

Briefing Notes

5th Mercator European Dialogue – The Future of EU Prosperity:
Addressing the Modernization Challenge

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1. future of industries

FRAMING

European industries are a major driver for growth, employment and innovation with the potential to stimulate prosperity by leading sustainable economic transformations within the EU. To date the EU is still a world leader in many industrial sectors, such as pharmaceuticals, mechanical engineering, and fashion industries. However, the European industrial landscape is facing a **projected shortage of ICT skills, and the innovation gap when compared to countries like Japan or South Korea, is still wide**¹. In 2016, South Korea (130.7) and Japan (111.5) registered an excellent global performance of their innovation systems and were among the best global innovation leaders, according to the European Commission's Innovation Scoreboard, placing themselves well above the EU average (101.8)¹.

In a changing world, where global competition is increasing exponentially, EU industries must adjust in order to remain competitive.

Over the last decade, the share of EU GDP provided by the industrial sector has continued to decrease, with repercussions also on employment. European industries have also to face increasing international competition from developing countries and **global value chains – which represent 49% of the world trade in goods and services** – not only in traditional production industries but also in the highest value-added and dynamic manufacturing and service sectors¹.

Yet, to reverse this trend, European industries could encourage innovation, for instance by **developing inter-sectoral spillovers, or by pursuing social and environmental goals**. European industries can indeed compete better internationally, offer greater job opportunities and better satisfy European customer needs if perceived as a balanced industrial landscape of different coordinated industrial patterns.



ADDITIONAL RESOURCES

- » European Commission's new Industrial Policy Strategy [download](#)
- » European Commission [European Innovation Scoreboard](#)
- » Digital Economy and Society [Index](#)

FACTS & FIGURES

3 out of 4

Europeans believe that digitalization will have a positive effect on the economy. However, the same proportion think that digitalization destroys more jobs than it creates, and just about half are convinced that their current job will be soon replaced by automation⁵.

50,000,000

Number of people working in industrial sector jobs across the EU. Since 2013 alone, 1.5 million new jobs have been created in the industrial sector¹.

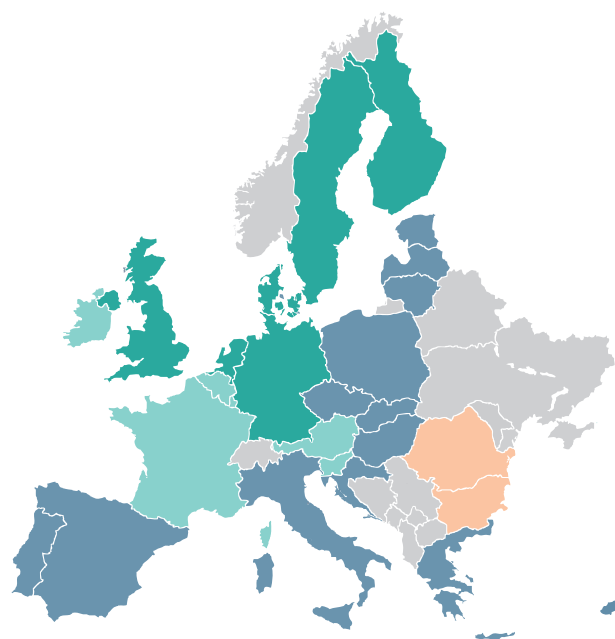
140% and 70%

The US government and businesses invest 1.4 times as much in intangible capital as their European counterparts, while investing less, 0.7 times as much, in tangible assets⁶.

2008 and 2016

Have been the only two years since 1996 when productivity grew faster in the Eurozone than in the US. Overall, productivity growth is slowing down⁷.

Innovators in the EU according to the EU Commission's Innovation Scoreboard

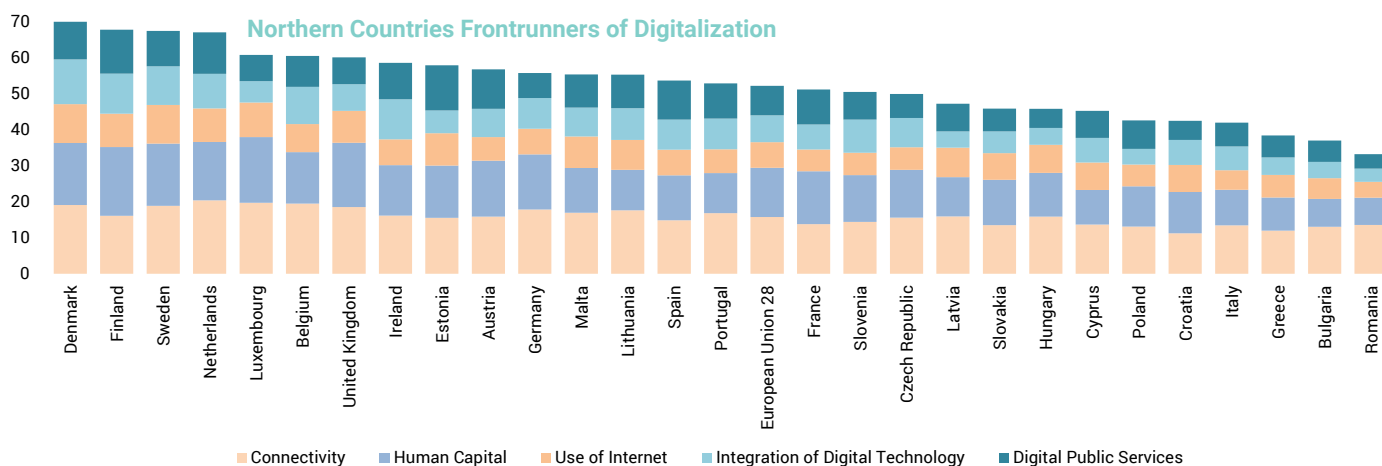


Innovation Leaders

Moderate Innovators

Strong Innovators

Modest Innovators



Member state scores on the European Commission's Digital Economy and Society Index (DESI)

POLICY INITIATIVES

- » To reverse the downward trend in investment, following the financial crisis in 2008, the EU has developed an Investment Plan to boost investments. By the end of 2017, the first pillar of the investment plan, the **European Fund for Strategic Investment (EFSI)** leveraged guarantees worth 31.5 billion euros to generate total investments of 168.8 billion, benefitting mainly SMEs across the EU¹.
- » **German business associations** have launched an initiative called Labs Network Industry 4.0, which supports mid-sized companies in Germany in taking a leading role in the global digitalization. Members can test new technologies, innovations and business models and review their economic feasibility prior to their market launch².
- » In **Sweden**, the Crowdfunding Platform, **FOUND-EDBYME**, attracts investors interested in financing early stage companies and small medium enterprises with innovative ideas. Created in 2016, the platform has allowed 50 million euro to be invested into new business activities within the EU and Asia³.
- » While the digital revolution is transforming the global market, existing barriers could undermine competitiveness and the possibility for citizens to have access to goods and services online, preventing them from fully benefit from digital tools. For this reason, the **EU** is promoting the **creation of a digital single market**⁴.

2. financing prosperity

FRAMING

Two interconnected finance-related challenges faced by Europeans in the wake of the 4th Industrial Revolution are **how to generate investments in innovative businesses; and how to reform tax systems** to be able to finance state responses to possible externalities such as unemployment and business failures, state investment into education and innovation, re-skilling, and infrastructure without inhibiting businesses and innovation.

Some authors have argued that technological changes have always benefitted workers in the long run through salary increases or job creation. However, a competing view is that at least in the shorter term, taxable wage incomes will drop due to automation. This would put additional strain on already weary public finances which would be needed, under this scenario, more than ever in order to cushion the projected job-losses and for retraining the unemployed⁸. The fact that digital businesses have proven to be particularly inventive and ef-

fective in **avoiding taxes** in recent years adds further pressure on governments to revise their tax strategies.

The EU institutions have already begun to draft potential ways forward: the EU Council has included measures to ensure digital businesses' tax compliance in its 'digital single market strategy'⁹. The European Parliament has passed a resolution to protect **whistle-blowers** who reveal tax avoiding strategies¹⁰. The EU Commission has drafted a **code of conduct** for businesses to make companies aware of their tax-paying obligations, though it may need to be adjusted to address the new challenges associated with the 4th industrial revolution¹¹; and it has proposed the re-launch of the **Common Consolidated Corporate Tax Base (CCCTB)** to harmonize the market rules for transnational companies and combat tax avoidance¹².

Just recently the European Parliament Committee on Economic and Monetary Affairs called on representatives from national parliaments to discuss a CCCTB for digital businesses together and there was a communication from the Commission to the EP and the Council on a **fair and efficient Tax System in Digital Single Market**¹³.

Nonetheless, it still remains **unclear how more investment in innovative businesses should be generated**. While new fintechs and digital innovations in the finance sector may potentially help better allocate investments or address consumers' needs more individually, they also cause destabilization in markets and financial systems contributing to increasing volatility and more susceptibility to cybersecurity threats or fraud. The potential for violations of consumer rights is also substantial.

It is a commonly held view that a **renewed regulatory and supervisory framework** that fully captures the potential of digital innovation while making the financial system more resilient against future crises is needed¹⁴.



ADDITIONAL RESOURCES

- » Kallmer, J. (2017) *Digital Tax: The Critical Importance of a Multilateral Approach*, GMF: Transatlantic Take, [download](#)
- » *Note for the attention of representatives of national parliaments on CCCTB*, European Parliament, [download](#)
- » Hadzhieva, E. (2016) *Tax challenges in the digital economy*, Directorate General for Internal Policy, Policy Department A: Economic and Scientific Policy, European Parliament, [download](#)
- » Schwab, K. (2016), *Shaping the Fourth Industrial Revolution*, Project Syndicate, [download](#)

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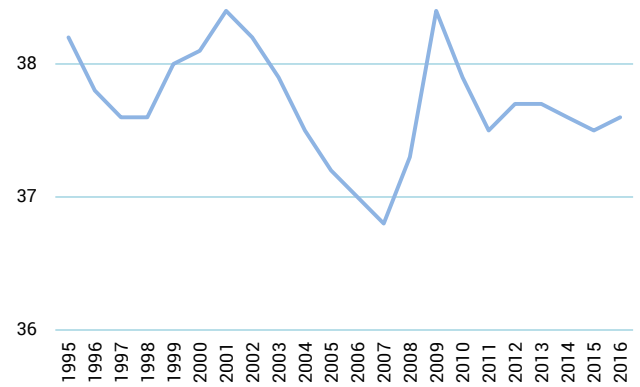
x3

Global investment in fin-tech sector since 2008 has tripled, from \$928 million to \$2.97 billion and is forecast to reach up to \$8 billion by 2018¹⁵.

1,000,000,000,000

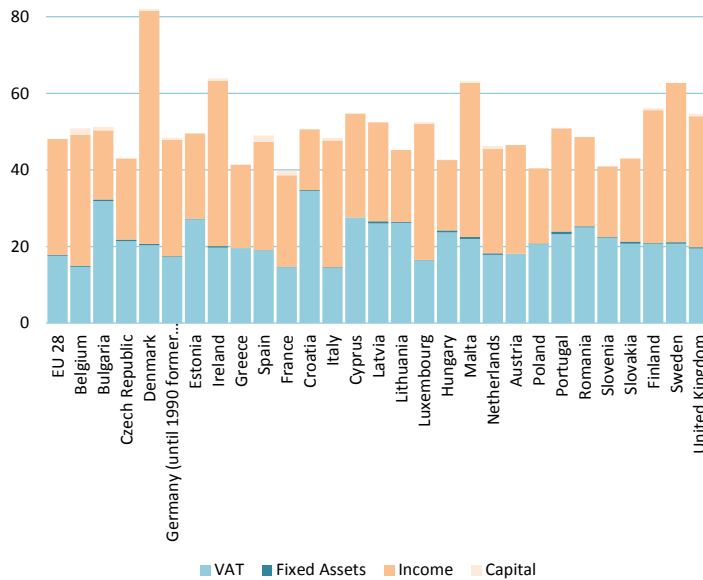
The maximum estimated yearly damage to state budgets in the EU incurred by tax evasion and avoidance according to the European Commission¹⁶.

Salaries and Wages: Shrinking Share of Total Incomes

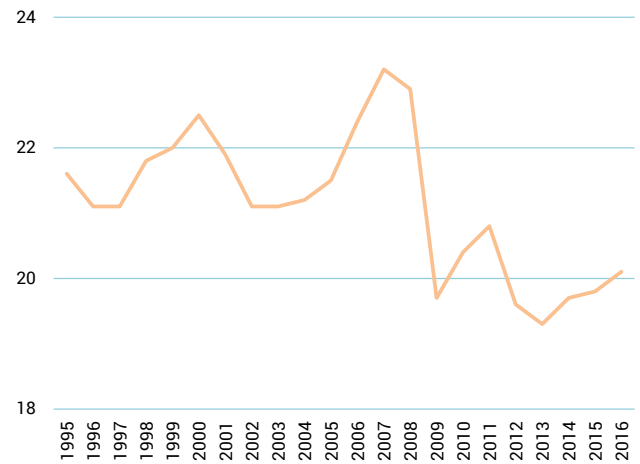


Share of the EU's GDP paid in salaries and wages in %¹⁷

Tax Bases: Highly Reliant on VAT and Incomes



Slow Recovery of Investments After Sharp Drop



Capital formation (investments) in the EU in % of total GDP¹⁶

Composites of government revenues from tax in % of total tax revenue in 2016¹⁸

POLICY INITIATIVES

- » In April 2017, the **UK** government introduced a tax-free allowance of 1,000 pounds for property and trading income. The Finance Act 2016 expanded legislative powers of HM Revenue and Customs to obtain data from digital platforms. Since 2016, Uber drivers are considered “workers” rather than independent contractors¹⁶.
- » As of 2016, the government of **Estonia** legalized ride-sharing and digitally linked drivers’ incomes with the revenue authority¹⁶.
- » In 2016, the **French** government introduced legislation to increase the tax on professional renters using Airbnb. Amounts of more than EUR 23,000 (US\$ 25,200) per year made from renting out homes on P2P economy websites are considered professional income and subject to income tax. The French Finance Act for 2016 imposed new reporting obligations on P2P platform users residing, selling products, and providing services in France¹⁶.

3. educating societies

FRAMING

Investing in education has long been considered a key driver of economic growth. Even though each EU country is responsible for its own education and training system, education is a key component of the Europe 2020 growth and jobs strategy. Drop-out rates from education and training have been in constant decline since 2002, while significant progress has been made in raising tertiary educational attainment, as such the EU as a whole is well on track to reach, respectively, its 10% and 40% targets by 2020, if recent progress is sustained¹⁹.

However, **improving career guidance and the quality and relevance of formal education is necessary, but not sufficient, for reducing skill mismatches**. On the one hand, according to the ILO²⁰, undereducation is declining in many European countries, yet overeducation is also on the rise. Even though higher educational attainment improves employability, overeducation implies a loss of human capital and thus an ineffective use of resources for enterprises and the economy²¹.

Since 2010, unemployment has been on the rise, while the job vacancy rate has remained stable or, in some cases, increasing. The inability of employers to fill vacancies despite high unemployment at the European level may reflect disparities across Member States. For example, **most job vacancies have been created in countries with comparatively low unemployment**^{19, 22}. Imbalances in labor market supply and demand are also attributed to misalignment of the education system with labor market needs as well as ineffective adult education and training schemes.

In 2014 about 25% of highly qualified first job entrants were overqualified for their position. Concerns have been raised that this may hamper both economic productivity and individual potential; highly educated people are likely to be trapped in jobs without opportunities to develop and use their skills²³. Moreover, in 2016, labor shortages appeared in several member states, where **hard-to-fill vacancies such as software developers, welders and doctors are high**, reflecting skills mismatches²⁴.

The impact of the economic crisis and persistently high unemployment have increased the need to better understand where future skills shortages are likely to lie in the EU.

Yet, seeing education merely as an economic factor falls short of appreciating its complexity and impact. Firstly, **education is a key means not just to produce an efficient and well-trained workforce, but also to strengthen citizen engagement and civic participation**. Secondly, the effects of changes in education are often so delayed that short-term economic impact assessments cannot adequately portray their effectiveness. It is thus all the more important to consider education policies in the long term. The strategic use of education, arguably our greatest resource, to address the greatest social and economic challenges of the future is as tricky as it is crucial.



ADDITIONAL RESOURCES

- » ILO (2014) *Skills mismatch in Europe*, [download](#)
- » McKinsey & Company (2017) *Education to employment: Designing a system that works?* [download](#)
- » 10 Years of Jet-Net (2017), a Dutch initiative to promote technology-based career choices. [video](#)
- » Goldblum, A. (2016) *The jobs we'll lose to machines – and the ones we won't*, [video](#)
- » Skills Mismatch (2012) Online resource by Think Young, [website](#)

FACTS & FIGURES

x 2.16

Young (18-24 years) holders of a tertiary degree are more than twice as likely to be employed than their peers with less than an upper secondary degree (2015, entire EU¹⁹).

1 in 5

EU school children do not have sufficient skills in reading, science, and math³².

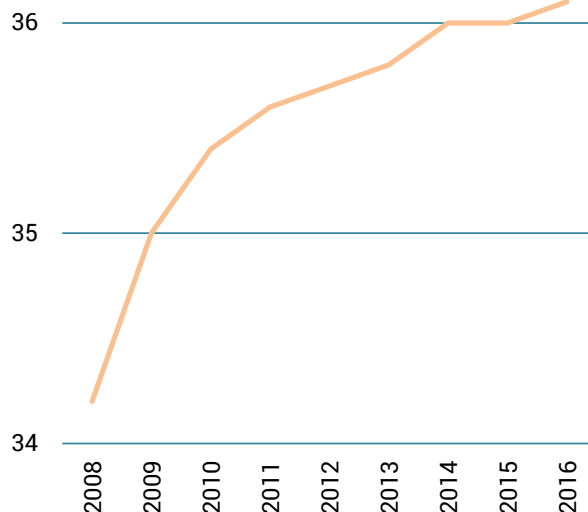
716,600,000,000 €

Total annual general government expenditure on education in the EU (2015). This is the fourth largest government expenditure item after social protection, health and general public services³¹.

35% vs. 11%

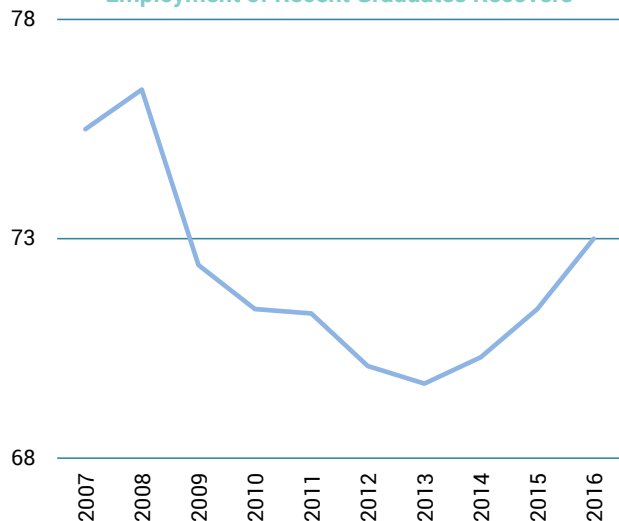
The risk of social exclusion or poverty for people without formal education compared to people with tertiary education in the EU³⁰.

Knowledge-Based Jobs on the Rise



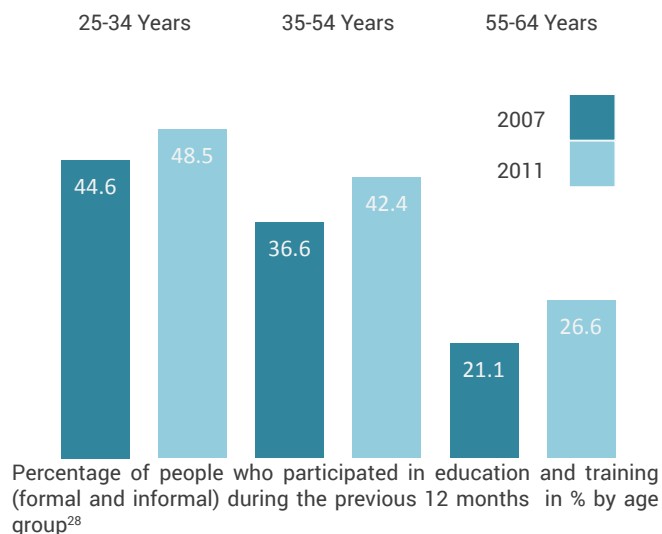
Percentage of employees in knowledge-intensive activities across the EU, share of total employment in %²⁷

Employment of Recent Graduates Recovers



Employment rate of recent (<3 years after finishing education) young graduates (15-34 years) in the EU 28, in %²⁹

Lifelong Learning Still Dependent on Age – Overall Improvements



Percentage of people who participated in education and training (formal and informal) during the previous 12 months in % by age group²⁸



POLICY INITIATIVES

» The European Commission and the Council of the European Union have agreed on common priorities in the area of education and training for 2020. The focus will now be on the effective implementation of those priorities, in particular through the **ET 2020 Working Groups**²⁵.

- » The new comprehensive school program, with a budget of EUR 90 million in 2016, aims to make **Finland** the leading country for modern learning and inspiring education by 2020. The program has three strands: teacher education, innovative pedagogy and local experimentation.
- » At January's **World Economic Forum** pledges were made for a further push to provide more skills to people²⁶.

4. models of work

FRAMING

The European job market is characterized by multiple and divergent realities. To date, **while the majority of European workers hold a permanent contract, it is evident that the structure and the ways that work is performed are changing.** On the one hand, as Europeans are getting older, retirement age has been on the rise and the possibilities for early retirement have been curtailed. On the other hand, digital and technological innovation have been requiring workers to constantly update their skills or learn new ones to remain employable. For these reasons, but also because of perceived economic volatility, companies tend now to prefer short term contracts in order to be able to respond with more ease to changing trends in product and market demands.

Because of the so-called “digital revolution” new jobs are created on a daily basis, whilst **around 5 million jobs with routine tasks, such as low-skill manufacturing jobs or clerical occupations are increasingly at risk of being substituted by automation**, requiring us to rethink the way we organize work³³. First of all, digitalization and technological advancement have created new types of jobs, which did not exist five or ten years ago. An example is constituted by the **rising number of experts needed in the field of cyber-security, web architecture or design.** Moreover, as work becomes more flexible, the traditional sense of professional fulfilment has been altered, and a new balance between working hours and leisure time is ever more in demand. For instance, younger workers are keen to change jobs and career paths more often as personal accomplishment is preferred to job security³⁴.

Institutionalized by the European Employment Strategy (EES) in 1997, flexicurity is a concept based on the idea that an efficient labour market needs to be flexible, while still allowing, for some forms of social guarantees through employment security. In other words, flexicurity does not guarantee workers their jobs by locking the labor market, but it rather is designed to allow them to shift easily to another occupation in case of dismissal. For this reasons, **while formally assuring higher employability, flexicurity has caused non-linear career-paths, and the decline of traditional wage negotiations between social partners.** At the same time, due to the unilateral decline of unions as a paramount policy-shaper and their shrinking core constituency -full-time permanent contract workers- significant shifts seem to be underway in our conception of social and labor policies in the future.



ADDITIONAL RESOURCES

- » Poli, E.(2017), *Horizontal and Vertical Effects of Flexicurity on the Southern European Labour Market*, Next Left, Feps
- » OECD (2016) *The Risk of Automation for Jobs in OECD Countries - A Comparative Analysis*, [download](#)
- » World Economic Forum, Accenture (2017), *Understanding the Impact of Digitalization on Society*, [link](#)
- » German Ministry of Labor and Social Affairs (2017), *White Paper Work 4.0*, [link](#)

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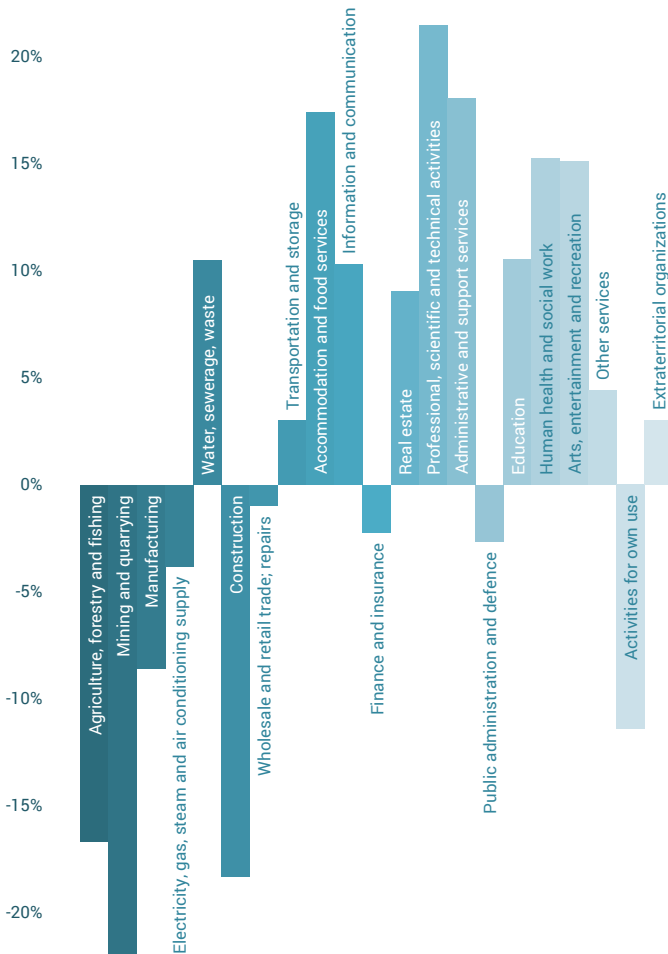
x3

12,000,000

Times as many employed women as men have part-time jobs in the EU 28³⁶.

The increase of older workers aged 55 and above between 2004-2014 in the EU 28³⁷.

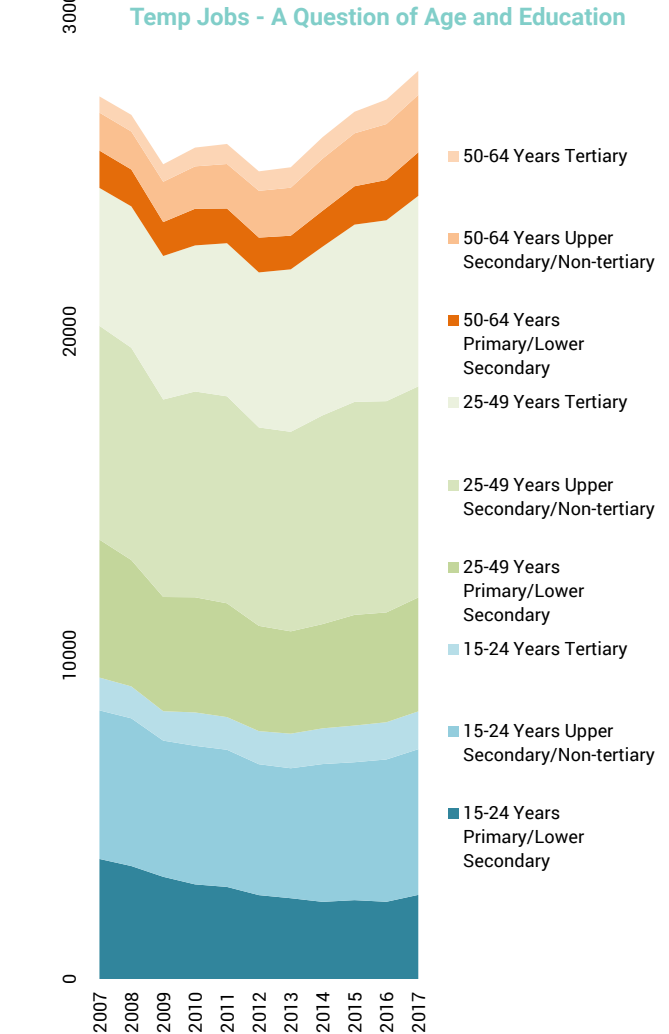
Sectoral Job Growth and Loss since 2008



Percentage changes in jobs by sector, EU 28, from 2008 to 2017³⁶

POLICY INITIATIVES

» **France** has decided to implement flexicurity in labor market reforms, emulating the **Danish model**. The idea at the basis of the flexicurity featured in Macron's agenda consists, on the one hand, in providing greater discretion in dismissing workers for employers, thus making them feel more confident in hiring workers under permanent contracts; on the other hand, it is supposed to enhance access to unemployment protection and training for workers.



Total of temporary employees (EU 28, in thousands) by age group, year and educational attainment³⁶

- » To fight against negative externalities of automation, **UK Labour Party** Leader, Jeremy Corbyn, among others, has proposed the introduction of a tax on robots. By taxing the use of machines, the comparative advantage of reduced working costs could be diminished, pushing companies to rethink their production strategy. In **Italy**, a **Socialist Party MP** has recently presented a draft legislation to the Italian Parliament to create tax incentives against job automation.
- » The **German Ministry of Labor** has launched an initiative called Work 4.0 to add a work perspective to the debate on industry 4.0. The initiative provides a holistic analysis of the structural changes digital technologies will bring to the labor market, as well as a set of policy options characterized by a more preventive approach to labour market policy³⁵.

5. managing unemployment

FRAMING

There are different opinions about how the 4th Industrial Revolution will impact employment. Bowles (2014) claims that there are between 40% and 60% of jobs that could be lost in the EU due to automation, noting that southern Europe is the most at risk. Other studies suggest that the numbers are much lower depending on the methodology used. In their report, Arntz, Gregory and Zierahn (2016) claim that even if a job could be automated, it may not mean that all the tasks within the job will be, so human workforce will not be (completely) replaced³⁸. Also, one of the reasons to be optimistic in terms of employability in the new digital economy is that thousands of new jobs that do not exist today will be created, thus partially compensating the effect of

job losses due to new technologies. For example, McKinsey's Paris office estimated that in the last 15 years, 500.000 jobs had been destroyed by "the Internet" but at the same time 1.2 million were created. Another report claims that there will be a demand of between 20 and 46 million workers (a mix between medium and high skilled workers)³⁹. A boost in labor demand might also be the result of an increase in product demand thanks to a boost in productivity, wages and lower productivity costs⁴⁰. These **contradictory findings show that it is impossible to reliably predict the effects of digitalization on the labor market.**

With that in mind, one challenge already exists now and is likely to persist: long-term unemployment (LTU).

LTU has soared since the sovereign debt crisis, particularly in the southern member states. **People who are unemployed in the long-term are especially unlikely to benefit from digitalization** because they are disproportionately low-skilled and would thus have increasing difficulties in re-entering the job market⁴¹. In addition to the efficiency losses, LTU has been shown to cause personal harm to the afflicted²⁴.

Suggestions as to how unemployment could be prevented in the expected economic overhaul range from a better school education in STEM disciplines and life-long learning to tax benefits for employers who invest in human capital, a reorientation of unemployment programs towards re-skilling or state investment in new digital businesses²⁶. One particularly controversial idea is that of a universal basic income (UBI), which has lately been hotly debated in developing and developed countries alike.



ADDITIONAL RESOURCES

- » Frey, C. B. and Osborne, M. A. (2015) *The Future of Employment: How Susceptible are jobs to Computerization?* Oxford University Workshop Paper, [download](#)
- » Bowles, J. (2014) *The Computerization of European Jobs*, Bruegel, Brussels, [download](#)
- » Bregman, Rutger (2014) *Why we should give everyone a basic income*, TEDx Maastricht, available on [youtube](#)

FACTS & FIGURES

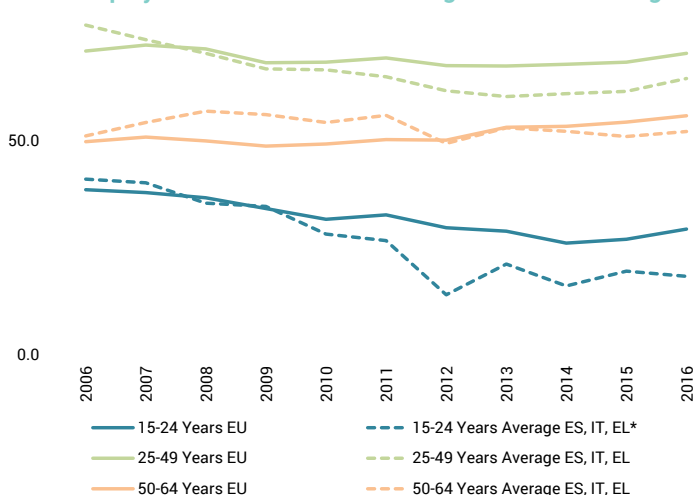
6 in 10

EU citizens would vote in favor of a universal basic income⁴².

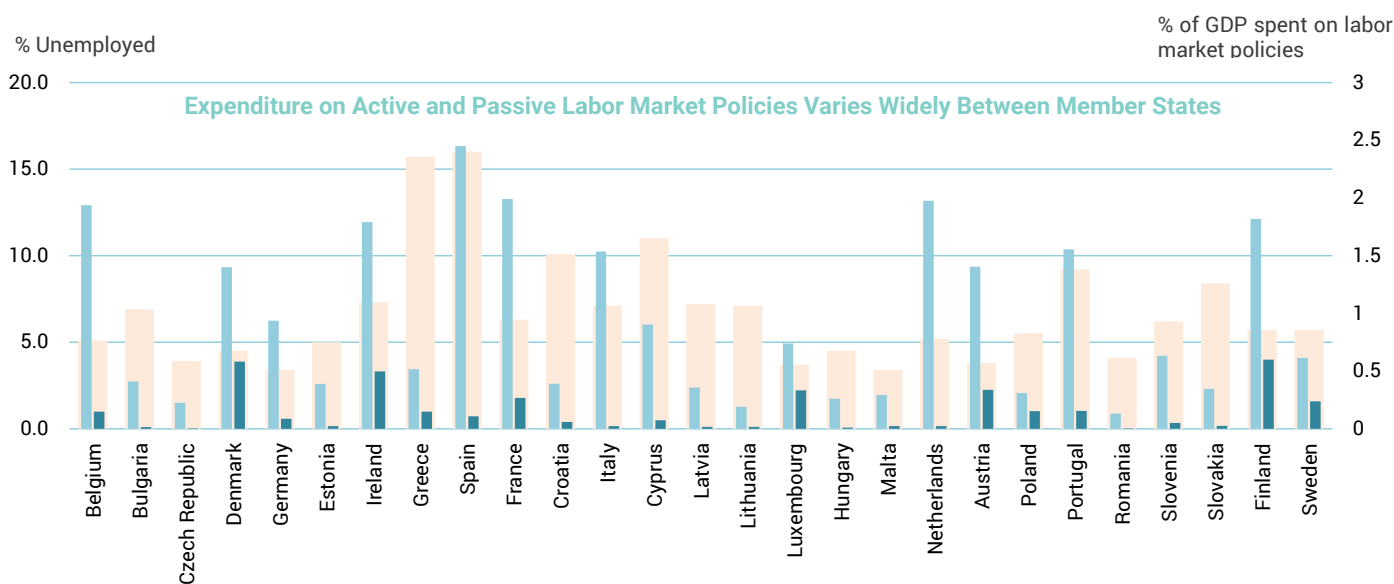
Up to 10%

Of workers throughout the EU are employed in jobs that underutilize their productive capacity and would like to change jobs. This rate is the highest in Cyprus, Spain, and Greece and lowest in Czechia, Bulgaria and Hungary⁴⁴.

Unemployment Rates in the South Higher than EU Average



Employment rates in % by age group in the EU and southern member states. *No data for EL 2015-2016⁴³



Unemployment rates in %, expenditure on active and passive labor market policies in % of GDP (2014)^{45,46}

POLICY INITIATIVES

- » The government of **Finland** has launched a UBI trial in January 2017. The idea was to give an income of 560 € per month to 2000 randomly selected unemployed people without conditions attached. The analysis will consist in evaluating a control group of 175,000 people.
- » The European Globalisation Adjustment Fund (EGF) is an **EU initiative** that provides support to people losing their jobs due to globalization and its implications (externalization, delocalization, etc.). It can be used only when there is a minimum of 500 workers of a single company losing their job and it has a budget 150 Million euros for the period 2014-2020.
- » Policy practices to tackle long-term unemployment have been put in place in different member states. These policy practices are known as **Active Labour Market Policies** and have evolved from passive entitlement-based cash transfers to a set of more advanced tools, including conditional cash transfers, intensive job search support, consolidating public employment services and agencies to create “one-stop shops”, or contracting out public employment services.

6. impact of digital transforma- tions on society

FRAMING

Automation and digital transformation are reshaping our societies with far reaching impacts beyond the mere economic sphere – scenarios span from completely driverless cars to the possibility of fully autonomous robot carers or automated decision making (ADM) processes determining whether people are sent to prison. **The difference in perception concerning this development between industry and the general public is substantial.** Almost 75% of Germans think that ADM processes pose a risk to them personally if the used data and logic remain unknown.

Data collection by private companies are met with criticism by activists and the EU administration, leading to the abolishment of agreements like Safe Harbor and the creation of the General Data Protection Regulation (GDPR). Yet, what we can witness in many societies is the so-called **Privacy Paradox**. If asked whether they find privacy important, most people put a high value on privacy. But in real life they behave differently, disclosing lots of private information about themselves.

When it comes to maximizing the public utility of the digital sphere, there is an intense debate about copyright regulation, the so-called **Digital Dilemma**, and critics argue that many approaches regulating the digital sphere pose neutrality risks because they do not adequately take into account the interests of small and medium-sized enterprises and citizens alike.

Proponents of the use of big data analytics and eGovernance services for public use argue that these approaches could be instrumental in regaining citizen confidence, by helping streamline institutional processes, increase transparency, save tax payers' money and achieve better results through evidence-based policies.

In all these fields, it seems especially hard to resolve the conflict between the risks and opportunities technological advances bring. Policy makers need to seek regulatory approaches maximizing the public good in terms not only of prosperity, but based on rights regarding freedom of expression and access to information.



ADDITIONAL RESOURCES

- » *Give robots 'personhood' status, EU committee argues – Proposed rules for robots and AI in Europe include a push for a general basic income for humans, and 'human rights' for robots*, The Guardian, January 12, 2017, [link](#)
- » European Commission (2017), *Special Eurobarometer 460 on Attitudes Towards Digitalization*, [download](#)
- » Pasquale, F. (2017) *How to Hold Algorithms Accountable*, lecture and debate at the University of Luxembourg, [video](#)

FACTS & FIGURES

23 vs. 12 vs. 4

Estimated billion dollar invested in artificial intelligence development in the USA, China and Europe, respectively, in 2016⁴⁸.

7/10

EU citizens think that robots will steal their jobs, but only half of them think that their job could be done completely by a robot in the future⁴⁷.

8/10

EU citizens agree that robots are necessary as they could do jobs that are too hard or too dangerous for people⁴⁷.

7%

Of EU citizens consider stories published on on-line social networks are generally trustworthy⁴⁷.

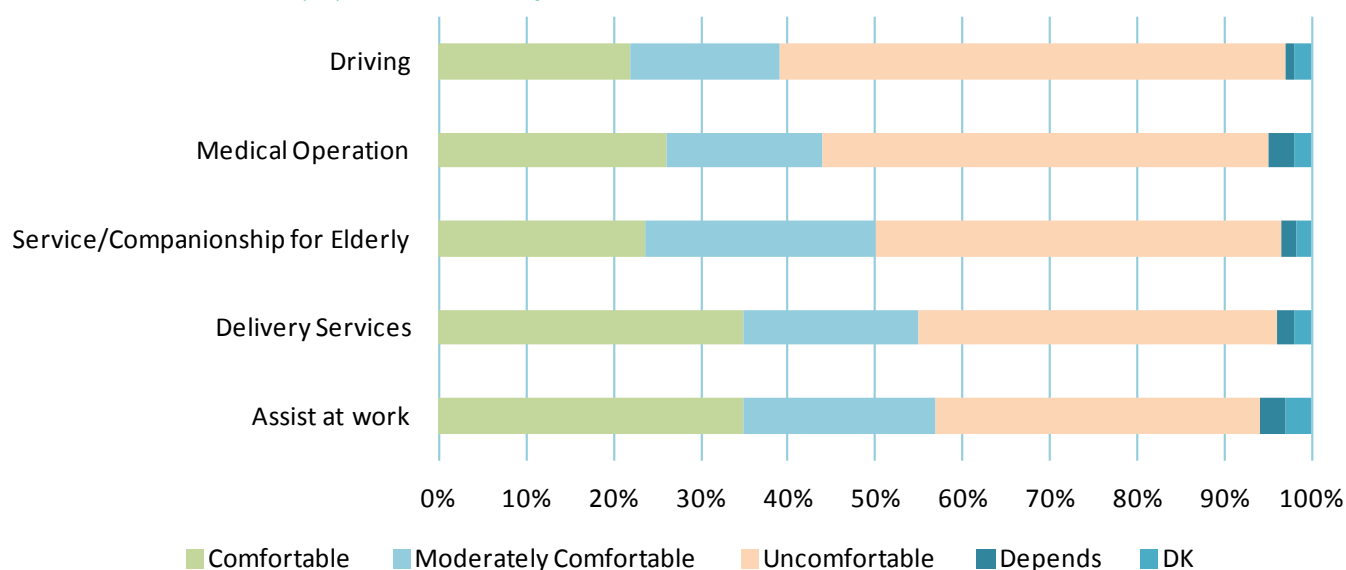
20 million € / 10 million €

EU data protection regulation maximum fines for, respectively: infringement of personal data rights (20 M or 4% of global annual turnover), failure to comply with technical and organizational safeguards (10 M or 2% of global annual turnover⁴⁹.

1.7 billion €

Potential reduction in public administration costs thanks to the use of open data, across the EU by 2020⁵⁰.

How (Un)Comfortable Europeans are to let Robots Perform Certain Tasks for Them



Percentages of responses⁴⁷

POLICY INITIATIVES

» The **GDPR** (General Data Protection Regulation) is one of the most contested regulations ever to be adopted in the **EU**. By its proponents it is seen as a long overdue tool to protect people's privacy. Its adversaries fear that it will have unintended consequences, i.e. benefit the dominant US companies at the expense of EU companies (many of them SMEs) because of enormous costs of compliance. Journalist associations criticize risks for the free flow of information and free speech.

» **Estonian eGovernance:** In just 25 years Estonia has become one of the world's most advanced countries in using eGovernance tools for public use. By 1997, 97% of Estonian schools were on-line. In 2000, Estonia declared access to Internet as a basic human right. E-voting has been in place since 2007. Since 2015, people across the world are able to apply for Estonian e-residency, a transnational digital identity that gives them access to the Estonian business environment and the use of public e-services.

7. sustainable and inclusive prosperity

FRAMING

Tackling resource scarcity while at the same time boosting economic growth has been one of the European Union's top priorities for the last decade. The EU overachieved its collective Kyoto targets from 2008-2012. However, this is mainly attributed to the economic crisis, which resulted in unforeseen emission reductions⁵¹. Moreover, the performance of EU member states considerably varies, and the cost of inaction remains remarkably high.

During the last decade environmental inequalities increased within countries and between socio-economic groups. Already vulnerable groups (due to un- or under-employment and economic hardship) are disproportionately burdened by the impacts of climate change and they are more likely to suffer from exposure to environmental hazards, even though they contribute

to pollution less than high-income groups. National climate change policies may even alter income distributions and generate unequal costs for these vulnerable groups⁵². For example, increased energy prices due to carbon prices or taxes hit low-income groups relatively more than others, unless tax systems are significantly altered.

Societal cohesion is further strained by economic inequality. **The OECD argues that inclusive prosperity may not only help address the normative question of social inequality, but is necessary to prevent a drop in productivity.** Other voices in academia go as far as to claim that there is a fundamental incompatibility of inclusiveness and sustainability with the current strive for economic growth and the resulting demand for ever-increasing amounts of resources and energy. There are diverging views on whether technological advances will help to address these challenges or exacerbate them. In his seminal book "Capital in the Twenty-First Century", the economist Thomas Piketty posits that continuing on the path of increasing income inequality would endanger the very foundations of democracy⁵³.

For the time being, some governments and businesses are discovering that protecting the environment can be good for business and jobs. **European green industry** has been one of the few economic sectors that continued to flourish in terms of revenues, trade and jobs since the 2008 financial crisis, **adding 1.2m jobs between 2000 and 2017 as one of the few sectors creating jobs**⁶¹. However, most of those jobs were subject to subsidies and incentives and are not yet fully competitive against traditional employment.

The major challenge in moving ahead is setting the correct incentives for societies to move in the right direction, which may include re-defining well-being in a way that reflects citizens' experience, not just in monetary terms.



ADDITIONAL RESOURCES

- » IIER (2011) *Low Carbon and Economic Growth – Key Challenges*, [download](#)
- » ILO (2017) *Only Few Countries Combine an Environmentally Sustainable Footprint with Decent Work*, [link](#)
- » OECD (2011) *Divided We Stand. Why Inequality Keeps Rising*, [download](#)
- » OECD (2017) *Investing in Climate, Investing in Growth*, [download](#)
- » Keynote address by Jean-Claude Juncker (26/03/2015) at the Europe Business Day 2015, [video](#)
- » European Investment Bank (2017) *Investment in the EU: from recovery to sustainable growth*, [video](#)
- » OECD (2017) *Growing Green Economies*, [video](#)

FACTS & FIGURES

1 in 20

Of the G20 countries has seen an increase in labor shares of income over the past 20 years. Decreasing labor shares of income are correlated with greater income inequality⁶¹.

3,600,000,000

Number of people who together hold as much wealth as the richest 8 individuals on the planet⁶².

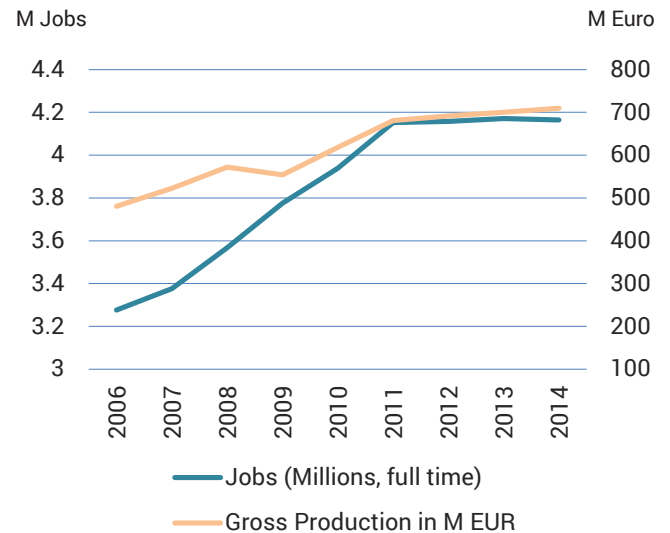
1 in 10

EU citizens are unable to adequately heat their home in winter⁵⁹

5.6

Jobs created in the environmental sector for every other job created in the EU between 2000-2014⁶⁰

Green Economy Grows and Provides Jobs



Growth of the environmental economic sector, EU 28⁵⁹

POLICY INITIATIVES

- » In 2001, the **Swedish government** implemented an environmental tax reform program that aimed to reallocate taxes from labor to environmentally harmful activities (CO2 and environmental taxes on vehicles, waste landfilling, and pesticides). Between 2001 and 2006, the government raised 1.6 billion euros in additional environment-related taxes and reduced personal income taxes and social contributions, focusing on low-income households⁵⁴. This is in line with the country's recent efforts to refocus development on well-being, rather than just economic growth. A new index has been developed to account for other aspects concerning quality of life and long-term sustainability⁵⁵.
- » **Denmark** has had a long-standing focus on integrating environmental and climate issues into its educational and vocational training systems. While introducing an explicit green jobs program, Denmark's Ministry of Employment at the same time focused on ensuring that the labor market is efficient and well-functioning. These conditions have in turn allowed companies to move into new markets, like green technologies. Thus, a combination of incorporating environmental topics into the existing educational and vocational schemes

together with good labor market policies have enabled Denmark to become a leader in green technologies, with 600 clean-tech companies employing 78 thousand people^{56, 57}.

- » The **European Social Fund** is also supporting actions to upgrade workers' skills. In Spain, for example, the ESF committed more than EUR 22 million to a Green Jobs Programme which has helped around 60 000 people acquire skills through 2000 different training courses.
- » In line with the national strategy to transition towards a green economy, **France** has established the National Observatory for Green Economy Jobs and Skills, which forecasts the sectoral and macroeconomic impact of the green transition, with special attention to its implications on the numbers of jobs and skills requirements. Partnerships have been developed with trade unions, employer organizations and Pôle Emploi (the public employment service). Pôle Emploi has studied the supply and demand for green skills to guide the design of its programs to up- or re-skill job-seekers to better meet the requirements of this transition^{57, 58, 59}.

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