployment insurance	3.9	5.3	0.3	9.5	0.4
Other measures	3.6	8.8	2.8	15.2	0.6
B. Recovery Plan, France Relance (total)[1]	***1.8***	***38.2***	***30.1***	***70.1***	***2.9***
Planned European funding		16.5	10.6	27.1	1.1
A. Emergency measures, % of 2019 GDP	***2.9***	***2.6***	***0.3***		***5.8***
B. Recovery Plan, % of 2019 GDP	***0.1***	***1.6***	***1.2***		***2.9***

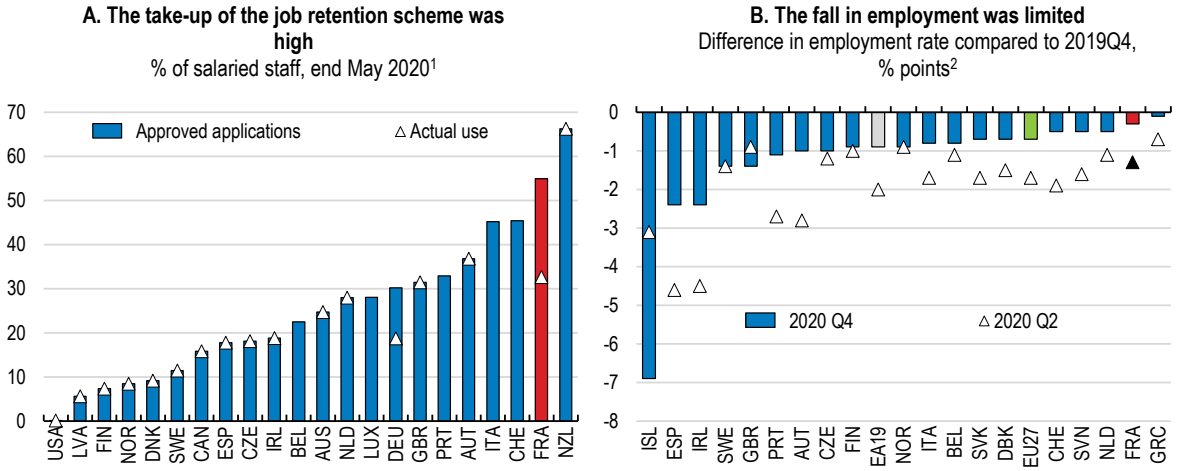
1. Includes only those measures that affect the fiscal balance in the national accounts.
Source: RF (2021), Rapport Économique Social et Financier 2022, October 2021, Government of the French Republic.

The key emergency measures are:

- **The job retention scheme**: the scheme was made more generous for businesses and workers (OECD, 2021). The share payable by employers, which was zero between March and May 2020, varies across sectors. In the most affected sectors such as hotels and catering, the share remained at zero until the end of August 2021 and has increased gradually. In other sectors, the share has been rising since June 2020 and is set at 40% since September 2021. However, businesses that are still affected by sanitary restrictions (administrative closures, people density limits) or those in hard-hit sectors whose turnover has fallen by more than 80% continue to be subsidised in full until the end of October 2021.
- **Solidarity fund**: the fund comprises flat-rate support to the smallest businesses experiencing a significant fall in turnover that meet certain conditions. The scheme was later extended to the sectors most affected by the crisis, such as hotels and catering, and the conditions on business size were lifted in December 2020 (Cour des comptes, 2021). In 2021, further assistance for "fixed costs" was also introduced to cover 70% to 90% of the operating losses off businesses subject to trading restrictions (RF, 2021).
- **Exemptions from social contributions**: these involved the sectors most affected by the crisis.

Source: Cour des comptes (2021), Le budget de l'État en 2020 (résultats et gestion), report of 13 April 2021; RF (2021), Rapport Économique Social et Financier 2022, Government of the French Republic; OECD (2021), OECD Employment Outlook 2021, OECD Publishing, Paris.

Figure 1.3. The job retention scheme contained the employment fallout



1. Employment rates are calculated in respect of the population aged between 15 and 64.
Source: Eurostat (2021), *Employment and Unemployment (LFS) – detailed quarterly results*; OECD (2020), *OECD Employment Outlook 2020*, OECD Publishing, Paris.

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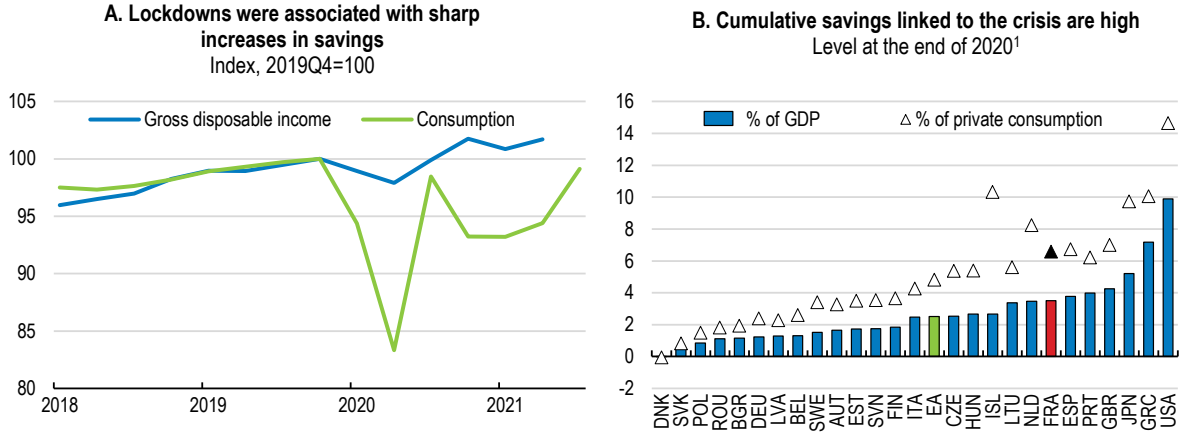
Figure 1.4. The shock on household income was limited, leading to large savings



1. Cumulative savings as a result of the crisis are estimated using excess household deposits, meaning the difference between savings levels at December 2020 and a hypothetical level that assumes that, in 2020, deposits rose at the average rate for the previous five years.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

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Box 1.2. The recovery plan, *France Relance* and the investment plan to 2030

The *France Relance* recovery plan commits to EUR 100 billion worth of measures, the majority in 2021-22, including EUR 87.3 billion according to the national account definition. This includes France's recovery and resilience plan worth around EUR 39.4 billion financed through the European Recovery and Resilience Facility (RF, 2021; EC, 2021). This effort is part of the Next Generation EU recovery plan that has enlarged fiscal space and will provide EUR 750 billion (about 5.5% of EU27 2019 GDP) of grants and loans to member states, funded by EU debt issuance (OECD, 2021). The main measures of *France Relance* are organised into three main fields:

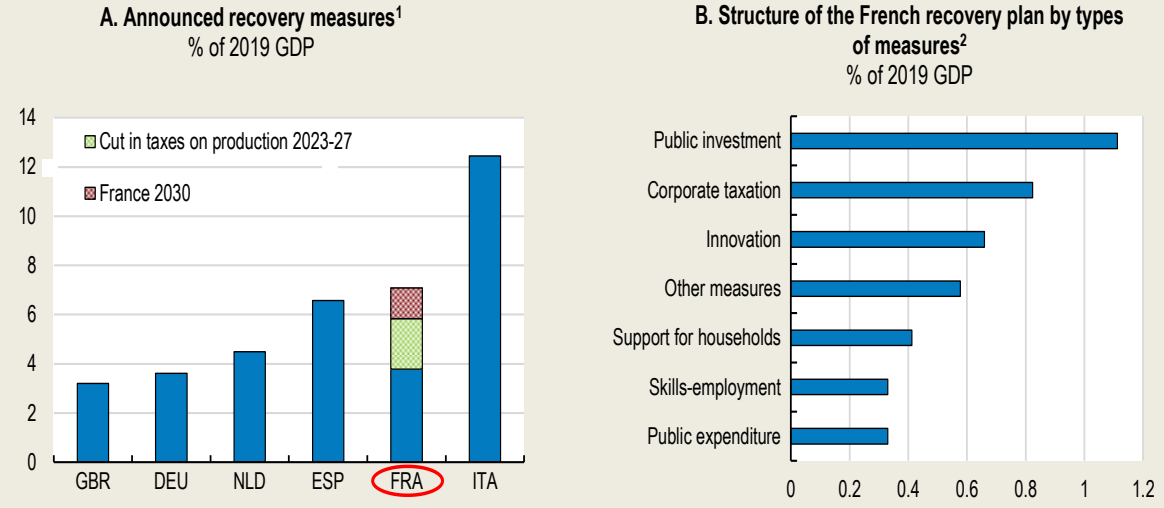
- **The ecological transition** (EUR 30 billion), including measures to improve the energy performance of buildings, increase rail freight, develop the use of decarbonised hydrogen and support businesses to make the transition;
- **Competitiveness and innovation** (EUR 34 billion), including EUR 20 billion in tax cuts over two years (maintained at EUR 10 billion per annum subsequently), corporate equity-building measures and support for digitalisation; and
- **Social inclusion, employment and territorial cohesion** (EUR 36 billion) including employment subsidies (targeted at young people and the most vulnerable), additional finance for the healthcare sector, and additional support for local government and lifelong learning.

In addition, the authorities announced a new investment plan to 2030 in October 2021. The plan, worth EUR 30 billion until 2027, would complement *France Relance* and notably target further investment in the energy sector (EUR 8 billion), as well as the health and transport sectors (EUR 7 billion and EUR 4 billion, respectively).

When compared internationally, the estimated recovery expenditures would rank France in an intermediate or high position, when the investment plan to 2030 and permanent business tax cuts are included (Figure 1.5). The permanent business tax cuts (EUR 10 billion annually) bring the estimated level of support to around 7.1% of 2019 GDP for the period 2020-27. Government estimates, excluding the 2030 investment plan, indicate a cumulative impact of 4% on GDP in the period 2020-27, including through support for public investment in 2020-22 and positive spillovers from the EU recovery plan (RF, 2020).

The Monitoring and Evaluation Committee for Business Support Measures established in April 2020 and chaired by Benoît Cœuré published an initial evaluation report of *France Relance* in October 2021 and an evaluation through research projects is planned in 2022. The initial report notes that the objectives in terms of the amounts to be committed have been achieved or are in the process of being achieved. Yet, the medium-term effects of the plan on energy efficiency, labour-market integration of young people, as well as productivity and resilience of value chains remain uncertain (Comité d'évaluation du plan France Relance, 2021).

Figure 1.5. The recovery plan emphasises public investment



1. The measures announced cover only measures that impact the budget balance up to end-2027 at most.
2. The planned business tax cuts are accounted for in 2021-22 only. The EUR 4 billion of the 2030 investment plan in 2022 are assumed to raise public investment.

Source: OECD estimate based on IGF-France Stratégie (2021), Rapport Final du Comité de suivi et d'évaluation des mesures de soutien financier aux entreprises confrontées à l'épidémie de Covid-19, July 2021, and national sources; RF (2020), Rapport Économique Social et Financier 2021, Government of the French Republic.

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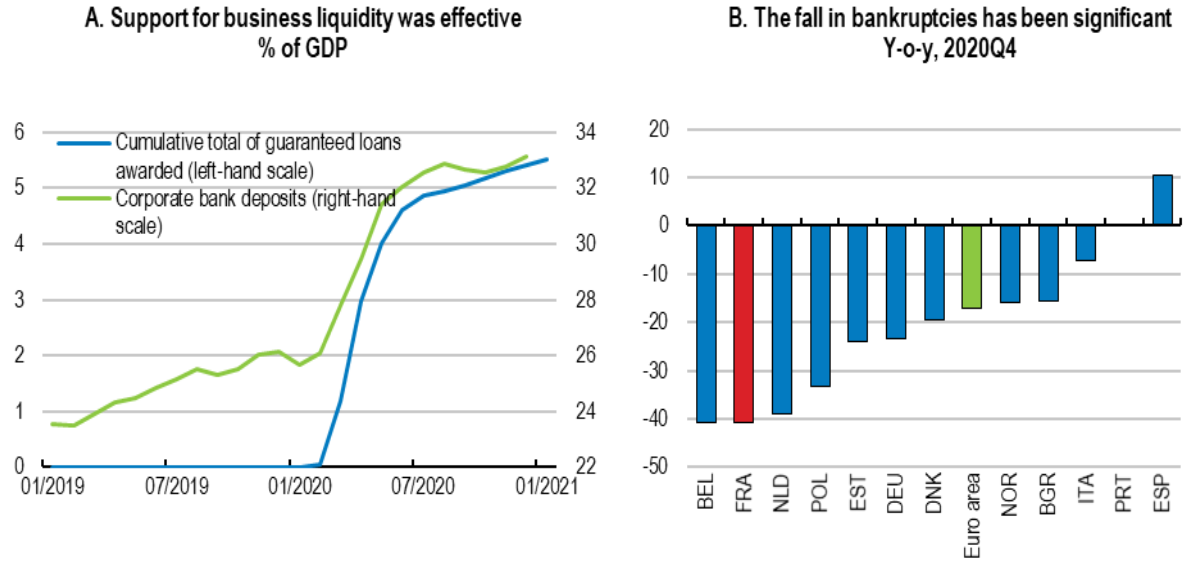
Source: RF (2021), Plan National de Relance et de Résilience, Government of the French Republic; RF (2020), Rapport Économique Social et Financier 2021, Government of the French Republic ; EC (2021), Commission Staff Working Document: Analysis of the recovery and resilience plan of France, European Commission ; OECD (2021), OECD Economic Surveys – European Union, OECD publishing, Paris; Comité d'évaluation du plan France Relance (2021), Premier rapport, Octobre 2021.

Support for business liquidity and temporary adjustements to banking regulations limited credit constraints (Figure 1.6). The annual growth in bank loans to non-financial businesses stood at 13.3% in December 2020, the highest level since 2008 (Banque de France, 2021b). As a result of both the temporary administrative changes to reduce the likelihood of petitions for bankruptcy, and the reduced activity in the courts because of the pandemic, creditworthy businesses with low cash reserves and high levels of debt were prevented from going bankrupt.

At end-2020, bankruptcies had fallen by more than 40% in France compared to the previous year, against a 17% drop in the euro area (EC, 2021a). By safeguarding otherwise viable businesses, this policy minimised the hysteresis effects of the crisis on the economy's production capacity. According to simulations run by the Ministry of the Economy, the proportion of French businesses that would have become insolvent during 2020, on account of the impact of the crisis, was halved as a result of public support (Hadjibeyli et al., 2021). This support did not significantly influence the key factors for business failure in 2020 (Cros et al., 2020; Hadjibeyli et al., 2021).

Figure 1.6. Support for business liquidity was effective



Source: Banque de France (2021), Financial situation of households and firms; EC (2021), Quarterly registrations of new businesses and declarations of bankruptcies – statistics, European Commission.

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Box 1.3. Measures to support the liquidity of businesses and strengthen their equity in 2020-21

Initial key liquidity measures

- **Government guaranteed loans (PGE) has accounted for EUR 142 billion of loans (5.8% of 2019 GDP) between March 2020 and August 2021**(Figure 4). Representing up to 25% of turnover, PGEs enable recipient businesses to apply to spread their repayments over between one and five years at the end of the first year and, in some cases, depreciate their capital only at the end of the second year. The scheme was mainly deployed from end-March 2020 to end-2021. Small and medium-sized enterprises account for 75% of the sums allocated (Secrétariat du Comité Cœuré, 2021).
- **Deferrals of social contributions mainly involved very small enterprises (VSEs).** VSEs, which represent around 20% of all employment, account for 56% of all deferred social contributions (IGF-France Stratégie, 2021). Non-financial business debt, in particular involving deferrals of social security and tax payments, amounted to EUR 25 billion (1% of 2019 GDP) in March 2021.
- **Credit mediation supported businesses in difficulties.** It handled close to 14 000 case files between March and December 2020 and, in half of cases, a solution was found with the banks.
- **The State supported Air France-KLM with a EUR 7 billion shareholder loan.**
- **The European Investment Bank (EIB) guarantee mechanisms have been expanded** (OECD, 2021). They include the establishment of a EUR 25 billion European Guarantee Fund to deploy up to EUR 200 billion in finance to businesses throughout the European Union.
- **Tax credit advances and the carry-back procedure were relaxed in 2020 and 2021.**

Tools to develop business equity and improve savings allocation

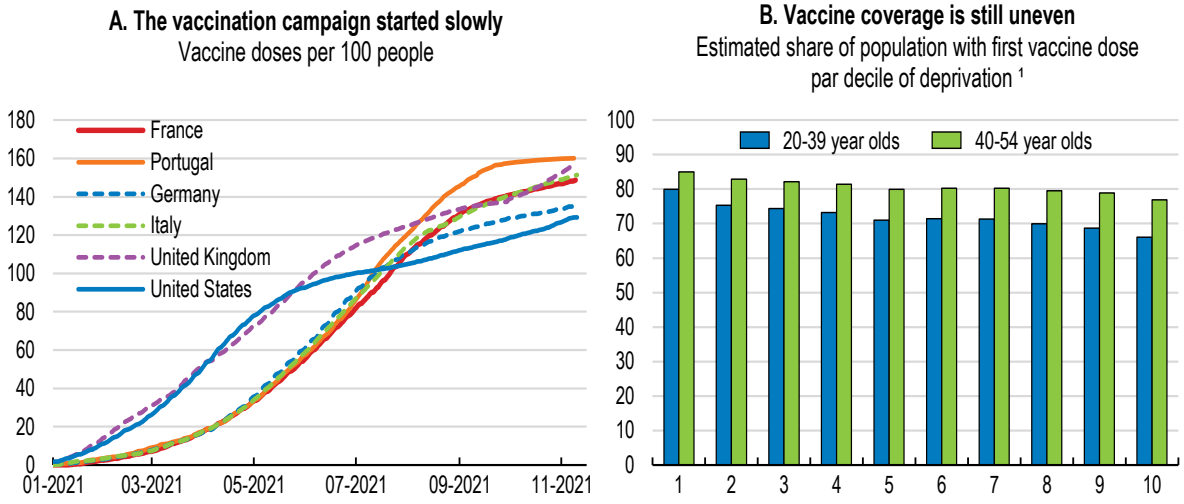
- **The long-term loan scheme (prêts participatifs Relance) guarantees business loans and was introduced in May 2021.** These long-term highly subordinated loans (loans that mature after eight years where the principal is repaid only from the fifth year and that are subordinate to all other bank debts) are intended to support business investment. This mechanism could mobilise EUR 20 billion in finance, that is around 6% of non-financial business investment in 2019 (MEFR, 2021).
- **Created in October 2020, the Relance label aims to guide private savings towards dedicated investment funds.** The label is based on a set of investment rules and environmental, social and governance criteria controlled by the French Treasury. As of September 2021, around 200 funds were labelled “relance” and amounted to around EUR 16 billion, including EUR 3.6 billion for insurers. Some 70% of the labelled funds are invested in the equity and quasi-equity of French businesses and more than 50% in SMEs and medium-to-large-sized enterprises (MEFR, 2021).
- **Incentives for households to invest in SMEs have been strengthened.** Income tax deductions were increased to 25% for equity subscriptions from August 2020 to December 2021.

Source: Secrétariat du Comité Cœuré (2021), *Chiffres clés de la mise en œuvre des mesures de soutien financier aux entreprises confrontées à l'épidémie de Covid-19*; OECD (2021), *Economic Survey 2021 – European Union*, OECD Publishing, Paris; IGF-France Stratégie (2021), Rapport *d'Étape du Comité de suivi et d'évaluation des mesures de soutien financier aux entreprises confrontées à l'épidémie de Covid-19*, April 2021; MEFR (2021), *Renforcer le bilan des entreprises pour la relance: présentation des prêts participatifs Relance et des obligations Relance*, Ministry of the Economy, Finance and the Recovery.

The acceleration of the vaccination campaign supports the recovery

The vaccination rollout has significantly eased pressure on intensive care units and will help to sustain the economic recovery. Although, as in the rest of Europe, the vaccination campaign got off to a slow start, it gained significant speed in the spring and summer 2021 when vaccination centres opened and vaccines were made available to healthcare professionals, and later with the implementation of the health pass. At the beginning of November 2021, 74.6% of the population was fully vaccinated, and 76.4% had received their first injection (Figure 1.7; Santé Publique France, 2021a), higher than European average rates (ECDC, 2021). At the same time, France rolled out its testing campaign, based on broad capacity and free testing until October 2021, for an estimated cost of EUR 7.7 billion in 2020-21 (0.3% of 2019 GDP).

Figure 1.7. The vaccination programme has been scaled up but remains perfectible



1. The deprivation index is defined at the municipality level as the first principal component of four variables (median income per consumption unit, the share of secondary school graduates in the out-of-school population aged 15 or over, the share of workers in the active population aged 15-64 and the share of unemployed in the active population aged 15-64).
Source: Caisse nationale de l'Assurance Maladie (2021), *Taux de vaccination (en %) par indice de défavorisation au 24 octobre 2021*; Our World in Data (2021), COVID-19 vaccine doses administered per 100 people.

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Ensuring a steady recovery requires achieving an even broader vaccination coverage and making changes to preventive health measures. The vaccination strategy prioritised the elderly and people with comorbidities that were at risk of developing more severe diseases. The authorities also took welcome measures to target the most vulnerable and disadvantaged, such as the introduction of mobile teams. In view of the low vaccine coverage among some healthcare professionals (Santé Publique France, 2021b), vaccination was made mandatory for healthcare and care home workers, as in the United Kingdom. However, in early November 2021, vaccine coverage was significantly lower in the most deprived areas (Figure 7; Ameli, 2021) and lower than the European average for those in the 80+ age group (ECDC, 2021). The priority is therefore to scale up vaccination even more for the most fragile and vulnerable communities.

As in other countries, the spread of more infectious or more severe variants is still a risk (Advisory Panel on COVID-19, 2021a and 2021b). In order to control their spread and prevent further waves of the epidemic, the authorities introduced protective measures in summer 2021, including the health pass, social distancing in places open to the public and the administration of booster shots for the vulnerables, thus reducing the scale of potential rebound in certain business sectors. Capacity to screen adults and young children rapidly will also have to continue to grow to ensure the success of the test, track (especially upstream) and isolate (especially for people arriving from at-risk countries) strategy. Additionally, capacity

to sequence variants should continue to increase. In addition, the aid to achieve higher vaccination globally should continue. The French government plans, in a welcome move, to share around 60 millions doses of COVID-19 vaccine before the end of 2021 (PR, 2021; OCDE, 2021m).

Beyond the health challenges, the crisis has underlined the importance of anticipating and preventing risks (Pittet et al., 2020 and 2021). Planning for major risks should be the subject of recurring general and specific exercises, such as stress tests of logistical capacity, and reflected in specific targets that are regularly reviewed, such as preparation of operational capacity. All-hazards risk analyses should also include highly unlikely situations such as the simultaneous occurrence of a combination of improbable multi-hazard risks (for example, a flood followed by an earthquake) whose potential cost is very high, to ensure that response capacity is adequate.

Local risk management strategies should involve greater commitment and the formulation of a shared vision that brings together local governments and the national authorities. Little account is taken in planning and urban development policies of specific risks (such as flooding) or the comprehensive multi-hazard view of risks, including health-related, climatic, geological, seismic and technological risks (OECD, 2017a; 2018a). In Japan, the national and local authorities are closely linked through national and subnational "national resilience plans". The aim of the plans is to ensure that the electrical, digital, rail, airport and flood-prevention infrastructures can perform as planned in the event of disaster (OECD, 2021c).

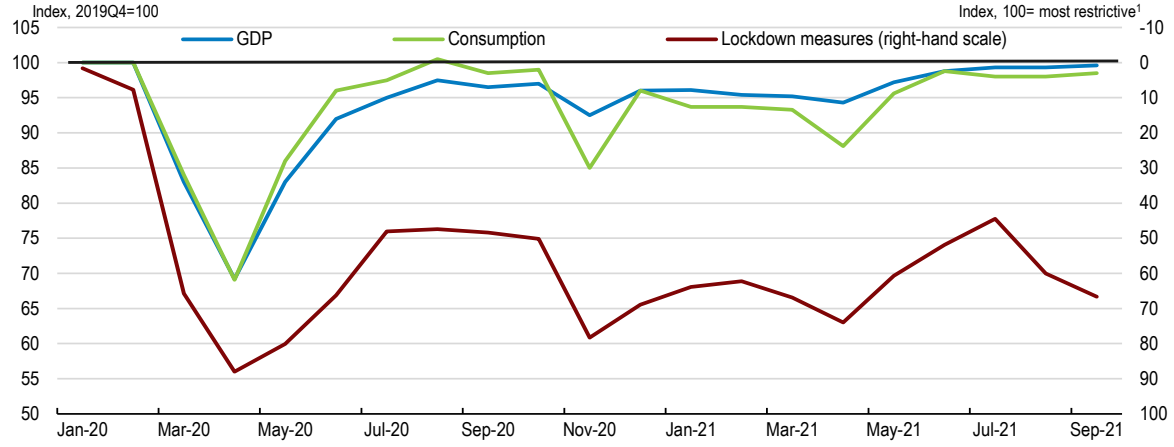
1.2. The economy bounced back when health restrictions were lifted

Macroeconomic policies are supporting domestic demand and the recovery

GDP growth will be around 6.8% in 2021 and 4.2% in 2022, and economic activity returned close to its pre-crisis levels in the third quarter of 2021 (Table 1.2 and Figure 1.8). Health restrictions have had an ever-decreasing effect on consumption patterns and mobility (Insee, 2021b; Banque de France, 2021c). After a poor start in 2021, the economy rebounded as the epidemic lessened, the vaccination campaign accelerated and health restrictions were relaxed. Moreover, while supply constraints weakened industrial performance at the beginning of 2021 and increased again over the summer 2021, some of them should gradually fade (Insee, 2021c).

The economy strongly rebounded at the beginning of summer 2021. Despite a further wave of COVID-19 cases over the summer, the lifting of health restrictions and the reopening of certain sectors has sustained a rapid rebound in consumption (Insee, 2021d; Banque de France, 2021g). Activity in restaurants, bars, leisure and air travel services (around 14% of output in non-financial service sectors in 2015), which in March 2021 was at less than 50% of its level at end-2019, therefore recovered (Figures 9 and 10). Moreover, demand from trade partners also bounced back swiftly, and exports are likely to slowly return to previous levels following their historically low levels of 2020 and mid-2021.

Figure 1.8. The economic impact of the epidemic and containment measures has fallen



1. The Oxford Index (COVID-19 Government Response Tracker, stringency index) is based on nine indicators, including closures of schools, workplaces and travel restrictions.
Source: Insee (2021), Après l'épreuve, une reprise rapide mais déjà sous tensions, October 2021; Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford.

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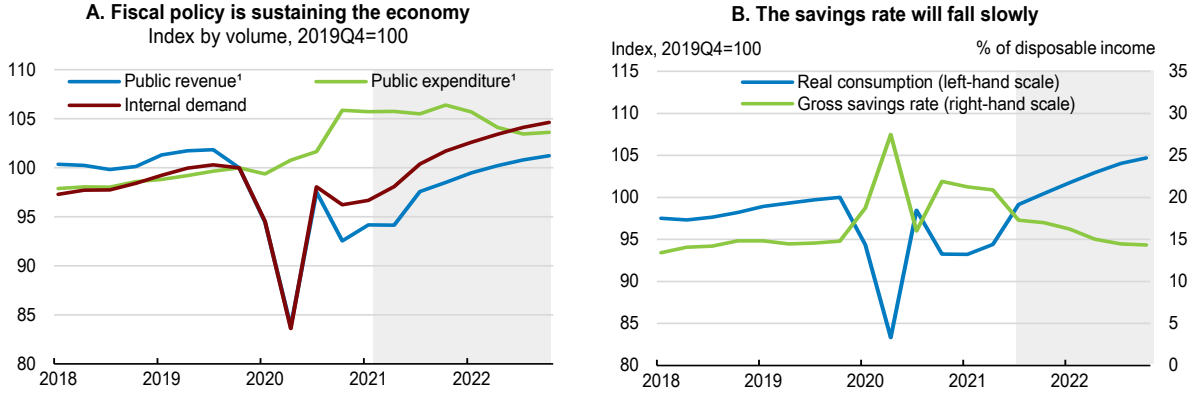
Fiscal measures strongly support domestic demand. The emergency economic and social measures (Box 1.1) together with the gradual lowering of the housing tax, will considerably lessen the crisis' effects on household incomes and purchasing power, despite the planned cut in unemployment benefits. The recovery and 2030 investment plans and support measures that protected corporate production capacity will also support business investment. However, although robust in 2020 and during the first part of 2021 (Figure 1.2), business investment will be restrained by high levels of gross debt in some firms as well as ongoing uncertainties (notably related to the health situation and trends in aggregate demand).

The recovery will support a moderate decrease of the unemployment rate. New hires and outflows from unemployment rebounded over the summer 2021. Yet, as the take up of the job retention scheme is declining rapidly, the increase in the number of hours worked in 2021 will be sustained chiefly by an increase in working time per employee (Figure 1.11). Moreover, the normalisation of the labour force, following its dip in 2020, will temporarily push the unemployment rate upwards (Table 1.2). As these factors fade out, the labour market will tighten further. Recruitement difficulties, notably for skilled staff, have already increased significantly (DARES, 2021b).

Figure 1.9. Fiscal policy and domestic demand are driving the recovery



1. Total public revenue and expenditure is deflated by the GDP deflator. Public revenue excludes European funding in 2021 and 2022.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

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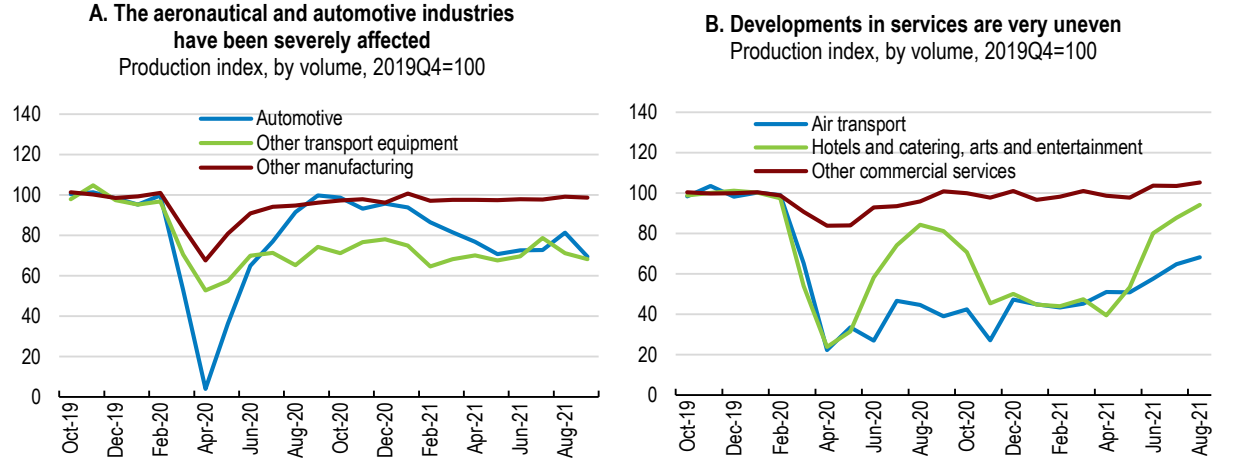
Table 1.2. Macroeconomic indicators and projections

	2017	2018	2019	2020	2021	2022
France	Current prices EUR billion	Percentage changes, volume (2014 prices)				
GDP at market prices	2 298.6	1.8	1.8	-8.0	6.8	4.2
Private consumption	1 241.0	0.8	1.9	-7.2	4.8	6.8
Government consumption	543.4	0.8	1.0	-3.2	6.4	1.9
Gross fixed capital formation	517.3	3.3	4.1	-8.9	12.0	3.7
Final domestic demand	2 301.7	1.4	2.1	-7.0	6.3	4.2
Stockbuilding[1]	21.6	0.0	0.0	-0.2	-0.2	-0.3
Total domestic demand	2 323.4	1.4	2.1	-6.8	6.6	4.5
Exports of goods and services	711.6	4.6	1.5	-16.1	8.2	7.5
Imports of goods and services	736.4	3.1	2.4	-12.2	7.3	8.4
Net exports[1]	-24.8	0.4	-0.3	-1.1	0.1	-0.4
Note:						
GDP deflator	_	1.0	1.3	2.5	0.7	0.8
Harmonised consumer price index	_	2.1	1.3	0.5	1.9	1.7
Core HICP[2]	_	0.9	0.6	0.6	1.2	1.4
Unemployment rate[3] (% of active population)	_	9.1	8.5	8.1	7.8	7.6
Gross household saving (% of disposable income)	_	14.1	14.7	21.0	19.1	15.0
General government financial balance	_	-2.3	-3.1	-9.1	-8.0	-5.0
General government gross debt	_	121.1	123.5	146.5	146.5	146.6
General government gross debt, Maastricht definition (% of GDP)	_	97.7	97.4	115.1	115.2	115.3
Current account balance (% of GDP)	_	-0.8	-0.3	-1.9	-1.0	-1.8

1. Contributions to changes in real GDP, actual amount in the first column.
2. Harmonised consumer price index, excluding energy, food, alcohol and tobacco.
3. Including overseas departments.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and updates.

Figure 1.10. Business activity remains very uneven



Source: Insee (2021), Industrial production index (IPI) and services production index (SPI).

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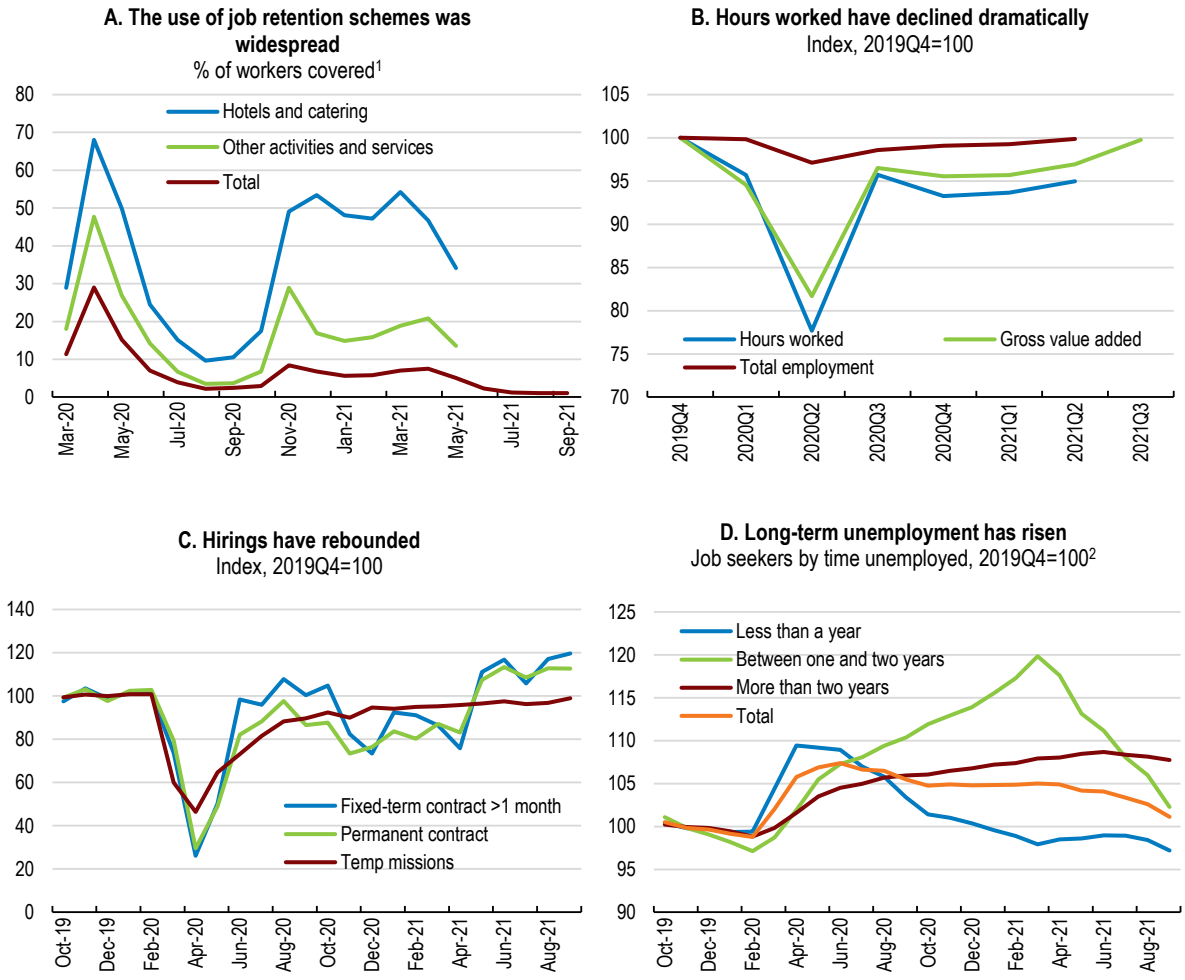
Figure 1.11. The labour market has been seriously affected



1. Monthly trend in actual take-up of short-time work schemes (shown as FTE) in the two sectors where the scheme was used most.
2. Job seekers registered at Pôle Emploi at the end of the month in categories A, B and C in metropolitan France.
Source: Secrétariat du Comité Cœuré (2021), *Chiffres clés de la mise en œuvre des mesures de soutien financier aux entreprises confrontées à l'épidémie de Covid-19*; DARES (2021), *L'emploi intérimaire*; DARES (2021), *Les demandeurs d'emploi inscrits à Pôle emploi*; ACOSS (2021), *Déclarations préalables à l'embauche*; Insee (2021), *Quarterly national accounts – detailed figures*.

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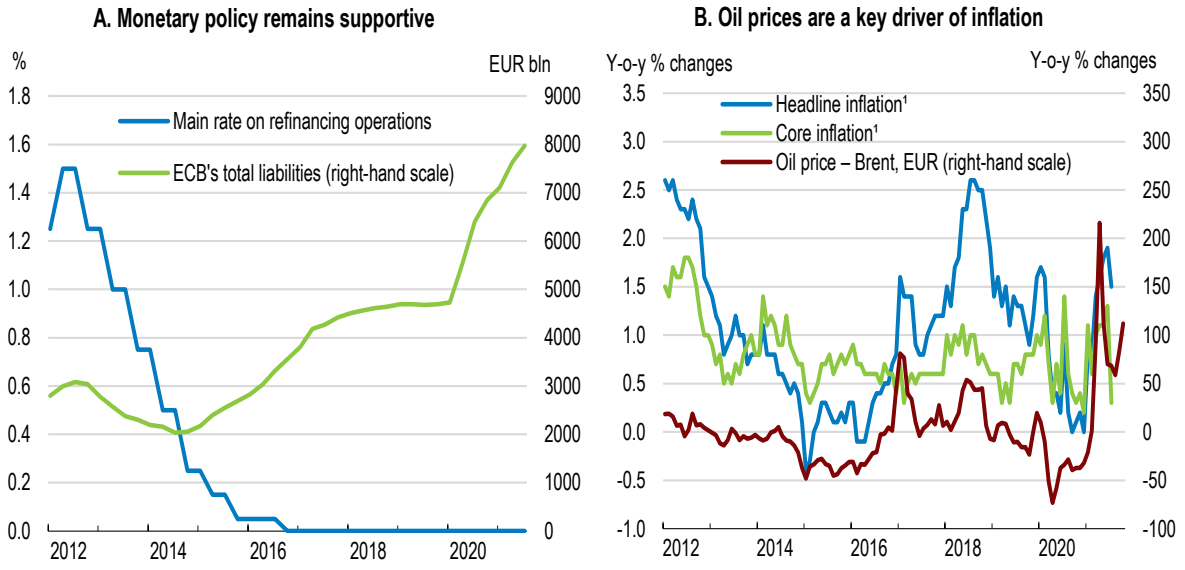
Core inflation will rise in 2021-22 (Figure 1.12). Since the beginning of 2021 and with an acceleration over the summer, the increase in commodity prices, particularly of oil and gas, together with supply problems driven both by the vigorous rebound of demand and disruption to some value chains, have been exerting upward pressure on consumer prices (Banque de France, 2021c; Insee, 2021c). So far, the trend in commodity prices has only partially been passed on in business sales prices (Banque de France, 2021e) and the scale of spare capacity in the economy is temporarily holding down core inflation. Yet, the resilience of the labour market and rising labour market shortages are set to support a pick-up in wages.

Figure 1.12. Core inflation will remain moderate



1. Harmonised indices.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and updates; ECB (2021), "Financial Market Data: Official Interest Rates", Statistical Data Warehouse (database), European Central Bank, Frankfurt.

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The risks surrounding these projections are historically high

In the short and medium term, the risks surrounding these projections are high. Passenger transport, tourism, cultural services and the aeronautical industry will probably carry lasting scars. Demand for these goods and services has fallen, and recovery is highly dependent on the health situation. Businesses have also accrued significant debt, and some of them will face liquidity and solvency issues, potentially leading them into bankruptcy. A slower recovery among France's main trading partners in the euro area would also delay recovery in France. By contrast, a larger drop in the savings accrued during the crisis, swift use of recovery funds at European level and a faster-than-predicted recovery in international tourism would stimulate growth. Finally, a number of large potential shocks could also alter the economic outlook significantly (Table 1.3).

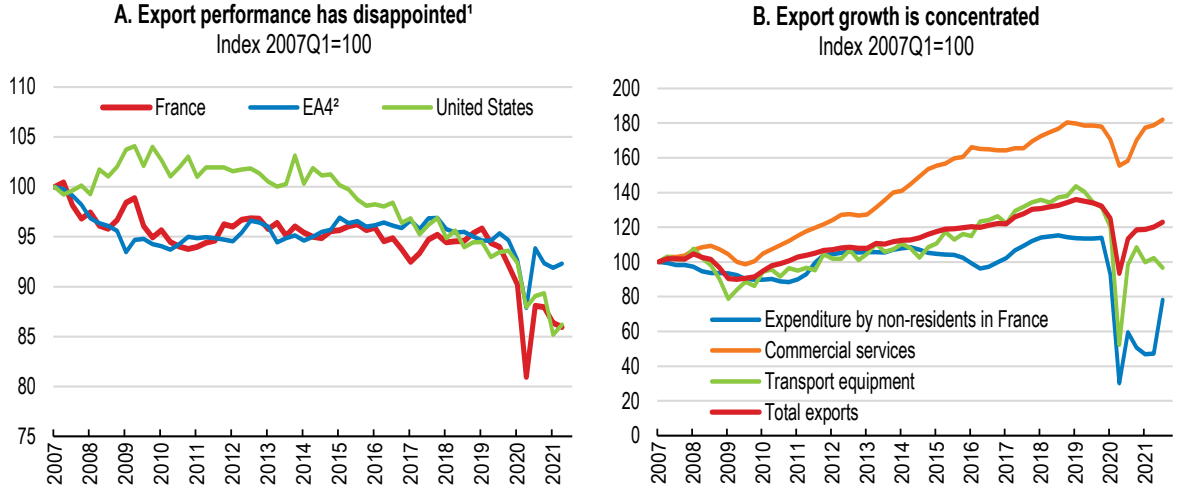
Table 1.3. Events that could lead to major changes in the outlook

Vulnerability	Possible outcome
Further national or global epidemic waves, potentially linked to the emergence of new variants that are more infectious or cause more severe disease.	Failure to combat the pandemic could increase pressure on the health system and require further preventive measures that could revert the economic recovery, particularly for the hotel and catering, tourism and leisure services sectors.
Rapid, uncontrolled rise in bankruptcies.	The overloading of commercial courts could considerably prolong the time taken to restructure debt, lead to deterioration in the banks' balance sheets and raise risk premia and could reduce the supply of bank loans.
Significant re-evaluation of interest rates.	A sharp rise in borrowing costs would increase the pressure on public finances and the banking system.

Trade performance is a key vulnerability for the French economy. France's foreign trade performance is unsatisfactory, as exports have never returned to the levels attained on the export markets since the 2007/8 crisis and fell steeply in 2020 (Table 1.2 and Figure 1.13). In particular, in 2021Q2, exports of transport equipment, including large exports of aeronautical and space equipment, and expenditures by non-residents remained well below their end-2019 levels (Figures 1.13 and 1.14; Insee, 2021b). In mid-2021, these sectors still showed adverse changes in activity and in their outlook for recovery in the short term (Banque de France, 2021e; Berthou et Gollier, 2021). Additionally exports of services, which had been growing rapidly since 2007, had only partly rebounded. Furthermore, French businesses, which in part

focused their growth strategy on increasing the numbers of their production sites, saw rapid falls in income linked to foreign direct investment. As a result, the current account has been in deficit since 2007 and stood at -1.9% of GDP in 2020.

Figure 1.13. Export performance is disappointing



1. Difference between export growth and export markets' growth, in volume terms (based on export markets as of 2010).
2. EA4 is the simple average for Germany, Spain, Italy and the Netherlands.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and updates; Insee (2021), Quarterly national accounts (database).

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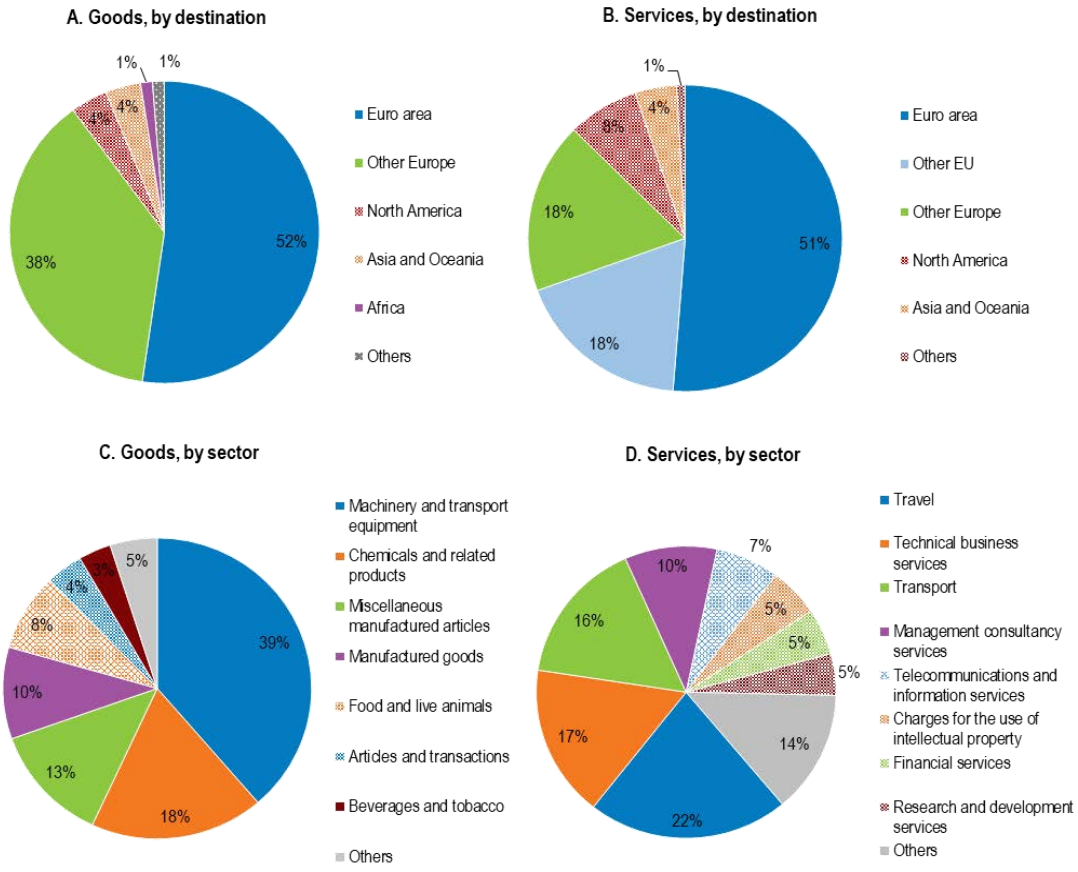
Productivity gains and improvements in non-price competitiveness are necessary to reduce exposure to external trade shocks. France's export-market shares had stabilised over 2012-19, as the intergration of emerging countries in international trade slowed and the tax credit for competitiveness and employment (CICE) and other labour tax cuts on low and average wages have considerably reduced the labour cost of low-skilled workers. However, labour costs remain relatively high for some skilled jobs (Paris, 2019). Moreover, although the non-price competitiveness of French exports appears good in the aeronautics, cosmetics and beverages sectors, it is only average in major sectors of world trade such as machinery, electrical equipment, vehicles or pharmaceuticals (Burton and Kizior, 2021). Non-price competitiveness is notably hampered by weaker innovation than in the best performing economies.

Figure 1.14. Structure of exports

Per cent, 2019



Note: In panel C, "others" includes mineral fuels, lubricants and related materials, crude materials, and animal and vegetable oils. In panel D, "others" includes insurance and retirement-savings services, construction and cultural services

Source: OECD (2021), International Trade Statistics (database).

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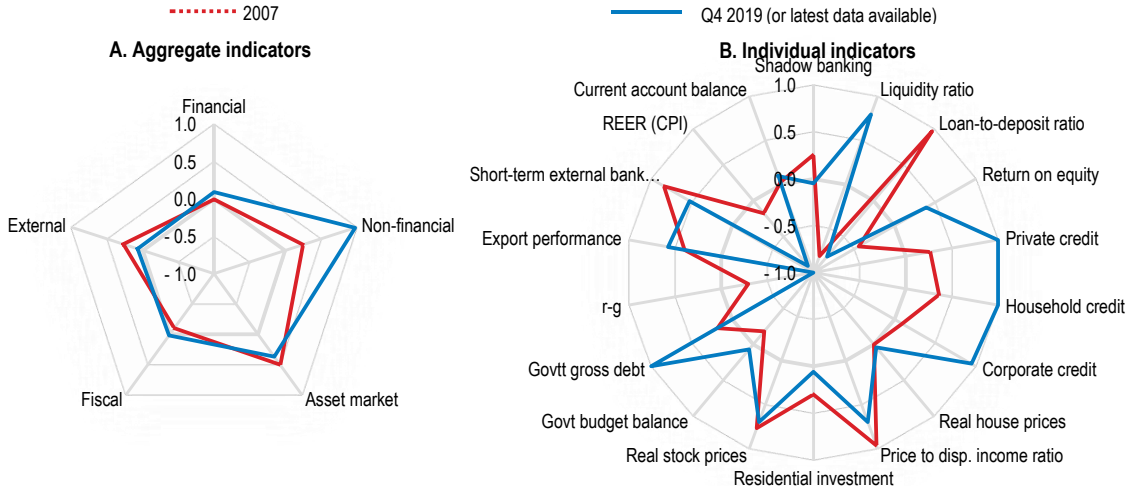
1.3. Financial risks have increased

Financial vulnerabilities were contrasted before the crisis. French banks had more robust levels of equity and liquidity than in 2007 (Figure 1.15; Banque de France, 2020a). This sound situation, together with fiscal and monetary support, has so far enabled banks to effectively face increased funding needs (OECD, 2021l). However, the crisis has exacerbated pre-existing risks related to the upward trend in private debt (both household and corporate), public debt, as well as some vulnerabilities in market finance and asset management (Figure 1.15; OECD, 2019a).

The crisis has increased gross corporate debt. Non-financial businesses entered the health crisis after three years of buoyant activity, rising profit margins, low interest rates and strong cash reserves. The rise in indebtedness was down to medium and large enterprises: debt for SMEs was falling (Bureau and Py, 2021). However, non-financial corporate debt rose from 73% of GDP at end-2019 to close to 88% in 2020. This rise was largely linked to SMEs, state-backed loans and the fall in GDP (see above). Although high cash reserves and intragroup borrowing moderated the risks for the businesses involved (Khder and Rousset, 2017; Banque de France, 2020b), the combined effects of an uncertain economic outlook and an increase of payment delays undermines the financial situation of some businesses, especially some of the smallest ones (IGF-France Stratégie, 2021b).

Figure 1.15. Prior to the crisis, the risks related to public and private debt were high

Index scale of -1 to 1 from lowest to greatest potential vulnerability, 0 refers to long-term averages since 1970[1]



1. Each aggregate macro-financial vulnerability dimension is calculated by aggregating (simple average) normalised individual indicators from the OECD Resilience Database. Individual indicators are normalised to range between -1 and 1, where -1 to 0 represents deviations from long-term average resulting in less vulnerability, 0 refers to long-term average and 0 to 1 refers to deviations from long-term average resulting in more vulnerability. Non-financial dimension includes: total private credit (% of GDP), private bank credit (% of GDP), household credit (% of GDP) and corporate credit (% of GDP). The asset market dimension includes: growth in real house prices (year-on-year % change), house price to disposable income ratio, residential investment (% of GDP) and real stock prices. Fiscal dimension includes: government budget balance (% of GDP) (inverted), government gross debt (% of GDP) and the difference between real bond yield and potential growth rate (r-g). External dimension includes: current account balance (% of GDP) (inverted), short-term external bank debt (% of GDP), real effective exchange rate (REER) (relative consumer prices) and export performance (exports of goods and services relative to export market for goods and services) (inverted).

Source: Calculations based on OECD (2021), OECD Resilience Statistics (database).

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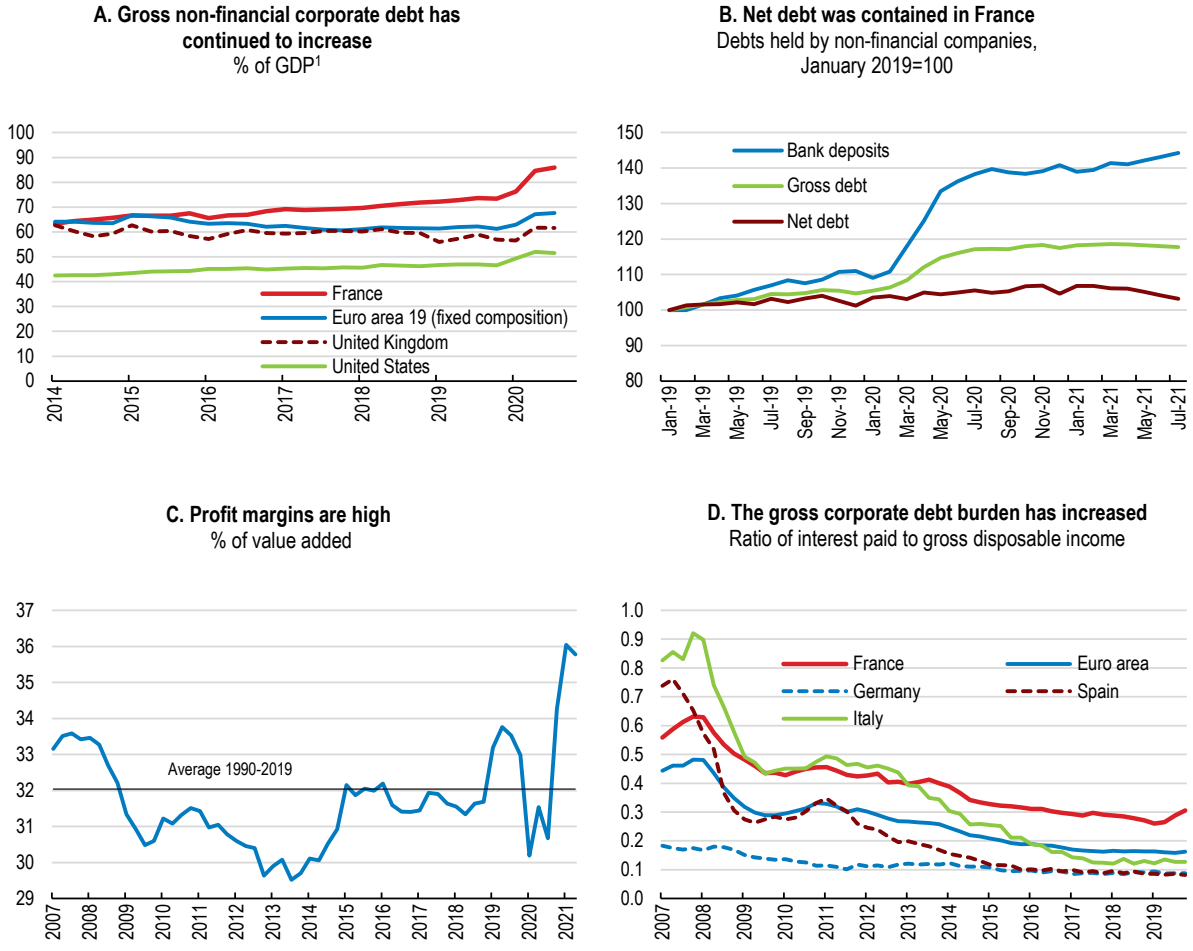
Continuing to provide liquidity to small and medium-sized enterprises and to strengthen their equity in a targeted manner is key for a resilient recovery (Figure 1.16). French businesses' liquidity appears adequate, but the profitability of some firms (excluding public support) has been very significantly affected, and the time taken for business-to-business payments has increased (Gonzalez, 2021). While the impact of the crisis on the corporate financial situation is currently limited (IGF-France Stratégie, 2021b), the pace of the phasing out of emergency support and the implementation of the recovery plan will be critical. Extending guaranteed loans could be a partial solution: during the 2008-09 crisis, such extensions made it possible to save jobs and limit public spending (Barrot et al., 2019).

Figure 1.16. Non-financial gross corporate debt has risen rapidly



1. The non-financial corporate debt is consolidated by subtracting assets from the non-financial corporate sector's liabilities.
Source: Banque de France (2021), "Endettement des agents non-financiers: comparaisons internationales", Webstat database; Insee (2021).

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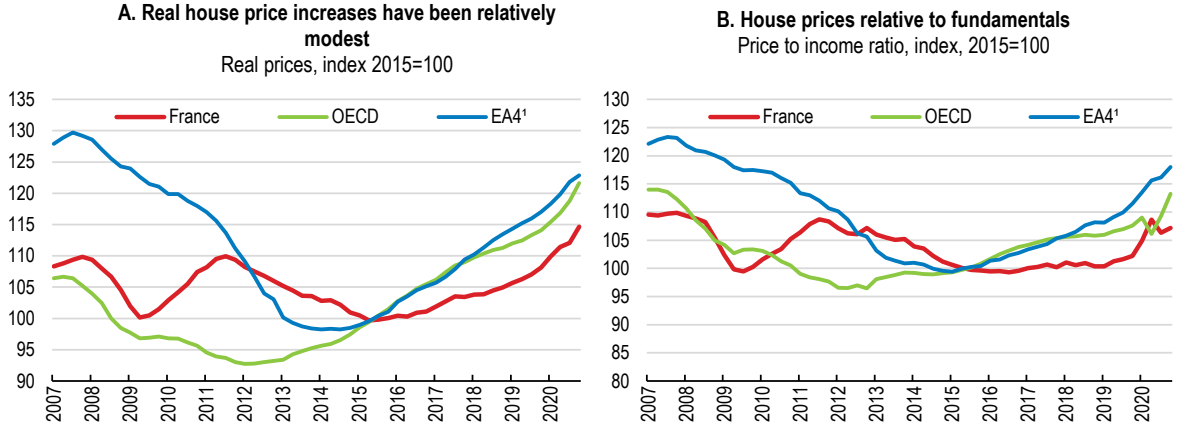
France has introduced several measures to support equity finance, which should help to reduce the risks of high corporate debt (Demmou et al., 2021; IMF, 2021; OECD, 2020f). The main instrument – *Prêt participatif Relance* – incentivises the private sector to mobilise highly subordinated long-term loans backed by public guarantees (Box 1.3). While the scheme combines features of market-led selectivity and limits the administrative cost for the government, few businesses have applied so far. The insufficient business awareness about the scheme and the debt-status of the instrument may have limited its attractiveness, as well as is design and complex status (IMF, 2021). If take-up remains weaker than planned or equity needs persist, support may have to increase and the instruments adjusted, for example by selectively providing greater equity through regional investment funds co-managed by the public investment bank (Bpifrance), the regions and private partners. Moreover, further structural measures concerning insolvency procedures and corporate financing are likely to contain the systemic risks (see below).

The valuation of commercial real estate requires careful monitoring, as the French market was very buoyant in 2019, and, at that point, France was already the most expensive market among the major European countries (Banque de France, 2021b; 2018). The crisis has also accelerated profound change with a boom in homeworking that could result in a reduction in office space (ACPR, 2021; Bergeaud and Ray, 2020). The systemic consequences of the price correction experienced in this market appear limited, since the direct exposure of the insurance and major commercial banks to the commercial real estate

sector accounts for less than 5% of their balance sheets (HCSF, 2017). For the moment, they are apparently resilient enough to weather a sharp price correction in prices in the office space segment of commercial real estate. However, the correction under way could reduce business investment by having a bearish effect on assets that could be used as collateral (Fougère et al., 2019).

Household credit was also at an all-time peak before the crisis (Figure 1.15). The progressive easing of conditions for mortgage loans noted in recent years have made households more vulnerable, but the measures taken by the High Council for Financial Stability (HCSF) in December 2019, and then again in January 2021, made mortgage conditions more stringent (Box 1.4). The increase in real house prices since mid-2015 is less than the average for the euro area and the OECD (Figure 1.17). Price-to-rent and price-to-income ratios remain below the average for the OECD, and increases have slowed from their highs in 2011. Moreover, the nature of mortgages, which are primarily at fixed interest rates – 96% of the outstanding mortgage market in 2019 (ACPR, 2020) – speaks for the resilience of household solvency. However, a sharp increase in banks' financing costs would adversely impact the profitability of their mortgage stock. Moreover, a sharp repricing of household assets (particularly housing) or a drop in household income if the recovery were to disappoint, would make households less solvent.

Figure 1.17. Housing market trends



1. EA4 is the simple average for Germany, Spain, Italy and the Netherlands.
Source: OECD (2021), Analytical House Price Indicators (database).

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Against this background, the profitability of the French banking system should be carefully monitored. In mid-2021, the bank capital ratio remains high and close to the euro area average at close to 16% (CET1, Basel III), whereas the total capital ratio stood at 19.4% (ECB, 2021). Before the crisis, the gross ratios of non-performing loans held by French banks were low by comparison with other European countries and they have not increased so far (HCSF, 2020; Banque de France, 2021f). However, the profitability of European and French banks was low even before the crisis (OECD, 2021d; ACPR, 2021). An increase in banks' credit risk linked to potential corporate bankruptcies and the cost of the risk could accentuate the weakness of the banks' revenues. Even though the European measures have reduced the cost of risk (Box 1.4), the credit outlook could prove challenging. A rise in the banks' perception of risk could push them to tighten credit standards, while an adjustment of state guarantee programmes and the need to improve corporate balance sheets could reduce corporate demand for credit.

Box 1.4. Monetary policy measures and adjustments to financial regulations in 2020-21

European regulations

- **The European Central Bank (ECB) expanded its asset purchase programme, allocating a further EUR 1 970 billion to the total** (equivalent to 16.5% of euro area GDP for 2019; OECD, 2021). The programme is essentially a EUR 1 850 billion pandemic emergency purchase programme (PEPP) under which net purchases will continue until at least March 2022 and to which some of the limits imposed on asset purchases by the ECB itself will not apply.
- **In order to preserve banking credit and liquidity, the ECB announced further targeted longer-term refinancing operations**, made the funding conditions offered under targeted longer-term refinancing operations (TLTROs) more favourable, and relaxed the criteria it applies when determining which assets are acceptable as collateral.
- **The regulatory requirements governing banking capital and liquidity ratios have been temporarily relaxed,** notably through amendments to the regulation on capital requirements and the introduction of a degree of flexibility on the prudential treatment of non-performing loans (NPLs). In order to preserve bank capital, the ECB asked banks not to pay dividends or buy back shares.
- **Targeted amendments of the rules that apply to capital markets have been applied.** Regulations on prospectuses, in the Markets in Financial Instruments Directive (MiFID II) and rules on securitisation, have been amended to allow issuers to raise funds quickly and facilitate recourse to securitisation, including for NPLs, so that the banks can make more loans.

Key national measures

- **The High Council for Financial Stability (HCSF) fully released the counter-cyclical capital buffer in March 2020.**
- **The recommendation of the Banque de France and the ECB on the temporary suspension of any cash dividend and of any share buyback that was formulated in March 2020 was relaxed in December and extended to September 2021.**
- **The HCSF has recommended greater prudence in granting mortgage loans.** In December 2019, it recommended that debt-service-to-income ratios should not be greater than 33% (35% since January 2021) and that the loan maturity should not exceed 25 years. The recommendation will become binding in January 2022 (HSCF, 2021).

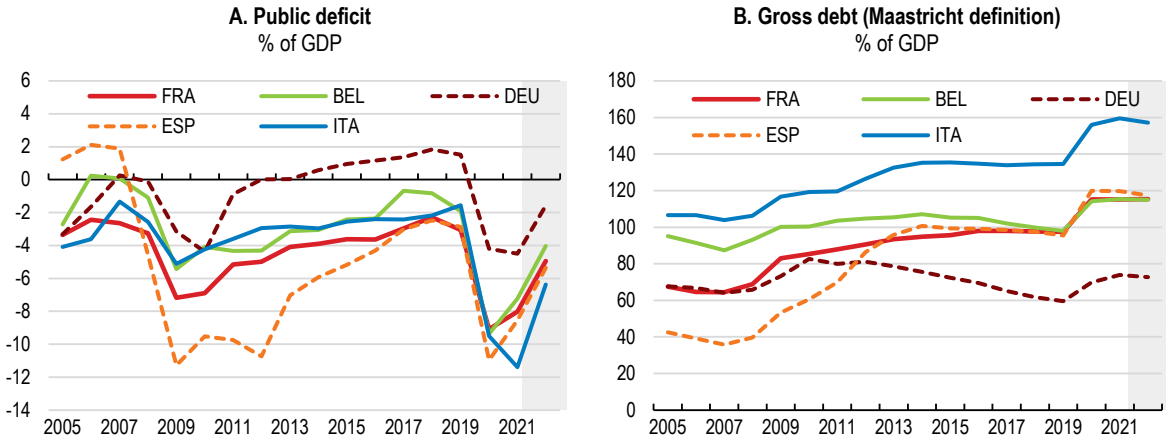
Source: OECD (2021), *Economic Survey 2021 – European Union*, OECD Publishing, Paris; HCSF (2021), *Décision D-HCSF-2021-7 relative aux conditions d'octroi de crédits immobiliers*, 29 September 2021, High Council for Financial Stability.

1.4. Reforming public finance to sustain the recovery

Continuing and targeting short-term support

France had been making some progress in reducing its public deficit between 2012 and 2019. It had fallen from 5.0% of GDP in 2012 to 2.5% in 2018. In 2019, by excluding a significant one-off expense caused by replacing the competitiveness and employment tax credit (CICE) with reduced employers' social security contributions, the public deficit was 2.1% of GDP. Buoyant growth and the fall in unemployment had more than compensated for the emergency provisions made in the wake of the "yellow vests" movement. Yet, the crisis and the associated fiscal support have pushed the deficit to 9.1% of GDP in 2020. The ratio of gross public debt to GDP rose sharply in 2020, as in most OECD countries (Table 1.4 and Figure 1.18).

Figure 1.18. The deficit and public debt are historically high



Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and updates.

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Fiscal support must be maintained until the recovery has been firmly established, but it needs to become more targeted and more limited to facilitate the reallocation of resources after the pandemic. However, in the event that risks associated with the ongoing health situation materialise, or if the recovery proves weak, it would be appropriate to retain the flexibility of the current approach, which allows public policy to be tailored to the evolution of the pandemic. This could include mobilising the state guarantee given to numerous loans.

According to OECD projections, significant efforts will be required to stabilise France's public debt at close to 120% of GDP in 2060 (Maastricht definition; Figure 1.19). Beyond 2022, the assumption is that the increase in the costs of ageing will be fully offset and that additional measures will stabilise the debt. Otherwise, the debt-to-GDP ratio will remain close to 120% of GDP and could rise to close to 150% of GDP in 2060 if the rise in interest rates proves greater than projected under the initial assumptions (Figure 1.19). That would threaten the viability of the public finances. Although clouded by significant uncertainty, the outcomes are in line with recent analyses by the Committee on the Future of the Public Finances (Commission pour l'avenir des finances publiques, CAFP) and the European Commission (CAFP, 2021; EC, 2021b)

Table 1.4. Key fiscal indicators

As a percentage of GDP

	2014	2015	2016	2017	2018	2019	2020	2021[1]	2022[1]
Spending and revenue									
Total expenditure	57.2	56.8	56.7	56.5	55.6	55.3	61.7	59.9	56.6
Total revenue	53.3	53.2	53.1	53.5	53.3	52.3	52.6	51.9	51.7
Total revenue excluding European funding in 2021-22[2]	53.3	53.2	53.1	53.5	53.3	52.3	52.6	51.3	51.3
Net interest payments	2.1	1.9	1.7	1.6	1.6	1.4	1.2	1.0	0.8
Budget balance									
Fiscal balance	-3.9	-3.6	-3.6	-3.0	-2.3	-3.1	-9.1	-8.0	-5.0
Primary fiscal balance	-1.8	-1.8	-1.9	-1.3	-0.7	-1.7	-7.9	-7.0	-4.1
Cyclically adjusted fiscal balance[2]	-2.6	-2.3	-2.3	-2.4	-2.2	-3.3	-2.5	-5.6	-4.7
Underlying fiscal balance[3]	-2.6	-2.5	-2.2	-2.4	-1.9	-2.4	-2.5	-6.1	-4.9
Underlying primary fiscal balance[3]	-0.6	-0.6	-0.4	-0.7	-0.3	-1.0	-1.4	-5.2	-4.0
Public debt									
Gross debt (Maastricht definition)	94.8	95.6	98.0	98.1	97.7	97.4	115.1	115.2	115.3
Net debt	75.3	77.2	79.3	77.5	78.0	78.7	94.5	95.9	96.2

1. Projections.
2. The European funding received by France will be EUR 16.5 billion and 10.6 in 2021 and 2022, respectively.
3. As a percentage of potential GDP. The underlying balances are adjusted for the cycle and for one-offs. For more details, see *OECD Economic Outlook Sources and Methods*.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and updates.

In order to set the debt-to-GDP ratio on a sustainable path and increase the efficiency of public spending, it is necessary to better identify the costs and benefits of each public policy while reducing the fragmentation of the budgetary processes. There are over 90 000 public entities in three categories of public administration (Cour des comptes, 2020a). This makes it difficult to identify clearly the scale and total cost of public policies and hampers the ability to make decisions on the allocation of resources. Various budgetary processes exist alongside each other and could be consolidated (Moretti and Kraan, 2018).

The establishment of a consultative body comprising representatives of the State, social security and subnational governments, and regularly opening a general debate on public revenue and the conditions for fiscal balance could increase the efficiency of the fiscal framework. The new body could be given responsibility for establishing and rolling out an expanded, multiannual expenditure rule with sectoral objectives while the High Council for Public Finances (HCFP) could be made responsible for sounding the alarm in the event of a significant deviation from the multiannual trajectory (Cour des Comptes, 2020a). Expenditure rules have a positive track record of successfully curbing the deficit bias in some European countries, such as the Netherlands and Sweden (OECD, 2021p). As envisaged by a 2021 draft law, following its analysis of the macroeconomic assumptions of the main annual budget and with a longer preparation period, the HCFP could be tasked to analyse and publish an opinion about the realism of the budgetary forecasts and evaluate their compliance to the multiannual trajectory for public finances.

The authorities will have to regularly evaluate the efforts to rationalise public expenditures and improve their efficiency. In-depth spending reviews are necessary to implement an ambitious programme to significantly and progressively lower public spending and increase its efficiency. Public spending is among the highest in the OECD when compared to GDP, especially where social expenditures are concerned (OECD, 2020g), and welfare benefits and payroll grew strongly after the 2008-9 economic and financial crisis (Figure 1.20) and require growing tax revenues.

While the administrative costs of some expenditure are high, the outcomes in terms of reducing social and regional inequalities and performance in the education system and innovation were disappointing (see below). Established in 2017, the Comité Action Publique 2022 identified potential efficiency gains to reduce public spending. Nevertheless, the results were modest so far. The process supported the welcome modernisation of some services delivery and some reorganisation of human resources. Yet, there were no precise performance targets for public service quality or budget savings. Spending reviews could be designed to assist in identifying areas for potential savings, and improving alignment of public expenditure with strategic and political priorities, as in Canada and the United Kingdom (Box 1.5). Regular evaluations of the effects of spending reviews would be key to ensure their efficiency (OECD, 2017a).

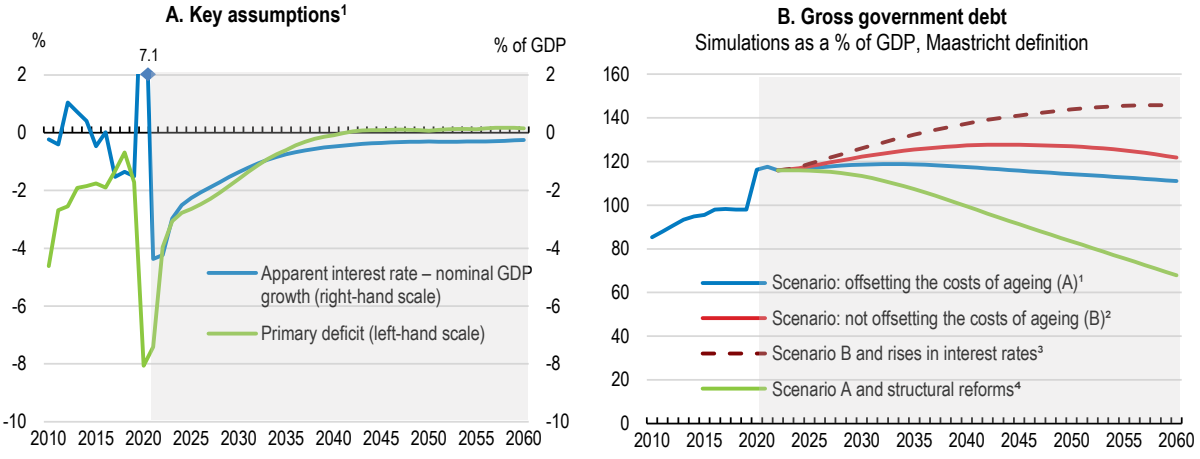
Box 1.5. Spending reviews in Canada and the United Kingdom

Canada's Policy on Results (2016) prioritised the achievement of results across government by enhancing transparency on which resources are allocated to achieve them and through better use of evidence including use of performance information and spending reviews (OECD, 2019). Spending reviews focused on thematic areas of spending, such support for innovation, management of fixed assets. These reviews look at spending across all of government and apply a results-driven, rather than a fiscally-driven, approach to spending assessment.

The United Kingdom is an example of linking spending reviews to mid-term fiscal strategy. Such multi-year spending reviews were introduced in 1998 (EC, 2020). They usually set 3 to 4 year capital and current budgets for each ministry, with the final year of each spending review period becoming the first year of the subsequent one – deliberately designed to deal with the rising uncertainty associated with medium-term targets.

Source: EC (2020), Spending Reviews: Some Insights from Practitioners – Workshop Proceedings, European Economy Discussion Paper, No. 135 ; OECD (2019), Budgeting and Public Expenditures in OECD Countries 2019, OECD Publishing, Paris.

Figure 1.19. Putting debt on a sustainable path requires structural reforms



1. These assumptions are taken from the long-term model described in Guillemette and Turner (2021). In the model, the rise in spending related to ageing is offset in full, and the primary deficit develops endogenously and stabilises public debt in the long term at 2021 levels.
2. This scenario includes the costs of ageing as described in European Commission Table III.1.137 (2021c).
3. Compared to the assumptions in scenario A, the rate is 125 basis points higher in 2025 and remains stable thereafter.
4. The "OECD-recommended reforms" scenario adds the estimated effects of the reforms recommended in this *Survey* (Box 1.5 and Table 1.6). This scenario assumes a rise of 1.2% in potential GDP by 2033.

Source: Adapted from OECD (2021), OECD Economic Outlook: Statistics and Projections (database), June and November; and European Commission (2021), "The 2021 Ageing Report: Economic and budgetary projections for the EU Member States (2019-2070)" Directorate-General for Economic and Financial Affairs.

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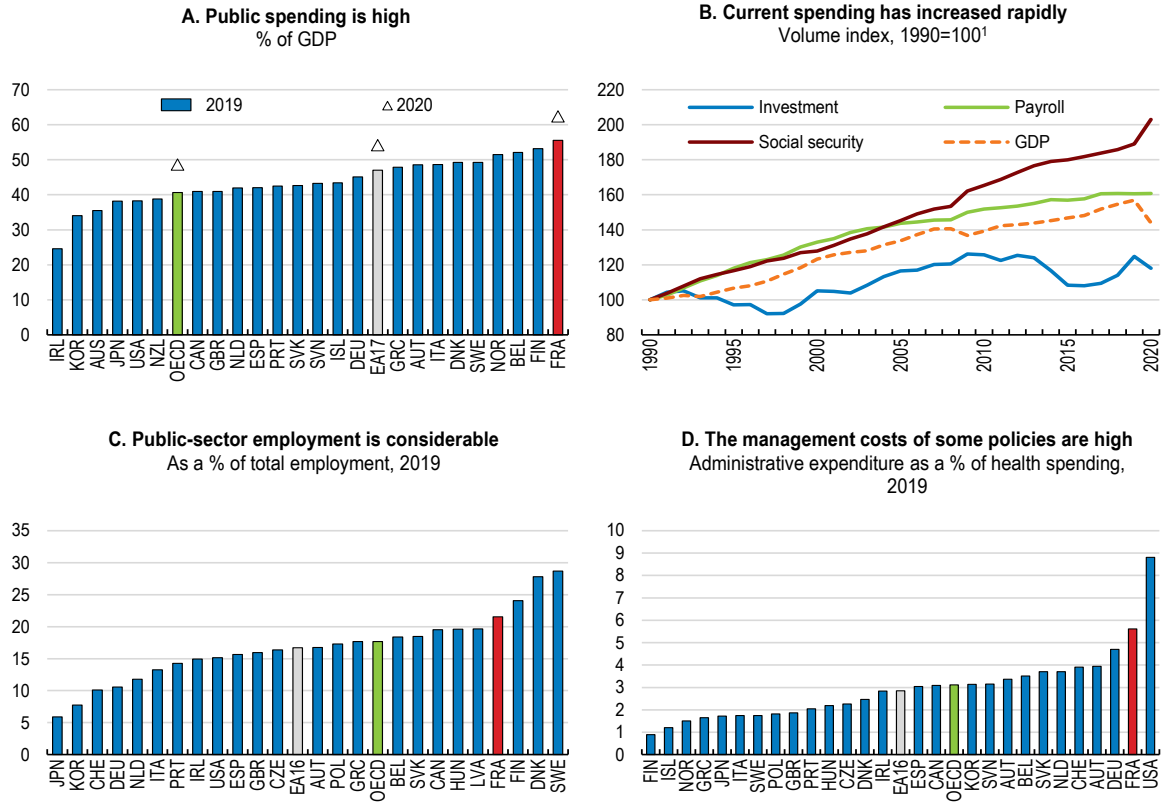
France also lacks long-term projections for public spending and debt. The public finance trajectories presented by the government have a five-year time frame (CAFP, 2021). Even though the annual Stability Programmes include an indicator of long-term sustainability and some long-term simulations are also published for the pension system, regularly publishing long-term debt projections for the general government and expanding the mandate of the High Council for Public Finances (Haut Conseil des finances publiques, HCFP) to include analysing the extent to which the assumptions for these projections are realistic would be steps in the right direction. For example, in the Netherlands and the United States, independent fiscal institutions are responsible for analysing long-term fiscal sustainability in periodic documents with 40- and 30-year time horizons.

Figure 1.20. Public spending efficiency must improve



1. Expenditure is deflated by the GDP deflator.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database); OECD (2021), *OECD Health Statistics 2020*; OECD (2019), *Government at a Glance 2019*; Insee (2021), The national accounts.

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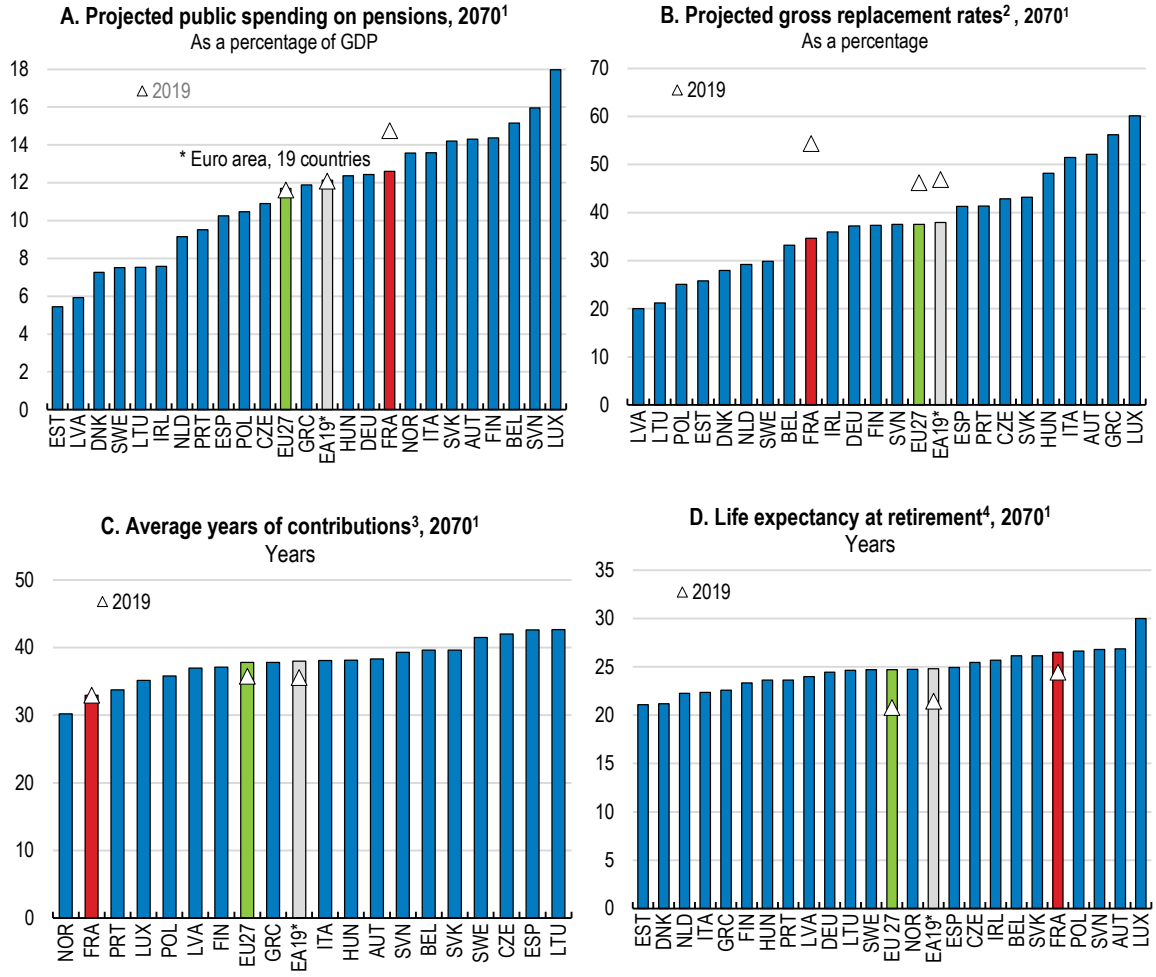
Improving the allocation of public spending to support more sustainable growth

A strategy to reduce public expenditures in France should include improving their efficiency, particularly those related to local governments and tax expenditures. Lowering the public sector wage bill, and reducing pension spending in relation to GDP by raising the retirement age and easing longer careers should also be a priority. This would make it possible to finance much needed investment, especially in digitalisation, skills and the environment (Table 1.6; EC, 2021c; Guillemette and Turner, 2021). At the same time, the reduction of public spending should be associated with higher incentives for greener investment (Table 1.6 and Chapter 2). This strategy would lead to lower tax rates in the medium run, notably on labour, increasing potential growth (Fournier and Johansson, 2016). This would allow to deepen the recent reforms of in-work benefits (*Prime d'Activité*) and personal income taxation, which have raised work incentives, but remain perfectible (Sicsic and Vermesh, 2021; Blanchard and Tirole, 2021).

Reforming the pension system

The relatively low average effective retirement age implies high public spending on pensions and low labour participation rates among older workers, which adversely affect medium-term growth. Public pension spending is among the highest in the OECD area at about 14% of GDP (Figure 1.21). However, under the current legislation, public expenditures on pensions are set to remain broadly stable until 2040 and decline thereafter according to the projections from the European Commission (EC, 2021c). Indeed, several reforms until 2014 have increased the minimum affiliation period, progressively increased the statutory retirement age, raised incentives to delay retirement and indexed pension on prices (rather than wages) (Bellon, 2020; COR, 2021). Under the current rules, the financial sustainability of the pension system will be ensured by a rapid lowering of replacement rates (Figure 1.21), and a decline of the average pension compared to the average wage (EC, 2021c; COR, 2021). According to these projections, in 2070, projected public pension spending would be close to the euro-area average.

Figure 1.21. Public spending on pensions is set to decline alongside replacement rates



1. European Commission projections (2018).
2. Gross replacement rates are measured as the very first pension benefit relative to the last wage before retirement.
3. Average contributory period for new pensions. Contributory periods can increase for several reasons, such as, for example, rising statutory retirement ages that force employees or higher employment rates.
4. Life expectancy at average retirement age.

Source: European Commission (2021), "The 2021 Ageing Report: Economic and budgetary projections for the EU Member States (2019-2070)", Directorate-General for Economic and Financial Affairs.

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The pension system suffers from numerous weaknesses. The effective contributory period to the public pension system is among the lowest in the European Union, whereas the payment period is far longer than the European average (Figure 1.22). Weak employment rates and labour market weaknesses, as well as the low effective age of exit from the labour market, reduce contribution periods and pension rights (OECD, 2019a). Moreover, the complex structure of the pension system – 42 different pension regimes coexist – prevents workers from knowing what their pension entitlement will be. The coexistence of multiple schemes with different rules also undermines labour mobility, and contributes to the inequity of the pensions system, fostering mistrust.

Several measures would be desirable to raise the employment opportunities of older workers and promote an age-inclusive workforce. Despite a significant increase over the past decade, the employment rate of the 55-64 year old remained more than 18 percentage points lower than in Denmark, Germany or Finland in 2019. Increasing the statutory retirement age in line with life expectancy through smooth and predictable indexation mechanisms could accelerate the rise in the effective retirement age (OECD, 2017c). A revision of bonuses could also make gradual retirement more attractive (OECD, 2020a). In addition, it will be important to ensure the convergence of the parameters of the special pension regimes in the private sector that often allow for earlier retirement (COR, 2016). Such measures should go hand in hand with measures to raise the employability and training of older workers and address age-based discrimination (OECD, 2019f).

The political economy of a pension reform will be key for its success. To be socially acceptable and politically feasible, the reform will need to strike a balance between a partial recognition of acquired rights, to the extent that public finances can accommodate it, possible compensations of the aggregate impacts, along with mechanisms to support the population in the reform process (OECD, 2015). Building on the reduced number of branches and the 2017 reform of social dialogue, programmes to promote quality jobs for older workers could be designed and experimented with social partners at the sectoral level to be tailored to sector-specific working conditions and skill needs. Improving working conditions and easing access to part-time jobs and flexible work arrangements would be ways to give older workers greater choice and lengthen working lives. Finland, for example, has implemented flexible working hour schemes for older workers (OECD, 2020h), and the waste sector in France has developed a comprehensive framework to reduce health risks (Bellon, 2020). Similarly, targeted support for learning could be effective in increasing the labour market attachment or probability to re-enter employment of older workers (Van Hoof and Van den Hee, 2017). The Netherlands for instance has training vouchers available to individuals above 55; and Canada has a subsidy program targeting older workers aged 45-64.

The plan to move to a single, points-based pension system was a move in the right direction. The design of adequate contributions and solidarity mechanisms will be key to a successful move to a single pension system (Boulhol, 2019). A systematic reform such as that of 2019 will need to ensure a better visibility of future pension levels and to take into account differences in working conditions and their effects on health for older workers (Boulhol, 2019; Blanchard and Tirole, 2021). To avoid creating inequities between workers and retirees, it will also be necessary to review the rules for adjusting past earnings based on wages and adjust the other parameters to ensure the sustainability of the pension system. Such reform should also address the current shortcomings in family-related pension benefits. They are heterogeneous across pension schemes, and the third child top-up tends to benefit more men than women and affluent families (Vignon, 2018). Survivor pension schemes could also be reviewed to increase incentives to work and reduce their costs (OECD, 2020a).

Better regulating social expenditures

The government temporarily provided a welcome rise in social spending during the crisis but France's social expenditures require structural reform. In 2019, before the crisis, social expenditures represented 31% of GDP compared to the OECD average of close to 20% (OECD, 2020g). Moreover, it has grown at an annual rate of 2.7% over the last decade. The deviation from the OECD average is chiefly the result of

the pension system (see above) and the recent growth in expenditure broadly reflects population ageing (Gouardo and Lenglart, 2019; DREES, 2021). However some cash benefits for care or assistance to individuals show scope for savings (Cour des Comptes, 2021d). Social expenditures, excluding pensions, amount to close to 40% of the difference in the total general government expenditures to GDP ratios between France and the Euro area average (Table 1.5).

Whether it is unemployment benefit and income support, housing assistance or family benefits, French social spending is high. Even though the benefits sharply reduce cash poverty, there is room for improvement (OECD, 2019a). The government's decisions to partially undo pensions index-linking in 2019 and 2020 and the reforms under way in respect of unemployment insurance are steps in this direction. The simplified automated scales set out as part of the Universal Income Guarantee (*Revenu Universel d'Activité*) would also be a move in the right direction by reducing potential tenants' access costs as well as management costs.

Additionally, housing policy instruments could also be reviewed as spending in this area is markedly higher than the European average (Table 1.5). In addition to measures to encourage a flexible rental market (see below), personal housing assistance could be targeted more narrowly at the poorest households (Cour des Comptes, 2021d). In order not to sustain inequalities between households with similar incomes depending on their access or not to social housing, setting rental supplements in relation to income, length of the tenancy and better adjusting social housing rent based on the perceived quality of the social dwelling is needed. This could also increase mobility within the social housing sector and between the social and private housing sectors (Trannoy and Wasmer, 2013).

Table 1.5. Composition of public spending by main component

2019[1,2]

	France	Allemagne	Euro Area[3]	OCDE[3]	France vs Euro Area (difference)ro	
	% of GDP	% of GDP	% of GDP	% of GDP	% points	Share in total difference (%)
Total public spending	**55.4**	**44.9**	**43.7**	**42.4**	**11.7**	**100**
Primary spending	53.9	44.1	42.7	40.7	11.2	96
Wage bill	12.2	7.8	10.4	10.3	1.8	15
Investment	3.7	2.5	3.3	3.5	0.4	3
Education[4]	4.7	4.1	4.1	4.4	0.6	5
Housing and collective equipment	1.1	0.4	0.5	0.5	0.5	5
Social expenditures	**31.0**	**25.9**	**22.4**	**19.8**	**8.6**	**74**
Pension	14.0	10.2	10.0	8.2	4.1	35
Health	8.5	8.2	5.7	5.6	2.8	24
Family	2.9	2.3	2.2	2.1	0.7	6
Active labour market policies	0.8	0.7	0.6	0.4	0.3	3
Unemployment	1.5	0.9	1.0	0.6	0.6	5
Housing	0.7	0.6	0.3	0.3	0.5	4

Note: 1. Or latest available year. 2. Numbers may not add to totals because of rounding, overlapping across selected spending categories and non-universal coverage of all spending categories.. 3. Non-weighted averages of available data. 4. Excluding pre-primary education.
Source: OECD (2021), OECD Economic Outlook 110 Database, OECD Social Expenditure Database (SOCX); OECD Education at a Glance 2021 Database and National accounts.

Containing local government spending

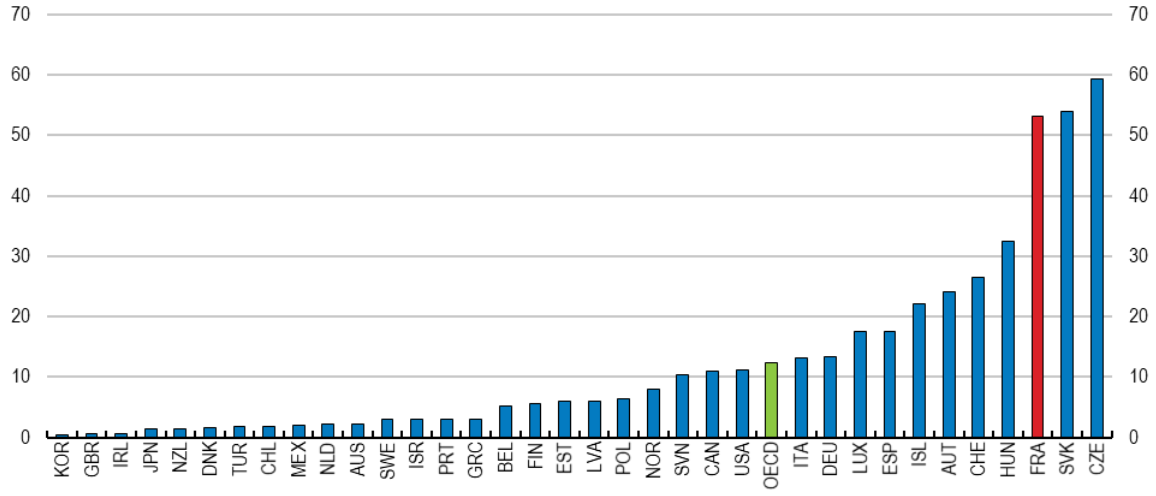
Simplifying the multiple layers of sub-central governments – known as the “mille-feuille” – could serve to make spending more efficient and, in due course, realise substantial savings. The 2014-15 territorial reforms reduced the number of regions in metropolitan France from 22 to 13 and increased the size of inter-municipal co-operation structures. They also created new governance bodies for large urban areas (*métropoles*). Detailed objectives were lacking however, and early indications suggest that cost savings in the short run have been limited since the merging of regional administrations were either partial or done based on the most attractive conditions. Additionally, the reforms did not fully streamline the allocation of responsibilities across different levels of local governments, suggesting significant room for efficiency gains in this area (Cour des comptes, 2017a). Additionally, the first assessments of the introduction of metropolitan areas (*métropoles*) and regions (*régions)* are unconvincing. They have so far not yet had the expected structural impact on the mutualisation of local capacities and transfers of responsibilities across administrative levels (Cour des comptes, 2019; 2020c).

Continuing efforts to streamline small municipalities would help achieve further efficiency gains. French municipalities are small in international comparison, and French metropolitan areas are among the most administratively fragmented in the OECD (Figure 1.22). Small municipalities make it more difficult to internalise spatial spillovers in terms of urban planning, environmental costs and public services provision. They also compound co-ordination problems by spreading expertise more thinly. Asymmetric arrangements, in which responsibilities for municipalities are differentiated based on population size or urban/rural criteria, could be further developed in that respect (Allain-Dupré, 2018). The differentiation of responsibilities depending on the category of inter-municipal cooperation structures is a step in that direction. Pilot experiments like the Danish “Free Municipality” programme would also be helpful to identify the asymmetric arrangements that result in the strongest benefits. Moreover, ensuring that regulations applying to subnational governments are proportional and tailored to them would help limit the effects of those regulations on public spending (Lambert and Boulard, 2018).

Intergovernmental transfers need to reflect local governments’ spending needs more accurately in order to contain public spending growth. The main central government transfer to the municipal sector (*dotation globale de fonctionnement*, DGF) is complicated, as it includes multiple layers, including several equalisation components that benefit nearly all municipalities. Moreover, the lump-sum component of the DGF tends to perpetuate past spending patterns that can lead to sizeable inequalities across jurisdictions (Cour des comptes, 2016). Giving cost-based approaches a stronger role by defining a basic set of collective goods and services for delivery by local governments would help better reflect actual spending needs of municipalities.

Figure 1.22. French municipalities are fragmented

Average number of municipalities per 100 000 inhabitants, 2016



Source: OECD (2021), OECD Cities statistics (database).

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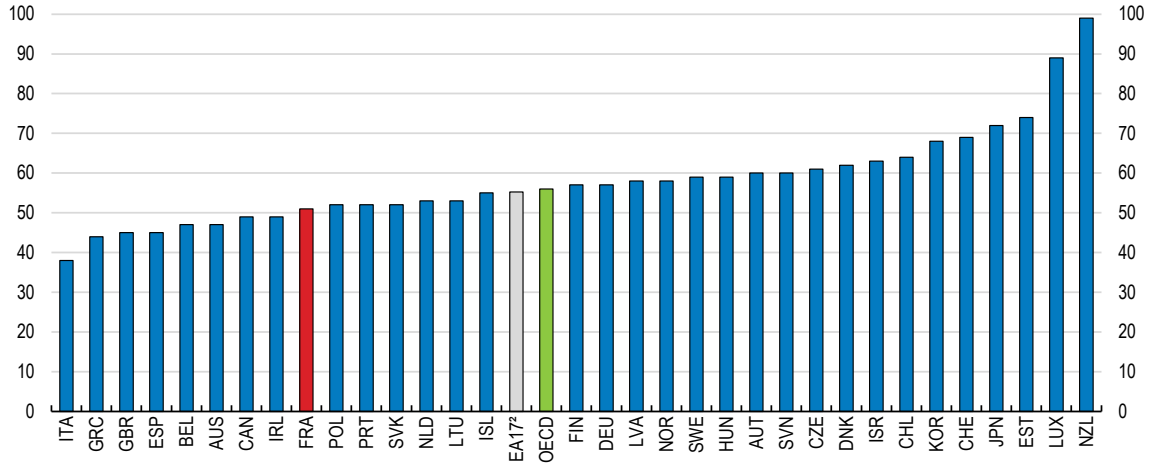
Reducing inefficient tax expenditures

Tax expenditures are high at about EUR 80 billion in 2019 (3.4% of GDP, excluding the CICE) and can be gradually streamlined to improve the effectiveness of the tax system and its redistributive effects. These tax expenditures relate to various areas and objectives such as the tax preferences in favour of the housing sector; reduced VAT rates and VAT exemptions; or exemptions from inheritance and gift taxes, which benefit the wealthiest households (OECD, 2019a). In the short term, the high rates of saving and the surplus saving accumulated by households during the crisis would justify the removal of tax breaks on saving flows. The VAT system is complicated by the use of many reduced rates on selected items and exemptions, leading to substantial VAT revenue shortfalls (Figure 1.23). For example, the reduced rates on housing maintenance, development and renovation work have a limited impact on employment in terms of revenue cost and tend to benefit the wealthiest households (CPO, 2015). Moreover, once the recovery has gained traction in these sectors, it would be reasonable to review the reduced rates on hotels and restaurants, which have largely benefitted the owners of the businesses concerned (Benzarti and Carloni, 2019), and the most affluent households. Broadening the tax bases will have to be accompanied by lower tax rates, particularly the progressivity of the tax wedge on low- and middle-income households, to strengthen social cohesion.

There is room to strengthen regular evaluations of tax expenditures (Cour des comptes, 2020a). Yet, the authorities are introducing new tax expenditures such as tax-free overtime work, which can have adverse effects on hiring and entail significant dead-weight costs (Cahuc and Carcillo, 2014). The benefits of tax expenditures should be systematically evaluated after a few years of implementation. Such reports should be made public and if some tax expenditures are deemed inefficient, the government should phase them out or explain why it wishes to maintain them.

Figure 1.23. VAT revenue shortfalls are large

VAT revenue ratio[1] (VRR), 2018



1. The VRR is an indicator of the loss of VAT revenue as a consequence of exemptions and reduced rates, fraud, evasion and tax planning. It measures the difference between the VAT revenue actually collected and what would theoretically be raised if VAT was applied at the standard rate to the entire potential tax base in a "pure" VAT regime and all revenue was collected.
2. Euro area member countries that are also members of the OECD (17 countries).
Source: OECD (2020), *Consumption Tax Trends 2018 – VAT/GST and Excise Rates, Trends and Policy Issues*, Consumption Tax Trends, OECD Publishing, Paris.

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Table 1.6. Illustrative fiscal impact of OECD-recommended reforms

Estimated change in the fiscal balance in the medium term, as a percentage of 2019 GDP

Cut further distorsive business taxes (*impôts de production*)	-0.5%
Remove tax breaks on household saving	0.2%
Strengthen environmental taxation	0.5%
Once the recovery is confirmed, remove the reduced VAT rate on hotels and restaurants	0.1%
Total tax measures	***0.3%***
A gradual increase in the effective retirement age to 64 in 2025	0.9%
Broad-based spending review	0.2%
Increase the efficiency of local public spending	0.2%
Focus housing supply support on high-density areas	0.1%
Increase support for the railway network and renewables (Fond chaleur)	-0.2%
Total spending cuts	***1.2%***
Effect on the fiscal balance	***1.5%***

Note: The estimated changes in the fiscal balance are static estimates that abstract from behavioural responses that could be induced from policy changes. These estimates are reported only for illustrative purposes. For the increase in the effective retirement age, the pension simulator from the Pensions Advisory Council (Conseil d'orientation des retraites, COR) is used (www.cor-retraites.fr/simulateur). The outcomes of the broad-based spending review are scaled using the proposals of the Action Publique 2022 Committee related to health care (improved balance of EUR 5 billion) and reform of central governement (improved balance of EUR 1 billion). The reforms of housing support would improve the balance by EUR 3 billion. The measures concerning local government - mutualisation of purchases of goods and services by public entities and local government reforms would improve the balance by EUR 4 billion. A 0.2% reduction in tax breaks on household saving could be achieved by removing the favourable tax treatment for housing investment and for the sale of immovable property (Council of Mandatory Contributions (CPO), 2018). For the fiscal benefits from removing reduced VAT rates, estimates available in the *Évaluation des voies et moyens Tome II – Dépenses fiscales* 2019 budget draft bill are used. The strengthening of environmental taxation takes into account a lowering of tax expenditures on energy – notably off-road diesel fuels and goods transport (EUR 3.5 billion) and an increase in the carbon tax (EUR 9.1 billion).-
Source: OECD calculations.

Table 1.7. Past OECD recommendations to boost the efficiency of public spending

Main OECD recommendations	Summary of actions taken since the 2019 Survey
Move towards a single pension system to make the system easier to understand, reduce inequalities and lower management costs. Then, gradually increase the minimum retirement age in line with life expectancy.	Discussions with stakeholders to move to a single pension system were held in 2018-19. However, no vote was held on the reform.
Reform public employee job-mobility rules, and reduce the number of civil servants through a targeted approach, redefining the duties of government, for example with the help of an external audit.	A 2019 law (Loi de transformation de la fonction publique) eased job-mobility between the public and private sectors and hirings on private-law contracts.
Simplify the tax system by reducing the use of exemptions and reduced rates that do not benefit the lowest earners, and reduce tax rates.	The French recovery plan lowered taxes on production in 2021.
Reduce registration fees, and increase taxes on immovable property.	No action taken. The repeal of the housing tax runs against an increase in taxes on immovable property.
Systematically review tax expenditures after some years of implementation and phase them out if not deemed helpful.	No action taken.
Continue to extend the investment selection framework in place in the health sector to other sectors. Strengthen the share of infrastructure maintenance spending in public investment.	Ex-evaluation has been integrated to the implementation of major investment plans, such as the 2020 plan (Plan d'Investissement d'Avenir
Take better account of environmental externalities in transport taxation and develop flanking measures for the most affected populations over the short term.	Since 2020, France has conducted an annual environmental audit (Rapport sur l'impact environnemental du budget de l'Etat, September 2020, referred to as the green budget "budget vert").
Merge welfare programmes and in-work benefits (prime d'activité), taking into account housing benefits and public housing in overall household resources.	The authorities are developing further analyses to implement a systemic reform of minimum income programmes (*Revenu Universel d'Activité*).

1.5. Reform plans for a steady, sustainable and inclusive recovery

Additional reforms are needed to sustain employment, productivity growth and household income. The key recommendations made in this *Survey* could generate a further 1.2% in GDP growth per capita GDP after 10 years (Box 1.5). The changes needed for a more sustainable, more inclusive and more digitalised economy (Chapter 2) require increasing investment, notably in training and education. The high level of corporate debt, the longer periods of unemployment and the disruption to the training and education system could weigh heavily on corporate investment capacity and productivity. However, the pandemic has also been an opportunity to trial new methods of working (home working, remote meetings), discover new, untapped sources of productivity (shorter travel times, streamlined procedures, advances in medical research) and to speed up investments in digitalisation (e-commerce, digital services) (Criscuolo et al., 2020).

Box 1.6. Potential impact on growth of the OECD-recommended reforms

The estimated impact of some of the key structural reforms proposed in this Survey is calculated using historical relationships between reforms and growth in OECD countries (Table 1.7). These estimates assume full and swift implementation of reforms.

Table 1.8. Potential impact of some reforms proposed in this *Survey* on GDP per capita after 10 years

	GDP per capita[1] %	Through employment (percentage points)	Through productivity (percentage points)
Labour market reforms			
– Greater effectiveness of activation policies	0.4	0.2	0.2
– Gradual increase in the effective retirement age to 64 by 2025	0.5	0.3	0.1
Tax and public spending measures			
– Higher digital investment, notably through additional public support for digital training (0.1% of GDP)[2]	0.3		0.3
Total (recommended reforms)	1.2	0.5	0.6

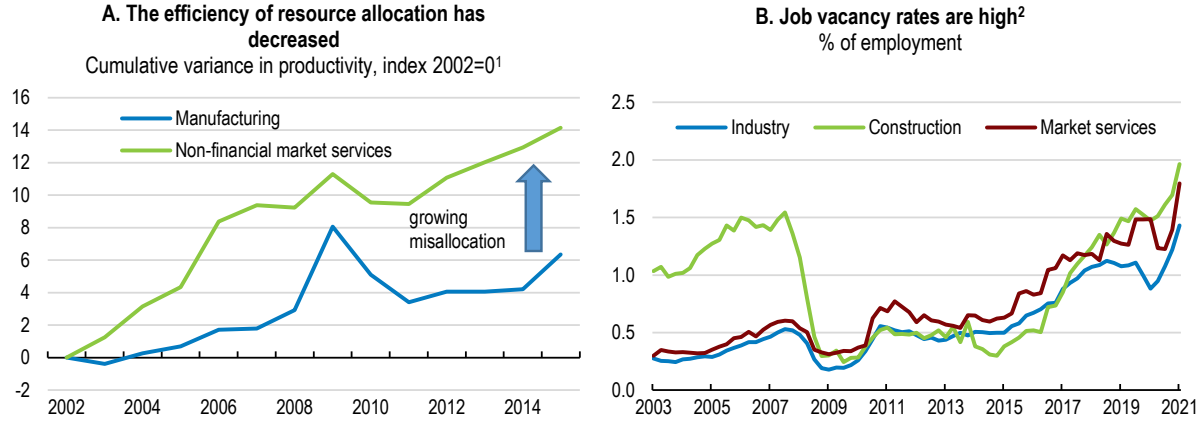
1. All figures are rounded to the nearest decimal point. The estimates assume full implementation of the reforms.
2. The output effects from a permanent increase of 0.1% of GDP in digital investment are scaled using the range of models used to estimate the long-term GDP gains from an increase in public investment reported in A. Mourougane, et al. (2016), "Can an increase in public investment sustainably lift economic growth?", OECD Economics Department Working Papers, No. 1351, OECD Publishing, Paris.
Source: OECD estimates based on based on B. Égert and P. Gal (2017), "The quantification of structural reforms in OECD countries: A new framework", OECD Journal: Economic Studies, Vol. 2016/1; Akgun, O., B. Cournède and J.-M. Fournier (2017), "The effects of the tax mix on inequality and growth", OECD Economics Department Working Papers, No. 1447, OECD Publishing, Paris.

Facilitating the reallocation of resources while preventing failures of viable businesses and facilitating corporate restructuring is necessay to make the most of these changes. This means supporting lifelong training and boosting innovation, particularly in the digital field, and competition on markets that are still protected, for example the retail sector and regulated professions. The recovery measures and the rate at which they develop will require great flexibility and fine-tuning to the economic and social situation. Indeed, at end-2020, the crisis, despite its strong sectoral nature, the crisis had widened activity gaps among businesses in the same sectors (Bureau et al., 2021).

Encouraging a better allocation of resources

Further structural reforms are needed to boost productivity gains and employment. The fall in productivity gains during the 2000s is, in part, the result of the increasingly inefficient allocation of jobs to more productive businesses (David et al., 2020). Some regulations have hindered firm entry and growth, as well as more efficient resource allocation. After 2008, the reallocation of labour and capital towards the most productive firms slowed markedly (Figure 1.24; OECD, 2019e; David et al., 2020; Libert, 2017). Though the 2018 Pacte law has sinced eased firm creation and growth (OECD, 2019e), job vacancies are at an unprecedented high level, especially in construction, despite the rise in the number of job seekers during the crisis (Figure 1.11).

Figure 1.24. Factor allocation could be improved



1. The figure shows the estimated coefficients of annual dummy variables in a regression of logarithmic variance in labour productivity within industries in France, and within country-industry pairs in a set of reference countries, taking the first year as reference (Desnoyers-James et al., 2019). The variance is measured as the ratio of the 9th to the 1st deciles of the distribution of business productivity. The equations are estimated separately for manufacturing and non-financial market services.
2. The job vacancy rate is the ratio of the number of declared job vacancies to the sum of the number of job vacancies and the number of jobs filled. It is calculated for businesses with 10 or more employees in France (metropolitan area and DOM excluding Mayotte).
Source: OECD (2019), "France: Productivity", *OECD Insights on Productivity and Business Dynamics*, February 2019; Desnoyers-James, I., S. Calligaris, and F. Calvino (2019), "DynEmp and MultiProd: Metadata", *OECD Science, Technology and Industry Working Papers*, OECD Publishing, Paris; DARES (2021), *Les emplois vacants au 2ème trimestre 2021*.

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Anticipating and improving insolvency procedures

Insolvency proceedings are expected to rise in commercial courts. The risks of insolvencies appear contained in the short term (Épaulard and Gache, 2021; Épaulard et al., 2021), but a catch-up from the low level of bankruptcies observed in 2020 could lead to a significant increase in cases. Some models assume a sharp rise in bankruptcies among SMEs compared to 2018 and 2019, for example as much as 25% in accommodation and catering as dedicated support measures are gradually withdrawn (Gourinchas et al., 2021; Guerini et al., 2020). Moreover, although credit supply and government guaranteed loans have been a crucial prop in maintaining production processes in 2020 and early 2021, the level of corporate debt could constrain future output potential and especially investment capacity. Business investment could be reduced – without any offset measures – by up to 2% in the medium term according to models by Demmou et al. (2021) and Hadjibeyli et al. (2021).

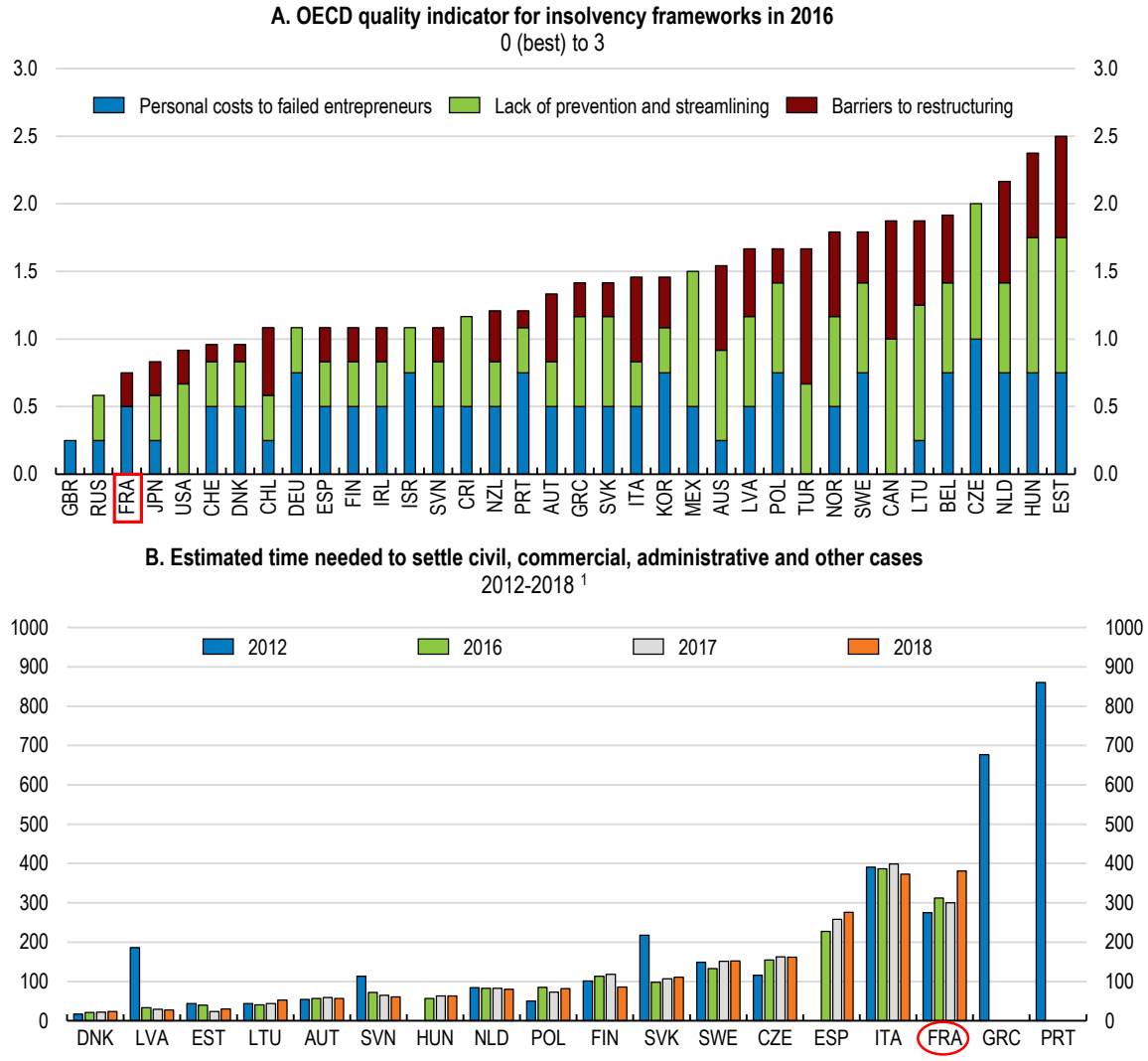
Effective insolvency law is crucial to absorb the coming stream of businesses in difficulties, enable the highest possible number of viable businesses to restructure successfully and contain the associated credit losses. For businesses whose financial situation has deteriorated too far, improving the balance sheet requires full debt restructuring in partnership with public and private creditors. Although French insolvency procedures appear to be well designed and were further improved under the PACTE Law (De Williencourt et al., 2018), they are lengthy in international comparison (Figure 1.25; EC, 2020; World Bank, 2019). In particular, the commercial courts are often very busy, and insolvency procedures are lengthy despite preventive safeguard measures. Indeed, take-up of preventive procedures is uneven, even though they considerably increase the survival chances of businesses by reducing the effects of stigma (Épaulard and Zapha, 2021; Zapha, 2020). The authorities have taken in May 2021 welcome measures to develop ad-hoc procedures to ease firm restructuring during the recovery, notably through selective financial support and simplified court-based procedures for SMEs (see below; MEFR, 2021).

Several approaches could improve further the effectiveness of commercial courts during the recovery and the risks of bankruptcies associated to the phasing out of unconditional business support. Establishing and promoting an enhanced regional structure for consultations with public and private stakeholders would make it possible to build a consensus on the financial situation of corporates in difficulty and to identify the prospects of recovery upstream of insolvency procedures (Husson, 2021). Such an approach would make it possible to distinguish which corporates can and cannot be restructured and allow for early identification of non-viable businesses and those that could deploy preventive procedures. This would speed up resolution of SME insolvency procedures. The increase in administrative capacity for out-of-court and court restructuring could be temporary in part. If this strategy and the approaches taken to boost equity (see above) prove insufficient, subsidising reductions in private debt could be envisaged, while paying attention that it remains a one off (Blanchard et al., 2020; Greenwood et al., 2020). Involving private stakeholders who have direct information on SMEs' circumstances would make it possible to triage viable businesses and those that will be liquidated by the banks and to prevent excessive numbers of businesses being wound down (Demmou et al., 2021; CNP, 2021).

Speeding-up insolvency proceedings and reducing their costs would also help. The government has introduced a temporary simplified court-based procedure for businesses with fewer than 20 employees to allow them to conduct debt-rescheduling negotiations with all their creditors (MEFR, 2021). Should those negotiations fail, the procedure will convert to the standard court-based reorganisation procedure. However, before the crisis, some procedures were very lengthy, and, in February 2021, close to two thirds of winding-up proceedings had been under way for more than two years. The commercial courts will need to be made more aware of the need to close winding-up proceedings within two years, where necessary using their powers to appoint an appropriate representative to monitor the proceedings under way (Ricol, 2021). Better cost-efficiency at all stages of reorganisation and winding-up proceedings could also be achieved by rethinking the scale of emoluments for court-appointed receivers and administrators (Plantin et al., 2013).

Finally, as in many other OECD countries, the French corporate tax system continues to favour debt over equity (Hanappi, 2018). The deductibility of corporation tax against interest rates makes debt financing more attractive. This debt bias can reach high levels in France (Hanappi, 2018; Figure 1.26).The reform of 2019 of the corporate income tax (CIT) and the progressive lowering of the standard CIT rate over 2018-22 are attenuating this bias without remedying it fully (OECD, 2019a; IMF, 2021). An allowance for corporate equity, which could be temporary (Demmou et al., 2021) or targeted at SMEs, would allow notional interest equivalent to the expected return on equity to be deducted from the corporate tax base. It would have to be designed so as to ensure both that multinationals do not leverage the system for profit-shifting strategies and that its fiscal costs are acceptable (OECD, 2020d).

Figure 1.25. Bankruptcy procedures are well designed but lengthy



1. Number of days taken by the competent court to come to a decision at first instance. This category includes all civil and commercial litigious and non-litigious cases, non-litigious land and business registry cases, other registry cases, other non-litigious cases, administrative law cases and other non-criminal cases.

Source: Adalet McGowan, M. and D. Andrews (2018), "Design of insolvency regimes across countries", *OECD Economics Department Working Papers*, No. 1504, OECD Publishing, Paris; EC (2020), EU Justice Scoreboard, European Commission.

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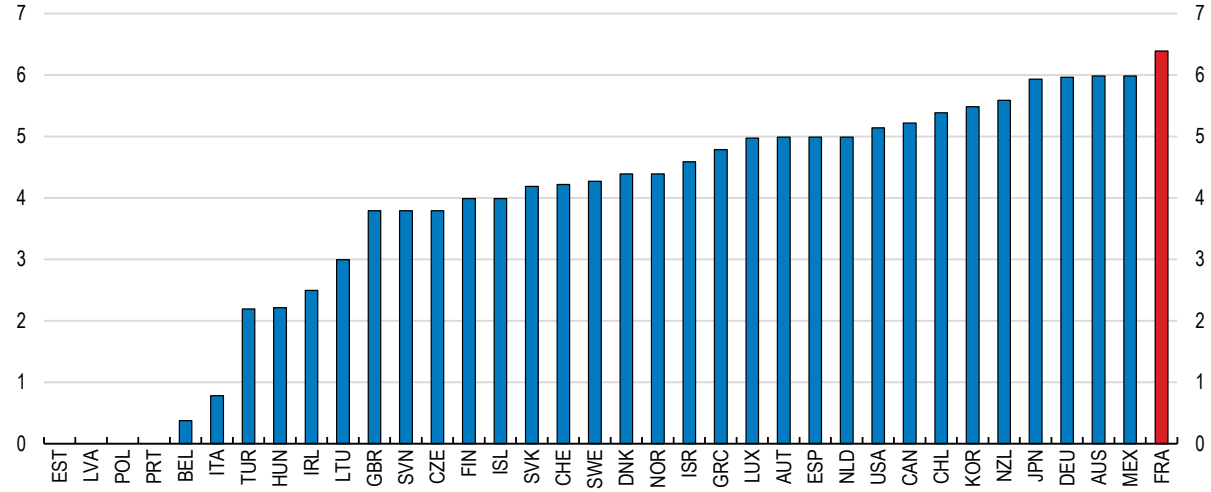
Figure 1.26. The tax bias towards debt financing remains significant

Estimate of the debt-equity bias at the corporate level, percentage points, 2020[1]



1. Difference between the estimated average effective tax rate for debt-based rather than equity-based project finance at the corporate level. The figures come from a scenario with 1% inflation and 3% real interest rate. They do not take into account taxes at the personal level.
Source: OECD Corporate Tax Statistics.

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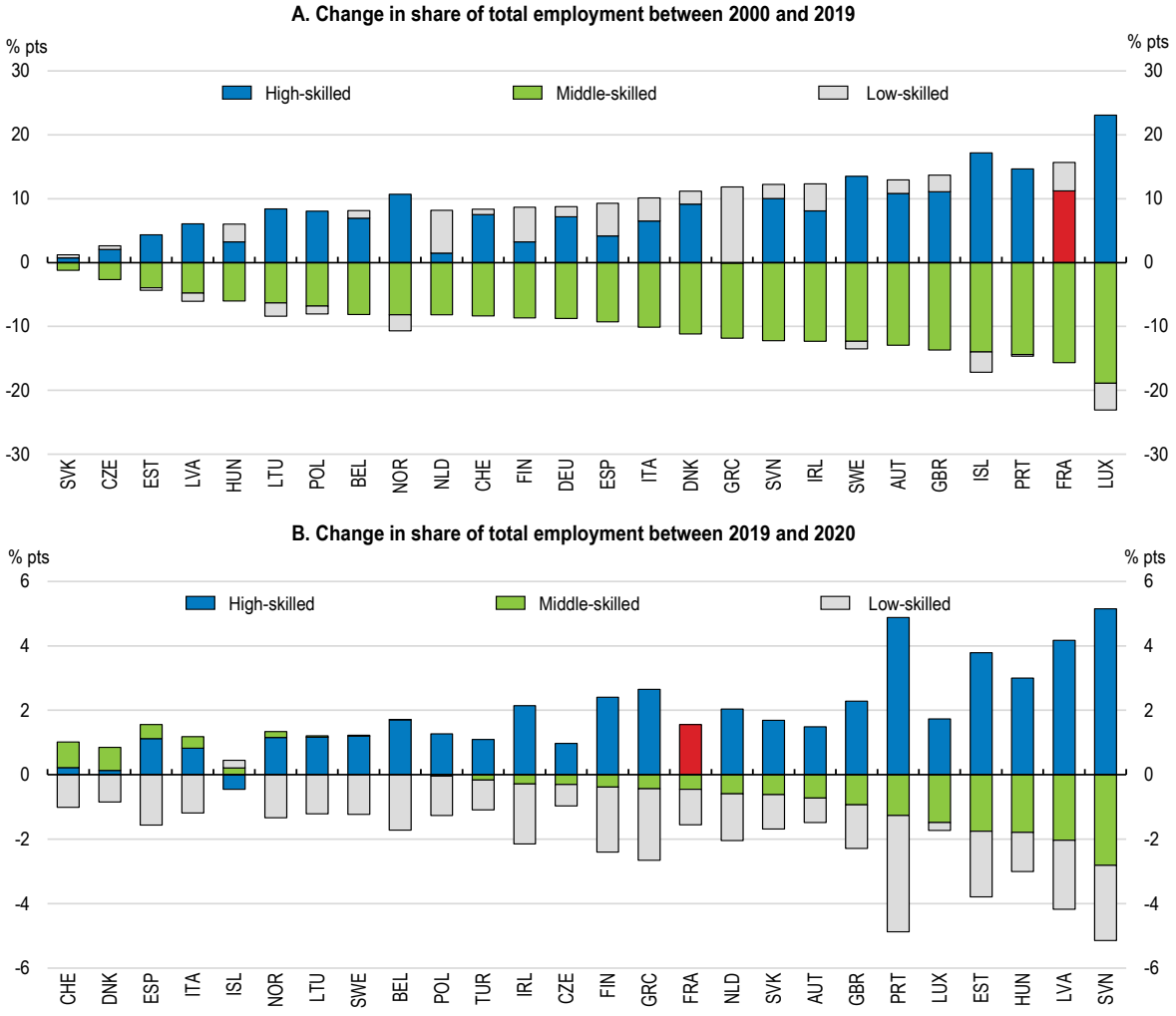
Boosting training and better connecting people to jobs

The economic crisis has accelerated needs to reallocate labour within and between sectors as well as the need to train and reskill workers. The demand for skilled workers has continued to rise (Figure 1.27), and needs for training and upskilling have been accentuated by the recovery. Some skills (such as stock management, sales, customer relations) were in high demand in sectors where jobs were most severely affected in 2020, but in very low demand in currently buoyant sectors (Coueffe, 2021). Numerous schemes were therefore established to support retraining, especially under the *France Relance* plan (Box 1.6). Moreover, for employees in more vulnerable jobs, the "Transitions Collectives" scheme offers support for retraining in sectors recruiting from the same job pool. Employees retain their wages and employment contracts throughout the duration of the training. This could go some way into bridging the skills gap. According to OECD estimates, businesses in France with average productivity levels could have increased those levels by 11% before the crisis if their skills mix had been similar to that of a business in the top 20%. This figure is significantly higher than the European average (Criscuolo et al., 2021; CNP, 2021).

The authorities must continue to boost learning and support for young people. In 2018, nearly 89 000 young people left the French education system with only the lower secondary qualification or no diploma at all (Depp, 2021b). They often spend long periods when they are not in education, employment or training; they are generally from the most disadvantaged backgrounds (Reist, 2020; Figure 1.28). Young people who are in work are often recruited for temporary jobs (Eurostat, 2021a). This increases the likelihood of skills obsolescence and depreciation, while France stands out as one of the few European countries where the qualifying age for the minimum income is higher than the age of majority. The government plans to expand the temporary "*Un jeune, une solution*" (One young person, one solution) plan and the strengthened youth guarantee (*Garantie Jeune*) through the "Contrat d'Engagement Jeune"(Box 1.6; COJ, 2021). Experience in OECD countries shows that a broad range of targeted interventions, ranging from specialist education programmes to mentoring, can benefit young people who are furthest from employment (Carcillo et al., 2015), and that effective activation policies can make provision for a monetary allowance. The allowance could be age-dependent and reserved for those who need it, such as those not in education or employment, and conditional on training participation to encourage training. Students would continue to be supported by the scholarship system subject to parents'

means-testing (OECD, 2013). A significant share of the funding of the new allowance should come from eliminating the advantages of including young adult children in their family tax units. At the same time, it will be necessary to simplify the many age thresholds that determine young people's eligibility to social programmes and benefits and complicate their economic and social integration (Verot and Dulin, 2017).

Figure 1.27. The polarisation of the labour market and the crisis weigh on the low-skilled



Note: The figure shows the percentage point change in employment shares by skill intensity between the fourth quarter of 2000 and the fourth quarter of 2019 (panel A) and between the fourth quarter of 2019 and the fourth quarter of 2020 (panel B). High-skilled occupations include jobs classified under the ISCO-88 major groups: legislators, senior officials, and managers, professionals, and technicians and associate professionals. Middle-skilled occupations include clerks, craft and related trades workers, and plant and machine operators and assemblers. Low-skilled occupations include service workers and shop and market sales workers, and elementary occupations.
Source: OECD calculations based on Eurostat (2021), Employment by occupation and economic activity (database).

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A successful reform and implementation of the *Contrat d'Engagement Jeune* will require enhanced coordination between social inclusion services. The new guarantee will have to link effectively with the preparatory learning schemes for apprenticeship dedicated to the most challenged young people and second-chance schools, as well as various local stakeholders responsible for providing support, training and the allocation of monetary assistance. To that end, a single local body for each local labour markets could be given responsibility to rule on admissions and the monitoring of young people covered by all existing aid mechanisms for example, by taking on board the experiences of the single windows for young people in Finland (Ohjaamo) as a starting point (OECD, 2019b).

Box 1.7. Measures announced for training and integration into the labour market

The "Un jeune, une solution" plan and its development

"Un jeune, une solution" initially provided 1.3 million "solutions" targeted at young people under 26 years of age for a total of EUR 6.5 billion announced in July 2020 (RF, 2020). The plan boosted assistance for recruiting young people, an emergency measure for firms that employ apprentices and young people recruited under the "emploi franc" scheme, as well as guidance and training for 200 000 young people for work in jobs and sectors of the future. It also includes support measures for 300 000 young people who are particularly vulnerable.

The plan was subsequently extended with measures costing EUR 9 billion. The emergency support for apprenticeships was extended until mid-2022. The bonus for recruiting young people was also extended until 31 May and adjusted in April to target salaries below 1.6 SMIC [minimum wage].

Initial assessments of the recruitment assistance scheme (Martin and Rathelot, 2021; Borel et al., 2021) confirm the positive role it has played in youth employment during the crisis, as it did during the crisis of 2008-2009 (Cahuc et al., 2019).

The strengthening of the *garantie jeune* and its foreseen reform

Established in 2013 and funded in part using European credits, the *garantie jeune* combines levelling up, enhanced support and a (conditional) income guarantee for under-26s. It was enhanced at European level in October 2020, and its eligibility widened in France in May 2021. The current *garantie jeune* is administered by local agencies and targets 200 000 young people.

The scheme would be extended beyond 2022 through the "Contrat d'Engagement Jeune". The aim is to improve the labour market integration of those under-26s, notably by providing some of them with a monthly allowance of up to EUR 500.

Training-related measures contained in the recovery plan

The *France Relance* plan dedicates around EUR 3 billion to professional training in 2021-22:

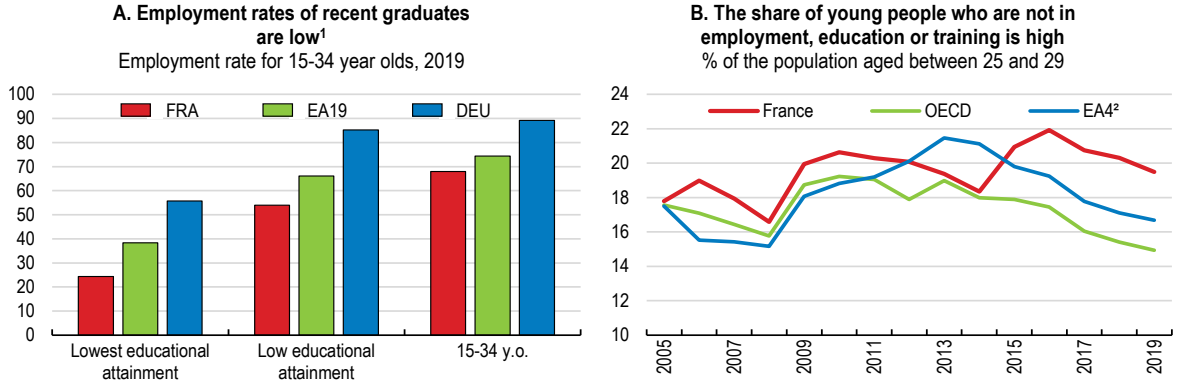
- A first envelope of close to EUR 1 billion aims to facilitate professional transitions and to adjust the labour supply to tomorrow's needs.
- A second EUR 1 billion envelope is devoted to a fund that would allow employees on short-time work schemes to develop their skills and employees whose jobs are under threat to retrain (FNE-training).
- A final EUR 1 billion envelope strengthens the means available to France Compétences and Pôle Emploi by EUR 750 million and EUR 250 million respectively. It finances work-study schemes, insurance and support for jobseekers.

Source: Cahuc, P., S. Carcillo and T. Le Barbanchon (2019), "The Effectiveness of Hiring Credits", *Review of Economic Studies*, 86(2), pp. 593-626; Martin, P. and R. Rathelot (2021), "Évaluation de l'aide à l'embauche des jeunes à partir des déclarations préalables à l'embauche", *Focus*, No. 60, CAE, 5 May 2021; Borel M., C.-L. Dubost, A.-S. Pichavant and C. Reist (2021), "Quels ont été les effets de l'aide à l'embauche des jeunes sur l'emploi des jeunes? Premières évaluations de l'AEJ", *DARES Analyses*, No. 22, May 2021; RF (2020), Plan #1JEUNE1SOLUTION press release, Government of the French Republic.

Raising access to the adult learning system and its ambitions is also needed. The 2018 reforms to professional training and apprenticeships resulted in considerable progress (OECD, 2019a). Nonetheless, the welcome increase of apprenticeships has been mostly concentrated among older and more-skilled workers (Box 1.7). Further support from the public employment services for the low skilled and SMEs will be necessary, as will the development of more comprehensive and accessible information on the quality of training and its value on the labour market. Indeed, under the 2018 reform, restricted training lists were discontinued, which eased eligibility and access but required quick implementation of the planned certification mechanisms after the crisis to improve information on training courses and their relevance.

Funding professional training for young people and people made vulnerable by the crisis will have to be extended, especially if labour market adjustments take longer or are weaker than projected. Like the recovery plan, the *plan d'investissement compétences* (skills investment plan – PIC) is due to end in 2022 (Box 1.6). The same is true of the support for retraining employees in struggling industries and their transition to new jobs. Following the PIC and the recent 2021-22 plan to address labour shortages (*Plan pour réduire les tensions de recrutement*), a new multiannual programme to invest in professional training and mobility would improve stakeholders' awareness. It should build on the forthcoming evaluation of the PIC. In addition, if the economic situation deteriorates again, further subsidised jobs in the commercial sector could be established for low-skilled workers. In that case, employment grants could help to improve the opportunities of the low-skilled and to maintain their skills (Card, Kluve and Weber, 2018; Cahuc, Carcillo and Le Barbanchon, 2019).

Figure 1.28. Young people struggle on the labour market



1. Employment rates are measured between one and three years after the end of training.
2. EA4 is the simple average for Germany, Spain, Italy and the Netherlands.
Source: Eurostat (2021), Detailed annual results of labour force surveys, Eurostat (database); OECD (2021), *Youth not in employment, education or training* (NEET) (indicator).

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The funds available to the public employment service should be increased (OECD, 2021e). The authorities have gradually modified the unemployment insurance reform planned in 2019 in order to tailor it to the changing economic conditions (Table 1.7). Reducing the pro-cyclical nature of support finance in favour of employment will be vital as the country emerges from the crisis. Pôle Emploi is responsible for the operational management of unemployment insurance, which covers *inter alia* the payment of unemployment benefit and job-seeker's support. Pôle Emploi itself is financed by the State and a fixed share of Unédic's past receipts, which will result in a substantial drop in Pôle Emploi's resources in 2022 (Unédic, 2021a). This had to be compensated through temporary funding from the recovery plan and the REACT EU funds. Providing Pôle Emploi with a budget allocation that is independent of unemployment insurance receipts would make it possible to remove the pro-cyclical component of its funding and to ensure it is better in line with economic conditions (Cahuc et al., 2021). For example, outside crisis periods, Unédic's participation in Pôle Emploi's budget could be made part of a multiannual framework and based on a financial trajectory of Pôle Emploi (Cour des Comptes, 2021a).

Box 1.8. Enhancing the effects of the 2018 apprenticeship reform

The 2018 law "Loi pour la liberté de choisir son avenir professionnel" entrusted responsibility for work-study programmes to a new operator – France Compétences – and the relevant branches of industry. Several measures have enhanced the attractiveness of the main apprenticeship scheme (apprentissage). One such measure is the simplification of contractual procedures and available assistance, the raising of the age limit (from 25 to 29) and length of the working week, the increased net income received by apprentices, higher allowances to help apprentices take their driving tests and the option to continue classroom training if the work contract is terminated.

Take-up of the apprentissage and an alternative scheme (contrats de professionalisation) rose from 5.6% and 8.6% in 2019 and 2020, despite the health crisis. Emergency aid enhanced the attractiveness of apprenticeships for employers (Box 1.6). Nevertheless, the rise in contracts has been concentrated among older, more skilled workers, in part as the age limit was increased to 29 years in 2018. Moreover, the take-up of work-study programmes among students in secondary and early tertiary education is relatively low in France compared to Germany, Austria or Denmark.

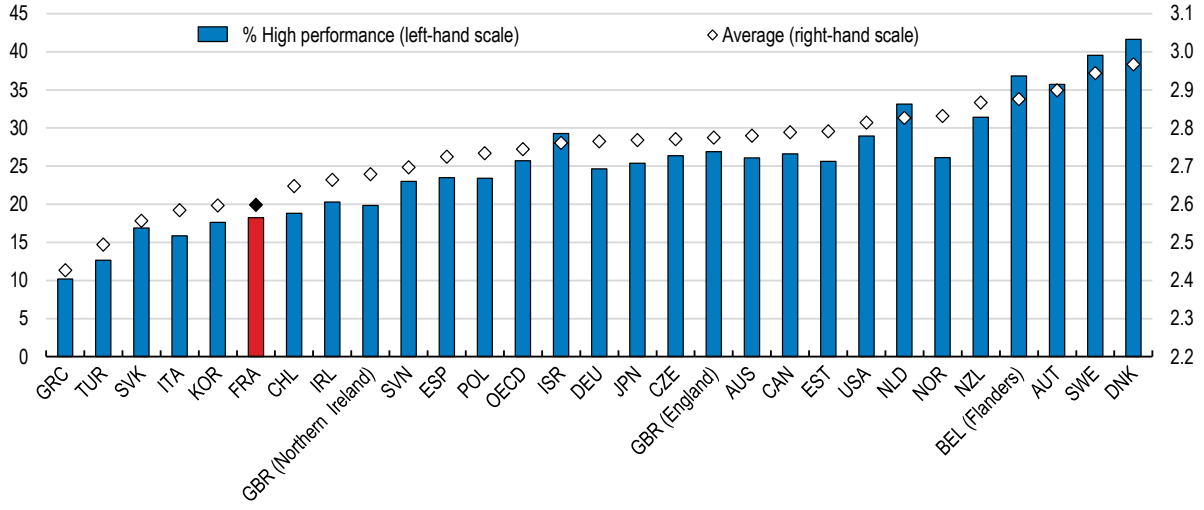
Further development of apprenticeships should include closer links between training and business, especially by encouraging longer contracts with more time spent in the workplace. The duration of apprenticeship contracts tends to be shorter than in Germany (20 months instead of 36). Additionally, the share of the time spent in the workplace during training is close to 62-75% in France for upper secondary vocational students, compared to close to 80% in Austria or Finland (OECD, 2020). In France, apprenticeships are offered by 4% of businesses compared to 20% in Germany. Strengthening the possibilities to switch between general and vocational education could also improve the attractiveness of vocational studies (OECD, 2020). In France, only 62% of students in vocational upper secondary education are registered in programmes that allow them to access tertiary education, while this proportion reaches 92% in Germany (OECD, 2020).

Source: OECD (2020), Education at a Glance 2020, OECD publishing, Paris.

Work-based training and human resources management practices must also be improved. The better the quality of management, the greater the resilience of value added and employment in the face of recessions (Cette et al., 2020). The current changes that are driven by the lockdown measures associated with the epidemic will require profound shifts in management methods (remote working, delegation). Surveys of management quality and organisational practices within industry show that France is significantly behind in adopting successful organisational delegation practices (Figure 1.29; Eurofound and Cedefop, 2020). These shortcomings could have consequences for the allocation of resources, the ability to find appropriate staff, the adoption of new technologies and the development of skills. It should be noted that, during 2020-21, French businesses increasingly viewed remote working as a source of productivity losses (Insee, 2021c).

Figure 1.29. Management practices are still formal

Percentage of jobs with a high level of high-performance work practices (HPWPs) and an average HPWP score[1]



1. The figure shows the average value of the HPWP indicator and the percentage of individuals in a job below the 75th centile in the various distributions of HPWPs sampled. HPWPs include certain aspects of the organisation of work, including teamwork, autonomy, prioritisation, mentoring, job rotation and the implementation of new learning, as well as management practices – including employee participation, pay incentive schemes, training practices and flexibility of working hours.

Source: *Survey of Adult Skills* (PIAAC) (2012, 2015).

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Active labour market policies should be targeted more at small and medium-sized enterprises. According to some opinion polls, a majority of business managers have little trust in Pôle Emploi, most frequently because of bad experience in the past (Cannevet and Kennel, 2020). However, those who take up the services offered to businesses are satisfied overall, especially large firms (Cannevet and Kennel, 2020; Cour des comptes, 2020b). The tools introduced, especially those that enable direct searches of online profiles appear to significantly reduce the costs of looking for candidates, and lead to job offers (Algan et al., 2020). These services should be tailored better to the smallest businesses (Cour des comptes, 2020b), and the distribution of information to businesses should be automated through e-mails setting out the services provided by Pôle Emploi's 5 500 specialist advisers. More ambitiously, the establishment of local one-stop shops for businesses combining training, recruitment and human resources services would provide better guidance to businesses in search of information and support (France Stratégie, 2021a). The strengthened collaboration between Pôle Emploi and the agency in charge of handicaped workers (Cap emploi) over 2021-22 could be a starting point in this direction.

The structural effects of recent labour market reforms should be carefully evaluated after the crisis, when the reform of lifelong learning is fully implemented (see above). The 2017 reforms promoted a more flexible labour market, through lower uncertainty about separation costs and the development of firm-level bargaining (OECD, 2019e; Carcillo et al., 2019). A significant increase of in-work benefits (Prime d'Activité) in 2018-19 was also associated with a lowering of labour costs focused on low-wage workers. However, short-term contracts remain high and self-employment has increased. In 2021, as recommended by the OECD, the authorities have reformed the unemployment insurance system so that it does not encourage recurrent short-term employment periods and unemployment spells. They are also planning to increase the relative cost of short-term hiring in 2022 (Table 1.9).

Table 1.9. Past OECD recommendations for a more inclusive and resilient labour market

Main OECD recommendations	Summary of actions taken since the 2019 *Survey*
Focus employer social security contribution exemptions mainly on low wages.	The 2019 reform of the competitiveness tax credit focused the associated cut of social contributions on low wages.
Strengthen work-study programmes in vocational secondary schools, and programmes for social and workplace integration for economically inactive young people.	In 2020-21, the "Un jeune, une solution" plan established financial incentives for work-study programmes and additional support measures for young people. The government plans to extend a number of measures through the "Contrat d'engagement jeune".
Ensure access to transparent information and effective monitoring of the quality of lifelong learning programmes through additional evaluations and counselling.	The 2018 reform of lifelong foresaw the implementation of certification mechanisms, but it has been delayed by the crisis.
Restrict the possibility of receiving unemployment benefits during repeated periods of temporary employment and the reloading of rights over short employment spells.	The minimum eligibility requirements for receiving and reloading rights to unemployment benefits were tightened in November 2019. The eligibility criteria will reach six months if the improvement in the labour market gains traction. A new method of calculating unemployment benefits that takes account of periods out of work entered into force in October 2021.
Modulate labour costs to reduce the excessive use of short-term contracts.	A modulation of employers' unemployment insurance contributions is due to enter into force in mid-2022 in some sectors, based on a reference period that started in July 2021..

Stimulating innovation and business digitalisation

Developing innovation and the availability of digital technologies will be vital to stimulate productivity when the crisis is over. France lags behind in R&D investment and availability of digital technologies compared to the top-ranking OECD countries.

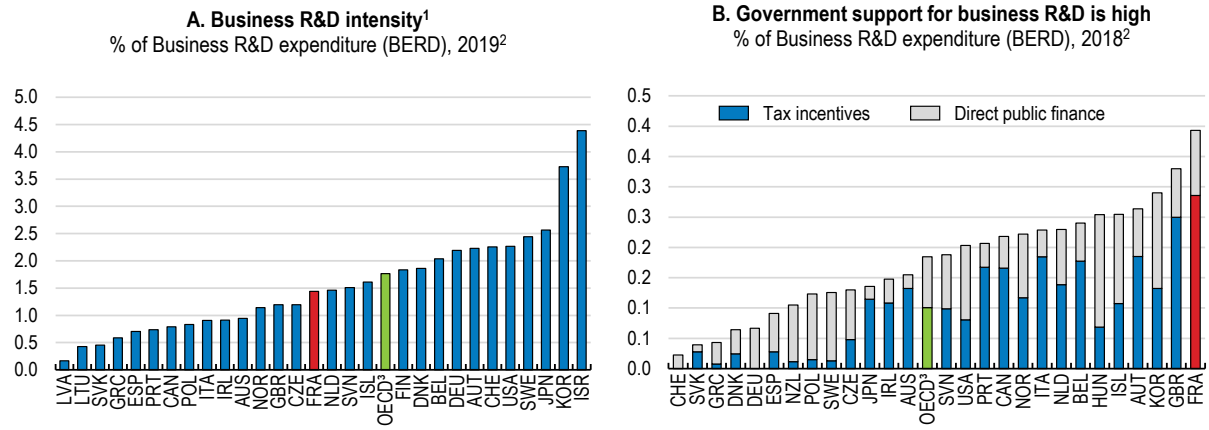
Strengthening R&D and innovation

France has a high rate of support for business R&D relative to countries with a similar business R&D-to-GDP ratio. In 2018, its support was the highest in the OECD (Figure 1.30). Nonetheless, business R&D expenditure is lower than the OECD average (Figure 1.30). The same is true for innovation, especially among SMEs, the quality of scientific papers and cooperation between science and industry (OECD, 2021f). This reflects, in part, the sectoral composition of the French economy, where the high- and especially the medium-high technology sectors are under-represented (OECD, 2021g).

Support for R&D mostly takes place through two tax instruments: a volume-based tax credit and social security contribution exemptions targeted at young and innovative firms, while there are also numerous schemes offering direct assistance and possible income tax reductions on income associated with intellectual property (OECD, 2021h). Moreover, a specific investment fund for supporting radical technological innovation, the Innovation and Industry Fund (Fonds pour l'Innovation et l'Industrie, FII), was created in 2018. In parallel, a new Innovation Council was set up in 2018 to provide guidance on innovation policies, including a review of existing measures with an objective of simplification.

Despite this significant progress, numerous measures could improve innovation support. Young and innovative firms enjoy good access to bank financing and a rapidly increasing venture capital market (Banque de France, 2021d). However, the effects of the 2008/2009 crisis show that innovation expenditure and intangible assets could suffer from growing financial constraints during the recovery (Aghion et al., 2012). SMEs account for a low share of innovation and innovation finance (Figure 1.31). The time taken to recover the sums committed under R&D tax credit (*credit d'impôt recherche*) are long for small, young businesses (Kallenbach et al., 2018), and the amounts allocated remain highly focused on large businesses, whereas the effects on innovation in large businesses have not been documented (CNEPI, 2021; Bach et al., 2021). Efforts should be targeted more at young SMEs, which tend to be more innovative. Indeed, OECD findings show that the effect of fiscal assistance mechanisms for R&D is generally stronger in SMEs than in large businesses (OECD, 2020c).

Figure 1.30. Business investment has stagnated, despite generous R&D support



1. R&D investment, excluding real estate activities, public administration and defence, compulsory social security and education, human health and social work activities, and activities of households as employers.
2. Or latest available year.
3. Unweighted average across 30 countries with available data.

Source: OECD (2021), R&D Tax Incentives Database; OECD (2021), Main Science and Technology Indicators Database.

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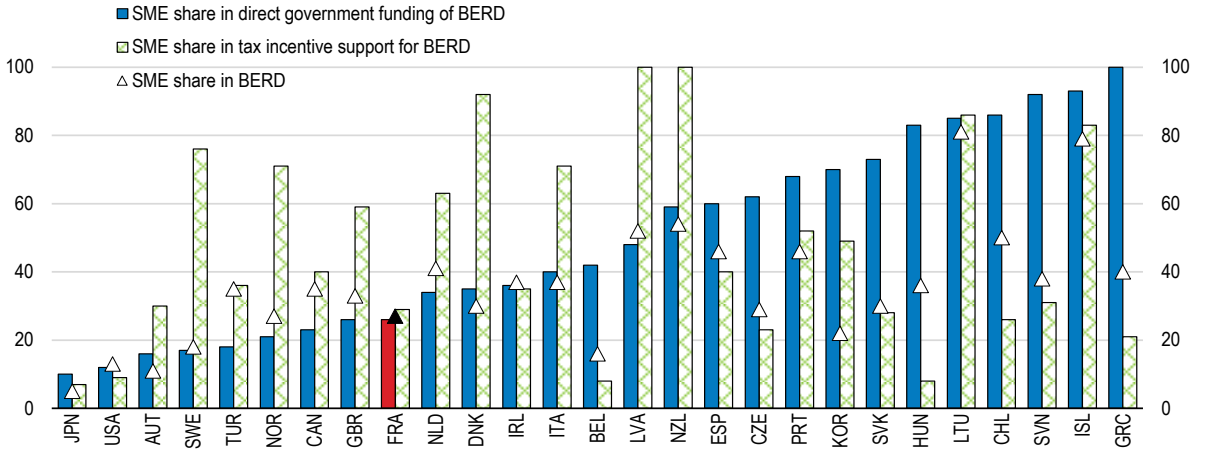
Basic research and public-private links are also crucial to the innovation process. The public R&D budget credits have been on a downward trend since 2008, and a targeted rise in the finance allocated to public research should go hand in hand with reforms to increase universities' autonomy over their human resources (OECD, 2019a). Additionally, the share of competitive public funding for research appears low in international comparison to the other OECD countries, focusing on competitive processes in order to allocate additional finance would be beneficial. The law on research planning 2021-2030 and the fourth Investing for the Future Programme (PIA4, 2021-27) provide for work in this area by raising an annual public research effort of EUR 6 billion (0.2% of 2019 GDP). Work on links between research and industry should also be continued by giving wide circulation to toolboxes for public/private partnership agreements and identifying the major centres of expertise (Cour des comptes, 2021b).

Figure 1.31. The take-up by SMEs of R&D support is low

% of public support for R&D (% of business R&D expenditure) by policy type, 2018



Note: International comparability may be limited, e.g. due to differences in SME definitions for business R&D and R&D tax relief reporting purposes. SME figures refer to enterprises with 1-249 employees (i.e. excluding firms with zero employees).

Source: OECD (2021), OECD R&D Tax Incentive Indicators (http://oe.cd/rdtax) and OECD (2021), Research and Development Statistics (database).

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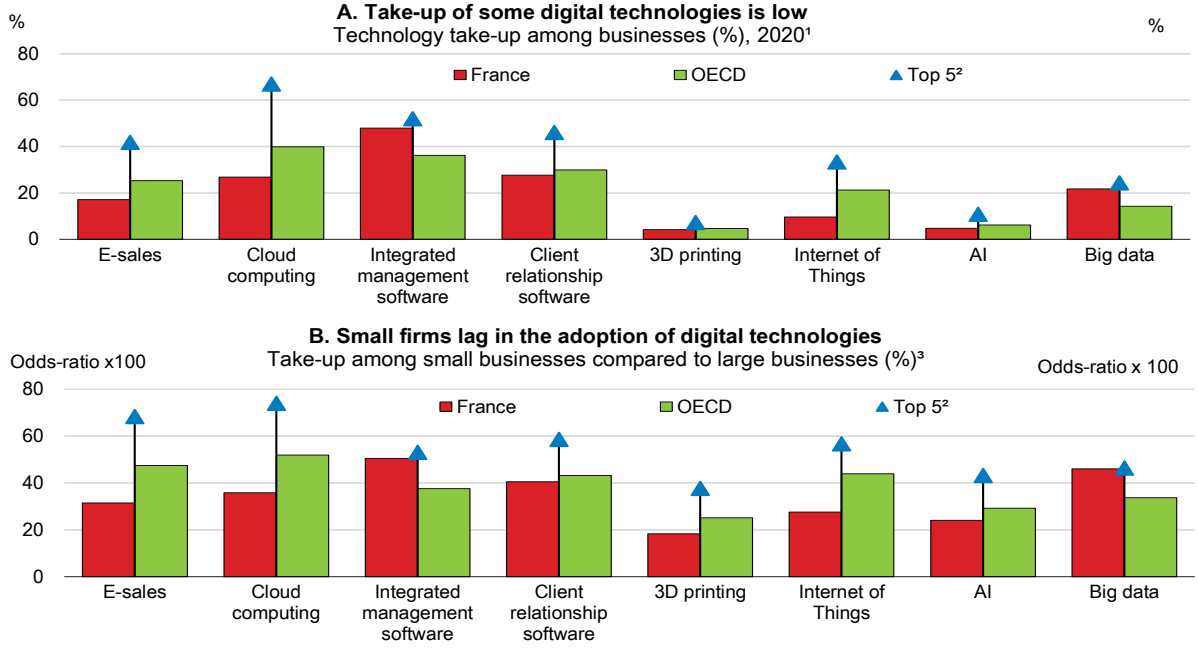
Improving the diffusion of digital technologies

Boosting the adoption of digital technologies would make for significant productivity gains. The take-up of some technologies is low among French businesses, in particular in service sectors. Take-up is also targeted more on large businesses in France than in most OECD countries (Figure 1.32; Boudrot, 2021; EIB, 2021). France is thus one of the OECD countries where business productivity has most to gain from the adoption of digital technologies (Gal et al., 2019; Cette et al., 2020). Wider diffusion of these technologies is also likely to have beneficial consequences for French exports (Aghion et al., 2020).

In small businesses, lack of training among managers and employees, and poor knowledge of support mechanisms act as a barrier to the take-up of digital technologies. The recovery and resilience plan, which covers investments from the recovery plan that would be financed through the European Recovery and Resilience Facility, foresees EUR 10 billion in assistance for digitalisation, and the focus will be on expenditure to support digital technologies (Box 2). The take-up of training in these technologies among business leaders and employees is too low for it to be possible to optimise production processes (Figure 1.33). Feedback shows that the most effective tools for promoting robotic and digital solutions combine financial support and technical follow-up, as provided by the platform *France Num* launched in 2018 (Faquet and Malardé, 2020). This could encourage take-up of digital innovation as experience in Germany, Finland and Italy has shown (OECD, 2021i).

The rapid rise in online sales also requires adjustments to be made. Online sales, measured by transactions using bank cards, leapt by more than 30% in the year to spring 2021 (Faquet and Malardé, 2021). In some markets, digital technology lowers barriers to entry and allows small enterprises to access bigger markets. However, improving fairness with regard to taxation, consumer protection and competition across the different methods of trading must be a priority. Measures to provide training, leadership and support in setting up local platforms providing shared logistics could enable independent traders and productive companies to develop their businesses online (Deketelaere-Hanna et al., 2021a).

Figure 1.32. The diffusion of digital technologies is uneven



1. Or latest year available.
2. Average of the five countries where take-up rates are highest (A) or availability is greatest (B).
3. Small businesses have between 10 and 50 employees, and large businesses have more than 250 employees.

Source: OECD calculations using OECD (2021) ICT Access and Use by Businesses (database).

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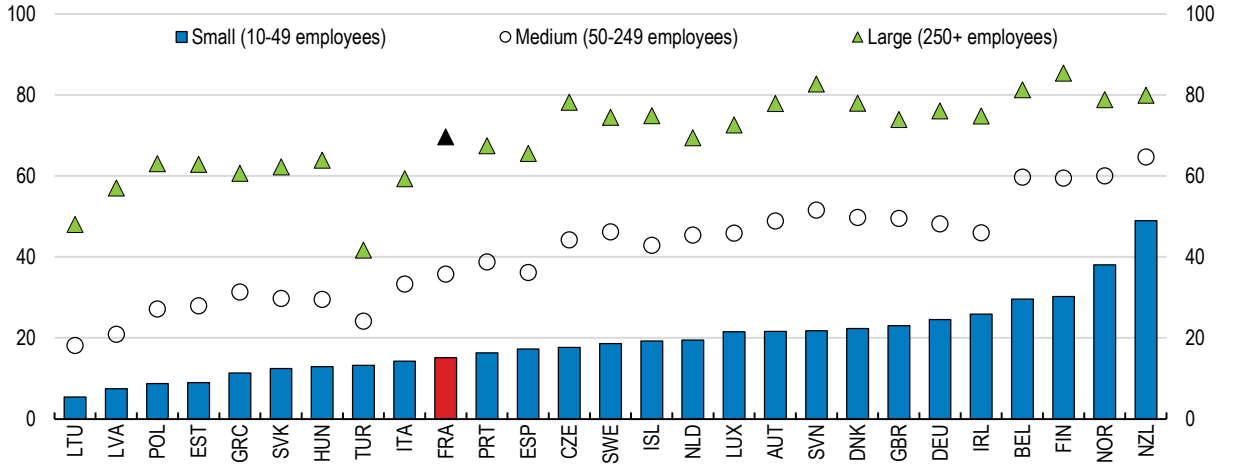
The roll-out of efficient telecommunications networks must continue. The roll-out of broadband had a positive impact on productivity gains and imports by businesses in France at the beginning of the 2000s (Malgouyres et al., 2019), and the pricing of telecommunications services is moderate in international comparison (OECD 2021f). The superfast broadband plan for France (Plan France Très Haut Débit) with an envelope of EUR 3.3 billion for 2013-22 and the *New Deal Mobile* of 2018 have led to rapid progress, but fixed superfast broadband coverage remains uneven. Nationally, close to 58% of locations are eligible for superfast services, of which 93% are in highly populated areas and 43% in small towns and rural areas (ARCEP, 2021). The recovery plan provided a welcome scale-up in funding to EUR 0.6 billion. However, if the objectives of the superfast plan are to be attained, i.e. total coverage down to the subscriber by 2025, the work involved in the roll-out is significant, with 16.5 million locations yet to be connected.

Growing digitalisation of the economy also prompts the need for new regulations. The economic power of some digital platforms has become considerable, and, in the bulk of OECD countries, growing digitalisation is associated with a rise in profit ratios for the largest businesses (McMahon et al., 2021). More transparency must also be imposed on the major digital firms by opening up application programming interfaces and involving citizens and experts in testing and controlling algorithms in order to encourage new entrants and innovation (Bourreau and Perrot, 2020).

Figure 1.33. The take-up of digital training remains low

% of businesses offering ICT training to their employees, by size, 2018



Note: Businesses with at least 10 employees offering training to develop their employees' ICT-related skills over the past 12 months. Data for Portugal refer to 2017, for New Zealand to 2016, and for Iceland to 2014.
Source: OECD (2020), ICT Access and Usage by Businesses (database) and OECD (2020), OECD Telecommunications and Internet Statistics (database).

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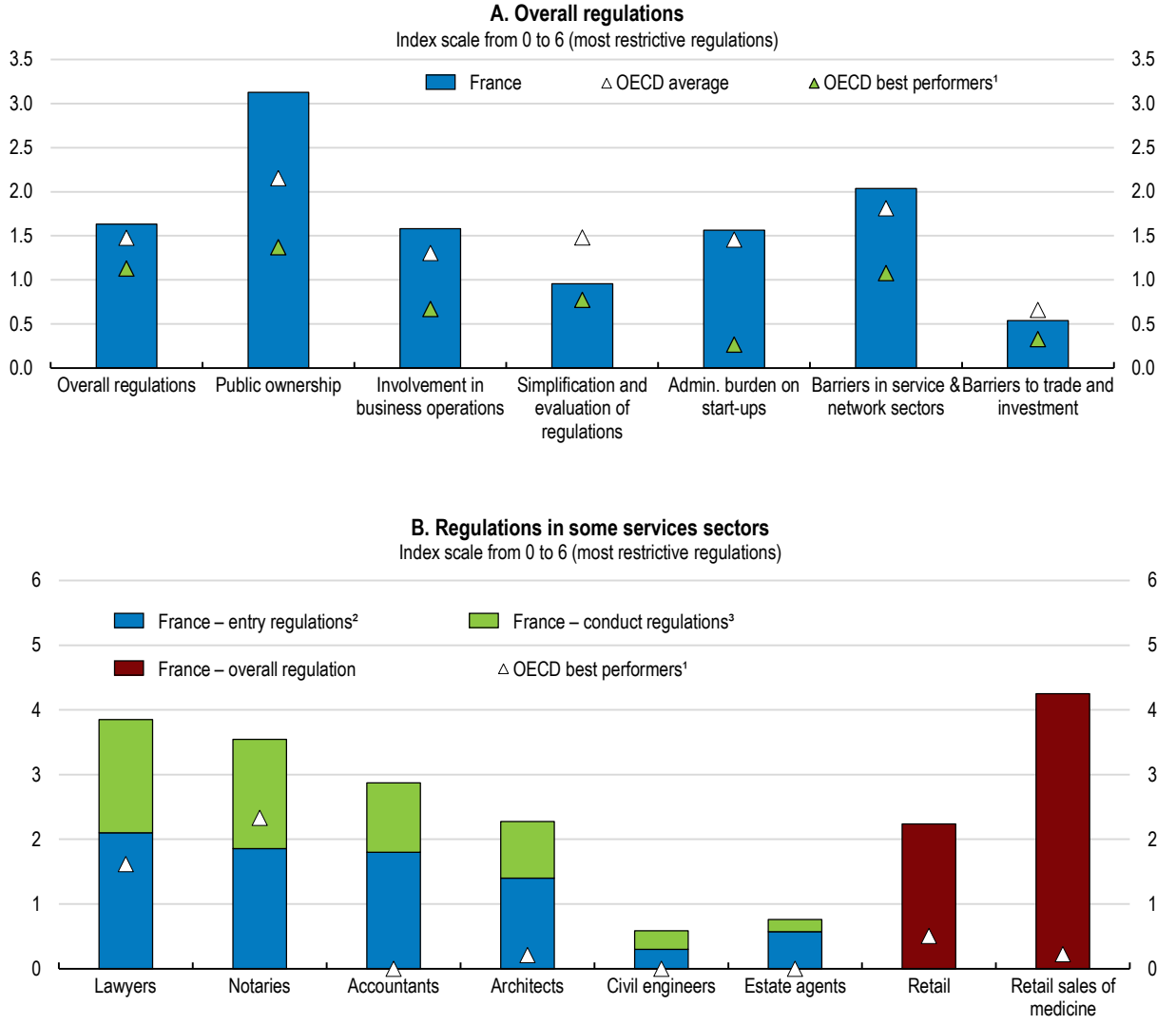
Increasing business performance and competition in services

Additional reforms to the markets for goods and services will encourage competitiveness and long-term growth. Some services sectors are partly sheltered from competition, and business regulations remain complex. Regulations on start-ups and services sectors that hinder the entry of new firms, competition and productivity are more restrictive than in many other OECD countries (Figure 1.34). At the same time, entrepreneurial activity is lower than in many OECD countries, especially among young people and in the services sector (OECD, 2019c; Gilles et al., 2020; Bauer et al., 2020), despite significant progress (Gourdon, 2021). As a result, new entrants during the 2000s were smaller and their capacity for growth lower than the average for OECD countries (OECD, 2020d).

Easing unduly restrictive regulations would stimulate competition and innovation. As foreseen by a 2019 law (loi Pacte), an electronic Single Window is set to replace the six current networks of business formalities centres that are used for firm creation by January 2022 and a single general register will centralise and publish, information about businesses online (Comité Impacte, 2021). Nonetheless, multiple regulatory and tax thresholds may still be a barrier to firm growth, as small firms may shy away from growing beyond them. Studies estimate the cost of such regulations at between 0.3% and 4% of GDP (Garicano, Lelarge and Van Reenen, 2016; Gourio and Roys, 2014), depending on the degree of downward wage rigidity, although older research suggests only a small impact on the firm-size distribution (Ceci-Renaud and Chevalier, 2011). Despite the adoption of significant recent measures to smooth some of these thresholds included in a 2019 Law (loi Pacte), the new regulatory environment has tended to concentrate them on 11 and 50 employees, and the 2017 labour-law orders introduced differentiated treatment of industrial agreements based on firm size.

Figure 1.34. Product market regulations remain stringent in some sectors



1. The figure for "OECD best performers" is the average of the five OECD countries with the least distortive regulations.
2. Entry regulation refers to the regulation of new entrants to the profession.
3. Conduct regulation refers to the regulation of the conduct of existing professionals.
Source: OECD (2019), Product Market Regulation indicators.

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Making taxes on production more conducive to business productivity gains should remain a priority. In a welcome move, the recovery plan cut taxes on production significantly. Moreover, the government continued to reduce the corporate income tax rates from 33% in 2018 to 25% in 2022. However, some tax bases continue to be particularly distortive (Martin and Trannoy, 2019; Martin and Paris, 2020). For example, the corporate social solidarity contribution (*contribution sociale de solidarité des sociétés* – C3S) is levied on turnover, regardless of how the business performs, and increases the fragility of companies in times of crisis. Eliminating some tax expenditures, including in the short term, household saving incentives, and, once the recovery has gained further ground, reduced VAT rates, would give room to cut taxes on production, promoting a more efficient tax system (OECD, 2019a).

As in most OECD countries, many professional services are subject to a raft of regulations. Although the regulations in force would appear more conducive to trade in most services sectors, the same cannot be said of professional services (OECD, 2021j). Where notary, architectural, accountancy and legal services are concerned, barriers to entry and controls on practice in France remained among the highest in the OECD, suggesting that it should be possible to reach a better balance between quality control, integrity and competition. For example, in architecture services, the majority of shares in an architectural firm must be owned by licensed architects, while the regulatory framework imposes licensed auditors to manage auditing firms (OECD, 2021j).

More generally, a further opening of the capital of selected professions would ease new entry and allow economies of scale and scope. For example, France stands out as the country with the most restrictive regulations on retail sales of medicines (Autorité de la Concurrence, 2016). Pharmacies continue to retain a monopoly on the sale of basic drugs and are subject to strict restrictions on ownership and size, capital, distribution chains and online sales.

Table 1.10.Past OECD recommendations to stimulate innovation and business performance

Main OECD recommendations	Summary of actions taken since the 2019 *Survey*
Task an independent institution to conduct a thorough review of all existing and proposed regulations affecting firms.	The 2019 PACTE law simplified starting a business, merged employment thresholds for SMEs and improved insolvency procedures. In 2019, the Law on Mobility (*loi d'orientation des mobilités*) lowered some of the regulatory barriers in the vehicle parts sector and driving schools. However, the time allowed for sales was reduced in 2019.
Continue to increase universities' autonomy over their programmes and human resource policies, while taking into account their public service function.	No action taken.
Continue to increase the budget of the National Research Agency.	The law on research planning 2021-2030 provides for an increase in the budget of the National Research Agency.

Ensuring an inclusive recovery

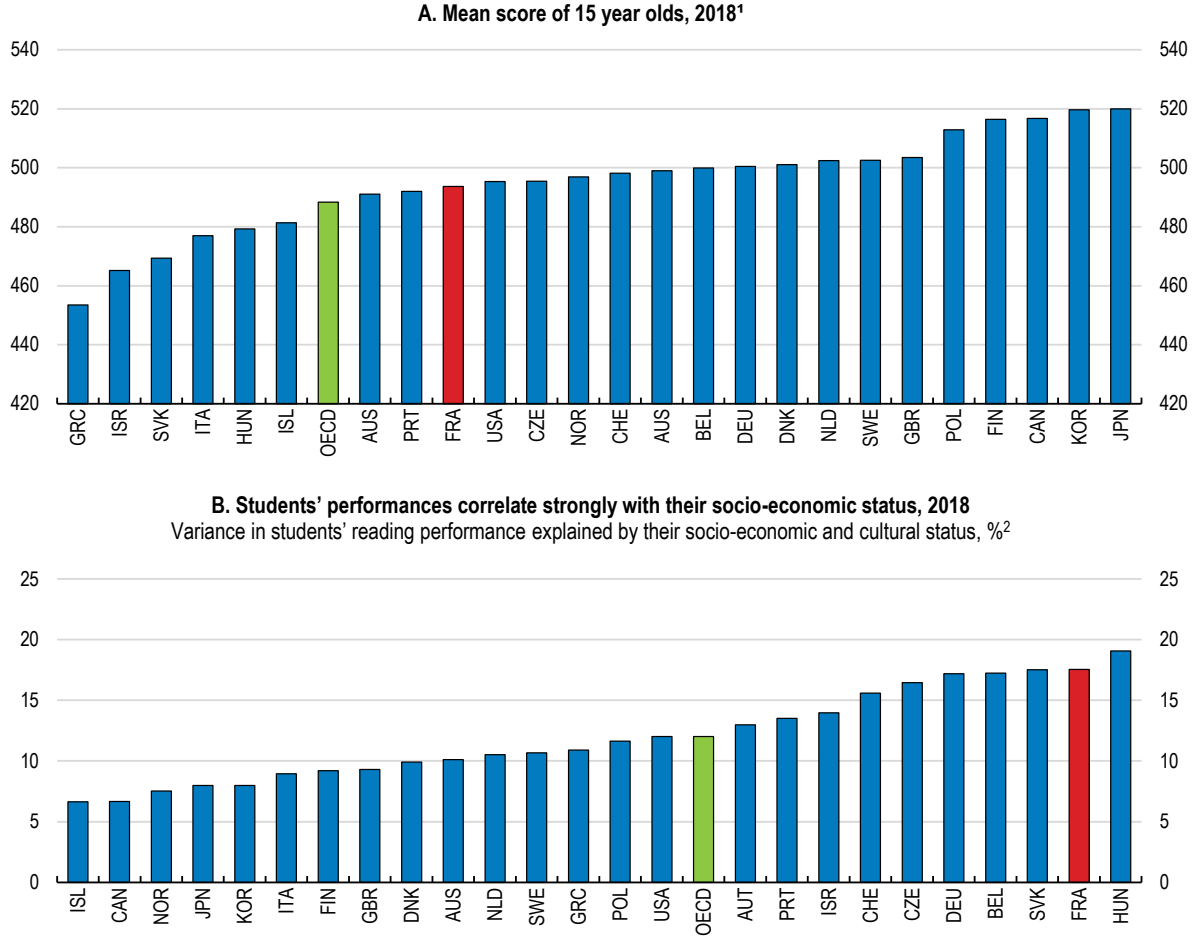
The coronavirus health crisis has had and will have very significant economic and social consequences. Although the government has introduced important measures to attenuate the social impacts of the crisis, it may still result in increased poverty (France Stratégie, 2021b) and more unequal opportunities. Measures to improve the outlook for employment and productivity should be supplemented by specific measures to ensure that all students can be supported on their learning journeys and that those living in the most vulnerable areas are not further marginalised.

Improving initial education

The labour market is continuing to shift towards higher-skilled employment (Figure 1.27). Thus, in order to sustain growth, it is becoming increasingly important to adjust and improve skills, starting with initial education. In international comparison, the quality of the education system appears average compared to the level of public spending on education (Blanchard and Tirole, 2021; Table 1.5). In PISA 2018, as in

2015, students in France had slightly above-average performance in reading, mathematics and science, but equity indicators were among the least favourable of OECD countries (OECD, 2020e). Students' skills correlated strongly with their socio-economic and cultural status (Figure 1.35). Additionally, France closed its schools comparatively shortly, providing good continuity of education in international comparison, while it took steps to address and assess the learning gaps associated with school closures (OECD, 2021k; OECD, 2021l). Annual national evaluations do not show a drop in average learning outcomes at the elementary level between January 2020 and 2021 (Depp, 2021a). However, problems were more frequently encountered by students from low-income backgrounds due to the lack of equipment needed or to their parents' inability to support them during the first lockdown in 2020 (Insee, 2020a).

Figure 1.35. The school system perpetuates significant disparities



1. Average score in reading, mathematics and science.
2. Variance in reading performance explained by socio-economic context as measured by the PISA index of economic, social and cultural status.
Source: OECD (2019), OECD Programme for International Student Assessment (PISA).

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Disparities between socio-professional categories and regions become embedded at a very early age. While the social system and public assistance provide significant childcare, only 30% of children from disadvantaged backgrounds attend "formal" childcare, whether crèches, day care or childminders, compared to close to 60% for the population as a whole in 2019 (OECD, 2021o). This is, in part, a reflection of geographical disparities: the level of development of these forms of care varies with the municipality or borough. Childcare provision for young children is much fuller in urban areas, wealthy municipalities and better-off boroughs (HCFEA, 2018). Though the starting age of compulsory education has recently been lowered to three, early childcare helps children's general development and their social skills: unequal opportunities start here (OECD, 2018b).

France does not strike the right balance in spending per pupil across education levels to best address inequalities in educational outcomes. Relative to the OECD average, spending per student is comparable to the per-student average in tertiary and pre-primary education and it is above for upper secondary education. Yet, spending per children is below the OECD average for primary education (OECD, 2021n). There is also extensive evidence that teachers were more inexperienced, more often on temporary contracts, and that staff turnover was higher for schools in poor neighbourhoods (Depp 2020a; 2020b).

To address some of these concerns and to better tackle inequalities in education that start to accumulate from early childhood, pre-primary education was made compulsory for three year olds from the 2019 school year (*loi "pour une école de la confiance*"), class sizes are being halved in grade 1 and grade 2 of primary school in priority education networks (*Réseau d'éducation prioritaire*, REP), and the salary supplement for staff in those schools was boosted in 2021-22 by the Grenelle education measures (Table 1.11). Nonetheless, although declining, the number of children per teacher and the ratio of children per contact-staff, including teachers and teachers' aides, remain relatively high in pre-primary education (in 2018-19, there were 23 children per teacher – eight children more than the OECD average – and the ratio of children per contact staff was 15 compared to an OECD average of 11). Moreover, the strengthening of the attractivity of teaching as career initiated with the *Grenelle de l'Éducation* should combine wage increases and more autonomy for school management and the choice of teaching practices (OCDE, 2020e; Blanchard and Tirole, 2021). In particular, encouraging teachers' collaborative work will be essential for the diffusion of good practices and innovative teaching methods.

Educational interventions for disadvantaged children are more efficient when they are made at an early stage (OECD, 2018c). The authorities should continue to increase the number of teachers at pre-primary level in disadvantaged neighbourhoods, as is gradually being done. Efforts should also focus on initial training and professional development measures, in particular in respect of continuing training and salary progression, in order to attract and train high-quality educators and teachers where the challenges are the greatest. In addition, policies for Early Childhood Education and Care (ECEC) could do more to increase the fairness of the education system and boost women's employment. Local allocation of places in early public childcare facilities (crèches) should be revised, making the criteria more transparent, more dependent on household income and the expected long-term learning outcomes and less subject to political pressures (OECD, 2019a). In addition, a more coordinated governance system of childcare services for 0-6 year olds could help to deliver a more consistent learning experience, for example by placing these services under the umbrella of the same ministry (OECD, 2020e).

Continuing with work to bring initial training more into line with labour market and business needs must be the priority for secondary education. Some vocational routes are unattractive because they provide poor opportunities for graduates and do not provide a way into jobs of the future (OECD, 2020e). They also often have a bad reputation because they are perceived as following on from a failure to progress to higher education (OECD, 2015). Enhancing technical schools (*Campus des métiers et qualifications*) and rolling out work-study programmes in vocational upper secondary schools are promising steps. Despite this, in 2016, only 2 in 10 students were on a vocational programme that combined work and study (OECD, 2020e). More recently, the aim of the careers reform is also to develop a more progressive approach. The development of work-study programmes, which often lead to better opportunities, must therefore continue. Strengthening the place of business in work-study programmes, as in Germany, could also help students transition more securely into working life as early as the upper secondary cycle (Box 1.7).

Table 1.11. Past OECD recommendations to improve learning outcomes

Main OECD recommendations	Summary of actions taken since the 2019 *Survey*
Offer attractive salaries and career prospects to teachers in schools with many pupils from disadvantaged backgrounds.	The salary supplement paid to teachers in REP schools was increased in 2019 and 2021. The Grenelle education measures provide for a further increase in 2022.
Promote an innovative range of different practices in teacher training in order to meet students' differing needs.	The 2021 teacher training reforms increase professional practice through an observation placement or a work placement.
Bring schools' human resources budgets into line with the number of their students, with top-ups for disadvantaged students and those whose first language is not French. Publish the budgets and the underlying formulae.	In 2021, an experiment tests a new approach to better integrate social and geographical criteria in school funding in three regions.
Speed up the development of additional childcare services for low-income households and in the poorest neighbourhoods.	The financing of pre-primary schools is partly based on two bonuses for their share of low-income children and their location in poor neighbourhoods since 2019.

Ensuring territorial equity

Public policy must support the territories during the recovery. The poverty rate after taxes and transfers is relatively low in France but very heterogeneously distributed. Benefits in kind such as education, health and housing also contribute significantly to reducing inequality (Insee, 2021a). Even though the gaps in disposable incomes between urban and rural areas appear to have been closing, it has increased within urban areas (Box 1.9) while the drop in public service provision and economic activity in peripheral areas has increased people's discontent. The demonstrations at end-2018 were more frequent where the number of local businesses, schools and healthcare professionals had recently fallen (Davoine et al., 2020).

The territorial impact of the 2020 crisis has varied widely. Income in areas that are very popular with tourists has fallen sharply, whereas regions dominated by farming have been relatively unaffected (Figure 1.37; Insee, 2021d; Bouvart et al., 2021). Although the areas that were worst affected were not the poorest performers before the crisis (Barrot, 2021), the recovery could nonetheless make some regions vulnerable. The poor are very much clustered together geographically, and the increase in poverty could be substantial for young people and the self-employed.

Improving access to essential services

Disparities within urban districts and between urban and rural areas have been linked to persistently high opportunity gaps. For example, rural and suburban areas appear to have a larger proportion of low-skilled young people (Caro, 2018), and children from the major metropolitan areas still predominate in elite universities (Bonneau et al., 2021). Although inequalities in disposable income have shrunk markedly between *départements* and regions over the long term (Bonnet et al., 2021; Davezies, 2021), the upward social mobility of children of manual and white-collar workers is still highly dependent on the *département* where they were born (Dherbécourt, 2015). The social ladder seems to work well in some regions — Île-de-France, Brittany — and poorly in others — Hauts-de-France. In particular, some rural areas suffer from a lack of transport mobility to educational establishments, and travel time is long (Caro, 2018; Berlioux, 2020), while poor districts in urban centres are hives of social and educational challenges. Though some initiatives such as boarding schools (Internats d'excellence) target these gaps, access to essential services and business centres must be developed further, especially for young people.

Public service provision and access to social assistance must continue to improve. Relative to the population, the presence of public services in both rural territories and districts designated as "poor" under urban policy is high overall but varies sharply depending on the branch of public service concerned (Cour des comptes, 2019; ONPV, 2020). The aim of introducing the "France Services" label is to promote and modernise access to public services. The label has 1,304 locations, and a further 181 are planned in 2021 as well as 90 *France Services* buses for designated priority districts and rural locations. Outreach measures aimed at vulnerable populations or those that are far away from urban centres must be further developed and better targeted. This is about defining measurable targets for accessibility on the basis of

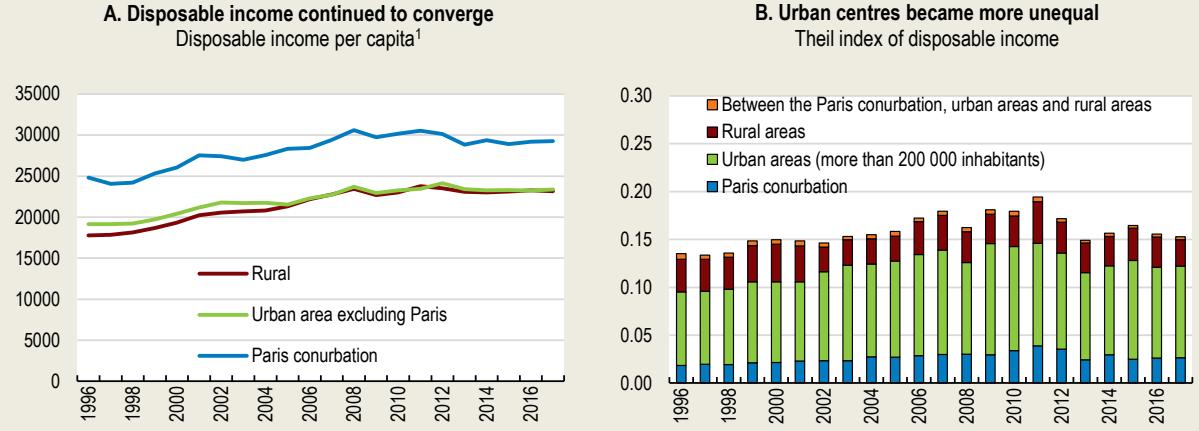
service diversity and regular, independent analysis of quality of public service access, as happens for telecommunications (Brandt, 2018). Moreover, adding social support agencies and community centres to "France Services" hubs could reduce failure to take up the assistance and minimum welfare benefits that will be vital to the most vulnerable people once the crisis is over (CNLE, 2021).

Box 1.9. Recent increases in income inequalities have been concentrated within urban areas

Analysis of microdata for the past 20 years (Goujard and Loriaux, forthcoming) shows that per capita disposable income is substantially higher in urban areas (especially around Paris). However, between 1996 and 2017, disposable income rose faster in rural areas than in large and medium-sized urban settlements. The differences between major regional capitals and rural areas were tapering out until the 2008 crisis (Figure 1.36).

The convergence of average incomes masks a rise in inequalities in disposable incomes between 1996 and 2017, which was concentrated in urban areas (excluding Paris), while disparities within rural areas tended to fall (Figure 1.36).

Figure 1.36. Changes in income disparities between urban and rural areas



1. Per consumption unit in constant euros.
Source: OECD calculations based on the Tax and Social Incomes Survey (ERFS), Insee.

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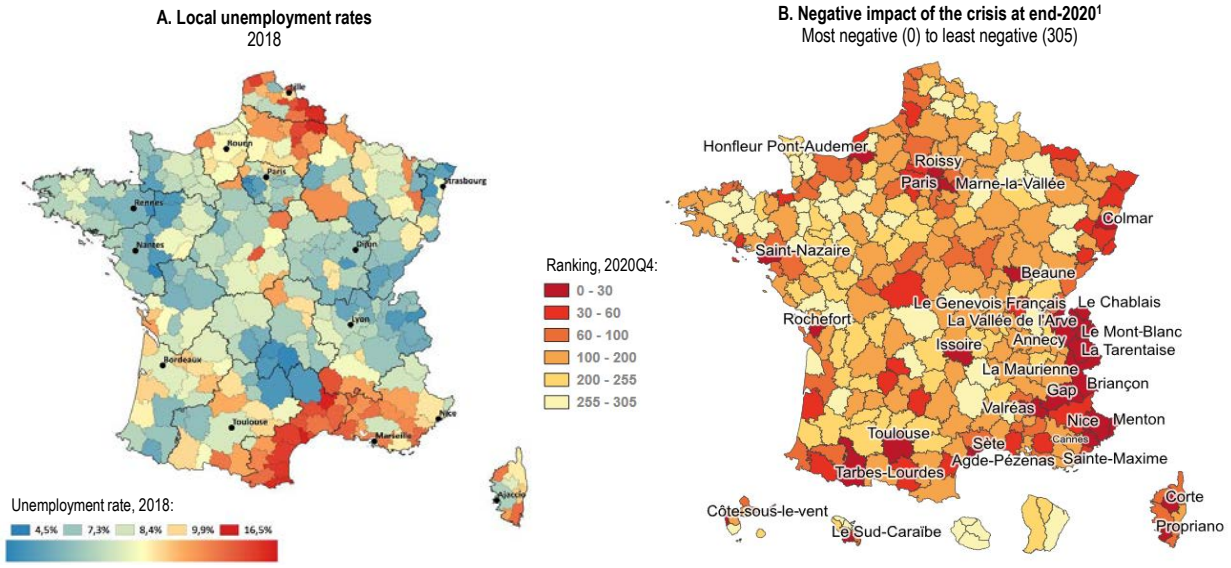
These changes reflect both the effects of fiscal redistribution (Insee, 2021) and the significant impacts of household composition. The taxes and transfer system tends to reduce differences in primary incomes of households between Paris, large and medium urban areas and rural areas. Additionally, socio-professional status and the structure of households explain some of the income gaps between urban and rural zones. Finally, changes in household structure, in particular the rise in lone-parent families and living apart, contribute to the rise in inequalities observed in urban areas (Behagel, 2008; Goujard and Loriaux, forthcoming).

Source: Goujard A. and Loriaux, C. (forthcoming), Trends in regional income disparities in France from 1996 to 2017, OECD Technical background paper; Behagel L. (2008), "La dynamique des écarts de revenus sur le territoire métropolitain (1984-2002)", Economics and Statistics No. 415-416, pp. 97-120; Insee (2021d), La France et ses territoires – Édition 2021, Insee.

Figure 1.37. Past vulnerabilities and the effects of the 2020 crisis overlap imperfectly



1. The negative impact is measured using downward local sectoral GDP exposure, local take-up rates of short-time work schemes and local job destruction between the fourth quarter of 2019 and the fourth quarter of 2020 (Bouvart et al., 2021).
Source: Insee (2021), www.insee.fr/fr/statistiques/5371275?sommaire=5371304; Bouvart et al., (2021), "L'emploi en 2020: géographie d'une crise", *Note d'analyse,* France Stratégie, No. 100, April 2021.

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Access to transport remains difficult in some urban neighbourhoods and rural areas. The 2019 Law on Mobility (LOM) broadened the perimeters of transport organising authorities' to the entire territory, by partly shifting this responsibility to the regions, so that all areas could be included in a local transport strategy. However, the coverage and frequency of public transport in sparsely populated areas remains poor. Improving digital-based ride-sharing could reduce the number of miles driven, lower emissions and reduce road congestion substantially, provided it replaces individual car use. Norway has achieved promising results by providing door-to-door bus services at the user's desired time rather than with a fixed route and timetable (Dotterud and Skollerud, 2015). These new services have improved well-being by improving access to social and cultural events and to health services, particularly among the young and the old.

Ensuring a sound implementation of the recovery plan is likely to encourage territorial convergence (Box 1.9). The amounts contained in the regional recovery plans equate on average to 1.1% of regional GDP. Subnational governments, especially the smallest, need engineering support in order to respond to calls for complex national projects with tight time frames. Developing the roles played by expertise, technical support and procedural harmonisation at regional level to the benefit of local services and small municipalities could lead to efficiency gains and achieve greater fairness (OECD, 2019a).

Box 1.10. The local implementation of the recovery plan

The recovery plan (Box 1.2) provides for three types of place-based measures with funding of EUR 16 billion in 2021-22 (out of a total of EUR 100 billion). Regional recovery plans have been signed by the regions and the State. Joint control is provided at local level by state services, and regional and *département* councils. Funds are allocated in the form of specific envelopes under the responsibility of *préfets*, calls for projects and decentralised loans. The plan provides for EUR 10.5 billion in funding for local governments.

The recovery plan should be cascaded to subregional level in summer 2021, by which time recovery and ecological transition contracts (CRTE) should be drawn up. The contracts will be subdivided between 833 inter-municipality groupings and will cover the contractual process in place (rural community contracts, ecological transition contracts, etc.) to formalise the funding linked to the recovery plan.

Measures for rural territories

The recovery plan allocates EUR 5 billion to rural territories for:

- young people (deployment of 800 volunteers at subnational level in administration in particular);
- support for businesses in rural areas (support for 1 000 restaurants under the sustainable tourism support fund);
- encouragement of local food systems (EUR 80 million).

Measures for disadvantaged urban neighbourhoods

The authorities have provided for EUR 1 billion for priority districts by way of:

- workplace integration for young people and the “Un jeune, une solution” plan (Box 1.6);
- improving the living environment and attractiveness of territories through enhanced support for refurbishment of social housing, infrastructure and public facilities;
- increased social cohesion through enhanced support for solidarity stakeholders.

Source: ANCT (2021), *Le numérique du quotidien au cœur du plan de relance*, Agence Nationale de la Cohésion des Territoires; RF (2021), *France Relance – 9 000 projets d'investissement du quotidien – Coup de projecteur sur les mesures de soutien aux collectivités locales*, press release of 6 May 2021.

Tailoring support for employment and inclusion to local needs

The experience of OECD countries shows that it is vital to coordinate public policies in order for the regions to develop (OECD, 2019d). Locally, support for employment in non-mobile sectors should be accompanied by enhanced assistance for training (see above) and geographical mobility to boost the population's economic and social prospects.

Place-based tax incentives should be rigorously evaluated and their management should be reformed to encourage local development and the involvement of local governments. Place-based tax incentives accounted for around EUR 620 million in 2018 (Deketelaere-Hanna et al., 2021b), although they have not proved effective in business or job creation. For example, impact assessments of urban free zones (ZFU) have concluded that they have little or no effect. They show no impact on the activity of existing establishments and largely highlight displacement effects, and even then only in the most densely populated urban environments. In particular, tax breaks appear to be more effective in the areas best served by transport networks (Briant et al., 2015). The same is true for rural regeneration zones (Behagel et al., 2015). Moreover, these place-based schemes are determined nationally, with no local consultation and with no room for local experimentation or adjustment (Algan et al., 2020). These expenditures could

be reallocated to lagging urban and rural areas, but in the form of allocations that closely involve locally elected representatives. If the place-based tax incentives are retained, it might be appropriate to try to restrict them to export business and enlarge their geographical boundaries to local employment areas. This could maximise the potential positive effects on activity and employment, as the examples of Germany and the United Kingdom show (Criscuolo et al., 2019; Etzel et al., 2021).

Coordination between inclusion and employment stakeholders must increase. The non-take-up of financial assistance for the least well-off is still considerable (Drees, 2020). When combined with more systematic integration programmes for the jobless, automated payments would provide better support towards employment (Pitollat and Klein, 2018). The effectiveness of the unification of national social benefits will depend on a proper architecture of associated rights, especially at the local level, for which knowledge is incomplete. Regular surveys of these schemes, for example using annual selections of a cross-section of communes and *départements*, would help to increase awareness among local policy makers when determining their scales for levels of assistance (Desmarescaux, 2009).

Easing geographical mobility

Public support for geographical mobility should take better account of the links between mobility needs and employment. Employment rates vary significantly from one region to another, especially for the low skilled and the young, and geographic mobility among young unemployed or inactive people is low (OECD, 2019a). The available grants could be reformed to better support short-distance mobility (Roulet, 2018). The fragmentation and lack of coordination of available support for mobility provided for by subnational governments and their groupings, the public employment service and the voluntary sector means that job seekers and businesses are unable to use it effectively. Local information points would raise awareness. The eligibility conditions of mobility subsidies from Pôle Emploi also appear to be restrictive and based on many factors (minimum distance, amount of unemployment benefits, training undertaken) that cannot be tailored to local circumstances (Cour des comptes, 2021c).

Many measures could improve the flexibility of the rental market. A state guarantee (*garantie Visale)* was put in place in 2016 for young people moving into privately rented accommodation but is seldom used in sought-after areas. Enhancement of this guarantee could be channelled through more ambitious information campaigns and an increase in delays to report unpaid rents. In addition, social housing needs to take into greater consideration the specific issues of young people and short-term contracts. The removal of the requirement for ties to the municipality of residence to have a right to social housing, the transfer of quotas to supra-municipal organisations and the creation of a right which would be transferable from one municipality to another would help avoid penalising tenants planning to move to accept a job a long way from their place of residence (Carcillo, Huillery and L'Horty, 2017; Défenseur des droits, 2020). At the same time, assistance for the construction of rental properties should be refocused on areas of very high population density and towards the most vulnerable households. Finally, the upsurge in teleworking means that the rental market could be developed by making the procedures for converting offices into housing more straightforward. Indeed, some requirements such as parking areas appear restrictive, even though they were relaxed in 2018.

Moreover, the high taxation of housing and land transfers and the relatively low and declining recurrent taxes on property assets prevent them from being used more effectively, and limits residential and business mobility (Bergeaud and Ray, 2021). Reducing registration and transfer fees and increasing recurrent taxes on land and property by gradually aligning them with market prices would incentivise owners to sell developable land (Bérard and Trannoy, 2018). This would help absorb tensions on the housing market and commerical real estate. At the same time, updating cadastral rental values and reforming the *taxe foncière* is a priority to ensure efficiency and fairness of property taxation. The cadastral values used for the property tax levied on households (both for the *taxe d'habitation* and *taxe foncière*) are based on an assessment of property values dating back to 1970.

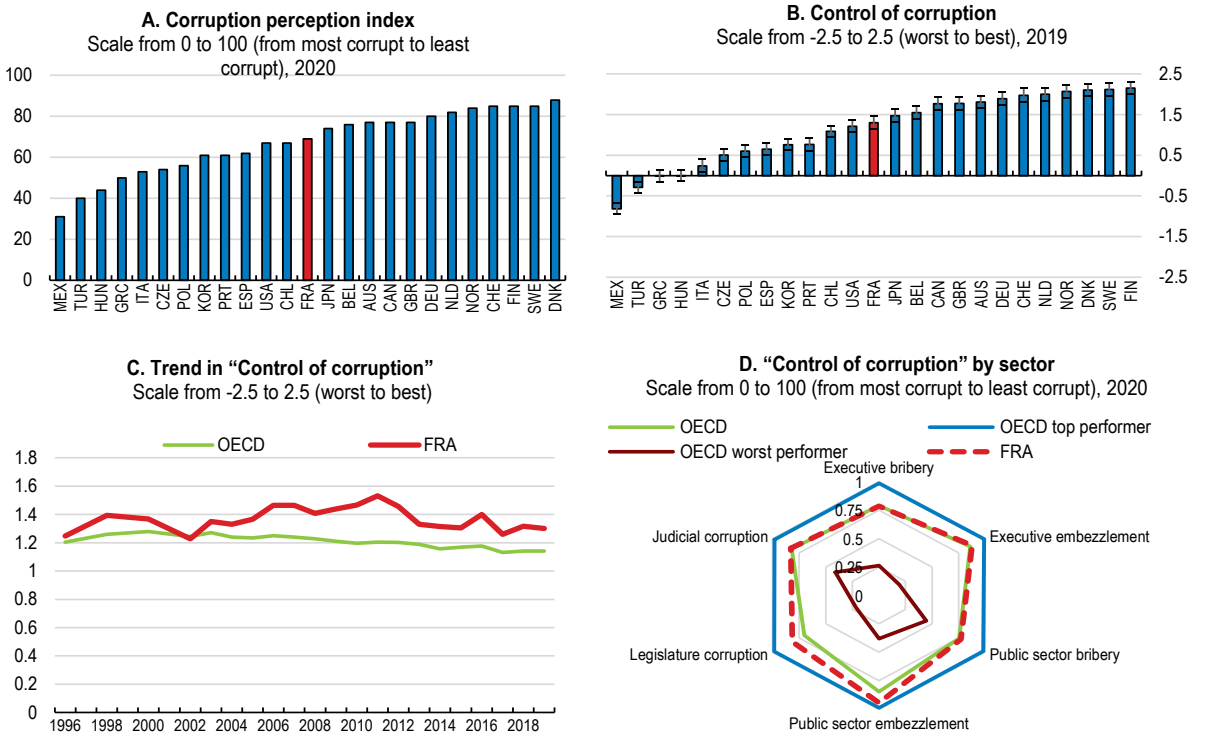
Reducing further discriminations

Continuing a detailed monitoring of the pandemic's differentiated impacts will be crucial for determining whether additional measures to address discrimination is needed. On average, the COVID-19 crisis did not affect more strongly women's and foreign-born employment rates in France so far, but they are still significantly lower than those of men and native workers (Insee, 2021; Eurostat, 2021b). Perceptions of labour market discrimination are high in international comparison (Carcillo and Valfort, 2020). The government took a series of measures to fight unequal treatment between women and men in 2018 (OECD, 2019e) and monitored the impact of the pandemic on domestic violence and labour market outcomes. In a welcome move, it also extended paid paternity leave from 11 to 25 days in 2021. Despite the crisis, the mandatory equal-pay indices published by firms in 2020 and 2021 have shown some progress (MTEI, 2021). However, some forms of discrimination based on ethnicity and residence appear to have increased after the first lockdown (Challe et al., 2021). To assess such changes and raise awareness and incentives to reduce such behaviours, broadening the scope of the equal-pay indices to include the share of women, older workers and minorities would be a good move (Carcillo and Valfort, 2020).

Continuing the efforts to fight corruption

Continuing the efforts to fight corruption is important. Corruption can distort competition, damage the business climate and divert the use of public resources from the public interest, as well as foster a sense of mistrust towards public institutions. Transparency International's Corruption Perceptions Index and the World Bank's Corruption Control Indicator placed France around the median of OECD countries in 2019-20 (Figure 1.38).

Figure 1.38. The risks of corruption are perceived as relatively contained



Source: World Bank (2018), *World Governance Indicators*; Economist Intelligence Unit; Gallup Organisation; French Ministry of the Economy and French Development Agency; Political Risk Services; Global Insight; V-Dem Institute; University of Gothenburg; University of Notre Dame; and Transparency International.

StatLink https://doi.org/10.1787/888934285685

Further progress is possible both in respect of local public procurement and of control of the risks of corruption for the central government. In its guide to public procurement, the French Anti-Corruption Agency (AFA) sets out the good practices that local governments should put in place. Nonetheless, compliance with statutory ethical obligations continues to be uneven and practices to control the risks are yet to be developed (AFA, 2020a). There is room to improve the knowledge of anti-corruption mechanisms within small local governments (AFA, 2018), and thereby to further professionalise public procurement processes at the local level (OECD, 2015; 2019a). There is also scope for improvement in the control of risks of corruption in central government. The members of the executive, including the President of the Republic, should publicly report at regular intervals which lobbyists they have met and what they discussed (AFA, 2020a and b; GRECO, 2020).

Table 1.12. Main findings and key recommendations

MAIN FINDINGS	KEY RECOMMENDATIONS
Ensuring a strong and resilient recovery	
Fiscal policy has responded in swiftly and appropriately to the effects of the pandemic. The economic rebound has been rapid, but a premature withdrawal of support to households and businesses could raise bankruptcies and unemployment.	**Provide increasingly selective fiscal support as the economic recovery gains traction.**
The recovery plan, supported by EU funds, is expected to support the green and digital transitions, which should lead to a stronger and more resilient growth.	**Ensure swift and effective implementation of the recovery plan.**
The commercial courts and the early warning system risk not being able to deal efficiently with insolvencies when the economy emerges from the crisis. Insolvency proceedings are lengthy.	**Encourage the take-up of the new, simplified preventive procedures and strengthen the capacity of commercial courts.**
The vaccination rate has increased, but the coverage rates of some vulnerable groups are still comparatively low.	Strengthen further efforts to reach out vulnerable and precarious groups.
Prevention and risk-management strategies are often fragmented and ill-suited to catastrophic risks. The recent health crisis has highlighted the lack of preparedness and coordination between the State and the various stakeholders, especially at the local level.	Further develop all-hazards risk-management approaches that involve all relevant stakeholders.
Strengthening the effectiveness of fiscal policy	
Public debt is historically high as a share of GDP and ageing costs, if not addressed, could put it on an unsustainable path.	**Develop a strategy to stabilise and gradually lower the public debt ratio.**
The projections for public debt do not cover the long term.	**Publish long-term debt projections based on assumptions validated by the fiscal council.**
Public spending is among the highest in the OECD and is damaging growth and debt sustainability, despite favourable borrowing costs.	**Lower gradually and significantly public spending through a medium-term consolidation strategy based on spending reviews and improved expenditure allocation.**
The governance of public finance is fragmented across sectors and levels of government. It does not allow a full evaluation of some policies.	**Implement a multiannual expenditure rule that encompasses the entire public sector.**
The competences of various levels of local governments are overlaping.	Rationalise the competences of local governments.
Tax expenditure is considerable and some new measures have been implemented (such as tax exemptions for overtime), even though evidence of their effectiveness is poor.	**Reduce tax expenditure, in particular those that do not benefit low-income households or measures that encourage excessive household saving.**
The effective age of exit from the labour market is low. The pension system is fragmented and pension expenditure is high.	**Encourage a rise in the effective age of exit from the labour market, notably by increasing the minimum retirement age in line with life expectancy.**
Boosting employment and productivity	
Businesses are heavily indebted and dependent on bank finance, while the valuation of commercial real estate has fallen rapidly. Government measures aim at supporting business investment, but the tax system is biased towards debt finance.	Allow a tax deduction for risk capital. Regularly monitor changes in investment and the gross and net debt held by SMEs at sectoral and subnational level in detail. Strengthen selective measures to support business, if the existing measures do not make for a rapid recovery in investment.
The financing of unemployment insurance and activation programmes is pro-cyclical.	**Reform the financing of job seekers's support to ensure it is in line with economic conditions.**
Human resources management practices could be improved.	Establish local one-stop shops providing a range of activities to support human resources practices in small businesses.
The quality of lifelong learning programmes is uneven. Despite ambitious reforms, the crisis halted the roll-out of quality labels for training bodies.	Develop transparent information and effective monitoring of the quality of lifelong learning programmes through additional evaluations and counselling.
The school-to-work transition is still complex, especially for low-skilled youth, who have been severely affected by the crisis. The authorities plan to expand the youth guarantee scheme. Apprenticeship is underdeveloped, especially at the secondary level.	**Ensure that measures to expand the youth guarantee scheme combine a financial allowance for those who need it, support to enter the labour market and streamlined procedures.** **Increase the share of work-based training for apprentices.**
The bases of some business taxes are not conducive to growth and productivity.	Finance a cut of the most distortive business taxes by reducing ineffective tax expenditures.
The pandemic has speeded up the transition to a digital economy, but the take-up of digital technologies by small businesses remains low.	**Provide financial support for training in digital technologies for small businesses.**

Enhancing equal access to opportunities	
Disadvantaged households have less access to formal childcare, making employment more difficult for women.	**Speed up the development of additional childcare services for low-income households and in the poorest neighbourhoods.**
Access to public services could be improved in certain rural and urban areas. The government is developing a network of regional contact points known as “France Services”.	**Strengthen outreach and accessibility schemes by implementing a quantitative follow-up of local access to public services.** Consider complementing the “France Services” contact points by including social workers and civil society stakeholders.
The short supply of housing in dynamic areas prevents higher housing mobility and employment, especially for young people.	**Refocus housing supply subsidies on the most densely populated areas.** Lower transaction costs on housing, notably real estate transfer taxes.
Place-based job incentives do little to involve local stakeholders and evidence of their effectiveness is weak. The current zoning scheme focus on small areas and support is available to highly mobile sectors.	Reform the governance of place-based job schemes by involving locally elected representatives. Focus place-based support schemes on export activities and consider extending their zoning to cover local labour markets.

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2 Steering the recovery towards an ecological transition

Priscilla Fialho

The green transition has become one of France's main priorities. Even though it is one of the countries with the lowest greenhouse gas emissions, the pace of emissions cuts has to accelerate to comply with its European commitments, namely carbon neutrality by 2050. Land take continues to increase and waste volumes remain above the OECD average. Intensive farming and the use of chemical inputs have had a highly detrimental impact on biodiversity and ecosystems.

Green private investments must increase, and households and businesses need further incentives to adapt their behaviour. Public acceptance for environmental taxes is low. They are nevertheless effective in reducing emissions and pollution. To avoid exacerbating inequalities and to promote social acceptance for environmental taxes, the most vulnerable households and businesses need additional support.

The design and implementation of some policy instruments can still be improved to increase their cost-effectiveness in reducing emissions and pollution. The development of renewable energies must accelerate to diversify the energy mix without jeopardising efforts towards a more sustainable economy, nor affecting electricity supply security and affordability. Land-use policies must also take better into account the many benefits of biodiversity and internalise the negative externalities of land take.

2.1. France has set itself ambitious environmental targets

Climate change is accelerating and its consequences are being felt throughout the world. In France, 2019 was one of the hottest years since the beginning of the 20th century (CGDD, 2021b). More than 60% of the French population is currently strongly or very strongly exposed to climate risks, such as avalanches, storms, forest fires, floods, droughts, heatwaves or land movements (ONERC, 2018; Météo France, 2020). Climate change is mostly driven by the increase in greenhouse gas emissions worldwide. Concentrations of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) into the atmosphere have increased substantially since 1800 as a result of human activity (CEDD, 2015). France is nevertheless one of the OECD countries with the lowest greenhouse gas emissions, both per unit of GDP and per capita (Figure 2.1, part A).

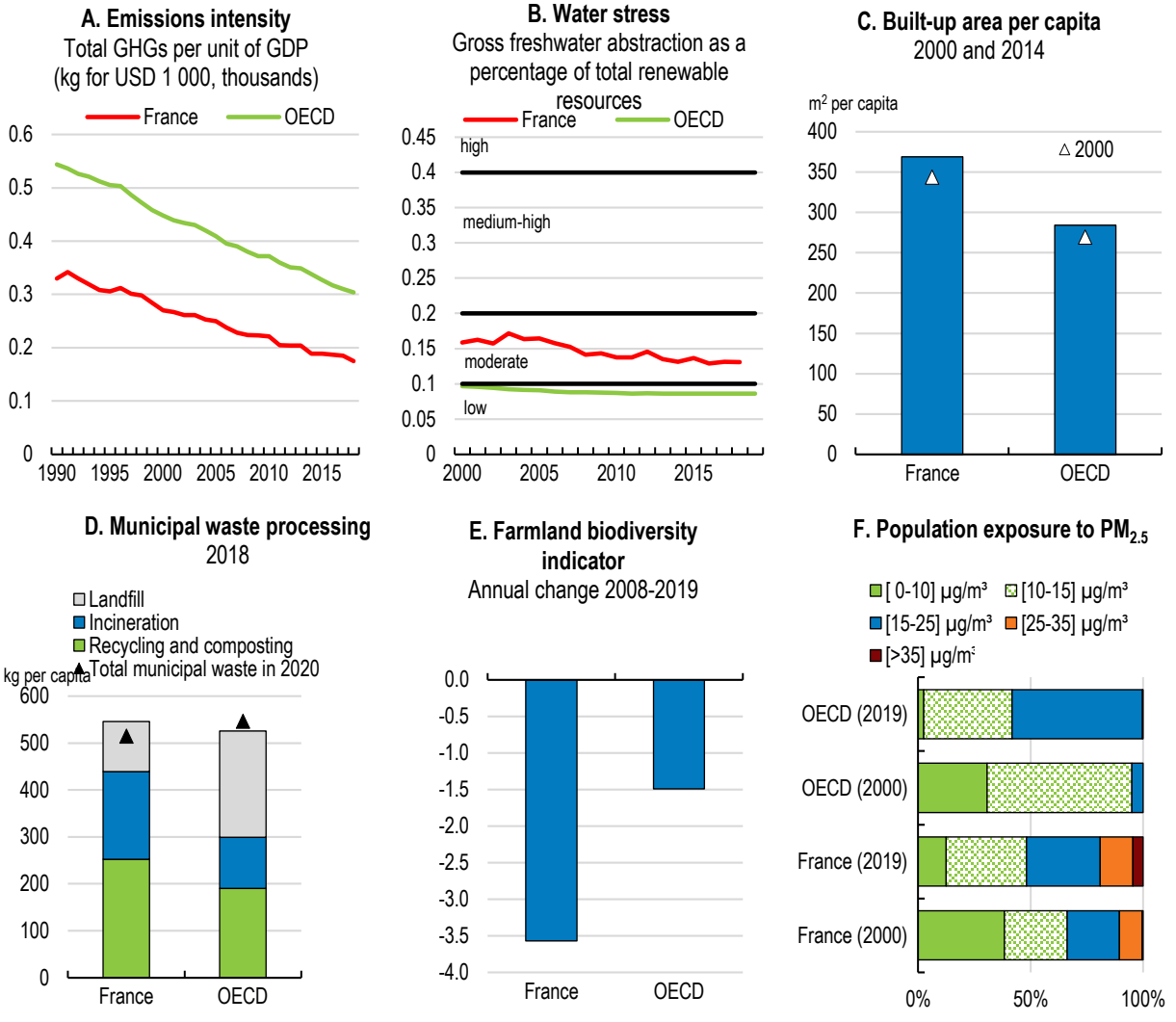
Some human activities contribute directly to the exhaustion and contamination of natural resources. The extraction of surface water or groundwater in excessive quantities reduces the quantity of water available. In France, water stress remains moderate so far (Figure 2.1, part B), but urbanisation continues to increase, reducing natural spaces and eroding landscapes, natural resources and habitats (Figure 2.1, part C). The volume of waste has increased slightly since 2000 and landfilling also contributes to soil and water contamination, even though a higher proportion is recycled than the OECD average (Figure 2.1, part D). Biodiversity in France is heavily impacted by urban sprawl, intensive farming, soil and water contamination (Figure 2.1, part E). Human activity can also adversely affect air quality through emissions of air pollutants. Annual mean concentrations of pollutants have fallen overall in France and are below the OECD average (Figure 2.1, part F). However, this is partly because France has a relatively low density, some towns and cities being very exposed. Between 2016 and 2019, 7% of total mortality among the French population, around 40 000 deaths each year, could be attributed to excessive exposure to fine particulate matter (Santé Publique France, 2021). Therefore, policy action must go beyond the transition to other sources of energy and energy efficiency. More initiatives are needed in the industrial sector, with low-carbon and less polluting mobility solutions, more energy-efficient constructions, more sustainable urban development, further reuse, repair and recycling, and in the agri-food industry, gradually replacing industrial agriculture with more sustainable farming practices.

The economy and political stability are endangered by climate change, pollution and the increasing scarcity of resources. The erosion of ecosystems, for example, has an impact on agricultural and viticulture outputs (Hardelin and Lankoski, 2018). Other sectors are also affected, such as tourism, construction and energy production and distribution, as coastal infrastructures and installations are at risk. The financial system is also subject to increasing risks. Some assets could suffer a sharp depreciation due to climate change, but also if the green transition occurs abruptly. The increased frequency of extreme climate events could also cause significant losses for insurance companies, with consequences for public finances (OECD and World Bank, 2019). The health consequences of global warming will put additional pressure on the health system. Overall, it is difficult to predict and quantify all the economic repercussions, but the impact on GDP would be negative and significant (Figure 2.2; Direction Générale du Trésor, 2020; DeFries et al., 2019). All-hazards risk analyses and the ensuing adaptation policies should take these potential costs related to climate change into account (chapter 1).

The governance of environmental policies has been strengthened in recent years

The fight against climate change, human pollution and biodiversity loss are major priorities in France. The country has set itself ambitious, legally binding, targets in a number of key areas (Table 2.1). Many of these targets have been set at the European Union level and transposed into national law. Others, for example those relating to biodiversity protection, are even more ambitious than the European targets. The list of sectoral, interim and non-binding targets is even longer. For instance, France has set specific targets for the transport and buildings sectors to achieve its broader emissions reduction and energy savings objectives. France is among the most ambitious countries as far as climate policy goals are concerned (CCPI, 2019). As regards its foreign policy, the country participates in all multilateral climate discussions. France recently hosted the Paris Climate Change Conference (COP21), where it championed and ratified the Paris Agreement.

Figure 2.1. The climate emergency calls for stronger and wide-ranging action



Note: The farmland biodiversity indicator is an aggregate index which tracks the population of a selected group of breeding bird species that is dependent on agricultural land for nesting and breeding (OECD, 2017b).

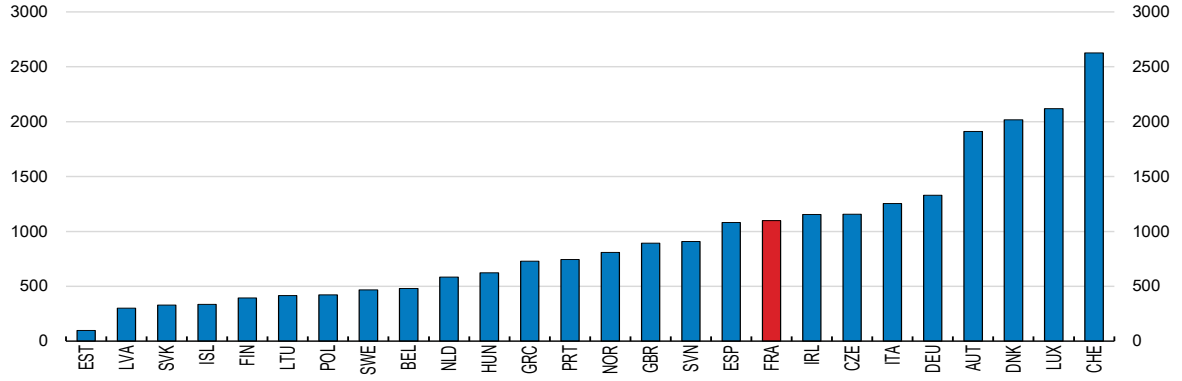
Source: Parts A-D and F: OECD Green Growth Indicators; part E: OECD (2021), *Measuring the Environmental Performance of Agriculture Across OECD Countries*, OECD Publishing, Paris.

StatLink https://doi.org/10.1787/888934285704

France has strengthened the governance of its environmental policy. The 2015 Law on Energy Transition for Green Growth defines long-term targets, clarifies roles and divides responsibilities among relevant stakeholders (Figure 2.3). It also requires the development of a "National Low Carbon Strategy" ("*Stratégie Nationale Bas Carbone*"), which defines the main priorities to decarbonise the economy and sets maximum emission ceilings every five years, by sector and by greenhouse gas, known as "carbon budgets" ("*budgets carbone*"). The budgets establish a roadmap and a long-term target trajectory. Regarding energy policy, the "Multiannual Energy Programme" ("*Programmation Pluriannuelle de l'Énergie*") defines, for five-year periods, priorities concerning energy supply security, energy efficiency improvements, fossil fuels consumption, and the development of renewable energies. The first programme was adopted in 2016 and the second in 2020. All the strategic and planning documents must remain coherent, something which is often difficult given the different drafting and revision calendars.

Figure 2.2. Economic losses due to extreme climate-related events are high

Estimated cumulative losses per capita between 1980 and 2019, EUR at 2019 prices



Note: The figures vary according to the proportion of damage that is insured and do not therefore reflect the real cost of damage.
Source: NatCatService database provided by Munich Re and Eurostat structural indicators.

StatLink https://doi.org/10.1787/888934285723

Local policies are key to reach environmental objectives and should be better coordinated with national policies. Local authorities are responsible for waste management, the development of public transport, management of public capital and urban planning, among other things. Through these policies, they can directly act on 15% of greenhouse gas emissions and indirectly on 50% of such emissions (France Stratégie, 2020b). Each region must therefore draw a plan to take climate, air and energy concerns into account ("*Schéma Régional d'Aménagement, de Développement Durable et d'Égalité des Territoires*"), namely when it comes to urban planning. However, regional plans are not always coherent with national objectives. Cooperation between different levels of government must improve, in particular the coordination of local planning documents and the National Low Carbon Strategy (HCC, 2021).

Tools for monitoring the implementation of public environmental policies, which requires coherent data and well-defined quantitative indicators, are still being developed. To monitor the implementation of the National Low Carbon Strategy and the Multiannual Energy Programme, the Ministry of the Ecological Transition introduced a dashboard consisting of 184 indicators and 42 indicators, respectively. The first dashboard for the National Low Carbon Strategy was published in January 2018, but only 103 indicators had been compiled (Rüdinger, 2018c). For the Multiannual Energy Programme, no dashboard has been published yet. In addition, subnational results are not always reported in a harmonised and comparable manner. Data collection does not take place regularly enough (Dive and Duvergé, 2019). To improve data collection, a number of observatories have been set up. The Energy and Climate Observatory, for example, established in 2018, monitors some indicators at the regional level. The National Land Take Observatory, established in 2019, is responsible for surveying land use, while the National Building Energy Renovation Observatory, established in 2020, should improve knowledge on the dynamics of building renovation. However, their resources are still limited. Efforts to improve data collection must continue.

The evaluation of environmental policies must improve. *Ex post* evaluation studies are not conducted as often as *ex ante* evaluation studies. *Ex ante* evaluations assess whether strategies are properly aligned with France's national, European and international objectives. *Ex post* evaluations, on the other hand, assess the effectiveness of the measures so as to inform the revision process of each strategy. The Law on Energy Transition requires that the two types of evaluation must be conducted. However, when the first revision process for the National Low Carbon Strategy and the Multiannual Energy Programme were launched in 2017, there had not been an in-depth *ex post* evaluation yet (Rüdinger, 2018b). *Ex post* evaluations must be conducted before the next revisions are launched. Impact assessment studies, to evaluate the efficiency of specific public expenses and identify the most effective public programmes and policies should be encouraged. For that purpose, data collection to make these impact assessment studies feasible needs to be planned ahead. The creation of the High Council on Climate (HCC) in 2018, an independent experts committee that publishes regular reports on environmental progress, is a step in the right direction. The government must still ensure that the HCC has adequate resources to exercise its functions.

Table 2.1. Major legally binding environmental targets for France

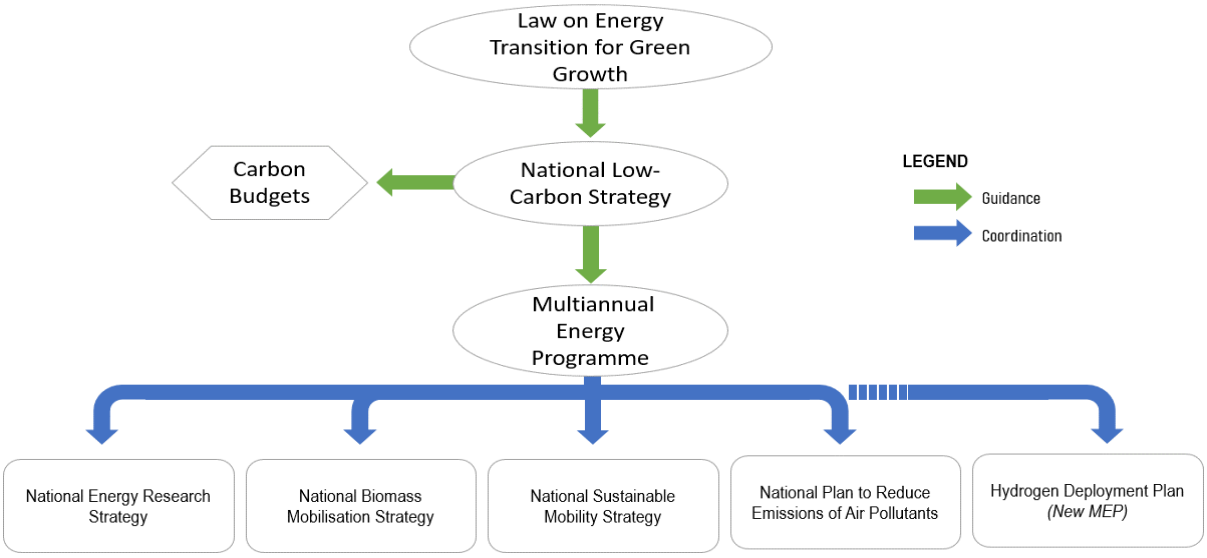
Target	Legal constraint	National/ European
Reducing global warming		
Reduce greenhouse gas emissions by 40% between 1990 and 2030 and carbon neutrality in 2050 (1)	Law of 8 November 2019 on Energy and Climate	European (2)
Increasing energy efficiency		
Reduce final energy consumption by 50% in 2050 compared with 2012, with an interim target of 20% in 2030	Law on Energy Transition for Green Growth	European
Reduce primary energy consumption by 30% in 2030 compared with 2012	Law on Energy Transition for Green Growth	European
Diversifying the energy mix		
Increase the share of renewable energy to 23% of gross final energy consumption in 2020 and at least 33% in 2030	Law on Energy Transition for Green Growth	European
Increase the share of renewable electricity to 40% of total electricity production in 2030	Law on Energy Transition for Green Growth	National
Increase the share of nuclear energy in electricity production to 50% by 2035 (3)	Law on Energy Transition for Green Growth	National
Reducing air pollution		
Reduce, by 2020, pollutant emissions, expressed as a % compared with 2005: -55% for SO_2; -50% for NO_x; -43% for NMVOCs; -4% for NH_3; -27% for PM2.5	Directive (EU) 2016/2284 of 16 December 2016	European
Reduce, by 2030, pollutant emissions, expressed as a % compared with 2005: -77% for SO_2; -69% for NO_x; -52% for NMVOCs; -13% for NH_3; -57% for PM2.5	Directive (EU) 2016/2284 of 16 December 2016	European
Conserving biodiversity		
Reduce the net loss of biodiversity to zero	Law on Restoration of Biodiversity, Nature and Landscapes of 9 August 2016	National
Reduce landfill waste by 50% by 2025	Law on Energy Transition for Green Growth	National
Aim for 100% of plastic recycled by 1 January 2025	Law of 10 February 2020 on the Fight against Wastage and the Circular Economy	National

Note: Non-exhaustive list. (1) Concerns only French domestic emissions and does not include emissions from international transport or imported emissions. (2) In December 2020, the European Union increased its target for 2030 to -55%. A set of proposals was published in July 2021 to revise and update the European legislation and introduce new initiatives. The European Effort Sharing Regulation is thus currently under revision. A new target of -47.7% by 2030 has been proposed for France. There has not yet been a vote on this proposal. (3) Target revised downward in 2018. Initially, the target had been fixed for 2025.
Source: Legal texts; Ministry of the Ecological Transition.

The gap between the results and the objectives is widening

Despite all the efforts made over a number of years, France is still falling short of its targets for reducing greenhouse gas and air pollutant emissions, increasing energy efficiency, diversifying its electricity mix and improving biodiversity conservation. The gap regarding greenhouse gas emissions cuts is particularly concerning as, with the new European objective for 2030, the European Commission has proposed an even more ambitious target for France, still under discussion, of -47,7% compared with 1990 (European Commission, 2021).

Figure 2.3. The Law on Energy Transition establishes the framework for environmental policies



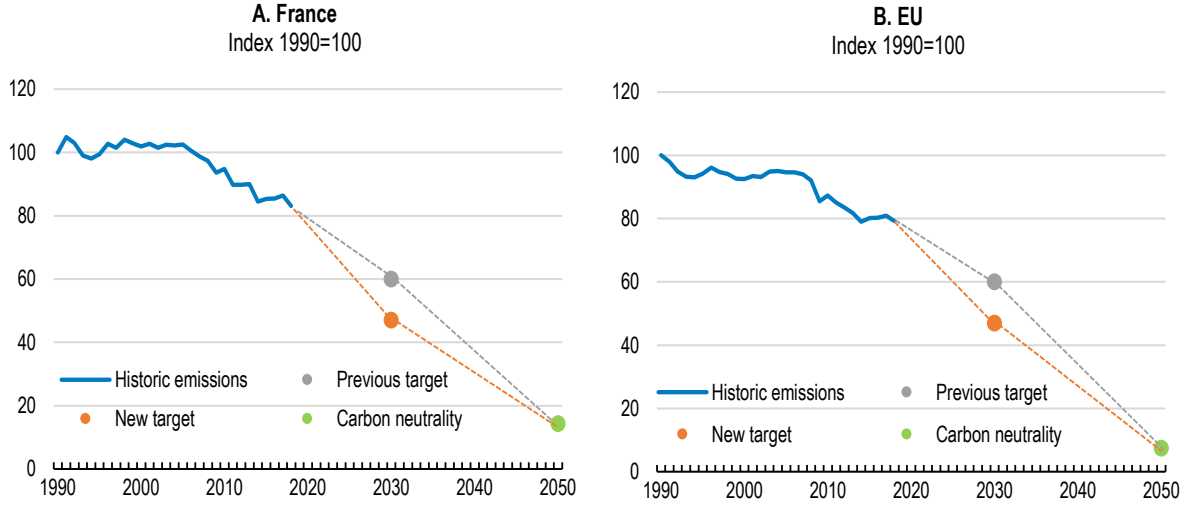
Note: The figure is not exhaustive. Other strategies and plans have been developed.
Source: Legal texts; Ministry of the Ecological Transition.

The pace of domestic greenhouse gas emissions reductions must increase. France failed to meet its first carbon budget between 2015 and 2018 (CITEPA, 2019). Consequently, for the second National Low Carbon Strategy, ambitions had to be revised downwards and the carbon budget for 2019-2023 was increased. Preliminary estimates show a 1,9% fall in 2019 and 9,2% fall in 2020, a faster pace than targeted in the second National Low Carbon Strategy (HCC, 2021a). However, the 2020 fall is primarily explained by measures taken in the wake of COVID-19. This pace should be maintained even as the economy recovers. From 2024, emissions will have to fall by 3,2% each year to meet the third carbon budget (CITEPA, 2020; HCC, 2020b). The proposed new target of -47,7% in 2030 within the effort sharing regulation and excluding emissions under the EU ETS system, would require emissions to fall by 5% each year, up to 2030 (European Commission, 2021; Figure 2.4, part A). The pace in the European Union as a whole is also insufficient for achieving the targets in 2030 and 2050, suggesting that collective efforts should be further intensified in the coming years, especially since the European ambitions have been raised (Figure 2.4, part B; EEA, 2020d).

France's carbon footprint, which includes "imported" emissions, has increased. Emissions from foreign economic activities, whose output is intended for French imports, increased by 72% between 1995 and 2019. Emissions from international maritime and air transport represent less than 5% of France's carbon footprint, but these have also increased by almost 50% since 1990 (CGDD, 2020d; HCC, 2020b). Imported greenhouse gas emissions are not included in the legally binding targets, nor covered by a specific strategy. To avoid reducing domestic emissions by increasing imported ones, the 2019 Law on Energy and Climate stipulates that, from 2022 onwards, indicative emissions ceilings should also be set for imported emissions and emissions connected with international transport.

Decoupling of primary energy consumption and economic growth in France is below the European average. France needs more primary energy to produce the same quantity of goods and services. Although primary energy consumption fell by 0,8% each year, on average, between 2012 and 2017, an annual reduction of 2% would have been needed to stay on track (Rüdinger et al., 2018). Final energy consumption, which refers to the energy actually consumed by end users, excluding the needs of the energy sector itself and transformation and distribution losses, fell by 1,7% between 2012 and 2017, while a target of -7% compared with 2012 had been fixed for 2018 (Figure 2.5, part A). Preliminary estimates for 2020 show that primary energy consumption fell by 10% and final energy consumption by 8% compared to 2019. However, this is mostly explained by favourable weather conditions and reduced economic activity. France is not the only country where the pace of energy savings remains insufficient. The European Union as a whole is not expected to meet its common target for 2020 (Figure 2.5, part B). Even though France is one of the countries that has contributed most to reducing final energy consumption in the European Union, in absolute terms, the gap regarding its indicative targets is still significant (Figure 2.5, parts C and D).

Figure 2.4. The pace of emissions reductions should be stepped up in order to achieve the targets
Greenhouse gas emissions



Note: The objectives represented in the figure are OECD estimates. The historical series excludes the LULUCF sector (gross emissions). The previous target for 2030 was to reduce GHG emissions by 40% compared with 1990, excluding the LULUCF sector (gross emissions). The new European target, set at the end of 2020, is to reduce emissions by 55% compared with 1990, including the LULUCF sector (net emissions). The figure considers an equivalent gross emissions objective of -53% approximately. The carbon neutrality objective for 2050 includes the LULUCF sector (net emissions). To approximate that objective, the figure considers that the ratio between net and gross emissions in 2050 will remain identical to the last historical value observed. The European target of -55% has not yet been transposed into French legislation. The new target for France shown here is therefore not definitive, but proposed by the European Commission in July 2021 as part of the "Fit for 55" package.
Source: European Commission, Energy Data (database).

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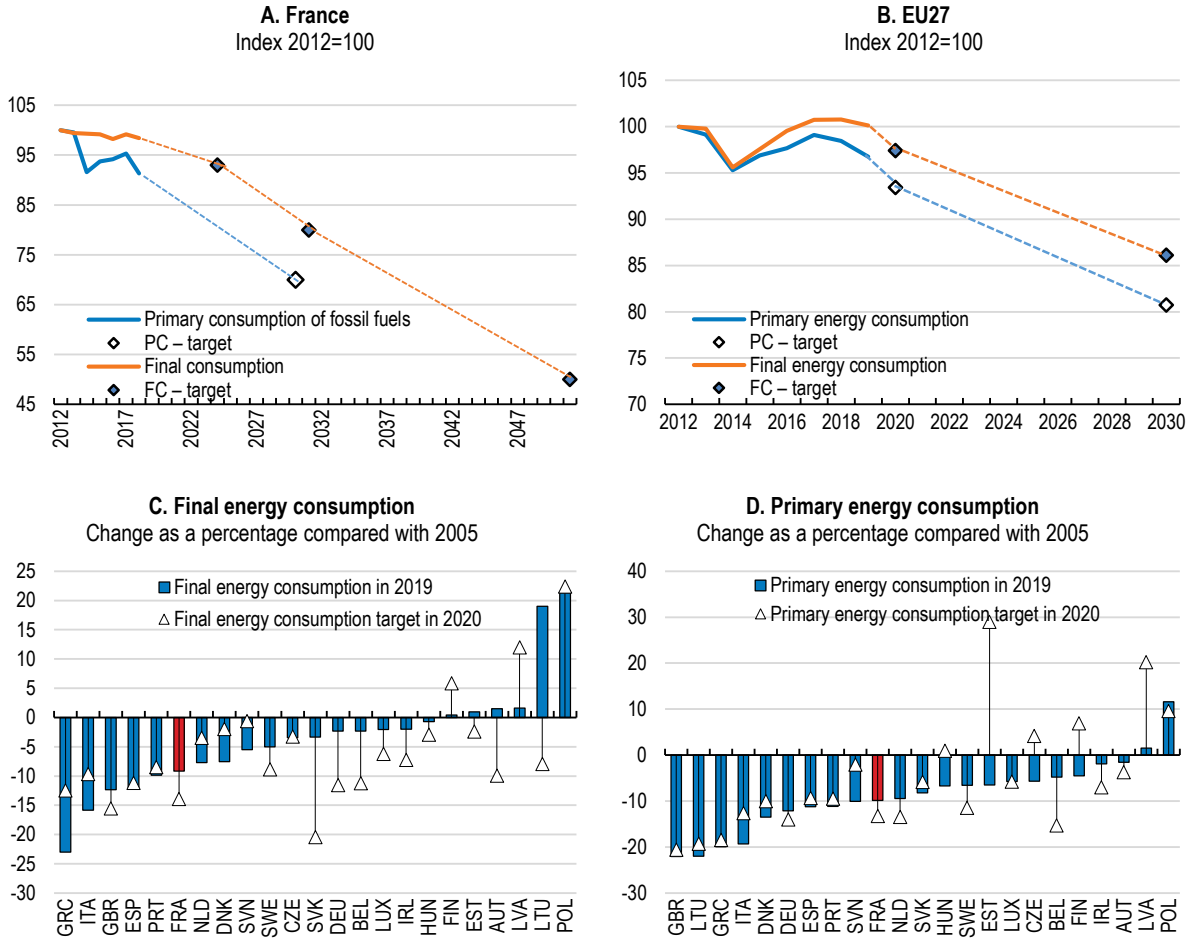
The country is unlikely to meet its renewable energies' targets (Figure 2.6, part A). In 2020, renewables represented 19,1% of gross final energy consumption and 22,5% in electricity production, while those shares are expected to reach 33% and 40% in 2030. The share of renewables in heat consumption was only 23,3% in 2020, against a target of 38% for 2030. Production of renewable heat has even felt by 4,2% in 2020. The share of renewables in final fuel consumption was only 9,2% in 2020, while a target of 15% has been set for 2030 (CGDD, 2021b, 2021e). As for renewable natural gas, biogas represented only around 1,6% of total natural gas consumption in 2016, against a target of 10% in 2030 (Rüdinger et al., 2018). Biogas production increased by 14,2% in 2020 compared to 2019, but this was not enough to increase overall renewable heat production (CGDD, 2021e). For the European Union as a whole, the share

of renewables was 19,5% of final energy consumption in 2019, while a target of 20% was established for 2020 (Figure 2.6, part B). France is one of the countries with the lowest consumption of fossil fuels, thanks to the key role played by nuclear power in its electricity mix. Nevertheless, the gap compared to its indicative targets for renewables by 2020 is the largest in the European Union (Figure 2.6, part C).

Figure 2.5. More energy savings are needed to reach the targets



Source: Bilan Énergétique pour la France 2018; Eurostat, Complete energy balances; and European Union targets.

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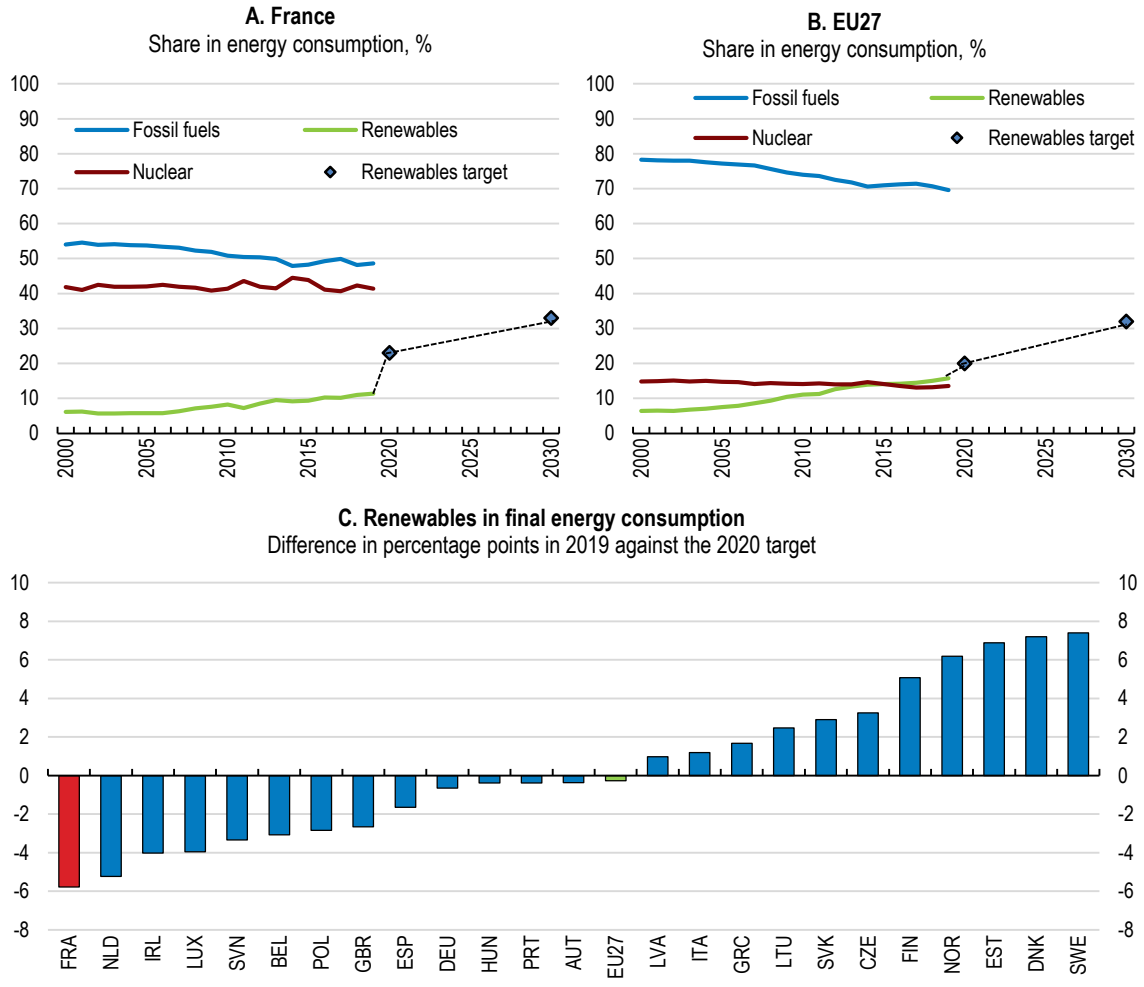
Progress made regarding air pollution is still insufficient. Between 2000-2019, the majority of gas and particulate matter emissions connected with human activities fell, with the exception of ammonia (NH_3), which has barely gone down since 2000 (CGDD, 2020a). The situation is not as good in some towns and cities. The regulatory ceilings for air quality, which have been imposed to protect public health, continue to be exceeded in several urban areas: Lyon, Marseille - Aix-en-Provence, Paris and Strasbourg. France is currently in a litigation procedure with the Courts of the European Union concerning nitrogen dioxide (NO_2) and in pre-litigation procedure concerning fine particulate matter with a diameter of less than 10 micrometres (PM_{10}), for failure to comply with the European directives. In fact, the impact of these air pollutants is non-negligible. A higher concentration of air pollutants increases the number of emergency admissions and the mortality rate on the same day, related to cardiovascular or respiratory causes (INSEE, 2021). Falls in pollution levels during spring 2020, as a result of lockdown measures, were associated with significant health benefits, with around 2 300 deaths per annum being prevented thanks to a temporary lower public exposure to fine particulate matter (Santé Publique France, 2021).

Figure 2.6. France consumes less fossil fuel but is lagging behind its targets for renewables



Note: In 2020, the targets varied from one country to the other but were intended to reflect the different starting points of the countries in renewable energy production and their capacity to increase production. These ranged from 10% for Malta to 49% for Sweden. The target for France was 23% (Table 1).
Source: Eurostat, Complete Energy Balances.

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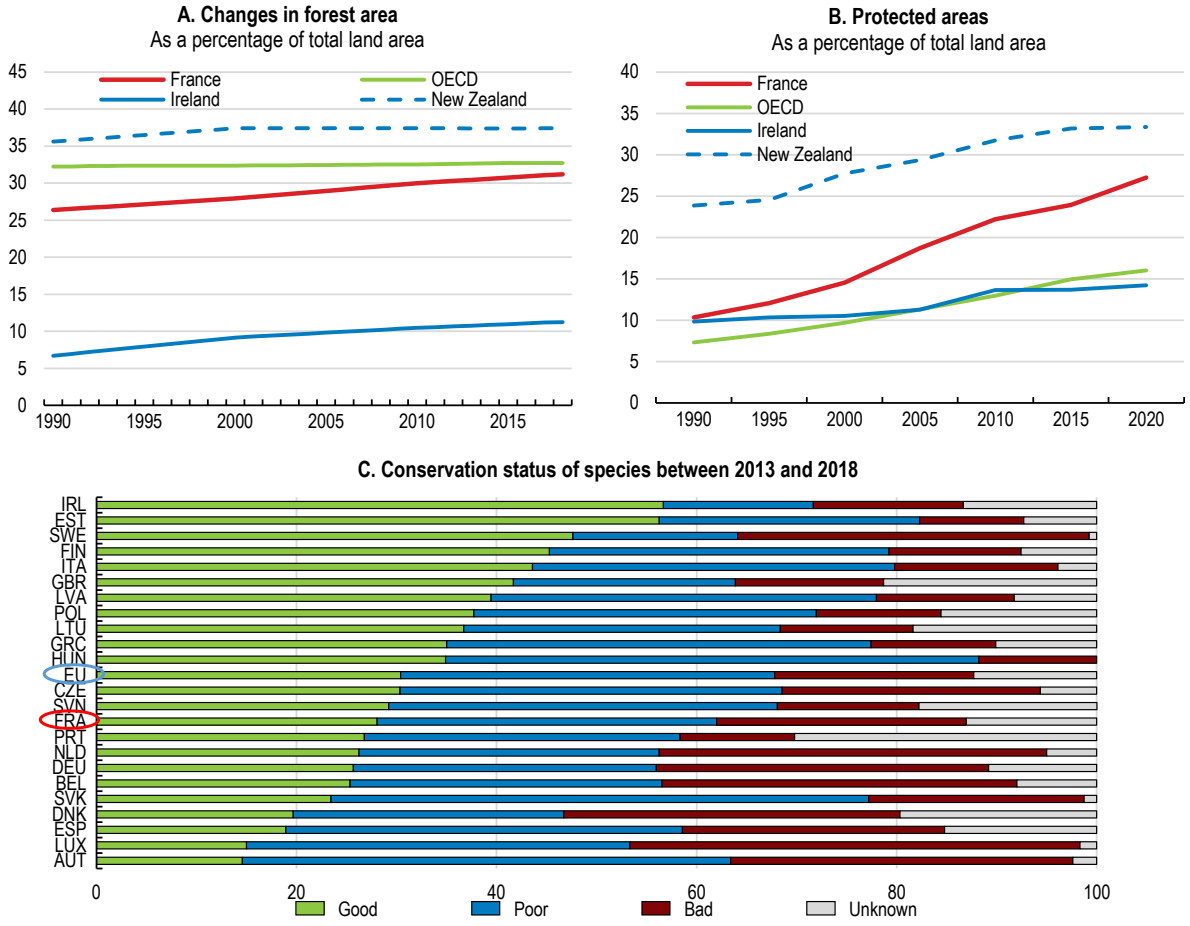
Similarly, biodiversity conservation measures have not been sufficient to slow down the decline of plant and animal populations. Forest and protected areas have expanded considerably since the 1990s, particularly compared with the OECD average (Figure 2.7). However, between 2006 and 2015, land take in France grew by 1,4% per year on average, the same trend as in the period 1992-2003. The increase in land take has been faster than population growth and equivalent to the disappearance of one "*département*" every 10 years (CGDD, 2018). The risk of extinction for certain species (amphibians, nesting birds, mammals and reptiles) rose by 15% between 2008 and 2017. Overall, 26% of species under review were subject to a risk of disappearance or had already disappeared. Just one fifth of habitats and one quarter of species of Community interest have a favourable conservation status, a lower percentage than the European average, and not much has changed since 2001 (OFB, 2020; Figure 2.7).

Figure 2.7. Few species have a favourable conservation status, despite the growth of forest and protected areas



Note: Ireland and New Zealand are included by way of comparison because of the significance of the agricultural sector in exports from those countries.

Source: OECD statistics on land use and OECD statistics on protected areas; and European Environment Agency, Article 17, Habitats Directive 92/43/EEC.

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Several factors explain France's deviation from its objectives

The factors that explain the country's deviation from its objectives for reducing greenhouse gas emissions are also closely linked to the emissions of pollutant and biodiversity loss. Therefore, policies to reduce greenhouse gas emissions can also bring benefits for air, soil and water quality, as well as biodiversity conservation. This section begins by identifying the factors responsible for most greenhouse gas emissions and then explains how these also contribute significantly to pollution and ecosystem degradation.

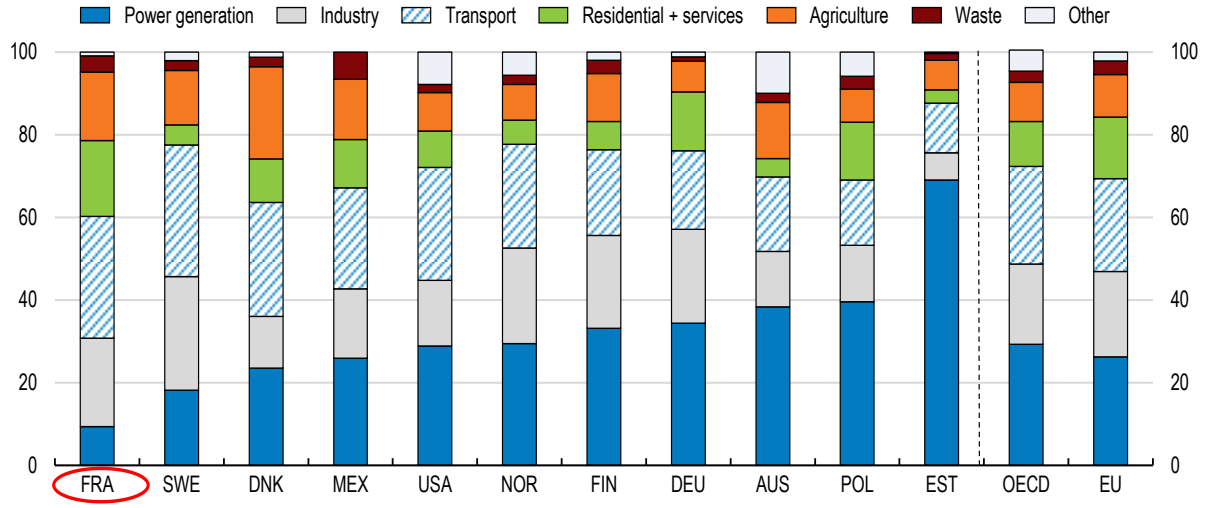
Factors that explain greenhouse gas emissions

Three sectors are primarily responsible for the deviation from the targets for reducing greenhouse gas emissions. In 2018, transport, agriculture and the residential-tertiary sectors accounted for more than 67% of greenhouse gas emissions, with 30,8%, 19,4% and 18,4% of emissions respectively (Figure 2.8). These three sectors can entirely explain the overrun on the first carbon budget: emissions were above the indicative values in the first budget by 22% for the residential-tertiary sector, by 11% for transport and by 3% for agriculture (CETE, 2018). Three sources alone account for half of the emissions: diesel road

transport, buildings (residential and tertiary) and cattle breeding (CITEPA, 2020). Since 1990, French emissions have increased by 10% in the transport sector and have fallen only slightly in the residential-tertiary sector and in agriculture (Rexecode, 2021). The manufacturing sector, on the other hand, has met its carbon budget and is responsible for more than 90% of French efforts to reduce greenhouse gas emissions since 1990.

Figure 2.8. Three sectors account for the majority of emissions in France

Greenhouse gas emissions by sector, as a percentage, 2018



Source: OECD Environment Statistics.

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Road passenger transport explains a significant share of transport emissions. The road sector represents 94% of those emissions and passenger vehicles account for 51% (HCC, 2020c). Demand for mobility has increased substantially since 2012. Between 2012 and 2017, the number of passenger-kilometres travelled rose by 6,2%. Urban sprawl could explain some of the increase in the number of kilometres travelled per passenger. In fact, several studies show that the number of daily journeys has fallen slightly, but this has been offset by an increase in the average distance travelled (Rüdinger et al., 2018). The deployment of low-emission vehicles has not progressed sufficiently to compensate for this increase. Average emissions from the automobile fleet per kilometre travelled fell slightly by 0,6% per year between 2000 and 2016. However, the increasing popularity of heavier vehicles, particularly SUVs, has slowed that progress (CETE, 2018). Taxes on diesel fuel have not yet been fully aligned with taxes on petrol, and the planned gradual alignment was interrupted in 2018, which also slowed down the fall in emissions from motor vehicles.

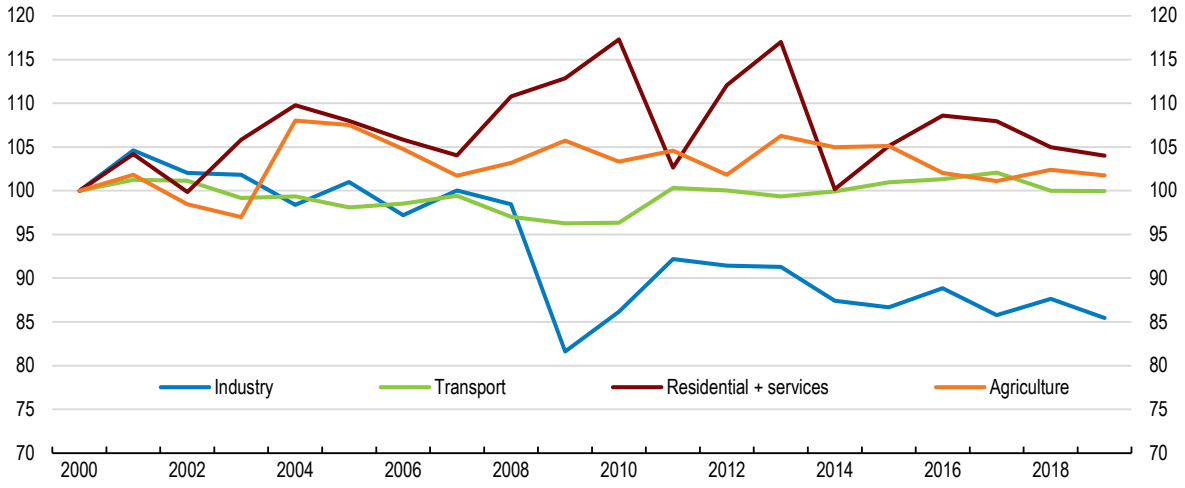
Freight transport remained stable over the same period, but the share of road freight transport increased significantly to the detriment of rail (Rüdinger et al., 2018). The lack of investment in the maintenance of existing rail transport infrastructures over many years has been detrimental to the quality of rail freight services (OECD, 2019a). Across the rail network, the risk of breakdown and delay is still too high and puts freight at a disadvantage.

The residential-tertiary sector accounts for more than 40% of final energy consumption. Energy efficiency in the residential sector has improved since 2000: the ratio of final energy consumption over the total surface of occupied housing fell by 24% (CGDD, 2021b). However, total final energy consumption in the sector has not changed much since 2000 (Figure 2.9). In particular, few energy savings have been realised in tertiary buildings (OECD/IEA, 2021). Consumption of fossil fuels by boilers for heating (domestic heating oil and natural gas) continues to be the main source of energy consumption and the main cause of emissions in the residential-tertiary sector (CGDD, 2021a). In 2018, heating represented 66% of residential energy consumption and 77% of CO_2 emissions in the sector (CGDD, 2020b).

The residential-tertiary sector is also characterised by high emissions of hydrofluorocarbons (HFCs), a potent greenhouse gas. HFC emissions are linked to air conditioning systems in buildings and domestic and commercial cooling equipment (OECD/IEA and UNEP, 2020). Energy efficiency in buildings must be improved to increase energy savings and reduce emissions from the residential-tertiary sector. The thermal rehabilitation of old buildings, in particular, appears to be a major challenge for sustainable urban development.

Figure 2.9. The final energy consumption of buildings has not changed much

Final energy consumption, index 2000=100



Source: European Commission, Energy Data (database).

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The agricultural sector overran its first carbon budgets only marginally, but it is not structurally on track for its 2030 targets (HCC, 2020c). Agriculture differs from other sectors in the small proportion of emissions linked to energy combustion (CGDD, 2021a). The main sources of emissions from agriculture are methane (CH_4) and nitrous oxide (N_2O), which have a warming potential around 28 times and 265 times higher than carbon dioxide (IPCC, 2014). Methane emissions stem mainly from cattle bearing. Nitrous oxide emissions can be explained primarily by the use of nitrogen fertilisers for crop fertilisation (ADEME, 2013b). There are known methods for reducing emissions from the use of chemical inputs and, to a lesser extent, emissions from cattle bearing. Some of these methods may even improve the economic situation of farmers (OECD, 2016). However, these methods have struggled to spread. The fear of taking risks and lack of knowledge are often identified as the main obstacles.

Energy production has much lower greenhouse gas emissions than other OECD countries, especially because of the energy mix and the key role played by nuclear power (Figure 2.8). In fact, nuclear power is the main source of primary energy and electricity in France (Figure 2.6, part A). For more than 30 years, France has made investments to devise and implement sustainable solutions for radioactive waste management. Like most OECD countries, France has opted to store waste in adapted industrial centres while it poses potential risks (OECD/NEA, 2020a). Some waste is already held in those storage centres. For high-level and long-lived waste, the Cigéo project, led by ANDRA, should start being constructed in 2022, and the industrial pilot phase should be launched in 2025.

The target of reducing the share of nuclear power in the energy mix to 50%, initially planned for 2025, was ultimately deferred to 2035, so as not to jeopardise CO_2 emissions reduction efforts. In fact, to reach that target while guaranteeing the security of energy supply, and with relatively stable electricity consumption, the decommissioning of nuclear power plants would have had to be compensated with the reopening of coal-fired power plants (RTE, 2017). The development of renewables has not been fast enough to

compensate for the closure of coal power plants and must accelerate so that greenhouse gas emissions and air pollutants reduction objectives, energy supply security and affordable electricity prices are not called into question (OECD/NEA, 2019).

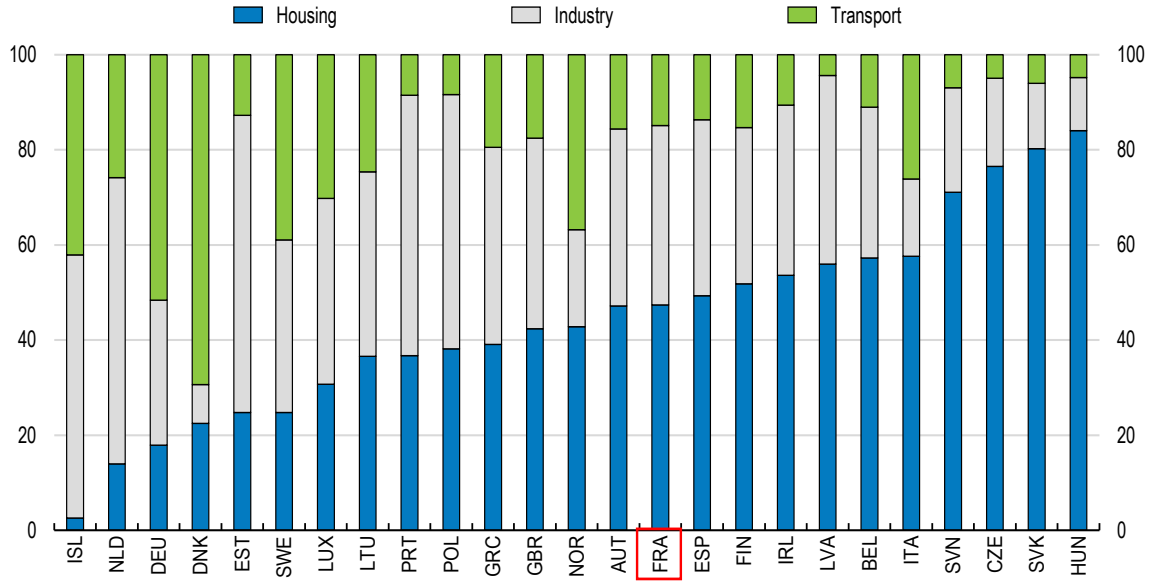
Factors that explain pollution and biodiversity loss

Intensive farming is one of the main causes of biodiversity loss (CGDD, 2018). Fragmentation and partitioning of land destroy natural habitats and adversely affect many species. Improper use of crop protection products (herbicides, fungicides, insecticides, etc.) gives rise to concentrations in the air, in the soil and in the water of chemicals that affect the behaviour of a number of living organisms. Fertiliser use and cattle faeces are also linked to pollutant concentrations in rivers, water surfaces, lakes and coastal waters, disrupting the ecological status of those habitats (OECD, 2012; European Commission, 2020). It is therefore important to spread examples of good farming practices, which are compatible with the sustainable use of land and natural resources.

Transport, buildings and agriculture are responsible for a high proportion of emissions of air pollutants, which increase risks of respiratory illnesses and cancer in humans, but also affects animal and plant communities (OECD, 2019d). Transport account for more than 60% of nitrogen oxide (NO_x) emissions, agriculture accounts for more than 90% of ammonia (NH_3) emissions, and the residential-tertiary sector is the main responsible for the emissions of fine particulate matter with a diameter of less than 2.5 µm and 10 µm ($PM_{2.5}$ and PM_{10}) (Figure 2.10). Nitrogen oxide emissions impair air quality and, combined with ammonia, give rise to particulate matter. Emissions from transport originate primarily from road transport. Emissions from agriculture are mostly explained by cattle bearing and fertiliser use. Emissions from the residential-tertiary sector are principally linked to combustion of fuelwood and, to a lesser extent, combustion of fuel oil (CITEPA, 2020). Consequently, measures to reduce the use of polluting vehicles, limit urban sprawl, promote sustainable farming practices and thermal renovation of buildings will also have an impact on emissions of air pollutants.

Figure 2.10. Buildings account for a large proportion of particulate matter emissions

% of emissions of $PM_{2.5}$ by sector, 2017



Source: OECD (2021), *Brick by Brick: Building Better Housing Policies*, OECD Publishing, Paris.

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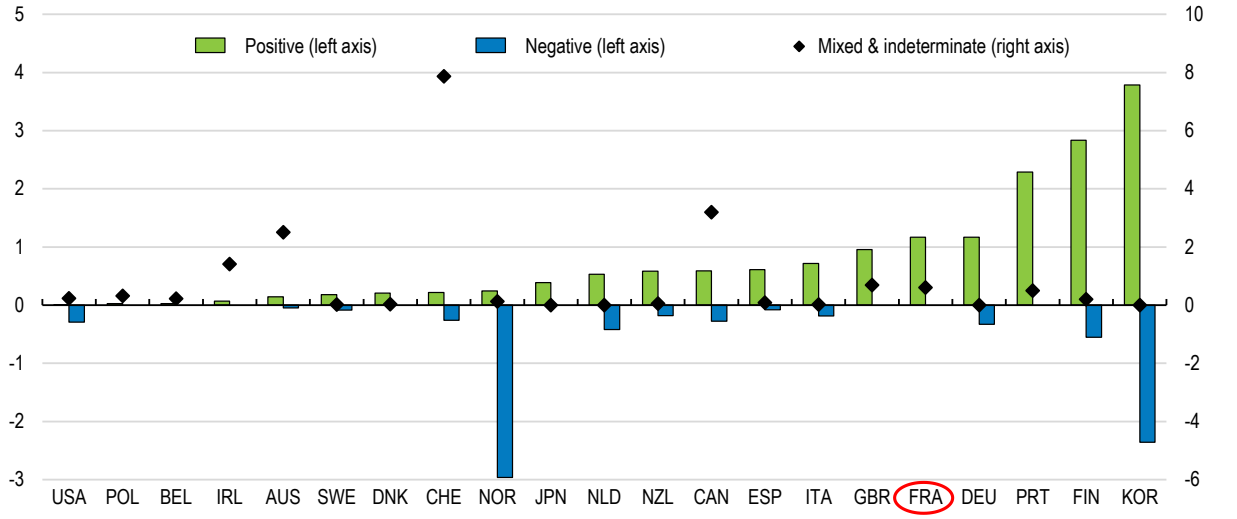
The pace of transition must accelerate and reallocation costs minimised

Planned investments to revitalise economic activity and employment following the coronavirus crisis may help to accelerate the pace of emissions cuts. Substantial public investment is planned in the next few years under the "*France Relance*" recovery plan, the "Investments for the Future" ("*Programme d'investissements d'avenir*") programme, the "Next Generation EU" programme, and the recently announced "France 2030" investment plan. A considerable share of that investment is earmarked specifically for the "green transition" (Figure 2.11; Box 2.1). According to HCC estimates, the "*France Relance*" plan provides EUR 28 billion for the mitigation of greenhouse gas emissions between 2021 and 2022 (HCC, 2020a). The "France 2030" investment plan, announced in October 2021, earmarks EUR 15 billion to the green transition. The investments made under the "*France Relance*" plan also concern adaptation to climate change, biodiversity conservation and measures to combat land take. This is particularly timely, as financing costs are historically low, which makes it possible to finance very long-term projects. The health crisis also seems to have boosted the social acceptability of environmental measures. The "Citizens' Convention on Climate" ("*Convention Citoyenne pour le Climat*" or CCC), which was held in October 2019, attracted significant media attention and generated much discussion. There was also a lively response to the examination of the "Climate and Resilience Bill" ("*Loi Climat et Résilience*") in early 2021, which seeks to implement many of the measures proposed by the CCC and to enhance existing environmental policies (Box 2.1).

Figure 2.11. A large share of the recovery plan goes towards the green transition

Impact of recovery plan measures on the environment, as a percentage of GDP in 2019



Note: The database covers a range of environmental dimensions, beyond the focus on energy and climate. These are measures with impacts on pollution (air, plastics), water, biodiversity, waste management and climate change adaptation. The categorisation used draws on existing and emerging classification systems, such as the EU Taxonomy for Environmentally Sustainable Activities, and OECD assessments of those methods. Support for the nuclear industry is included among the measures regarded as positive.

Source: OECD (2021), The OECD Green Recovery Database: Examining the environmental implications of COVID-19 recovery policies.

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Increasing public "green" spending through the recovery plan will not be enough to ensure that environmental objectives are met. The mechanisms introduced are not always cost-effective in reducing emissions of greenhouse gases and pollutants or conserving natural resources. In addition, private investment is still insufficient given the needs. These investment needs have been estimated at EUR 13 to 17 billion each year over 2021-2022 in the residential-tertiary, transport and renewable energies sectors, but the required investment for carbon neutrality will continue to grow after 2023 and investment needs in other sectors, such as agriculture, have never been estimated (I4CE, 2021b).

Policies to reduce emissions are not incompatible with economic recovery and good economic performance (OECD, 2021a). In fact, sectors that are lagging behind – transport, agriculture, building renovation and development of low-carbon energy – are also sectors with high job creation potential. The construction sector, for example, concerned with public transport infrastructures, infrastructures for production of low-carbon energy or energy renovation of buildings, is labour-intensive (OECD, 2017a). Greater investment in those sectors could therefore help to revitalise employment and short-term economic activity. In the long term, a number of transnational studies suggest that job creation in "green" sectors will be sufficient to compensate for job losses in the fossil-based energy production sector (OECD/IEA, 2020). According to a study based on input-output tables, the energy transition scenario proposed by the association négaWatt in 2011, which suggested a number of concrete measures to cut French CO_2 emissions by three-quarters by 2050, could have generated about 630 000 additional jobs in 2030 (Quirion, 2013).

Moving towards a greener economic model will nonetheless create winners and losers. Opportunities will arise for firms operating and workers employed in "green" activities. However, carbon-intensive capital will progressively be removed, potentially before having fully depreciated and generating financial losses for capital owners. Workers in carbon-intensive firms and sectors will need to be reallocated to less carbon-intensive jobs. Low-skilled workers or workers with limited access to reskilling opportunities could be left behind, which would exacerbate inequalities in the labour market. Jobs created in "green" sectors will not always be based in the same regions as the jobs lost in carbon-intensive firms and sectors, which could affect local employment dynamics and increase regional disparities. Higher energy costs will expose the most vulnerable households and firms to a greater extent than those who have the capacity to invest in less polluting equipment and technologies, potentially rising income and wealth inequality. If higher production costs are reflected into higher prices, this could also damage the international competitiveness of some French firms.

A comprehensive strategy to mitigate reallocation costs should be developed. Pro-active labour market policies must give comprehensive support to affected companies and workers, ensuring mobility between jobs and access to lifelong training opportunities so that no worker is left behind. Policies that improve the business environment, foster private investment, facilitate innovation, reduce entry-barriers for new low-carbon-technology firms and smooth the exit of carbon-intensive or polluting firms will be crucial (chapter 1).

Box 2.1. Recent measures to accelerate the green transition

Law of 8 November 2019 on Energy and Climate

This law sets the goal of carbon neutrality by 2050. Carbon neutrality is defined as a balance between emissions by sources and absorptions by greenhouse gas sinks. The law also formalises the establishment of the High Council on Climate ("*Haut Conseil pour le Climat*" or HCC).

Framework Law on Mobility (LOM) of 26 December 2019

The LOM sets the target of achieving carbon neutrality for transport from 2050 and reducing transport-related CO_2 emissions by 37,5% by 2030. It also fixes the objective of banning the sale of vehicles using carbon-based fossil fuels by 2040. The LOM strengthens the provisions laid down in the Law on Energy Transition for Green Growth concerning the obligation for public actors (government, public institutions, local authorities, State-owned companies) and private actors that manage a large vehicle fleet, when renewing the fleet, to include a proportion of low-emission or ultra-low-emission vehicles. The LOM also introduces an obligation to implement low-emission zones from 2021 in the most polluted areas.

Law of 10 February 2020 on the Fight against Waste and the Circular Economy

Under this legislation, reduction, reuse and recycling targets are laid down by decree for the period 2021-2025, then for each subsequent five-year period up until 2040. The law has already made progress with the introduction of bans in 2020 and 2021: ban on single-use plastic cups, plates and cotton buds, ban on the sale of straws, cutlery and stirrers. The law also sets the goal of going towards 100% recycled plastic by 1 January 2025 and sets the target of ending the marketing of single-use plastic packaging by 2040. Lastly, it requires telecommunications operators to inform their subscribers of the volume of data used and the associated greenhouse gases. In May 2021, 21 decrees implementing the Law on the Fight against Waste and the Circular Economy had already been published. France is the first OECD country to introduce a law to eliminate plastic packaging by 2040.

"*France Relance*" plan 2021-2022

In September 2020, the government announced a recovery plan amounting to EUR 100 billion, EUR 30 billion of which is dedicated to the environment. A number of measures are envisaged: thermal renovation of public buildings; support for thermal renovation of public and private housing and VSBs/SMEs; investment in cycling and public transport infrastructures; greening of the State-owned automobile fleet; help-to-buy schemes for clean vehicles; modernisation of waste sorting, recycling and recovery centres; investment in waterway and rail infrastructures; financing of prototypes and models to improve the energy and environmental performance of the fishing fleet; aid for replacement of agricultural equipment; launch of a "brownfield fund" to finance the decontamination, redevelopment and rehabilitation of industrial or commercial urban brownfield sites; financial support for research projects to develop hydrogen energy solutions; and support for the nuclear industry to enhance skills and develop innovative technologies. The environmental impact of the "*France Relance*" plan has been analysed as part of the OECD environmental budgeting initiative ("Paris Collaborative on Green Budgeting").

Climate and Resilience Law of 22 August 2021

The law to tackle climate disruption and boost resilience against its effects was passed in July 2021. It includes a number of measures, stemming from proposals made by the Citizens' Convention on Climate, around five themes: consuming, producing and working, moving around, housing and eating. The key measures are: making compulsory the establishment of low-emission zones, with lower volumes of traffic of the most polluting vehicles, for urban centres with a population in excess of 150 000 by the end of 2024; banning the sale of new vehicles with high emissions in 2030; ending air traffic for internal flights where there is a low-carbon alternative of less than two and half hours; establishing an obligation to offset carbon emissions linked to internal flights within Metropolitan France for all air operators; progressively banning the rental of poorly insulated buildings and housing from 2025; establishing a minimum energy performance level to define adequate housing; defining legal targets for protected areas; taxing nitrogen fertilisers; increasing penalties for environmental offences; and creating a general water and air pollution crime known as "ecocide".

Having identified the main challenges to accelerate the pace of emissions reduction, the key messages in the following sections of this chapter are:

- Market-based incentives to reduce emissions must be reinforced. Exemptions and reduced rates weaken the incentive effect of environmental taxes and their capacity to modify individual behaviour and redirect investment towards green projects.
- Environmental taxation is not the only available instrument, and a comprehensive approach combining several mechanisms must be employed. Regulation could sometimes be used when economic incentives are ineffective at addressing market failures or not socially accepted.
- Policies to accelerate the transition to a low-carbon economy cannot succeed without public support. The social acceptability and distributive effects of reforms must be taken into account. Support mechanisms to compensate the most vulnerable and promote the social acceptability of environmental measures must be simplified and given more visibility.
- The design of some instruments can be improved to increase effectiveness without necessarily increasing public spending. Environmental criteria and conditions to benefit from public support must be more stringent. Monitoring must be strengthened.

2.2. Economic incentives must be reinforced to accelerate the pace of emissions reduction

Public investments need to be more cost-effective and policies to steer economic incentives, to secure more private-sector investment and to encourage all actors, particularly households and businesses, to adapt their behaviour, must be reinforced. France must continue efforts to review its spending and can draw on its green budget to carry out budget reallocations if needed (Cour des comptes, 2021). The OECD Economic Survey for France in 2019 makes a number of recommendations to improve the efficiency of public investment, particularly in the transport and energy sectors (OECD, 2019a). This section focuses on mobilising investors, households and firms towards a cost-effective green transition.

Private investment must increase

Investors and creditors need more information on the environmental impact of projects so that they can better assess the associated opportunities and risks and internalise environmental concerns in their decision-process. Businesses need to provide more information on the steps taken to integrate social and environmental concerns in their development strategies. Firms are strongly encouraged to incorporate climate issues into corporate social responsibility (CSR) reporting. Since 2010, this is even mandatory for listed companies and large corporations. In practice, this reporting obligation also applies to SMEs and VSBs that supply larger companies and form part of their production chains. However, smaller firms do not always have the necessary resources or know-how for an effective CSR reporting. The French Agency for the Ecological Transition (ADEME), which provides a range of training courses for companies, associations and public authorities, could offer specific modules designed to help smaller firms meet CSR reporting requirements.

The methodologies employed for analysing CSR reports remain very heterogeneous and, in some cases, not very transparent. For listed companies, analysing this information has led to the development of non-financial performance ratings, often called ESG ratings (based on environmental, social and governance indicators). The rating of companies by the Banque de France, which is currently based on the analysis of financial ratios, could also integrate non-financial criteria (I4CE, 2021a). However, without a harmonised regulatory framework, which, among other things, would allow for greater transparency of rating methodologies, the common practice of displaying environmental concerns that are not actually taken into account (“greenwashing”) could damage the credibility of CSR reporting and ESG ratings (Boffo and Patalano, 2020).

Several options could be explored to harmonise and improve the transparency of non-financial performance assessments. The creation of a single, freely accessible database of non-financial performance indicators would be one possibility. A regulatory framework laying down requirements for the way in which potential conflicts of interest are managed and internal controls carried out could be developed (Banque de France et al., 2020). External audits or certifications could be introduced for ESG rating agencies. The development of a taxonomy of sustainable activities should also help to harmonise methodologies for analysing non-financial information. Recent efforts by the European Commission - the publication of a first taxonomy on "environmentally sustainable" (or "green") activities in June 2021, the revision of the European Corporate Sustainable Reporting Directive and the establishment of a single access point for companies' information - represent big steps forward.

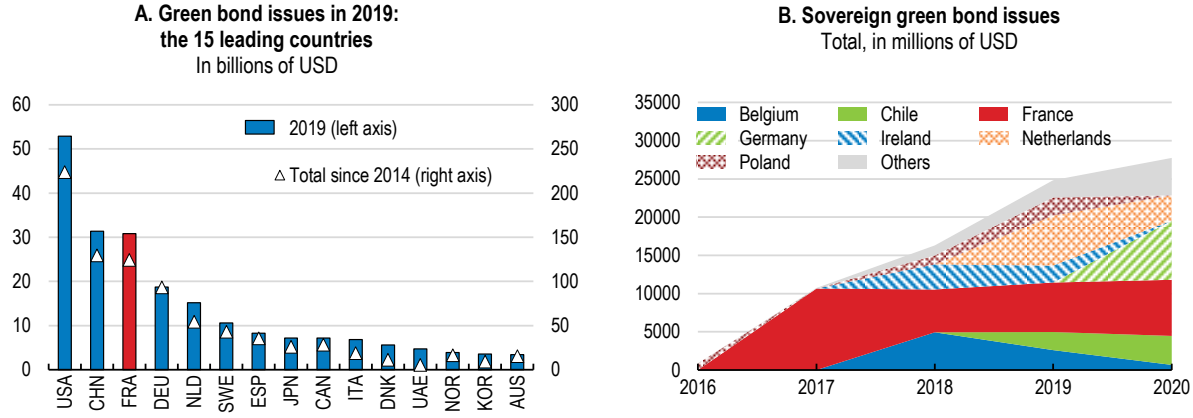
Final investors, including households, must also have access to appropriate information when they choose to invest through asset managers or institutional investors. The Ministry of the Economy and Finance has introduced a Socially Responsible Investment (SRI) label to distinguish funds whose strategy includes non-financial criteria. Funds that are SRI labelled must provide information about their investment strategy and how they monitor companies in which they invest. According to information published in the ministry's website, the almost 700 funds that held SRI labels in March 2021 already had a total of almost EUR 470 billion in outstanding. In 2015, the Ministry of the Ecological Transition also created a "*GreenFin France Finance Verte*" label, highly demanding and focused exclusively on environmental issues. This guarantees the environmental quality of the labelled financial product and, in particular, excludes funds that invest in companies operating in the fossil fuel sector. However, it does not yet permit the large-scale development of a product offering for private individuals' investment. In July 2021, 62 funds had been labelled, with a total of EUR 17 billion in outstanding. The differences between the *GreenFin* label and the SRI label should be clarified to avoid an excessive volume of information and prevent greenwashing practices. The regulators should also ensure that the existing labels remain consistent with the sustainable taxonomy developed by the European Commission.

The short-term orientation of investors is also an obstacle to the financing of the green transition. The majority of investors are under considerable pressure to obtain quick financial results. Many investment fund managers are remunerated according to the performance of their funds, which encourages them to seek a short-term return. Financial actors therefore find it difficult to commit beyond a horizon of three to five years (Carney, 2015). Index management practices, where selection of products, securities or sectors to be included in the portfolio is partially automated to track or surpass the performance of a reference market, discourage investors in engaging with the companies in which they invest and discussing green transition issues directly with them (ESMA, 2019). The development of a harmonised and transparent framework for analysing non-financial performance indicators, laid down in European law and whose progress is discussed above, and their integration in general indices could be a way of correcting the short-term bias. If this proves insufficient, the regulations governing remuneration practices could induce financial actors to defer drawing a proportion of the dividends until later, and beyond three years as it is the case currently. They could also encourage remuneration policies to be linked to portfolios' non-financial performance indicators (I4CE, 2021a).

The green bonds market has expanded substantially in recent years, but remains less accessible to small and medium firms. These bonds are debt securities issued on the financial markets, where the issuer certifies that the funds will be used to finance projects with an expected environmental benefit. To that end, the supporting documents for each issuance must provide details of the projects concerned. However, it is up to investors to consult those documents in order to find out more about the nature of the investment. Therefore, the credibility of the issuer often plays a key role. The leading issuing countries are the United States, China and France (Figure 2.12, part A). After the issue of the second green bonds, with a maturity of 23 years, by Agence France Trésor in March 2021, France became the biggest sovereign borrower on that market (Bloomberg New Energy Finance, 31 March 2019; Figure 2.12, part B). The amount outstanding for this green bond was EUR 28,9 billion in March 2021. Aside from public administrations,

the main green issuers in France are large structures, with a limited risk profile and who already have access to financial markets, in particular, large energy and transport companies and large companies in the financial sector. Therefore, most of the projects financed by these bonds would have been financed in any case by conventional bonds (I4CE, 2018b). The development of the green bonds market requires that a precise and standardised definition of the objects financed by those bonds be recognised at the international level (Banque de France, 2019). The adoption of a European taxonomy for sustainable activities is a big step towards an official, standardised definition (OECD, 2020b). The European Commission also proposed a green bond standard in July 2021, which is intended to become an international benchmark.

Figure 2.12. France is one of the most active countries in the green bonds market



Source: Climate Bonds Initiative database and OECD (2020) "Business and Finance Outlook 2020".

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Financial actors must be knowledgeable about the risks and opportunities associated with climate change, natural resources depletion and biodiversity loss. Some fields of knowledge, particularly those connected with the energy sector or innovative low-carbon and low-polluting technologies can be highly technical. Banking actors, in particular, are not always able to ask the right questions and therefore to finance the most relevant projects (I4CE, 2021a). However, they are often the only point of contact for SMEs, VSBs and households. Training in the banking sector must be adapted to include a minimum knowledge base on the financial implications of climate change and environmental policies.

Financial markets may take some time to adapt to increasing climate risks and the importance of resource efficiency. In the meantime, additional public action may be required. Green loans guaranteed by the State to small firms wishing to invest in cleaner technologies, infrastructures and processes (between EUR 50 000 and EUR 5 000 000 and up to 10 years), introduced in early 2021 and spread over the duration of the recovery plan, are welcome. Such publicly guaranteed loans will also encourage banking actors to acquire experience in assessing the quality of companies and local authorities' green transition projects. The authorities could consider extending these green loans guaranteed by the State beyond 2022.

The share of the sizeable amounts of household savings directed towards "green" investments is still low. These savings could represent a significant source of financing, since return is not the main motivation for households (Rüdinger, 2015). Increasing the credibility of "green" investment labels and their environmental benefits would create more incentives for households to invest in associated financial products. The *"GreenFin"* label, in particular, should be used more widely for products aimed at private individuals. If improving the credibility and transparency of these labels proves insufficient to attract higher volumes of households' savings, financial institutions should be encouraged to more systematically propose "green" investment opportunities to households. The 2019 PACTE Law obliges life assurance companies to offer at least one unit of account holding the SRI or "GreenFin" labels in any life assurance policy. This obligation could be extended to more financial institutions and financial products.

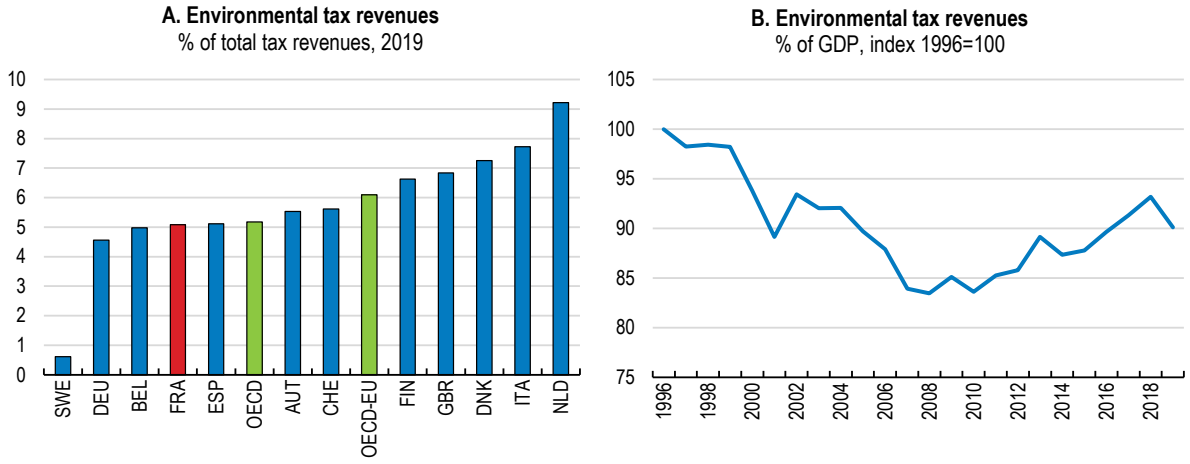
Climate change and ecosystem degradation pose a risk to the stability of the financial system. Going beyond raising financing to support the green transition, regulators must therefore also ensure the resilience of the financial sector as a whole in the face of growing threats from natural disasters and abrupt and disorderly green transitions (Allen et al., 2020). The first climate stress test was carried out in France by the Banque de France and the Prudential Supervision and Resolution Authority (ACPR). The results, published in May 2021, show that the exposure of the French financial sector is moderate (ACPR and Banque de France, 2021). However, the exercise highlighted a number of methodological limitations; financial institutions find it difficult to assess the market risk with such a distant time horizon, mechanisms for transmission of climate shocks to the real and financial economy are not yet well controlled, and the exercise is still sensitive to the selection of different scenarios (ACPR and Banque de France, 2021). It is therefore necessary to continue to improve the methodology of the climate stress test for the next exercise, which is planned for 2023.

Environmental taxation must be strengthened

Environmental taxation still has limited significance out of all tax revenues, with EUR 56 billion in 2018 (Figure 2.13, part A; Conseil des prélèvements obligatoires, 2019). The tax-to-GDP ratio is lower than in the mid-1990s despite a recent upswing (Figure 2.13, part B). The main reason for this downward trend, which can be observed in most European countries, is the absence of indexation for most of these taxes and the increased proportion of diesel vehicles in total car sales up to 2012, which are still subject to lower taxes (CGDD, 2017). The recent rise in revenues from environmental taxation, between 2014 and 2018, is mostly explained by the carbon component introduced in domestic taxes on consumption of *energy products* (TICPE), natural gas (TICGN) and coal (TICC), as well as by the alignment of diesel and petrol taxation (Conseil des prélèvements obligatoire, 2019). However, in the wake of the “yellow vests” movement, the carbon component of energy taxes, often called “carbon tax”, has been freeze at its 2018 level. The fiscal alignment between different types of fuels has been postponed to January 1st 2023 in the context of the economic crisis and tensions on the supply of raw materials.

Environmental taxes, and in particular energy taxes, are cost-effective in reducing energy consumption and associated emissions. A 10% increase in energy pricing can reduce energy consumption by French firms in the industrial sector by 6% without reducing the aggregate sectoral employment rate. In fact, the energy price increase encourages the reallocation of workers to the least energy-intensive and most efficient firms in the medium-term (Dussaux, 2020). There is actually no empirical evidence that the carbon tax has a meaningful impact on growth and the overall employment level (Metcalf and Stock, 2020; Dechezleprêtre and Kruse, 2018). Environmental taxation can even stimulate innovation in the design of less environmentally damaging products and processes and the development of new markets in the long-term (Kozluk and Zipperer, 2013). However, reallocation takes time, comes with costs and requires complementary policies (see above). In addition, environmental taxes can be regressive and, in some sectors, such as transport, the lack of alternative may significantly lower the price elasticity of energy demand, justifying compensation measures. Finally, the lack of social acceptability for higher carbon taxes may call for alternative or complementary policy instruments, such as standards, public bans or regulation, although research on the acceptability of environmental policies is still at an early stage (Box 2.4.).

Figure 2.13. Environmental taxation represents a low share of tax revenues



Note: The figures include environmentally related taxes, fees and charges, tradable permits, deposit-refund systems, environmentally motivated subsidies and voluntary approaches used for environmental policy. The data have been cross-validated and complemented with revenue statistics from the OECD Tax Statistics database and official national sources.
Source: OECD Green Growth Indicators.

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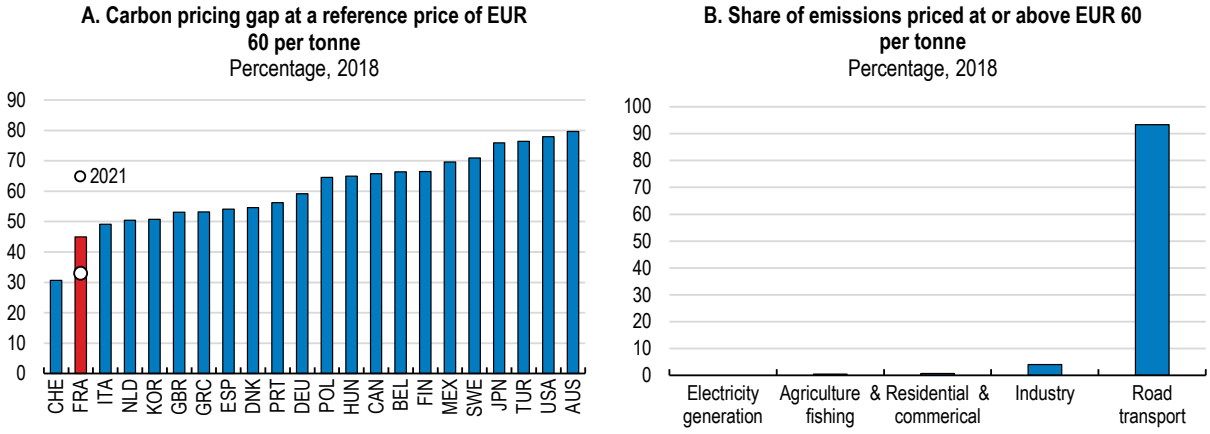
Reforming energy taxes

Pricing of carbon emissions across sectors is uneven. Energy taxes, with the carbon component, and the average price of emission allowances under the EU Emissions Trading Scheme (EU ETS), determine the *effective* price of carbon emissions calculated by the OECD. Across all sectors, and in comparison with other OECD countries, the *effective* price of carbon in France is relatively close to the benchmark price of EUR 60 per tonne of CO_2, which is an estimate of the average cost to society from the emission of one tonne of carbon in 2020 (Figure 2.14, part A). In 2018, the proportion of CO_2 emissions covered by a price equal to or higher than EUR 60 per tonne was 55% in France, compared with 36% on average in the 44 countries covered by the survey (OECD, 2018). However, that proportion varies significantly between the different sectors under consideration, and in particular, between sectors covered and not covered by the EU ETS (Figure 2.14, part B).

Carbon prices applied in energy production and the industry, determined primarily by the EU Emissions Trading Scheme, have risen recently. In 2019, the price of an emission allowance in the EU ETS was still only EUR 24,7 per tonne (EEA, 2020). However, since the beginning of 2021 and the entry into force of a new European regulatory framework, the price of emission allowances has increased sharply and rose above EUR 50 per tonne of CO_2 equivalent in June 2021 (Box 2.2). With a price for emission allowances of EUR 50 per tonne of CO_2 equivalent applied to sectors and companies subject to the EU ETS, the difference between the effective price of a tonne of emissions and the benchmark price of EUR 60 would fall to 33% in France (Figure 2.14, part A).

Figure 2.14. CO_2 emissions are not all taxed at the same level



Note: The updated data point for France in 2021 is based on the higher price of emission allowances in the EU ETS at the beginning of the year. The calculation has only been updated for France, but the higher emission allowance price would also decrease the carbon pricing gap for other EU countries.
Source: OECD, Effective Carbon Rates (database).

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Tax exemptions and reduced rates weaken the incentive effect of energy taxes for sectors and businesses which are not part of the EU ETS, namely buildings, agriculture and transports - sectors which are lagging behind their emissions cut objectives. For example, the use of non-road diesel fuel benefits from a reduced rate, in particular, in the construction sector. In 2018, this tax advantage costed almost EUR 2 billion in foregone fiscal revenues (I4CE, 2018a). The government had planned to abolish this tax advantage in 2019. However, after the "yellow vest movement" in 2018, the COVID-19 outbreak in 2020 and the still fragile economic situation in 2021, it backtracked three times and has been postponed to January 1st 2023. Fuel used by agricultural machinery also benefits from a tax credit. This tax credit represents 60% of tax expenditures for the agricultural sector and amounts to approximately EUR 200 million (OECD, 2020d; I4CE, 2018a). In the road transport sector, although the share of emissions that is taxed at the reference price of EUR 60 is much higher, there are also some tax advantages that reduce the incentive effect of energy taxes. The tax on road freight transport, for example, is partially reimbursed. In 2018, this represented more than EUR 1 billion of gross tax expenditure (I4CE, 2018a). The effective rate increased marginally in 2020 by two cents per litre, but this is not enough. The Climate and Resilience Law set the objective of abolishing that fiscal advantage by 2030, but the exact calendar and phasing out trajectory has not yet been defined.

Box 2.2. Revision of the EU ETS for phase 4 (2021-2030)

To increase the pace of emissions cuts, the overall number of emission allowances will decline at an annual rate of 2,2% from 2021 onwards, compared to 1,74% before.

The market stability reserve, a mechanism introduced in 2019 to reduce the surplus of emission allowances on the carbon market and prevent market imbalances, is being reinforced. The amount of allowances put in the reserve should increase to 24% of the allowances in circulation between 2019 and 2023, before returning to the regular feeding rate of 12% in 2024.

The system of free allocation will be prolonged for another decade and has been revised to focus on sectors at the highest risk of relocating their production outside of the EU. These sectors will receive 100% of their allocation for free. For other sectors, free allocation is foreseen to be phased out after 2026 from a maximum of 30% to 0% at the end of 2030.

Two new funds will be created to help energy-intensive industrial sectors and the power sector meet the innovation and investment challenges of reducing emissions: the Innovation Fund and the Modernisation Fund.

The European Commission proposal to revise the EU ETS in September 2020 included extending the scheme to cover the transport sector, including road transport and shipping. Including road transport in the ETS would increase the covered emissions by about 50%.

This type of fiscal advantages must be eliminated so that the price signal of energy taxes and the carbon component is maintained. In total, energy tax exemptions, tax credits and reduced tax rates amounted to EUR 6,9 billion in 2018 (I4CE, 2018a). Gradually withdrawing tax exemptions and reduced rates in energy taxes will help align the effective carbon price across different sectors of activity. Once these fiscal advantages have been removed and the carbon price is more balanced across all sectors, the gradual upward trend of the carbon component of energy taxes should resume so that these taxes do not lose their incentive effect over time and to avoid abrupt changes in the future.

Carbon dioxide emissions in the residential-tertiary sector are still barely taxed (Figure 2.14, part B). The price of CO_2 emissions in the residential and commercial sectors is determined primarily by the carbon component of the domestic tax on consumption of natural gas (TICGN). Consequently, it is above all a potential reduction of emissions in buildings that will be "missed" by freezing the rise in the carbon tax. If the carbon component cannot be increased immediately due to the lack of social acceptability, an increase in the excise duty on natural gas could be considered, which would not affect the already high *effective* price of carbon emissions in the transport sector. In fact, the TICGN has been stable at EUR 8,45/MWh since 2018, when it should have increased and reached EUR 14,13/MWh in 2021. The planned increase was supposed to contribute to finance the development of low-carbon energy production, such as biogas. The recent surge in gas prices and the government decision to smooth price increases over time make that policy particularly difficult to implement in the current context. However, this could be considered when gas supply tensions ease.

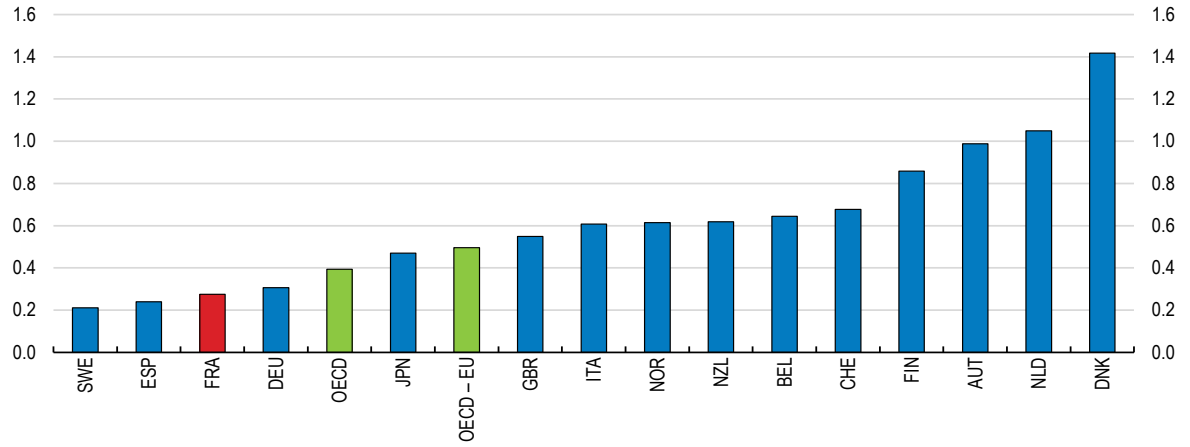
To avoid widening inequalities and the risk that households will not be able to meet their heating needs, while maintaining the incentive effect of energy taxes and the carbon component, compensation through more generous help-to-buy programmes should be given priority over exemptions, reduced rates or tax credits, or yet, direct financial redistribution. In the case of the tax on natural gas, the redistribution of one third of additional revenue to low-income households would be sufficient to attenuate the risk that they are unable to meet their heating needs (Flues and van Dender, 2017). Furthermore, the introduction of redistribution mechanisms increases the acceptability of environmental taxes like the carbon component of energy taxes (Box 2.4).

Strengthening other environmental taxes

Environmental taxation in France is mainly based on energy taxes, which account for three quarters of environmental tax revenues (CGDD, 2017). Taxes on transport excluding fuel, meant to reduce air pollution, congestion and noise, are particularly low compared with the OECD average (Figure 2.15). The tax on car registration certificates is also low in comparison with other European countries. Furthermore, there are many exemptions from the tax on company vehicles, and the performance criteria for the motor vehicle bonus/malus scheme could be strengthened, as discussed in the next section. The abolition of the "*vignette*" in 2000 reduced taxation on transport by one quarter, and since then, no other tax on vehicle ownership has been introduced (CGDD, 2017). The calculation method for the tax on registration certificates and the tax advantage for company cars should be reconsidered (Conseil des prélèvements obligatoire, 2019).

Figure 2.15. Taxes on transport excluding fuel are below the OECD average

As a % of GDP, 2019



Source: OECD, Environmental tax statistics.

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France could consider introducing a tax on heavy goods vehicles, like its European neighbours. This "ecotax" would add to tolls on the main motorways. The idea of an "ecotax" in Île-de-France and Alsace is now gaining ground and the Climate and Resilience Bill opens up this possibility to any interested regions. The measure should be applied nationally. Switzerland was the first country on the continent to officially introduce an "ecotax" in 2001, applying to all domestic and foreign heavy goods vehicles weighing more than 3.5 tonnes. The value of the tax is based on vehicle weight, mileage and the level of polluting emissions. The rate varies between CHF 2,28 cents and CHF 3,10 cents per tonne-kilometer (approximately EUR 3 cents). This tax would have contributed to lower emissions of fine particules by 10% and emissions of nitrogen oxide by 14% (Office fédéral du développement territorial, 2015). Considering the annual volume of traffic of heavy vehicles in France, an equivalent tax could raise approximately EUR 10 billion (0,5% of GDP). Austria followed this example in 2004, as did Germany in 2005. Other countries like Denmark, Luxembourg, the Netherlands, Sweden and Belgium have opted for a Eurovignette system based on the actual time which vehicles spend on the road.

Greenhouse gas emissions other than CO_2, such as methane and nitrous oxide, coming mostly from the agricultural sector, and hydrofluorocarbons (HFCs), coming primarily from air conditioning and refrigeration systems in the residential-tertiary sector, are hardly taxed (Section 1; CGDD, 2017a). Industrial emissions of nitrous oxide have been included in the EU ETS system since the third revision of the legislative framework for the trading system, but emissions from other sectors are not always taxed (Box 2.2). A tax on HFCs was planned in 2021, but its introduction has been postponed to 2023. The introduction of this tax should no longer be postponed.

Fiscal instruments applying to soil and water pollution, as well as consumption of natural resources, remain weak. Taxes on air and water pollution account for only 6% of environmental taxes compared with almost 20% in the Netherlands, for example (CGDD, 2017a). The general tax on polluting activities is still lower than the decontamination costs and investment costs on cleaner technologies (Cour des comptes, 2020). Charges levied by water supply agencies do not cover the use of mineral fertilisers, which are very damaging to some ecosystems. Finally, taxes on the extraction of non-renewable resources are low and have barely evolved in recent years (CGDD, 2017a). The level of these taxes must be revised upwards if they are not to lose their incentive effect. A levy on nitrogen fertilisers could also be introduced to reduce soil and water contamination (Sud, 2020). The Climate and Resilience Bill establishes that a charge will be introduced if targets for the reduction of emissions connected with nitrogen-based agricultural fertilisers are not met, which is a step in the right direction. In Sweden, the introduction of a tax on nitrogen oxide (NO_x) emissions proved quite effective (Box 2.3).

Box 2.3. The Swedish tax on nitrogen oxide (NO_x) emissions

A strategy to reduce overall NO_x emissions by 30% was adopted in Sweden in 1985. Combustion plants were imposed different individual quantitative emission limits through a licence system. Nevertheless, it quickly became clear that those emission limits would not be sufficiently effective to achieve the emissions reduction objectives. The Swedish Parliament decided in 1990 to supplement the individual ceilings by a tax of SEK 40 per kilogramme of NO_x emitted by any stationary combustion plant producing at least 50 MW of useful energy per year. At the time, around 200 plants were concerned.

In three years, average emissions per unit of useful energy produced fell by 40%. The tax was then extended to all stationary combustion plants whose energy production was higher than 10 MW of useful energy per year, in the heat and electricity production sector, the chemical industry, waste incineration, metallurgy, pulp and paper, foodstuffs and the timber industries. In 2008, the tax was increased to SEK 50 (EUR 5,5) per kilogramme of NO_x so as to preserve a strong incentive to reduce emissions. Revenues from this tax reached about EUR 85 million in 2010.

Source: OECD (2014), *OECD Environmental Performance Reviews: Sweden 2014*, OECD Publishing, Paris.

Support for households and firms must increase to improve social acceptability

Environmental taxes, like other indirect taxes, are more onerous for low-income households. The poorest 20% households spend 7,2% of their income on energy, compared with 2,1% for the wealthiest households (Conseil des prélèvements obligatoire, 2019). The carbon tax also places a proportionally greater burden on households who live far from large urban and peri-urban centres, with limited access to public transport infrastructure. Environmental taxation can also have detrimental effects on the competitiveness of French firms. A rise in environmental taxes can cause “carbon leakage” and the relocation of polluting, high-emission activities, outside France or the European Union, to countries with less or little environmental regulation. Even if this is partly compensated by a reallocation of resources to “green” sectors and more environmental-friendly firms within France, transition costs can be significant and concentrated on a few individuals and stakeholders.

The lack of social acceptance for stricter environmental policies and, in particular, higher environmental taxes, makes their introduction quite difficult. In France, the carbon tax increase and the alignment of diesel and petrol taxation in 2018 faced strong public opposition. After the “yellow vests movement”, these measures were put on hold and the whole notion of increasing environmental taxation was called into question. Several factors could explain the strong public opposition: the scheduled tax increase was too steep at a time when oil prices were rising sharply, the social benefits were not well understood, the climate-related motivation was met with suspicion, and no compensation scheme for more vulnerable households and firms had been planned (CEDD, 2019c). The “red hats movement” in 2013, following the attempt to introduce a tax on heavy goods vehicles, is another exemple of strong public opposition to higher environmental taxes.

The socio-economic effects of environmental policies must be carefully studied. Impact assessments must not only identify the most cost-effective abatement measures, but also understand how those abatement measures will be distributed across the population and firms. Impact assessments must select appropriate quantitative or qualitative methods and be transparent as to the evaluation criteria used, assumptions made and methodology chosen. They must also be independent, and their findings must be widely disseminated (HCC, 2019). Based on these studies, the design of environmental policies or the development of an appropriate compensation mechanism should be considered if necessary. As previously discussed, France can still improve the assessment framework of its environmental policies. The socio-economic and regional impact of the Climate and Resilience Bill, for example, are only briefly mentioned in the bill’s prospective impact study (HCC, 2021b).

Improving communication and transparency regarding the use of environmental taxes would help to increase social acceptance (Box 2.4). Environmental taxes will only be accepted as legitimate if the objective of reducing emissions is clearly communicated and credible. The carbon tax, for example, has only been accepted in countries where institutional trust is high and communication on the measure was carefully considered, such as Sweden, Denmark and Norway. To improve communication efforts, the French government has started publishing annual reports on the environmental impact of the state budget, known as “Green Budgets”. However, pedagogy may not be enough. Switzerland, for example, has introduced an automatic adjustment mechanism for its carbon tax, based on the trajectory of its emissions, for environmental taxes not to be seen as yet another revenue-generating tax (Box 2.5).

Compensation mechanisms for the effects of environmental taxes on the most vulnerable households and firms can improve. Revenues from environmental taxes could be used to strengthen help-to-buy schemes for cleaner vehicles, more efficient boilers, cleaner productive technologies, or support the energy renovation of buildings, as in Switzerland (Box 2.5). Help-to-buy schemes should be preferred over tax exemptions or the complete financial redistribution of revenues so that the incentive effect of environmental taxes is preserved. Using revenues from environmental taxes to subsidise equipment changes also makes it possible to effectively target the losers from these reforms, that is to say, those who have polluting equipment and are subject to higher taxation. In France, since its introduction in 2014, less than a quarter of the carbon tax revenues have been used to invest in the green transition or to compensate vulnerable households. Revenues from the carbon tax have mostly been used to reduce the state budget deficit (ADEME, 2019; Conseil des prélèvements obligatoires, 2019). In 2018, compensation measures amounted to only EUR 180 million, while additional expenses for households steaming from the rise in the carbon tax had been estimated at EUR 3,7 billion (Husson, 2017).

An increase in environmental taxes could be compensated by a reduction in other taxes. Revenues from the carbon tax, which represented EUR 6,4 billion in 2017 (I4CE, 2018b), could be used to reduce income taxes or taxes on the relatively low-carbon electricity. In Sweden, the increase in the carbon tax in 2000 was accompanied by a reduction in other forms of taxation to limit its negative distributive effects (Box 2.6). In Denmark, the rise in fossil fuels taxes was accompanied by a reduction in taxes on electricity consumption, in particular during periods of low demand. The acceptability of the carbon tax could increase if revenues are used along these lines (Box 2.4).

To safeguard the competitiveness of French and European firms, solutions must be sought on the basis of international cooperation with trade partners. For example, the European Commission project to revise the Community framework for excise duties on energy and the exemptions allowed, paused in 2015, should be resumed (Conseil des prélèvements obligatoires, 2019). An European initiative to harmonise the taxation of heavy goods vehicles could also be envisaged to reduce emissions associated with road freight transport and give priority to rail freight without, however, undermining the competitiveness of French road transport and logistics companies compared to their European peers.

Finally, the introduction of a carbon border adjustment mechanism, whereby imports of products with a high carbon content require the purchase of CO_2 allowances, whose price would be aligned to those on the European market (EU ETS), advocated by France since 2009 and proposed by the European Commission in July 2021 with the "Fit for 55" package, could play a useful role in preventing carbon leakage. The mechanism would have the benefit of not weakening national incentives to reduce emissions (European Commission, 2021; OECD, 2021e). Such a measure must not be used for protectionist purposes. The mechanism would therefore have to be carefully designed, take into account countries' commitments under the multilateral trading system and remain compatible with the principles of the World Trade Organization (OECD, 2020e; OECD, 2021e).

Moving to a more sustainable economic model will not be possible without a properly skilled workforce. Skills gaps and shortages are already a major bottleneck in a number of sectors linked with the transition, such as production of renewables, building energy renovation and sustainable farming (OECD, 2020c). Changes in skill needs must be anticipated and monitored. This is the role of the Observatory for Jobs and Occupations of the Green Economy (Onemev), who organised a series of consultations with representatives from each sector affected by the green transition between 2012 and 2015. However, in light of the rapid developments, those consultations should be held more regularly or other methods should be developed to follow progress in real time.

Support to regions and territories adversely affected by the transition should also improve. The green transition has heterogeneous effects on the local economy and labour markets. For example, the potential for renewables is not the same for all regions. The closure of fossil-fired power plants by 2022 will strongly impact the *départements* of Loire Atlantique, Seine-Maritime, Bouches-du-Rhône and Moselle. The closure of several nuclear reactors could also negatively affect the "*communes*" surrounding those nuclear centrals. In fact, beyond the highly-qualified direct jobs created by the centrals, there could be as many indirect jobs as 60% of the centrals' employees (INSEE, 2014). However, tools to obtain a regional breakdown of labour market trends relating to the green transition have not yet been developed. For instance, data are not always available at the subnational level, as discussed previously. Labour market data collection could improve by conducting employers' surveys that specifically take green transition issues into account and allow for the results to be disaggregated across territories. The use of high-frequency data, derived from "web-scraping" job websites, could also be envisaged. Results must be accessible to all relevant stakeholders, such as social partners involved in the development of vocational training programmes, and advisers of regional bodies and local career guidance organisations, who can point displaced workers towards relevant training programmes (OECD, 2017b).

Box 2.4. Social acceptance of environmental measures in France

Results from an ongoing OECD study on the social acceptability of environmental measures in France show that voters would be less opposed to carbon taxes if revenues were fully redistributed to households and firms, compared with the same tax without any compensation mechanism (Figure 2.16). Out of different possible uses for the carbon tax revenue, French voters seem to favour investment in "green" infrastructures, especially public transport, or else, a reduction in income taxes, as in Sweden (Figure 2.17; Box 2.6).

This study also shows that bans are sometimes perceived less negatively than taxes, at least initially (Figure 2.16). This suggests that non-market-based measures could be considered as alternatives in some instances, although they are less cost-efficient in reducing carbon emissions (Furceri et al., 2021).

Figure 2.16. Public support for carbon taxes remains low

Answers to the question "Do you support the following measures?"

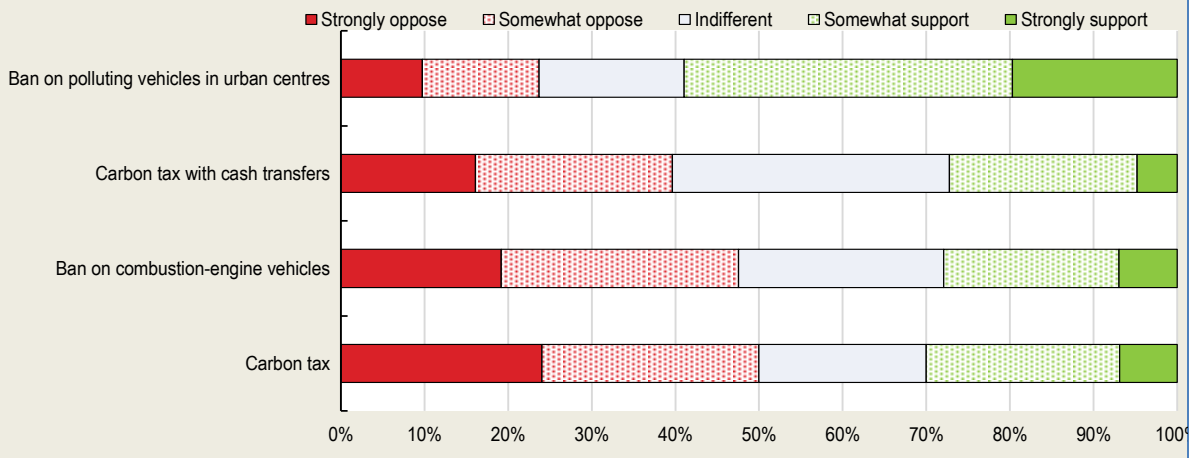

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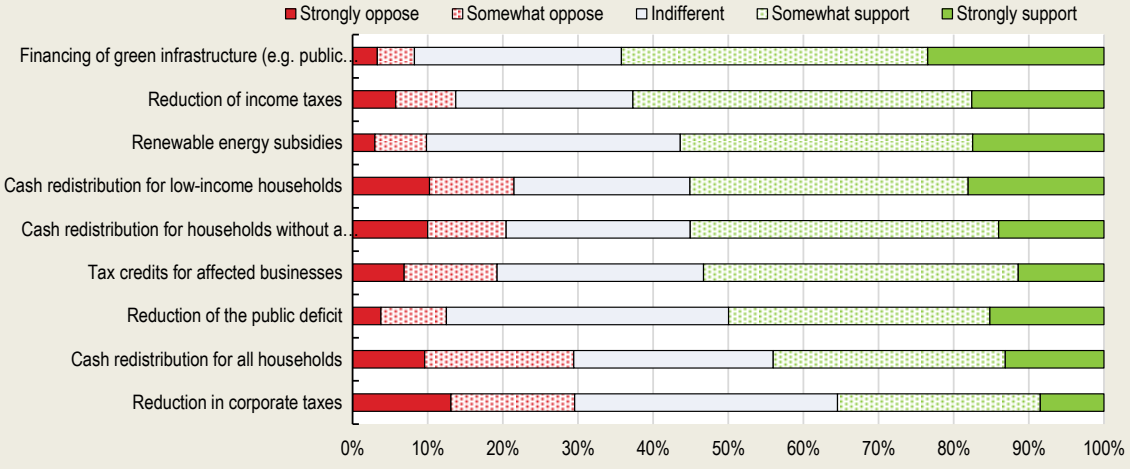
Figure 2.17. Using carbon tax revenues to finance green infrastructures would increase social acceptance

Answers to the question "Do you support a carbon tax if the revenues are used to…?"



Source: Dechezleprêtre et al. (forthcoming), *Preliminary results: Weighted, representative sample of 1 691 observations.*

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Box 2.5. Adjustments to the carbon tax based on the distance to targets in Switzerland

In 2011, Switzerland introduced an adjustment mechanism to its carbon tax, based on whether or not interim emissions reduction targets are met. If the targets for reducing CO_2 emissions fixed each year are not met, the planned increase in the carbon tax takes effect automatically. If the targets are met, or even exceeded, the carbon tax remains at the same level and the planned increase is deferred to the following year. Therefore, the State does not receive additional revenues when emissions reduction targets are met. In addition, efforts to reduce emissions are rewarded with lower tax increases.

Regarding compensation mechanisms, one third of the revenues from the carbon tax in Switzerland is earmarked for programmes to support building energy renovation to reduce energy consumption. The remainder is redistributed uniformly to all Swiss residents through lower health insurance premiums, regardless of their income.

Source: Bureau et al., 2019; World Bank, "Using carbon revenues", Technical Note No. 16, August 2019.

Box 2.6. How Sweden compensated for the increase in environmental taxes

The carbon tax rate in Sweden rose from EUR 40 to EUR 90 per tonne of CO_2 equivalent between 2000 and 2004. Other environmentally related taxes, including taxes on electricity, fuels, vehicles, landfilling, gravel and pesticides, also increased in the same period. These increases were accompanied by a rise in the minimum income tax threshold so that the purchasing power of the lowest-income households would not worsen. Sweden is thus one of the few countries that has managed to redistribute the tax burden from labour to environmentally damaging activities.

As a result of the "green" tax shift and the progressive increase in environmental taxes, final energy intensity (final energy consumption per unit of gross domestic product) has declined significantly, as has the carbon intensity of the economy (CO_2 emissions from combustion of energy sources per unit of GDP). According to Sweden's Ministry of Finance, the increase in energy taxation has had no negative impact on economic growth or employment. Several studies indicate that Sweden has nearly neutralised the potentially regressive effect of the tax reform. That reform resulted in increased disposable incomes for most income groups, although the highest and lowest income group experienced slight declines.

Source: OECD (2014), *OECD Environmental Performance Reviews: Sweden 2014*, OECD Publishing, Paris

2.3. The cost-effectiveness of some sectoral policies can still be improved

Sectoral policies to reduce emissions are sometimes poorly designed or insufficiently ambitious. Environmental policies directed at the transport sector and the residential and commercial buildings sector, in particular, must become more cost-effective. Development of renewables must also accelerate, to reduce emissions of greenhouse gases and air pollutants, and to diversify the electricity mix, while reducing the share of nuclear power to 50% by 2035.

Mobility-related measures can be better designed

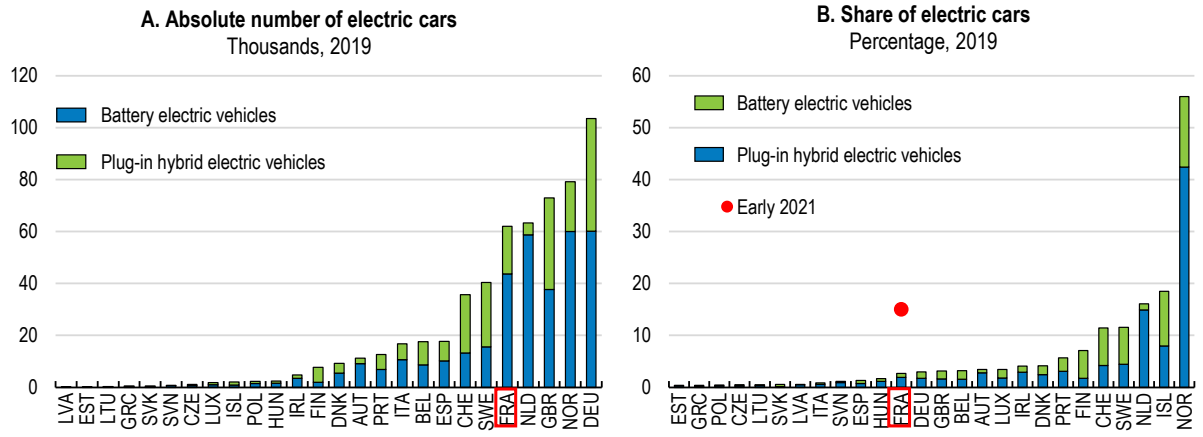
The demand for mobility has increased considerably in recent years, particularly for road transport. The rise in road transport compared to other means can be seen in both passenger transport and goods transport, including heavy and light-duty vehicles. Therefore, pending the extension of the EU ETS scheme to road transport, efforts to reduce the carbon intensity and pollution from motor-vehicle must continue. These efforts must be accompanied by measures to reduce demand for mobility and encourage the use of alternatives to road transport, such as rail.

Promoting the use of electric vehicles

The largely decarbonised electricity mix in France, particularly on account of nuclear power and renewables, means that the large-scale deployment of electric vehicles and plug-in hybrids can be particularly effective in reducing emissions linked with the transport sector (OECD/IEA and OECD/NEA, 2020). Electric and hybrid vehicles could be largely deployed for passenger transport, but also when it comes to deliveries using light-duty vehicles, whose emissions continue to increase. The price of electric vehicles and plug-in hybrids is one of the obstacles to their large-scale deployment. In fact, buying a fully electric vehicle still entails a considerable additional cost (Dive and Duvergé, 2019).

The “conversion premium” scheme and the “ecological bonus” have contributed to increase the sale of electric and hybrid vehicles, for individuals and professionals, while supporting innovation in the automobile sector. In fact, although these programmes can be quite costly, for the same volume of emission reductions, help-to-buy schemes for less polluting vehicles generate fewer losses and allow greater flexibility for businesses in the automobile sector, compared to regulatory instruments (Durrmeyer and Samano, 2017). Standards and prohibitions are also more likely to suffer from lobbying and administrative burden (Blanchard and Tirole, 2021). In 2020, the “conversion premium” was temporarily increased to support the automobile sector, severely hit by the crisis. Consequently, despite an overall fall in private passenger car sales, the sale of electric vehicles in 2020 increased by 259% compared to 2019 (ADEME, 2021b). In early 2021, 15% of new cars sold were either electric or plug-in hybrid (Figure 2.18). The amount of support for passenger private vehicles has already been readjusted and revised downwards in 2021. Nonetheless, in a welcome move, this has been compensated by an increase in the amount provided for the purchase of electric and plug-in hybrid light-duty vehicles in July 2021.

Figure 2.18. The sales of electric vehicles have accelerated



Note: Data for 2021 in panel B is preliminary and the data for other countries is likely to change too.
Source: European Environment Agency.

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Eligibility criteria for help-to-buy schemes are not ambitious enough. The "conversion premium" can still finance vehicles emitting more CO_2 than the threshold imposed on motor vehicle constructors by European standards. Similarly, the "ecological malus" applies only from thresholds higher than those set by the European rules. The help-to-buy schemes for less polluting vehicles must be adapted to offer the right incentives and be better aligned with environmental ambitions in the transport sector. The "ecological malus" ("malus écologique") has been strengthened in 2021 and should progressively become more binding up to 2023. The revision of the malus could, nonetheless, be carried out prospectively to ensure *ex ante* an alignment between the bonus-malus scale, targets under the national strategy and European goals.

There are other measures in the transport sector that are also not sufficiently aligned with European ambitions. The "Climate and Resilience law" bans selling vehicles emitting more than 95g CO2/km starting from 2030, as a step towards banning thermal vehicles sales in 2040. However, this seems already outdated. The European Commission package "fit for 55" suggests banning thermal vehicles sales already in 2035. France is also the only EU country who does apply the European directive imposing a compulsory technical control for two-wheeled motor vehicles. Such controls can identify the most polluting vehicles so that they are equipped with filtration systems. Other measures though, deserve some recognition. The introduction of the weight criterion into the "ecological malus", which is planned from January 2022, will help slow down sales heavy and polluting vehicles, such as SUVs. Taxing cars according to weight will also encourage the vehicle industry to develop lighter electric cars, which will reduce their energy consumption and the size of the batteries needed for their operation, and indirectly the emissions associated with batteries manufacture.

Autonomy is still a barrier to the large-scale deployment of electric vehicles and the installation of charging infrastructures has been slow (Dive and Duvergé, 2019). The recovery plan devotes EUR 100 million to the installation of fast charging stations across service areas in the motorway network. This aid can be combined with another public support scheme of up to 75% of the network connection cost. These charging stations will encourage the use of electric vehicles outside urban areas, especially for deliveries. Nevertheless, for private individuals, a study conducted in Norway indicates that 97% of electric vehicle owners recharge their vehicles at home (OECD/IEA, 2018). The 2021 Budget extends the flat-rate tax credit for the installation of electric charging stations in private car parks to tenants, free occupants and secondary residences, which is a step in the right direction. To allow those who do have a private car park to access a charging station close to their homes, a programme for the deployment of on-demand charging stations, managed on a decentralised basis by regional and local authorities, was introduced in 2016: the

ADVENIR programme. This programme, which has been extended for the 2021-2023 period, can ensure that on-street charging stations will be adequately used. This programme also provides support for the installation of charging station in co-owned and office parkings. Information about the ADVENIR programme should be more widely circulated.

Regulating demand for road transport

The introduction of congestion charges could be envisaged in large towns and cities. Urban congestion charges can already be introduced on a trial basis, but the excessively short trial period deters local authorities, given the high fixed costs of setting up such systems. The "Crit'air" vignette, introduced in 2017, classifies vehicle's according to their environmental impact and can be used to impose bans on the most polluting vehicles in certain zones and/or at certain times. Under the "Climate and Resilience Law", these low-emission zones will be expended significantly. However, there is still significant social opposition to banning polluting vehicles from urban centres (Box 2.4). The benefit of congestion charges, as opposed to traffic bans, is that, in the absence of public transport alternatives, lower-income households can still access urban centres, using carpooling and cost sharing, for instance, which increases the social acceptability of the measure. Furthermore, revenue from these charges can be used to invest in the development of public transport, which may partially compensate for the regressive effect of the congestion charges. Adjusting the amount of the charges based on the time of the day or week and traffic volumes allows users to adapt their behaviour so as to equalise the charge paid and the marginal cost to society of using the vehicle to access urban centres (OECD/ITF, 2021; OECD, 2019e). Several European cities have successfully introduced congestion charges on road traffic (Box 2.7). The trial period for urban congestion charges should be extended in France to increase its feasibility.

Box 2.7. Congestion charges in London, Stockholm and Milan

Congestion charges in London, Stockholm and Milan have brought a number of benefits. The number of private vehicles on the road in the city centre has fallen by 21% in London, 28.5% in Milan and 29% in Stockholm. Emissions of fine particulate matter (PM_{10}) have also fallen by 18% in Milan and Stockholm and by 12% in London. In the three cities, congestion charges also created advantages for public transport services, increasing the speed and regularity of the bus network.

In Stockholm, to encourage social acceptance of congestion charges, the scheme was initially introduced for a seven-month trial period. The trial scheme was accompanied by significant investment in the public transport network.

Source: OECD/ITF (2018a; 2018b; 2019 and 2021).

In order to reduce demand for road passenger transport, the use of other means of transport must be encouraged, particularly active means of mobility. Restricting the eligibility for electric bicycles premiums to individuals living in an area where local authorities offer co-financing, has held back the development of this means of transport (Rüdinger et al., 2018). Eligibility criteria for help-to-buy schemes for electric bicycles should be more relaxed. The measure in the "Climate and Resilience Bill" to extend the conversion premium for the scrappage of polluting vehicles to electric bicycles purchases is a positive step. Measures to encourage the faster deployment of cycling infrastructures should also be considered.

Developing rail freight

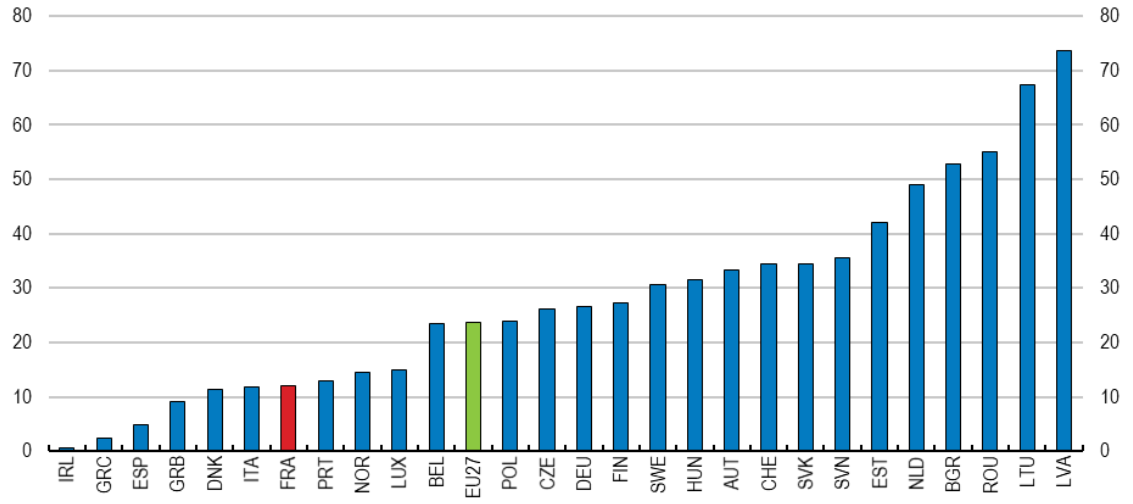
The share of rail freight in goods transport has fallen since 2000 and has stagnated in recent years, whereas it could contribute to reduce greenhouse gas and pollutant emissions (Briand et al., 2019). The share of rail in goods transport, per tonne-km, in 2019 was only 12% (Figure 2.19). However, rail freight emits eight times less fine particulate matter than road freight transport and nine times less CO2 per tonne-kilometre (Geoffron, 2020).

Freight is too often penalised in relation to passenger transport, which limits its attractiveness. Throughout the rail network, the risks of breakdown and delays are too high and primarily penalise freight on account of the priority given to passenger transport, particularly high-speed lines, the socio-economic benefit of which is not always proven or evaluated prior to the investment decision. In Switzerland, passenger and goods transport by rail have been on an equal footing since 2018. Further studies are needed to assess the relative socio-economic benefits of passenger rail and freight rail transport to optimise the share of freight that should have priority over passenger rail transport.

The lack of maintenance of existing rail transport infrastructure has been detrimental to the quality of rail transport services (OECD, 2019a). A great deal of maintenance and renovation work is needed to make rail transport more efficient, particularly for freight (Geoffron, 2020). Some feeder lines running closer to shippers, for exemple, would need to be modernised (Dive and Duvergé, 2019). Investment in rail infrastructure has increased in recent years, but efforts must continue (Figure 2.20). In a welcome move, the government announced in September 2021 that financial support to the rail freight transport sector, representing EUR 170 millions per year, would be prolonged up until 2024.

Figure 2.19. The share of rail freight is relatively low

% of goods transport by rail



Source: Eurostat, Rail transport statistics.

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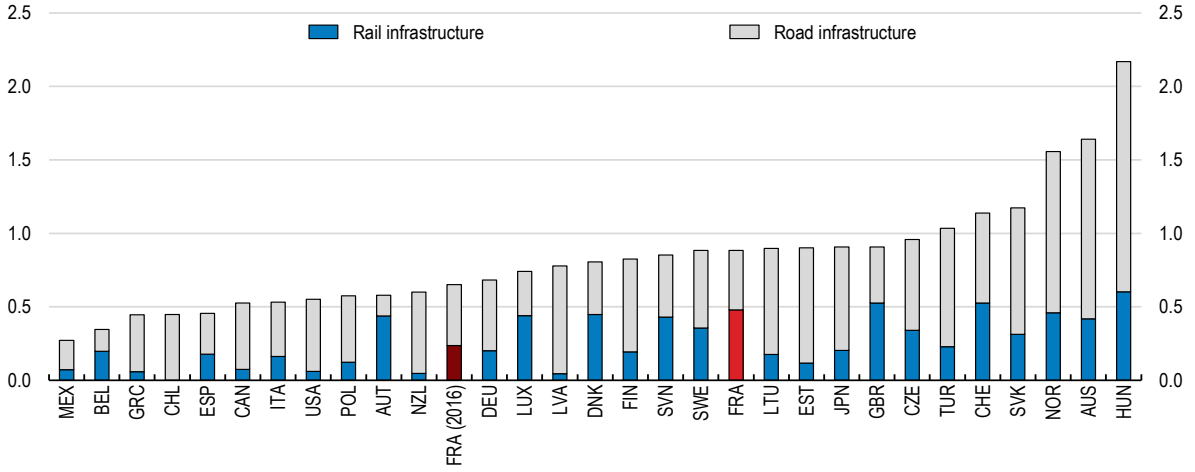
The strategic planning of rail infrastructures and logistics networks should be better coordinated. Recently, certain ports have been redesigned to improve their road connectivity and excluding the possibility that shipments are carried by rail following their arrival at the port (Dive and Duvergé, 2019). The planning of major logistics infrastructure projects, such as ports or large warehouses, must anticipate and take into account the planned development of rail freight and rail network in distribution chains.

Figure 2.20. Investment in rail infrastructure has increased

As percentage of GDP, 2019 or latest year available



Source: OECD, International Transport Forum (database).

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Buildings' energy performance must increase

The new Environmental Regulation for Energy Efficiency of New Buildings (RE2020), announced in 2020 and set to replace the 2012 rules, is particularly stringent regarding insulation, decarbonisation of energy systems and selection of construction materials with a low environmental impact. It should help to reduce greenhouse gas emissions from new buildings. However, its entry into force, initially planned for 2021, was delayed to 2022 for the residential sector and postponed six months for offices and buildings in the tertiary sector.

Support programmes for the energy renovation of existing buildings is the main tool for increasing their energy efficiency and reducing their energy consumption and carbon footprint. This policy could also create jobs and boost economic activity at a time when the government is seeking to revitalise the economy following the COVID-19 crisis. The buildings sector has already benefited from substantial investments. In 2015, renovation works in the residential-tertiary sector had already amounted to almost EUR 40 billion (Rüdinger, 2015). The recovery plan devotes an additional sum of more than EUR 6 billion to the renovation of buildings up to the end of 2022. Nevertheless, the results observed consistently seem to fall short of expectations. Even if renovations are carried out in many buildings, they do not systematically lead to an improvement in their thermal performance (CGDD, 2021).

Strengthening the statistical monitoring of energy renovations

In the absence of comprehensive, reliable survey tools, it is not possible to record the exact number of energy renovations carried out each year. Unlike building construction works, there is no requirement to make an administrative declaration for energy renovations. Surveys on existing individual buildings or private housing are conducted only on an *ad hoc* basis. Statistical monitoring of energy renovation works should improve and it should be possible to quantify the number of renovations that led to higher energy performance. The creation of a National Energy Renovation Observatory (ONRE) in 2019 could help addressing the issue. The first publication by ONRE, in May 2021, provides the most complete overview of energy renovations available up until now (CGDD, 2021). However, the resources allocated to the Observatory are meagre given the scale of the task (Descoeur and Meynier-Millefert, 2021). The "Climate and Resilience" law will oblige home owners, starting from 2023, to keep an online record of each new housing built and each energy renovation work carried. This will improve the statistical monitoring of building renovations, and in particular, for private housing.

Few of the energy renovation works surveyed so far have led to significant energy savings. Only 5% of energy renovation projects surveyed between 2014 and 2016 had a significant impact on energy consumption. The Rental Housing Observatory, which is attached to the Social Union for Housing, estimates that 162 503 social housing units were renovated in 2019, but only 104 000 changed energy label as a result of these works. The High Council on Climate estimates that only 0.2% of energy renovations in the residential and tertiary sectors led to the "low consumption building (BBC)" classification (HCC, 2020d). An analysis of the data available for the most recent period (2016-2019) shows that, even though the situation has improved, many energy renovation works still do not lead to thermal performance improvements (CGDD, 2021). Consequently, the net discounted benefit of the energy renovation for an average home is negative (Blaise and Glachant, 2019). The challenge seems to be, first and foremost, to improve the cost-effectiveness of energy renovations and to encourage renovations that lead to significant energy savings.

Simplifying support programmes for households and firms

The complexity of administrative procedures to benefit from public support programmes is often seen as a barrier to buildings energy renovation. A multitude of public policies and instruments are offered to individuals and firms to accelerate buildings energy renovation (Box 2.8), but information is scarce, scattered and the lack of guidance for those wishing to carry out renovation works is detrimental to their effectiveness (Sichel, 2021). The Public Service for Energy Performance in Housing (SPPEH), created in 2013, refers households to specialised agencies based on their needs. Branch offices of the National Housing Agency (ANAH), ADEME and some regional and local authorities also offer dedicated information and advice services, for both households and firms. However, even here, the multiplicity of information and support points requires simplification. The "Climate and Resilience Law" creates a new status of certified public operators, who will offer guidance to households in their energy renovation plans, in particular to set up a financing plan and apply for the available public support, which is already a significant improvement compared to the current situation. Nevertheless, further steps could be taken to simplify access to public support programmes. Public programmes could be centred and entrusted to a single agency, like in Germany (Box 2.9), potentially ANAH that has already substantial expertise in the area of building energy renovations. This single point of contact would simplify access to information and the administrative procedures to apply for public funds. It would also make statistical monitoring and assessing the effectiveness of different programmes easier, to improve budgeting efficiency. Finally, the creation of this single agency would reduce the number of interlocutors and the administrative costs associated with support programmes. The government has recently announced the intention to create this single agency by 2023-2024.

Energy renovation projects can be complex to implement. The choice between alternative equipment, materials, suppliers and the supervision of renovation works call for technical expertise that private individuals and business owners do not possess. A building renovation professional has more expertise and information, which creates information asymmetries and can give rise to frauds, such as incomprehensible quotes and misleading practices (Descoeur and Meynier-Millefert, 2021). The introduction of a new status of certified public operators, as mentioned above, who will also offer technical guidance to households regarding the quality and ambition of renovation works, will help minimising problems of information asymmetry. The establishment of a single information, guidance and financing agency, centred on the most effective programmes, with independent, certified experts who could also offer technical advice, will also minimise problems related to frauds and, therefore, improve the cost-effectiveness of public support.

A label was created in 2011 to certify qualified professionals in the area of buildings energy renovation: the "Recognised Guarantor of the Environment" (RGE) label. The label is a minimum quality guarantee for craftsmen and energy renovation work companies. For most public support programmes, individuals and firms must hire a professional who has the RGE label. However, many professionals are not willing to

undertake the necessary training to obtain the RGE label, as it is expensive and does not necessarily lead to long-additional contracts in the longer-term (Descoeur and Meynier-Millefert, 2021). The introduction of a "project-by-project" RGE certification in January 2021, as part of the France Relance recovery plan and on a trial basis, is expected to simplify the certification procedures and allow smaller businesses and individual craftsmen to carry out energy renovation works eligible for public support. To that end, an official body will need to give its approval and conduct on-site inspections to certify, on an *ad hoc* basis, the qualifications of the craftsmen involved and the quality of the renovation works.

Box 2.8. Energy renovation support programmes for households and firms

MaPrimeRénov'

Under this programme, a premium is available to all private individuals, who are housing owners, and wish to carry energy renovation works. One-off and *ad hoc* interventions that do not necessarily imply a comprehensive renovation are eligible for this premium. Households can nevertheless receive a top-up compensation when comprehensive renovation works lead to energy savings of at least 55% or to significantly improve the building energy certificate. MaPrimeRénov' can be accumulated with ESCs and the éco-PTZ support programmes.

The ANAH "Habiter Mieux Sérénité" ("Living Better Serenity") programme

The programme is targeted at low-income households interested in comprehensive energy renovation projects. To be eligible, renovation works must lead to energy savings of at least 35%. Project management assistance (advice, technical guidance) is compulsory and subsidised to ensure that renovation works are effective.

Energy Savings Certificates (ESCs)

Under this scheme, energy suppliers are obliged to encourage energy savings. Suppliers should proactively promote energy efficiency among consumer (households, regional and local authorities and professionals). Certificates are awarded by public authorities to energy suppliers that implement energy saving measures or finance programmes contributing to the reduction of energy consumption (training, awareness-raising or guidance).

Zero-interest eco loan (Éco-PTZ)

Eco-PTZ loans are offered by commercial banks to private individuals, and interests paid by the State, without any income-related conditions. The maximum amount of the loans is EUR 30 000, with a term of 3 to 15 years. Works must be carried out by a RGE certified company and must include at least one energy renovation measure or works leading to energy savings of at least 35%.

Lower rate of VAT of 5.5%

The lower rate is applicable to any intervention carried to improve housing energy efficiency. This programme can only benefit private individuals.

ADEME Support programmes

ADEME provides financial support to firms who want to complete an energy audit in their offices or premises to identify potential energy savings.

Local authorities support programmes

Some local authorities also provide financial support to renovate tertiary buildings.

Source: https://www.ecologie.gouv.fr; Descoeur and Meynier-Millefert, 2021; Dive and Duvergé, 2019.

Improving the scope and quality of renovation works

Some energy renovation support schemes do not necessarily encourage comprehensive renovations, but instead, provide incentives for staged renovations, which are not always effective. This is the case, for example, with most financial support allocated by MaPrimeRénov' and the éco-PTZ loans which, with a maximum amount and a short loan duration, are rarely used for comprehensive renovations in practice. Small, one-off energy renovation interventions are not usually sufficient to increase the energy performance of buildings and lead to meaningful energy savings. Some experts even question the capacity to achieve an efficient energy performance with staged renovation interventions, as transversal works are not performed (Rüdinger et al., 2015). The probability of reaching the "Low Consumption Buidling" certification, for example, decreases with the number of renovation work stages carried (ADEME, 2021d). Furthermore, it is often more expensive to carry out operations at different stages, since it is necessary to prepare the site, erect scaffolding, etc. each time (Descoeur and Meynier-Millefert, 2021). Support should be conditional on achieving a minimum energy performance level, as in the ANAH "Habiter Mieux Sérénité" programme. This could be done by granting more financial support to comprehensive energy renovations or by introducing a minimum level of energy savings requirement for all public support programmes.

Box 2.9. The Credit Institute for Reconstruction in Germany

The Credit Institute for Reconstruction (*Kreditanstalt für Wiederaufbau*, KfW) is a State-owned investment bank. It offers financing solutions for building energy renovations in the form of direct subsidies and preferential loans. Financial aid is conditional on experts being involved before and after the energy renovation works. The experts monitor renovation works from a technical point of view, verify the conformity of the planned intervention and the energy performance attained.

KfW is financed on international markets for a total of EUR 80 billion per year. It is fully guaranteed by the State, giving it an "AAA" rating. Except for local authorities, KfW does not directly finance project promoters. It relies on commercial banks to distribute financial aid to households and firms.

Source: HCC (2020d); Rüdinger (2015).

Even with public support, the remaining amount to be paid by households and firms for efficient comprehensive energy renovations is too high. Access to bank credit for this kind of renovation is difficult, and the terms of the loans are not always attractive (Descoeur and Meynier-Millefert, 2021). The "Climate and Resilience Law" reforms the "*Prêt avance mutation*" instrument, which has been barely used. This instrument allows households that do not have access to conventional credit to borrow a sum calibrated to the value of their property and the renovation works planned and to only repay the interest. The principal amount is only repaid when the property is transferred, sold or inherited. Banks still have a very limited appetite for this mechanism, since the term of the loan is very uncertain, which makes pricing of loan servicing extremely complicated (Sichel, 2021). The Law proposes that the State acts as guarantor when the renovated property selling price turns out lower than the estimated price when the loan was taken, reducing the risk for banks. However, risk relating to the uncertainty over the term of the loan remains. Authorities should consider a similar programme for firms wishing to renovate their offices or premises.

To improve credit access for energy renovation works, a mechanism could also be envisaged where third-party operators selected by the State finance energy renovation operations and monitor the works to ensure their effectiveness. Such operators would be progressively reimbursed from the savings made in the energy bills of the beneficiaries (France Stratégie, 2020c). The amount and duration of the éco-PTZ loan should also be increased, following the German example where these loans can reach EUR 120 000 for a duration of up to 30 years (HCC, 2020d). To encourage comprehensive energy renovations, the amount of financial aid must be proportional to the project's ambition and costs. The top-up compensation recently introduced in the MaPrimeRénov' programme for comprehensive energy renovations are flat rate and do not necessarily reflect the costs incurred (Box 2.8).

Even when households or firms want to carry comprehensive energy renovation works, there is not yet a structured offer for this kind of overall building renovations. Instead, there is a multitude of craftsmen offering one-off services: changes to glass walls, external roof insulation, internal insulation, etc. Clear and credible communication regarding building energy renovation policies in the longer-term could give more visibility to the sector and create incentives for such structured comprehensive energy renovation professionals and businesses to develop. The recovery plan is generous, but does not offer any visibility beyond 2023.

The quality of works carried out with public support is not always monitored. To achieve the energy renovation targets set by the government, it should be mandatory to carry out exhaustive performance diagnostics before and after major subsidised energy renovation works, as is already the case with the ANAH "Habiter Mieux Sérénité" programme (Descoeur and Meynier-Millefert, 2021). Quality controls by thermal insulation and energy specialists would improve the effectiveness of public support and make promotors accountable (Rüdinger, 2013). Recentering the different public support programmes around a single agency and the most cost-effective programmes, as discussed, namely those that encourage comprehensive renovation works, would make monitoring the quality of major renovation works feasible.

The development of renewable energies must accelerate

To reduce greenhouse gas emissions, pollution and diversify the electricity mix, the development of renewables must accelerate. The progressive reduction of nuclear power in the long term cannot be envisaged without augmenting the share of renewable energies to guarantee security of energy supply without increasing fossil fuels consumption (OECD/IEA and RTE, 2021). A 60-65% share of renewables in the electricity mix in 2050 would, for example, require at least 50 GW from onshore wind (three times the current installed capacity), 30 GW from offshore wind (equivalent to 60 offshore wind farms with a capacity of 500 MW, whereas no farms have come into operation so far) and 100 GW from solar PV (10 times today's level) (OECD/IEA and RTE, 2021). Achieving carbon neutrality in 2050 will be impossible without a significant development of renewable energies (RTE, 2021).

Beyond ecological motivations, the development of renewable energies also has advantages from an economic point of view. Compared to a fossil fuel supply scenario, the cost of a carbon neutral electricity system would be more stable and would no longer depend on fossil gas and oil prices (RTE, 2021). In addition, renewable energies are becoming increasingly competitive. The cost of an electric kWh associated with large wind and photovoltaic farms is now lower than with new thermal and nuclear power plants. The costs associated with an electricity system relying increasingly on renewable energies will largely depend on the system's storage capacity and flexibility (RTE, 2021).

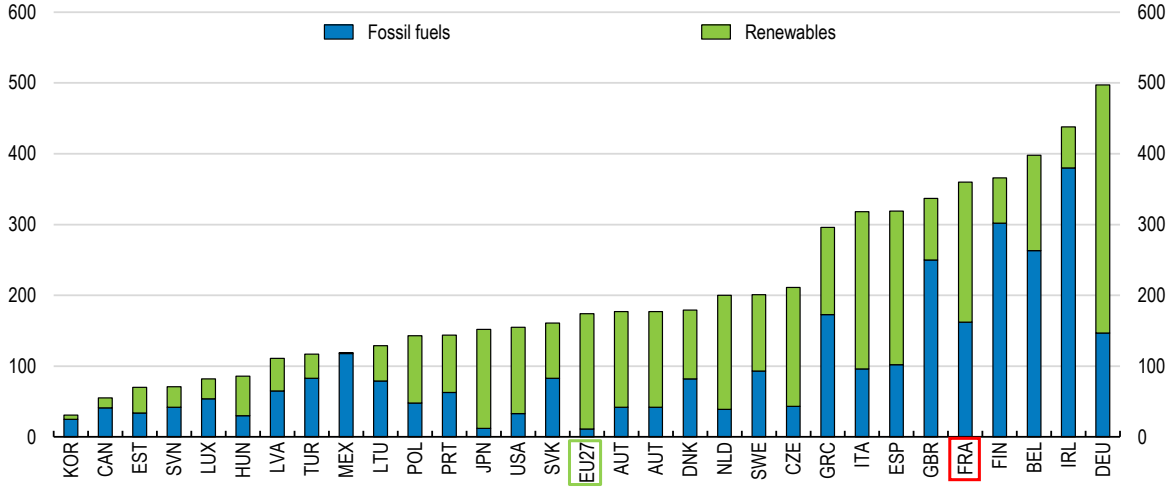
In fact, the power grid must also be adapted to allow greater diversity and decentralisation of potentially variable sources of energy supply. Currently, the system's flexibility and running capacity is based primarily on nuclear, hydroelectric and fossil-fired power plants. The gradual closure and the construction ban for thermal power stations, as well as the reduction of the share of nuclear power, will significantly reduce the flexibility and running capacity of the electricity system (OECD/IEA and RTE, 2021). The development of energy storage and electricity demand management solutions must accelerate. The investments planned under the France Relance plan and announced with the "France 2030" programme, to develop a low-carbon hydrogen option, which would allow the surplus electricity generated at certain times to be stored and subsequently redelivered, are welcome developments (OECD/IEA, 2019). These developments must be accompanied by more efforts to upgrade and adapt electricity transmission and distribution networks, as envisaged in the 10-year network development plan of the electricity transmission system operator (RTE) (OECD/NEA, 2019). Whatever the share of renewable energies envisaged in the French electricity system, the networks must be rapidly resized (RTE, 2021).

Redirecting public support to low-carbon sources

Although public support for the development of renewable energy has increased, several implicit fossil fuel subsidies reduce incentives for private investment in low-carbon energy sources. Subsidies for renewable energy production, including direct subsidies, purchase obligation programmes and additional remuneration mechanisms, rose from EUR 1.5 billion in 2011 to EUR 4.8 billion in 2018 (CGDD, 2020c). However, public support for renewable energy production is still comparatively lower than in other OECD countries. At the same time, implicit fossil fuel subsidies are higher than in other OECD countries, such as Germany, Italy and Spain (Figure 2.21). Implicit subsidies for fossil fuels, mostly in the form of tax exemptions, tax credits and reduced rates, negatively affect the relative competitiveness of renewable energy production technologies and, therefore, reduce incentives to invest in their development. Environmental taxation arrangements that favour fossil fuels should be gradually withdrawn (section 2.2).

Figure 2.21. Fossil fuel subsidies are still too high

Euros per capita, 2018



Note: The following subsidies are included: direct transfers, preferential loans, collateralised loans, capital injections, tax credits, tax reductions and other fiscal incentives involving a loss of revenue, public provision of services and public purchases of goods, public price and income support.

Source: European Commission (2020), "Energy Subsidies: Energy costs, taxes and the impact of government interventions and investments", Final Report.

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Public support for renewables is disproportionately focused on renewable electricity sources. In 2016, renewable electricity sources received EUR 4.4 billion in public spending compared with only EUR 567 million for renewable thermal energy (Cour des comptes, 2018). However, the cost per tonne of oil equivalent produced by renewable thermal energy is very competitive compared with renewable electricity (Rüdinger et al., 2018). Renewable electricity benefits from operating subsidies, particularly purchase obligations and compensation mechanisms. The development of gas and heat from renewable sources (thermal solar, heat pumps, geothermal and biomass) benefits from investment subsidies through the heat fund. The resources available under the heat fund should be increased to meet the development targets set for renewable thermal energy. In 2020, this fond distributed EUR 350 million, its entire allocated budget, to achieve 60% of its objective of greening heat networks. To reach the aimed trajectory, established in the Multiannual Energy Programme, 8 TWh of renewable heat installations would be needed each year, while the current budget allows for only 3 to 3,5 TWh to be installed annually (ADEME, 2021c). Nonetheless, the fond's budget for 2021 remained unchanged.

The government announced a new investment plan in October 2021, called "France 2030", with financial support of up to EUR 15 billion towards research and development of low-carbon technologies. Nuclear

energy, renewables and green hydrogen are among the government's top priorities. Indeed, achieving carbon neutrality in 2050 without new nuclear reactors would imply a pace of development of renewable energies even more accelerated than those of the most dynamic European countries in the field, in particular, Sweden, Denmark or Norway. In addition, the development of "low-carbon" hydrogen is necessary to store energy in a system where renewable energies will occupy an increasingly important place (RTE, 2021). To select the most cost-effective low-carbon technology projects and monitor their implementation, France could consider the creation of an agency like Enova in Norway (Box 2.10).

Uncertainty over the trajectory of the French electricity system is also an obstacle to private-sector investment in low-carbon energies. No document defines the projected trajectory for nuclear power plants beyond 2035. The question of the long-term share of nuclear power in national strategies should be addressed to improve predictability for the stakeholders concerned and so that labour markets, and training provision in particular, adapt accordingly (ASN, 2020). The lack of visibility and the absence of a timetable or clear roadmap for the relative shares of nuclear power and renewables after 2035 weaken the nuclear industry and constrain the emergence of a strong domestic renewables industry. Some of the difficulties encountered in recent nuclear reactor construction projects relate specifically to the lack of visibility for the sector, which has led to skill depreciation (OECD/NEA, 2020b). The support offered to the nuclear industry under the recovery plan regarding skill retention can help to overcome these difficulties in the short term. In the long term, however, it is important to reduce uncertainty.

Box 2.10. ENOVA in Norway

In Norway, a government agency has been created in 2001 to promote the development and use of renewable sources of energy, as well as cleaner and more energy-efficient technologies. Enova manages the Climate and Energy Fund on behalf of the Ministry of Climate and Environment. It attributes financial support to selected projects that aim at testing new energy and climate technologies in industry, transport or buildings. Financial support is distributed in arrears based on actual projects costs. Enova also supervises the implementation of the supported projects.

Centralising financial support and project monitoring in one single agency brings several advantages. Access to information is facilitated, the processing of most applications can be digitalised and automated so that manual case processing can be reserved for complex projects, staff build on expertise, easily share knowledge and experience, and finally, communication with stakeholders and the general public is also simplified.

Source: https://www.enova.no/about-enova/

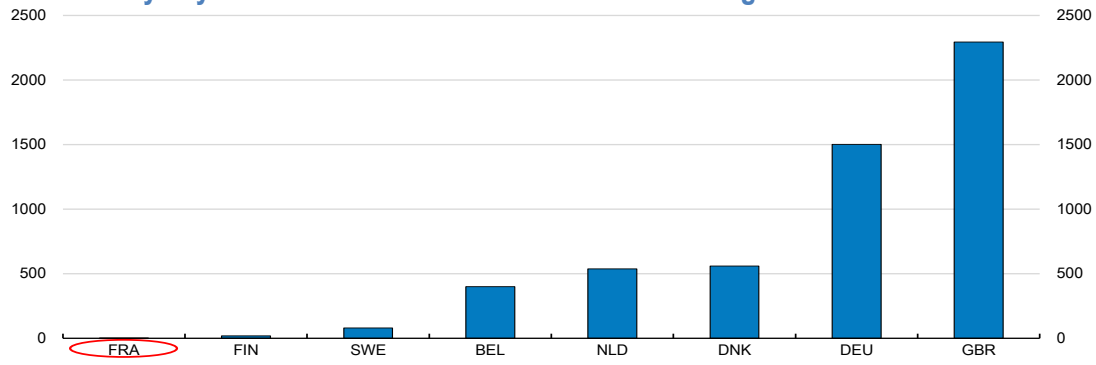
The financing mechanisms for the decommissioning of nuclear plants, laid down in the Environmental Code, can still be improved. The costs of decommissioning nuclear power plants and restoring land on former sites are still uncertain, and the process may take between 20 and 25 years (Cour des comptes, 2020b). Radioactive waste management also raises a number of environmental problems, and the average lifespan of radioactive waste is 100 000 years (IRSN, 2013). Those costs are currently provisioned by producers of nuclear waste in according to the polluter-pays principle. These provisions are covered by dedicated assets. As of 31 December 2018, the future value of the discounted nuclear liabilities of EDF was estimated at EUR 44.1 billion, EUR 43.3 billion of which was covered by dedicated assets, resulting in a long-term provision coverage ratio of 98.3% (OECD/NEA, 2021). Nevertheless, certain smaller expenditures are excluded from these assessments, like post-operation charges (taxes, levies and insurance premiums). Provisions should be adapted to long-term needs and the scope of the charges covered could be clarified further (OECD, 2019a; Cour des comptes, 2020b).

Removing regulatory constraints on the development of renewables

The development of offshore wind energy faces multiple obstacles. France enjoys an excellent geographical location for the development of offshore wind energy. However, the country has just one floating wind turbine in service, a pilot project off Le Croisic. Four calls for tenders have been launched for the development of offshore wind farms since 2011, but none of the planned sites has entered into service yet. In comparison with other European countries, France is lagging far behind when it comes to offshore wind energy (Figure 2.22). The numerous administrative procedures, the lack of social acceptability, the length of appeal proceedings and the complexity of grid connection largely explain this delay (Dive and Duvergé, 2019).

A number of measures have been taken to bring offshore wind farms into service since 2017, in particular by the Law on Hydrocarbons and the ESSOC Law. For example, certain administrative steps, such as the selection of candidates admitted to the competitive dialogue, can be initiated concurrently with the start of the public consultation process on the potential location of new projects. The government has also abolished one level of appeal in proceedings brought against offshore wind projects to save time in the development timelines for these projects. Connection is no longer under the responsibility of the producer but is carried out by RTE, the public electricity transmission network operator, in order to decouple establishing the connection from operation of the wind farms and to limit the risk of delaying its supply. However, the farms allocated since 2011 and prior to the introduction of these measures did not benefit from these simplifications.

Figure 2.22. Barely any offshore wind farms are connected to the grid



Source: Wind Europe, End-of-year data for 2020, expressed as the number of projects. Several projects should enter into service in France in 2021.

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The simplification of administrative processes could go even further, provided that the environmental impact of projects is properly taken into account, namely risks for marine biodiversity, and that consultations with the public and local upstream stakeholders is not neglected. These consultations are essential to obtain social acceptability and to minimise subsequent litigation procedures. One possibility could be to create an agency that would manage the entire procedure, including the organisation of the different phases of dialogue, the organisation of public consultations and calls for tenders, the issuing of the various permits and operating licences, among other things, thereby simplifying interactions between different stakeholders, like in Denmark (Box 2.11).

Social acceptability remains the main constraint on the development of offshore wind energy, namely due to the potential impact of offshore wind farms on marine biodiversity. However, several solutions exist to minimise that impact. Floating wind turbines, for instance, can be set further away from coasts, where the avifauna is not so developed, while also minimising the impact of underwater vibrations on fish and marine mammals. This option is not possible with fixed foundation wind turbines, which require shallow water bottoms. These solutions should be given further consideration and the location choice for wind farms must take biodiversity into account, avoiding “Natura 2000” and “ZPS Oiseaux” delimited areas (CNPN, 2021).

Few projects involve private individuals or local authorities, which adds to the social acceptability problems (CESE, 2018). The regulation governing "participatory" or "citizen" projects, where private individuals, regional and local authorities are directly involved in the financing and governance of renewable energy production infrastructures, could be simplified. At present, several schemes coexist with differentiated fundraising ceilings and rules on the maximum amount that an individual may contribute. The many layers of regulation cause mounting complexity for all the stakeholders involved (Rüdinger, 2019). The "participatory bonus" scheme, introduced in 2016, provides additional points on a flat-rate basis for projects submitted in calls for tenders when a minimum amount of financing comes from a minimum number of private individuals or at least one local authority. The amount of the bonus points could be calculated proportionally, based on several participation thresholds, to increase participation incentives (Rüdinger, 2019).

Box 2.11. Implementation of offshore wind projects in other OECD countries

Denmark

The Danish Energy Authority (DEA) is a single agency that provides the three successive licences needed for carrying out preliminary investigations and for establishing and exploiting offshore wind farms. Offshore wind projects can be proposed freely by promoters to the DEA ("open door" procedure) or in response to a call for tenders issued by the DEA. In both cases, the DEA organises all procedures and actions before authorising the development of the site. It takes only 16 months on average to bring into service an offshore wind farm in Denmark.

Germany

The competent authority depends on the site's distance from the coast. Within 12 nautical miles, consent is granted by the government of the coastal region concerned. Beyond that distance, consent is granted by the federal government. However, the government of the coastal region must still authorise the laying of cables and the installation of network connection infrastructure. Projects are freely proposed by potential developers, which must present environmental impact and navigation safety studies with their application documents and show that consultations with local stakeholders have taken place. Processing times in Germany are three years, on average.

Netherlands

The procedure was similar to that in Germany up to 2015. Since then, the government has moved from an "open door" procedure to a tendering procedure. The government (Ministry of Economic Affairs and Ministry of Infrastructure and Environment) actively participates in the preselection of potential sites and the development of environmental impact and navigation safety studies, which simplifies the preliminary work carried out by potential promoters. Calls for tender are then launched for the selected sites. Prior to this reform, processing times were two years. There are no estimates for the average processing time since new procedures were introduced.

United Kingdom

The Crown Estate, as owner of the seabed belonging to the United Kingdom, preselects locations that are eligible for installation of offshore wind farms and launches calls for tenders. The selected promoters must carry out environmental impact and navigation safety studies and organise consultations with local stakeholders themselves. Once all these conditions have been met, promoters must apply for development consent to the Planning Inspectorate in England and Wales or the Marine Scotland agency in Scotland. The procedure lasts 18 months, on average.

Source: Salvador, Gimeno and Larruga (2018), "Streamlining the consent process for the implementation of offshore wind farms in Spain, considering existing regulations in leading European countries", *Ocean and Coastal Management*, Vol. 157, pp. 68-85.

Administrative constraints are also an obstacle to the development of other, more mature, renewable energy sources. Calls for tenders are particularly complex for solar photovoltaic energy, for example, demotivating small-scale project promoters. The first calls for tenders were very demanding on research and innovation aspects and an insufficient number of projects ended up being submitted to achieve the proposed objective (CESE, 2018). Licence issuing still takes too long. Since 2017, to encourage small-scale projects, installations below 100 kWp located on buildings or structures have benefitted from an "open counter" mechanism with regulated tariffs, a purchase obligation and without any open competition. The government is planning to take up the proposal made by the Citizens' Convention on Climate to increase the threshold of this open counter from 100 to 500 kWp by the end of 2021. Tendering and administrative authorisation procedures must also be simplified to speed up the deployment of larger-scale projects.

Increasing investment in grid infrastructure

Grid connection difficulties are also an obstacle to the development of renewables. Much more investment will be needed in the next few years to adapt electricity transmission and distribution networks to changes in the electricity mix. Renewable energy production is seasonal and geographically dispersed. The electricity distribution network must be capable of capturing locally produced renewable energy and carrying it to the high-voltage transmission network when that energy is not consumed locally (France Stratégie, 2019d). Without additional investment, to ensure grid stability in current conditions, a minimum level of conventional electricity generation of between 20% and 40% would still be required, depending on operational conditions (OECD/IEA and RTE, 2021). Investment in the grid has increased considerably since 2005, particularly investment in grid expansion. However, the manager of the electricity transmission networks estimates that annual spending will need to increase from around EUR 1.3 billion in 2020 to more than EUR 2.5 billion in 2035, primarily on account of the adaptation of networks to renewable energy and connection costs for offshore wind farms. The necessary investments identified by the French transmission network operator remain nevertheless lower than those planned by other European countries (RTE, 2019).

To support such investments, electricity tariffs should be adjusted. Currently, the tariff comprises a fixed component (20% of the tariff, on average) and a variable component, proportional to energy consumption so as to encourage energy savings (80% of the tariff on average). The tariff structure would be more adapted with the network management cost structure, composed predominantly of investments, if the fixed component would increase compared to its variable component, without undermining energy efficiency incentives (France Stratégie, 2019d).

2.4. Land use must be more carefully considered to preserve biodiversity

The green transition depends on more sustainable use of soils, which represent one of the most important land-based reservoirs of biodiversity (Bardgett, 2005; Wall et al., 2010; Nielsen et al., 2011, 2015). Forests and natural soils form the habitat for many plant and animal species; they constitute carbon sinks and can offer biomass potential. Agricultural land can also help to store carbon dioxide, provide nitrogen and water to cultivated plants and regulate water quality. Waste from cattle rearing can produce renewable natural gas, including biomethane. Elements of biodiversity in urban environments (green spaces, presence of plant species, etc.) are also advantageous for adaptation to climate change; they help to regulate the temperature locally and can attenuate flood risks (Bureau et al., 2020). However, little attention is paid to these positive externalities connected with land use, just like the negative externalities connected with land take or waste landfilling.

Biodiversity protection and economic development are compatible

France has a wide diversity of protected areas (MTE, 2021). A recent study, which covers both areas with significant biodiversity challenges and areas with regulatory protection, reveals that 95% of the areas that play a key role for biodiversity and may be under pressure from urbanisation or intensive agriculture are protected (CGDD, 2019). However, protected areas are not always supported by adequate financial and human resources to enforce the rules. Funding granted to supervisory bodies should be increased. But most importantly, market-based instruments, that offer the private sector incentives to conserve and restore biodiversity, must be strengthened.

Reconciling biodiversity protection and local development objectives

Competition between local authorities to attract residents and businesses so as to maintain local dynamism can encourage land take and go against biodiversity conservation objectives. Major public and private development projects must be subject to an environmental impact assessment (EIA). Currently, the environmental code specifies the list of projects and planning documents that are systematically subject to EIAs. The law also defines another list of smaller-scale projects for which a case-by-case decision is made to determine whether an EIA is needed. However, in 80% of the cases, this decision is taken by the departmental or regional prefects, who also represent the project developer or assist the project promoter. The European Commission has raised questions with the French administration regarding the independence of environmental assessment decision-making, the potential conflict of interests and the excessive number of exemptions granted. Case-by-case decisions should be taken by the the Environmental Authority (Ae) and the Environmental Authority Regional Missions (MRAe), attached to the General Council for the Environment and Sustainable Development (CGEDD), which are independent institutions. The list of projects and planning documents that are systematically subject to EIA should also be revised and extended to minimise the number of case-by-case decisions and limit it to even smaller projects. Under the “Climate and Resilience” law, new commercial developments leading to an increase in land take are prohibited, unless there is a specific derogation. This new measure will only be effective if such derogations are granted by an independent party.

Strengthening environmental compensation

Economic incentives for biodiversity protection are not effective enough. The deployment of the “Avoid, Reduce, Compensate” sequence (“*Séquence Éviter, Réduire, Compenser”,* ERC, Box 2.12), aiming to avoid environmental damage, reduce damage that cannot be avoided and compensate for its effects, has failed to live up to its ambitions. There is not enough emphasis on the “Avoid” part of the sequence. Furthermore, according to a study of 24 major infrastructure projects, environmental compensation is not sufficiently rigorous in 80% of cases. The measures introduced preserve habitats that are already of good quality, where the ecological benefit is less, and do not therefore allow a tangible return of biodiversity to counterbalance the effects of development projects (Weissgerber et al., 2019). Monitoring and review of the measures introduced continue to be negligible and offer a low incentive to comply with the law (Bureau et al., 2020). To improve the implementation of environmental compensation measures and ensure that net ecological benefits are achieved, in 2021 France published a national framework for designing and shaping compensation measures, which is a step in the right direction.

Box 2.12. The principles of the "Avoid, Reduce, Compensate" sequence

Under this mechanism, certain major projects and plans, in particular those requiring an environmental impact assessment, must detail all the measures taken and choices made to **avoid** degradation of the quality of the environment. If certain significant impacts cannot be avoided at a reasonable cost, technical solutions to **reduce** degradation must be adopted. Lastly, if there are still significant impacts, **compensation measures** must offer an equivalent counterpart.

Compensation measures can include rehabilitation, restoration or creation of natural habitats. The positive impact on biodiversity of these measures must be at least equivalent to the loss caused by the project. It must therefore be possible to quantify the environmental impact of projects and the benefits of the compensation. The benefit must be realised close to the impacted site and in accordance with the principle of ecological equivalence.

The developer has two ways to make compensation: (i) *demand-based compensation*, where it carries out the compensatory works itself or delegates them to other actors; and (ii) *supply-based compensation*, where it acquires "offset units" from a dedicated natural compensation site. In the latter case, the environmental benefits are integrated and managed by a third-party "operator".

Source: CGDD, 2017.

Supply-based compensation, where the project promoter purchases "offset units" from a dedicated natural compensation site certified by the State, must be further developed (OECD, 2016). In fact, supply-based compensation is more easily monitored (CEDD, 2016b). The upstream implementation of projects that it entails offers visibility and reduces uncertainty. Further developing supply-based compensation would also make it feasible to extend the compensation obligation to all projects, regardless of their size, since the "offset units" can be purchased in small quantities without fragmenting the compensation projects (Bureau et al., 2020; CGDD, 2017b). However, natural compensation sites currently account for a still very limited area. Clarification regarding the operation and implementation arrangements for supply-based compensation and reflection on public-private partnerships, which form the basis for "mitigation banks" in the United States, could contribute to the development of supply-based compensation (Box 2.13).

Another instrument inspired by English-speaking countries was introduced to assist compensation measures in 2016: Real Environmental Obligations (REOs). This instrument enables any land owner to establish environmental protection for their land, such as restoration of elements of biodiversity, introduction of environmentally friendly infrastructure allowing movement of species, etc. REOs can be used for compensation purposes. The land owner signs a contract with a developer subject to a compensation obligation, committing to take environmental action in exchange of a financial counterpart. At present, REOs are very rare in France (Bureau et al., 2020). To make these instruments more attractive, the 2021 Law on Finance introduces two fiscal incentive measures which complement those brought in by the 2016 Law on Biodiversity: exemption from the property security contribution and the option for public establishments for inter-municipal cooperation (EPCI), in respect of their share, to exempt undeveloped land from property tax where the owners have signed a REO. However, that exemption remains optional. This should be made compulsory to encourage the development of REOs by proposing that this exemption is covered by the general state budget.

Box 2.13. "Environmental mitigation banks" in the United States

The compensation element in the United States can be provided by public-private partnerships. A private entity called a "mitigation bank" acquires land and undertakes to conserve biodiversity there, whoever the future owners might be.

The mitigation bank must establish monitoring with precise indicators that can attest to its actions to promote biodiversity. The public administration certifies these indicators, which it can review regularly, and grants a number of "offset credits" to the bank, depending on the scale of the actions undertaken and as ecological benefits are shown by the indicators. The administration keeps a register of mitigation banks, with information on their location, the total number of credits granted and the number of credits available for sale. The bank can then sell those offset credits within a geographical area defined by the administration. Developers based in that area that have an offset obligation can purchase those credits. The price of offset credits is freely determined in each defined area. The administration must therefore regulate the quantity of offset credits granted to banks so that the price gives a further incentive to avoid and reduce damage to biodiversity.

In 2016, just over 2 000 mitigation banks had already been created. The offset credits market allows better monitoring of the compensatory actions that have been taken and their location, size and quality. Mitigation banks can gain a reputation with the administration, which reduces information asymmetry. The development of these markets has also allowed the formation of a new sector of activity, thereby creating jobs.

Source: CEDD, 2016b.

Reforming land taxes

Taxation on land generally promotes land take: the transformation of agricultural, natural or forest land by development activities which can result in total or partial soil sealing (Colsaet, 2019). This change in land use, which is generally irreversible, has potentially detrimental consequences for the environment and agricultural production. Numerous exemptions and lower rates exist for developed land, while undeveloped land, including agricultural land or natural spaces, is subject to a number of taxes that systematically make its annual after-tax return negative and compel its owners to build on it (Sainteny, 2018).

The measures introduced to encourage space saving are often optional and are still little used by regional and local authorities. The possibilities for exemption entail a direct loss of tax revenue for local authorities that choose to apply them. However, even measures that do not necessarily entail losses of tax revenue are often seen as an obstacle to local development and are therefore little used. That was the case, for example, with the low density tax, which was created in 2010 and aimed at limiting urban sprawl by taxing new constructions that did not meet a minimum development density threshold. Having met with very modest success, the tax was repealed by the 2021 Law on Finance. The planning tax could be reformed by integrating a "bonus-malus" mechanism to discourage land take and encourage densification. Revenue from the malus would finance spending connected with the bonus so as to ensure that the measure is neutral with regard to local public finances (Comité pour l'Économie Verte, 2019).

A number of construction support schemes have also contributed to the acceleration of land take (OECD, 2021c). For example, some regional and local authorities have committed to selling land to developers at a symbolic price of EUR 1 to encourage new construction projects. These programmes should be better monitored to prevent land take in areas where there is no pressure on access to housing. The Pinel investment rental scheme, which permits a tax reduction calculated on the basis of the purchase price of a new home that is rented out, has also encouraged urban sprawl. Until 2018, the scheme applied without distinction as to the location of the building. In order to stimulate densification, in 2018 the Pinel scheme was reoriented to areas where there was an imbalance between housing supply and demand, and, in

2021, it was also reserved for housing in multiple occupancy residential buildings. The scheme is to be progressively cut back in 2023 and 2024.

Action could be taken to facilitate further development of abandoned urban brownfield sites, former industrial, commercial, military, railway and even administrative areas. These provide an opportunity to revitalise urban centres and reduce pressure on land without increasing land take. However, the number of brownfield sites is still not really known (AdCF, 2019). A current inventory or a regularly updated map of urban brownfield sites should be made available and universally accessible in order to disseminate information on the opportunities available (France Stratégie, 2019c).

Financing for urban brownfield site revitalisation operations must be targeted. Decontamination costs, for example, are estimated to be at least EUR 1 million per hectare (Adam and Kerbarh, 2021). The human, material and R&D resources needed may also be significant. Third-party financing mechanisms may work for sites in dynamic regions where reconversion to accommodation will mean that long-term financing of the necessary work will be easy. Rehabilitation operations in less favoured sites require public support to establish an economic balance between projects. The creation of a “brownfield fund” under the recovery plan, the government announcement that the amounts initially earmarked for the fund would be doubled in May 2021, from EUR 300 million to EUR 650 million, and the presidential announcement in September 2021 that the fund would become permanent, are encouraging developments.

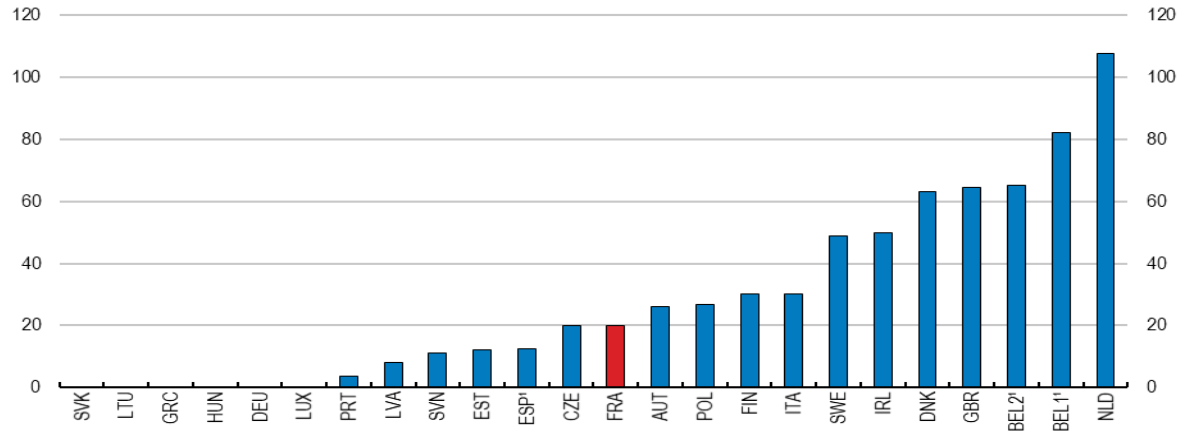
Encouraging waste reduction

Landfill charges are low in France in comparison with other OECD countries (Figure 2.23). Charges on all stored or incinerated waste increased considerably between 2008 and 2015 to encourage local authorities and businesses to prioritise recycling. However, the rate has not increased since then (CGDD, 2017). The optional use of incentive-based charging for waste, which was introduced by law in 2012 and charges users of waste management services according to the quantities that they produce, has still not had much uptake. In 2020, it had been implemented by 200 authorities, and charging applied to almost 6 million inhabitants, well short of the target of 15 million inhabitants set by the Law on Energy Transition. Several OECD countries have introduced large-scale incentive-based charging with very satisfactory results. These include the Netherlands, Japan, Switzerland and South Korea (OECD, 2019c). These systems, which have already proven their effectiveness, should be widely adopted.

Plastic is still not sufficiently recycled in France. According to Plastics Europe, just over 26% of the plastic used in France was recycled in 2019. The plastic recycling rate is almost 40% in Germany, by way of example, although calculation methods are not fully harmonised from one country to the next (Plastics Europe, 2020). France has recently published a law which seeks progressively to limit the marketing and use of single-use plastics, becoming the first OECD country to introduce an objective to eliminate plastic packaging by 2040 (Box 2.1). The law also sets the target of 100% for recycled plastic in 2025. In order to meet this target and increase the recycling rate for plastic or its re-use, France could introduce a plastic bottle deposit scheme as in Germany (Box 2.14).

Figure 2.23. Landfill charges are relatively low

Landfill charge, euros per tonne



Note: BEL 1 – Dutch-speaking Flemish region; BEL 2 – French-speaking Walloon region; ESP refers only to the Catalan region.
Source: European Environment Agency.

StatLink https://doi.org/10.1787/888934286103

Box 2.14. The plastic bottle deposit scheme in Germany

The deposit or "*Pfand"* began in the 1990s in Germany. At the checkout, customers must pay a deposit on most bottles, large glass jars (yoghurt, for example), nearly all aluminium cans, cartons and drinks in plastic bottles. The deposit can then be reclaimed by returning the packaging. For that purpose, machines called "*Pfandautomaten*" are provided at nearly all points of sale. The barcode on the packaging enables the product to be identified and the amount of the associated deposit to be reimbursed. The amount of the deposit varies between 8 and 15 cents, and the practice is optional for customers. Retailers have been required to offer the scheme to their customers since 2006. The collection rate was 98.5% in 2018.

Source: Centre Européen de la Consommation.

Farming must gradually shift to more sustainable practices

Emissions from the agricultural sector have barely changed since the 1990s (Figure 2.24). However, potential for emissions reduction in the sector is high, and abatement costs are lower than in other sectors (CEDD, 2019a). A number of practices and technical measures have already been identified to reduce net emissions from agriculture (both greenhouse gases and ammonia) and the use of chemical inputs. Certain techniques may even lead to carbon sequestration. Some of these practices do not entail major additional costs but are still not well understood by farmers. Others may even improve the economic situation of farmers. However, they require specific investments and considerable working time, and they may alter the cropping system. They therefore represent a risk to short-term yield and require an adaptation period.

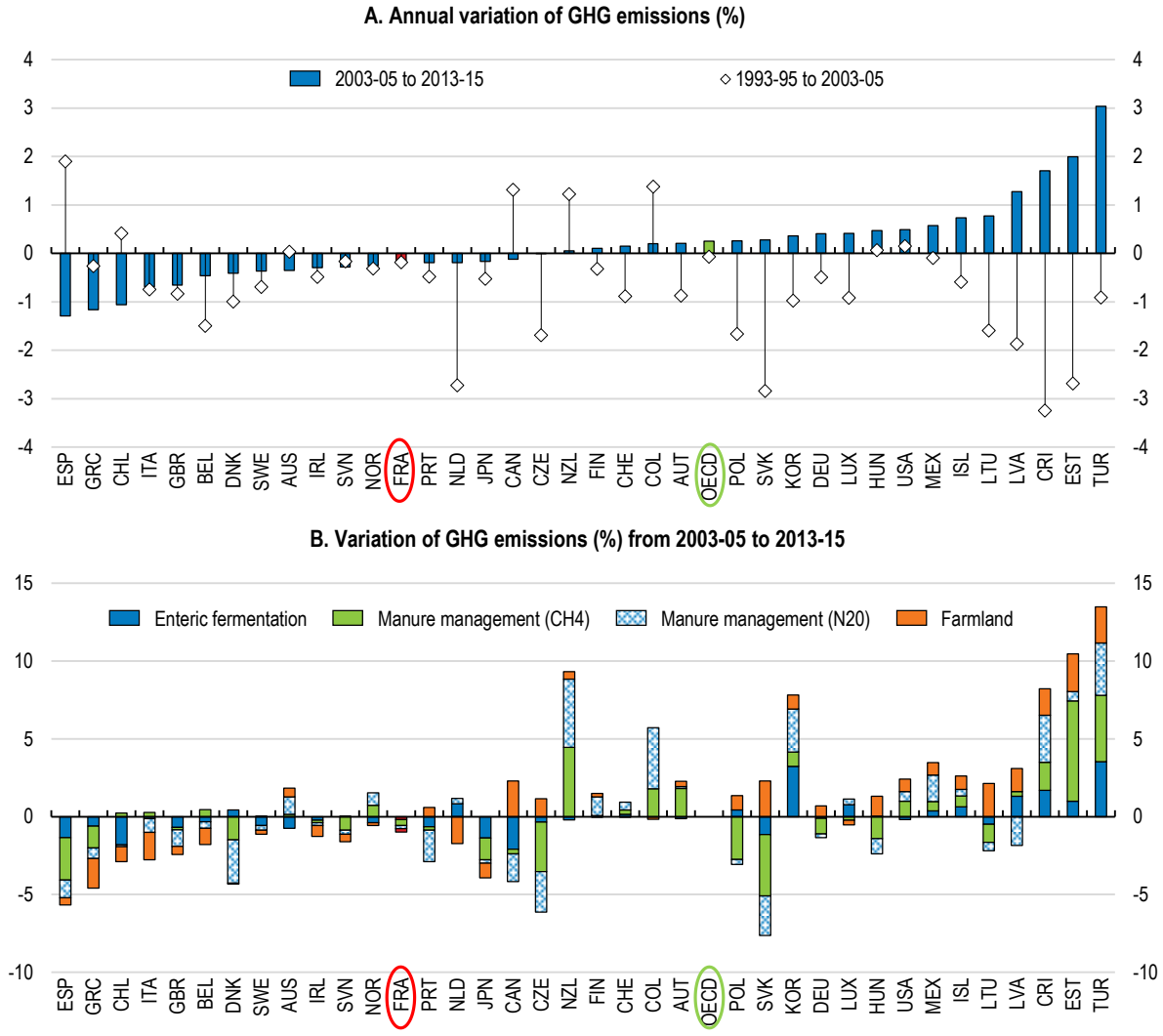
A number of support measures have already been introduced to encourage the adoption of these more environmentally friendly practices, mostly using funds from the second pillar of the European Union's Common Agricultural Policy (CAP). For example, to compensate, at least partially, for investment costs and initial revenue losses associated with organic farming practices (agriculture without synthetic chemicals and subject to strict conditions), an "organic farming conversion and maintenance premium" has been created. In 2018, a three-year trial for payments for environmental services (PSE) was launched, with a total budget of EUR 150 million. The government also introduced agro-environmental and climate payments (PAEC), in 2020, to support the development of agroecology, a farming practice where there is greater reliance on the natural resources offered by ecosystems and only natural inputs are used.

However, the bulk of agricultural support comes in the form of direct payments from the first pillar of the Common Agricultural Policy, distributed depending on the farming land area and with little real environmental counterpart. In Europe, 20% of transfers to farmers could distort the market and even contribute to increase greenhouse gas emissions in the agriculture sector (OECD, 2021f). In contrast, in 2018, financial support aimed at rewarding biodiversity conservation efforts represented only 2% of public financial support to farmers (Bureau et al., 2020). The ongoing negotiations of the new EU Common Agricultural Policy could result in better environmental incentives. The European Commission wants direct payments to be subject to more stringent environmental requirements. Farmers would have to comply with a minimum set of environmental standards to be eligible for income support from the first pillar. The share of direct payments from the CAP budget allocated to these new "ecoschemes" should be about 25%.

Pending the CAP reform and the introduction of these eco-regimes, the share of funding from the second pillar of the CAP allocated to payments for environmental services (PSE) and payments linked to agro-environmental and climate projects (PAEC), could be raised. The design of these payments could also be improved to enhance their environmental effectiveness (DeBoe, 2020). Many farmers believe that these payments are not flexible enough. The payments should be focused less on the specific practices implemented and more on the results achieved, measured by easily observable biodiversity indicators so as to minimise administrative costs, which would allow farmers greater flexibility to optimise methods. Good practice in agroecology, for example, is largely dependent on local conditions and will not necessarily be the same throughout France. A similar payment for environmental services programme, but based on quantitative results achieved, is currently being experimented in Argentina, Finland, Sweden, the Netherlands and Canada (OECD, 2021d). Introducing a minimum revenue in areas of significant environmental interest, in exchange for labour-intensive conservation and restoration efforts, could also be considered (Bureau et al., 2020).

Experience sharing and the widespread dissemination of sustainable farming practice should be stepped-up. Training and awareness-raising activities already exist to promote knowledge transfer and encourage farmers to take action (OECD, 2015). Efforts must therefore be focused on the generalisation and dissemination of those training programmes and awareness-raising activities, in particular through agricultural cooperatives and chambers of agriculture, which should circulate the information more pro-actively (Bamière et al., 2017).

Figure 2.24. Direct agricultural GHG emissions trends in OECD countries



Source: OECD Agri-Environmental Statistics (database); and OECD (2021), *Measuring the environmental performance of agriculture across OECD countries*, OECD Publishing, Paris.

StatLink https://doi.org/10.1787/888934286122

Table 2.2. Chapter recommendations to combine economic recovery and green transition

CONCLUSIONS (main conclusions in bold)	RECOMMENDATIONS (key recommendations in bold)
Reinforce economic incentives	
Exemptions and reduced rates weaken the incentives of environmental taxes. **The level of the carbon price remains uneven across sectors.**	**Gradually withdraw exemptions and reduced rates on environmental taxes.** **Prioritise the progressive alignment of carbon prices across sectors while resuming the gradual upward trend of the carbon component of energy taxes.**
Public acceptance of environmental taxes is low, in part due to their regressive and sectoral effect.	**Link economic incentives with measures to increase their social acceptability when needed.** Prioritise help-to-buy schemes to compensate vulnerable households and firms. Make the use of environmental tax revenues more transparent.
Banking actors do not have adequate knowledge about the risks and opportunities associated with climate change.	Training in the banking sector must be adapted to include a minimum knowledge base on the financial implications of climate change.
The short-term orientation of investors is an obstacle to the financing of environmentally sustainable projects.	Continue international collaboration efforts towards a standard and harmonised definition of "green" investments. Continuously align official investment labels to the most recent developments towards a taxonomy of sustainable activities.
Improve the cost-effectiveness of sectoral policies	
Help-to-buy schemes for less polluting vehicles are not ambitious enough.	**Make the eligibility criteria for the conversion premium and the ecological malus scale more stringent.**
Some support schemes for building renovations do not encourage efficient energy renovations.	**Make aid conditional on achieving a minimum energy efficiency standard and tighten controls on major projects.**
Demand for mobility continues to grow, in particular with increased use of passenger cars.	Introduce a charge for entering large urban centres to reduce congestion and pollution problems and use the revenue to develop public transport.
Road freight transport is increasing to the detriment of rail freight.	Planning of logistics networks, including the location of large warehouses, must be closer to railway lines.
Reliable information on the number of energy renovation building works carried out is unavailable.	Improve statistical monitoring of building works carried out to improve building energy efficiency.
The complexity of public support programmes is a barrier to the energy renovation of buildings.	The different support programmes should be centralised in a single agency which would also act as a single point of contact.
Subsidies for fossil fuels reduce the relative attractiveness of investing in renewable energies.	Taxation arrangements that favours fossil fuels must be phased out.
Support for renewables is focused disproportionately on renewable electricity sources.	The resources available under the renewable heat fund should be increased further.
Reform land use policies	
The bulk of support to the agricultural sector comes with little environmental counterparts. The reform of the CAP should increase environmental conditionality. France has also introduced its own incentives, notably based on the second pillar of the CAP, but they remain limited.	**Reallocate support to the agricultural sector towards payments for agro-environmental services.**
A high number of development and infrastructure projects are still exempt from an environmental impact assessment.	Systematically conduct independent environmental impact assessment for projects that could have significant adverse environmental effects.
Environmental compensation is not sufficiently rigorous, and supply-based compensation is not common.	Supply-based compensation, where the project promoter purchases "offset units", must be developed further.
Taxation on land generally promotes land take.	The planning tax could be reformed by integrating a "bonus-malus" mechanism to discourage land take and encourage densification.
Landfill charges are low in France in comparison with other OECD countries.	Incentive-based charging for waste should be widely adopted.
Plastic is still not sufficiently recycled.	Introduce a deposit scheme for plastic bottles.

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FRANCE

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