



**MINISTÈRE
DE L'ÉCONOMIE
DES FINANCES
ET DE LA RELANCE**

*Liberté
Égalité
Fraternité*

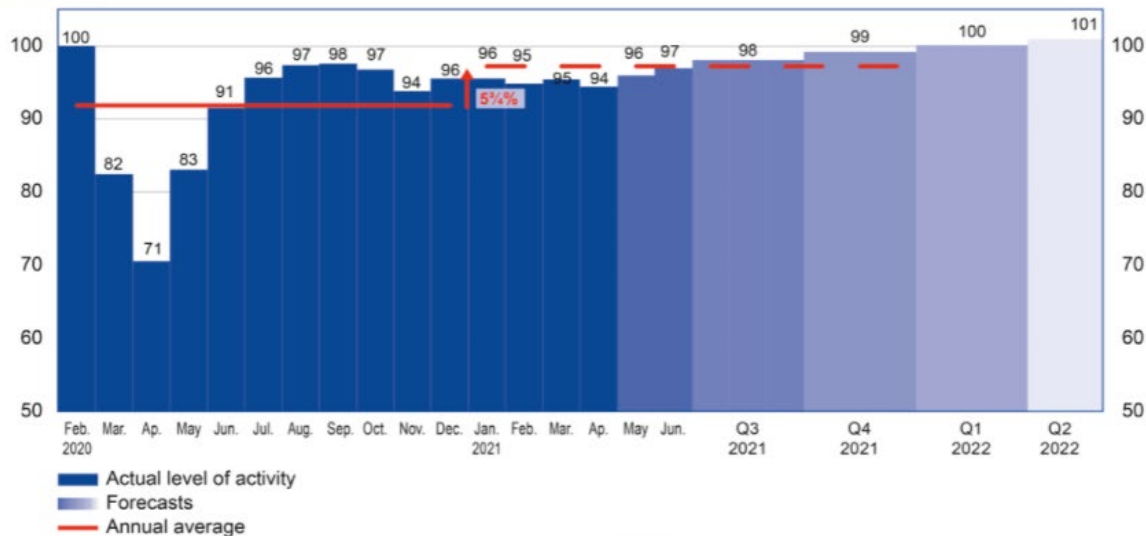
Labor reallocations in the aftermath of the covid crisis: A methodology

IMF-Treasury joint seminar, 28 June 2021

Closing the output gap on aggregate

Chart 1: Evolution of economic activity

(percentage of pre-Covid activity)



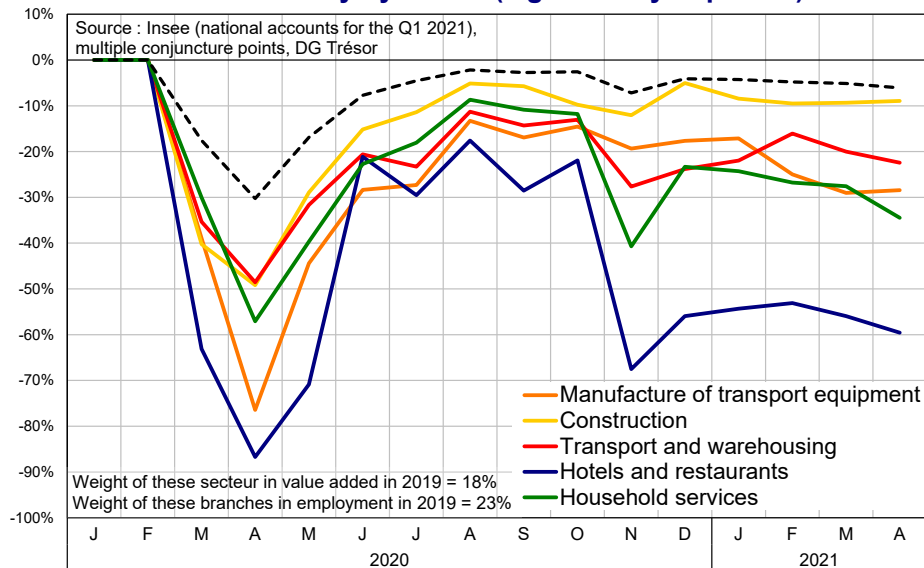
Sources: INSEE data up to the first quarter of 2021, Banque de France projections.

Note: The red lines show the average level of GDP in 2020 and 2021, where the average level for 2019 has been normalised to 100.

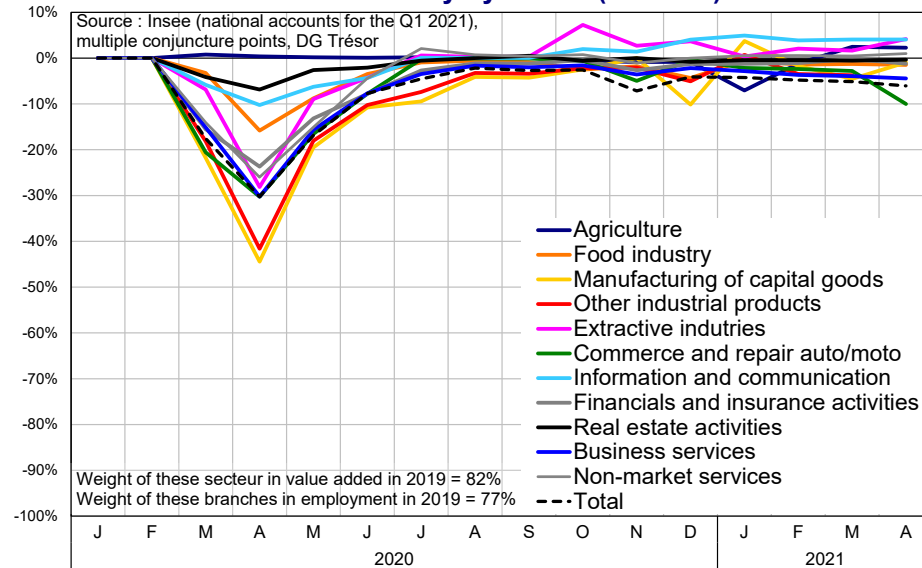
Source: Banque de France, June 2021.

Closing the output gap will require reallocations

Level of activity by sector (significantly impacted)



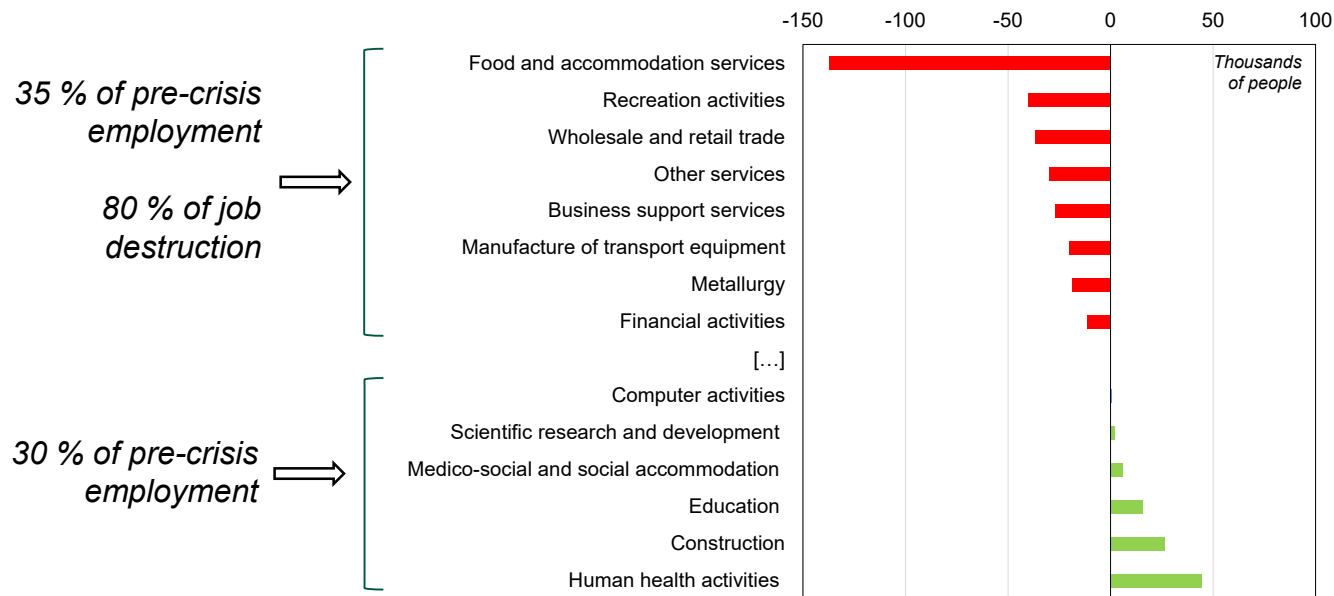
Level of activity by sector (resilient)



→ Across sectors and within sectors

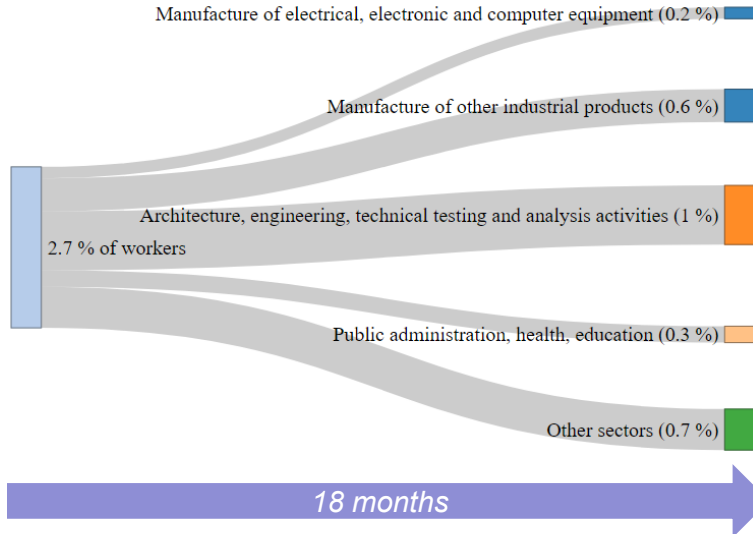
Job destructions concentrated in a few sectors in 2020

Evolution of employment by sector in 2020

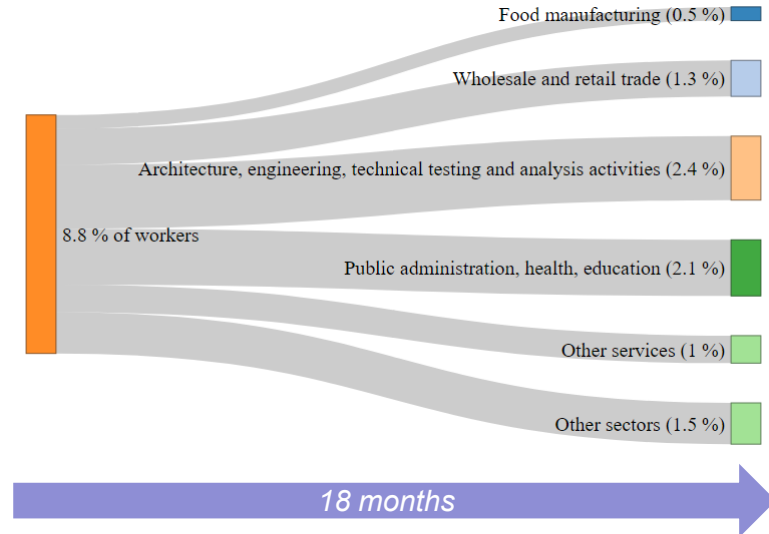


Occupational mobility of workers varies across sectors

Manufacture of transport equipment



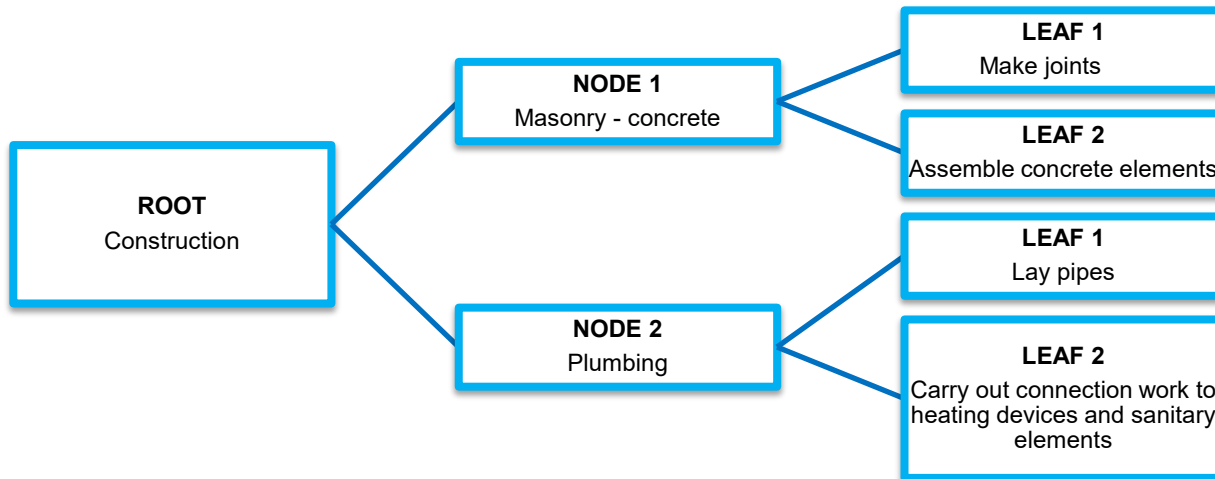
Food and accommodation services



Source: Insee (employment survey, 2008-2018 edition), calculations: DG Trésor. Reading note: On average over the period 2008-2018, 2.7% of people working in the manufacture of transport equipment work in another sector 6 quarters later. Among them, 1% went to scientific and technical activities, 0.6% to the manufacture of other industrial products and 0.2% to the manufacture of electronic equipment. Accommodation and food service workers are more mobile: 8.8% changed of sector over the same period.

The French employment service Pôle Emploi provides data on skills by occupation

These skills are classified in the form of a tree: they are ranked in roots, nodes and leaves.



- On average, an occupation requires 21 node skills.
- The INSEE employment survey gives the weight of each occupation by sector.
- We can calculate the number of occupations in a sector that require each skill. Each occupation is then weighted by their share of employment in the sector.
- Ultimately, for each skill, we obtain the share of employment that mobilizes it in each sector.

Some skills are more marketable than others

Top 15 basic and specific skills most represented in destructive and job-creating sectors in 2020

Skills of the 8 most job-destroying sectors		
1	Team management	53%
2	Order management	51%
3	Stock management and inventories	46%
4	Sale	45%
5	Customer relationship	39%
6	Use of information technologies, computer and office tools	34%
7	Processing of administrative and financial transactions	33%
8	Training animation and coaching	33%
9	Cash register	32%
10	Management of interpersonal, difficult or emergency situations	31%
11	Negotiation	31%
12	Organization of an action or management of a project	30%
13	Checking the conformity of a product, service or equipment	29%
14	Handling	28%
15	Communication actions	27%

x Common skill between destructive and job-creating sectors

Skills of the 6 sectors that create the most jobs		
1	Team management	72%
2	Use of information technologies, computer and office tools	55%
3	Management of interpersonal, difficult or emergency situations	44%
4	Training animation and coaching	44%
5	Processing of administrative and financial transactions	43%
6	Health regulations - hygiene rules	39%
7	General and specialized medicine	37%
8	Safety standards and regulations	32%
9	Humanities and Social Sciences	32%
10	Accounting management and controls	31%
11	Order management	31%
12	Communication actions	30%
13	Organization of an action or management of a project	29%
14	Assistance, advice and nursing care	29%
15	Cleaning - maintenance of premises	28%

x Skill specific to destructive or job-creating sectors

Sources: Pôle Emploi (node skills), Insee (employment survey, 2019 edition). Reading note: 53% of jobs in the eight most job-destroying sectors involve the "team management" skill. This skill is also found in the six most job-creating sectors, where 72% of jobs require this skill.

Measuring skill proximity across sectors or across occupations

Measuring skill proximity between two sectors or two groups of occupations :

- Let s_j be the vector containing shares of jobs requiring each skill in sector j :

$$s_j = \begin{pmatrix} s_{1j} \\ s_{2j} \\ \dots \\ s_{nj} \end{pmatrix} \text{ with } s_{ij} \text{ the share of jobs requiring skill } i \text{ in sector } j$$

- Skill proximity between sectors j and j' can be defined as: $P_{jj'} = \text{Correl}(s_j, s_{j'})$
- The proximity index can also be calculated for groups of sectors: $P_{JJ'} = \text{Correl}(s_J, s_{J'})$, where J are sectors destroying jobs and J' are sectors creating jobs.
- Similarly, skill proximity can be calculated for occupations.

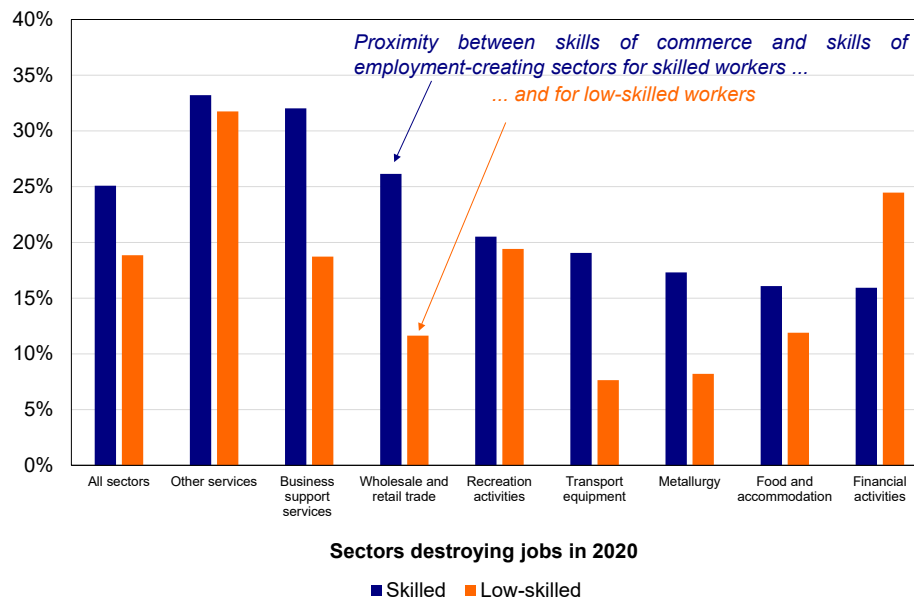
➤ **For 38 sectors, 10 000 occupations and 7 000 skills (leaves)**

10 pairs of sectors

SECTOR 1	SECTOR 2	SKILL PROXIMITY
Pharmaceutical industry	Chemical industry	91%
Activities of households as employers	Medico-social and social accommodation and social action without accommodation	67%
Legal, accounting, management, architectural, engineering, control and technical analysis activities	Telecommunications	58%
Administrative and support service activities	Wholesale and retail trade ; repair of automobiles and motorcycles	56%
Food and accommodation	Manufacture of food, drink and tobacco products	52%
Medico-social and social accommodation	Human health activities	46%
Construction	Manufacture of transport equipment	40%
Arts, entertainment and recreation	Manufacture of food, drink and tobacco products	25%
Food and accommodation	Manufacture of textiles, clothing industries, leather and footwear industry	22%
Arts, entertainment and recreation	Manufacture of transport equipment	16%

Lower-skilled workers have fewer skills in common with growing sectors

Proximity between the skills of workers in affected sectors and those of creative sectors, depending on the affected sector



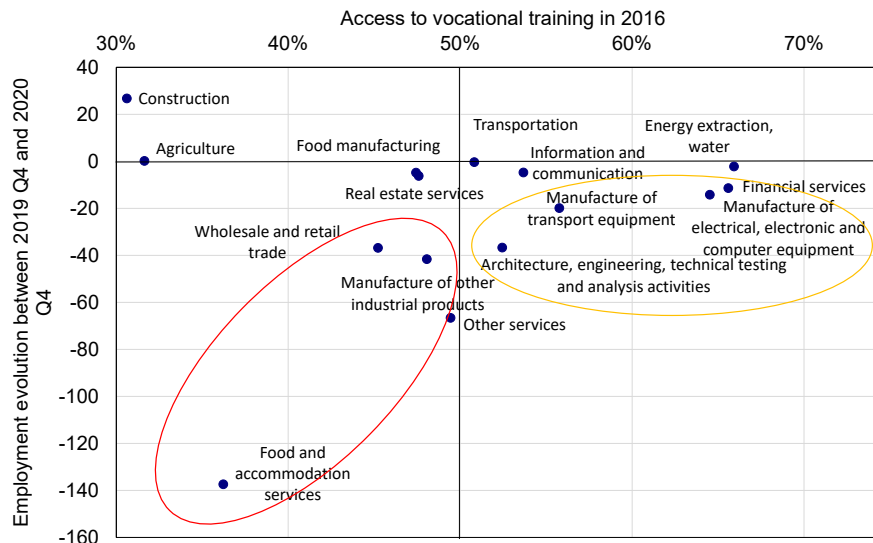
Sectors destroying jobs in 2020

■ Skilled ■ Low-skilled

Reading note: Low-skilled workers in job-destroying sectors have skills more distant from those in job-creating sectors (correlation coefficient of 0.25), compared to skilled workers in job-destroying sectors (0.19). The skills of workers in accommodation and food services are more distant from those of job-creating sectors than those of workers in administrative and support services. Sources: Pôle Emploi (skills), Insee (employment survey, 2019 edition).

Access to vocational training is low in some sectors

Evolution of employment in 2020 and access to vocational training before the crisis



Sources: Insee, Employment survey, adult training survey (AES) 2016. Notes: Share of people having taken at least one training course during the year by sector. Calculations: DG Trésor

The training component of the Recovery plan

Encourage employees in short-time work for a long time to train more

FNE Formation

- € 1 billion to train employees in short-time work
- !/\ mainly mobilized for short training at this stage = increase in skills but no retraining

Ensure that the tools of the Avenir professional law, reinforced in the recovery plan, are well implemented

Pro A

- low-skilled retrain internally within the company
- 200,000 retraining targeted

CPF de transition

- On file selection, funded retraining project
- 25,000 to 30,000 retraining targeted in 2021

Transitions collectives

- Matching supply and demand for skills at local level
- 20,000 to 25,000 retraining targeted in 2021

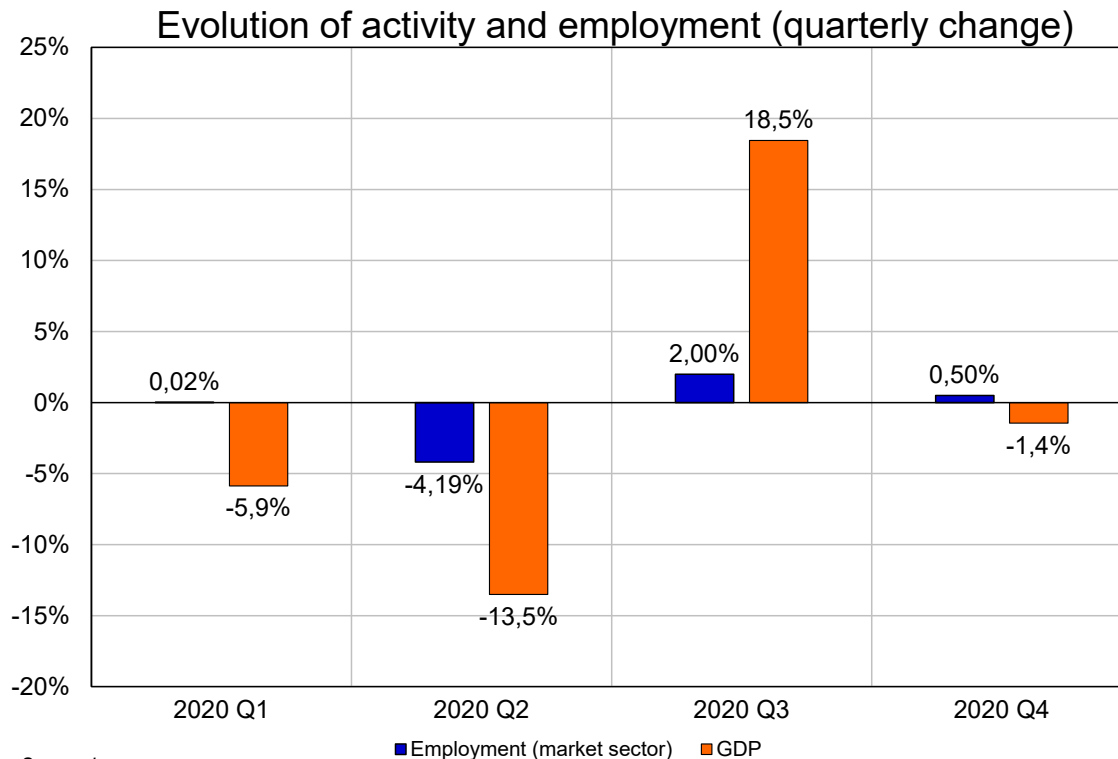
Abondement CPF métiers stratégiques

- Training 100% funded if the job is identified as strategic
- 25,000 retraining targeted in 2021

280,000
possible
retraining

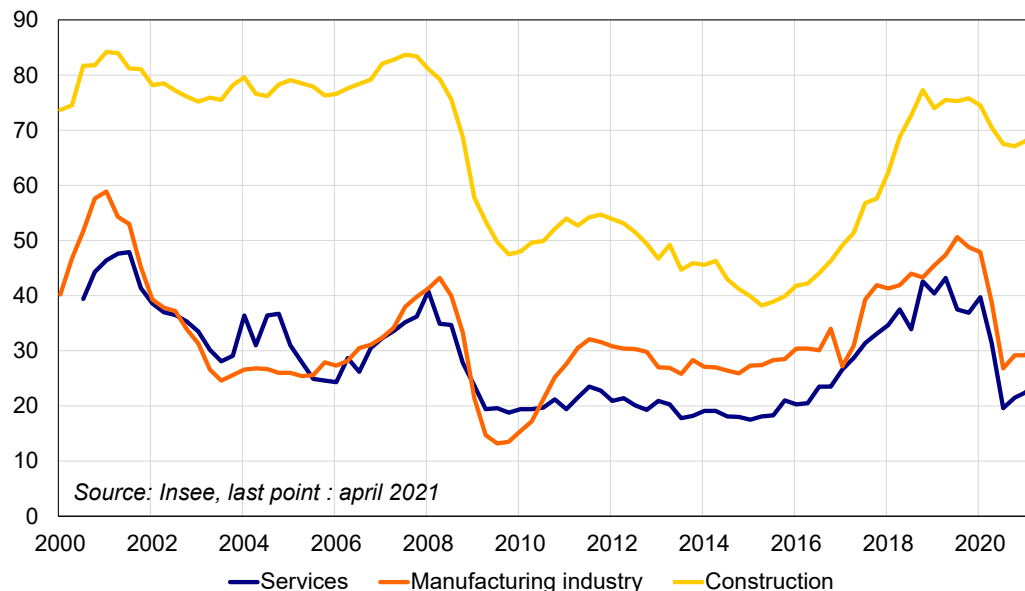
Annexes

The emergency measures helped to preserve employment



Recruitment tensions existed before the crisis in some sectors. Some still probably hold, as the underlying factors will persist - for example, those related to a lack of trained people

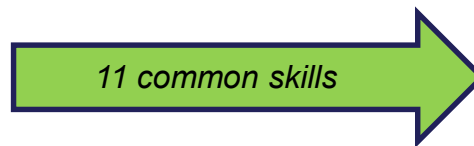
Share of companies declaring that they encounter recruitment difficulties (%)



Example of a comparison of skills between two occupations

Mechanical worker working in manufacturing adjustment and assembly

Skills	
1	Routine acts and maintenance tools
2	Application of standards, procedures, rules
3	Control of the conformity of a product, service or equipment
4	Electricity
5	Mechanical Engineering
6	Production management
7	Handling of tools and equipment
8	Methods of analysis and quantification
9	Quality system
10	Tracing - marking
11	Installation and removal of floor and wall coverings
12	Team management
13	Heat processes and treatments
14	Production engineering
15	Technical drawing
16	Representation of visual information
17	Maintenance of production or collective equipment
18	Operating and information systems
19	Welding techniques and processes - brazing
20	Material specificities
21	Operation of construction and handling machinery
22	Airport operations
23	Machining
24	Operation of materials, machines or systems
25	Boilerwork - sheet metal
26	Electrical or electronic study and design
27	Manufacturing and processing of composite, plastic and rubber materials
28	Authorizations to drive construction and handling machinery
29	Assembly



*59,000 jobs in
job-destroying
sectors in 2020*

*54,000 jobs,
occupation with
recruitment
difficulties*

Construction worker specializing in the assembly of electrical and telecom networks

Skills	
1	Routine acts and maintenance tools
2	Control of the conformity of a product, service or equipment
3	Operation of materials, machines or systems
4	Network and telecom installation and cabling
5	Handling of tools and equipment
6	Measurements and data collection
7	Establishment of security
8	Safety standards and regulations
9	Plumbing
10	Representation of visual information
11	Team management
12	Intervention on electrical or electronic equipment
13	Operation of construction and handling machinery
14	Organization of an action or piloting of a project
15	Welding techniques and processes - brazing
16	Network and telecom management
17	Masonry - concrete
18	Assembly - wiring
19	Electricity
20	Maintenance of production or collective equipment
21	Technical maintenance (street furniture, buildings and premises)
22	Authorizations to drive construction and handling machinery