European Commission

The impact of reforms supported by the Recovery and Resilience Facility in the area of the labour market

Prepared by CEPS and Ecorys
January 2026

EUROPEAN COMMISSION

Directorate-General for Economic and Financial Affairs
Directorate B — Investment, growth and structural reforms
Unit B.4 — Economics of Resilience and Transition

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Manuscript completed in December 2025

1st edition

Luxembourg: Publications Office of the European Union, 2026

PDF ISBN 978-92-68-36305-8 doi:10.2765/6071600 KC-01-26-010-EN-N

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List of acronyms

ALMP	Active Labour Market Policy
CSR	Country-Specific Recommendation
DiD	Difference-in-Difference
EPL	Employment Protection Legislation
EU	European Union
EU-LFS	European Labour Force Survey
EU-SILC	European Statistics on Income and Living Conditions
GDP	Gross domestic product
ILO	International Labour Organization
JSA	Job Search Assistance
LABREF	Labour Market Reforms Database
NEET	Not in Employment, Education, or Training
OSH	Occupational Safety and Health
PBD	Potential Benefit Duration
PES	Public Employment Services
RRF	Recovery and Resilience Facility
(N)RRP	(National) Recovery and Resilience Plan
SCM	Synthetic Control Method
SSC	Social Security Contributions
TFP	Total Factor Productivity
UB	Unemployment Benefits
VET	Vocational Education and Training
WB (learning)	Work-based (learning)

Executive Summary

Background

The Recovery and Resilience Facility (RRF) is the EU's flagship instrument to support post-pandemic recovery by enhancing resilience, preparedness, adjustment capacity, and growth potential across Member States. Labour market reforms and investments are central to this agenda, reflecting the European Commission's emphasis on employment, skills, and the creation of high-quality jobs as drivers of cohesion and upward convergence.

This study examines how selected Member States have designed and implemented key labour market reforms under their National Recovery and Resilience Plans (NRRPs) and assesses their effects on labour market outcomes –particularly employment– and, where possible, on GDP and potential growth. The latter analysis focuses on impacts transmitted through labour market channels; macro effects related to higher public spending or total factor productivity are not modelled.

The study covers eight reforms across four Member States that were selected due to their advanced state of implementation at the start of the project:

i. France: (i) reform of public unemployment services and (ii) of the unemployment insurance system;

ii. Greece: (i) the modernisation and simplification of labour law and (ii) the modernisation of the public employment services (PES);

iii. Portugal: (i) reform to promote decent work, targeted at platform workers in particular; and

iv. Spain: (i) the simplification of employment contracts, (ii) the modernisation of active labour market policies (ALMPs), and (iii) the digitalisation of PES.

Methodological approach

Labour market reforms included in the NRRP are complex and generally consist of a variety of measures. The analysis builds on a common classification framework to analyse each reform, determine expected labour-market impacts, and identify suitable indicators. This framework underpins the assessment of each reform.

The first step of the analysis examines the rationale and relevance of the different reforms, that is, how effectively they address pre-existing labour market challenges, a key precondition (though not guarantee) for meaningful impacts.

The rationale is evaluated by comparing the reforms' expected effects with structural needs identified in the 2019 and 2020 Country Specific Recommendations (CSRs), the broader EU objectives (e.g. the European Pillar of Social Rights) and insights from stakeholder interviews. This analysis is complemented by an assessment of coherence, exploring how each reform aligns with related policy measures and initiatives at the national and EU levels.

The quantification of labour market impacts relies on a combination of literature review, new empirical analysis using the EU Labour Force Survey (EU-LFS), and advanced econometric methods aimed at isolating the causal impact of each reform on employment. Given their design, timing, and data availability, only a subset of reforms allows for full quantification. The macroeconomic impacts are assessed using a production function approach to translate observed employment changes to GDP and long-term growth effects. Importantly, the analysis excludes direct fiscal expenditures (investment) associated with the reform. This exclusion reflects the fact that the reforms with the largest expected labour market impacts did not involve investments and were primarily implemented through legislative acts. Conversely, some reforms, typically those related to PES, were accompanied by investments but had relatively small aggregate effects on the labour market. The methodology does not allow for the quantification of the macroeconomic impacts of such reforms.

The rationale and relevance of the reforms

All four countries examined face long-standing structural challenges in their labour markets. The analysis confirms that the selected reforms target these weaknesses.

Despite individual country-specificities, four of the eight reforms (in Greece, Spain and France) focus on PES, either through the generalisation of new individualised services (as in France) or through broader modernisation efforts that improve governance, efficiency, and digitalisation (Greece and Spain). These reforms are intended to strengthen support for disadvantaged groups (e.g. youth, long-term unemployed), enhance labour market matching and ALMPs, and overcome capacity constraints that weighed on the effectiveness of PES.

For these reforms, available data primarily capture outputs rather than outcomes. The indicators suggest increased assistance to jobseekers and increased uptake of services (e.g. training), although outreach and coverage of certain target groups for PES (e.g. young individuals Not in Employment, Education or Training (NEET) aged 15-29) did not improve. This evidence is descriptive as it was not possible to analyse re-employment outcomes of jobseekers registered with PES using the EU-LFS.

In parallel, other reforms, notably the French unemployment insurance reform, the Greek modernisation of labour law, and the Spanish simplification of contracts, seek to reduce labour market segmentation and/or promote more

secure and stable working arrangements, addressing persistent divides between different categories of workers.

Each reform has measurable progress toward its main objectives, particularly in terms of impacts on target groups or institutional changes, thereby contributing to better working conditions and fairer and more inclusive labour markets. More specifically, we find that the reform of the unemployment insurance in France succeeded in incentivising faster re-employment of jobseekers, although this did not necessarily translate into more stable working relationships (i.e., longer duration contracts). Reforms in Spain and Greece proved effective in tackling long-standing forms of labour market segmentation, thereby promoting more secure forms of employment. In Spain, the reform on the simplification of contracts led to a significant reduction in the prevalence of temporary contracts. The modernisation and simplification of labour law in Greece improved job stability and fairness on the labour market by harmonising dismissal provisions between white- and blue-collar workers and by establishing new provisions related to work-life balance and parental leave, supporting parents' participation in the labour force.

These positive effects are noteworthy and contribute to improving working conditions for certain groups of workers. However, our analysis reveals that, except in the case of Spain, these reforms have not yet generated positive effects on aggregate employment. This outcome may reflect the limited time elapsed since their implementation and the associated data constraints, as well as the lag with which aggregate effects typically materialise. Furthermore, for some reforms (for instance, those focusing on inclusion), the groups affected are not large enough to translate into measurable impacts on aggregate employment. Without effects on employment, our methodological approach is unable to estimate macroeconomic impacts of the reform. As a result, only the reform on the simplification of contracts in Spain is subject to a macroeconomic assessment. While the effects on GDP are estimated to be of substantial magnitude, the uncertainty around the actual impact on employment warrants a cautious interpretation of the results

Labour market and macroeconomic impacts

In **France**, the unemployment insurance reform represents a comprehensive overhaul of the system, modifying key parameters such as the benefit levels and their duration to incentivise faster re-employment. It also targets the high prevalence of short-duration contracts by tightening affiliation conditions and increasing social security contributions for firms with high job separation rates in specific sectors. Combined with the introduction of a sliding scale for high earners (decreasing profile for benefits through time), these measures are expected to promote more stable forms of employment and to curb government expenditure. The reform of unemployment services is complementary and introduces two measures to enhance labour market intermediation and improve job search assistance (JSA), in particular for persons with disabilities.

In terms of impacts on the labour market, the reform of unemployment services is associated with an increased satisfaction reported by both jobseekers and employers. By contrast, the number of jobseekers with a disability and registered at the PES did not significantly increase following the reform, and positive but small improvements in the disability employment gap could only be identified in our descriptive analysis.

These results are broadly consistent with the evaluation requested by French National Authorities, showing a positive effect on the job finding rate and a small decrease in the share of fixed-term contracts with duration shorter than one month. No statistically significant effects were detected on aggregate employment, nor on the stock of open-ended contracts. This implies that, up to now, no macroeconomic effect could be estimated according to our approach.

In **Greece**, the modernisation and simplification of labour law, implemented through Law 4808/2021, constitutes a major reform of the employment legislation. It covers different policy domains, including employment protection legislation, working time, and work-life balance. The reform aims, among other objectives, to reduce segmentation across gender (particularly between parents) and between blue- and white-collar workers. The law further includes provisions related to overtime, Sunday openings, telework, labour fraud and platform work. In parallel, the restructuring of the PES constitutes a comprehensive modernisation which improved governance. It led to a shift towards personalised, employer-connected, training-linked services to strengthen activation and outcomes.

In terms of labour market impacts, evidence collected suggests that the new law expanded parental-leave use without reducing employment, improved blue-collar job stability by harmonising dismissal rules with those of white-collar workers, and strengthened activation and training within PES. This enhanced support for the unemployed had no visible effects on registrations at the PES. Overall, these changes have not yet led to any measurable effects on employment that could be associated with a macroeconomic impact.

In **Portugal**, the introduction of the Platform Work Reform, included in the Decent Work Agenda and the Portuguese RRP, seeks to address labour market duality and the rise in non-standard employment, particularly in platform work. A central element of the reform is to strengthen workers' protection through the introduction of a presumption of dependent employment, which facilitates the reclassification of contracts into the more standard employee relationship. This, in turn, improves working conditions and access to social security and employment protection legislation.

In terms of labour market impacts, the available evidence does not allow for the detection of any measurable changes in employment levels. This is largely due to the limited data available since the reform’s implementation, as well as the inherent difficulty of capturing platform work using traditional surveys (like the EU-

LFS), which are primarily designed to assess standard forms of employment. Consequently, no macroeconomic effects were estimated for this reform.

In **Spain**, the simplification of contracts was designed to promote the use of open-ended contracts and reduce chronic labour market segmentation. The reform restricted the use and the duration of temporary contracts and introduced a new open-ended contract for seasonal work. The reform also revised work-based learning contracts (e.g. traineeship) and introduced new provisions to fight labour fraud. Complementary PES reforms focused on the modernisation of ALMPs and digitalisation of services, improving governance, inclusiveness, integration, and service efficiency.

In terms of labour market impacts, entry into force of the PES reforms coincides with an increase in active support to registered jobseekers, and a higher participation in training and education programmes. However, the overall number of registered jobseekers shows little change, and outreach to vulnerable groups (e.g. NEET, non-native jobseekers) appears to have declined between 2021 and 2023 (the most recent year for which data is available).

By contrast, the reform related to simplification of contracts had large and significant effects on the prevalence of fixed-term contracts, particularly benefitting young workers, women, and non-native workers. Positive effects were also identified on the separation rate from employment to unemployment and on employment duration of younger workers, suggesting that the reform may have contributed to increasing job security overall. The estimated impact on aggregate employment is clearly positive but characterised by some level of uncertainty. Despite this limitation, an average estimated employment increase of about 3%, based on alternative counterfactual scenarios, is used to assess the macroeconomic impact. The analysis indicates that the reform may have increased GDP by as much as 2% compared with a scenario in which the reform did not occur. However, these results should be interpreted with some caution: Spain's post-COVID recovery, strong immigration inflows, and other concurrent reforms may have amplified employment effects and, consequently, GDP.

Taking these limitations into account and based on the large documented shift from temporary to open-ended contracts that the reform triggered, an additional counterfactual scenario was constructed by modelling a productivity difference between permanent and temporary workers as a potential driver of GDP growth. Assuming a 5% productivity premium for permanent workers, smaller (than in the previous case) but still positive GDP gains of approximately 0.14% of GDP in 2022 and 0.3% of GDP in 2023 were estimated. The simulation also shows that even modest productivity differences between workers on open-ended and temporary contracts can produce tangible and long-lasting macroeconomic gains. Finally, the reform appears to have affected potential GDP, though more modestly than actual GDP.

Conclusions and final considerations

Overall, the analysis shows that all reforms address genuine and often long-standing labour market challenges and the observed labour market outcomes are generally aligned with the expected impacts, addressing pre-existing structural challenges and responding to identified needs. However, impacts vary considerably depending on the reforms' scope and specific objectives.

Among the reforms examined, only the Spanish simplification of contracts shows measurable macroeconomic effects to date, reflecting methodological constraints and data limitations. The latter is expected to alleviate as more data becomes available over time.

Measuring reform's impacts, particularly at the macroeconomic level, is inherently challenging. Data limitations, overlapping policies, and the structural nature of many interventions constrain the ability to isolate causal effects. Nevertheless, the approach taken in this report can bring valuable insights for future attempts at estimating macroeconomic effects of labour market reforms. In particular, starting from state-of-the-art causal inference methods to isolate the impact of the reform on employment, and input the counterfactual level of employment in the macroeconomic analysis, constitutes a promising approach, more intuitive and less demanding than relying on complex models. Furthermore, as most reforms analysed involve limited or no fiscal expenditure, their macroeconomic influence does not operate through traditional fiscal multipliers but through labour market outcomes, reinforcing the relevance of a production function framework, ideally adapted to account for changes such as productivity differentials.

Finally, a key insight from the study is that macroeconomic gains, while desirable and easy to communicate, should not be the sole measure of success. Reforms that strengthen processes and institutions, enhance service delivery, or improve social inclusion, contributing to important targets (e.g. European Pillar of Social Rights), can yield significant long-term benefits even if these are not immediately visible in aggregate statistics, whether on employment or GDP. A nuanced assessment, one that considers macro, meso, and micro-level effects, is essential to fully understand how labour market reforms contribute to resilience, cohesion, and convergence across the EU.

Introduction

Endowed with EUR 648 billion (2022 prices) to support the post-pandemic recovery, the Recovery and Resilience Facility (RRF) has the main objectives of promoting the EU's economic, social, and territorial cohesion by enhancing the resilience, crisis preparedness, adjustment capacity, and growth potential of the Member States. The role of the labour market is central to achieving such objectives. The European Commission's guidelines for the preparation of National Recovery and Resilience Plans (NRRPs) included a detailed list of recommended reforms and investments to support employment, enhance skills, and create high-quality, stable jobs. These measures are not only key to fostering economic resilience and long-term growth but also to promoting social cohesion and upward convergence across Member States. A review of the approved national plans confirms this emphasis. According to the European Commission's Recovery and Resilience Scoreboard, almost all Member States have included labour market and employment-related components in their plans.

The analysis of the reforms suggests that three main types of labour market measures can be identified in the NRRPs:

- *Support for job-seekers and for improving employability*: Most Member States have included measures aimed at improving the efficiency of public employment services (for instance, Greece and Spain), and active labour market policies (ALMPs), providing activation support for job seekers, job creation (including hiring and job transition incentives and support for self-employment) and increasing the labour market participation of women, young people, and vulnerable groups.
- *Reforms of employment regulation to reduce labour market segmentation and reflect changes in the world of work*: Several Member States (for instance, Spain) are addressing the high incidence of temporary and precarious employment by making open-ended contracts more attractive for employers, while also tackling the misuse of non-standard work contracts and combating undeclared work. Some Member States (for instance, Greece and Portugal) have introduced reforms to modernise labour market regulations in response to structural shifts in the world of work, including the rise of teleworking and platform-based employment.
- *Reform of unemployment benefit schemes:* Some countries (for instance, France and Belgium) have put in place reforms of the unemployment benefit schemes to improve effectiveness, but also ensure the sustainability of the systems.

As the RRF nears its conclusion and most Member States have implemented their pledged reforms, assessing the impact of these reforms has become increasingly important.

The Mid-term evaluation of the RRF in 2023 highlighted that one of the Facility's key success factors was its ability to support structural reforms aligned with Country-Specific Recommendations (CSRs) and broader EU objectives, but full evaluations of individual reforms are still missing.

As it will be illustrated in the literature review, so far, evaluations have been mostly carried out at the national level, often by central banks or ministries, and primarily focused on short-term labour market impacts (measuring the direct effect of the reform on targeted groups). By contrast, a systematic quantification of labour market outcomes (for instance, changes in unemployment/employment) caused by the reforms or their macroeconomic impact has not been done. This can be explained by a wide range of factors.

First, impacts of labour market reforms on the economy typically take a long time, often years, to develop, thus it may still be too early to assess the full effects of reforms. Second, there are significant challenges related to data access and timeliness, particularly for microdata. These challenges include difficulties in linking monitoring data with other databases or administrative registers, as well as delays in the availability. Third, methodological challenges persist, especially in the context of ALMPs, in establishing a causal link between policy outputs (such as participation in training or upskilling programmes) and aggregate employment outcomes. Fourth, it is often difficult to disentangle the specific effects of RRF-funded measures from those of broader national initiatives, EU structural funds, or other exogenous changes (e.g. migration, post-COVID behavioural changes), complicating efforts to trace a clear line of causality. Finally, the measurement of the (potential) macroeconomic impacts is exposed to specific methodological limitations, particularly in translating micro-level outcomes (such as changes in labour market participation or workforce skills) into broader macroeconomic outcomes like productivity gains or economic growth.

Against this background, the study pursues three main objectives.

First, it identifies the labour market challenges addressed by reforms in selected Member States, explains how these reforms build upon or adjust past measures, and analyses how pre-existing conditions and institutional frameworks shaped the reform choices in their NRRPs. This part draws primarily on official documents and interviews with national authorities.

Second, it assesses the expected short-, medium-, and long-term effects of these reforms (and related investments) on labour market outcomes, examining the extent to which they are achieving their stated objectives and enhancing labour market resilience. This part draws primarily on an extensive review of the academic and grey literature and interviews.

Third, it evaluates, based on available evidence, whether the reforms are effectively delivering on their goals by quantifying, wherever possible, their impact on employment, GDP and economic growth potential. This analysis relies on the EU-LFS micro data and a range of estimation models and techniques designed

to isolate the specific effects of the reforms, on measurable labour market outputs (e.g., take-up and enrolment rates) and on outcomes (mainly employment), from other economic influences. Finally, these empirical findings are used to estimate broader macroeconomic effects. While measurement and modelling limitations persist, they are mitigated through complementary assumptions and robustness checks.

The selection of the reforms was primarily based on their state of implementation. The study focuses on eight reforms across four Member States (see Table 1) that had fulfilled the relevant milestones, and the necessary legislation was put in place early enough for 2023 data to reasonably capture some of the impacts.

Table 1: List of the measures within the scope of the study

Member State	Code	Measures
France	FR-C [C8]-R[R1]	Provision of services by the unemployment agency (Pôle Emploi)
France	FR-C [C8]-R[R4]	Reform of the unemployment insurance
Greece	EL-C [3,1]-R[16744]	Modernisation and Simplification of Labour Law
Greece	EL-C [3,1]-R [16941]	Restructuring and rebranding of Public Employment Service local offices - Organisation reform of Public Employment Service (DYPA)
Portugal	PT-C [C06]-R[r17]	Agenda for the promotion of decent work
Spain	ES-C [C23]-R[R4]	Simplification of contracts: generalisation of the open-ended contract, reasons to use temporary contracts and regulation of the training/apprenticeship contract
Spain	ES-C [C23]-R[R5]	Modernisation of active labour market policies (ALMP)
Spain	ES-C[C23]-R[R11]	Digitalisation of the Public Employment Services (PES) for its modernisation and efficiency

Source: Own elaboration based on the tender specification.

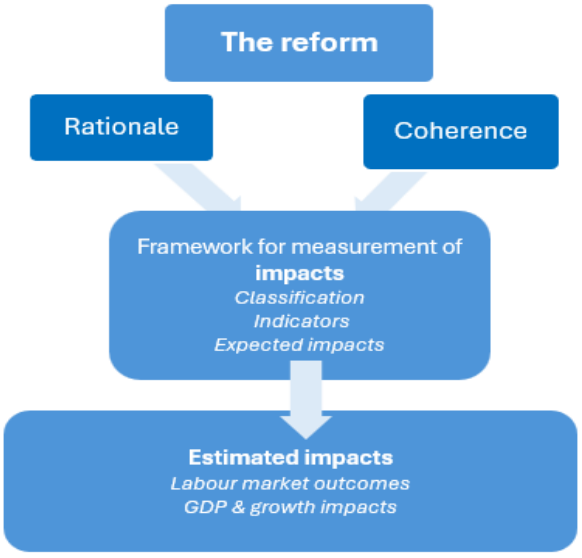
The remainder of the study is structured as follows. Section 1 outlines the analytical structure used to guide the analysis of labour market reforms, including the classification framework and the empirical and modelling strategy to estimate labour market and macroeconomic impacts. The subsequent sections are organised by country and reform, following the order presented in Table 1. Accordingly, Section 2 presents results for France, Section 3 for Greece, and Sections 4 and 5 for Portugal and Spain, respectively. The final section provides a cross-country comparison and draws conclusions.

1. The analytical framework

The approach to the analysis of the labour market reforms is built around three core dimensions: the rationale of the reform, its coherence, and its impacts. It assumes that reforms should not only be well-designed (have a sound rationale and be coherent) but also effectively evaluated for their tangible impact.

Assessing the rationale involves examining whether the reform addresses identified labour market challenges, aligns with structural needs, CSRs, and broader EU objectives, and, not least, clarifies its expected outcomes. Coherence refers to how well the reform fits within the broader policy mix in a certain country and considers complementarities with past or ongoing reforms, as well as potential inconsistencies or overlaps. While a solid rationale and coherence are necessary conditions for effectiveness, they are not sufficient on their own. Ultimately, effectiveness must be assessed through measurable impacts. This requires first unpacking the reforms to identify their expected outcomes and to select appropriate indicators that can proxy reforms' outputs and results. On this basis, empirical methods can then be applied to evaluate their effects on employment, GDP and potential growth (see Figure 1).

Figure 1: Overview of the methodological approach



Source: Own elaboration

Labour market reforms included in NRRPs are often complex, encompassing multiple measures across diverse policy domains (e.g. ALMP, employment protection legislation (EPL), working time). A sound classification framework for the reforms is therefore central for a meaningful analysis. The next sub-section presents this framework, which will be applied to the reforms under the scope of the study, outlining typologies (policy field and domain), indicators for

measurement and expected impacts[1]. The final part of this section describes the approach to analyse the rationale and coherence of the reform, and to measure impacts, first focusing on labour market effects and then on the macro-level.

1.1. Typology of reforms and impacts

Based on the Commission's Guidelines to Member States for the preparation of the NRRPs, a reform is defined as *"an action or process of making changes and improvements with significant impact and long-lasting effects on the functioning of a market or policy, the functioning or structures of an institution or administration, or on progress to relevant policy objectives, such as growth and jobs".* As noted previously, a single reform may encompass several policy fields, and through specific measures, can lift or activate different mechanisms, leading to a variety of outcomes. Categorising the reforms by distinguishing the types of measures is therefore key to identifying the related expected outcomes and to informing the quantification and measurement of the effects on the labour market, (potential) growth and productivity.

To develop the framework, we draw on the European Commission's Labour Market Reform (LabRef) database. LabRef systematically records information on labour market institutions, regulatory frameworks, and reforms across Member States, organising this information in a structured way. It categorises reforms in nine broad policy domains, further divided into 49 fields of policy intervention and collects detailed information on specific measures (often corresponding to provisions in legislative initiatives).

The policy fields serve as the basis for the classification framework. Because these fields are well-established in the academic literature, existing research can be used to identify indicators and potential impacts. As a result, the classification framework also relies on an extensive review of the academic and grey literature (the full list of sources can be found in Table 15 in Annex A.1). Particular attention has been given to empirical studies based on microdata relying on exogenous sources of variation to identify potential causal effects. While such identification strategies have limitations, they are generally more robust, as they better control for confounding factors and address endogeneity concerns. Meta-analyses and existing literature reviews, often covering broader policy domains, are also included. These studies provide valuable insights into the mechanisms through which measures operate and help anticipate likely impacts. Whenever possible, effects on flows (i.e. job transitions and separations), stocks (e.g. employment, average duration in employment) and wages are discussed. When evidence is available, effects are also disentangled between short and medium/long-term.

[1] The full classification of labour market reforms, with policy fields, domains and measures can be found in Table 16 in Annex A.1

Table 2: Classification framework: Labour taxation policy domain

Policy domain	Policy field	Measure	Indicators	Expected Impacts
Labour taxation	Employers' social security contributions (SSC)	changes in SSC levels and structure, including SSC reductions for employing special groups	Separation and/or job finding rates, employment duration, employment, wages, labour force participation	• The intended incidence of SSC does not necessarily correspond to the actual incidence of SSC, as the latter is influenced by the labour supply and demand elasticities, institutions and more generally, the relative bargaining power of employers and workers. • If the increase in SSC is mainly passed through to wages, then negative labour supply effects (e.g. job finding, employment, participation) can be expected. • If the increase in SSC is, for the most part, absorbed by employers, then labour demand should be negatively affected (e.g. decrease in hiring, employment) • SSC have usually limited effects on separations, except in specific cases (e.g. Countercyclical UI SSC, experience-rated systems) • Increase in SSC on temporary contracts can have unexpected effects and increase segmentation • The perceived link between the SSC and the (future) benefit can influence impacts, as a clear tax-benefit linkage can limit distortionary effects of SSC
	Employees' social security contributions (SSC)	changes in SSC levels and structure		
	Self-employed social security contributions (SSC)	changes in SSC levels and structure	transitions from self-employment to employee status,	An increase in self-employed SSC is expected to decrease the attractiveness of self-employment and lead to an increase in employee relationships
	Income tax	changes in income taxation, tax credits, tax allowances	transitions to the labour force and to employment, hours worked, labour force participation	• Changes in labour income tax can lead to important labour supply responses, for specific groups in particular (i.e. married women) • Additional behavioural response include tax evasion, changes in reported incomes and saving rates
	Labour taxation – Other	e.g.: measures related to fighting undeclared work and fraud	Transitions from un(der)declared to regular employment, employment, hours worked	• (Regular) employment and/or hours worked should increase. • Unintended effects may arise (e.g. underdeclared workers becoming fully undeclared)

Source: LabRef database, see https://employment-social-affairs.ec.europa.eu/databases-and-indicators/labref-labour-market-reform-database_en..

Note: By impacts, we mean both labour market outcomes, like employment and unemployment, and macroeconomic effects, like on GDP and productivity.

The final framework, displayed in the Annex, has been refined to fit the eight reforms under investigation (Table 16). Table 2 above presents the Labour taxation policy domain as an illustrative case, but the reforms under study span five different policy domains, namely Labour taxation, Unemployment Benefits (UB), ALMP, EPL and Working Time. Reforms often consist of packages of measures, covering different policy domains, and their impacts are therefore likely to result from the aggregate effects of the different measures. The classification framework helps address this complexity in a systematic way. Following the description of each reform, identified measures are mapped to the classification framework. This provides us with a range of indicators and potential impacts for each measure. This information then serves as basis for the analysis of the rationale and coherence of the reforms, as well as their labour market and macroeconomic impacts.

1.2. Rationale and coherence of the reforms

Rationale is understood as the extent to which reforms address pre-existing labour market challenges, especially those identified by the European Commission and explicitly referenced in the 2019 and 2020 CSRs[2], before the creation of the RRF. Similarly, *coherence* is understood as the extent to which a given reform coheres with other pre-existing and ongoing reforms and labour market policies, as well as those outlined in NRRPs.

For each country, pre-existing labour market challenges are outlined primarily based on the 2019 and 2020 Country reports and Council Recommendations. Then a detailed description of the reforms is presented to identify the full set of measures. Each measure is mapped to the classification framework, which provides expected impacts and allows for careful assessment of the rationale of the reform. Rationale and coherence are further analysed based on a review of official documents, academic and grey literature, and a series of interviews with key stakeholders (e.g. academics, members of relevant ministries).

1.3. Empirical approach

It is well established that the effectiveness of labour market reforms depends critically on the institutional context in which they are implemented (Boeri et al., 2015). For this reason, while the findings from a wide range of the literature are valuable in shaping expectations and understanding the rationale and internal coherence of reforms, they are not sufficient to assess the impacts. It is necessary to identify and measure the actual effects of the reforms. This

[2] As noted by ECA (2025), reforms and investments included in NRRP should address the CSRs, in order for Member States to benefit from the facility.

subsection outlines the empirical strategy employed to estimate both labour market and broader macroeconomic impacts.

1.3.1. Labour market impact

The analysis of the reforms' labour market impacts draws on two main sources of information. First, for some of the reforms, evaluations are already available. This is the case of the French unemployment insurance reform (Bjaï et al., 2025) and the reform on the simplification of contracts in Spain (Conde-Ruiz et al., 2023; International Monetary Fund European Dept., 2024).

Second, the European Labour Force Survey (EU-LFS), the main official source of labour market statistics in the EU[3], is used for data collection and estimation purposes. The EU-LFS offers significant advantages, notably its representativeness across all Member States, and the efforts to harmonise variables and improve cross-country comparability. It also allows for the construction of a broad range of indicators relevant to all the reforms considered[4]. However, these indicators are often proxies as the EU-LFS does not always allow for the precise identification of the specific groups affected by certain measures (e.g. workers on intermittent seasonal contracts in Spain).

In addition, the absence of individual identifiers prevents the tracking of people over time, limiting the set of indicators and empirical strategies. The implementation of several measures simultaneously, or within a short time period, further complicates the isolation of the effects of individual measures. For this reason, while expected impacts are discussed at the level of each measure, the quantitative analysis generally focuses on the aggregate outcomes of the reforms as a whole[5].

Finally, it is also worth noting that while there exists substantial heterogeneity in the measures implemented under each reform, some of these reforms can be expected to affect the same labour market outcomes (e.g. separation rates for the reforms of the unemployment insurance system and the simplification of contracts in France and Spain; see Table 16). Accordingly, some reforms are assessed using the same indicators and methodological approach. Further details on this aspect are provided in Annex A.2.3.

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[3] Data from the European Statistics on Income and of Living Conditions (EU-SILC) is also considered for certain reforms.

[4] The measure on the integration of *Cap'emploi* services within the reform of unemployment services in France (FR-C[C8]-R[R1]) is not analysed using the EU-LFS, given that the variable informing on the disability status has been recently added to the survey and is currently only available for one year.

[5] The modernisation and simplification of labour law reform in Greece is the only exception. This reform is very broad and the quantitative analysis focuses on two specific measures affecting groups that can be identified in the EU-LFS.

Indicators derived from the EU-LFS are primarily used for descriptive purposes. This implies that for some reforms (e.g. Public Employment Services (PES) reforms), the evidence presented should not be considered causal. When deemed possible, the EU-LFS is used to estimate labour market impacts using econometric methods. These reforms include the French unemployment insurance reform, the Greek reform on modernisation and simplification of labour law and the Spanish reform on the simplification of contracts. For these reforms, causal inference methods are used (i.e. Difference-in-Difference and Synthetic Control Methods), which allow for constructing credible counterfactual series for the evolution of outcomes in the absence of the reform. Methodological details are presented in more detail in Annex A.2 and further discussed in the relevant Member State sections.

It is important to note that EU-LFS data is currently only available until 2023, implying that only the short to medium-run (depending on the reform's implementation) effects can be analysed using the dataset. Additionally, the EU-LFS underwent a substantial methodological change in 2021 with the introduction of a new Integrated European Social Statistics (IESS) Framework Regulation. While the full implications of this change remain unclear[6], it may have introduced breaks in some series, including those relevant to our analysis.

Finally, post-COVID-19 recovery has been affected by external shocks (e.g. supply chain disruptions, energy crisis), which could impact labour market outcomes during the implementation period. Country-specific developments, such as migration flows in Spain, and in some cases additional reforms undertaken concurrently, might influence estimation results as well. These contextual factors are discussed on a country-by-country and reform-specific basis in the sections that follow.

1.3.2. Macroeconomic impacts

The approach to estimate macroeconomic impacts consists of quantifying how the reforms affected GDP in the short term and exploring the reforms' potential long-term impact on growth, building on the findings of the labour market impacts generated by the modelling approach introduced above.

The key assumption is that, in the short run, reforms can influence employment, which in turn drives GDP through a standard production function. We recognise that reforms take time to be fully implemented and absorbed by the economy, beyond their immediate effect on a single labour market outcome. This view is consistent with empirical literature, which generally finds limited short-term macroeconomic impacts from labour market reforms. However, our preliminary

[6] The last available EU-LFS quality report concerns the 2020 release of the EU-LFS (European Commission, 2022).

evidence suggests that certain reforms can produce relatively rapid labour market adjustments, making it important to investigate these short-term dynamics.

Unlike much of the existing literature, our analysis excludes direct budgetary expenditures, which are assumed to be negligible for the reforms considered. Our focus is therefore on how potential changes in workers' and firms' behaviour– shaping employment outcomes– rather than changes in government spending, translate into GDP effects.

To estimate the macroeconomic impact of the reforms, we apply a standard production function approach (see Annex D for details). While relatively simple, this method is well-suited to capturing the potential effects of a labour reform that affects employment. More sophisticated macro modelling –often used by central banks and government authorities –can provide more precise assessments, also leveraging highly detailed labour and firm-level national microdata. However, these approaches are complex and depend on country-specific administrative or survey data, which were not available or readily accessible (depending on the country) and challenging to replicate across different countries.

Our simpler approach crucially builds on the employment effects of the reform estimated using EU-LFS data. Specifically, by identifying the reform's impact on employment, we can also compute a counterfactual employment level—that is, the level that would have prevailed without the reform. Using this counterfactual, we calculate the corresponding GDP (ceteris paribus) and compare it with the observed GDP. The difference between the two is an estimate of the reform's macroeconomic impact. Importantly, the classification of the reforms and the unpacking of individual measures offer important qualitative insights about additional transmission channels for the reform effects at the macro level.

In practice, the first step involves estimating an econometric specification of the production function using observed data to obtain its parameters. These parameters are then applied to the counterfactual employment to model how GDP would have evolved absent the reform. Two main specifications of the production function are considered. The first is a traditional Cobb–Douglas specification, with labour and capital as factors of production and constant returns to scale.

$$Y_t = A_t \; L_t^{\beta} \; K_t^{1-\beta} \qquad (1)$$

The second specification is suitable for reforms that affect the degree of labour market segmentation. As will be illustrated in detail, a compositional shift is the central effect of the Spanish reform (but the approach is suitable for the French reform). It decomposes the labour input (*L*) into temporary (*T*) and permanent (*P*) workers, and assumes different levels of productivity (captured by the s parameter in the equation) between the two. This approach aims to incorporate changes in the composition of employment—between temporary and permanent contracts— in the production function(details are available in Annex D).

$$Y_t = A_t(P_t + sT_t)^{\beta} K_t^{1-\beta} \qquad (2)$$

Finally, to assess the long-run effects on GDP, the trend component of the production inputs is used to compute the counterfactual level of output, yielding an estimate of potential output. This approach removes cyclical fluctuations in the input series that do not affect the long-term trajectory of GDP. The approach is applied to both specifications.

The simplicity of the empirical strategy and of the production function approach comes with some costs and limitations discussed below.

In particular, assuming that capital (K_t), total factor productivity (A_t), and labour share of income (β) are fixed and the same in the actual and counterfactual estimates, have some limitations in the real world and can ultimately affect the estimation results. We consider that maintaining constant β, which reflects technology and production structure, and is not mechanically affected by changes in L, is a reasonable assumption for this specific exercise and the time horizon considered (eight quarters). However, a similar hypothesis may be more controversial for capital and TFP.

In our approach, the capital input in the counterfactual scenario is assumed to be the same as the observed one. Hence, assuming that the reform had no impact on the stock of capital. This may still be reasonable for the short-term analysis; however, capital is expected to adjust in the longer term. In practice, if the assumption does not hold and capital has increased during the time considered, it would imply that our approach overestimates the counterfactual, making the estimate of the impact of the reform a conservative estimate.

Similarly, in the counterfactual analysis, TFP is estimated using actual data covering the entire sample period — including the reform period. Its values may capture reform-induced changes in total factor productivity driven by the shift in the composition of employment (OECD, 2024b)[7] This means that, similar to capital, the counterfactual TFP in the absence of the reform might have been lower than the one used to construct counterfactual GDP. Overall, our treatment of both TFP and capital likely raises the counterfactual, resulting in a more conservative estimate of the reform's impact.

A final consideration relates to the neoclassical assumptions inherent in the Cobb-Douglas production function. The assumption of constant return to scale (i.e., the sum of the factor coefficients equals 1) fixed elasticities of output with respect to the factors of production (treating K and L as perfect substitutes)

[7] Alternative approaches have also been considered—for example, estimating the production function only up to the reform's entry into force to forecast the future path of TFP, or simply fixing TFP at its unconditional mean of zero. However, these methods also have limitations. They fail to account for the substantial deviations in TFP observed during that period, which are unlikely to reflect the labour market reform itself but are instead driven by the broad positive economic cycle that has recently characterised the Spanish economy.

implies diminishing returns to labour (β is always smaller than 1). By construction, this means that, when L increases, the productivity of labour declines. As explained in the case of the Spanish simplification of contract reform, this assumption can be extremely limiting, and alternative counterfactuals are explored.

2. France

Synthesis of results

- The modernisation of the public employment service sought to deliver more individualised guidance, strengthen case management and improve support for disadvantaged groups, particularly persons with disabilities.
- The redesign of the unemployment insurance system introduced changes to benefit levels, duration and eligibility, as well as a modulation of social security contributions for employers with high separation rates, with the intention of encouraging quicker re-employment, reducing short-duration contracts and limit excessive turnover.
- Both reforms were motivated by persistent challenges such as labour-market exclusion among vulnerable groups, extensive use of temporary contracts, skills mismatches and pressure on fiscal sustainability. The measures aligned closely with national reform priorities and EU recommendations, and complemented the transition toward a more integrated public employment service.
- Early evidence indicates improved user satisfaction and a higher share of jobseekers receiving active support, while limited changes were observed in registration patterns among persons with disabilities.
- The unemployment insurance adjustments is found to have supported job transitions from unemployment, though not necessarily to stable employment forms, and contributed to expenditure control. The share of short-duration contracts (shorter than one month) slightly decreased as well. No effects on aggregate employment were detected at this stage.
- Given the absence of significant effects on employment, no macroeconomic impacts were estimated.

The French labour market faced several structural challenges already identified prior to the creation of the RRF. Four issues in particular stood out.

First, labour market exclusion remained significant among specific groups. Although the unemployment rate declined between 2015 and 2019, it remained high compared to peer countries and was disproportionately concentrated among disadvantaged groups, including young people, low-skilled workers, migrants, persons with disabilities, and residents of economically deprived areas (European Commission, 2019a). Persons with disabilities faced especially severe barriers, with unemployment rates twice the national average and unemployment durations on average 233 days longer (INSEE 2019), even though this group was not explicitly referenced in the CSRs[8].

[8] On this matter, see also European Commission et al. (2021).

Second, the overuse of short-term contracts was particularly acute in France. In 2018, 85% of new hires were on temporary contracts, one of the highest shares in the EU, combined with among the lowest transition rates to permanent employment (Council Recommendation 2019/C 301/10). This contributed to persistent labour market segmentation, trapping many workers in unstable employment

Third, France faced growing skills shortages and mismatches. These were reflected, for instance, in a rising job vacancy rate (European Commission, 2020a), signalling difficulties in aligning labour supply with labour demand.

Finally, concerns about fiscal sustainability persisted. In 2019, government debt stood at 98.2% of GDP and the deficit at 2.4%. These pressures were further exacerbated by the pandemic, with debt rising to 114.9% of GDP and the deficit to 8.9% in 2020.[9]

2.1. Provision of services by the unemployment agency

The reform aimed to reorganise the service provision by the French unemployment agency (then *Pôle Emploi*, *France Travail* since 2024).

2.1.1. Description, related investment and expected impacts

The reform includes two distinct measures:

1. ***Cap'Emploi* Integration**: The reform aimed to progressively integrate *Cap'Emploi*, a service specialising in helping people with disabilities, into *Pôle Emploi* agencies, by embedding its agents into the general unemployment support system. The integration was progressive and started with 19 agencies in January 2020. It was extended to 233 agencies in February 2021 and progressively to the remaining agencies until September 2022.
2. **Compensation Counsellors**: After an initial testing phase in few agencies (Pôle Emploi, 2020), counsellors specialised in matters related to UB (e.g. level of benefits, timing of payments) were progressively introduced in *Pôle Emploi* agencies throughout the territory. These counsellors contribute to the individualisation of services provided by *Pôle Emploi* and ensure that jobseekers have a direct point of contact for any inquiries related to benefits. Compensation Counsellors were first introduced in three pilot agencies in 2017 and then generalised to all agencies from September 2021 to December 2022

[9] Eurostat [gov_10dd_edpt1].

In terms of investments, the reform was accompanied by a series of investments as part of the NRRP to effectively support people with disabilities into employment, as well as to support skills development more broadly:

- Investment C8.I15 provided temporary support to employers in the form of a hiring subsidy for persons with disabilities (AMEETH),
- Investment C8.I16 extended the “guided employment” plan for persons with disabilities, further supporting them to enter stable employment through four distinct phases, going from the definition of a professional project to continuous support during employment.
- Investment C8.I17 provided distance (remunerated) training courses to disadvantaged groups, including jobseekers with a disability.
- Investment C8.I22 temporarily increased *Pôle Emploi*’s resources to cope with the negative impacts of the economic crisis and implement the new 2019-2022 framework agreement, which included the *Cap’Emploi* integration and the generalisation of compensation counsellors.

To unpack the reform, we apply the analytical framework developed in Section 1 and summarise the findings in Table 3.

Table 3: Categorisation of reform FR-C [C8]-R[R1]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
4. ALMP	Public Employment Services	**Measure 2:** Generalisation of the "compensation counsellor" (conseiller référent indemnisation). These advisers should improve the individual support to jobseekers by providing a direct point of contact on matters related to benefits.	facilitate the rapid return of jobseekers to employment Improved matching of labour supply and demand Increased access to PES and improved labour market outcomes for individuals with a disability	- transitions to employment for individuals registered at the PES (including individuals with a disability) - number and satisfaction of jobseekers registered at the PES (including individuals with a disability) - Employment gap and rates of individuals with a disability
	Special schemes for people with disabilities	**Measure 1**: Integration of Cap’Emploi services within Pôle Emploi (now France Travail), which creates a one-stop-shop for advisers and jobseekers with a disability		

Source: own elaboration

This reform falls entirely within the ALMP policy domain and covers two policy fields: the general services provided by the PES and the special scheme for jobseekers with disabilities. Its main measures focus on enhancing services and monitoring for jobseekers, particularly through more personalised and tailored counselling for individuals with disabilities.

Measure 1 (integration of *Cap’emploi* services), by introducing a one-stop-shop for persons with disabilities, is generally expected to improve labour market outcomes for jobseekers with disabilities (Eurofound, 2021). More generally, activation policies targeting persons with disabilities have been shown to affect

positively re-employment and health outcomes (Bewley et al., 2007; Eichhorst et al., 2010; Adamecz-Völgyi et al., 2018). However, the term disability encompasses a wide range of situations, and the effects of ALMPs can vary across groups. Successful policies typically require complementary measures, such as improved workplace accessibility and adaptation, in addition to activation (Eichhorst et al., 2010).

Measure 2, the remuneration counsellor, introduces a personalised service for jobseekers regarding benefits. Each jobseeker is assigned a dedicated counsellor who can be contacted directly via email throughout the unemployment spell. This approach is expected to reduce stress, uncertainty and conflict (e.g. related to overcompensation and potential reimbursements, Bjaï et al. 2025). This could lead to increased registration at the PES by lowering the potential costs of affiliation and could reinforce the small but positive effects of job search assistance(JSA) identified in the academic literature, by supporting jobseekers' search efforts (Crépon et al., 2016; Card et al., 2018).

Overall, these enhancements are expected to increase the effectiveness of JSA and training, ultimately facilitating employment re-entry and improving the matching process between jobseekers and employers.

2.1.2. Rationale and coherence

The rationale of this reform is clear: it targets one of the main pre-existing challenges in the French labour market, namely the exclusion and high unemployment of vulnerable groups, including persons with disabilities.

Enhanced services, in the form of JSA and training, also help address skills shortages and mismatches by improving employability and facilitating the entry of disadvantaged groups in the labour market, thereby increasing labour supply. While not directly related to labour market outcomes, the compensation counsellor plays a key role in supporting jobseekers and mitigating issues related to benefits. This security could allow jobseekers to focus more effectively on their job search (Pôle Emploi, 2020).

In terms of coherence, the reform aligns with both the broader policy agenda and the specific measures outlined in the NRRP. Major labour market reforms enacted in 2018 sought to improve access to skills and employment opportunities, particularly for vulnerable groups (International Monetary Fund. European Dept., 2019). Notably, the 2018-2022 skills investment plan ("*plan d'investissement dans les compétences*") and the 2018-771 Law ("*loi pour la liberté de choisir son avenir professionnel*") sought to upgrade professional training and upskilling options for workers, including individuals with a disability and from other disadvantaged groups.

Moreover, the personalisation of services introduced by the reform can be seen as a precursor to the PES reform of 2024, which led to the creation of France

Travail, and precisely aimed at individualising services to jobseekers and companies through personalisation and tailoring. Coherence with other reforms in the NRRP is also evident. While reform FR-C[C8]-R[R2] provides support to workers at risk of job loss via short-time work schemes, this reform targets activation of workers who have lost their jobs, and complements the reform of the passive support provided by the unemployment insurance system (FR-C[C8]-R[R4]).

2.1.3. Labour market impacts

Existing evidence

Existing evidence on these measures is rather scarce, particularly regarding the **compensation counsellor**. For this measure, an evaluation examining jobseekers' satisfaction with the PES reported a 4 percentage points increase in satisfaction in agencies that had implemented the compensation counsellor (Pôle Emploi, 2020).

The **integration of *Cap'emploi* services** is currently being evaluated by French national authorities, but the results were not available at the time of finalising this report. Some earlier studies on *Cap'emploi,* conducted prior to the integration with *Pôle Emploi* (Rougier et al., 2017; Dessein, 2022), highlighted issues in service provision, such as selectivity based on the form of disability and jobseekers' perceived likelihood of re-employment. Given that these studies are relatively old, it is unclear whether these issues were still relevant at the time of the integration with *Pôle Emploi*[10].

Indicators and methodological approach

Labour market effects from the introduction of the remuneration counsellor (**measure 2**) are difficult to measure using data provided by the EU-LFS, and the literature review suggests that expected impacts should be small. Interviews with stakeholders and an evaluation performed by Pôle Emploi services (Pôle Emploi, 2020) indirectly confirm this point, as both highlighted jobseekers' satisfaction with PES as the main indicator to evaluate the measure. This indicator is available from data published by France Travail[11]. Moreover, certain indicators constructed for the analysis of PES reforms (See discussion in Annex C.1) can also be used to inform on the output of this reform, in particular, the indicator related to whether individuals claim to receive active support from the PES.

Several indicators can be considered for **measure 1**, affecting services offered to individuals with disability. These can be obtained from publicly accessible data

[10] Stakeholders interviewed from France Travail were not aware of these issues, which are specific to *Cap'emploi.*

[11] https://www.francetravail.org/opendata/.

maintained by France Travail, Eurostat and the European Statistics on Income and Living Conditions (EU-SILC). Relevant indicators include the employment rates and gap between individuals with and without a disability, and the number of persons with a disability registered with France Travail.

As explained above, both measures were first implemented in pilot agencies in 2020 and 2017, respectively, and then progressively extended to the remaining agencies over the course of 2021 and 2022. The period of implementation overlaps with the unemployment insurance reform (reform FR-C[C8]-R[R4]), which may have had a negative impact on registrations at the PES (Bjaï et al., 2025). Another important reform took place in 2024 with the creation of France Travail and the new requirement for persons beneficiaries of the minimum income scheme to register at the PES. These changes could have large impacts on some of the indicators considered, but it should be noted that EU-LFS data is only available until the end of 2023 and should not be affected by the modifications that took place in 2024 and after.

Indicators are constructed at yearly frequency[12], implying that there is a maximum of three years of data available after the implementation of the reform (2021, 2022 and 2023). Moreover, an appropriate quantitative analysis would require data for individuals (or at a relatively fine group level) tracked over consecutive periods. More generally, it is a difficult task to evaluate ALMP reforms (Crépon et al., 2016) and the absence of proper data implies that the analysis in this section is only descriptive.

Descriptive evidence

With regard to **measure 1** and the *Cap'Emploi* integration, Figure 2 shows that between 2014 and 2024, the disability employment gap across the EU27 stayed fairly stable, hovering near 23 %, while France showed more pronounced swings. Initially, a steady narrowing can be observed, from about 21 % in 2014 to a low of close to 15 % in 2018. Then, France's gap rapidly widened again, peaking just above the EU average around 2020–2021.

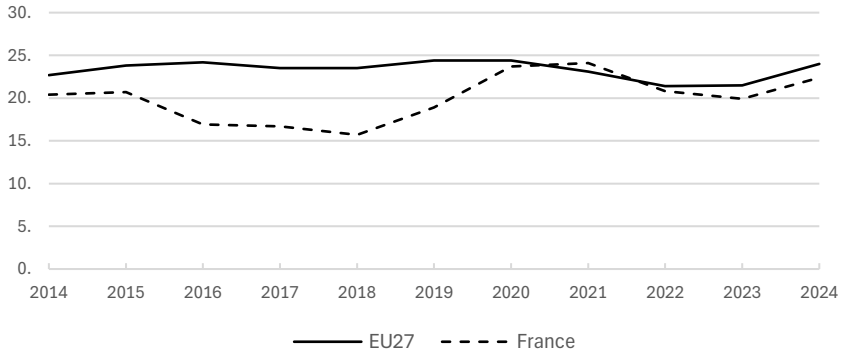
Figure 3 provides additional insights on the evolution of the gap by displaying employment rates of workers with and without a disability[13]. The figure shows that employment rates for persons without a disability are relatively similar between France and the EU27. Therefore, variations in the gap discussed above mainly originate from the differences in employment rates for workers with a disability.

[12] EU-SILC data is provided at this frequency only and the variables used for the construction of PES indicators (Annex C.1) are generally available on a yearly basis as well.

[13] As explained in the source note of Figure 3, the employment rates that more closely reproduce the gap published by Eurostat are obtained by combining the disability status at the moment of the interview with the employment status from the previous year. This is likely because using the employment status at the moment of the interview would not provide a good measure of employment. This further implies that the evolutions of employment rates should be considered with care as they are based on the employment status of the previous year.

In particular, the smaller gap observed in France between 2014 and 2018 can be explained by the significant increase in the employment rate of persons with disabilities (from 52% in 2014 to 60% in 2018). The decrease in the gap between 2018 and 2021 and the evolution after 2021 are also seen in the employment rate of persons with disabilities.

Figure 2: Disability Employment Gap



Source: Extracted from Eurostat [tepsr_sp200]. Individuals with some or a severe form of disability

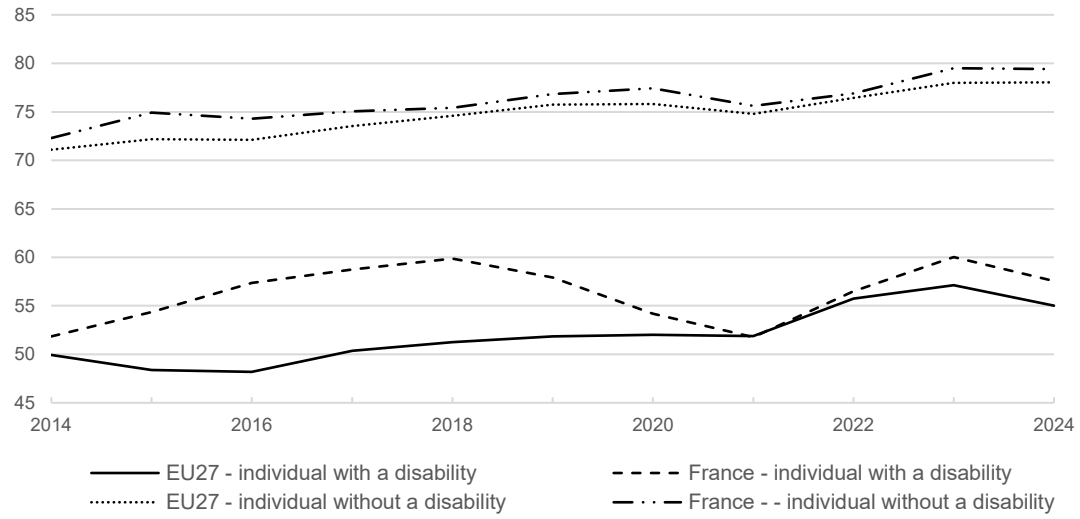
The *Cap'Emploi* integration occurred progressively, over the course of 2021 and was finalised in September 2022. It is therefore interesting to note the decrease in the disability gap in 2022 and 2023, coming primarily from an increase in the employment rate of persons with a disability. In 2024, the disability employment gap widened again, but this was also the case at the EU27 level. Nevertheless, this evidence indicates that **the disability gap decreased over the period of implementation of the reform and its aftermath** (from 24.1% in 2021 to 22.4% in 2024) driven by the **recovery in the employment rate of workers with a disability** (from 51.8% in 2021 to 55% in 2024).

In addition, Figure 4 displays the number of persons with disabilities registered with France Travail. From January 2017 through mid-2025, **total registered jobseekers under the "*obligation d'emploi*" changed remarkably little**, from 548,160 to 551,420[14]. By contrast, **the number of category "A"[15] jobseekers fell slightly from about 390,000 to just over 360,000** over the same span. The total number of jobseekers was at its lowest between the start of 2021 and mid-2023, in line with the developments observed for the disability gap and the employment rate of workers with disabilities (Figure 2 and Figure 3).

[14] Since 2024, inactive persons beneficiating from minimum income support schemes are also required to register with France Travail. These persons are classified in category "F" and "G". Considering these two categories, the number of persons with disability increased to just below 600,000.

[15] Jobseekers in category A are those who did not perform any work activity over the last month. Jobseekers with disabilities can be retrieved from the category '*obligation d'emploi*'.

Figure 3: Employment rates of persons with and without a disability – 2014-2024



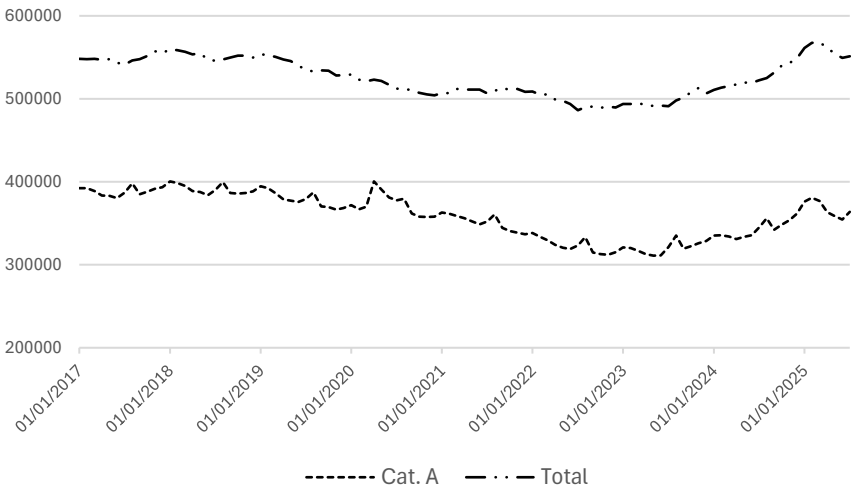
Source: EU-SILC. The population is restricted to individuals aged 20-64. The indicators are constructed based on the employment history in the previous year and the current disability status. This approach gives the closest results to the gap published by Eurostat, although some small differences can exist, likely due to a different approach to defining the employment status in the previous year.

Overall, the evolution of these indicators since 2021/2022 suggests **a slight improvement in the labour market situation of workers with disabilities in France**. It is not possible to draw a direct link between the reform and these improvements, but the fact that they take place over the same period is worth noting. The deterioration between 2023 and 2024, which seems to have persisted through 2025 (Figure 4), suggest that **this progress is fragile** and a more developed analysis would be required to better understand the impact of the reform.

Figure 5 plots satisfaction indicators, which are relevant for **measure 2** and the generalisation of the compensation counsellor. The shares of jobseekers and companies who report being satisfied with France Travail have largely trended upward since 2018. Jobseekers' satisfaction climbed from the low 70 % range in 2018 to the mid-80 % range by 2024, while employers' satisfaction rose from a similar baseline to slightly above 85 %. Implementation of **measure 2 coincides with a mild but sustained uptick in jobseekers' satisfaction**, which would be consistent with effects reported by Pôle Emploi (2020).

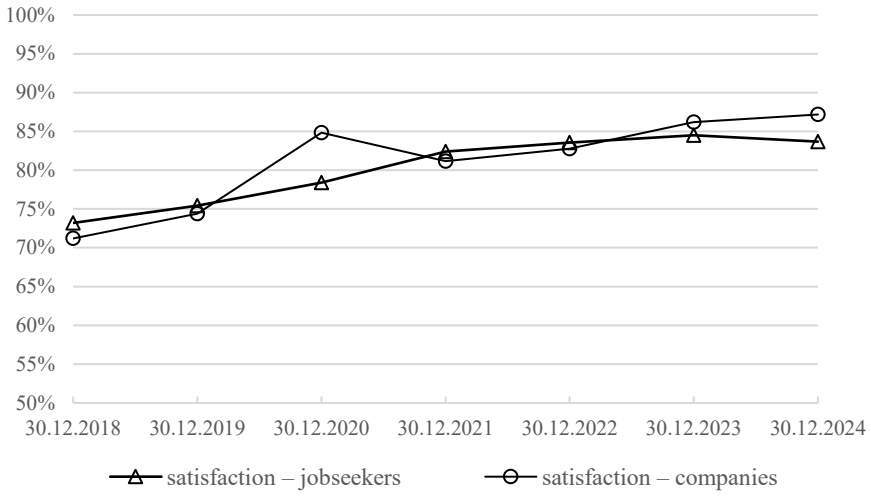
Finally, indicators derived from the EU-LFS provide complementary evidence on the PES reforms (see Annex C.1). In particular, the share of registered individuals reporting that they receive assistance from the PES could provide complementary evidence for this measure (Figure 19). After declining between 2019 and 2022, **this indicator rose again in 2023** to 44%. Although still below the EU27 average, this increase could signal a potential improvement. While the compensation counsellor is unlikely to fully explain this rebound, it may have contributed to it by improving the allocation of tasks among caseworkers, thereby enhancing the support provided to jobseekers.

Figure 4: Number of people with disabilities registered with France Travail – 2017-2025



Note: Monthly series were retrieved from France Travail. Jobseekers in category A are those who did not perform any work activity over the last month. Jobseekers with disabilities can be retrieved from the category "*obligation d'emploi*".

Figure 5: Satisfaction with France Travail's services



Source: France Travail

Given the limited measurable impact on jobseekers, no macroeconomic effects can be reliably estimated.

2.2. Reform of the unemployment insurance

Reform FR-C[C8]-R[R4] comprised a set of four key measures to overhaul the French unemployment insurance system. Its implementation, originally planned to occur gradually between November 2019 and March 2021, was delayed due to the COVID-19 pandemic. The reform was reintroduced as economic conditions improved in the course of 2021. It nonetheless passed into law (in a suspended

state) first on 30 March 2021 (decree no. 2021-346), and later on 8 June 2021 (decree no. 2021-730).

2.2.1. Description, related investment and expected impacts

There are four measures associated with this reform:

1. The methodology used to calculate the benchmark daily wage[16], the key input to determine the level of UB and the Potential Benefit Duration (PBD)[17], was adjusted. The computations of these two parameters now include all days in the reference period, whether worked or not. The reference period has been increased from 12 to 24 months. These modifications should lead to a decrease in the benchmark daily wage and an increase in the PBD for affected jobseekers.
2. A sliding scale was introduced for higher earners (above EUR 85 per day or close to EUR 4900 per month).[18] UB for these jobseekers now start to decline after six months by a maximum of 30%. Jobseekers older than 57 years old are not affected by this measure, which concerns around 3% of UB beneficiaries.
3. Conditions for eligibility to UB were tightened, requiring 6 months of work (or 910 hours) over the last 24 months instead of 4 months over the last 28 months for affiliation. The reform also modified the conditions under which a work experience prior to the expiration of UB rights would affect future affiliation ('*recharging rights*').
4. Creation of a 'Bonus-Malus' mechanism for employers, akin to experience rating systems existing in certain countries (e.g. the U.S.). The social security contribution (SSC) rate can now adjust from a baseline level of 4.05% to a maximum of 5.05% for firms with separation rates above the median in their sector. The SSC rate can also decrease to a minimum of 3% for firms with separation rates below the median.

Additional details on these measures can be found in Annex B.1. Bjaï et al. (2025) further discuss the precise changes. The first measure came into force in

[16] The benchmark daily wage ('*salaire journalier de référence'*) is obtained by summing the gross salaries received over a reference period (changed by the reform from 12 to 24 months) and dividing this total by the number of days non-worked (only worked before the reform). The benchmark daily wage is used to compute the level of unemployment benefits ('*allocation d'aide au retour à l'emploi')* by applying a replacement rate to the benchmark daily wage.

[17] The PBD is the maximum duration for which a jobseeker can receive benefits. In France, it used to be computed based on the number of days worked over a reference period of 24 months left unchanged by the reform. It is now obtained as the total number of days worked and non-worked between the first and last days worked over the reference period.

[18] Article 17bis of decree 2019-797 of 26 July 2019 (came into force on 1 December 2021)

September 2021, followed by measures 2 and 3 in December 2021 and measure 4 in September 2022.

No investments related to this reform have been identified in the NRRP.

Table 4 presents the results from mapping the different measures to our classification framework (Section 1). The reform includes measures related to the labour taxation and UB domains, covering a total of four policy fields. In particular, the reform modified all the main parameters associated with the unemployment insurance system and can be considered an important reform from this point of view.

Table 4: Categorisation of reform FR-C [C8]-R[R4]

Policy domain	Policy field	Measures	Expected outputs	Indicators
1. Labour taxation	Employers' SSC	**Measure 4:** Bonus-malus for employers' SSC: the SSC rate of a given employer increases or decreases depending on whether their separation rate is significantly above or below the median separation rate of the sector.	- Increased SSC for firms with high separation rates should support hiring on longer contractual duration - Share of short-duration contracts is expected to decrease and employment duration to increase - Unemployed are expected to exit to employment more rapidly and are incentivised to accept longer duration contracts as well - Unintended effects (e.g. increase in the use of short-duration contracts) cannot be ruled out - More fiscally sustainable UB system.	- Job finding and separation rates - Share of short (less than 1 month) and long (greater than 6 months) temporary contracts - Aggregate employment - Average employment duration - Number and prevalence of temporary and open-ended contracts
2. UB	Net replacement rate	**Measure 1:** New methodology for calculating the benchmark daily wage (SJR). The measure consists in dividing the total remuneration received during a given period by all calendar days worked and non-worked during this reference period. **Measure 2:** The introduction of a decreasing scale for UB of high-income recipients after six months of compensation.		
	Duration of UB	**Measure 1:** Taking into account all days worked and non-worked implies that the potential benefit duration (PBD) increases		
	Coverage and eligibility conditions	**Measure 3:** Tightening of the conditions of access to UB: workers have to contribute for a period of at least 6 months (130 working days) over 24 months, instead of previously 4 months over 22 months.		

Source: own elaboration.

The first two measures target workers, and with the exception of the increase in PBD, the literature suggests that they should stimulate jobseekers' search effort, leading to an increase in transitions from unemployment to employment. Unemployment duration should then decrease and employment increase (Lalive et al., 2006; Schmieder et al., 2016; Cohen et al., 2024). Following a decrease in UB, the effects on wages are negative but tend to be small.

In the medium to long run, the impacts of these measures also depend on whether transitions from unemployment to employment decrease with time (i.e. whether there exists effective negative duration dependence, see Kroft et al., 2013, 2016; Laureys, 2021; Cohen et al., 2023). In the presence of negative

duration dependence, the measures can be expected to have positive effects on employment over a longer time horizon.

Existing empirical evidence on **measure 3** (i.e. tightening of eligibility conditions) is limited. The literature available (Albanese et al., 2020; Khoury et al., 2020; P. Martins, 2021) highlights positive effects of such measures on worker separations (i.e. decrease in the transition from employment to unemployment/inactivity) as workers are incentivised to stay employed until eligibility is reached. This should raise employment and its duration, though unintended effects, in the form of multiple short-term contracts, can also emerge.

Measure 4 should be differentiated from the first three as it targets firms and therefore labour demand. The measure implies that firms with high separation rates see their SSC increase. There exists a vast literature studying the impact of changes in SSC on (temporary) employment. Results are generally not conclusive, as the effect of this measure on labour market outcomes can depend on whether wages absorb the change in SSC or not (Bozio et al., 2017; Saez et al., 2019; Guo, 2024). In the case of the French reform, the design of the reform, in particular the fact that it targets only a few sectors, could suggest that firms will be constrained in their ability to transfer the increase in SSC to wages. Hence, labour demand in affected firms can be expected to adjust, decreasing (increasing) hiring in firms with high (low) separation rates.

Importantly, the effectiveness of this measure is contingent upon firms' capacity to adapt and offer longer-duration contracts, which could be influenced by structural factors, such as the sector of activity. Moreover, some literature highlights potential unintended effects of taxation on temporary contracts, which can lead to an increase in labour turnover and a decrease in employment duration (Cahuc et al., 2020).

Taken as a whole, the reform can be expected to increase transitions to employment, decrease separations and disincentivise the use of short-duration (temporary) contracts. This should, in turn, increase employment duration and promote more sustainable forms of employment. Nonetheless, some uncertainty remains, and several measures could exert opposing or offsetting effects depending on implementation and behavioural responses. The expected impacts of each measure are described in more detail in Annex B.2.

2.2.2. Rationale and coherence

The broad objectives and expected outcomes briefly discussed above suggest that this reform should be largely relevant to France’s labour market challenges. Ex-ante, the reform can be expected to address, to a certain degree, three of the four pre-existing challenges mentioned previously, with the exception of increasing support for disadvantaged groups.

Despite this initial positive assessment, three potential shortcomings suggest that some caution is warranted when analysing this reform and its objectives. Firstly, a significant share of jobseekers on temporary contracts is not registered at the PES and does not claim UB. This population is therefore unlikely to be affected by the reform. Secondly, evidence from the academic literature discussed above indicates that these measures, 3 and 4 in particular, can have unintended effects (e.g. multiple short-term contracts, increased labour turnover), thereby raising the feeling of job insecurity. Thirdly, disadvantaged groups (e.g. uneducated youth) are overrepresented among short-term workers. Thus, the reform could actually weaken their position on the labour market, a fact that sits in tension with the CSRs related to fostering the labour market integration of said disadvantaged groups.

With regards to *coherence*, it was already noted that the labour market reforms included in the French RRP are complementary (Section 2.1.2).

Moreover, this reform is part of a broader effort to reform the unemployment insurance system. This effort started during the last decade after the financial crisis and was prolonged after 2022, notably in 2023 with the introduction of a countercyclical PBD, whereby the PBD automatically adjusts and decreases (increases) when the unemployment falls (rises) below (above) a certain level. Furthermore, the most recent framework agreement between social partners went back on some of the parameters modified by the reform, though only at the margin, indicating that after a strong opposition from both trade unions and employers, the reform is now (more or less) accepted. In this regard, some stakeholders pointed out that future discussions and debates around the unemployment insurance system could benefit from the creation of an independent tripartite body along the lines of the "*Conseil d'Orientation des Retraites*".

2.2.3. Labour market impacts

Existing evidence

Existing evaluations of France's unemployment insurance reform provide evidence largely consistent with the expected impacts discussed previously. These assessments, supervised by an independent committee of academic researchers, draw on individual-level administrative data and are synthesised in a final report (Bjaï et al., 2025).

One of the most significant findings relates to the first measure, which led the benchmark daily wage for affected jobseekers, mostly low-educated young individuals, to fall by approximately 25% on average, ultimately decreasing the

daily allowance by about 17% on average[19]. This substantial decrease in UB is reported to have increased the exit rate from unemployment to employment and reduced the duration of unemployment spells. Quantitative estimates suggest that a 10% reduction in the benchmark daily wage is associated with a decline in unemployment duration ranging between 1.4% and 5% (i.e. between 2.5 and 9 days for a six-month spell).

Measures 2 and 3, which introduced a sliding scale for high earners and tightened eligibility criteria, supported transitions to employment as well. These outcomes are again aligned with the available evidence and tend to confirm that reduced benefit generosity and increased minimum work requirements exert positive pressures on re-employment incentives.

The evaluation of measure 4, the bonus-malus mechanism applied to employers in certain sectors, is constrained by the fact that the measure entered into force one year after the other measures in September 2022. Nonetheless, preliminary findings point to modest but positive effects on the average duration of employment contracts.

Overall, the reform appears to have had a limited impact on short-duration contracts and labour market dualism[20], as around half of the exits from unemployment led to short-duration contracts (Bjaï et al., 2025). More generally and though the sign of the effects of different measures is consistent with the empirical evidence, the magnitude of the estimated effects seems to be relatively small, which can be explained by the fact that the reform affected only a fraction of jobseekers and firms[21]. More details on the results from the evaluation can be found in Bjaï et al. (2025).

Indicators and methodological approach

The literature review on expected impacts highlights that the separation and job finding rates are among the main outcomes of interest for this reform. The EU-LFS cannot be used to analyse labour market flows at the individual level but Eurostat publishes aggregate data on transitions between the three main labour market states (i.e. employment, unemployment and inactivity)[22], used for the descriptive and quantitative analysis below.

[19] The decrease in the daily allowance is smaller than the decrease in the benchmark daily wage due to the existence of minimum floors.

[20] More recent evidence indicates that the share of temporary contracts has been decreasing in France for the second consecutive year in 2024 (https://www.insee.fr/statistiques/8376894). It is however not possible to link this evolution to the reform without a proper econometric analysis.

[21] A point sustained by an academic expert during an interview.

[22] [lfsi_long_q].

The primary purpose of the EU-LFS is to construct indicators related to labour market stocks. These include:

- Employment disaggregated between permanent and temporary contracts. Stocks are expressed as rates in terms of total employment for descriptive purposes, and in level (thousands of individuals) for the econometric analysis.
- average duration in employment expressed in months
- temporary contract duration.

These indicators are primarily used for descriptive purposes, and the EU-LFS offers additional information (e.g. on hours worked), which could also be interesting to monitor. Moreover, evidence suggests that the prevalence of temporary work can be higher among certain groups in the labour market (Storrie, 2017). These include young workers, women and non-native workers[23]. The same indicators are therefore computed from the EU-LFS for these three different groups (see Annex C.2.1 for additional precisions).

Following the descriptive analysis, a subset of these indicators is used for a more formal evaluation of the reform's impact. Effects on labour market flows are analysed using the Synthetic Control Method (SCM; Abadie, 2021), while the effects on total, permanent and temporary contracts are studied using the Difference-in-Difference (DiD) estimator proposed by de Chaisemartin et al. (2024).

SCM is especially useful when only one or a few units are exposed to a policy or intervention. Given that only four of the flow rates provided by Eurostat could be affected by the reform (i.e. job finding rates from unemployment/inactivity and separation rates to unemployment/inactivity), SCM appears to be well-suited to our sample. The method constructs a synthetic version of the treated unit from a weighted combination of units unaffected by the reform. These control units correspond to the donor pool and consist of transition rates from other Member States published by Eurostat, as well as flows for Australia, the United States and the United Kingdom[24]. Flows from Greece, Spain and France (other than the flow of interest) are dropped from the sample, together with flows from certain Member States, which introduced their rotation scheme[25] in the EU-LFS, only recently (e.g. Belgium, Germany).

[23] This is less true for women, but differences by gender persist in certain Member States.

[24] See https://www.abs.gov.au/labour, https://www.bls.gov/flows and https://www.ons.gov.uk/datasets/flows.

[25] Rotation schemes ensure that a certain share of respondents remains in the sample across two consecutive quarters. This enables the computation of labour market flows and each Member States is required to have a rotation scheme in place in its national labour force survey. Many Member States introduced these rotation schemes over the last decade, some earlier than others.

In theory, all countries included in the donor pool should not be affected by reforms implemented over the period of interest after the treatment occurred. An analysis of labour market reforms included in the NRRP of each Member State was performed and did not reveal any major reform, (almost fully) implemented within the time window of interest (2021-2023) and that could potentially bias the estimates. However, this does not constitute definitive evidence, especially considering the four non-EU countries, and the estimation results should therefore be analysed with care.

The synthetic control is designed to closely replicate the treated unit's outcome trajectory before the intervention. If the synthetic version successfully tracks the pre-reform behaviour, it can then serve as a credible estimate of what would have happened in the absence of the intervention. The difference between the actual outcome for the treated unit and the synthetic control after the policy change is interpreted as the reform's causal effect.

Data on seasonally adjusted quarterly flow rates is retrieved from Eurostat for the period 2010Q2 to 2025Q1. This period was selected in order to work with a relatively long pre-treatment period for the estimation of weights, while ensuring that a relatively large number of countries can be included in the donor pool. In total, six flow rates for 19 countries are considered in the analysis and the donor pool includes 102 units[26], a large number when considering standard applications of the method. The SCM is discussed in more detail in Annex C.2.1.

DiD is used to estimate the potential effect of the reform on employment and permanent/temporary contracts. Our identification strategy exploits information on group units, often interpreted as jobs[27], and defined by the combination of 1-digit NACE sectors and 3-digit ISCO occupations. Given that the prevalence of temporary contracts varies significantly across sectors and occupations, some units with higher prevalence are likely to be more affected by the reform than others with a lower prevalence of temporary work.

This intuition is used to construct our control group, which includes all units with an average prevalence rate of temporary contracts over the period 2013-2019 below 5%. This is an arbitrary threshold selected to ensure that at least 40 units constitute the control groups while maintaining a low enough threshold to limit "contamination" of the control group. Hence, the treatment variable is binary and the treatment is assumed to take place in 2021Q3 for all (treated) units, with additional effects that could materialise in 2021Q4 and 2022Q3.

We rely on the nonparametric estimator developed by de Chaisemartin et al. (2024), which can accommodate a wide range of treatment designs. The inclusion of control variables is relatively simple, and the approach can be

[26] 12 additional transition rates are dropped from the sample. This is explained in Annex C.2.1.

[27] See Eurofound's job monitor for example.

adjusted to construct a counterfactual for total aggregate employment (see Ounnas, 2024), which constitutes a key input for the macroeconomic analysis.

The EU-LFS is available until the fourth quarter of 2023 (2023Q4), implying that we can estimate a maximum of nine effects after the entry into force of the reform (2021Q3). As a result, our reference period for the analysis is 2019Q2 to 2023Q4 in order to check that the parallel trend assumption holds. Estimates obtained from the DiD estimation are subject to a series of robustness checks presented in Annex C.2.1.

It is worth noting that neither the EU-LFS nor Eurostat (for flows) provide information on the past employment history of workers that would be required to analyse the impacts of each measure separately. Likewise, the mapping of the seven sectors selected by French authorities to the (1-digit) sector codes used in the EU-LFS is inappropriate, implying that measure 4 cannot be analysed on its own. As a result, the estimated labour market impacts only focus on the overall effects of the reform. This implies that the timing in the implementation of the different measures could matter for the estimation results: measure 1 entered into force in September 2021, followed by measures 2 and 3 in December of the same year, and measure 4 in September 2022[28]. Provided that there are no anticipation effects, the reform can be expected to have an impact from 2021Q3 with additional effects from new measures in 2021Q4 and 2022Q3.

Furthermore, several other reforms were implemented over the period of analysis. In addition to the reform of services to jobseekers discussed previously (Section 2.1), it is worth mentioning the substantial hiring subsidies created in favour of apprenticeships under Investment FR-C[C8]-I[I3], which significantly stimulated the creation of apprenticeships[29]. Apprentices are considered temporary workers in the EU-LFS and these incentives could therefore affect our analysis. As mentioned at the end of Section 2.1.2, an additional reform of the unemployment insurance took place in 2023 with the introduction of a counterfactual PBD. The reform of short-term work time schemes (FR-C[C8]-R[R2]) can also be mentioned, although this reform is unlikely to have a major impact, given that the take-up of the schemes should be small in the absence of a major economic shock over the period of interest.

Descriptive analysis

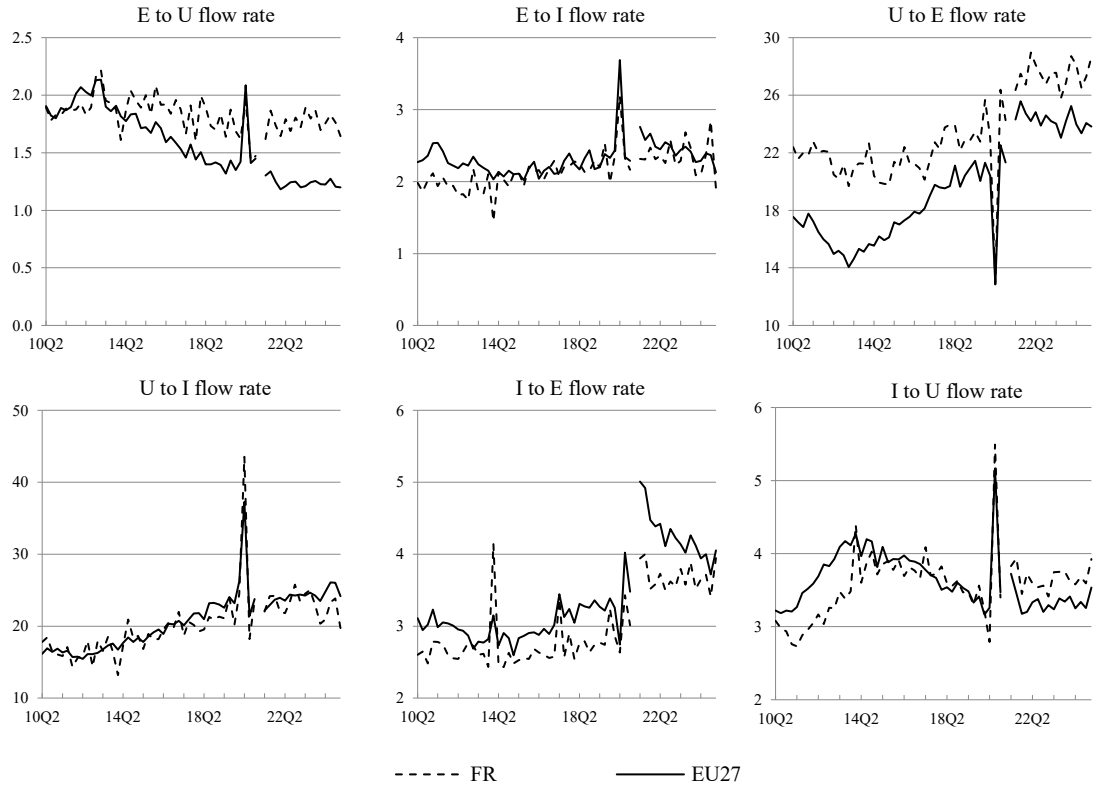
The descriptive analysis is based on a series of figures displaying the selected flow and stock indicators. Figure 6 and Figure 7 show the evolution over time of these indicators, while Figure 22 and Figure 23 in the Annex display the same indicators normalised such that their 2021Q1 value is equal to zero. The discussion below focuses on indicators that could be considered more relevant

[28] See Figure 1.1 of Bjaï et al. (2025) for the complete timeline.

[29] See https://dares.travail-emploi.gouv.fr/publication/quel-impact-de-la-hausse-de-lalternance-depuis-2019-sur-la-productivite-moyenne-du-travail for additional information.

with regard to the reform analysed, and that will be used as outcomes of interest for the quantitative analysis.

Figure 6: France quarterly flow rates in % – 2010Q2-2025Q1



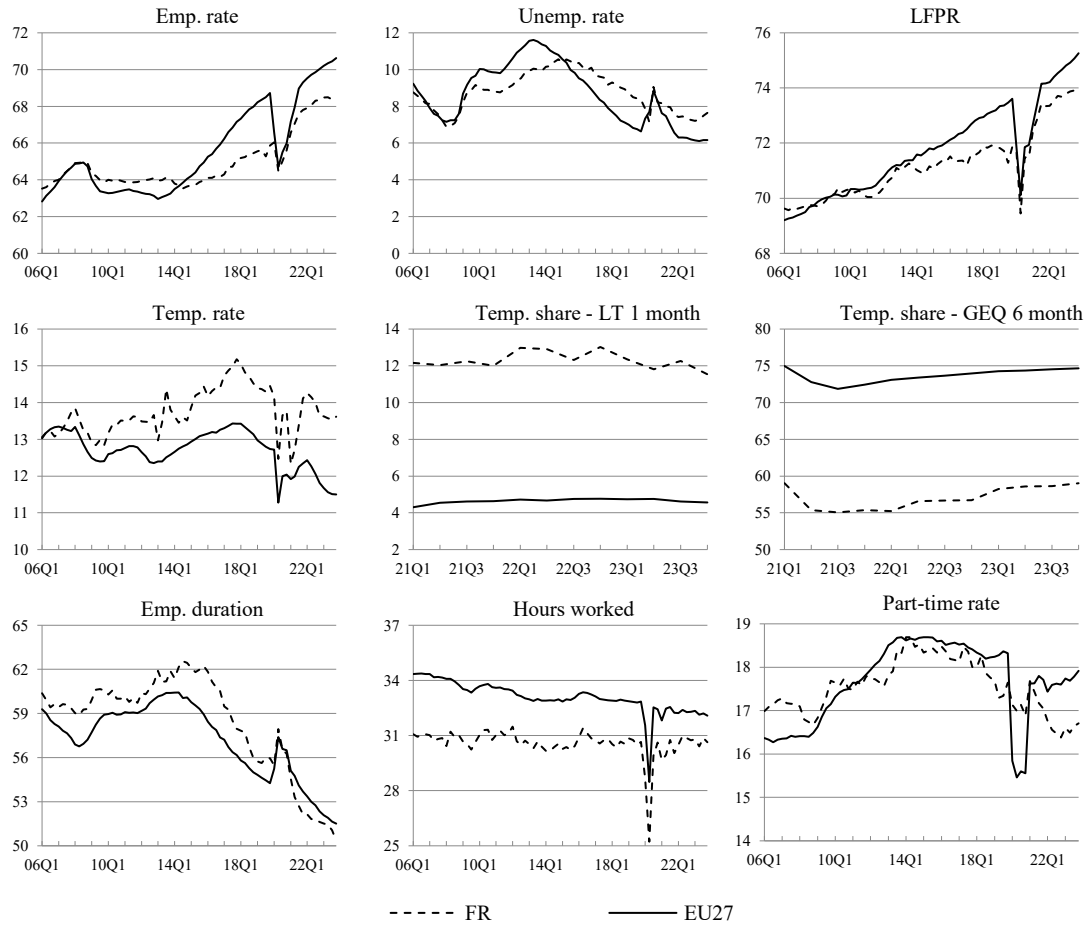
Note: Seasonally adjusted data is retrieved from Eurostat [lfsi_long_q]. “E” stands for employment, “U” for unemployment and “I” for inactivity. Series are expressed in percentages. Data for 2021Q1 is missing for several countries due to the introduction of the IESS framework regulation.

Figure 6 indicates that separation rates to unemployment and inactivity have been relatively stable over the last 15 years, around values similar to the EU27 rates. This observation also holds over the recent past, as separations to unemployment and inactivity only slightly decreased by 0.1 percentage point, since 2021Q2 (see also Figure 22)[30].

The job finding flows from both unemployment and inactivity appear to follow a similar evolution between 2010 and 2020. These rates have been fairly stable for the early part of the decade, but appear to have increased at the end of this period (around 2018). Since the COVID-19 pandemic, job finding transitions have been at their highest recorded levels, especially transitions from unemployment which were close to 1.2 percentage points above their 2021Q2 level on average between 2021Q3 and 2025Q1 (-0.1 percentage point at the EU27 level, see Figure 22).

[30] Note that the flows from employment to inactivity appear to be relatively volatile since 2021. See Figure 22 in particular.

Figure 7: France Labour market indicators – 2006Q1-2023Q4.



Note: Series are extracted from the EU-LFS and seasonally adjusted using Demetra. Series are expressed in percentages, with the exception of employment duration (average number of months) and hours worked. LFPR is the labour force participation, 'LT' stands for less than and 'GEQ' for greater than or equal to.

The prevalence of temporary contracts (Figure 7) has been increasing steadily during the previous decade to reach a maximum of 15.2% at the end of 2017 and decreased slowly afterwards until 2021Q1 (12.3%). The share of temporary workers then increased by a bit more than 2 percentage points over 2021 (14.3% in 2022Q1), which could be explained by the large inflows of apprentices (see discussion above). Since then, the temporary employment rate has decreased by about 0.6 percentage points (13.6% in 2023Q4).

In terms of contract duration[31], Figure 7 highlights the high prevalence of short-duration contracts (shorter than one month) in France, as the share of these contracts represents close to three times the EU27 value. Conversely, the share of longer duration contracts (greater than or equal to six months) is around 15

[31] The new IESS framework regulation appears to have generated a break in the series for contract duration and these are displayed only from 2021Q1. More generally, data on contract duration in the EU-LFS should be treated with care. See **Error! Reference source n ot found.** for a discussion of the limitations associated with labour market indicators.

percentage points smaller than the EU27 value (these contracts represent around three-fifths of fixed-term employment).

Recent developments have been consistent with the implementation of the reform (see also Figure 23 in the Annex). The share of short-duration contracts has decreased by 1 percentage point since 2021Q1 and even 2 percentage points since 2022Q4, or one quarter after the entry into force of measure 4. After an initial decrease, the share of longer duration contracts started to increase as well from 2021Q3, which corresponds to the date of implementation of measure 1. This increase could also be driven, at least to some extent, by the increase in apprenticeship, which typically tends to be of longer duration than other work-based learning arrangements (e.g. traineeships), with durations often running over years corresponding to academic cycles.

As discussed in Annex C.2.1, average employment duration appears to be mostly driven (negatively) by the economic cycle. Following the post-pandemic recovery, it is therefore not surprising to see the duration significantly decrease (by around three months, according to Figure 23). This observation is in line with the evidence discussed above on job finding transitions, which implies a substantial inflow of new workers (with no employment duration).

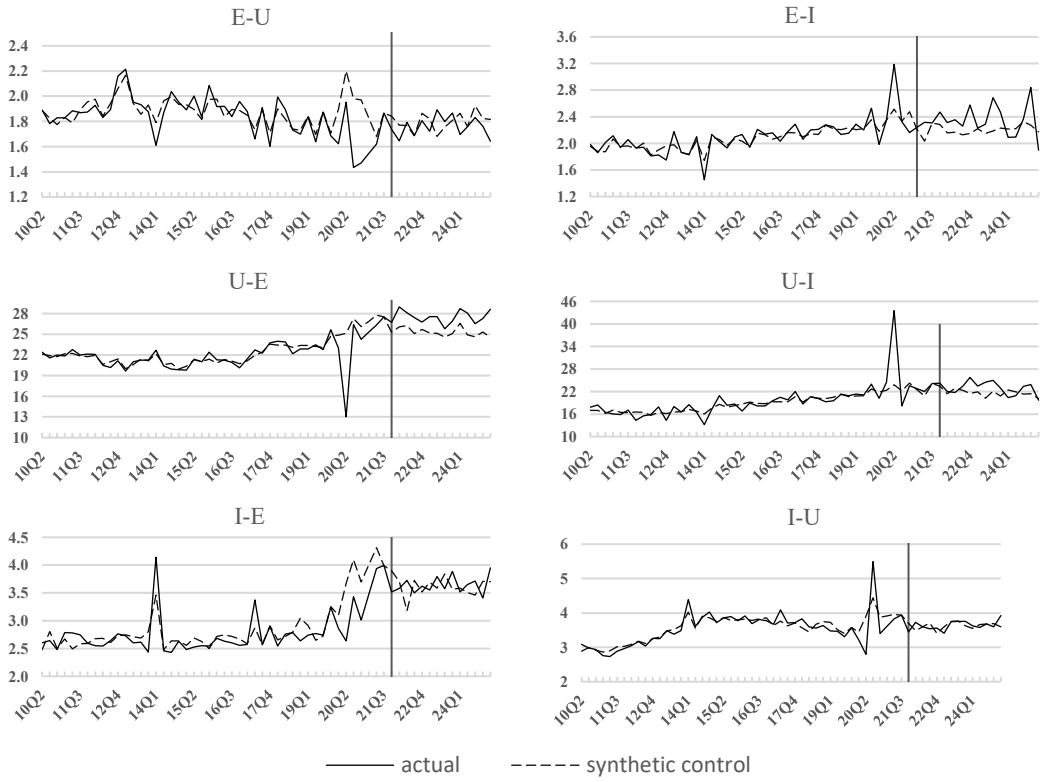
The same set of indicators (with the exception of contract duration) is available in Annex C.2.1 for migrant, young and female workers (Figure 24, Figure 25 and Figure 26). It is interesting to note from these figures that the prevalence of temporary contracts is only significantly greater than the aggregate series for young workers. A closer look at these indicators for this specific group is interesting, given the development in apprenticeships. However, the share of young workers on fixed-term contracts did not fluctuate much since 2021 (see Figure 25). Given the large increase in apprenticeships, this stagnation could hide a decrease in the prevalence of temporary work for this age group.

With the exception of job finding flows (from unemployment in particular) and contract duration, the descriptive analysis does not seem to reveal substantial developments that would support the view of large labour market impacts of the reform. It is, however, necessary to go beyond descriptive evidence to more properly assess the effects of the reform.

Estimated labour market impacts

The SCM is used to analyse the evolution of **flow indicators** following the implementation of the reform. Figure 8 displays the results obtained from the method. The impact of the reform can be measured by considering the difference between the actual series and the synthetic control. Estimated weights can be found in Table 19 in Annex C.2.1, together with Figure 27 and Figure 28, which display additional results from the estimation.

Figure 8: Impact of reform FR-C[C8]-R[R4] on flow rates – SCM



Note: Estimates from Synthetic Control Methods.

A first important observation from Figure 8 is that the synthetic controls in the pre-treatment period fit the actual series very well for all six flows[32]. When considering the post-treatment periods, a significant effect of the reform only appears for **the transition rate from unemployment to employment**. The positive effect varies between 1.1 percentage points (2022Q4) and 4.1 percentage points (2025Q1) with an **average effect over the period of 2.2 points**. Furthermore, the effect does not seem to increase around 2021Q4 and 2022Q3, meaning that the effects could be primarily explained by measure 1[33]. While the focus in this section is on the overall impact of the reform, it is worth pointing out that measure 1 led to a substantial decrease in the level of UB, which is expected to raise the job-finding rate (Section 2.1.1).

The results for the job finding rate can therefore be seen as consistent with the individual-level evidence reported by Bjaï et al. (2025). In the absence of the reform, the estimates indicate that the unemployment-to-employment transition rate would have been 2.2 percentage points smaller, implying that the reform

[32] With the exception of the COVID-19 pandemic period, though it should be remembered that only data points up to 2019Q4 are included in the procedure to retrieve weights. See Annex C.2.1.

[33] It should be noted that effects on flows are estimated until 2025Q1 and other reforms (e.g. counterfactual PBD introduced during 2023, creation of France Travail and changes to registration requirements) might also be relevant over the end of the period of estimation.

likely supported labour market dynamics over the period. No impacts on the job separation rates (to unemployment and inactivity) were detected.

Estimation results are interesting and aligned with expectations, but would require additional robustness checks, as estimated impacts obtained from the SCM can vary depending on the set of donors and the variables included in the procedure to compute weights.

Effects on the **employment stocks**, including open-ended contracts, are analysed using the DiD estimator of de Chaisemartin et al. (2024). The outcome variable is defined in log, such that estimated results can be interpreted as growth rates. A series of specifications is estimated for each outcome, starting from the baseline without any controls. Six other specifications are then considered, featuring different combinations of control variables. Control variables include sectoral value added and its lag, and 1-digit NACE and ISCO fixed effects. These fixed effects are also interacted with sectoral value added. The full set of results is displayed in Figure 9 and Table 20 in Annex C.2.1.

Focusing first on the baseline results, it is clear from Figure 9 that the estimation results suggest no impact of the reform on employment. The average effect (top of Table 20) is even negative (-3.6%), although not significant. Nevertheless, it is interesting to highlight the time profile of the estimated effects, in particular, the increase taking place from 2022Q4 (period 5), which corresponds to the entry into force of measure 4, and could signal a delayed effect of the reform on aggregate employment.

The joint-placebo test in the baseline specification is not significant as well but some individual placebos appear to be (e.g. at lag 6). This suggests a potential violation of the parallel trend assumption required to obtain valid estimates.

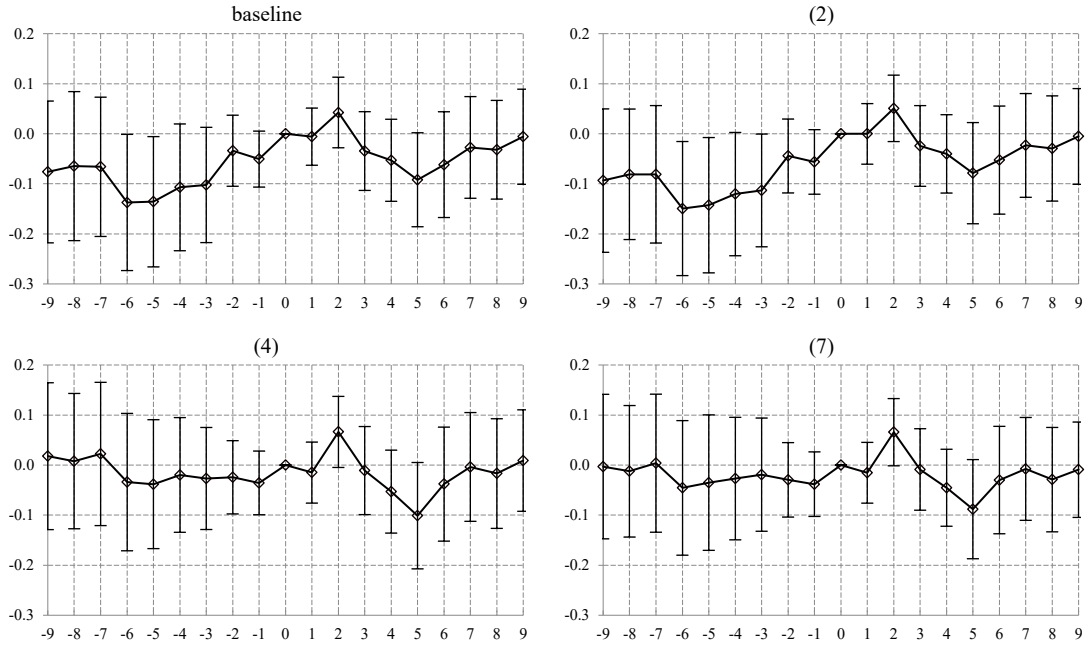
This potential issue disappears when occupation fixed effects, in particular for managers, are included in the specification (specification (4) in Figure 9). However, estimation results remain very similar, and no significant impacts of the reform on employment are detected, though the increase in the effects from 2022Q4 is still visible.

The same conclusion can be reached when looking at results for **open-ended contracts** (Figure 10 and Table 21). The estimated effects follow a similar profile through time. The average effect is again negative and non-significant in all specifications considered.

Several robustness checks were performed, including adjustments of the threshold to define the control group, exclusion of workers aged 15-24 in an effort to filter out apprentices and additional sensitivity analysis related to restrictions imposed on the sample (see Annex C.2.1 for estimation results). While some specifications show a positive effect on employment at the end of the period (Table 22), the profile of the estimates generally indicates **the absence of effects**

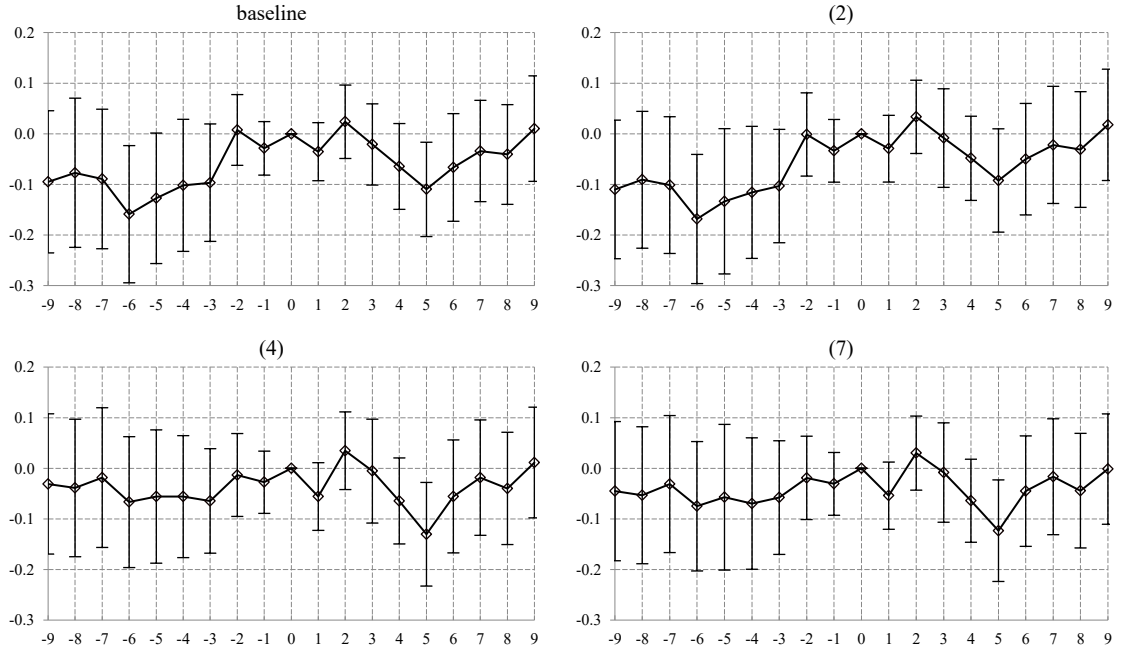
of the reform on employment and open-ended contracts over the period analysed.

Figure 9: Estimated effects – log of employment – FR-C[C8]-R[R4]



Note: DiD estimates at all possible leads and lags. l=0 for the last period before the first treatment takes place (i.e. 2021Q2). 'Baseline' corresponds to the specification without controls, (2) includes sectoral GDP and its lag, (4) includes 1-digit occupation fixed effects and all control variables are included in (7).

Figure 10: Estimated effects – log of open-ended employment – FR-C[C8]-R[R4]



Note: DiD estimates at all possible leads and lags. l=0 for the last period before the first treatment takes place (i.e. 2021Q2). 'Baseline' corresponds to the specification without controls, (2) includes sectoral GDP and its lag, (4) includes 1-digit occupation fixed effects and all control variables are included in (7).

It is important to note that the results obtained for the job finding flow rate do not necessarily contradict the absence of effects found for employment, since the latter is also affected directly (e.g. separations) and indirectly (e.g. out of the labour force flows) by other transition rates.

The quantitative analysis of the French unemployment insurance, therefore, reveals contrasting outcomes. Consistent with Bjaï et al. (2025), the results indicate a **positive impact on re-employment** captured by an increase in exit from unemployment to employment, and a **positive but small impact on the share of fixed-term contracts with duration shorter than one month**. On the one hand, **these evolutions match the objectives of the reform** and suggest a potential (slight) improvement in working conditions following the entry into force of the reform. On the other hand, Bjaï et al. (2025) report that **a high share of re-entries to employment were on temporary contracts**, which can be seen as aligned with the **absence of significant effects found on the stock of open-ended contracts, nor on employment**. These results tend to nuance the positive outcomes and support the idea that the reforms had **limited effects on aggregate labour market stocks**.

Given the limited measurable impact on employment, no macroeconomic effects can be reliably estimated.

3. Greece

Synthesis of results

- The modernisation and simplification of labour-law reform updated regulatory frameworks, clarified rules on emerging forms of work such as teleworking and platform work, and strengthened enforcement mechanisms.
- The restructuring of the PES aimed to reorganise local offices, enhance the use of digital tools, and improve governance arrangements to deliver more personalised and efficient services.
- These initiatives sought to address longstanding issues including high informality, outdated labour regulations and limited effectiveness of activation policies. The reforms were fully aligned with strategic national priorities and EU-level recommendations emphasising modernisation of PES and labour-market governance.
- The modernisation appears to have improved the take-up of ALMP (e.g training) and increased active support to jobseekers, though measurable effects on job transitions could not be estimated with the datasets used for the analysis.
- Labour-law changes have primarily produced institutional improvements, with their effects on working conditions and compliance still unfolding. The preliminary evidence suggests nonetheless that the reform increased take-up of parental leave without job separations and could have improved job stability for blue-collar workers.
- No macroeconomic effects have yet been identified.

Before the reforms, Greece's labour market faced several longstanding structural challenges, including high and uneven unemployment, a large informal economy, low labour productivity, and weak institutional capacity. These issues were reflected in Greece's CSRs and confirmed through stakeholder interviews.

During the sovereign debt crisis and subsequent adjustment programmes (2010–2018), unemployment remained persistently high, with long-term unemployment accounting for around 70% of joblessness in 2018. The burden of unemployment was unevenly distributed, disproportionately affecting youth and women, as well as other vulnerable groups, including migrants. Labour market participation among women and older workers was particularly low, while high emigration among young and highly educated workers contributed to rising dependency ratios. The 2019 CSR therefore emphasised the need to improve employment prospects and promote labour market participation, especially among the long-term unemployed (LTU).

Greece also had a sizeable informal economy, estimated at over 20% of GDP, with a similar share of workers outside formal employment. This reduced tax revenues, distorted competition, and left many workers without access to social protection. Relatedly, high income inequality and limited effectiveness of social transfers meant that the welfare system had a weaker impact on poverty reduction. The CSRs called for improving the coverage and targeting of social protection, reducing informality, and strengthening social dialogue.

Low labour productivity was another key challenge, linked to underinvestment in skills and education, particularly digital skills, and a weak alignment between education and labour market needs. Lifelong learning participation was limited, hindering upskilling and adaptability. The 2019 CSR, therefore, urged reforms to improve the quality of education, vocational training, and adult learning.

Finally, institutional capacity constraints affected both policy design and implementation. The PES, in particular, lacked the resources and operational capability required to support the unemployed and deliver effective ALMPs. Broader digital and administrative inefficiencies also increased compliance burdens for firms and reduced the effectiveness of labour market policies.

3.1. Modernisation and Simplification of Labour Law

The reform on modernisation and simplification of labour law (EL-C[3,1]-R[16744]) is part of a broader set of labour market reforms under Greece's key reform on the modernisation and simplification of the Labour Law and Digital Transformation of the Labour system. The reform aimed to modernise the system surrounding the Greek labour market by harmonising a previously fragmented and difficult-to-navigate labour law.

3.1.1. Description, related investment and expected impacts

The reform was implemented primarily via the Law 4808/2021 'Labour Protection Law', along with secondary legislation and implementing acts. It represents a comprehensive overhaul of Greek labour law, introducing a wide range of provisions across multiple policy domains. For analytical clarity, these provisions are grouped into five broad measures:

1. **Fundamental changes to EPL**: Article 64 harmonised severance indemnity, and termination and notice requirements for white- and blue-collar workers (see also Annex B.1). It further introduced new provisions related to work and compensation during the notice period (Article 65) and sets procedural protection against dismissal, on matters linked to unlawful grounds, burden of proof, and remedies (e.g. compensation; reinstatement; Article 66).

2. **Combating labour fraud** through the upgrade to the "ERGANI II" system: The reform strengthens enforcement against undeclared and under-declared work by upgrading Greece's "ERGANI" Digital Information System for workforce management to "ERGANI II", which integrates employment, social security, and real-time working-time data (Article 73). ERGANI II enables the Ministry of Labour and Social Affairs to effectively detect undeclared and under-declared work (Greek NRRP, 2021; p.240). The introduction of the *digital employment card* (Article 74) requires employers to record employees' working hours electronically and provides direct information to "ERGANI II", thereby enhancing monitoring and compliance with labour law. Articles 75–78 introduce complementary digital integration and interoperability rules. The Employment Inspection Authority was re-established as an independent authority, replacing the previous SEPE structure and setting out its legal status, organisation, and competences under the new framework (Articles 102–125).

3. **Work-life balance**: Law 4808/2021 transposes the Work–Life Balance Directive (Directive 2019/1158) through several provisions. Articles 27–29 introduce or strengthen paternity, parental, and carers' leave, while Article 31 provides for flexible working arrangements for care-related reasons. Additional provisions expand leave entitlements to specific groups and situations (e.g. Article 34 extends maternity leave arrangements to adoptive parents). The law also includes provisions related to telework in Article 67, which clarifies its definition, procedures for requesting it, employer obligations regarding equipment, and the right to disconnect.

4. **Working time regulation**: Articles 55–63 revise several aspects of working time. Article 55 confirms the standard full-time workload of 40 hours per week (distributed over five or six days), Article 58 sets rules for overtime pay, and Article 63 allows firms in designated sectors to operate on Sundays.

5. **Regulation of digital platform work**: Articles 68-72[34] of Law 4808/2021 introduce a regulatory framework for digital platforms. Article 68 provides a legal definition of digital platforms, while Article 69 represents an early attempt in the EU to establish a presumption of dependent employment for platform workers[35]. The remaining articles include provisions on collective representation, occupational safety and health (OSH), and transparency of working conditions (including the obligation to provide workers with a written contract).

[34] See https://www.ela.europa.eu/EL-Regulating-the-digital-platforms-economy.pdf for additional details on these articles.

[35] It should be noted that the law defines conditions under which an employment relationship cannot be considered dependent, rather than the conditions characterising this form of employment relationship.

6. **Equality, non-discrimination and collective labour relations.** A final group of measures concerns equality, non-discrimination and protection from harassment, including the ratification of International Labour Organisation (ILO) Convention No. 190. The reform also introduces changes in collective labour relations, such as the digitalisation of registers and voting procedures for social partners, as well as new provisions on unlawful strikes and minimum service requirements (Articles 82–101)

These measures are further discussed in Annex B.1

The mapping of the different elements of the reform to our classification framework (Table 5) confirms the importance and complexity of this reform, which spans three different policy domains (i.e. Labour taxation, EPL and Working time) and ten different policy fields.

Table 5: Categorisation of reform EL-C[3,1]-R[16744]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
1. Labour Taxation	Labour taxation: other	**Measure 2**: Introduction of ERGANI II, the digital employment card and re-establishment of an independent Employment Inspection Authority (SEPE)	-The measure is expected to reduce undeclared work and fraud, and increase transitions to regular (i.e. full-time open-ended) employment - Average hours worked should increase in the case of under-declared work	-transitions to regular employment (from out-of-the labour force or from part-time employment) -average hours worked
5. EPL	Procedural requirements	**Measure 1**: Articles 65 and 66 contain provisions related to work during the notice period (Article 65) and set aspects related to the burden of proof, and remedies in case of unfair dismissals.	- These measures correspond to a tightening of the EPL, with e.g. higher separation costs for blue-collar workers and new definitions for fair dismissals. The measures are expected to decrease separations with an indirect impact on hiring that will depend on the reaction of firms -Employment might increase in the short-run as separations decrease and hiring takes time to adjust but this effect should be temporary and employment effects could become negative in the medium/long run.	-separation and job finding rates - Employment by type (open-ended versus temporary) and employment duration
	Notice and severance pay ments	**Measure 1**: Harmonisation of notice requirements and severance payments between white and blue collar workers (Article 64)		
	Definition of fair dismissals	**Measure 1**: Article 66 sets procedural protection against unlawful dismissal		
	Permanent contracts - Other	**Measure 5**: presumption of employment, burden of proof	- Transitions from self-employment status to employee should increase - Unintended effects (transitions to un(der)declared work, hiring on fixed-term contract) may arise	-Share of self-employed and employees in specific sectors and occupations -Hours worked and prevalence of fixed-term contracts for platform workers
8. Working time	Working hours management	**Measure 4**: Articles 55-63 constitutes a comprehensive revisions of the legal framework surrounding working hours	-Effects of changes in working time regulation are conditional on several factors	-Hours worked and overtime -Hiring and firing -Employment -wages
	Part-time work			

	Sabbatical, other special leave schemes		-Increased in the maximum number of hours is expected to increase this number, though a substitution effect could take place (i.e. some workers will work more and some less). Wages should increase with the increase in hours. -Sunday work has been found to have positive effects on hirings and a small but positive impact on employment and hours worked	-workers reporting to work on Sundays
	Working time - Other			
	family-related working-time organisation	**Measure 3**: provisions to support work-life balance (e.g. expansion of paternity leave to 14 days, and leave for employees who are carers)	- Increase in take-up of parental leave - Lower separations with employers and maintained attachment to the labour force which facilitates labour market re-entry at the end of the leave. - Reduction in gender employment gap and increase in labour force participation - Smaller wage penalties for beneficiaries	- Employed but absent from work for parental leave reasons - Employment and labour force participation - gender employment gap

Source: Own elaboration

Measure 1 primarily tightens EPL for blue-collar workers, which is expected to reduce separations and generate a modest short-term increase in employment as firms gradually adjust. Higher severance pay may lower wages for new entrants, though wage effects depend on economic conditions, or the economic cycle (P. S. Martins, 2021). Furthermore, a stronger EPL is generally thought to raise the bargaining power of workers, exerting positive pressure on wages.

In the medium to long run, the effects are uncertain: firms may reduce hiring as the expected cost of a match rises, potentially offsetting initial gains (Boeri et al., 2015).

Measure 2 reinforces the legislation against undeclared work by introducing ERGANI II, creating the digital employment card and re-establishing SEPE as an independent labour authority. If effective, transitions to formal employment and hours worked should increase. Unintended effects, such as shifts from under-declared to undeclared work, remain possible (European Platform Tackling Undeclared Work, 2018).

Measure 3, through expansions in parental leave (e.g., four months of protected leave per parent) and flexible working arrangements, is expected to lower separations, support smoother re-entry into employment, and reduce the gender employment gap. Short-term effects on employment are ambiguous due to the timing of returns, but over the longer term, lower exit rates and preservation of worker-employer matches may modestly raise employment and increase labour force participation. Positive effects on wages are also possible by limiting (the perceived) skill depreciation that can arise from longer period away from the labour force.

Measure 4 adjusts multiple aspects of working time, including weekly hours, overtime pay, and Sunday work openings and allowances. Labour market

impacts of this measure are difficult to anticipate as they depend crucially on how binding the new legislation is. Moreover, many provisions under this measure tend to loosen restrictions related to working time (e.g. overtime hours, Sunday opening). In general, working time reforms are found to have limited effects on hirings and firings, and hence on employment (Batut et al., 2023). More generally, the clarification of rules related to working time may influence work organisation and job quality.

Measures 5 and 6 on platform work, fairness and equality. Articles 68–72 strengthen protections for platform workers, including a presumption of dependent employment, collective representation, and OSH. These provisions may reclassify self-employed workers as employees, but could also lead platforms to reduce hiring, to offer part-time/fixed-term working arrangements, or push workers into informal arrangements. The last set of provisions on equality, non-discrimination, harassment, and collective labour relations should improve job quality and satisfaction but is not expected to produce measurable labour market effects on the main labour market outcomes considered in this study.

3.1.2. Rationale and coherence

According to Greece's NRRP, this reform is in line with the CSRs for Greece for 2019 and 2020 and the proposals included in the 2020 Pissarides Committee final report[36].

Taken together, the multiple measures outlined above appear well-targeted to address several of the pre-existing challenges in the Greek labour market. In particular, Law 4808/2021 introduced a range of changes that are relevant to tackling the issues described earlier:

- Introduction of the mandatory digital employment card and the re-establishment of the Labour Inspection Authority target Greece's high level of informal work, estimated at 20% of GDP.
- Labour law changes, such as abolishing the distinction between blue- and white-collar workers for severance pay and dismissal notice, help create a more level playing field and promote a fairer labour market.
- Provisions on work-life balance for parents and caregivers aim to reduce the country's pronounced gender employment gap, as highlighted in the Pissarides Committee Report (pp. 143–144) and the 2019–2020 CSR.

In terms of coherence, these reforms align with Greece's broader labour market strategy (Key Reform 6 in the 2021 NRRP) and EU objectives on reducing undeclared work and narrowing gender gaps. At the national level, they respond

[36] The Committee had the mandate to develop a Growth Plan for the Greek economy, and its final report was influential in helping Greece shape its RRP

to the 2019–2020 CSRs and the recommendations of the Pissarides Report. Stakeholders highlighted the simplification of fragmented labour laws but emphasised the need for complementary measures, such as in-work benefits and reforms to overtime remuneration, to sustain progress. Similarly, OECD (2024) recommends strengthening incentives related to work life balance provisions, for example, by offering bonuses to fathers who take parental leave, as practised in Finland, Germany, and Italy. The OECD also suggests reinforcing awareness campaigns, such as Greece's "Share" project, and establishing equality labels for companies adopting gender equality policies, to counter stereotypes and increase the uptake of childcare services.

3.1.3. Labour market impacts

Law 4808/2021 represents one of the most comprehensive labour market reforms in Greece in recent decades. Given the scope and heterogeneity of the reform, this section does not aim to assess Law 4808/2021 as a whole. Instead, the empirical analysis focuses on two specific provisions that stand out as particularly significant in terms of both legal intent and potential labour market impacts: **Article 28**, which introduces individual and partially paid parental leave, and **Article 64**, which abolishes the longstanding legal distinction between blue- and white-collar employees with respect to severance pay and notice periods. These two provisions are part of measures 3 and 1, respectively. These articles are described more precisely in Annex B.1 together with their specific expected impacts.

Existing evidence

There is currently no ERGANI-published, consolidated indicator of fathers' and mothers' leave uptake under **Article 28** in the public domain. While ERGANI records the employer's E14 declaration granting/interrupting parental leave, and DYPA calculates the monthly allowance based on the E14 entry, public ERGANI outputs cover mainly hirings and separations. Hatzivarnava-Kazassi et al. (2024) report that the newly introduced obligation to record leaves digitally is still far from being fully implemented.

Early indications point to limited uptake driven by cultural norms and information gaps. In a nationally representative survey of Greek private-sector employees, Kasdagli et al. (2023) find that: (i) To boost parental-leave use, men most often favoured making fathers' leave mandatory, while women prioritised income protection (no pay loss during leave), highlighting different barriers by gender; (ii) Stereotypes remain salient as 58% of men and 38% of women agreed or somewhat agreed that the labour market penalises men who take parental leave; and (iii) awareness is limited with only 20% of respondents reporting being very familiar with parental leave, without significant differences between genders.

Simulations suggest parental leave reforms could boost employment and long-term growth in Greece. An IMF staff analysis (Capell et al., 2025) estimated that in Greece, improving parental leave policies, alongside childcare expansion and tax-benefit tweaks, could boost employment by 3%[37]. Because care constraints fall overwhelmingly on women, almost the entirety of this effect comes from greater employment for women, directly narrowing the gender employment gap. This supports the mechanism that higher fathers' take-up of parental leave would relax mothers' care constraints, facilitating their (re)entry in the workforce and their working time arrangements, thereby narrowing the mother/father employment gap[38].

There are presently no empirical or academic studies examining the labour-market and economic implications of **Article 64**. Antonopoulos et al. (2022) do not address **Article 64** directly, but they explore the distinction between blue- and white-collar employees. They show that, in the post-pandemic period, blue-collar workers experienced resilient employment flows and even rising wage pressures in sectors such as construction, thereby supporting the labour market position of these workers.

Specifically, no formal academic or institutional analyses have examined contract preferences or dismissal patterns in the Greek labour market. Despite the economic hypothesis that equalising severance protections under **Article 64** might lead employers to favour fixed-term contracts to limit firing liabilities, there is no supporting evidence. Similarly, although some commentators speculated that employers might have chosen to dismiss workers shortly before the reform entered into force.

Although they are not the focus of the quantitative analysis below, some evidence on **measures targeted at labour market fraud (measure 2)** can be obtained from the grey literature. It should be noted that un(der-)declared work is a difficult phenomenon to measure, but some evidence could be obtained through interviews with the Ministry of Labour and Social Insurance. At the time of writing, the digital employment card was still in its pilot phase, involving 300,000 businesses, with the goal of covering all private sector employees. Nevertheless, evidence on hours worked suggests that, following the introduction of the digital employment card, overtime increased by 60% overall, with increases of 38% in the banking sector, 81% in industry, 97% in retail, 600% in tourism, and 52% in the catering/food service /hospitality sector[39].

[37] The plus 3 per cent is a total employment gain that includes people inactive due to care duties and nets out expected unemployment.

[38] The gender employment gap in Greece remains among the EU's highest. It stood at a value close to 21 percentage points in 2022 (10.2 percentage points at EU27 level in 2023, see European Commission, 2023).

[39] Ministry of Labour and Social Security data; March 2025 vs. March 2024, before the digital employment card was introduced.

Indicators and methodological approach

To assess the impact of **Article 28**, our primary outcomes of interest are:

- Work performed vs. leave. "*At work"* measured with the LFS variable WKSTAT = 1 (worked in the reference week); "*Absent with job"* measured with the LFS variable WKSTAT = 2 (has a job but was absent in the reference week; job-attached).
- Employment measured by the LFS variable ILOSTAT = 1. This measure is sensitive to the ILO rule that long unpaid absences (expected return greater than 3 months) may be classified outside employment.
- Labour-force participation measured by the EU-LFS variable ILOSTAT (1 for employed and 2 for unemployed).

It is worth noting that the EU-LFS offers information on whether an individual is absent from work for parental leave reasons, but in the Greek EU-LFS files, the variable is missing for a large majority of observations. An alternative indicator based on EU-SILC was also considered but not explored further due to data quality concerns as well (see Annex C.2.2).

Article 28 took effect in 2021Q2[40] and expanded parents' rights to parental leave. The expected effects tested in the quantitative analysis of **Article 28** are the following:

1. a leave-take-up/within-employment reallocation effect: conditional on being employed, a shift occurs between being at work and being absent while preserving the employment relationship;
2. a re-classification effect under the post-2021 ILO rules: long unpaid spells (with expected return beyond three months) may be recorded outside employment.

Ex ante, we expect that the reform will take effect and primarily operate along the margin of presence vs temporary absence rather than through altering employment levels. Accordingly, among the eligible groups, our prior is a reallocation within employment: a decline in the probability of being present at work in the reference week and an increase in being absent while job-attached, with the overall ILO employment level roughly unchanged, or only slightly lower where longer unpaid spells trigger reclassification under the ILO's three-month rule. Consistent with this mechanism, labour-force participation is expected to remain essentially unchanged in the short term, with at most a gradual increase in the medium term as protected leave lowers exit risk and facilitates returns. Given prevailing gender norms and lower expected take-up by fathers, we anticipate larger and cleaner effects for mothers.

[40] Entitlement applies if the leave starts on or after 19 June 2021. For empirical work, it's still sensible to treat 2021Q3 as the first full post-policy quarter.

We rely on the dynamic DiD event study estimator proposed by de Chaisemartin et al. (2024) using individual-level EU-LFS weighted data for the period 2019Q3-2023Q3. The treated group comprises eligible parents (mothers and fathers in separate analyses) whose youngest child is aged 0-7, while the control group comprises ineligible parents (mothers and fathers in separate analyses) with a youngest child aged 9-13. We exclude cases where the youngest child is exactly 8 years old (a doughnut-hole around the age-eight cutoff) to enhance comparability around the threshold. The age group of the mothers is restricted to 20-49, which corresponds to the peak childbearing and caregiving years. This group constitutes the primary focus of work-life balance policies, and is in the core of their working lives. For comparison purposes, the age group of the fathers is the same. Additional restrictions on the sample are presented in Annex C.2.2.

With regards to **Article 64**, our outcomes of interest are:

- Tenure (with the current employer) in months for permanent employees, a direct measure of job stability.
- Shares of permanent and fixed-term employees with tenure smaller or equal to 3 months, which constitutes proxies for the inflows of new hires by type of contracts.
- Permanent share among all employees (permanent and fixed-term, regardless of tenure) for testing the stock contract-mix.

Article 64 took effect in 2022Q1 to strengthen the protection for manual workers by abolishing the blue/white-collar distinction, thereby raising the expected separation costs. The indicators listed above will be used to analyse several potential behavioural channels through which **Article 64** could affect the labour market:

1. Retention effect (stabilising adjustment) whereby higher separation costs provide incentives for firm to keep their workers or delay separations.
2. Change/reallocation adjustment that can occur through two sub-channels.
    (a) A slowdown in permanent hiring (entry volume effect) as firms may (temporarily) reduce the inflow of new permanent hires.
    (b) The share of new hires (entry composition effect). may tilt toward fixed-term/agency/outsourced arrangements.
3. Stock contract mix (permanent vs fixed-term). Firms may gradually reweight the workforce toward fixed-term contracts, filling vacancies with fixed-term rather than permanent, or renewing roles on fixed-term.

The prevalence of open-ended and temporary contracts (labour market segmentation) may change depending on which of the subchannels described

above, if any, dominates. However, effects on stocks, as opposed to flows described in 1., 2.(a) and 2.(b), are likely to materialise with time and we expect the retention effect to dominate. We also consider the potential undesired effects characterised in subchannels 2.(a) and 2.(b), as well as the overall effect on the prevalence of permanent contracts.

Our prior is that any substitution (2.(b)), if present, should be small and not persistent, as effectiveness, in this framework, means delivering the intended retention channel without material, sustained shifts away from permanent employment.

To test these hypotheses for **Article 64**, we follow a similar approach to Article 28 and implement the DiD estimator proposed by de Chaisemartin et al. (2024). Outcomes are obtained using weighted EU-LFS microdata for the period 2019Q4–2023Q4. The treated group is blue-collar, and the control group is white-collar. They correspond, respectively, to ISCO-08 groups 6 to 9[41] and to ISCO-08 groups 1 to 5[42]. The age group considered is 20-64, which reflects the Eurostat definition of Employment. The econometric specification includes a range of control variables described in Annex C.2.2.

Estimated labour market impacts

The results indicate that **Article 28** of the reform led eligible workers, especially mothers, to spend less time physically at work and more time on job-protected parental leave, while keeping their employment relationship intact. Employment and labour-force participation remained essentially unchanged. This suggests that **Article 28 facilitated temporary absences for family reasons rather than causing job loss or discouraging participation**.

Table 6 shows estimation results for women and the four outcomes of interest. Models 1 and 2 show the negative effect on presence at work of about 0.17% on average and an increase in absence with maintained attachment of 0.11% on average.

Table 6: Dynamic DiD event study on Article 28 (eligible vs non-eligible mothers)

[41] Respectively, Skilled agricultural, forestry and fishery workers; Craft and related trades workers; Plant and machine operators, and assemblers; and Elementary occupations.

[42] Respectively, Managers; Professionals; Technicians and associate professionals; Clerical support workers; Service and sales worker.

	No detrend				Linear detrend			
	Model 1 At work	Model 2 Absent	Model 3 Empl	Model 4 LFP	Model 5 At work	Model 6 Absent	Model 7 Empl	Model 8 LFP
δ (-8)	-0.10	0.10**	-0.01	-0.10	-0.11	0.11**	-0.01	-0.09
δ (-7)	-0.11*	0.07	-0.07	-0.12*	-0.11*	0.08	-0.06	-0.11*
δ (-6)	-0.13**	0.08*	-0.05	-0.11*	-0.13**	0.09*	-0.04	-0.10
δ (-5)	-0.11*	0.06	-0.05	-0.12*	-0.11*	0.06	-0.05	-0.12*
δ (-4)	-0.10	0.07	-0.05	-0.08	-0.10	0.08	-0.05	-0.07
δ (-3)	-0.10	0.08*	-0.06	-0.11*	-0.10	0.08*	-0.05	-0.10*
δ (-2)	-0.11*	0.05	-0.06	-0.11*	-0.11*	0.05	-0.06	-0.10*
δ (-1)	-0.13*	0.08*	-0.06	-0.06	-0.13*	0.09*	-0.06	-0.06
δ (0)	0	0	0	0	0	0	0	0
δ (+1)	-0.09	0.06	-0.04	-0.14	-0.09	0.05	-0.04	-0.14
δ (+2)	-0.16**	0.09	-0.07	-0.14*	-0.15**	0.08	-0.07	-0.15*
δ (+3)	-0.26***	0.09	-0.20**	-0.11	-0.26***	0.08	-0.21***	-0.12
δ (+4)	-0.19***	0.13*	-0.07	-0.08	-0.18***	0.12*	-0.08	-0.10
δ (+5)	-0.24*	0.13*	-0.15	-0.13	-0.23*	0.12*	-0.15	-0.15
δ (+6)	-0.18**	0.13**	-0.03	-0.04	-0.17**	0.11**	-0.04	-0.06
δ (+7)	-0.13	0.12**	-0.07	-0.11	-0.12	0.10*	-0.09	-0.13
δ (+8)	-0.22	0.16**	-0.06	-0.12	-0.21	0.14**	-0.07	-0.14
δ (avg)	-0.17**	0.11**	-0.08	-0.10	-0.17**	0.10**	-0.09	-0.12*
Joint post (p)	0.0029	0.0008	0.0232	0.3180	0.0011	0.0009	0.0082	0.310
Joint placebo (p)	0.355	0.167	0.0652	0.0563	0.297	0.129	0.0299	0.0230
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Group FE	Y	Y	Y	Y	Y	Y	Y	Y

Source: own elaboration

Note: Coefficients are expressed in percentage points (p.p.) and report by the p.p. difference between eligible–ineligible in k quarters before and after the reform, respectively, relative to the last pre-reform quarter (2021Q2). In the 'Linear trend' columns, outcomes are detrended using group-specific linear pre-trends estimated over 2019Q2–2021Q2 while preserving the 2021Q2 baseline. We specify that the entry quarter is 2021Q3 (although Art. 28 entered into force on 19 June 2021, to avoid partial exposure in Q2). Event time is denoted by δ(k), with δ(-k) being the 'Placebos (pre-reform) and δ(+k) the 'Effects' (post-reform). We report coefficients for $\delta \in \{-8,...,+8\}$; δ (avg) is the 'average cumulative/total effect'. "Joint post (p)" tests that all post-reform coefficients are jointly zero; "Joint placebo (p)" tests that all pre-reform leads are jointly zero. Standard errors not reported; *** p<0.01, ** p<0.05, * p<0.1.

It is difficult to interpret the difference between the two estimates but it could result from the ILO's change in how leaves are recorded. The negative effects on employment and the labour force participation rate reported for models 3 and 4 in Table 6 is consistent with the difference in the two estimates. However, it should be noted that these effects are only found to be statistically significant in a few instances and therefore, there is a certain degree of uncertainty on whether these effects are effectively different from zero. All these observations are confirmed when a linear detrending is included in the specification.

Overall, the results indicate that eligible mothers were found to be less frequently recorded as at work in the reference week and more frequently recorded as absent from work (i.e. with a maintained job-attachment), suggesting an **increase in the up-take of protected, temporary leaves without separations after the reform**. **Employment and labour-force participation remain broadly stable**, indicating that instead of pushing mothers out of the labour force, **the reform**

allows mothers to maintain an attachment with their employer, facilitating their future re-entry in the workforce. For fathers, the qualitative pattern is the same – presence falls and job-attached absences rise – but effects are smaller and somewhat less precisely estimated, in line with lower expected take-up[43]. These results are discussed in detail in Annex C.2.2.

Estimation results regarding the impacts of **Article 64** show an **improved job retention** as blue-collar employees maintained longer employment relationships, accumulating on average about seven to eight additional months of tenure relative to comparable white-collar workers. Firms appear to have postponed or reduced terminations, leading to greater employment continuity, decreased separations and enhanced retention of manual workers.

Effects on hiring flows are found to be limited. There is no statistically or economically significant evidence of changes in the inflow of new permanent hires, implying that **Article 64**'s main effect operated through retention rather than new recruitment. Likewise, the contract composition between permanent and temporary does not appear to change after the entry into force of the Law. Hence, the data reveal no systematic substitution from permanent to fixed-term contracts; the overall contract mix remained broadly unchanged.

Finally, **no adverse labour effects associated with Article 64 were detected**. Despite the increase in dismissal protections, overall employment growth continued in the post-reform period. The broader macroeconomic conditions may have contributed to offsetting any potential regulatory costs.

These results tend to indicate that **the reform strengthened job stability among blue-collar employees** without producing measurable distortions in hiring or contract structures. Further details can be found in Annex C.2.2.

Given the limited measurable impact on employment, no macroeconomic effects can be reliably estimated.

3.2. Restructuring and rebranding of Public Employment Service local offices - Organisation reform of Public Employment Service (DYPA)

The investment in 'ΚΠΑ2' *(*Κέντρα Προώθησης Απασχόλησης – Employment Promotion Centres*)* aimed to revamp the PES (in Greek: OEAD, and after 2022 DYPA). In particular, it aimed to improve the governance efficiency, and enhance

[43] Table 28 in the Annex shows similar patterns for eligible men: presence at work decreased and absences with maintained attachment increased. However, the effects are smaller and not statistically significant, which may reflect either a more limited impact on fathers' leave uptake or the smaller sample size, resulting in higher uncertainty. Consistent with the results for women, the effects on employment and labour force participation are negative but very small.

the PES evidence-based, data-driven decision-making, and ultimately, raise the overall quality of its services, including at the local level, through tailor-made matching services, enhanced counselling and rebranding. The broad objective of the reform was to strengthen the governance and decision-making capacity of the PES, especially its local customer service centres, to improve its work at promoting employment. There was a particular focus on customised job matching, enhanced counselling and outreach, as well as major physical upgrades, renovations and rebranding of local offices.

3.2.1. Description, related investment and expected impacts

The reform introduced several elements related to PES and ALMP, and is associated with the promulgation of several Articles included in Law 4837/2021. This law is complemented by Law 4921/2022 (which renamed OAED in DYPA), and is discussed in Section 3.2.2 on coherence. The main elements of Law 4837/2021 are:

1. **Governance and Organisational Modernisation of OAED**. Law 4837/2021 introduces targeted reforms to OAED's organisational structure. Articles 60–62 establish employment counsellors as a formal staff category, regulate their recruitment, and create a middle-management post in each local employment office to supervise operations and monitor performance. Article 66 sets up a Service Unit for Medium and Large Enterprises to strengthen employer engagement. Articles 67–69 adjust internal administrative arrangements, including governance procedures, movement and approval rules for the Governor, and the timetable for issuing OAED's internal organisational and financial regulations.
2. **Counselling, Profiling, and Activation Services**. The law reinforces OAED's counselling capacity by defining the duties, qualifications and certification framework for employment counsellors (Articles 60 and 64). Article 64 regulates the provision of group counselling, specifying that such services must be delivered by appropriately qualified and certified staff. These provisions support the staffing and constitute the basis for structured counselling and activation services within OAED's local employment network (KPA2).
3. **Governance of OAED's Vocational Education and Training (VET) Structures**. Article 65 provides the governance framework for OAED's VET institutions by defining eligibility, required qualifications and experience for directors of vocational training units, and by mandating a joint ministerial decision to specify the detailed selection procedure and evaluation criteria. This provision establishes consistent leadership standards across OAED's VET network within the broader organisational structure set by the law.

The different measures are described in more detail in Annex B.1

Table 7 shows that the reform targets the ALMP policy domain and the core of the associated law lies in the PES policy field, as it modernises the PES governance, organisation, and service delivery.

Table 7: Categorisation of Reform EL-C [3,1]-R [16941]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
ALMP	Public Employment Services	**Measure 1**: Law 4837/2021 reorganises and modernises the PES governance, including vis-à-vis the local branches (KPA2) **Measure 2:** reinforcement of counselling capacities	-The new governance model of the PES is more effective and efficient compared to the previous one - Ultimately, these measures aim at improving the quality of services provided by the PES, increasing its outreach amongst its target audiences. - These improvements can be expected to increase registration and participation in ALMP - They should further support quality activation policies and reinforce the positive effects of ALMP (JSA in particular) on job finding transitions.	-number of jobseekers registered at the PES and receiving active support, including by target group -re-employment probability of jobseekers participating in JSA and other ALMP
	Special schemes for youth	**Measure 3**: Article 65 of Law 4837/2021 strengthens the governance of Vocational Education and Training (VET)	- Improved governance could increase the take-up of work-based learning programmes among youth in particular.	- number of jobseekers registered at PES on a work-based learning experience - Transitions to employment following the end of e.g. work-based learning programme

Source: own elaboration.

Through its reform of VET governance, particularly Article 65, the reform can be linked to youth activation via apprenticeships and work-based learning. Although centred on PES and youth policies, the reform's government and organisational measures should reinforce the coherence and efficiency of Greece's employment policy framework. In this sense, the reform could be interpreted as having an impact on all fields of the ALMP domain.

Together, these measures form a package of organisational and governance updates that modernise internal structures, strengthen managerial accountability, and enhance the agency's ability to support employment and labour market needs. These provisions strengthen OAED's activation framework by ensuring methodological coherence and reinforcing the professionalisation of counselling staff. The reform further modernises the governance within OAED's VET network, supporting the provision of quality training and activation policies

Measures 1 and 3 are related to governance and the organisational structure. These measures are important to improve the outreach and functioning of PES.

However, their effects on labour outcomes are likely to be indirect and go through increased registrations at the PES and improved delivery and efficiency of ALMP.

Measure 2 could be expected to have a more direct positive effect on the re-employment probabilities of registered jobseekers. The measure is expected to improve the training and competencies of counsellors, leading to improved JSA (i.e. counselling and guidance services), which has been shown to have small but positive effects on re-employment prospects (Card et al., 2018; Cottier et al., 2018; Cheung et al., 2025). These services can enhance employability and the efficiency of job matching.

Beyond JSA, counsellors are important to orient jobseekers towards different forms of activation policies, for instance, training. These programmes are generally considered to have more pronounced benefits in the medium to long term, in particular for jobseekers who have been without employment for a significant period of time (Crépon et al., 2016; Card et al., 2018; Berg et al., 2022)

The positive effect on job finding transitions is expected to lower unemployment duration and increase employment. However, it is important to note that the aggregate effects of ALMP are not known with precision (Crépon et al., 2016), as existing evaluations generally focus on the impact at the individual level, ignoring potential crowding-out effects (i.e. a beneficiary from an ALMP who exit to a job after the programme could have taken the position of another unemployed, who might have accepted this position in the absence of the programme).

The impact on **wages** may be indirect, modest and long-term. On the one hand, improved job matching, stronger employer engagement, and better alignment between training and labour-market needs could support higher productivity and gradually push wages upward. On the other hand, broader activation of jobseekers and higher labour-force participation might initially expand labour supply, which could dampen wage pressures in the short run.

Certain disadvantaged groups on the labour market (e.g. youth, NEET, LTU) feature among the primary target population for PES. Hence, these jobseekers could be expected to particularly benefit from improvement in JSA and in the overall efficiency of the PES.

3.2.2. Rationale and coherence

The investment was in line with Greece's CSRs for 2019 and 2020, which noted that, although improving, PES were '*not commensurate to the unemployment challenge*' (Country report, 2020; p.35).

Hence, this reform is broadly relevant to addressing identified challenges, particularly the need for more effective and tailored support to jobseekers to reduce unemployment and labour market mismatches, and to drive greater institutional capacity. In 2020, Greece's CSRs noted insufficient employment

counsellors and an absence of integrated employment and social inclusion services for the LTU. Within this context, modernising local PES branches, emphasising personalised matching, enhanced counselling, and active outreach, appears highly relevant. That said, some uncertainties remain regarding the scale of the reform, which could be insufficient to effectively address the unemployment challenge.

The restructuring and rebranding of OAED branches can be seen as broadly coherent with Greece's broader reform strategy under the NRRP, which includes labour law reforms, active and passive labour market policy upgrades, and investments in digital labour systems. At the EU level, the reform supports flagship initiatives such as the European Pillar of Social Rights, particularly its focus on active employment support and tailored support via the promotion of Individual Learning Accounts.

Before 2021, Greece's PES relied primarily on administrative staff to manage registrations, UB, and programme enrolments, but it did not operate with a professional cadre of employment counsellors providing systematic career guidance. Law 4837/2021 (Arts. 60-61) introduced this function formally for the first time, establishing dedicated counsellors with a mandate to support jobseekers through personalised action plans, individual guidance, and follow-up. As the OECD (2024) underlines, this reform marked a structural shift: instead of a passive administration of benefits, the service gained the institutional capacity to deliver individualised and group counselling, thereby aligning Greece with international best practices in activation policy.

Finally, Law 4921/2022 ("Jobs Again - Reorganisation of the Public Employment Service") is important as it complements the provisions introduced by Law 4837/2021. The latter strengthened key operational components of the PES (e.g. establishment of employment counsellors and the definition of their qualifications and recruitment procedures in local offices), thereby enhancing OAED's capacity to deliver counselling, activation and training services. Law 4921/2022 subsequently implements a broad institutional reorganisation by renaming OAED as DYPA, redefining its governance structure, and reorganising local employment offices and service-delivery functions (Articles 1-45). Law 4921/2022 also establishes DYPA's digital activation framework, including the Digital Individual Action Plan, the Digital Registry and the Digital Card (Articles 16-23). Taken together, the two laws form a coherent and complementary reform package that modernises DYPA's operational functions.

3.2.3. Labour market impacts

Existing evidence

Counselling capacity and high caseload remain a major constraint. The OECD (OECD, 2024a) acknowledges that the reform effectively doubled the number of

counsellors, through a mix of reassigning and professionalising existing front-office staff into formally defined counselling roles and undertaking new hires, thereby strengthening DYPA's (then OAED) capacity to deliver individualised support. However, it stresses that counselling capacity remains a major constraint: despite the increase, each counsellor was still responsible for an average of 1,847 jobseekers in the second half of 2022, far above international benchmarks. Evidence from other OECD countries shows that significantly lower caseloads (around 70–80, or even 40 in pilot programmes) are required to produce strong effects on re-employment chances. The report thus concludes that while the reform created the institutional basis for personalised support, the full impact on labour market outcomes will depend on further reducing caseloads through additional recruitment and training of counsellors.

A framework for individualised support now exists, but its effectiveness depends on expanding resources and ensuring systematic coverage. Both the OECD (OECD, 2024a) and the World Bank (World Bank, 2023) emphasise the significance of the individualised approach introduced by Law 4837/2021. This reform requires that each registered jobseeker develop a personalised action plan in cooperation with an employment counsellor, mapping skills, employment goals, and steps towards reintegration. The OECD (2024) notes that this system brings Greece closer to international best practice, where individualised services are associated with quicker exits from unemployment and better job matches, provided caseloads are manageable. The World Bank (2023) further stresses that profiling and individualised activation are necessary to segment the heterogeneous unemployed population and deliver tailored services, particularly for the LTU. However, both institutions observe that implementation in Greece is constrained by counsellor capacity.

Group counselling can be a relevant complement to individualised approaches, especially in a context of high unemployment and limited counselling capacity. Individualised support cannot realistically be extended to all registered, making group sessions an important complementary tool (World Bank, 2023; OECD, 2024a). Group counselling allows counsellors to reach larger numbers simultaneously and to provide jobseekers with transferable skills, such as job-search techniques, motivation, and career management.

Articles 65-68 of Law 4837/2021 are considered critical steps in strengthening DYPA's institutional capacity beyond individual counselling. Article 65, on the governance of VET units, is linked to the need for more effective management of DYPA's training schools and closer alignment of training with labour market demand. Article 66, which created a business liaison unit for medium and large enterprises, is noted as a turning point in building structured relationships between the PES and employers, through vacancy collection, career days, and partnerships. Articles 67-68, dealing with organisational and implementation provisions, are acknowledged as facilitating the gradual transition from OAED to DYPA, and delays in fully operationalising these new structures initially limited their effectiveness (World Bank, 2023; OECD, 2024a).

Indicators and methodological approach

As already noted for the reform on the provision of service by the unemployment agency in France (Section 2.1), ALMP reforms are difficult to assess empirically. We therefore focus primarily on descriptive evidence obtained from the EU-LFS indicators. The three different types of PES indicators constructed from the EU-LFS are of interest:

- Indicators on the composition of the population registered at the PES can inform on whether any of the measures had an impact on specific groups who are more represented among the population of registered jobseekers (e.g. measure 3 on the governance of VET could have an impact on youth registrations)
- Indicators on outreach of PES are also interesting to analyse as the different measures could have an impact on the registration of specific target groups (e.g. LTU, residents from rural areas).
- Proxy indicators on potential ALMP instruments used by the PES (e.g. training). Taking into account the focus on VET governance, it can be relevant to analyse the indicator on work-based learning, for instance.

Hence, we rely on the set of PES indicators constructed from the EU-LFS to highlight recent evolutions in the composition of the pool of registered individuals, the PES coverage in terms of certain target population (e.g. LTU) and proxy certain ALMPs that could be offered by PES (e.g. training). See Annex C.1 for a description of the different indicators.

Law 4837/2021 was promulgated in October 2021, implying that indicators could start adjusting from 2021 but most likely from 2022 onwards. With only two years of data available post-reform, the analysis is again only descriptive.

Before proceeding, it is worth noting that the Greek labour market has been characterised by a strong recovery since 2020 (see the first column in Figure 20), which is likely influencing the evolution of our indicators. Moreover, given the complementarity between this reform (Law 4837/2021) and Law 4921/2022, disentangling the impacts of both separately is difficult. Law 4921/2022 was promulgated in April 2022 and could therefore affect indicators from 2022.

Descriptive analysis

The 2021 reform appears to have increased activation of jobseekers rather than the number of registered jobseekers. The share of the population registered kept on decreasing between 2019 and 2023, from 12% of the working age population to 9.9%, ignoring 2020 (see Figure 19 in Annex C.1). This may reflect the strong labour market recovery in Greece, characterised by a substantial decrease in the number of (long-term) unemployed (First column in Figure 20, Annex C.1). Legislative changes related to Law 4921/2022 also tightened registration conditions and could play a role in this evolution. However, the indicator on the

share of registered jobseekers claiming to receive active support (see 'registered and assisted' in Figure 19) shows a distinct rise in 2021 (from roughly 17.2% in 2018–2020 to 22.9% in 2021), before stabilising in the following two years.

The recovery of the Greek labour market likely contributed to the changes in the composition of the population registered at the PES (Figure 20). While unemployed individuals accounted for over 80% of registered individuals in 2010-2012, this share fell to 60% in 2023, reflecting **a more diverse mix of statuses of registered individuals**. This shift is not due to reduced outreach, as over 75% of unemployed and nearly 90% of LTU were registered in 2023, well above EU27 levels (third column Figure 20)

Other indicators on the composition of the registered population (see Figure 21 in Annex C.1) show that **the representation of selected disadvantaged groups, such as NEETs and low-educated individuals, has declined among PES registrants**. Outreach measures show similar trends, for example, the share of NEETs registered remained stable around 55% between 2019 and 2022, but dropped to 45.8% in 2023. This suggests that changes in the composition of the registered population are not solely explained by the labour market recovery, and decreased outreach likely contributes as well.

Finally, proxy indicators for ALMP show **positive development related to training and education**. The share of registered individuals claiming to have attended training in the previous four weeks rose from around 1.5%-1.6% in 2019 to 4.3% in 2023 (Figure 19), though this share remains significantly smaller than the EU27 value (11.1% in 2023). The share of registered individuals who also attend formal education increased from values between 3% and 4% to 5.8% in 2023 (Figure 19). This increase took place entirely between 2022 and 2023. Moreover, indicators related to employment (Figure 20) are interesting as they can proxy the use of direct job creation schemes, a policy field identified in the classification framework (Section 1). As such, **the substantial and continuous increase in the number of employed workers registered at the PES**, from 3.7% in 2019 to 13.3% in 2023, could signal a greater use of these schemes[44].

Given the reform's emphasis on VET, **the lack of improvement in work-based learning indicators** (second row in Figure 19) may raise concerns. However, the EU-LFS only captures paid work experiences, so unpaid or allowance-based VET activities would not be recorded. If such activities increased, the rise in education-related indicators may partially reflect changes in the VET system[45].

[44] Note that the outreach indicator (third column in Figure 20) is also increasing, which is consistent with the idea that the increase observed in the composition of the registered population can be related to better outreach (or rather, greater take-up of direct job creation schemes since registered and employed are assumed to be a proxy for this ALMP).

[45] Furthermore, it is worth mentioning that apprenticeships and traineeships require the involvement of an education provider as they should lead to a recognised certification. This

Overall, the descriptive analysis points generally to **positive developments following the reform**. Increases in the number of registered jobseekers receiving active support, attending training, participating in education, or in employment suggest **improved activation support from the PES**. In contrast, **indicators on the composition of registered and PES outreach are less encouraging**. Beyond the unemployed, outreach to vulnerable groups (e.g., NEETs, low-educated individuals) has not improved since 2021.

Given the data constraints, no impact on employment was estimated, and hence, no macroeconomic effects as well.

supports the idea that unpaid work-based learning experiences could be captured by our indicators based on education discussed previously.

4. Portugal

Synthesis of results

- The Agenda for the Promotion of Decent Work introduced measures to strengthen employment rights, especially for platform workers, and to modernise labour relations.
- The reform included in the NRRP introduced a presumption of employment for platform workers aimed at clarifying employment status, reduce misclassification and reinforce protections in response to the precarious working conditions often associated with this type of work.
- The reform was found to be coherent with broader national and EU priorities on fair working conditions and regulatory modernisation.
- Early developments point to improved enforcement and enhanced protections for platform workers, although quantifiable effects on transitions and employment remain limited in the short term.
- No measurable macroeconomic impacts have been estimated, but more stable employment relationships may yield benefits over time.

The challenges facing the Portuguese labour market can be summarised in three main points: Labour market segmentation and precariousness, income inequality, and structural weaknesses in skills.

Despite previous reforms, the Portuguese labour market remained segmented, and many workers had a precarious situation. The proportion of temporary workers in the labour market was well above the EU average, with such workers more likely to be exposed to poorer working conditions, greater economic dependency and fewer employment protections (European Commission, 2019b).

Moreover, income inequality remained high, despite improvements in some employment indicators (Council Recommendation 2019/C 301/22). Social transfers had a limited impact on reducing social exclusion and poverty, and minimum income schemes appeared inadequate to ensure a sufficient safety net for vulnerable groups.

Finally, there were structural weaknesses in the human capital of the Portuguese labour force, further compounding these challenges. Around 50% of the population aged 25-64 had low educational attainment – more than double the EU average (Council Recommendation 2019/C 301/22). Low levels of qualifications and skills hinder both productivity growth and the capacity to attract and sustain investment and boost the economy. Adult learning opportunities were inadequate (Council Recommendation 2019/C 301/22), and digital skills proficiency was particularly low, reflecting a lack of preparedness for the demands of the modern labour market.

4.1. Agenda for the promotion of decent work

The development of digital platform work has raised concerns related to the social and economic implications of this new form of work, defined by its large-scale crowd work and algorithmic management of tasks performed using readily available tools such as smartphones and personal transport applications.

To address these concerns, Portugal implemented a set of labour market reforms part of the broader Decent Work Agenda (‘*Agenda do Trabalho Digno’*), adopted in February 2023. The Decent Work Agenda spans several areas, including enhanced protections for young workers, gender pay gap, reinforcement of collective bargaining, and regulation of non-standard employment, but only the reform specifically targeting platform work has been placed under the RRF.

4.1.1. Description, related investment and expected impacts

Following extensive social dialogue, the measures were incorporated into amendments to the Labour Code through Law No. 13/2023 of 3 April 2023.

Two main measures have been identified:

1. The key measure of the reform consists of the **introduction of an employment presumption for platform workers**. Article 12-A[46] of the Labour Code, effective from 1 May 2023, establishes that a platform worker is presumed an employee if at least two out of six criteria related to autonomy, supervision, and more broadly subordination, are met (see Annex B.1 for details).
2. **Stricter rules on probationary periods and dismissal justification** (e.g. obligation for prior notice and legal remedies in case of abuse) were implemented.

The reform marked a significant shift in the regulation of platform work in Portugal. By extending the presumption of employment, the law aimed to enhance workers’ rights, including access to social protection, collective bargaining, and safeguards against precariousness. The new rules also oblige platforms to inform workers when algorithmic systems affect working conditions, profiling, or employment decisions, thus addressing transparency gaps in digital management.

Table 8 applies the analytical framework developed in Section 1 to this reform.

[46] https://diariodarepublica.pt/dr/detalhe/lei/13-2023-211340863.

Table 8: Categorisation of reform PT-C [C06]-R[R17]

Policy domain	Policy field	measures	Expected outcomes	Indicators
5. EPL	Permanent contracts – Other	Measure 1: Presumption of employment between platforms and self-employed under defined criteria	- Transitions from self-employment status to employee should increase - Unintended effects (e.g. transitions to un(der)declared work, hiring on fixed-term contract) may arise	-Share of self-employed and employees in specific sectors and occupations -Hours worked and prevalence of fixed-term contracts for platform workers
	Procedural requirements	Measure 2: Stricter rules on probationary periods and dismissal justification	- A tightening of EPL is expected to decrease separations and hirings - Effects on employment are ambiguous but generally found to be negative	- Job finding and separation rates - Employment duration - aggregate employment

Source: own elaboration

In the absence (to the best of our knowledge) of studies relying on causal inference methods to analyse the impacts of similar measures to **measure 1**, it is difficult to precisely anticipate on the effects of this reform. Therefore, the expected impacts presented below are discussed based on economic reasoning.

Measure 1 introduces a presumption of employment for digital platform work: when at least two of six indicators are present and the worker is presumed to be an employee unless the platform proves genuine independence. This legal design shifts the burden of proof and raises the expected cost of maintaining "own-account" arrangements that function like employment. In economic terms, these changes can be interpreted as a tightening of EPL for platform workers. The measure creates incentives for platforms (or intermediaries) to reclassify existing workers or hire new ones as employees, potentially via fixed-term and/or short-hour contracts to preserve flexibility. A clear compositional prediction follows: sectors and occupations with a high prevalence of platform work should observe an increase in their share of employees and a mirror reduction in self-employment, potentially accompanied, at least in the short run, by a lower permanent-contract share, higher part-time, and slightly shorter usual hours.

At the same time, the reform could generate unintended adjustments. Platforms may reduce activity, restructure via subcontracting, shift tasks across jurisdictions, or push some work into informality/under-declaration to avoid the presumption and associated costs. These channels can offset reclassification, so while the direction of the composition change is relatively clear where prevalence of platform work is high, the net (or aggregated) effect on total employment levels is theoretically ambiguous.

4.1.2. Relevance and coherence

The reform targets several long-standing structural challenges, as identified in the European Semester country reports (European Commission, 2019b, 2020b), including high levels of precariousness and gaps in social security coverage. These workers, often young and low-qualified, have faced weak enforcement of labour protections and limited access to collective bargaining, making them vulnerable to economic dependency and poor working conditions. This presumption of an employment relationship aims to address these gaps and extend core employment rights, including social security, paid leave, and protection against dismissal, to platform workers.

There is an ongoing debate within Portuguese and international legal scholars concerning the appropriate conceptualisation of "subordination" or "employment" in the context of platform work. Challenges in the implementation have also emerged, as some courts and tribunals have not consistently applied the presumption of employment. Platform companies have simultaneously adjusted their operations to exploit legal uncertainties. Recent and ongoing case law may therefore suggest that the reform's impact has been more limited than intended, and that its relevance could have been augmented by a more comprehensive approach. Nevertheless, in objective terms, this reform remains highly relevant to the first two pre-existing challenges identified in the study.

Furthermore, this reform is highly coherent with national initiatives and other Portuguese labour market and social policy reforms.

It builds on the strategic directions set out in the national *Green Book on the Future of Work*[47], which called for regulating platform work, strengthening social protection, and establishing clear rules on algorithmic management. In line with the Council Implementing Decision's call for a comprehensive approach to labour market challenges, the platform work reform supports national priorities aimed at reducing labour market segmentation, improving job quality, and reinforcing worker protections. It forms part of a broader revision of the Portuguese Labour Code, alongside reforms such as the Reduction of Restrictions in Highly Regulated Professions ("*Redução das Restrições nas Profissões Altamente Reguladas"*), which facilitates labour market access while safeguarding protections. It also complements the Combatting Gender Inequality reform ("*Combate à Desigualdade entre Mulheres e Homens"*), through measures that promote gender equality, close pay gaps, and enhance work-life balance.

At the European level, the reform is consistent with key policy priorities and aligns with the proposed EU directive on improving working conditions in platform work. As highlighted by the European Commission's preliminary assessment, the platform work measures introduced under the Decent Work Agenda implement

[47] https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx

principles of the European Pillar of Social Rights, particularly Principle 5 on secure and adaptable employment. By preventing the abuse of atypical contracts and extending standard protections to platform workers, the reform contributes directly to EU efforts to promote fair working conditions.

4.1.3. Labour market impacts

Existing evidence

No available empirical studies have been identified regarding this measure, but some evidence exists on the characteristics of platform workers.

In Portugal, most platform workers are young people, including many migrants, in a context of high youth unemployment (21.6% in 2024), which continues to constitute a major structural challenge. The situation has deteriorated in recent years, despite various ALMPs and reforms supported by EU funding (European Commission, 2025).

Furthermore, ongoing legal debates within the Portuguese and international legal scholarship concern the appropriate conceptualisation of subordination in the context of platform work. A growing body of academic and policy literature, including the Green Paper on the Future of Work, argues that modern forms of organisational control, rather than direct managerial command, should be recognised as the defining feature of subordination in contemporary labour markets. According to this view, integration into the employer's organisational framework, including algorithmic performance management and economic dependency, is sufficient to establish an employment relationship, even in the presence of nominal freedoms.

In this context, some authors have offered critical commentary on recent case law. In analysing the Court of Appeal of Évora's judgment of 12 September 2024, it has been noted that while the court acknowledged the presence of indicators of an employment contract, it ultimately accepted that Glovo[48] had rebutted the legal presumption under Article 12-A[49]. The ruling attached significant weight to couriers' discretion to accept or reject deliveries without penalty, to select their mode of transport, to deactivate geolocation, to subcontract tasks, and to set their own schedules.

However, this reasoning has been criticised as reflecting an outdated and unduly narrow understanding of legal subordination, failing to capture the structural vulnerabilities and power asymmetries inherent in platform work. It has been emphasised that features such as the theoretical right to substitute another worker do not, in practice, negate the platform's organisational control. In a

[48] Glovo is demand delivery services from local restaurants, supermarkets, and other stores.

[49] See https://observatorio.almedina.net/as-plataformas-digitais-a-presuncao/.

subsequent commentary on the Lisbon Court of Appeal's ruling of 12 February 2025, it has further been argued that Portuguese case law remains overly attached to traditional notions of subordination focused on direct control and has not yet embraced the evolving legal consensus that recognises organisational dependency as the hallmark of employment in the digital age[50].

Overall, this evidence on the implementation of the reform on the ground highlights difficulties and uncertainties which could limit the impacts expected from the measure, at least in the periods following entry into force.

Table 9: Summary of judicial decisions on employment contracts for platform couriers in Portugal

Court level	Number of decisions	Favourable to digital platforms	Favourable to couriers	Total couriers involved	Percentage of unfavourable decisions
First instance	69	53	16	69	76.8%
Second instance	15	3	12	33	9.1%
Total	83	56	27	141	56.6%

Source: ACT

Indicators and methodological approach

Given the relative novelty of platform work, the construction of meaningful and precise indicators to evaluate the reform's impacts is a difficult task. Evidence from specific surveys[51] exists but cannot be used to try to detect the impact of the reform. Nonetheless, some insights may be obtained through the careful use of the EU-LFS, focusing on self-employment in sectors and occupations where platform work is known to be prevalent (e.g. transportation).

More precisely, indicators are constructed at the job level by interacting information on 3-digit occupations and 1-digit NACE sectors. We focus on two main occupations: Occupation 832 - car/taxi/van drivers and Occupation 962 - messengers/deliverers, and two sectors Sector H (Transportation and storage) and sector I (Accommodation and food).

For each job, four indicators are considered:

- the status in employment (employee vs. self-employed)[52],
- the contract type among employees (permanent vs. temporary),
- the working time (full-/part-time and usual hours),

[50] See https://observatorio.almedina.net/plataformas-digitais-e-estafetas-a-saga-continua/.

[51] See for instance the COLLEEM surveys.

[52] In the case of Portugal, self-employed with and without employees are not distinguishable.

Presenting three different indicators[53] allows us to take into account the fact that the reform's net employment effect is theoretically ambiguous, namely, we may have workers entering more standard and formal employment (formalisation) versus a potential displacement, whereby the reform would lead to an increase in part-time and/or fixed-term work, or reductions in usual hours.

As a caveat, the constructed indicators constitute a (gross) proxy for the number of platform workers, which is likely to include self-employed workers who work in the sector/occupation but who do not make use of such platforms. Given the evidence of the high prevalence of platform work among young workers and migrants, we construct indicators for these groups as well.

The evolution of self-employment can then be monitored through time in these sectors and occupations. We start the analysis by focusing on Occupation 832 and Sector H and then pool data for the two occupations and sectors. All indicators are obtained using weights provided in the EU-LFS.

Measure 1 was effective from the 1st of May 2023 (2023Q2) meaning that only three data points (assuming an immediate effect in 2023Q2) are available. The analysis is only descriptive.

Descriptive analysis and estimation results

Starting with indicators for Occupation 832 – car/taxi/van in Sector H – transportation and storage (Figure 11), we find movements that point to a **modest increase in the share of employees after the reform** (formalisation). The share of employees increases, but remains below the observed pre-pandemic maxima. In 2023S2 (Q3–Q4), a shift in the level of the series could occur as the employee share rises compared to the levels observed in 2022Q3–Q4/2023S1 to values similar to 2019–2022 average. However, the S2 average movement remains moderate. In other words, this evolution could be consistent with an initial post-reform formalisation (especially given the Q3 jump), but not strong enough to claim a large or definitive effect.

Focusing on the contract types, the post-reform evidence points to **a mild decrease in the prevalence of open-ended contracts**, when benchmarked against the full pre-reform period (2019–2022). **Evolutions in part-time incidence and usual hours are also modest** and hover near historical averages. Taken together, these patterns suggest **an early evolution consistent with a margin-compliant adjustment** – some reclassification into employee status without a pronounced shift toward fixed-term or short-hour arrangements rather than a more generalised change in the quality of contracts.

[53] Indicators on multiple job holding could also be interesting to investigate using information provided in the EU-LFS.

Figure 11: Employee vs self-employment share in NACE Rev.2 sector H and ISCO – 08 occupation 832

Source: Own elaboration on EU-LFS data.

Pooling data on the selected platform jobs (sectors H and I, ISCO 832 and 962) leads to **conclusions that remain qualitatively similar** to what is described above, **though the pattern is attenuated** when using the entire pre-reform window (2019–2022) as a point of comparison. In 2023S2, the employee share is higher than the 2019–2022 average, signalling formalisation, but the change in the level is lower than observed for car/taxi/van drivers in the transport sector alone.

When accounting for age (16–24 and 15–29 cohorts) and using the full pre-reform period (2019–2022) as a benchmark, the indicator based on the four jobs shows only **a small post-reform shift toward employee status**. For foreign-born workers, employment status **remained largely unchanged** after mid-2023

Overall, this analysis does not indicate **substantial effects of measure 1** on the labour market outcomes of potentially affected workers. **A slight increase in the share of employees** is observed, with **minimal changes in hours or contract types**. This may partly reflect limitations in the EU-LFS, which lacks detailed identification of platform workers. Moreover, the fact that effects are barely detected at the 3-digit occupational and 1-digit sectoral levels suggests that **broader labour market impacts are likely to be marginal**. A more formal analysis would be needed for robust results. Additionally, the short post-reform observation period and the time required to resolve legal cases related to the measure call for further caution against drawing definitive conclusions.

For these reasons, impacts on employment were not estimated, meaning that no macroeconomic effects could be retrieved.

5. Spain

Synthesis of results

- The simplification of employment contracts generalised intermittent open-ended contracts, limited recourse to temporary employment and clarified conditions for training and apprenticeship arrangements, with the objective of reducing labour-market segmentation.
- The modernisation of active labour market policies improved governance structures, strengthened evaluation systems and enhanced coordination across regions. The digital transformation of the public employment service upgraded matching tools, case-management systems and administrative efficiency
- Reforms responded to persistent challenges, related notably labour market segmentation and fragmented ALMP governance, and were consistent with national and EU recommendations.
- The simplification of contract reform produced a marked decline in temporary employment and a strong rise in open-ended contracts, with particularly large improvements for young people, migrants and women Aggregate employment effects remain modest, but early signals point to reduced turnover and longer employment durations for young workers, suggesting that the reform contributed to improve job stability.
- Improvements in ALMP and PES delivery have increased service uptake, of training programmes in particular, although measurable effects on re-employment outcomes could not be estimated.
- The macroeconomic analysis of the simplification of contract reform indicate that the reform may have generated large positive effects on GDP growth, though the uncertainty around the impacts on employment suggests to approach these results with care. When only the change in the composition of the workforce (between permanent and fixed-term contracts) is considered, results still indicate a positive (but small) macroeconomic effect. These results support the idea that the reform had, at least, slight positive effects on economic growth.

The Spanish labour market has long been the focus of policy debate and academic analysis due to its persistent structural challenges. When the NRRP was prepared in 2020, these pre-existing issues, clearly highlighted in the 2019 and 2020 CSRs[54] served as a key reference. Three main areas of concern were identified:

First, PES and ALMPs faced longstanding effectiveness challenges, partly due to insufficient resources (CSR 2019). The CSRs stressed the need to strengthen

[54] Council Recommendations 2019/C 301/09 and 2020/C 282/09.

administrative capacity to provide tailored and efficient employment and social support (CSR 2019, 2020).

Second, the Spanish labour market was highly segmented. Temporary contracts were widespread (26.3% in 2019), particularly in specific sectors, and were often accompanied by high rates of involuntary part-time work and bogus self-employment (CSR 2020). These forms of employment were strongly associated with in-work poverty. Transitions from temporary to permanent contracts were limited, reducing incentives for employers and employees to invest in skills development and thereby constraining productivity growth (CSR 2019). Additionally, regulatory and geographic fragmentation hindered labour mobility.

Third, LTU remained substantial at 6.4% of the active population in 2018. This was particularly concerning given the high share of NEET. Unemployment was also disproportionately concentrated among certain groups, including youth, women, and people with disabilities, and gender gaps in employment persisted (CSR 2019).

Against this background, several reforms were included in the Plan. Here, we focus on the tree most advanced in terms of implementation.

5.1. Simplification of contracts: generalisation of the open-ended contract, reasons to use temporary contracts and regulation of the training/apprenticeship contract

In December 2021, the Spanish government approved the reform ES-C [C23]-R[R4], aiming to simplify employment contracts by generalising the use of open-ended contracts, clarifying the conditions for the use of temporary contracts, and regulating training/apprenticeship contracts. This approval marked the timely fulfilment of the sole milestone associated with this measure: amending the Workers' Statute to reduce temporary employment by streamlining contract types. This was achieved with the promulgation of Royal Decree-Law 32/2021 in December 2021.

5.1.1. Description, related investment and expected impacts

The reform includes four key measures:

1. **Reduction of the types of contracts to three**: the reform modified the provisions in the Workers' Statute (Legislative Decree 2/2015)[55]

[55] In particular, RDL 32/2021 amended, among others, articles 11, 15 and 16, which regulate training contracts, fixed-term contracts and fixed-discontinuous contracts, respectively.

regulating the employment contracts to promote open-ended employment while restricting temporary contracts to specific cases clearly defined. Following the approval of the Royal Decree-Law 32/2021, Article 1 of the Workers' Statute established three main types of employment contracts in Spain. Contracts could thus now either be:

(a) open-ended – the default

(b) training/apprenticeship

(c) temporary, with only two reasons permitted to justify this type of contract[56]

2. **Revision of work-based learning contracts**: It amended Article 11 of the Workers' Statute, introducing two key changes, limiting the number of work-based learning contracts to apprenticeship and traineeship, and strengthening the regulatory framework surrounding these contracts (e.g. age limits, mandatory tutors)
3. **Reinforced use of Seasonal Contracts** ('*Fijo-Discontinuo'*): a special type of open-ended contract for seasonal or intermittent activities. Article 16 of the Workers' Statute, amended by Article 1 of Royal Decree-Law 32/2021, now allows temporary employment agencies to use these contracts.
4. **Fight against labour fraud**: It strengthened the oversight and sanctions for irregular employment practices[57], increased penalties for violations, and raised SSC to discourage the use of very short contracts (less than 30 days).

No directly related investments were identified in the NRRP. Additional details on this reform can be found in Annex B.1.

Table 10 categorises the four measures according to the classification framework developed in Section 1 and summarises their expected outcomes.

Measure 1 corresponds to a tightening of EPL, which limits hiring of temporary workers, including the maximum contract duration. Evidence on this measure indicates a negative impact on the hiring of workers on temporary contracts (Güell et al., 2007; Cahuc et al., 2023; Daruich et al., 2023; Bottasso et al., 2025). Effects on job separations are unclear (Bottasso et al., 2025). The distribution of temporary contract duration should adjust as contracts for duration longer than six months should now be prohibited. The decrease in the number of temporary contracts should further raise the average employment duration.

[56] It is important to note that the previous fixed-term contract for specific work or service, which allowed for temporary employment of up to three to four years, has been abolished.

[57] Article 5 of Royal Decree-Law 32/2021 amended Articles 7.2 and 40.1.c-bis of Royal Legislative Decree 5/2000

Table 10: Categorisation of reform ES-C [C23]-R[R4]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
Labour taxation	Employers' SSC	**Measure 4**: Increase in employers' SSC for short-term contracts (shorter than 30 days)	Decrease in the number and prevalence of short-duration contracts	-Number and share of workers on a temporary contract with a duration of less than 1 month"
	Labour taxation – Other	**Measure 4**: Strengthen the control in the use of the part-time contracts, to prevent irregular working time. Strengthening of the fight against labour fraud, including by updating the sanctioning system.	-The measure is expected to increase transitions to regular (i.e. full-time open-ended) employment - Average hours worked should increase	-transitions to regular employment (from out-of-the labour force or from part-time employment) -average hours worked
EPL	Permanent contracts - Other	**Measure 3**: Reinforcement of the use of the seasonal contract, which is a special type of open-ended contract.	-Address labour market segmentation by regulating the use of temporary contracts as an exceptional type of contract and generalising the use of open-ended contracts -increase in employment duration and decrease in separations to unemployment, which should increase job stability -Decrease in the number of work-based learning contracts, but increase in their quality	- Number and prevalence of temporary and open-ended contracts - Share of temporary contracts with duration greater than 6 months - Aggregate employment - Average employment duration - Job separations and job finding rates to open-ended contracts - number of trainees/apprentices by age and contract duration
	Maximum number of renewals of fixed-term contracts Maximum duration of fixed-term contracts Temporary agency work Definition of valid reasons for fixed-term contracts	**Measure 1:** Simplification and reorganisation of the menu of contracts, with three main types: open-ended, temporary and training/apprenticeship. The design of the new types of contracts aims to limit the valid causes to use temporary contracts, thereby making open-ended contracts the general rule. **Measure 2:** Review of the use of the training/apprenticeship contract, in order to provide an adequate framework for young people to enter the labour market.		

Source: Own elaboration

Transitions to open-ended contracts should not be directly affected by the tightening of EPL for fixed-term contracts, although these new restrictions should make it relatively more interesting for firms to hire on permanent contracts. Important considerations in this regard relate to the degree of substitutability between the two types of contracts, whether temporary contracts constitute a "*dead end*" or a "*stepping stone*" to a regular employment relationship (Filomena et al., 2022; Boeri et al., 2024), and whether firms are effectively able to offer open-ended contracts. These factors depend on different considerations (e.g. overall stringency of EPL) and transitions from temporary to open-ended may or may not arise. Effects on aggregate employment could be either positive, negative or null.

Measure 2 reinforces the legislation related to work-based learning contracts. The literature suggests negative effects on the hiring of apprentices/trainees, though certain provisions included in the measure should raise the quality of work-based learning experiences, which could support transitions to regular employment (O'Higgins et al., 2018, 2021).

Measure 3 can be interpreted as a relaxation of EPL on open-ended contracts, which should stimulate the hiring of workers on this type of contract (Boeri et al., 2015). Employment duration and aggregate employment should increase, especially since workers on open-ended contracts tend to be more attached to the labour force and less likely to exit to inactivity. This effect could materialise at a longer time horizon.

The final measure tightens the legislation against undeclared work by reinforcing controls and raising penalties. If effective, this measure should raise transitions from undeclared to regular employment, and increase hours worked of individuals performing underdeclared work, though unintended effects cannot be ruled out (European Platform Tackling Undeclared Work, 2018). An increase in SSC for contracts of short duration should decrease hirings under this form of contract, ultimately leading to a decrease in the prevalence of these contracts. As noted in the case of the French reform FR-C[C8]-R[R4] (Section 2.2), raising taxation on temporary contracts could generate unintended effects (Cahuc et al., 2020).

Overall, the main effects of this reform are likely to come from the tightening of EPL on temporary contracts (measure 1) and the relaxation of permanent contracts (measure 3), given that these measures are likely to affect a large number of workers (as opposed to measures 2 and 4).

Taken together, these measures should **decrease flows to temporary contracts, while raising transitions to open-ended contracts**. Therefore, the share of fixed-term contracts and ultimately **the extent of segmentation on the labour market should decrease**. For this reason, average employment duration can be expected to increase as well. Furthermore, an increase in the prevalence of open-ended contracts should **increase job stability** through a decrease in separations to unemployment. **Effects on employment are expected to be positive but remain uncertain** and could take time to emerge. Ultimately, EPL reforms are complex and can have **unintended impacts**[58]. Their effects depend on the precise parameters adjusted and are influenced by the institutional characteristics of the country.

5.1.2. Rationale and coherence

Developed through an extensive negotiation process involving social partners, the reform addresses a key challenge of the Spanish labour market and benefited from a strong consensus, which enhances both its relevance and responsiveness to labour market challenges.

The reform directly targets Spain's long-standing labour market duality, particularly the excessive use of temporary contracts. Its objective to simplify

[58] See for instance Bottasso et al. (2025) for an example of EPL reform leading to unintended effects.

contract types aligns with broader goals of enhancing labour stability. Notably, it strengthens the regulatory framework for traineeships and apprenticeships, thereby addressing challenges faced by young workers.

In terms of coherence, as stipulated in the Council Implementing Decision, this reform is part of a broader framework introduced by Royal Decree-Law 32/2021 that was voted and entered into force on 28 December 2021, and the provisions on the reform under analysis entered into force on 30 March 2022, regulated as an exception to the general rule. The reform is aligned with related reforms under Spain's RRP, including those on internal employment flexibility (C23.R6), modernising collective bargaining (C23.R8), and subcontracting (C23.R9). Together, these constitute a balanced approach aiming to reconcile labour market flexibility with security. Furthermore, the reform builds on the 2012 labour law by re-emphasising the security dimension, in keeping with the overall thrust of labour provisions integrated into the current plan.

5.1.3. Labour market impacts

Existing evidence

Available evidence indicates that following the reform, the share of temporary contracts decreased substantially (Bank of Spain, 2024; OECD, 2024b) from around 25-30% during the previous decade to an average value below 20% in 2023 and to around 15% by early 2025[59]. The number of open-ended contracts increased significantly, and Martínez et al. (2022) estimate that the reform led to the creation of around 286,000 open-ended positions in the first quarter of 2022. No effects on aggregate employment were reported (Martínez et al., 2022; OECD, 2024b; International Monetary Fund European Dept., 2024), though positive effects could take time to materialise. The use of open-ended intermittent contracts also increased and Bank of Spain (2024) reports that this contract accounted for around 20% of the increase in open-ended contracts.

Regarding labour market flows, the evidence is more mixed as the (Bank of Spain, 2024) indicates a decrease in labour market turnover, whilst (Conde-Ruiz et al., 2023; International Monetary Fund European Dept., 2024) no changes in job finding and job separation rates. Hence, effects on job security and employment duration are currently not fully clear. It should be noted that this evidence focuses on the immediate aftermath of the reform (due to delays in data releases).

[59] These rates express the number of temporary workers in terms of the total number of employees, which explain the slight divergence with the evidence displayed in Figure 12, where the rates are expressed in terms of total employment (approximately the sum of employees and self-employed).

Indicators and methodological approach

As the reform is expected to have some effects on hiring and separations, on employment and its duration, and on the prevalence of temporary and open-ended contracts, the analysis exploits the same set of indicators used for the study of the unemployment insurance reform in France.

These indicators are displayed in Table 10 and briefly listed below:

- Labour market flows from Eurostat, the job finding and separation rates (i.e. flows from and to employment) in particular.
- Employment stocks and rates disaggregated between permanent and temporary contracts. Rates are expressed in terms of total employment aged 15-64.
- average duration in employment expressed in months.
- temporary contract duration.

These indicators are used for descriptive purposes, and employment stocks further constitute the outcomes of interest for the econometric analysis of this reform. Impacts are estimated relying on the methodological approach used for the French unemployment insurance reform (i.e. SCM and DiD, Section 2.2.3). SCM is applied exactly in the same way as for France. DiD is also applied in the same manner, with the sole exception being that the threshold to identify the control group is set to 7.5% instead of 5%. Since the prevalence of temporary work is larger in Spain (see Figure 12) this adjustment was required to ensure that enough units entered the control group.

Due to limitations associated with apprenticeships/traineeships data in the EU-LFS, and the impossibility of identifying workers on the new seasonal intermittent contract, the estimates capture the overall impact of the reform over eight quarters, between 2022Q1 and 2023Q4. Since all measures of the reforms were implemented at the same moment, it is not possible to relate changes in the estimated effects of the reform through time to a specific measure (as done, to a limited extent, for France).

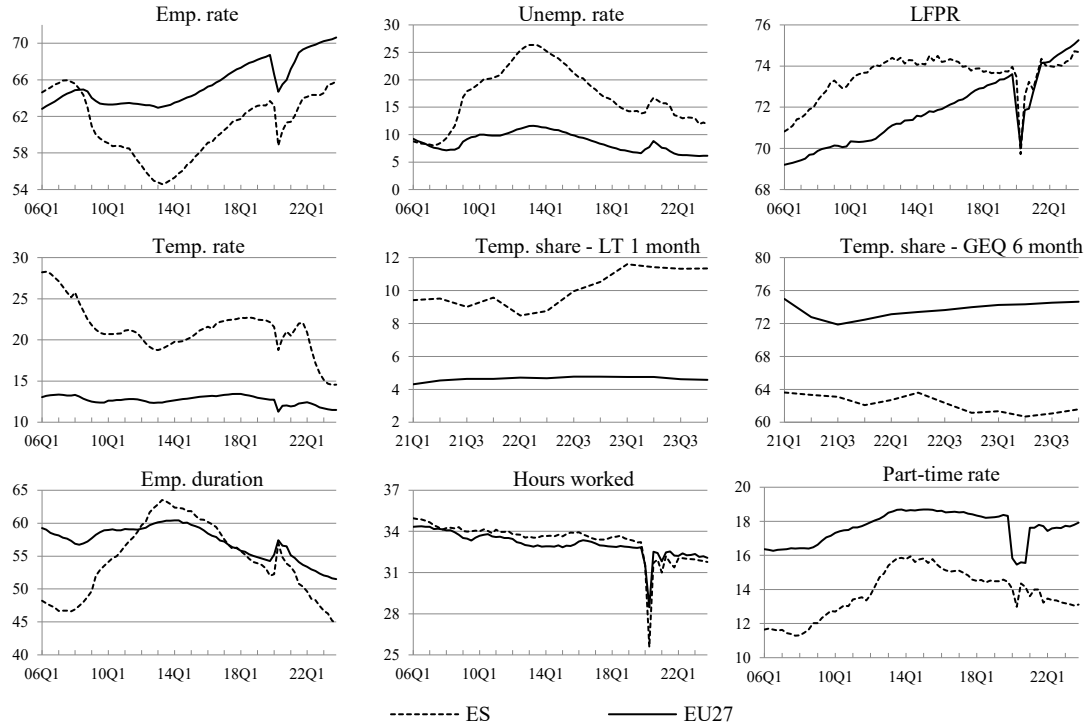
Annex C.2.3 provides additional evidence on indicators and the methodological approach.

Importantly, over the estimation period, the Spanish labour market underwent several significant developments that could influence the estimated impact of the reforms. First, **the increase in the minimum wage**. According to Eurostat data[60], the nominal minimum wage rose from EUR 1,108 in the second semester of 2021 to EUR 1,260 at the end of 2023 (+13.7%). Although this occurred in a context of high inflation, the increase remains sizeable and may have negatively affected

[60] [earn_mw_cur].

employment in low-paid jobs, where temporary contracts are particularly prevalent[61].

Figure 12: Labour market indicators – Spanish simplification of contracts reform



Note: Series are extracted from the EU-LFS and seasonally adjusted using Demetra. Series are expressed in percentages with the exception of employment duration (average number of months) and hours worked. LFPR is the labour force participation, 'LT' stands for less than and 'GEQ' for greater than or equal to.

Second, there was a **notable inflow of migrant workers**. The share of migrants (from any nationality) among the working age population increased by slightly more than two percentage points between 2021Q1 and 2023 Q4 (Figure 31), twice the EU27 increase. As indicated in the same figure, the prevalence of temporary work is much greater among migrants when compared to the overall population.

Third, while the reform constitutes the major labour market legislation following the COVID-19 pandemic, **other reforms** were implemented during this time period (e.g. the reform of the short-time work scheme ERTE) as well as **substantial investments**. Spain is one of the largest beneficiaries of the RRF, and RRF-related spending likely provided a macroeconomic stimulus. While the additional reforms are unlikely to materially distort the employment estimates, the spending impulse may still influence assessments of broader macroeconomic impacts.

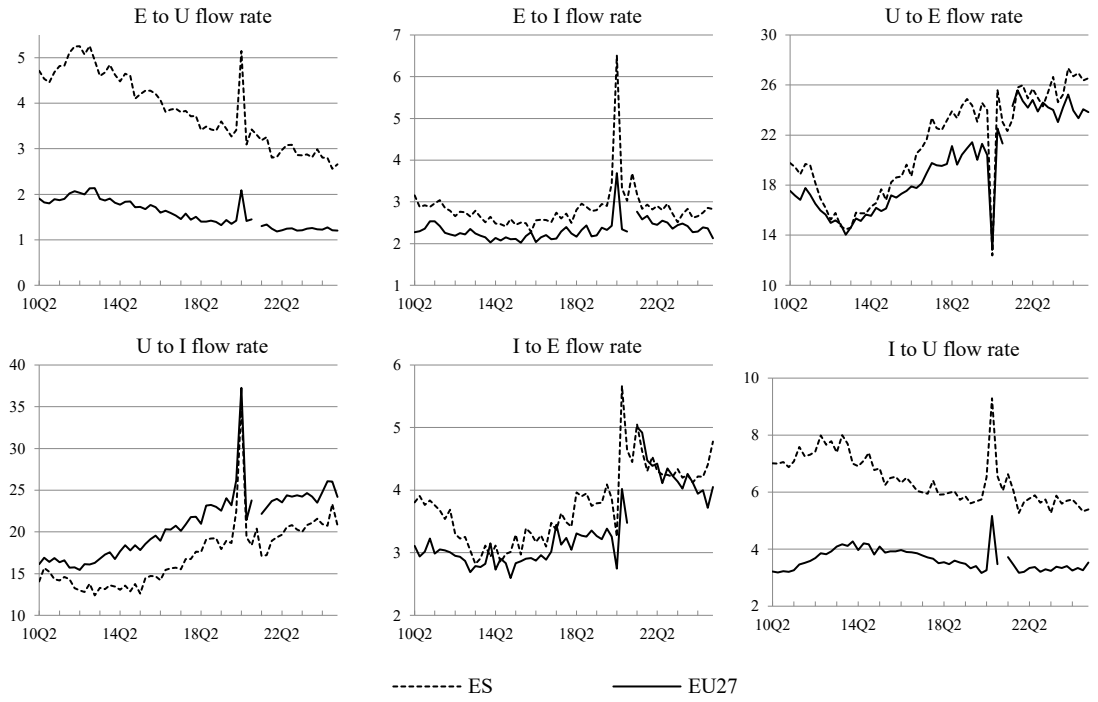
[61] The employment effects of minimum wages are uncertain, though a relative consensus seems to emerge from the literature on U.S. and EU studies, around the idea of null or small negative effects on employment, with young workers and those at the lower end of the wage distribution more likely to be affected (Neumark, 2018; Dube et al., 2024).

Descriptive analysis

Before discussing the estimation results, this subsection presents descriptive evidence on the range of indicators selected to analyse this reform.

Figure 13 displays flow rates and highlights a steady decline in separations from employment to unemployment[62]. This trend was not affected by the COVID-19 economic shock, and the separation rate to unemployment decreased by about 0.5 percentage point between 2021Q1 and 2025Q1 (see Figure 29 for the index series). The separation rate to inactivity also appears to have decreased between 2021Q1 and 2025Q1 (-0.4 percentage point), but a similar decline is observed at the EU27 level.

Figure 13: Spain quarterly flow rates in % – 2010Q2-2025Q1



Note: Seasonally adjusted data is retrieved from Eurostat [lfsi_long_q]. “E” stands for employment, “U” for unemployment and “I” for inactivity. Series are expressed in percentages. Data for 2021Q1 is missing for several countries is due to the introduction of the IESS framework regulation.

The transition rate from unemployment to employment almost doubled between 2014 and 2025, from 14% to 26%. More recently, job finding transitions quickly recovered and surpassed their pre-pandemic level by around one to two percentage points since the end of 2021. Flow rates from inactivity to employment display a similar trend since 2014 (increasing from around 3% to values between 4% and 5%), though the evolution following the COVID-19 pandemic diverges,

[62] A similar trend is observed at EU27 level and in other advanced economies. See for instance Shimer (1998) for a discussion of potential factors driving this secular decline.

with an initial spike in 2020Q3, as workers re-entered the labour force after the lifting of restrictions, and a steady decline after.

Figure 12 above highlights the high prevalence of temporary contracts in the Spanish labour market. Before 2020, around one in five workers in Spain was employed on a fixed-term contract. After a recovery in the aftermath of the COVID-19 pandemic, the prevalence of temporary contracts sharply decreased when the reform was implemented. The prevalence dropped by around six percentage points to reach 14.6% of the employed population in 2023Q4. This trend appears to have persisted since the rate of temporary workers was equal to 13.3% in 2025Q2 according to the latest data published by Eurostat.

EU-LFS evidence on the duration of temporary contracts should be interpreted with caution due to a high share of missing values in the Spanish EU-LFS. Between 2021Q4 and 2023Q4, the proportion of contracts lasting six months or longer declined slightly, from 62.1% to 61.6% (a 0.5 percentage point decrease), while the share of very short contracts (less than one month) rose by 1.7 percentage points, from 9.6% to 11.3%.

Interestingly, indicators for migrant workers, youth and females (Figure 31, Figure 32 and Figure 33 in Annex C.2.3) suggest that all groups benefited from the decrease in the prevalence of temporary contracts. The decrease was particularly substantial for young workers, for whom the rate of temporary employment decreased by more than 22 percentage points between 2021Q4 and 2023Q4. For migrants, the decrease reached 13 percentage points and 8 percentage points for females workers. Furthermore, the average employment duration of young workers started to increase from 2022Q1 (Figure 32) and rose by around one month over two years. Considering that employment duration is countercyclical, this increase is noteworthy in a period of economic expansion in Spain.

Overall, the descriptive evidence points to potentially **large effects of the reform on the prevalence of temporary and hence open-ended contracts**. Evidence on flows is more tentative, though **the separation rate appears to have decreased** since the end of 2021.

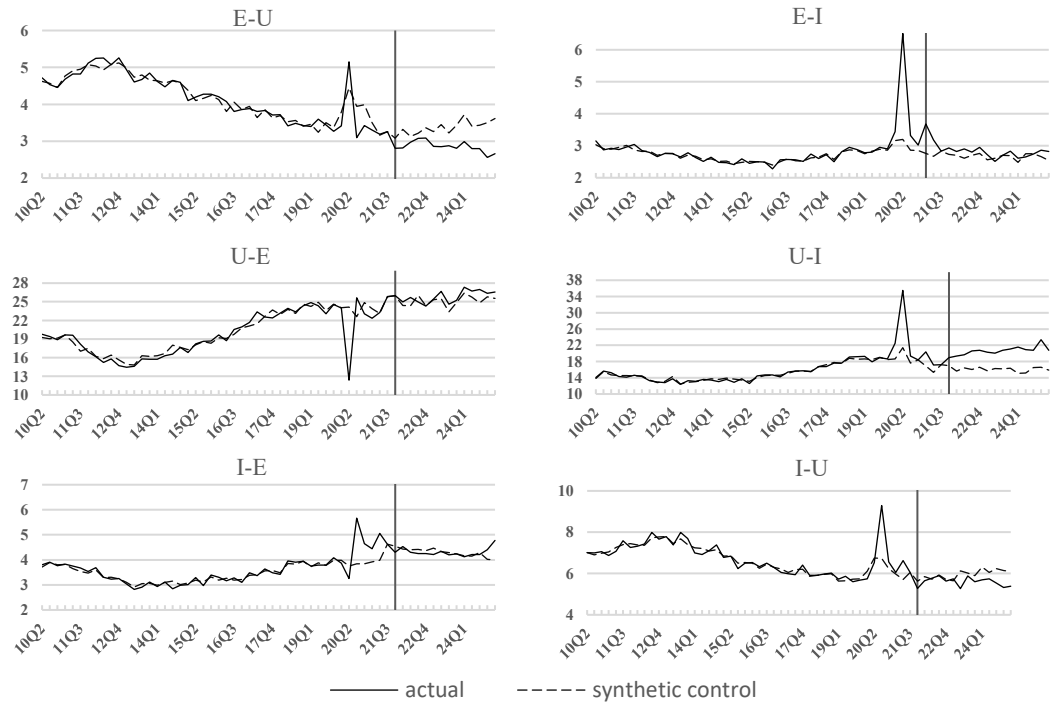
Estimated labour market impacts

Impacts of the reform are obtained through the same methodology used for the analysis of the unemployment insurance reform: impacts on flows are estimated using the SCM, while DiD is used to investigate effects on employment and the stock of open-ended contracts. More details on the methodology can be found in Section 2.2.3 and in Annex C.2.3.

Figure 14 shows that the synthetic controls for all **flow rates** track well the outcome series in the pre-treatment period.

In the post-treatment period, substantial differences between the synthetic controls and the actual series can be observed for transitions rates from employment to unemployment and unemployment to inactivity (see also Figure 35). Following the reform, the later flow rate increased significantly by an average of 4.5 percentage points over the 2022Q1-2025Q1 period[63].

Figure 14: Impact of reform ES-C[C23]-R[R4] on flow rates – SCM



Note: Estimates from the Synthetic Control Method.

Estimated effects on separations to unemployment are aligned with expectations: separations decreased by 0.5 percentage point. The effects appear to be ramping up with time as the average effects reached -0.3, -0.5 and -0.8 percentage point in 2022, 2023 and 2024, respectively. These results are in line with findings reported by Bank of Spain (2024), and the increasing effect through time could explain why Conde-Ruiz et al. (2023) and International Monetary Fund European Dept. (2024), who focused on the immediate aftermath of the reform, did not find any significant impact on this flow. Table 31, Figure 34 and Figure 35 in Annex C.2.3 provide additional information on the results

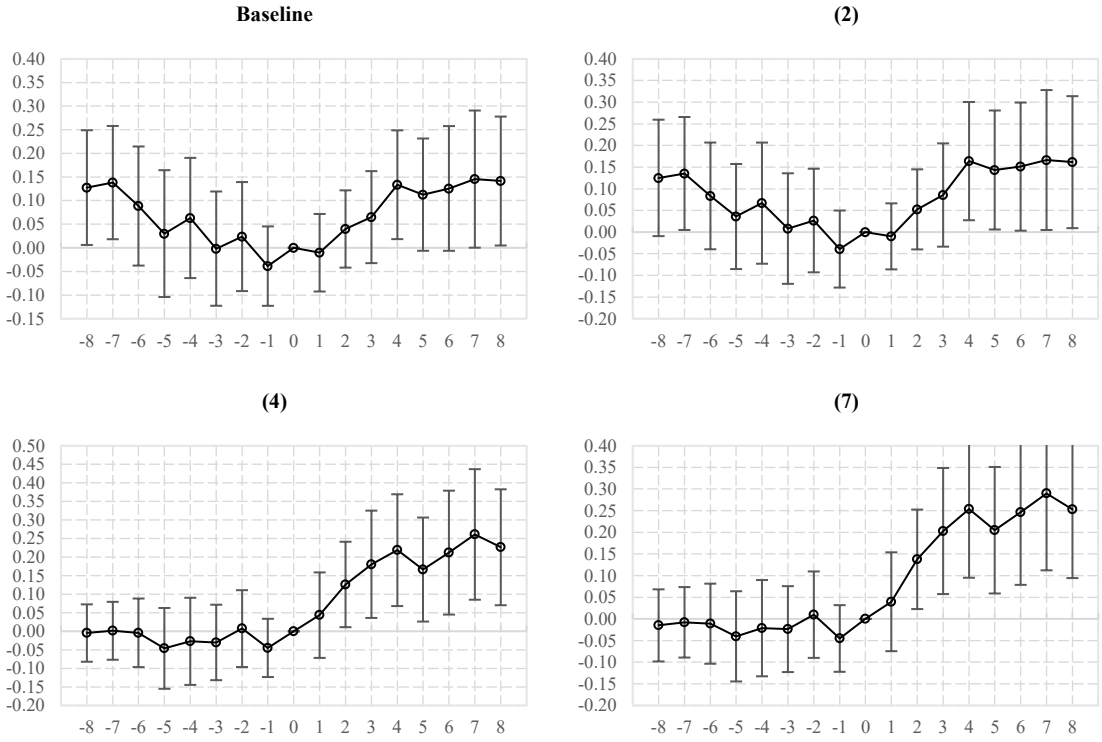
This analysis, therefore, suggests that the reform had **the intended effect of decreasing separations**. As explained in Annex A.2.1, SCM results can be sensitive and additional robustness checks are required to reinforce confidence in these results.

Effects of the reform on **employment** and the prevalence of open-ended/temporary are obtained using DiD. Effects displayed in Figure 15 and

[63] A priori, this flow rate should not have been affected by the reform and additional investigations would be required to understand this effect.

Figure 16 can be interpreted as the impact of the reform in percentages on the outcome of interest (i.e. employment and the stock of open-ended contracts), taking as reference 2021Q4.

Figure 15: Estimated effects – log of open-ended employment – ES-C[C23]-R[R4]

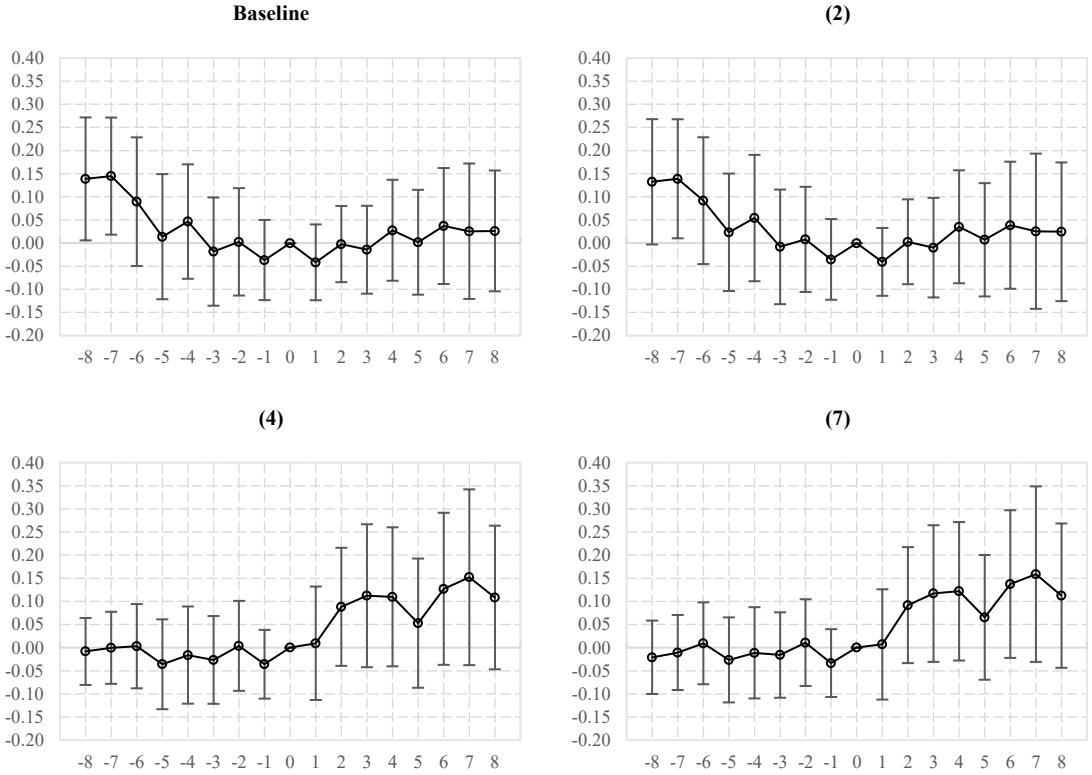


Note: DiD estimates at all possible leads and lags. l=0 for the last period before the first treatment takes place (i.e. 2021Q3). 'Baseline' corresponds to the specification without controls, (2) includes sectoral GDP and its lag, (4) includes 1-digit occupation fixed effects and all control variables are included in (7).

With this in mind, the results in the baseline specification, indicate an average positive effect of the reform on the stock of open-ended contracts of around 9.4% (see Table 33 in the Annex for detailed results), though the effect is only significant at the 10% level. Figure 15 shows that the effect progressively increases over the course of 2022 before stabilising around a value between 10% and 15%. As in the case of France, significant placebo effects indicate a potential issue with the evolution of the outcomes in the treatment and control groups before the reform.

The inclusion of occupation fixed effects helps to address this issue (specification (4) in Figure 14). The average effect when these variables are included in the specification rises to values between 16.6% and 20.9% (Table 33). These effects are always found to be statistically significant at conventional levels. Figure 15 further confirm the ramping-up effect reported for the baseline specification. The effect increases during 2022 to reach a value above 20% (in both specifications (4) and (7)). However, the effect does not seem to stabilise after this initial phase and increases also over the course of 2023, in spite of a decrease in 2023Q1 and 2023Q4.

Figure 16: Estimated effects – log of employment – ES-C[C23]-R[R4]



Note: DiD estimates at all possible leads and lags. l=0 for the last period before the first treatment takes place (i.e. 2021Q3). 'Baseline' corresponds to the specification without controls, (2) includes sectoral GDP and its lag, (4) includes 1-digit occupation fixed effects and all control variables are included in (7).

With regard to employment (Figure 16 and Table 32 in the Annex), the estimation results for the baseline specification tend to indicate that the reform had no impact on this labour market outcome. Between 2021Q4 and 2023Q1, the effects fluctuate around zero. It then turns positive, but the magnitude remains modest (between 2.5% and 3.7%). As discussed in Section 5.1.1, a positive employment effect may take time to materialise. However, the figure also shows the large confidence bounds, indicating high uncertainty around the point estimates.

As noted for open-ended employment, the inclusion of occupation fixed effects appears to address the potential issues with placebo effects (specifications (4) and (7) in Figure 16), and the point estimates increase substantially, reaching values above 10% in most periods. This would suggest a very large impact of the reform on employment. However, also in this case, the estimates are accompanied by large standard errors, meaning that we still cannot reject the hypothesis of no effect. Sensitivity analysis related to the sample selection (e.g. threshold value for the control group) generally leads to smaller estimated effects (see Annex C.2.3). The same holds when the sample is restricted to native workers.

Taken together, **these results are indicative of a positive effect of the reform on employment**: point estimates are mostly positive and tend to increase with time, consistent with expected impacts. Yet, the uncertainty surrounding the

estimates, reinforced by the robustness checks performed, calls for **caution on the actual size of the employment impact**.

5.1.4. Macroeconomic impacts

Building on the analysis above and the estimated employment effects, this section presents an attempt to quantify the reform's macroeconomic impact. Given the uncertainty surrounding the underlying employment estimates, the resulting GDP effects should be interpreted as indicative rather than definitive.

As described in Section 1.3.2, the first step is to estimate the production function using actual data to obtain values for β and TFP. Because TFP is calculated as a residual, some adjustments are applied to ensure the residuals behave appropriately[64]. The selected model yields a β of 0.7 (see Table 40 in Annex D), which is fully consistent with the literature. The red line in Figure 17 represents the actual level of GDP at constant prices.

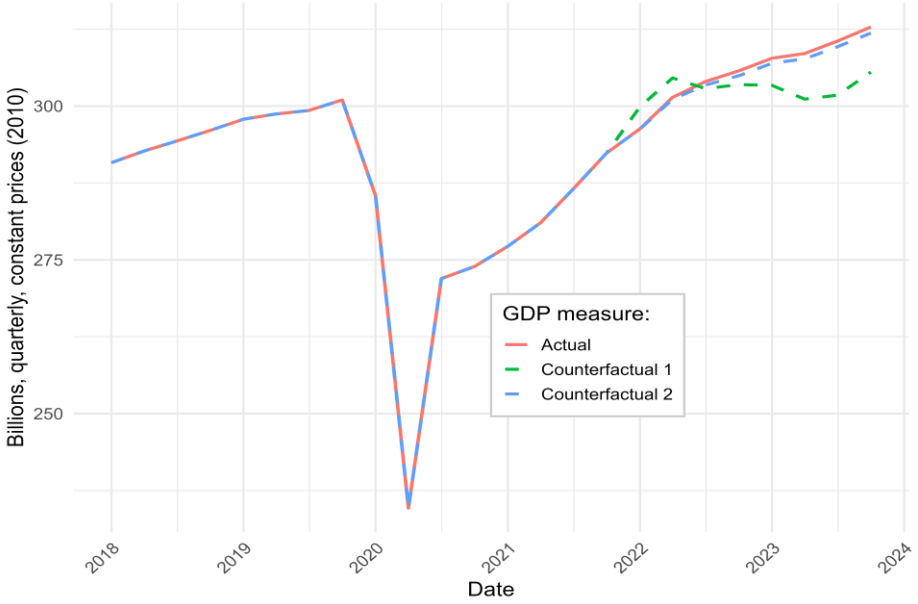
Short-term impact

Following the methodology outlined above, we construct two different counterfactuals. The first one, counterfactual 1 (green line dotted line in Figure 17), captures the effect on GDP of the employment increase generated by the reform, as estimated from microdata, under the assumption that all other factors remain constant (and measured ex post by observed data, after the reform). Specifically, we take the assumption that the reform has led to an increase in employment corresponding to the baseline estimation results in the previous section (see Figure 16)

The analysis indicates a positive impact of the reform on GDP, as counterfactual GDP is lower than the actual series. While estimates around the reform's implementation (Q1 2022) are subject to limitations and should be interpreted cautiously—the counterfactual initially overshoots and then undershoots actual GDP—the gap between actual and counterfactual GDP is nonetheless evident and substantial. The difference appears to peak in 2023Q3 before narrowing, suggesting a smaller potentially non-long-lasting impact of the reform. According to estimates, the reform led to an annual overall increase of approximately EUR 28 billion in 2023, or about 2.3% of GDP. It is worth recalling that this large impact crucially depends on the reliability of the employment estimates, which suffer limitations. The key message from this counterfactual is that any positive employment effect translates into a GDP effect, which can be very large.

[64] In particular, performing an automatic outlier detection procedure using the Demetra software, three temporary changes in the relationship between output and its production inputs are identified.

Figure 17: Actual and Counterfactual GDP, short-term



Source: Authors' elaboration

Note: Counterfactual 2 is built on equation (2) in Section 1. s measures the elasticity of productivity with respect to temporary workers compared to that of permanent workers. s =0.95 means that permanent workers are 5% more productive than temporary ones. In this counterfactual, the share of temporary contracts is kept fixed to that preceding the reform (the average share of temporary workers in 2021), but employment is the actual one.

Given the limitations of the employment estimates, we introduce a second counterfactual focusing on the contract effect of the reform.

According to OECD (2024b) and consistent with our own estimates, the reform triggered a sharp decline in temporary employment and a corresponding surge in permanent employment, particularly among younger workers. Instituto Nacional de Estadística data show that temporary employment dropped significantly—from over 20% in 2021 (already high by international standards) to less than 15% by Q1 2023. Over the same period, the share of open-ended contracts rose from 64% to 77%, with about 20% of this increase driven by the expansion of open-ended seasonal (intermittent) contracts. Beyond improving working conditions and reducing precariousness, this greater share of permanent contracts is expected to enhance labour productivity and TFP.

There are arguments, supported by academic research, suggesting that although permanent contracts are more expensive, they have a positive effect on productivity. Several factors explain why workers on permanent contracts are generally expected to be more productive than those on temporary contracts. First, career development opportunities: permanent employees are more likely to perceive prospects for advancement within the firm, which fosters greater commitment, stronger motivation, and a higher willingness to invest in firm-specific skills and knowledge. Second, greater access to training and upskilling: Temporary workers are often excluded from vocational training or professional development opportunities to a much greater extent than permanent workers. Over time, increased access to skill acquisition should boost labour productivity.

Notably, the Spanish reform directly addresses this issue for seasonal contracts by granting workers on intermittent contracts priority access to vocational training opportunities during periods of inactivity. Lastly, organisational familiarity: Permanent workers benefit from a deeper understanding of company procedures, culture, and team dynamics, reducing the low productivity typically associated with the initial adaptation period in a new role or workplace.

These arguments are supported by empirical findings. For instance, Lisi et al. (2017) show that the use of temporary contracts can have a detrimental effect on productivity, though the impact is unlikely to be uniform across sectors, and high-skill sectors exhibit larger effects. The estimates suggest that a 10 percentage-point reduction in the share of temporary contracts in skilled sectors is associated with a 1-1.5% decrease in labour productivity growth, whereas in unskilled sectors the increase is smaller (0.5-0.8%). Addessi (2014) further demonstrates that the share of permanent contracts in total employment positively affects TFP dynamics, not just labour productivity.

Taken together, these factors suggest that the observed shift toward permanent employment after the reform could plausibly raise average labour productivity, amplifying its potential macroeconomic benefits.

Against this background, counterfactual 2 (the blue dotted line in Figure 17) is obtained by using in the production function the actual level of labour, but fixes the share of temporary workers to its average in the year preceding the reform (approximately 25%), hence does not include the shift from temporary to open-ended contracts, which is the main change induced by the reform. This way, the difference between actual and counterfactual (pink and blue lines) captures the impact of the reform on the contracts. To make such a change relevant in the production function, and using the arguments above, a different productivity level is assigned to the workers depending on the contract (this is captured by the coefficients s in equation (2) in Section 1.3.2). The blue dotted line illustrates the GDP evolution under the assumption that labour productivity is 5% higher for workers on permanent contracts (than for temporary).[65] The comparison between actual GDP and Counterfactual 2 (the red and blue dotted lines) isolates the effect of compositional change in employment triggered by the reform. The simulation indicates that, under this assumption, the reform's positive effect on GDP is 1.7 billion in 2022 (0.14% of GDP) and 3.6 billion in 2023 (0.3% of GDP) when the share of permanent workers increases.[66]

[65] The choice of the 5% differential is arbitrary and only illustrative, but the point is that even small differences can lead to macroeconomic impacts. As illustrated in Annex D, assuming a 10% differential leads to a difference of 3.5 billion in 2022 (0.3% of GDP) and 7.3 billion in 2023 (0.6% of GDP).

[66] Annex D also illustrates the potential cumulative effect of the reform, namely the increase in employment and the change in its composition generated by the reform (keeping the assumption of a productivity differential between the two groups of 5%). As expected, the

Overall, the analysis indicates a positive and potentially sizeable effect of the labour market reform on GDP, driven primarily by higher levels of employment. However, the precise magnitude of the GDP effect should be interpreted with great caution.

Despite the use of multiple empirical techniques to isolate the reform's impact on employment, the Spanish economy has simultaneously experienced a series of shocks—including the post-COVID recovery, large migration flows, a dramatic expansion in the tourism sector and RRF stimulus—that may have amplified the reform's effect. Finally, while the GDP effect arising from changes in the composition of contracts is, by construction, mechanical, it remains highly illustrative. Even if productivity differentials across contract types cannot be estimated, small differences can translate into meaningful macroeconomic effects when they apply to a large share of the workforce, which was the case in happened in Spain.

Long-term impact

The final step of the macroeconomic analysis involves estimating the impact of the reform on potential GDP growth. This is done using the same method applied previously, but with detrended series for the inputs of the production function, except for capital (see Annex D for details). Actual potential output is obtained by extracting the trend component from the series of actual output.

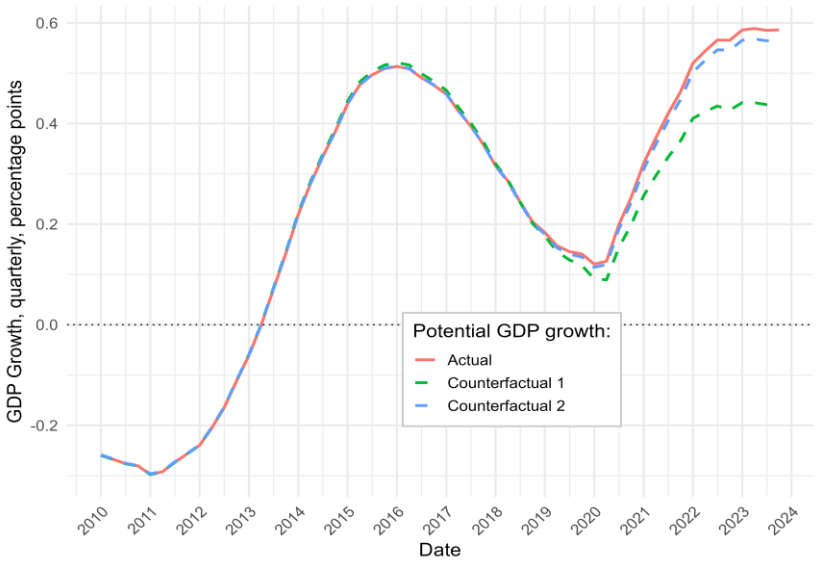
The results indicate that the reform has a positive effect once cyclical fluctuations are removed (see Figure 18). As in the short run, there appear to be both composition and level effects on GDP growth. The composition effect is illustrated by comparing actual GDP growth with counterfactual GDP growth assuming a fixed labour composition and a 5% productivity differential between the two groups of workers (red vs. blue lines). The level effect is observed by comparing with the counterfactual GDP under the baseline specification (green dotted line)[67].

Although the reform's effect on potential GDP (long-term effect) is estimated to be positive and large, its magnitude is smaller than that on GDP (short-term effect). Table 11 offers a summary overview of the GDP impacts, by year, distinguishing short and long-term effects.

impact on GDP is substantial, roughly equal to the sum of the two effects shown above, reaching EUR 32 billion or 2.6% of GDP in 2023.

[67] Annex D illustrates additional counterfactuals, in particular when considering the change in the level and in the composition of employment. Interestingly, the gap between the actual and augmented counterfactual potential GDP does not narrow; instead, it widens over time as the effect of higher labour productivity accumulates.

Figure 18: Actual and counterfactual potential GDP growth



Source: Authors' elaboration

Note: s measures the elasticity of productivity with respect to temporary workers compared to that of Note: Counterfactual 2 is built on equation (2) in Section 1.3.2. s measures the elasticity of productivity with respect to temporary workers compared to that of permanent workers. s =0.95 means that permanent workers are 5% more productive than temporary ones. In this counterfactual, the share of temporary contracts is kept fixed to that preceding the reform (the average share of temporary workers in 2021), but employment is the actual one.

Table 11: Summary overview of impacts on real GDP growth, percentage points (YoY)

GDP impact	2022		2023	
	Short-term	Long-term	Short-term	Long-term
Reform has only an employment effect (Actual - Counterfactual 1)	-0.29	0.44	2.6	0.57
Reform only increases the share of permanent contracts, which have a higher productivity (5% productivity differential) but no employment effect (Actual - Counterfactual 2)	0.15	0.07	0.16	0.08

Source: Authors' elaboration

5.2. Modernisation of active labour market policies (ALMP)

In February 2023, Spain enacted labour reform ES-C[C23]-R[R5] to modernise ALMPs, in line with recommendations from the Independent Fiscal Authority (AiREF). The reform introduced personalised counselling, safeguards on training schemes, stronger adult learning and skills recognition systems, a one-stop shop for youth, better coordination between employment and social services, and deeper private sector involvement

5.2.1. Description, related investments and expected impacts

The reform was implemented between 2021 and 2023 and was associated with three milestones (all positively assessed by the European Commission):

1. The Youth Guarantee Plan 2021–2027, aimed at reducing youth unemployment and early school leaving, supporting entrepreneurship, and creating opportunities in growth sectors. It also foresaw a Statute of Trainees, still pending (milestone satisfied in June 2021).
2. The Spanish Employment Strategy 2021–2024, aimed at promoting a balanced, people- and business-centred labour market, stronger skills-based services, support for regions in transition, and digitalisation through a "single personalised work file." It reinforced governance, PES staff professionalism, and evaluation mechanisms.
3. Amendments to the Employment Law to strengthen governance of the National Employment System, transform SEPE into a Spanish Employment Agency, and expand ALMPs by recognising employability as a right, improving services for vulnerable groups, enhancing data use, and giving more weight to local employment initiatives.

This reform was accompanied by complementary measures and significant investments. Reform C23.7 simplified hiring incentives, while €1.26 billion (C19) supported digital literacy, with attention to vulnerable groups. Over €2 billion (C20) was directed to vocational training, focusing on reskilling, digitalisation, and innovation. Under C23, €765 million was allocated to youth activation programmes, €105 million to women's labour market integration, €435 million to skills development for green and digital transitions, €106 million to territorial projects addressing demographic challenges, €106 million to governance and PES staff training, and €100 million to support the social economy. Additional details on the measures and related investments can be found in Annex B.1

Mapping the different measures into the classification framework (Table 12) shows that the reform targets the ALMP policy domain and spans three policy fields: public employment services, training and special schemes for youth.

Table 12: Categorisation of reform ES-C [C23]-R[R5]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
ALMP	Public Employment Services	**Measure 2:** Royal Decree 1069/2021 approving the new employment strategy 2021-2024 entered into force on 8 December 2021. The strategy includes 27 measures under 15 specific objectives and 5 strategic objectives. It spans different fields such as governance, services and	- Strengthened coordination and governance within the Sistema Nacional de Empleo (SNE)	- Share of unemployed registered at PES who transition to employment - Number of registered

Policy domain	Policy field	Measures	Expected outcomes	Indicators
	Training	training. **Measure 3:** Amendment of the Employment Law 3/2023 of 28 February 2023. It establishes the framework for organising public employment policies, regulating the set of structures, resources, services and programmes that make up the National Employment System.	- Increased registration and support for jobseekers - Enhanced effectiveness of training and counselling services, with dual training and integrated activation pathways, which should improve the positive outcomes of such programmes on exits to employment - Focus on disadvantaged groups (e.g. youth under 30, and immigrants) should improve their employability and job insertion,	jobseekers at PES and share receiving active support - Indicators for each disadvantaged group
	Special schemes for youth	**Measure 1:** Action Plan to tackle youth unemployment (Plan Garantía Juvenil Plus 2021-2027", published in the Official Journal BOE-A-2021-10587, of 25 June 2021) This reform is linked to the revision in training contracts (ES-C [C23]-R[R4])		

Source: Own elaboration.

This reform is designed to modernise ALMP by expanding and enhancing several activation measures. These interventions include vocational training, job search assistance, and other support mechanisms, with a specific focus on disadvantaged population groups. This reform shares conceptual parallels with analogous initiatives in France and Greece, particularly in the emphasis placed on personalised support and the alignment of services with the needs of vulnerable labour market participants. As such, expected impacts (and indicators) can be expected to be similar to those already discussed previously (Sections 2.1.3 and 3.2.3).

Such improvements are expected to increase the attractiveness of the PES, providing incentives for jobseekers to register. Moreover, the share of registered individuals receiving active support can be expected to increase, if the effectiveness of the PES increases as well.

JSA, including counselling and guidance services, has been shown to yield small but positive and long-lasting effects on re-employment prospects, particularly for those with weaker labour market attachment, such as individuals with low levels of education (Card et al., 2018; Cottier et al., 2018; Cheung et al., 2025). These services can enhance job readiness, improve the efficiency of job matching, and reinforce labour market motivation.

Training programmes, by contrast, tend to generate more pronounced benefits in the medium to long term. Such interventions are particularly effective for long-term unemployed individuals, who often require upskilling to meet labour market demands. By raising human capital and facilitating skill adaptation, training enhances re-employment probabilities over time (Crépon et al., 2016; Berg et al., 2022).

Evidence from PAPE (2023) and PAPE (2024) tend to confirm the effectiveness of such programmes: training, particularly dual training (formación en alternancia) and JSA, were found to be the most widely implemented and most effective across Spain's regions, and participation in these programmes was associated with measurable gains in employability and job insertion.

Youth represent another key target group of the reform. However, the evidence concerning the effectiveness of ALMPs for young people is less consistent. While JSA tends to be beneficial, other measures, such as training, appear to deliver more limited returns for youth populations (Caliendo et al., 2016; Card et al., 2018).

Taken together, the reform aspires to improve labour market integration for a range of disadvantaged groups[68], reduce unemployment, and support inclusive economic recovery.

5.2.2. Rationale and coherence

The reform of ALMPs appears to be relevant for the analysis and identification of the challenges faced by the Spanish ALMP system. In particular, following the recommendations made by the Spanish fiscal independent authority (AIReF), the limited investment in ALMPs, the overreliance on hiring incentives, the underperformance of PES, the insufficient digital infrastructure, the low engagement from the most disadvantaged groups, and the weak coordination between social and employment services were identified as caveats that continue to hinder the system's overall effectiveness. On the contrary, certain issues have not been addressed within the Spanish plan, including the ongoing understaffing in the PES, considerable regional fragmentation, the absence of a unified national job-matching system, and the inadequate integration of ALMPs with the productive fabric of the country, which can impede the efficacy of the reform. Nevertheless, the measures included in the reform under analysis address some of these issues. In particular, the recent amendments to the Spanish employment legislation are intended to intervene and reinforce the governance of the Spanish National Employment System, its local dimension, and the emphasis that the law places on the inclusion of vulnerable groups in the ALMP system, but other challenges have not been correctly addressed, which can reduce the relevance of the reform.

In the context of the action plan devised to address the issue of youth unemployment, the Statute of Trainees (Estatuto del Becario) and the Youth Guarantee scheme have been met with scepticism regarding their capacity to address the systemic challenges that have given rise to this issue. The

[68] In this regard, both PAPE (2023) and PAPE (2024) emphasise that ALMP implementation generated positive employment results for women, young people under 30, and immigrants, as well as benefits for persons with disabilities and victims of gender-based violence.

effectiveness of the proposed reforms in tackling the fundamental issues within the system has been called into question. As Corti et al. (2023) have demonstrated in their analysis of the reform, it has been observed that the reform does not address several of the key deficiencies identified in Youth Guarantee 2014-2020. These include the low correspondence between services offered and needs, hidden firm subsidisation, and the low capacity to reach out to vulnerable young unemployed people.

A similar set of concerns has been raised in relation to the Spanish Employment Activation Strategy. The identification of the challenges faced by the current ALMP system in Spain is accurate, including the necessity to enhance its monitoring and evaluation system and the coordination between national and regional levels. Nevertheless, there are reservations concerning the efficacy of the measures encompassed within the plan in achieving the stated objectives, particularly in light of unaddressed structural issues, including the necessity for a comprehensive restructuring of ALMP on a national scale, as highlighted by the stakeholders consulted. Furthermore, while the strategy incorporates key principles to be achieved, it is not accompanied by a substantiated explanation of how these objectives are to be accomplished.

A further consideration is the coherence of the reform with the other measures encompassed within the plan, as well as with past and present policy provisions. In this regard, the Council Implementing Decision already stipulates the existence of a coherent approach within the Spanish plan, as this reform is to be complemented by two other reforms in this component, namely Reform 7 (hiring incentives) and Reform 11 (digitalisation of public employment services), touching upon the main elements related to ALMP within the country. In particular, reform 7 under component 23 of the Spanish plan aimed to simplify the systems of hiring incentives and increase their effectiveness, a key ALMP in Spain, closely connected with the reform of ALMPs.

Furthermore, a series of investment measures has been included in the plan to ensure that the requisite changes are accompanied by the resources necessary for their implementation. Nevertheless, it is important to emphasise that, according to the stakeholders consulted, a considerable degree of responsibility for ALMPs and legislative competences still rests with regional authorities. The primary changes have not adequately addressed this aspect, as their effectiveness is contingent upon the consideration of internal regional variations, including resources and diverse needs.

5.2.3. Estimated labour market impacts

Existing evidence

To the best of our knowledge, no evidence exists on the labour impact of this reform.

Indicators and methodological approach

The evaluation of the reform's outcomes can draw on the EU-LFS in a similar way to the French and Greek PES reform (Sections 2.1.3 and 3.2.3). The scope for causal inference remains limited in the absence of a longitudinal dimension at the individual level. Therefore, EU-LFS indicators constitutes the basis for a descriptive analysis.

The reform is expected to affect registration and support to registered jobseekers, which are two outcomes (outputs) captured by some of our indicators. Proxy indicators for ALMP programmes are also relevant to the extent that training and work-based learning appear as key programmes for the reform. Moreover, the clear focus on disadvantaged groups implies that indicators on outreach are also relevant for the analysis.

As noted for Greece (Section 3.2.3) and shown in Figure 12, the Spanish labour has been subject to a strong recovery following the COVID-19 pandemic, which is likely to affect the evolution of our indicators. Furthermore, complementary reforms and investments are associated with this reform and their effects should also be reflected in our indicators.

Descriptive analysis

As discussed in the following section, Spain implemented two different PES reforms as part of its NRRP. It seems not possible to disentangle the two reforms relying on the data available and the descriptive analysis for these reforms is discussed jointly with reform ES-C [C23]-R[R11] in Section 5.3.3.

5.3. Digitalisation of the Public Employment Services (PES) for its modernisation and efficiency

Reform ES-C[C23]-R[R11] modernised Spain's PES through digitalisation and infrastructure upgrades.

5.3.1. Description, related investments and expected impacts

The reform consisted of several measures:

1. New information systems exploiting digital technologies for UB. (e.g. mobile app).
2. Enhancement of data management for evidence-based policymaking, and the promotion of transparency through data publication.
3. Integrated artificial intelligence and big data tools to strengthen fraud detection

4. Improvement of PES workplaces and infrastructure to support teleworking and staff wellbeing.

Only one milestone has been attached to the reform. This milestone was expected to be implemented by the 4th quarter of 2023, and has been reported as completed by Spain.

The reform was backed by a €1.2 billion investment (C11.I2) under Spain's digitalisation strategy for public administration, covering costs across sectors such as health, justice, employment, and social security. An additional €105.5 million (C23.I5) was allocated to strengthen PES governance and activation policies, including the creation of 20 orientation, entrepreneurship, and innovation centres (one in each autonomous territory and Ceuta/Melilla, plus one at the central level). The plan also mandated annual training for PES staff, with around 14,000 courses per year (30 hours each) during 2021–2023. See Annex B.1 for more information.

Table 13 displays the categorisation of the different measures according to the classification framework. The reform affects the UB policy domain through measure 1, while the remaining measures can be classified in the PES policy field of the ALMP domain. As noted for the ALMP reform in Greece (Section 3.2), this reform can be seen as affecting (indirectly) the delivery of counselling services and of all ALMPs in general.

Table 13: Categorisation of reform ES-C [C23]-R[R11]

Policy domain	Policy field	Measures	Expected outcomes	Indicators
2. UB	UB - Other	**Measure 1**: Modernising the information systems that support the unemployment benefit system		
4. ALMP	Public Employment Services	**Measures 2 to 4** introduce several changes: • Modernising the information systems that support ALMPs • Digitisation of all public services for citizens and services • Offer of new services (mobile application and improved pre-appointment system and online services • Incorporation of adequate data management as well as publication of information of high value for society • Improvement of anti-fraud systems through artificial intelligence systems and Big Data. • Modernisation of jobs and infrastructures to facilitate teleworking arrangements for PES staff.	-improved services (e.g. matching) and faster exit to employment -improvements in ALMP access, delivery and efficiency, supporting faster re-entry to employment	- Share of jobseekers registered at the PES and receiving active support - User satisfaction with PES - Exit to employment

Source: own elaboration

The digitalisation of PES is a rather recent trend, that accelerated with the COVID-19 pandemic and the advancements of AI (OECD, 2022). This reform is organisational in nature and the primary impact of the reform is expected to be an enhancement of the provision of PES, and a reduction in the costs for citizens and businesses using these services..

Although the academic literature evaluating the direct effects of PES digitalisation is sparse, a relatively recent impact assessment of the digital tool SEND@ introduced in Spain in 2020, can provide some relevant insights (OECD, 2023). The tool was used by counsellors to help match jobseekers to openings and ALMP based on data for similar jobseekers who had recently found employment. Results show that the digital tool boosted participation in ALMP and exit from unemployment, though the positive effects appear to be short-lived. Results also emphasised that jobs were generally of better quality (e.g. permanent).

These results support the idea that digitalisation can improve the efficiency, responsiveness, and user-friendliness of PES operations. Digitalisation is expected to facilitate more timely and personalised support for jobseekers. This, in turn, may enhance the effectiveness of existing ALMPs. If this is indeed the case, then the positive effects of JSA and training on exit from unemployment discussed previously for other reforms (e.g. ALMP reforms in France and Greece and Spain, Sections 2.1, 3.2 and 5.2), could be amplified when embedded within a digitally modernised institutional framework.

Enhanced digital interfaces may also reduce administrative burdens, improve data management, and allow for better targeting of services, especially for users with complex needs. Over the longer term, the reform may contribute to increasing take-up rates of PES, improving jobseekers' satisfaction, and generating efficiency gains for caseworkers. However, these effects are contingent on successful implementation and proper access to digital tools, particularly among populations with lower digital literacy or limited connectivity (OECD, 2022).

5.3.2. Rationale and coherence

The examination of the reform reveals its relevance in addressing a key challenge confronting the PES, namely, the need to improve efficiency[69]. Although limited in scope, the reform appears to be relevant as it targets one of the main obstacles to effective PES functioning by digitalising and upgrading service provision. The upgrading of PES also has the potential to tackle another key challenge facing the Spanish public administration -the low reliance on PES for job matching - further underscoring the reform's importance.

In terms of *coherence*, the reform package aligns with the broader objective of digitalising the Spanish public administration, with a particular focus on PES. Dedicated investments have been allocated to cover the costs of these changes, which is an important element given the potential additional burdens on PES. Complementary measures, such as training courses for PES staff and the

[69] See https://www.sepe.es/cuadernos-mercado-trabajo/laintermediaciondelossepeenlaeradigital

creation of a new employment orientation centre, reinforce the plan's coherence by supporting capacity building and service quality.

However, when assessed against Spain's overall employment policy, coherence appears weaker. Compared with the EU average, Spain allocates fewer resources to PES, and further national-level efforts beyond the RRP are needed. Structural weaknesses, such as limited collaboration with private companies, persist. As highlighted by stakeholders, these shortcomings risk undermining the long-term coherence and effectiveness of the reform.

5.3.3. Estimated labour market impacts

Existing evidence

No existing evidence providing insights on the impacts of this reform has been identified. Relevant results from the OECD impact assessment of the digital tool SEND@ (OECD, 2023) were discussed in Section 5.3.1.

Indicators and methodological approach

Indicators for assessing an organisational reform, such as the digitalisation of PES, are not easy to define, especially since consulted stakeholders pointed out the lack of publicly available data as a constraint for an evaluation. In the absence of established indicators, the EU-LFS can be used to construct proxy indicators to be used with caution (see Annex C.1 for details). Among these indicators, the total number of individuals registered and the share of those registered claiming to receive active support are likely to be the main one affected.

As was noted above, the reform is expected to affect access and efficiency of all ALMPs provided by the PES and EU-LFS indicators on this aspect can be of interest. Moreover, access to digital tools can vary across certain dimensions such as the degree of urbanisation of the residence[70], the age and level of education. Indicators on the composition and the outreach of PES can also be analysed to monitor evolutions.

Precise information on the implementation of the different measures was difficult to obtain but the sole milestone associated with this reform has been reported as implemented by the 4th quarter of 2023. However, the issue with the timing of the reform has limited impacts on the analysis given the proximity of the reform on modernisation of ALMP (Section 5.2) and the impossibility to disentangle effects from the two reforms using EU-LFS data.

The descriptive analysis below should therefore be considered as an analysis of the joint effects of both reforms on the selected indicators.

[70] https://ec.europa.eu/eurostat/statistics-explained/Digital_economy_and_society_statistics

Descriptive analysis

The indicator on the share of the working-age-population registered appears to be primarily influenced by the economic cycles, making it difficult to identify any interesting evolutions (Figure 19). The share of the population registered reached of maximum of 24% in 2013 and increased to 20% in 2020. It has since then recovered to its pre-pandemic level of 15%.

It can be interesting to note the stabilisation of this indicator between 2022 and 2023, in a context of strong labour market recovery and the decrease of unemployment. Figure 20 confirms this evolution (unemployed represented 10.5% of the working-age-population in 2019 and 9.1% in 2023) and further shows that the outreach to unemployed increased between 2022 and 2023 from 77.9% of unemployed registered at the PES to 80.6%.

An additional noteworthy changes in the composition of the registered population include the increasing representation of inactive individuals (a bit more than one third of registered in Figure 20), which can highlight the willingness from PES to keep expanding their reach to individuals potentially further away from the labour market (in a context of a lower unemployment as well). Regarding the outreach to certain disadvantaged groups (Figure 21, third column), we note that the four indicators have been on decreasing trends and only the indicator for resident in rural areas increased between 2022 and 2023 (from 15.3% to 16.7% of resident in rural areas registered at the PES).

Indicators for non-natives are likely to be affected by the substantial inflow of migrants that impacted the Spanish economy and its labour markets in recent times (see also the brief discussion in Section 5.1.3). Non-natives represented a an increasing share of registered in 2023 (14.5% of registered in 2021 and 17.3% in 2023.) while the outreach to the non-native population decreased.

Youth represent another key target group of the reform and the indicator on NEET can be informative on this aspect. Figure 21 shows that Spain had one of the highest outreach to this population in the early part of the previous decade with between 60% and 70% of NEET registered at the PES. This indicator decreased to 49% in 2022 and was stable in 2023.

Both reforms are implemented to modernise ALMPs by expanding and enhancing several activation measures. Taking a look at the related indicators in Figure 19, it is interesting to point the significant increase in the share of registered reporting to have attended training in the last four weeks. Between 2020 and 2023, the indicator almost doubled from 8% to 15%, values significantly above the pre-pandemic level. The share of registered individuals who report attending education increased as well, albeit to a lower extent (7.6% in 2020 and 9.8% in 2023).

The indicator related to jobseekers registered at the PES and claiming to receive active support (second column in Figure 19) also appears to display an important

cyclical component, which could signal increased support and means for PES during economic downturns. The indicator decreased from 45% in 2020 to 34.7% in 2022 (a similar level to 2019) but increased again in 2023 to 36.2%. This rebound is worth noting and could signal a more general positive impact of the reform on the activation of jobseekers, in line with evidence found on training and education.

Therefore, **the evolution of indicators related to the provisions of ALMP appears to be aligned with the expected effects of the reforms**. These results can be linked to the analysis of the PES reform in Greece. Both Greece and Spain implemented major ALMP reforms and appear to display **positive evolutions** in similar indicators, related to **training and education**, and to a lesser extent, the share of **registered receiving active support**. This could indicate that these reforms, which resulted in significant efforts to modernise and digitalise PES infrastructures and services, **supported the take-up of ALMPs** and, as such, are expected to hasten jobseeker's re-entry to employment. On the other hand, indicators on outreach to vulnerable groups generally appear to have evolved negatively and could indicate that renewed attention should be given to these groups in a context of substantial changes to the functioning of PES.

6. Conclusion

The analysis conducted in this study indicates that all the examined reforms were designed to address genuine and, in several cases, long-standing labour market challenges. Their scope and effects vary depending on specific objectives, design and accompanying measures, but also on the institutional and economic context in which the reform was implemented.

Descriptive evidence based on multiple indicators suggests that reforms have generated effects at the individual (micro) level that are broadly aligned with expectations but do not always translate into immediate aggregate economic outcomes such as employment or GDP growth. In some cases, reforms focus on procedures, governance and systems, and are intended to improve efficiency rather than to produce immediate quantitative changes in employment or GDP. In other cases, the lack of robust evidence reflects data limitations (which may be overcome in the future as additional data becomes available) or methodological constraints that hinder causal identification, especially given the short post-implementation period and the influence of concurrent shocks (e.g. supply chain disruptions) and other policy measures.

Among the eight examined reforms, the four targeting public employment services and their active labour market policies implemented in France, Greece, and Spain are found to have increased the share of jobseekers receiving active assistance, strengthened counselling and the take-up of activation programmes (training and education in particular) –laying the groundwork for more effective counselling and job matching. However, as already mentioned, it is challenging to prove that such changes directly lead to an increase in employment.

Evidence also suggests that France's unemployment insurance reform and Spain's contract simplification reform, especially the latter, have contributed to reducing the prevalence of short-term contracts and increasing open-ended employment, respectively, hence helping to improve working conditions and reduce atypical forms of work. In France, a positive effect on transitions from unemployment to employment has been detected following the entry into force of the reform, but no substantial employment effect was found, most likely because the affected group was not large enough to generate impacts on labour market aggregates. In Spain, while the estimated employment effect should be interpreted with caution, results suggest a potentially positive impact on aggregate employment of around 3% in 2023.

Additional evidence of improved working conditions associated with the reform is also found, to a limited extent, in Portugal, where the reform creates a presumption of employment for platform workers, which should allow these workers to benefit from the more protected employee status (e.g. with access to social protection). In this case, employment effects are not measurable, and the analysis is affected by the limited data availability since the implementation of the

reform. In Greece, the introduction of work-life balance measures has been associated with a higher take-up of parental leave, without any negative effect on employment. Changes to employment protection legislation also appear to have increased job stability, though results are less conclusive than in the case of parental leave.

Overall, measuring labour-market-level (micro-level) reform impacts remains highly challenging. An accurate assessment would require tracking individuals who benefited from specific services or measures triggered by a certain reform and analysing their subsequent labour market outcomes. In practice, this is only possible in a few countries (France being an example). Such work demands extensive national data collection, systematisation of administrative data (e.g., social security records), and political willingness to use this data for evidence-based policymaking. Furthermore, administrative data is rarely publicly available, and where accessible, comparability across countries is limited because each system collects and records data differently, reflecting institutional specificities rather than statistical needs.

Identifying measurable macroeconomic impacts is difficult as well, particularly in the short term. Importantly, most reforms involved limited or no additional public expenditure. As a result, potential macroeconomic effects do not operate through fiscal multipliers but rather through employment and productivity channels. For structural changes to translate into higher employment or productivity, time is needed for behavioural adjustments by firms and workers. This makes it particularly difficult to detect effects for narrowly targeted reforms or those affecting specific groups.

Of the eight reforms under study, only the macroeconomic impact of the Spanish simplification of contracts could be analysed, based on the estimated employment effect. The estimates suggest a substantial impact on GDP, possibly of the order of 2%, essentially driven by the estimated increase in employment. However, the limitations that apply to the latter are also translated into limitations for the GDP estimates. Strong GDP performance may have been amplified by several concurrent positive factors in the Spanish economy since 2022, complicating the isolation of the reform's specific contribution.

Nevertheless, limited short-run macroeconomic effects do not imply a lack of meaningful outcomes. As argued above, many reforms are likely to generate positive micro-level effects –for instance, improving employability, job stability, access to quality services or targeting specific groups (migrants, women, young workers), enhancing social inclusion and contributing to key principles of the European Pillar of Social Rights– that may not be substantial enough to affect aggregate employment, or may take longer to materialise. Employment changes remain the most direct and measurable transmission channel for assessing macroeconomic outcomes, yet they capture only part of the overall impacts of labour market reforms.

In conclusion, labour market reforms should not be evaluated solely on the basis of their short-term macroeconomic impact. Their broader contributions to institutional strengthening, inclusion, and long-term labour market resilience are equally important. The reforms supported by the RRF appear to have helped Member States advance key principles and targets of the European Pillar of Social Rights, contributing to the creation of fairer and more inclusive labour markets across the EU, even if macroeconomic effects remain uncertain in size at this stage.

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Annex

Annex A. Classification framework and methodological approach

Annex A.1. Classification framework

This Annex includes three tables, which provides additional information on the construction of the classification framework discussed in Section 1.1. Table 14 shows the complete LabRef database, while Table 15 and Table 16 focus on the subset of policy domains covered by the reforms under the scope of the study. Table 15 provides the full list of references used to determine expected impacts and Table 16 the full classification framework.

Table 14: LabRef Database

Policy domain	Subdomain (when relevant)	Policy field	Measures
1. Labour taxation		Employers' social security contributions (SSC)	changes in SSC levels and structure, including SSC reductions for employing special groups
		Employees' social security contributions (SSC)	changes in SSC levels and structure
		Self-employed social security contributions (SSC)	changes in SSC levels and structure
		Income tax	changes in income taxation, tax credits, tax allowances
		Labour taxation – Other	e.g.: measures related to fighting undeclared work and fraud
2. UB		Net replacement rate	changes in levels or structure of benefits
		Duration of unemployment benefits	changes in duration of benefits
		Coverage and eligibility conditions	changes in conditions, including employment history and insurance record in reference periods, or target groups covered by benefits
		Search and job availability requirements	changes in job search conditions and sanctions, including mobility requirements
		Unemployment benefits – Other	e.g.: temporary rules on benefits; special funds
3. Other welfare-related benefits		Short-time working schemes	all measures or changes related to subsidized temporary reductions in working time during economic downturns, including changes in scope, structure and duration
		In-work benefits	changes in employment conditional benefits, tax credits, and work incentives
		Social assistance	all changes related to social safety nets, i.e. level, duration, coverage and eligibility of housing benefits or means-tested benefits
		Sickness schemes	changes related to sickness schemes – excluding disability

		Family-related benefits	all changes related to family benefits, i.e. level, duration, coverage and eligibility – excluding childcare (see Working time – Family-related working time organisation)
4. ALMP		Public Employment Services	changes related to coverage, governance arrangements and services provided, including targeting or individualised services, job assistance and job-counselling services, private employment services
		Training	all changes in training offers or structure, including life-long learning
		Direct job creation schemes	job creation schemes in the public sector or in non-profit organisations; public work schemes
		Employment subsidies	changes in different wage and start-up subsidies, excluding SSC reductions
		Special schemes for people with disabilities	all rehabilitation measures for the employment of disabled people and quotas for employers; excluding non-discrimination or other 'umbrella' policy measures for those with disabilities and disability benefits (see Early retirement – disability schemes)
		Special schemes for youth	measures related to apprenticeships and schemes encompassing a mix of measures directed at the youth, often providing counselling, training and subsidies, e.g. youth guarantees; excluding measures that cover participation of young people to measures open to adults as well
		Active labour market policies - Other	e.g.: sectoral plans or ALMP during notice periods
5. EPL	Permanent contracts	Procedural requirements	all changes related to the procedure to hire and fire, including obligation for written prior notification, delays before notice can start, obligation to provide third parties with a justification of dismissals, trial periods, administrative barriers, dispute resolution or mediation provisions
		Notice and severance payments	changes in notice and severance requirements, levels of compensation and contributions to funds
		Definition of fair dismissal	changes in definitions of valid reasons for fair dismissals
		Permanent contracts - Other	e.g.: changes in professional classifications; employment status; definition of different types of contracts; job-sharing
	Temporary contracts	Maximum number of renewals of fixed term contracts	changes in the number of maximum renewals of fixed-term contracts
		Maximum duration of fixed-term contracts	changes in the maximum duration of fixed term contracts
		Temporary agency work	duration, renewal, valid reasons; changes in working conditions for and protection of temporary agency workers; changes regulating agencies
		Definition of valid reasons for fixed-term contracts	changes in reasons easing or restricting the use of fixed-term contracts

		Temporary contracts - Other	e.g.: notice and severance payments for fixed-term contracts, changes in protection of workers under fixed-term contracts (excluding TAW)
	Collective dismissals	Collective dismissals	valid reasons, procedures or contributions to special redundancy funds
6. Early withdrawal		Early retirement	changes in the early retirement provisions, including generosity, duration and eligibility conditions
		Disability schemes	all measures related to disability pensions, including generosity, duration and eligibility conditions; but also in-work benefits for people with disabilities – excluding ALMP policies for the rehabilitation and employment of people with disabilities (see ALMP – special schemes for people with disabilities)
7. Wage Setting		Statutory minima	measures introducing a minimum wage, changes in the framework
		Social pacts, bipartite or tripartite framework agreements on wage setting	Tripartite pacts with employment and/or income policy focus, tripartite or bipartite/collective agreements (sectorial or inter-sectorial) at national level
		Regulation by the Government of the wage bargaining framework	changes in rules guiding trade union representation, opt-outs, negotiation frameworks, and collective agreements
		Public wages	all changes related to public wages, including increases, reductions, and freezes; framework conditions; exceptional measures
		Wage setting - Other	e.g.: procedural changes
8. Working time		Working hours management	changes in maximum working hours, flexible arrangements, overtime, bank of hours, night/Sunday work, annual leaves; excluding telework (see Working time – Family-related working time organisation)
		Part-time work	measures extending or reducing the possibility of part-time work, including for retired persons
		Family-related working-time organisation	measures altering the incentive structure for working parents, telework, parental leave, childcare availability
		Sabbatical and other special leave schemes	e.g.: changes in training leaves or training time accounts at the workplace
		Working time - Other	e.g.: changes in public holidays or working time in the public sector
9. Immigration and mobility	Immigration	Immigration control	all measures regulating work permits and blue cards
		Selective Immigration policies	special provisions allowing targeted professions or third country nationals from specific countries to access work permits/EU Blue card
		Measure to facilitate labour market integration of immigrants	e.g.: language courses, benefits eligibility, support and integration measures
	Mobility	Internal mobility	changes in transport allowances and measures extending or restricting internal mobility in the national territory, excluding measures aimed at intra EU mobility
		Mobility - Other	special legislations on mobility

Source: See https://employment-social-affairs.ec.europa.eu/databases-and-indicators/labref-labour-market-reform-database_en.

Table 15: List of references

Policy domain	Policy field	Literature
1. Labour taxation	Employers' SSC	Benzarti, Y., & Harju, J. (2021). Can payroll tax cuts help firms during recessions? Benzarti, Y., & Harju, J. (2021). Using payroll tax variation to unpack the black box of firm-level production. Bozio, A., Breda, T., & Grenet, J. (2017). Incidence of social security contributions: Evidence from France. Cahuc, P., Carcillo, S., & Le Barbanchon, T. (2019). The effectiveness of hiring credits. Cahuc, P., Charlot, O., Malherbet, F., Benghalem, H., & Limon, E. (2020). Taxation of temporary jobs: Good intentions with bad outcomes? Duggan, M., Guo, A., & Johnston, A. C. (2023). Experience Rating as an Automatic Stabilizer. Egebark, J., & Kaunitz, N. (2018). Payroll taxes and youth labor demand. Fath, J., & Fuest, C. (2005). Experience rating of unemployment insurance in the US: A model for Europe? Guo, A. (2024). Payroll tax incidence: Evidence from unemployment insurance. Guo, A., & Johnston, A. C. (2021). The Finance of Unemployment Compensation and Its Consequences. Johnston, A. C. (2021). Unemployment insurance taxes and labor demand: Quasi-experimental evidence from administrative data. Ku, H., Schönberg, U., & Schreiner, R. C. (2020). Do place-based tax incentives create jobs? Saez, E., Matsaganis, M., & Tsakloglou, P. (2012). Earnings determination and taxes: Evidence from a cohort-based payroll tax reform in Greece. Saez, E., Schoefer, B., & Seim, D. (2019). Payroll Taxes, Firm Behavior, and Rent Sharing: Evidence from a Young Workers' Tax Cut in Sweden. Saez, E., Schoefer, B., & Seim, D. (2021). Hysteresis from employer subsidies.
	Labour taxation – Other	Eurofound. (2016). Exploring the fraudulent contracting of work in the European Union. European Platform Tackling Undeclared Work. (2018). Report on tackling under-declared employment in the European Union. Franic, J. (2024). What do we really know about the drivers of undeclared work? An evaluation of the current state of affairs using machine learning. Franic, J., Horodnic, I. A., & Williams, C. C. (2023). Extent of undeclared work in the European Union. Horodnic, I. A., Horodnic, A. V., & ICF. (2024). Analysing the extent of undeclared work among highly skilled workers. Popescu, M. E., Cristescu, A., Stanila, L., & Vasilescu, M. D. (2016). Determinants of undeclared work in the EU member states.
2. UB	Net replacement rate	Lalive R., van Ours J. C. and Zweimüller J. (2006). How changes in financial incentives affect the duration of unemployment. Schmieder, J. F. and von Wachter, T. (2016). The Effects of Unemployment Insurance Benefits: New Evidence and Interpretation Kolsrud J., Landais C., Nilsson P. and Spinnewijn J. (2018). The Optimal Timing of Unemployment Benefits: Theory and Evidence from Sweden
	Duration of UB	Schmieder, J. F. and von Wachter, T. (2016). The Effects of Unemployment Insurance Benefits: New Evidence and Interpretation Johnston A. C. and Mas A. (2018). Potential unemployment insurance duration and labour supply
	Coverage and eligibility conditions	Khoury L., Brébion C. & Briole S. (2020). Entitled to Leave: the impact of Unemployment Insurance Eligibility on Employment Duration and Job Quality; Martins, P. S. (2021). Working to get fired? Unemployment benefits and employment duration;
	UB – Other	-
4. ALMP	Public Employment Services	Cheung M., Egebark J., Forslund A., Laun L., Rödin M;, and Vikström J. (2025). Does Job Search Assistance Reduce Unemployment? Evidence on Displacement Effects and Mechanisms Lauringson A. and Lüske M. (2021). Institutional set-up of active labour market policy provision in OECD and EU countries: Organisational set-up, regulation and capacity
	Training	Biewen M., Fitzenberger B., Aderonke Osikominu A. and Paul M. (2014). The Effectiveness of Public Sponsored Training Revisited: The Importance of Data and Methodological Choices Van den Berg GJ and Vikström J. (2022). Long-Run Effects of Dynamically Assigned Treatments: A New Methodology and an Evaluation of Training Effects on Earnings
	Special schemes for people with disabilities	European Network of Publoic Employment Services (2022). Practitioner toolkit on strengthening PES to improve the labour market outcomes of persons with disabilities Adamecz-Volgyi A., ZsuZsa Levay P. Bordos K. and Scharle A. (2018). Impact of a personalised active labour market programme for persons with disabilities

	Special schemes for youth	Escudero V. and Lopez Mourelo E. (2017). The European Youth Guarantee: A systematic review of its implementation across countries Caliendo M. and Schmidl R. (2016). Youth unemployment and active labor market policies in Europe
5. EPL	Notice and severance payments	Cervini-Pla, M., Ramos, X. & Ignacio Silva, J. (2014), `Wage effects of non-wage labour costs', Martins P. S. (2021). Do entry wages increase when severance pay drops? Not in recessions
	Definition of fair dismissal	Autor D. Kerr W. R. and Kugler A. D. (2007). Does employment protection reduce productivity? Evidence from US States. Martins, P. S. (2009), 'Dismissals for Cause: The Difference That Just Eight Paragraphs Can Make
	Permanent contracts - Other	Conde-Ruiz J. I., García, M., Puch, L. A. & Ruiz, J. (2023). Reforming Dual Labor Markets: "Empirical" or "Contractual" Temporary Rates?
	Maximum number of renewals of fixed term contracts	
	Maximum duration of fixed-term contracts	Güell, M., and Petrongolo B. (2007). "How Binding Are Legal Limits? Transitions from Temporary to Permanent Work in Spain."
	Definition of valid reasons for fixed-term contracts	Cahuc P, Carry P., Malherbet F. and Martins P. S. (2023). Spillover Effects of Employment Protection; Dariuch D., Di Addario S. & Saggio, R. (2022). The effects of partial employment protection reforms: evidence from Italy;
8. Working time	Working hours management	Carry P. (2024). The Effects of the Legal Minimum Working Time on Workers, Firms and the Labor Market
	Family-related working-time organisation	Cascio, U. E., S. J. Haider, and H. S. Nielsen. "The effectiveness of policies that promote labor force participation of women with children: A collection of national studies."

Source: own elaboration. Empty cells reflects the impossibility to identify relevant literature, not the absence of it.

Table 16: Classification framework for the analysis of labour market reforms and their impacts

Policy domain	Policy field	Measure	Indicators	Expected Impacts
Labour taxation	Employers' social security contributions (SSC)	changes in SSC levels and structure, including SSC reductions for employing special groups	Separation and/or job finding rates, employment duration, employment, wages, labour force participation	• The intended incidence of SSC does not necessarily corresponds to the actual incidence of SSC, as the latter is influenced by the labour supply and demand elasticities, institutions and more generally, the relative bargaining power of employers and workers. • If the increase in SSC is mainly passed through to wages, then negative labour supply effects (e.g. job finding, employment, participation) can be expected. • If the increase in SSC is, for the most part, absorbed by employers, then labour demand should be negatively affected (e.g. decrease in hiring, employment) • SSC have usually limited effects on separations, except in specific cases (e.g. Countercyclical UI SSC, experience-rated systems) • Increase in SSC on temporary contracts can have unexpected effects and increase segmentation • The perceived link between the SSC and the (future) benefit can influence impacts as a clear tax-benefit linkage can limit distortionary effects of SSC
	Employees' social security contributions (SSC)	changes in SSC levels and structure		
	Self-employed social security contributions	changes in SSC levels and structure	transitions from self-employment to employee status,	An increase in self-employed SSC is expected to decrease the attractiveness of self-employment and lead to an increase in employee relationships
	Income tax	changes in income taxation, tax credits, tax allowances	transitions to the labour force and to employment, hours worked, labour force participation	• Changes in labour income tax can lead to important labour supply responses, for specific groups in particular (i.e. married women) • Additional behavioural response include tax evasion, changes in reported incomes and saving rates
	Labour taxation – Other	e.g.: measures related to fighting undeclared work and fraud	Transitions from un(der)declared to regular employment, employment, hours worked	• (Regular) employment and/or hours worked should increase. • Unintended effects may arise (e.g. underdeclared workers becoming fully undeclared)
Unemployment benefits	Net replacement rate	changes in levels or structure of benefits	Job finding and separation rates, (un)employment duration, employment, wages	• A decrease in the net replacement rate or in the PBD is expected to: • Stimulate jobseekers' search efforts and increase transitions from unemployment to employment • Unemployment duration should decrease and employment increases • Reservation wages should decrease, leading possibly to lower re-employment wages • Effects of duration can be more complex as longer duration can also lead to (slightly) smaller re-employment wages (skill depreciation effect).
	Duration of unemployment benefits	changes in duration of benefits		

	Coverage and eligibility conditions	changes in conditions, including employment history and insurance record in reference periods, or target groups covered by benefits		• Changes in coverage and eligibility criteria that tend to tighten access to UB are generally associated with a decrease in separations and an increase in job finding transitions. Employment duration increases as workers are incentivised to look for longer duration contracts. • Unintended effects (e.g. multiple short-duration contracts, low paid work) can arise
	Search and job availability requirements	changes in job search conditions and sanctions, including mobility requirements		• Monitoring and job search requirements aim to address moral hazards problems associated with UI. Impacts on job finding transitions are mixed but could be small and positive. • Potential unintended effects in the form of withdrawals from the labour force and incentives to accept a lower paid employment. • Precise schemes (e.g. proof of search efforts, meeting notice, consequences in case of non-compliance) and the difficulty to precisely monitor search effort can affect the effects of the schemes
	Unemployment benefits – Other	e.g.: temporary rules on benefits; special funds		–
Active Labour Market Policies	Public Employment Services	changes related to coverage, governance arrangements and services provided, including targeting or individualised services, job assistance and job-counselling services, private employment services	Job finding rates, (un)employment duration, employment	• JSA services tend to have a positive impact on the return to employment, at least in the short run (up to year). Evidence in the medium/long term is more scarce but suggest positive effects as well. • JSA does not always come alone and is often accompanied by an element of monitoring. It is therefore difficult to disentangle the effects of JSA and monitoring • Potential heterogeneous effects as workers from disadvantaged groups (workers less attached to the labour market excluding women, LTU and youth) are the main beneficiaries. • Caseworkers (i.e. more experienced) supporting jobseekers could positively affect impacts of the programme. • Well-structured PES have been shown to be associated with shorter unemployment duration • Studies on labour market impacts of ALMP generally focus on specific programmes and ignore potential general equilibrium effects (e.g. crowding-out of other jobseekers) that could result in lower (and potentially negative) effects of ALMP at the macro/aggregate level
	Training	all changes in training offers or structure, including life-long learning		• Participation in a training programme temporarily reduces job search activity, either because time is diverted toward training or because programme rules discourage simultaneous job search, leading to a lock-in effect of training programmes. • Training reduces transitions in the short run due to lock-in but generates substantial improvements in U→E transitions in the medium and long run, with retraining showing especially strong effects. • Effects on employment are small or negative in the short-run but increase through and become larger in medium- and long-run employment. • Unemployment duration increases in the short-run and decreases after. • No consistent evidence on wage effects of standard training programmes. Available results are limited and mixed.

				• Training works through human-capital accumulation, displays heterogeneous returns (higher for LTU and women, lower for youth), and may generate crowding-out effects (of other jobseekers) when implemented at high intensity.
	Direct job creation schemes	job creation schemes in the public sector or in non-profit organisations; public work schemes		• Direct Job Creation schemes substantially raise employment while the subsidised job exists, but only produces modest improvements in subsequent transitions to regular employment. • These schemes substantially increase earnings in the short run, and, at best, yield small to moderate gains for very disadvantaged groups in the medium term. • The increase in wages comes mostly from more employment and more hours worked (rather than higher hourly wages), with minor improvements in job stability reported in few instances.
	Employment subsidies	changes in different wage and start-up subsidies, excluding SSC reductions		• Wage subsidies reduce employer's labour costs and are expected to shift labour demand upwards, thereby increasing employment and wages. Wage subsidies should stimulate job creation and hirings. • Wage subsidies can substantially increase the unsubsidised employment rate and the aggregate employment rate through long-term integration of jobseekers
	Special schemes for people with disabilities	all rehabilitation measures for the employment of disabled people and quotas for employers, excluding specific measures		• Training and counselling/JSA have been found to have positive effects on re-employment. • PES can play an important role, by offering a one stop shop for individuals with disabilities and employers. • Importance of tailoring services as disability encompass heterogenous realities with different implications.
	Special schemes for youth	measures related to apprenticeships and other schemes directed at the youth, including counselling, training and subsidies		• Effects on youth appear to depend on the type of programme considered. JSA (with and without monitoring) seem to have positive effects in general but results regarding training and wage subsidies are more mixed. The effects of public work programs are clearly negative. • In general, younger workers tend to benefit less from ALMP compared to other groups of workers.
	Active labour market policies - Other	e.g.: sectoral plans or ALMP during notice periods		–
Employment Protection Legislation	Procedural requirements	all changes related to the procedure to hire and fire, (e.g. obligation for written prior notification, delays, administrative barriers, dispute resolution or mediation provisions)	Separation and/or job finding rates, employment duration, (fixed-term, part-time and self-) employment, hours worked, wages	• 'Effects of the different policy fields can be analysed based on whether they imply a tightening of the EPL or not • A tightening of the EPL should lead to a decrease in separation rates and in job finding rates. Effects on stocks (e.g. Employment (duration)) should be negative but are generally undetermined (both job finding and separation rates are affected). Impacts on wages can depend on the precise levers (e.g. increase in severance pay can lead to lower wages), but effects on wages are usually found to be small • EPL interacts with other institutional features (e.g. wage setting, product market regulations), which can also explain the lack of consensual results • Studies analysing policy fields separately suggest larger effects from changes in legislations related to unfair and collective dismissals
	Notice and severance payments	changes in notice and severance requirements		

	Definition of fair dismissal	changes in definitions of valid reasons for fair dismissals		• The EPL affects labour market dualism as stricter EPL limits transitions to permanent contracts. In such case, stricter EPL can actually lead to increased worker flows relative to job flows (excess worker reallocation) and a deterioration of job security. • In the medium/long run, stricter EPL tend to limit reallocations of workers across sectors (from low to high productive sectors in particular) with potential negative effects on productivity.
	Permanent contracts - Other	e.g.: changes in professional classifications; employment status;		
	Collective dismissals	valid reasons, procedures or contributions to special redundancy funds		
	Maximum number of renewals of fixed term contracts	changes in the number of maximum renewals of fixed-term contracts		• 'Tightening EPL on temporary contracts is associated with lower job finding transitions from unemployment to temporary employment, but also higher separation rates. • Transitions from temporary to permanent contracts depend on the degree of substitutability between the two types of contracts. Evidence is mixed in this regard but a certain degree of substitutability is usually reported (fixed-term contracts as a stepping-stone) • In general, workers on permanent contracts enjoy a wage premium over workers on temporary contracts with similar characteristics. • workers on temporary contracts accumulate less firm specific skills and benefit less from training opportunities, which should negatively affect wages and productivity. • Temporary contracts can also help workers acquire a first experience and serve as a stepping stone.
	Maximum duration of fixed-term contracts	changes in the maximum duration of fixed term contracts		
	Temporary agency work	duration, renewal, valid reasons; changes regulating agencies		
	Definition of valid reasons for fixed-term contracts	changes in reasons easing or restricting the use of fixed-term contracts		
	Temporary contracts - Other	e.g.: notice and severance payments for fixed-term contracts		
Working time	Working hours management	changes in maximum working hours, flexible arrangements, overtime, bank of hours, night/Sunday work, annual leaves; excluding telework		• No actual consensus in the literature on impacts of measures leading to working time reductions. Differences in the reforms (e.g. effects on wages, tax credit/subsidy to help firms adjust) and in the institutional context (e.g. EPL, collective bargaining) could explain heterogenous results • In general, studies report a negative effects (i.e. an increase) on separations for workers affected by the reform, but the opposite effect has also been found. • Effects on hirings depend crucially on the evolutions of wages, the use of overtime hours, and labour costs. Effects on (un)employment are also uncertain. • Hours worked for affected workers/firms tend to decrease and the overall effects on total hours depend on the evolution of employment. • Most reforms analysed require firms to keep monthly wages constant after the reforms leading to an increase in hourly wages; • Working time deregulation (e.g. Sunday work) has been found to have positive effects on hirings and a small but positive impact on employment and hours worked

	Part-time work	measures extending or reducing the possibility of part-time work		
	Family-related working-time organisation	measures altering the incentive structure for working parents, telework, parental leave, childcare availability	At-work rate (eligible–ineligible); Absent-with-job rate; Employment; LFP; Father vs mother proxy	• Family-related working-time reforms shift labour supply through (i) increased employment entry for mothers when childcare becomes cheaper/more available, and (ii) reallocation from full- to part-time work when flexible working-time rights are expanded. • Childcare expansions have been shown to raise employment and hours of mothers, while flexible working-time arrangements raise labour supply but can induce a part-time specialisation (trap). Parental-leave and childcare systems contribute to cross-country differences in maternal employment. • Working-time flexibility expands earnings for average mothers but lowers earnings for mothers who reduce hours. Childcare policies rarely affect wages directly, while the motherhood wage penalty varies widely across countries and tend to be smaller where leave lengths are moderate and childcare is publicly supported. • Family-related working-time is heavily influenced by cultural norms.
	Sabbatical and other special leave	e.g., changes in training leaves or training time accounts		
	Working time - Other	e.g., changes in public holidays or working time in the public sector		

Source: Own elaboration based on the LabRef database.
Note: By impacts, we mean both labour market outcomes, like employment and unemployment, and macroeconomic effects, such as GDP and productivity. Blank cells indicate that the policy field was not analysed for this report.

Annex A.2. Methodology for the empirical approach

The estimation of labour market impacts of the reforms relies on standard causal inference methods, namely the Synthetic Control Method (SCM) and Difference-in-Difference (DiD). General details on these two approaches can be found in Annex A.2.1 and Annex A.2.2. Specificities related to the reform (e.g. definition of the treatment) are discussed in the relevant Member State sections in the core report and in Annex C.2. This Annex concludes with a discussion on the general methodological approach and the decision to analyse certain reforms using the same indicators and methodological approaches.

Annex A.2.1. Synthetic Control Method

The SCM is a modern approach to policy evaluation that is especially useful when only one or a few units are exposed to a policy or intervention. The idea is to construct a synthetic version of the treated unit from a weighted combination of unaffected comparison units. This synthetic control is designed to closely replicate the treated unit's outcome trajectory before the intervention. If the synthetic version successfully tracks the pre-policy behaviour, it can then serve as a credible estimate of what would have happened in the absence of the intervention. The difference between the actual treated outcome and the synthetic control after the policy change is then interpreted as the policy's causal effect.

One of SCM's main strengths lies in its transparency as it is possible to show both the pre-intervention fit and the divergence that emerges afterward. Instead of relying purely on statistical models, the method exploits observed data to construct a counterfactual series. Because SCM is typically applied in settings with a single treated unit and a small number of potential controls, standard large-sample theory does not apply. As a result, inference relies primarily on permutation or placebo tests, in which the treatment is reassigned to units that were in fact untreated (Abadie et al., 2010).

While informative, these tests can be limited in their ability to approximate the true sampling distribution of the estimator, particularly when the donor pool is small or when units differ substantially in their pre-treatment characteristics. Recent work has shown that placebo-based inference may over-reject or under-reject depending on the structure of the data, the quality of the pre-treatment fit, and the heterogeneity of trends across units (Ferman et al., 2021). These concerns have motivated the development of alternative inference procedures (e.g.self-normalised test statistics) that aim to provide more reliable uncertainty assessments in small-sample environments. Hence conducting valid statistical inference in the synthetic control framework remains challenging.

Furthermore, the estimated effects have been shown to be sensitive to the composition of the donor pool. In settings with small donor pools, researchers often assess robustness through leave-one-out tests, re-estimating the synthetic control after sequentially removing each donor unit (Abadie et al., 2015). With larger donor pools, such exhaustive procedures become impractical, and recent contributions have emphasised more systematic approaches to donor-pool sensitivity. These include regularised or penalised versions of SCM that shrink weights and mitigate instability when many donors are available (Abadie et al., 2021).

Nevertheless, SCM has become widely used over the past two decades in economics, political science, and public policy, with applications ranging from evaluating tobacco control in California (Abadie et al., 2010) to measuring the economic costs of terrorism in the Basque Country (Abadie et al., 2003). More recent contributions extend the method to improve its flexibility, allow for formal inference, and combine it with related approaches such as difference-in-differences (Arkhangelsky et al., 2021).

Annex A.2.2. Difference-in-Difference

DiD is a widely used method for estimating the causal impact of an exogenous intervention on an outcome of interest by removing confounding factors that are constant across groups or common across time. The basic idea is to difference outcomes over time within units, thereby absorbing all unit-specific fixed characteristics, and to difference outcomes across units within a period, thereby controlling for time-specific shocks (double difference).

In practice, this logic can be operationalised by regressing the outcome on a set of group fixed effects, a set of time fixed effects, and an indicator variable equal to one for treated units after the intervention has occurred. This formulation corresponds to the well-known two-way fixed-effects (TWFE) estimator. Extending this regression by interacting the treatment indicator with the time fixed effects yields the event-study TWFE specification commonly used to visualise dynamic treatment effects (Miller, 2023).

The validity of the DiD approach relies on the standard identifying assumptions from the potential-outcomes framework, most importantly the parallel trends assumption. This assumption requires that, in the absence of treatment, treated and untreated units would have followed similar trends in outcomes. While it cannot be directly tested, researchers typically assess its plausibility through pre-treatment event-study coefficients. Recent work has highlighted the importance and limitations of such pre-trend tests: Roth (2022), for example, shows that conventional tests often suffer from low power and can be invalid when treatment effects are heterogeneous, leading to over-rejection of parallel trends or inflated certainty about pre-intervention equivalence. This has motivated more rigorous

diagnostics and inference procedures that explicitly account for multiple testing, treatment effect dynamics, and the distribution of pre-treatment shocks.

Although TWFE DiD is relatively straightforward to implement, recent research has revealed important limitations. When treatment is adopted at different times across units and treatment effects are heterogeneous, the TWFE estimator can become inconsistent, sometimes even assigning negative weights to certain groups or comparing already-treated units to later-treated ones (De Chaisemartin et al., 2020; Goodman-Bacon, 2021). These issues extend to the event-study TWFE specification, where dynamic effects may be substantially biased in staggered-adoption settings (Sun et al., 2021). This recognition has led to a large methodological literature proposing alternative estimators valid under these types of commonly found treatment design.

In this study, we rely on the non-parametric estimator proposed by (de Chaisemartin and D'Haultfoeuille, 2024). While our empirical setting involves a binary treatment occurring at the same time for all units, implying that standard TWFE and event-study TWFE estimators would remain valid, this approach offers several advantages. It provides a transparent construction of the counterfactual, particularly in the presence of control variables, and yields output that can be readily reused. Moreover, it directly addresses many of the inferential and weighting concerns identified in the recent DiD literature.

Annex A.2.3. Additional considerations regarding the methodological approach

As explained in Section 1.3, some reforms, though very different in the measures implemented, are analysed using the same methodological approach. This is motivated by the fact that the expected impacts and the indicators relevant to assess the labour market effects of these reforms are generally similar.

For instance, the reform of the unemployment insurance in France and of the simplification of contracts in Spain are expected to impact flows in and out of employment, with potential positive effects on employment. Furthermore, the Spanish reform targets fixed-term contracts while the French reform aims to address the prevalence of short-duration contracts and promote more sustainable employment arrangements, in the form of open-ended contracts possibly. Hence, while the prevalence of temporary contracts in general is not the main target of the French reform, the reform could nonetheless have an impact on segmentation, which is worth exploring (in addition to the potential effect on aggregate employment). The reform on the modernisation and simplification of labour law in Greece is not considered jointly with these two reforms as the reform is very broad and the quantitative analysis focuses on two articles of the associated law. In this case, the targets groups (e.g. blue collar workers) can be identified from the EU-LFS.

Likewise, the PES reform are different in their precise measures but can target similar groups (e.g. youth, LTU) and promote the development of similar ALMP (e.g. training). Moreover, PES reforms are very difficult to evaluate quantitatively due to methodological difficulties (Crépon et al., 2016), and the lack of reliable and available data. Country-specific institutional arrangements (e.g. in terms of decentralisation) and varying degree of implementation of the different measures further complicate the task. The four PES reforms (i.e. reforms FR-C[C8]-R[R1], EL-C [3,1]-R [16941], ES-C[C23]-R[R5] and ES-C[C23]-R[R11]) are therefore analysed using the same set of indicators constructed from the EU-LFS (see Annex C.1 for details on these indicators).

The joint analysis of certain reforms further implies that more comparable data offered by the EU-LFS constitutes a noteworthy advantage compared to the more precise but country specific data provided by administrative sources.

Annex B. Detailed descriptions and expected impacts of the reforms

As its title indicates, this Annex provides further information on the description of the reforms (Annex B.1) and their expected impacts (Annex B.2). Detailed expected impacts are discussed only for the reforms which are evaluated quantitatively using SCM or DiD. This concerns the unemployment insurance reform in France, the modernisation and simplification of labour law in Greece and the simplification of contracts reform in Spain.

Annex B.1. Detailed descriptions of reforms

France: Unemployment insurance reform (FR-C[C8]-R[R4])

The reform is composed of four measures already described in Section 2.2.1 and for which additional details are provided below:

1. Changes in the methodology used to calculate the benchmark daily wage ('*salaire journalier de référence'*), the key figure used to calculate the amount of UB ('*allocation d'aide au retour à l'emploi',* or ARE) and the PBD. Previously, these two parameters were based on the days worked over the last 12 months[71]. The new methodology now includes all days in the reference period[72], whether worked or not, and the reference period has been changed to 24 months leading to a decrease in the benchmark daily wage and an increase in the PBD for jobseekers with a non-continuous work history. Jobseekers who worked constantly over the 24 months reference period are not affected by the reform.
2. The generosity of UB for higher earners (above EUR 85 per day or close to EUR 4900 per month) was reduced[73]. A sliding scale was introduced whereby UB declined by a maximum of 30% from the seventh month of unemployment. The reform excluded jobseekers older than 57 years old and concerned around 3% of UB beneficiaries.
3. Conditions for eligibility to UB were tightened, requiring six months of work (or 910 hours) over the last 24 months instead of four months over the last 22 months for affiliation. The reform also modified the conditions under which a work experience prior to the expiration of UB rights would affect future affiliation.

[71] The PBD was already computed based on the days worked over the last 24 months before the reform.

[72] Between the first and last day worked over the reference period in the case of the PBD.

[73] Article 17bis of decree 2019-797 of 26 July 2019 (came into force on 1 December 2021)

4. Finally, a 'Bonus-Malus' mechanism for employers was introduced, whereby the SSC rate could rise from a baseline level of 4.05% to a maximum of 5.05% for firms with separation rates above the median in their sector. Conversely, the SSC rate could decrease to a minimum of 3% for firms with below the median separation rates. The system was constructed to be neutral from a fiscal point of view and only applies to firms with more than 10 employees in seven pre-specified sectors. The computation of the separation rate further obeys specific rules, which for instance, exclude certain type of workers from the computation (e.g. apprentices).

Greece: Simplification and modernisation of labour law reform (EL-C[3,1]-R[16744])

This reform was implemented through Law 4808/2021. Additional details are provided for measures 1 to 6 in this section including Articles 28 and 64, which are those evaluated quantitatively in Section 3.1.3.

Measure1: Fundamental changes to EPL. The reform, via Law 4808/2021, introduces substantial revisions to the rules governing termination of contracts of indefinite duration. **Article 64** abolishes the longstanding distinction between white-collar and blue-collar workers in relation to terminations. This abolition represents an important legislative intervention, ending a disparity that had endured for nearly a century. Courts had already questioned its constitutionality (Stamati, 2004), noting that reduced severance for manual workers violated equality principles and undermined severance as a crucial means of subsistence. By eliminating this distinction, this article marks a significant step toward equal employment rights (Eurofound, 2015a, 2015b; Ζερδελής, 2025). Previously, Greek blue-collar severance compensation was significantly lower, often only a few days' wages per year of service, compared to the months of pay due to white-collar. After the reform, all employees accrued severance based on length of service under one unified scale, and any prior caps or calculations that differentiated the groups were harmonised (subject only to the general maximum severance ceiling in law). Other employment benefits tied to the white/blue distinction (such as certain leave or bonus entitlements) were likewise equalised.

Article 65 addresses the employer's right to release an employee from the obligation to work during the notice period while maintaining full pay until the notice expires. It further specifies that employees who are released from work may take up employment with another employer during this period without affecting their entitlement to severance or other rights arising from the original termination.

Moreover, Article 66 sets out grounds for unlawful dismissal such as discriminatory motives or retaliation for the exercise of rights, and establishes procedural rules governing the validity of terminations. Article 66 also regulates formalities related to dismissal, outlines deadlines by which employers may rectify certain omissions, and sets rules for the (shared) allocation of the burden of proof

in disputes concerning unlawful dismissal. Remedies under this article include reinstatement and compensation.

It is worth noting that while **Article 64** is widely regarded as a positive development for (blue-collar) worker, Gavalas (2022) and Papadopoulos (2023) argue that this gain is partly offset by Article 66, which reshaped the regime of unfair dismissal. Whereas previously a null dismissal guaranteed reinstatement plus full back pay, the new law allows employers, in many cases, to substitute reinstatement with capped compensation. According to Gavalas (2022) and Papadopoulos (2023), these changes bring Greek law closer to more flexible dismissal models, and weakens substantive protection under Article 24 of the European Social Charter.

Measure 2: Combating labour fraud. The law introduces a new digital infrastructure for monitoring employment conditions, starting with the upgrade of the national labour-market information system. Article 73 establishes ERGANI II as the modernised version of the earlier ERGANI system, designed to centralise employment declarations, contracts, and notifications. Article 74 creates the Digital Employment Card, which requires employers to electronically record working hours and transmit real-time attendance data to ERGANI II, significantly strengthening the monitoring of actual working time. Articles 75 to 78 complement this framework by regulating late submissions, consolidating registers of employers' and workers' organisations, mandating interoperability between information systems, and reinforcing the legal obligation to record schedule changes and overtime electronically before the work is performed. Article 79 contains enabling provisions to support full implementation of the new system.

Articles 102 to 125 establish the Labour Inspectorate as an independent administrative authority with operational and financial autonomy. Article 102 creates the authority, while Articles 103 to 121 define its responsibilities, investigative powers, internal organisation, staffing, and financial arrangements. Articles 122 and 123 amend earlier legislation to align with the new structure, Article 124 provides enabling provisions, and Article 125 contains transitional rules governing the transfer of functions and staff from the former inspectorate to the new authority.

Measure 3: Work–Life Balance. The reform introduces a comprehensive set of rights for parents and carers. Articles 25 to 32 establish the main framework governing paternity leave, parental leave, carers' leave, short-term leave for urgent family reasons, and the right to request flexible working arrangements. Articles 27 to 29 set out the specific conditions and duration of paternity, parental, and carers' leave. In particular, **Article 28** expanded parents' rights to parental leave by granting each working parent an individual, non-transferable entitlement of up to four months per child until the child turns eight, with two months paid at (approximately) the statutory minimum wage by OAED. Article 30 grants short leave for unforeseen and urgent family matters arising from illness or accident, while Article 31 establishes the right of employees with children up to a certain

age, or those with caring responsibilities, to request flexible working arrangements (e.g. telework, adjusted hours or part-time schedules). Article 32 designates the national equality body as competent for addressing discrimination related to the exercise of these rights.

Articles 33 to 45 supplement the WLB framework with additional family-related entitlements, including maternity-related protections extended to adoptive parents mothers (Article 34) and a range of leave rights linked to child illness, hospitalisation, assisted reproduction, and the situation of single parents. Articles 46 to 49 ensure that employees who exercise work-life balance rights retain their employment rights, are protected from adverse treatment, and may not be dismissed for reasons linked to exercising these rights.

Finally, Article 67 sets a general framework for telework, including the definition of teleworking arrangements, the allocation of costs, obligations concerning equipment, data protection, and the right to disconnect.

Measure 4: Working time regulation. The reform reshapes several aspects of working time regulation. Article 55 defines the weekly full-time schedule as 40 hours, permitting distribution over either five or six days and allowing shorter full-time schedules by agreement. Article 56 updates rules on rest periods by amending existing legislation, and Article 57 modifies the framework governing additional work by part-time employees. Article 58 adjusts the compensation rules for overtime increasing the maximum daily and annual number of overtime hours, while Article 59 revises the framework for working-time arrangement (time-averaging), setting out the circumstances under which hours may be averaged over reference periods through individual agreements. Articles 60 to 62 govern public holidays, the time limit for taking annual leave, and unpaid leave of up to one year by mutual agreement. Article 63 broadens or modifies categories of sectors authorised to operate on Sundays and public holidays by amending earlier regulations.

The implementation of working-time rules links directly to Articles 73 to 79, which mandate real-time electronic recording of working hours and schedule changes within ERGANI II and the Digital Employment Card system.

Measure 5: Regulation of digital platform work. Articles 68 to 72 of Law 4808/2021 introduce a specific regulatory framework for work performed through digital platforms. Article 68 defines digital platforms as entities that connect service providers with users or customers through an online interface. Article 69 regulates the contractual relationship between platforms and individuals providing services, allowing for both employment contracts and independent service contracts. It establishes a presumption of (non-dependent) employment when a series of autonomy criteria are met, including control over working hours and the ability to work for third parties. Article 70 grants individuals providing services under independent contracts the right to organise collectively and participate in trade union activities. Article 71 extends OSH obligations to

platforms with regard to service providers. Article 72 requires platforms to provide written or digital contracts before service provision, specifying key aspects such as the nature of the service, health and safety obligations, rights related to representation, and provisions for data protection.

Measure 6: Equality, non-discrimination, protection from violence and harassment, and collective labour relations. The first component of this measure is established in Articles 1 to 24, which ratify and implement ILO Convention No. 190 on the elimination of violence and harassment in the world of work. Articles 1 and 2 incorporate the Convention into national law and define the scope of application. Articles 3 to 16 introduce national measures prohibiting all forms of workplace violence and harassment, requiring employers to adopt preventive policies, establish internal procedures for addressing complaints, provide information and training, and take appropriate measures to protect affected persons. These articles also set out protection against retaliation, access to representation and support, and the allocation of the burden of proof in relevant disputes. Article 16 assigns monitoring responsibilities to the Labour Inspectorate regarding violence and harassment,. In addition to these provisions, Articles 46 to 49 (already discussed under measure 3: Work-life balance), play a complementary role in ensuring equality and non-discrimination for employees exercising family-related rights.

The second component concerns collective labour relations and is addressed in Articles 82 to 101. These articles modernise the legal framework governing trade unions, employers' organisations, and industrial action. Articles 82 to 85 introduce digital registers for workers' and employers' organisations and require their registration in the national employment information system. Articles 86 to 90 amend rules governing the internal functioning of trade unions, including general meetings, electronic voting, and protections for union activity. Article 91 updates procedures for announcing and conducting strikes, while Article 92 sets out specific rules for industrial action in essential services. Article 93 imposes obligations to safeguard the right to work of non-striking employees, and Article 94 revises the framework for public dialogue and the temporary suspension of strikes in certain circumstances. Articles 95 to 101 provide further amendments and transitional or repeal provisions relating to collective agreements and industrial-relations procedures.

Greece: Restructuring and rebranding of PES local offices - Organisation reform of PES (DYPA) (EL-C [3,1]-R [16941])

Measure 1: Governance and Organisational Modernisation of OAED (now DYPA). The reform introduces a set of targeted organisational reforms via Law 4837/2021, intended to strengthen OAED's administrative structure and the operational coherence of its employment-service network. Articles 60–62 create the institutional basis for reorganising human resources within OAED's local employment promotion centres.

- Article 60 formally defines employment counsellors as a distinct staff category and specifies that counselling, matching and related employment-promotion tasks must be carried out by personnel with appropriate academic qualifications and professional experience. The same article empowers the Minister of Labour to determine, through secondary legislation, the precise qualifications, certification conditions and methodological frameworks under which counsellors will provide their services.
- Article 61 regulates the recruitment of employment counsellors, setting out the procedures, eligibility requirements and categories of candidates from which OAED may select. This creates a uniform entry pathway for professionals delivering services in local offices.
- Complementing these staffing measures, Article 62 establishes a middle-management position in each local employment branch. Holders of this position are responsible for coordinating day-to-day operations, supervising counsellors and other staff, and monitoring the performance of the local office.

Further provisions refine OAED's internal organisational framework:

- Article 66 establishes a specialised Service Unit for Medium and Large Enterprises. The unit is tasked with developing ongoing cooperation with medium and large firms. Although the article does not specify specific activities, the creation of the unit is likely aiming at improving vacancy collection, and enhancing the matching of jobseekers with employers. Its creation reflects the expansion of OAED's employer services and strengthens employer engagement.
- Articles 67–69 introduce additional adjustments to governance and regulatory processes related to administrative aspects. Article 67 specifies rules for e.g. authorising the travel of the OAED Governor, Article 68 amends earlier legislation on OAED's organisational regulation and revises the timetable for issuing OAED's financial and accounting regulation, and Article 69 authorises the delegation of financial authorising-officer powers within OAED.

Measure 2: Counselling, Profiling, and Activation Services. Law 4837/2021 reinforces OAED's capacity to provide structured counselling and activation services by establishing explicit staffing rules, qualifications and procedures for the delivery of such services:

- Article 60 defines the core duties of employment counsellors and ensures that counselling and activation services are carried out by individuals with appropriate qualifications and expertise.
- Article 64 regulates the provision of group counselling programmes offered by OAED. It authorises such programmes for unemployed

persons who have already participated in an initial counselling process at their local employment office and clarifies that group counselling must be delivered by specially trained and certified employment counsellors. The article specifies the content that may be included in group counselling activities, such as vocational guidance, job-search techniques, or support for entrepreneurial initiatives. It also establishes that the methodological standards and the certification framework for counsellors participating in these programmes will be defined through secondary legislation.

Measure 3: Governance of OAED's VET Structures. The reform includes a reform targeted at the governance of OAED's vocational education and training institutions. Article 65 of Law 4837/2021 sets out the rules for selecting directors of OAED's training units, including institutes of vocational training, and training centres. It specifies the categories of personnel eligible to serve as directors (e.g. permanent civil servants, employees in the private sector) and requires that candidates possess formal and substantive qualifications aligned with the needs of managing a VET institution.

Article 65 further requires candidates to have relevant VET experience and mandates the issuance of a joint ministerial decision that will set out the detailed procedures for participation in the selection process, specify the required qualifications, define evaluation and ranking criteria, and determine the bodies responsible for assessment and appointment.

Portugal: Agenda for the promotion of decent work (PT-C [C06]-R[r17])

Concerns have increasingly been voiced about the social and economic implications of digital platform work, defined by its large-scale crowd work and algorithmic management of tasks performed predominantly by young and generally low-educated, male workers (Urzì Brancati et al., 2020). Additional concerns relate to its impacts on social protection systems, public revenue, and labour standards, which have prompted legal debate and judicial scrutiny across multiple jurisdictions. At the European level, the need for clearer regulation led to the 2021 proposal for a Directive aimed at establishing a legal framework for platform work (Directive 2024/2831), adapting existing legal concepts to the realities of algorithmic management and digitally mediated employment relationships.

In this context, Portugal has pursued comprehensive labour market reforms to address the risks associated with non-standard and precarious forms of work, including platform work. In February 2023, the government adopted the Decent Work Agenda ('Agenda do Trabalho Digno'), a broad package of labour reforms designed to strengthen workers' rights and modernise labour regulation. As already noted in Section 4.1.1, the Decent Work Agenda covers multiple areas, including enhanced protections for young workers, gender pay gap, reinforcement of collective bargaining, and regulation of non-standard

employment, but only the measure targeting platform work has been placed under the RRF. Measures associated with the Decent Work Agenda were social dialogue, these measures were introduced as amendments to the Labour Code through Law No. 13/2023 of 3 April 2023.

A key element of the reform is the introduction of an employment presumption for platform workers, aimed at tackling precarious working conditions in the digital platform economy. Article 12-A of the Labour Code, effective from 1 May 2023, establishes that a platform worker is presumed an employee if at least two of the following six criteria are met:

1. The platform sets payment terms, including establishing minimum or maximum limits.
2. It directs worker conduct and rules, such as appearance, behaviour towards users, or activity standards.
3. It monitors and supervises performance, including through real-time checks or algorithmic management.
4. It limits the worker's autonomy over schedules, task acceptance, use of substitutes, or choice of clients.
5. It exercises employer-like powers, such as applying sanctions or deactivating accounts.
6. It owns or controls the work equipment, including through leasing arrangements.

The reform marked a significant shift in the regulation of platform work in Portugal. By extending the presumption of employment, the law aimed to enhance workers' rights, including access to social protection, collective bargaining, and safeguards against precariousness. According to the European Commission's preliminary assessment of the third and fourth payment request[74], Law No. 13/2023 "brings clarity and certainty" to these employment relations, qualifying them as standard labour contracts when the presumption applies and thereby reducing job precarity. The new rules also oblige platforms to inform workers when algorithmic systems affect working conditions, profiling, or employment decisions, thus addressing transparency gaps in digital management. The Commission further highlighted that the reform addresses challenges arising from algorithmic management and strengthens labour relations by eliminating unbalanced and atypical work arrangements.

Spain: Simplification of contracts (ES-C[C23]-R[R4])

The complete description of the reform is based on Royal-Decree Law 32/2021, which contains one additional measures related to collective bargaining and

[74]https://commission.europa.eu/document/download/en?filename=C202389901_annexe_en.pdf

outsourcing. This measure affects a limited number of sectors and workers and was not discussed in Section 5.1.1. Overall, the following five measures can be identified:

Measure 1: Reduction of the types of contracts to three. The reform introduces a simplification of the contract framework by making open-ended employment as the general form of hiring. Article 15 of the Workers' Statute is revised so that temporary employment may only be used for two legally specified reasons: 1) temporary increases in activity, and 2) the replacement of an employee with a justified absence. Beyond these strictly delimited circumstances, temporary hiring is not permitted. The former task-based temporary contract, which had enabled employers to maintain workers for extended periods in non-permanent roles, is abolished without replacement.

Measure 2: Revision of work-based learning contracts. The reform thoroughly restructures work-based learning arrangements through a complete revision of Article 11 of the Workers' Statute. The legislation replaces the previous variety of training formulas with two clearly defined types, each with strengthened guarantees. The first type combines paid work with formal education delivered through an authorised training institution. Its purpose is educational, and the legislation sets detailed requirements concerning the link between on-the-job activity and the educational curriculum, the supervision of the learner, and the structure of the training plan (i.e. apprenticeship). The second type is designed for individuals who have recently obtained a recognised qualification and need practical experience to complete professional integration (i.e. traineeship).

Both contract types include strict limits on duration, remuneration linked to actual work performed, trial periods, supervision through designated tutors, and mandatory documentation of training content and objectives. Collective agreements have authority to regulate key aspects such as pay bands, criteria for access to each contract type, the distribution of time between workplace activity and training, and the professional groups eligible for these contracts.

Measure 3: Reinforced use of permanent–discontinuous contracts. The permanent–discontinuous contract, regulated in Article 16, becomes a central mechanism for structuring employment in activities with recurring but non-continuous demand throughout the year. The reform introduces detailed requirements for calling workers back to activity, mandating objective criteria and verifiable written communication. Sectoral collective agreements must regulate the maximum permissible duration of inactivity, particularly where the discontinuity arises from contracting or subcontracting chains. The legislation authorises the creation of annual registers, minimum call periods, and conversion pathways into continuous open-ended contracts. It also permits temporary work agencies to use permanent–discontinuous contracts when justified by sectoral characteristics, extending their reach into sectors with cyclical or intermittent labour needs.

Importantly, the consolidated legal framework establishes that periods of inactivity inherent to this contract type constitute a recognised situation of legal unemployment, allowing workers to access UB when the contribution requirements are met. This element is essential: it ensures income protection during inactivity, acknowledges the structural nature of intermittent work, and places the permanent–discontinuous contract firmly within the open-ended employment model while providing social-security coverage for non-active periods.

Measure 4: Fight against labour fraud. The reform strengthens enforcement mechanisms by amending the legal regime governing labour infringements. Misuse of temporary contracts becomes an offence assessed per affected worker rather than per establishment, significantly increasing potential penalties for non-compliance. The legislation also introduces a higher social-security contribution for very short-duration contracts (shorter than 1 month), discouraging excessive turnover and incentivising stable hiring. These measures are complemented by the broader digitalisation of employment records and notifications, which should facilitate the detection of irregularities.

Measure 5: Collective bargaining and outsourcing. The reform reshapes the collective-bargaining framework by modifying Articles 84 and 86 of the Workers' Statute. Sector-level collective agreements regain priority over company-level agreements with respect to core employment conditions, including remuneration, working time and job classifications (favourability principle). The reform also restores the principle that expired collective agreements remain in force until replaced, unless the parties negotiate otherwise. In addition, the regulation of intermittent employment in Article 16 requires that sectoral agreements define inactivity periods and call procedures when the structure of work depends on contracts or subcontracting arrangements. These adjustments ensure consistent regulation across production chains and reinforce the coordinating role of collective bargaining.

Spain: Modernisation of ALMP (ES-C[C23]-R[R5])

The labour reform ES-C[C23]-R[R5], focusing on modernising ALMPs, is aligned with recommendations from the Spanish Independent Fiscal Authority (*AiREF*). The reform introduced personalised counselling pathways, safeguards against misuse of work-based training schemes, enhancements to adult learning and skills recognition systems, a dedicated one-stop shop for youth, improved coordination between employment and social services, and strengthened collaboration with the private sector.

The reform was larger and more complex than some others considered in this study, unfolding through several legislative steps between 2021 and 2023, and associated with three key milestones (all of which were satisfactorily assessed by the European Commission).

The first milestone in June 2021, was the enactment of the Spanish Youth Guarantee Plan (‘*Plan de Garantía Juvenil Plus 2021–2027’*), with the broad objective of tackling youth unemployment and reducing early school leaving by aligning employment and education policies. The plan also sought to create job opportunities in high-growth sectors, support entrepreneurship, and reinforce personalised guidance for young jobseekers. A notable component was the proposed review of traineeship and apprenticeship contracts, including the approval of a Statute of Trainees (see also reform ES-C[C23]-R[R4]).

The second milestone was the adoption of the Spanish Employment Strategy 2021–2024[75]. Developed through social dialogue, the strategy aimed to balance flexibility and security in the labour market. It introduced a people- and business-centred approach, promoting a common framework for career guidance and job exploration services, bolstered skills-based employment and training services, and tailored services for employers and advice for jobseekers. The strategy also focused on supporting regions and sectors undergoing structural changes and implemented a results-oriented model with rigorous monitoring and evaluation. Additionally, it committed to diversifying service delivery channels, including via digitalisation and streamlining service provision through a ‘single personalised work file’, improving the capacity and professionalism of PES staff, and enhancing the governance and cohesion of the National Employment System.

The third milestone involved amendments to the Spanish Employment Law[76]. These amendments aimed to strengthen the governance, policy, and coordination instruments of the National Employment System. Key changes included transforming the State Public Employment Service (SEPE) into the Spanish Employment Agency, which has not yet taken place at the moment of writing these lines. The more centralised and empowered institution aims to integrate both public and private actors involved in social services into the system, and to introduce strategic planning and monitoring tools. The reform also modernised ALMPs through a comprehensive redefinition, recognising employability as a right and duty, expanding job intermediation, linking ALMPs with unemployment protection through activation agreements, and mandating tailored interventions for vulnerable groups. It also emphasised the local dimension of employment policy, trusting local corporations to design and deliver employment initiatives tailored to local needs. The reform further ensures the implementation of measures outlined in the National Plan for Active Employment Policies, including the greater use of data, evidence and technology, enhanced private sector engagement, guaranteed baseline services across the National Employment System (e.g. tailored pathways for both employers and jobseekers), and the promotion of financial sustainability and oversight.

This reform on ALMP has been accompanied by several investments.

[75] Formalised by Royal Decree 1069/2021 in December 2021.

[76] Royal Legislative Decree 3/2015, implemented by the fourth quarter of 2022

In particular, a budget of EUR 1.26 billion has been earmarked for investment 1 under component 19 of the Spanish plan, with the stated objective of enhancing the digital literacy and transversal digital skill acquisition of the Spanish population. This paid particular attention to both advanced digital skills and basic ones for e-inclusion of vulnerable groups with low digital skill levels, and involved several awareness-raising campaigns and digital resources for the dissemination and teaching of the Spanish language.

Furthermore, financial resources amounting to over EUR 2 billion have been allocated to vocational training under Component 20. The primary focus of this component is the reskilling and upskilling of the active population, in addition to the digitalisation of vocational training. Additionally, the promotion of innovation and internationalisation within the context of vocational training is emphasised.

Moreover, the majority of the investments associated with the reform under scrutiny have been incorporated into component 23 of the plan. The investment of the "Youth Employment" component has been allocated a budget of EUR 765 million. This budget is earmarked for the implementation of various activation and training programmes designed to facilitate the labour market integration of young job seekers between the ages of 16 and 29. In order to enhance the labour market integration of women, €105 million has been allocated to a series of initiatives, including training programmes, integration strategies and gender mainstreaming strategies within ALMPs. A budget of EUR 435 million has been designated for skills development programmes, with a particular emphasis on training those who may be at risk of displacement in the green, digital and productive sectors. A budget of €106 million has been designated for investment 4 under component 23, entitled “new territorial projects for rebalancing and equity”. The purpose of this investment is to facilitate at least 68 territorial projects that are intended to address the demographic challenge and to enable productive transformation towards a green and digital economy. A budget of €106 million has also been designated for investment measure 5, which is entitled 'Governance and Boost of Policies to Support Activation'. The primary objective of this measure is to facilitate the establishment of 20 centres of orientation, entrepreneurship and innovation for employment, in addition to a series of training actions that have been initiated for PES employees. In conclusion, a total of €100 million is to be allocated to initiatives centred on the social economy sector, which will also contribute to employment matters.

Spain: Digitalisation of PES for its modernisation and efficiency (ES-C[C23]-R[R11])

Reform ES-C[C23]-R[R11] transformed and modernised the provision of public employment services in Spain. Several key elements were introduced by the reform:

- Information systems supporting the UB system and the ALMPs were modernised. The aim was to transform the system into a fully digitalised service for citizens and businesses and enhance customer services.
- A new mobile application, an improved pre-appointment system and expanded online service offerings were introduced. The reform aimed to deploy advanced data management systems to enable evidence-based decision-making and publish high-value information for public and institutional use.
- Similarly, it implemented artificial intelligence and big data solutions to strengthen fraud detection and prevention mechanisms.
- The reform aimed to upgrade workplaces and infrastructure to support teleworking arrangements and improve overall staff working conditions in the Public Employment Services (PES) offices.

The reform has been accompanied by an investment amounting to 1.2 billion euros, as part of investment 2 of component 11 of the Spanish NRRP, entitled "specific projects to digitalise the central government". The Spanish government has formulated a comprehensive digitalisation strategy for public administration, encompassing various sectors including health, justice, employment, social security, migration, and consular services. The purpose of this investment is to cover the costs associated with the reform under analysis.

Furthermore, a budget of EUR 105.5 million has been designated for the investment measure 5 of component 23 of the Spanish plan, with the objective of promoting "governance and boost policies to support activation". The investment has been designed to reinforce the work of PES and contribute to improving the efficiency of the Spanish ALMPs. The investment plan includes the establishment of a network comprising 20 centres specialising in orientation, entrepreneurship and innovation with the view to fostering employment. The centres will be assigned one at central government level and one in each autonomous territory, including Ceuta and Melilla. As part of the investment, it is anticipated that PES' employees will participate in 14,000 training courses on an annual basis. The training programme is expected to include modules with an average duration of 30 hours. Each employee of the PES is required to participate in one module per year during the 2021-2023 period.

Annex B.2. Detailed description of expected impacts

Detailed expected impacts are discussed for the reforms which are evaluated quantitatively, namely the reform of the unemployment insurance in France, the modernisation and simplification of labour law in Greece and the simplification of contracts in Spain.

France: reform of the unemployment insurance (FR-C[C8]-R[R4])

The first measure, the inclusion of days worked and not-worked, results in a decrease of benefit levels and an increase in the PBD[77]. Though these two effects operate in opposite directions, the reduction in benefit levels is expected to dominate, thereby strengthening re-employment incentives[78]. As a result, **measure 1** should stimulate search effort and increase flows to employment (i.e. job transitions), decreasing unemployment duration and increasing employment (Lalive et al., 2006; Schmieder et al., 2016; Cohen et al., 2024). Some evidence further suggests that decreasing benefit levels can also decrease separation, in particular for older workers (Hartung et al., 2022). The latter effect should increase employment duration and have positive effects on employment as well. Effects on wages are small but tend to be negative, reflecting a decrease in jobseekers' reservation wages.

The sliding scale for high earners (**measure 2**) functions analogously to a reduction in benefits and is expected to spur exits from unemployment (Kolsrud et al., 2018). Moreover, it appears that jobseekers anticipate on the future decrease in benefits by exerting higher search effort earlier in the unemployment spell.

Over the medium to long term, the effectiveness of these two measures depends on factors such as the existence of effective duration dependence, skill depreciation, and the presence of employer-side stigma associated with long unemployment spells (Kroft et al., 2013, 2016; Laureys, 2021; Cohen et al., 2023). If these effects hold, then the two measures can be expected to have a positive impact at longer time horizons as they shorten unemployment spells.

Measure 3 tightens eligibility criteria by extending the minimum contribution period required to qualify for UB. Existing evidence on eligibility reforms is rather scarce, but this literature shows that restricting eligibility conditions decreases separations as workers are incentivised to remain employed for longer periods (Albanese et al., 2020; Khoury et al., 2020; P. Martins, 2021). On the other hand, job finding transitions tend to increase as workers can seek additional work experiences to meet eligibility criteria. Overall, employment duration should increase and unemployment duration decrease. However, it has also been shown that workers can take multiple short-term contracts in order to reach eligibility leading to ambiguous effects on employment duration. These short-term contracts often correspond to low-paid positions which negatively impacts wages.

The last measure directly targets firms and introduces a bonus-malus system wherein SSC rates vary inversely with separation rates. The effects of higher (or

[77] This reforms only affects jobseekers with fragmented work histories. Workers on full-time employment prior to losing their jobs are not affected by this change in the computation method.

[78] This aspect was noted during an interview with a relevant stakeholder. Bjaï et al. (2025) show that the daily allowance decreased by close to one fifth on average, which represents a significant decrease likely to dominate any increase in the PBD.

lower) SSC depends on the extent to which changes in SSC are absorbed by wages (the pass-through). Labour market theory suggests that workers should bear all the impacts of SSC changes through wages but recent study tend to challenge this conclusion (Bozio et al., 2017; Guo, 2024). If the pass-through is imperfect, then changes in SSC will impact labour demand and employment (Ku et al., 2020; Saez et al., 2019; Benzarti et al., 2021) with effects potentially lasting in the long-run (Egebark et al., 2018; Saez et al., 2021).

A similar bonus-malus system exists in the U.S. in relation to unemployment insurance SSC, the so-called experience rating system (Fath et al., 2005). Johnston (2021) and Guo (2024) show that this system has large negative effects on hiring and employment without much effect on wages and layoffs for firm affected by higher SSC.

The measure only targets firms in seven sectors, suggesting that firms will not be able (or to a limited extent) to transfer the increase in SSC to wages. Evidence on the experience rating system in the U.S. tends to support this point, implying that the reform can therefore be expected to negatively affect hiring in firms with high separation rates, ultimately raising average employment duration and employment.

Greece: Simplification and modernisation of labour law reform (EL-C[3,1]-R[16744])

Measure 1 appears to effectively tightens EPL, for blue collar workers in particular, although this interpretation should be nuanced as other article(s) in the same law could be argued to ease the EPL (Gavalas, 2022; Papadopoulos, 2023). Nevertheless, the reform is expected to generate a retention effect, with fewer separations, and could affect hirings, though indirectly and through time as firms internalise and adjust to the changes in EPL. In the short run, employment and unemployment effects are modest but can be positive as separations decreases and hiring adjust gradually. Higher severance pay tends to be associated with lower wages for new-entry workers in particular, but this effect can depend on the existence of wage rigidities or the economic cycle (P. S. Martins, 2021 and references therein). Furthermore, stronger EPL is generally thought to raise the bargaining power of workers, exerting positive pressure on wages.

In the medium to long-run, effects of **measure 1** are uncertain and depends crucially on how firms will adjust their hiring decisions. Evidence from the literature (Boeri et al., 2015) suggests that firms are likely to decrease hirings as the expected cost of a worker-employer match for firms rises without any direct effects on expected benefits (assuming that wages are unaffected). The initial positive effects (‘Honeymoon effect’) is therefore likely to disappear with time and could become negative.

Measure 2 tightens the legislation against undeclared work by introducing ERGANI II, creating the Digital employment card and re-establishing SEPE as an

independent labour authority. If effective, this measure can be expected to tackle both undeclared and underdeclared work implying that transitions to regular employment, and hours worked should increase. Unintended effects such as a transition from underdeclared to undeclared work are possible (European Platform Tackling Undeclared Work, 2018).

Measure 3 includes several elements aimed at supporting the work-life balance of parents. For instance, Article 28 of Law 4808/2021 grants each working parent an individual right to up to four months of protected parental leave, thereby expanding the option to take time away from work. In addition to a leave-take-up/within-employment reallocation effect, protected leave should reduce separations from employment to inactivity/unemployment and modestly delay employment entries (timing of returns), yielding ambiguous employment effects over short horizons[79].

In the longer run, protected leave should lower separation rates (i.e. the employment to unemployment/inactivity transition rates) and support returns to employment. The net effect remains ambiguous and depends on employer substitution and timing, though if protected leave reduces exits and facilitates returns, we would expect employment to edge up and unemployment/inactivity to fall (shorter non-employment spells) among eligible parents. The positive effect on employment would come from the preservation of the worker-employer match and a smoother re-entry into the labour force. Hence, this measure is also expected to decrease the gender employment gap. These developments are also expected to support wages in the long-run as quicker re-entry in the labour market limits the (perceived) skill depreciation associated with long inactive spells.

Measure 4 relaxes constraints on working time, for example overtime ceilings, Sunday opening and time-averaging arrangements, while clarifying the applicable framework. Evidence on working-time reforms shows that firms generally adjust labour input through hours rather than through hirings or separations, so aggregate employment effects tend to remain limited (Batut et al., 2023). Studies of Sunday-trading liberalisation likewise point to modest but positive employment effects concentrated in retail (Danchev et al., 2015), whereas more recent country-specific reforms in Italy and France show substantial increases in Sunday work accompanied by little change in total employment and significant reallocation of job opportunities across worker groups (Rizzica et al., 2023; Goux et al., 2025). Evidence from the Korean overtime reform further indicates that relaxing or tightening overtime constraints primarily reshapes the distribution of hours, with reductions in very long hours and increases in the number of workers performing overtime within the legal limit. These adjustments leave average hours and employment virtually unchanged

[79] Two caveats are worth mentioning: (i) measured employment can dip mechanically where unpaid spells exceed three months (e.g., ILO reclassification out of employment), and (ii) concurrent macro shocks (2022–23) and sectoral cycles co-determine these stock variables, further muting identifiable net effects.

(Carcillo et al., 2024). Theoretical work also suggests that when regulatory constraints on hours are eased, firms often rely on additional hours (intensive margin) rather than new recruits (Calmfors et al., 1988). Total earnings may rise for workers supplying extra hours, although base wages are unlikely to adjust materially.

Evidence on the labour market impacts of **measure 5** is scarce and expected impacts discussed in this paragraph are based on economic reasoning. Articles 68-72 of Law 4808/2021 can be interpreted as a tightening of EPL for platform workers (e.g. provisions akin to a presumption of (non-)dependent employment, collective representation, OSH). In this case, we expect workers previously recorded as self-employed to transition to the employee status (dependent employment) through reclassifications. Effects on hiring and firing are difficult to anticipate given the employee/self-employment dimension but stricter EPL generally leads to lower separations and hirings. Depending on which effects dominate, total employment (both employees and self-employed) in platform work may increase or decrease, though we might anticipate negative effects. More generally, the measure could have unintended impacts as platforms may reduce activity, decide to hire on fixed-term and/or part-time contracts, or restructure (e.g. subcontracting). Moreover, workers may enter informality or perform underdeclared work to avoid the presumption and associated costs.

The last measure aggregates very important working condition aspects that contribute to job quality and satisfaction, but the measure is not expected to have important impacts on standard labour market outcomes (e.g. employment).

Spain: Simplification of contracts (ES-C[C23]-R[R4])

Measure 1 corresponds to a tightening of EPL, which limits hiring of temporary workers by restricting the reasons for concluding such contracts and their maximum duration. Evidence on this measure indicates a negative impact on the hiring of workers on temporary contracts (Güell et al., 2007; Cahuc et al., 2023; Daruich et al., 2023; Bottasso et al., 2025). Effects on (temporary) job separations are unclear (Bottasso et al., 2025). Furthermore, the measure is expected to affect the distribution of temporary contract duration as contracts greater than six months should now be prohibited, with some exceptions (maximum duration of 3 years before the reform). The decrease in the number of temporary contracts should also decrease aggregate separations (i.e. increased in the share of workers on the more stable open-ended contract), which should in turn raise the average employment duration.

Transitions to open-ended contracts should not be directly affected by the tightening of EPL for fixed-term contracts, although these new restrictions should make it relatively more interesting for firms to hire on permanent contracts. Important considerations in this regard relate to the degree of substitutability between the two types of contracts, whether temporary contracts constitute a "*dead end*" or a "*stepping stone*" to a regular employment relationship (Filomena

et al., 2022; Boeri et al., 2024), and whether firms are effectively able to offer open-ended contracts. These factors depend on different considerations (e.g. overall stringency of EPL) and transitions from temporary to open-ended contracts are not guaranteed. Therefore, the effects on aggregate employment could be either positive, negative or null.

The degree of substitutability between contracts and the stepping stone versus dead end dimension of temporary contracts are also key to determining the medium to long-term effects of the reform. In particular, labour market effects of reforms tightening EPL on temporary contracts when these contracts act as stepping stone, could lead to negative labour market outcomes.

Measure 2 reinforces the legislation related to work-based learning contracts. The literature suggests negative effects on the hiring of apprentices/trainees, though certain provisions included in the measure should raise the quality of work-based learning experiences, which could support transitions to regular employment (O'Higgins et al., 2018, 2021).

Measure 3 creates a new form of open ended contract, which is more flexible than the standard contract, with regards to working hours in particular. As such, this measure can be interpreted as a relaxation of EPL on open-ended contract, which should stimulate the hiring of workers on this type contracts (Boeri et al., 2015). This intermittent contract is likely to absorb a share of existing temporary contracts and contribute to the decrease in job transitions to temporary contracts discussed previously for the first measure. Overall, employment duration and aggregate employment should increase, especially since workers on open-ended contracts are less likely to exit to unemployment (compared to temporary worker), and hence less likely to move out of the labour force to inactivity[80]. This effect could materialise at a longer time horizon.

Measure 4 tightens the legislation against undeclared work by reinforcing controls and raising penalties. This approach effectively tries to raise the costs and/or lower the benefits of engaging in such work arrangements (Horodnic et al., 2022; Franic, 2024). Hence, transitions from undeclared to regular employment should increase. Hours worked should also rise in the case of underdeclared work. However, this approach can have limited or even unintended effects, in the case of underdeclared work in particular (European Platform Tackling Undeclared Work, 2018). The increase in SSC for contracts of duration smaller than one month is expected to decrease hirings under this form of contracts, although unintended effects, in the form of e.g. increased labour turnover (Cahuc et al., 2020) could also emerge from such increase.

[80] Also because workers on open-ended contracts are less likely to enter unemployment, a state in which the probability (transition rate) to exit the labour force is much greater (Figure 13).

Annex C. Labour market impacts of the reforms

Annex C.1. PES indicators

Annex C.1.1.description

The evaluation of ALMP and PES reforms is a difficult task (Crépon et al., 2016), requiring detailed individual level data, that can be difficult to obtain. Half of the reforms under the scope of the study are related to PES and an effort is therefore made to create a series of indicators that can allow for a preliminary assessment of the reforms. Rather than related to impacts, these indicators can be linked to outputs of the reforms in terms of target populations (e.g. youth, LTU) and implemented ALMP (e.g. training). Significant outputs being a necessary conditions for impacts, there is nonetheless some interest in analysing these indicators. Before presenting them in more detail, it is important to keep in mind that we rely on EU-LFS yearly data, implying that only data up to 2023 is available (some of the reforms had barely been implemented). The survey nature of the data also suggests considering these indicators with care and in the case of implemented ALMP, indicators should be considered as proxies given that it is not possible to guarantee that the individual is performing the activity (e.g. training) through the PES (only that she/he is registered at the PES when she/he reported performing the activity).

These indicators rely on the variable 'register' available in yearly[81] EU-LFS files, with the following categories:

1. Person is registered at a public employment service and receives benefit or assistance
2. Person is registered at a public employment service but does not receive benefit or assistance
3. Person is not registered at a public employment service but receives benefit or assistance
4. Person is not registered at a public employment service and does not receive benefit or assistance

Categories one and two are used to compute the population of individuals registered at the PES.

To create indicators, the variable 'register' is interacted with other labour market characteristics.

[81] In quarterly files since 2021.

Two broad types of indicators are considered. The first type exploits information on individual level characteristics to provide evidence on the composition of the population registered and the coverage of certain target groups by PES (i.e. the share of a population of interest registered at the PES). The following characteristics are considered:

- Highest level of education attained in three levels (low, medium and high)
- Sex
- Age in three groups (15-24, 25-54 and 55-64)
- Individuals aged 15-29, neither in employment, nor education, nor training (NEET).
- Degree of urbanisation of the region of residence in three categories (Cities, Towns/Suburbs and Rural)
- Citizenship aggregated in three groups (natives, EU27/EFTA[82] and third country nationals (TCN))
- Unemployed including LTU with a duration greater than six months
- Inactive individuals

The second set of indicators relates to implemented ALMP and can generally be mapped to policy fields or measures identified in the analytical framework under the ALMP policy domain (Table 2). The following variables (interacted with the variable '*register*') are used:

- Registered individuals claiming to receive active support
- Employed and registered as a proxy for the policy field 'Direct job creation schemes'
- Attendance to training in the last four weeks and registered to proxy the policy field 'Training'
- In formal education in the last four weeks and registered, which complement information on attendance to training and possibly on work-based learning.
- Currently undergoing a traineeships/apprenticeship and registered to proxy the use of Work-based learning by PES, a measure included under the policy field 'Special schemes for youth'

The set of LFS-based indicators provides complementary perspectives on the functioning of the PES.

[82] The EU-LFS does not permit identification of individuals from the U.K. and prior to 2020; the group EU27/EFTA is effectively EU28/EFTA.

Indicators are expressed in terms of total number of registered, which informs on the composition, but also constitutes the most natural way to express indicators related to implemented ALMP.

In addition to the proxy nature of these indicators, some care should be taken with the data before and after the introduction of the new IESS framework regulation. As already noted in Section 1.3.1, this new regulation is likely to have generated breaks in some of the collected variables. This could be the case for variables related to training and education in certain Member States (e.g. FR for training, EL, ES and FR for education in the first column of Figure 19). Other variables appear to be affected by breaks but in periods prior to the interventions (e.g. Degree of urbanisation, Figure 21).

Furthermore, regarding WB, it is important to keep in mind that only paid work experiences are considered and e.g. unpaid traineeships or financed through scholarships are not recorded in the EU-LFS. Provided that these experiences would take place with the involvement of a formal education provider (e.g. alternating days/weeks in class with work), they should be captured by our indicators on registered individuals in education.

Hence, indicators from the EU-LFS data can serve as tool for tracking broad trends in PES usage. A more complete assessment would ultimately require the development of dedicated impact metrics, such as user satisfaction, or re-employment rate following participation to an ALMP[83].

Annex C.1.2.Descriptive evidence on PES indicators

The tables and figures below display the indicators described in the previous section, which serve as basis for the descriptive analysis of reforms related to PES.

Table 17 and Table 18 show average of the indicators over the period 2006-2023 for all relevant MS (including PT, for which no PES reforms is analysed in this study). Table 17 focuses on the labour market statuses of registered individuals and on indicators related to ALMP while Table 18 displays statistics by individual characteristics (e.g. age, level of education). Indicators are reported in levels (in millions) and as shares of the total number of registered (composition indicators) and of the population of interest (outreach indicators).

These tables are not commented directly in the core of the report but are useful to understand pre-existing specificities in the registered population of the different Member States. For instance, Table 17 shows that all Member States do relatively well in terms of outreach to LTU as between 70.9% (EL) and 84.3%

[83] See also data provided by France Travail (https://www.francetravail.org/opendata/) and used for reform FR-C [C8]-R[R1].

(FR) of LTU on average were registered at the PES. This close to or above the EU27 average of 71.2%. Moreover it is interesting to note the high share of registered individuals who report to be employed in France (34.3%), which could suggest greater use of direct job creation schemes in this Member State.

Figure 19, Figure 20 and Figure 21 then present the evolution of the indicators through time between 2006 and 2023 for indicators related to respectively, implemented ALMP, labour market statuses and selected disadvantaged groups.

Table 17: Average of PES indicators (1) – 2006-2023

		Total	U	LTU	I	E	WB	training	education
EL	Total	7.0	0.8	0.5	2.3	3.9	0.0	0.3	0.9
	Registered	0.7	0.6	0.4	0.1	0.1	0.0	0.0	0.0
	x and R as a share of R	100	77.2	46.5	14.6	8.2	0.1	1.9	3.3
	x and R as a share of x	10.6	70.6	70.9	4.9	1.3	2.7	4.1	2.6
ES	Total	31.1	3.9	1.5	8.3	18.9	0.2	3.4	4.0
	Registered	5.6	3.2	1.3	1.6	0.8	0.0	0.6	0.4
	x and R as a share of R	100	55.6	22.3	29.2	15.2	0.3	11.2	7.8
	x and R as a share of x	17.9	79.9	84.0	18.9	4.3	8.8	18.0	10.8
FR	Total	40.4	2.6	1.0	11.6	26.2	0.6	5.3	5.4
	Registered	5.1	2.1	0.8	1.3	1.8	0.0	0.6	0.2
	x and R as a share of R	100	41.4	16.4	24.3	34.3	0.6	11.7	3.0
	x and R as a share of x	12.7	81.2	84.3	10.9	6.8	4.9	12.6	3.0
PT	Total	6.8	0.5	0.3	1.8	4.5	0.0	0.5	0.9
	Registered	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.1
	x and R as a share of R	100	57.8	29.7	23.0	19.3	0.9	8.1	7.9
	x and R as a share of x	9.4	73.2	78.2	7.9	2.8	13.0	11.5	5.4
EU27	Total	287.6	17.8	7.7	81.0	188.7	3.7	21.6	39.8
	Registered	25.7	12.4	5.5	7.5	5.7	0.2	2.1	1.5
	x and R as a share of R	100	47.8	21.1	29.8	22.4	0.7	8.1	5.9
	x and R as a share of x	8.9	69.1	71.2	9.4	3.0	4.8	9.7	3.8

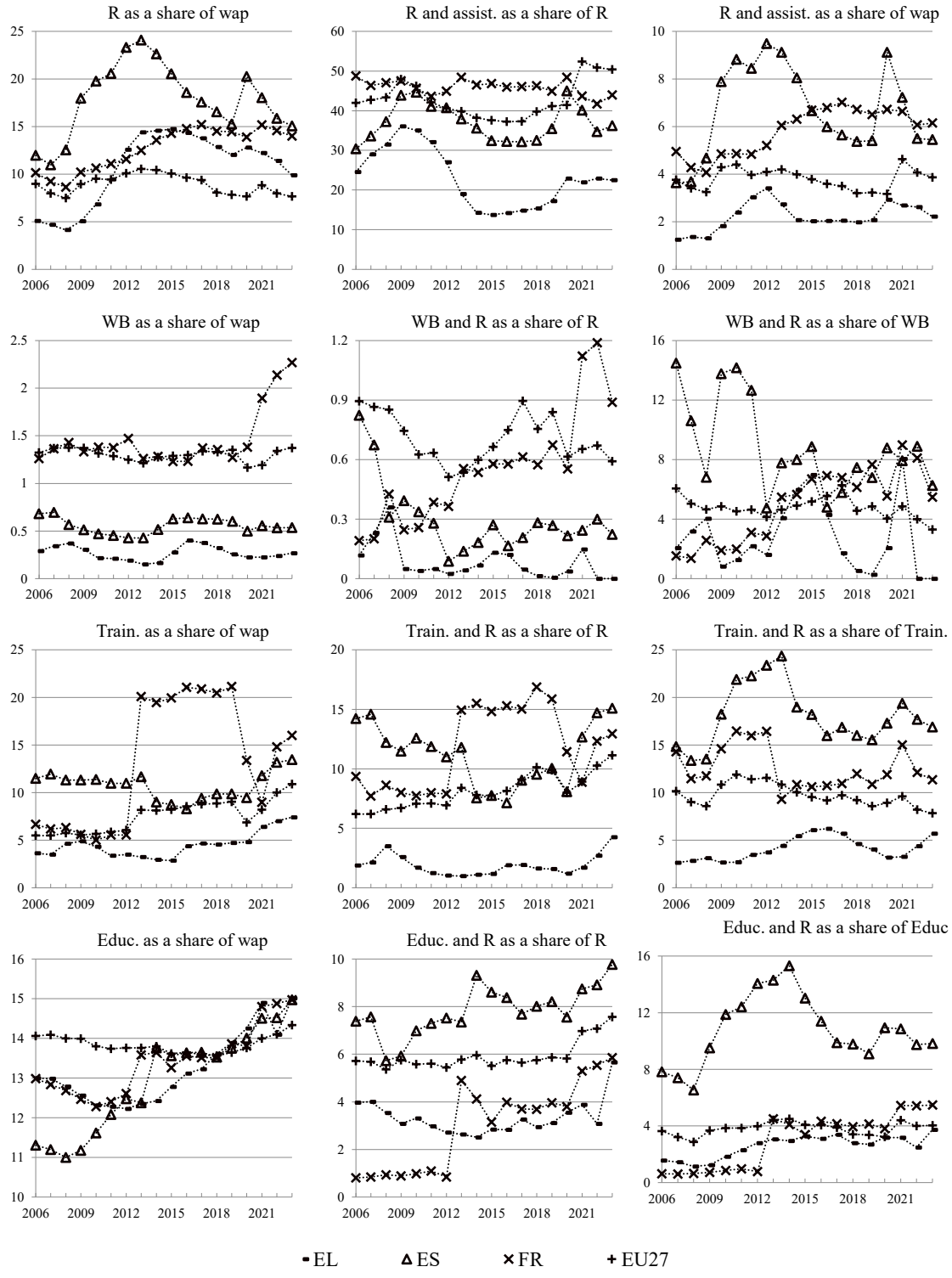
Note: Indicators extracted from yearly EU-LFS files and averaged over the period 2006-2023. Indicators are constructed by interacting the variable '*register*' (R) and a stock of interest (x) displayed in the column headers. The stocks x of interest are the working age population (Total), Employment (E), Unemployment (U), Long-term Unemployment (LTU), Inactivity (I), Work-Based learning (WB), training and education. See Annex C.1 for additional details. For each Member State, four different statistics are displayed. The first two are expressed in millions and the last two correspond to percentages. For example, column 4 shows that on average, around 800 000 persons were unemployed in EL and 600 000 were registered at a PES. Unemployed represent 77.2% of the total number of registered and 70.6% of unemployed are registered.

Table 18: Average of PES indicators (2) – 2006-2023

		Educ. Level		Sex	Age		NEET	Degree of urb.		Citizenship	
		Low	High	F	15-24	25-54		Cities	Rura	EU27	TCN
EL	Total	2.3	1.7	3.5	1.8	3.9	0.4	3.3	2.0	0.1	0.4
	Registered	0.2	0.2	0.4	0.2	0.5	0.2	0.3	0.2	0.0	0.0
	x and R as a share of R	27.1	23.2	59.5	29.3	61.4	23.8	44.6	28.3	1.1	6.0
	x and R as a share of x	8.9	10.0	12.4	11.7	11.9	47.9	10.4	10.1	11.5	12.9
ES	Total	13.3	9.9	15.5	7.6	17.9	1.2	16.0	6.3	1.3	2.7
	Registered	3.0	1.3	3.1	1.3	3.3	0.7	2.6	1.3	0.3	0.6
	x and R as a share of R	54.0	22.9	56.3	24.2	58.9	12.8	47.7	22.5	4.4	10.6
	x and R as a share of x	22.6	12.8	19.9	17.7	18.3	56.5	16.6	19.6	18.6	22.7
FR	Total	11.0	12.2	20.6	11.3	21.0	1.6	18.5	11.4	0.9	1.5
	Registered	1.6	1.2	2.8	1.6	2.8	0.9	2.5	1.3	0.1	0.4
	x and R as a share of R	31.5	22.2	53.9	31.5	54.6	17.1	48.8	24.9	2.2	7.1
	x and R as a share of x	14.5	9.3	13.4	14.2	13.4	54.3	13.4	11.2	13.0	24.7
PT	Total	3.9	1.3	3.5	1.7	3.7	0.2	3.1	1.6	0.0	0.2
	Registered	0.4	0.1	0.4	0.2	0.4	0.1	0.3	0.1	0.0	0.0
	x and R as a share of R	60.1	15.5	56.6	27.2	55.7	16.1	46.8	22.6	0.5	3.6
	x and R as a share of x	10.0	7.7	10.3	10.1	9.7	48.0	9.8	9.3	8.3	13.0
EU27	Total	82.0	71.3	144.0	75.8	155.0	10.6	118.4	76.5	8.3	12.6
	Registered	9.8	4.6	13.5	7.2	14.4	4.3	11.2	6.5	0.9	2.1
	x and R as a share of R	38.1	18.0	52.6	27.9	56.3	16.6	44.0	25.1	3.6	8.5
	x and R as a share of x	12.0	6.4	9.3	9.4	9.3	39.8	9.5	8.4	11.0	17.1

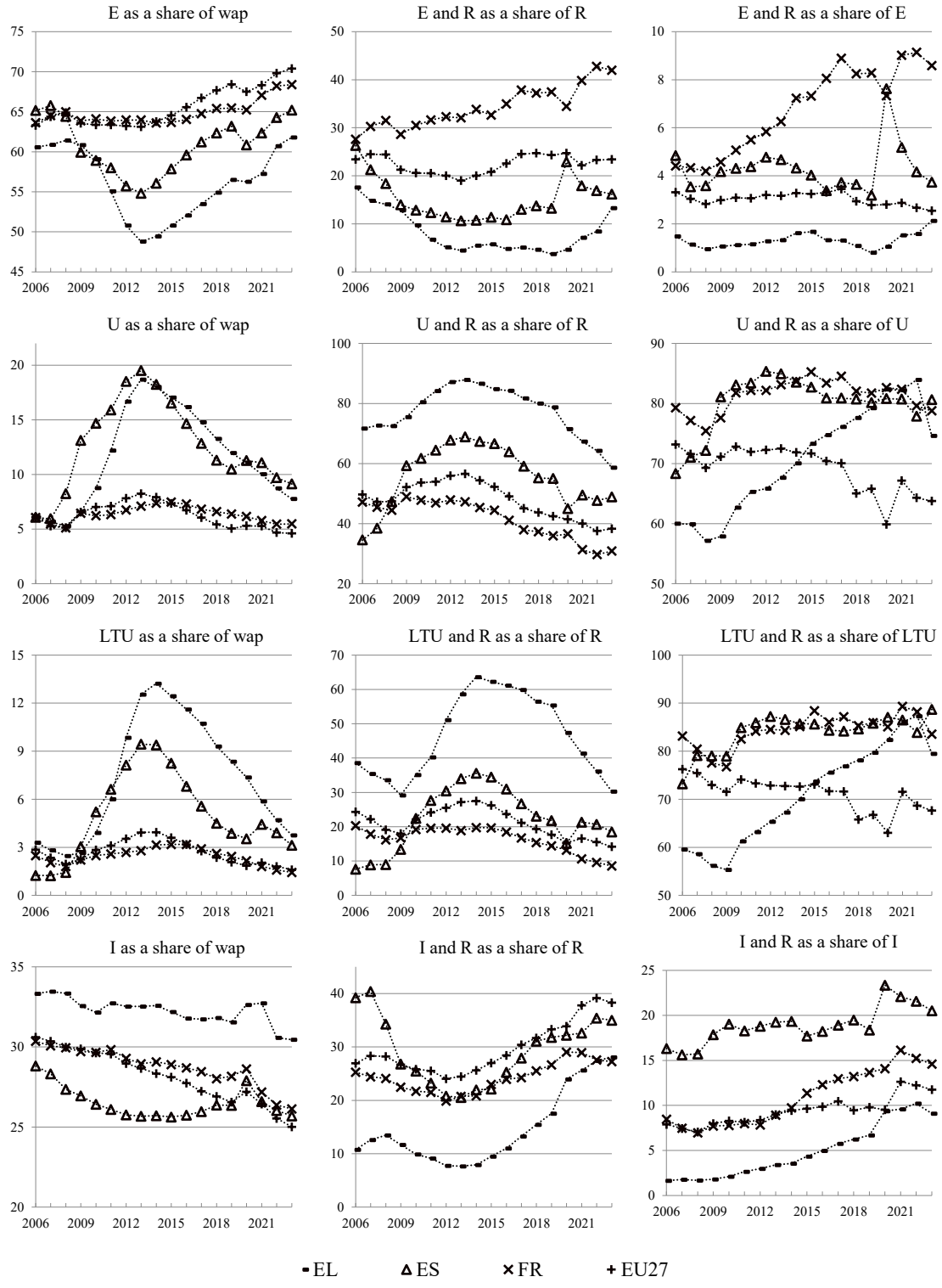
Note: Indicators extracted from yearly EU-LFS files and averaged over the period 2006-2023. Indicators are constructed by interacting the variable '*register*' (R) and a stock of interest (x) displayed in the column headers. The stocks x of interest are the low and high educated (Low and High), Female (F), young and prime-aged (15-24 and 25-54), NEET, resident in cities and rural areas, and migrants. See Annex C.1 for additional details. For each Member State, four different statistics are displayed. The first two are expressed in millions and the last two correspond to percentages. For example, regarding unemployment (column 4), the table show that, on average, around 800 000 persons were unemployed in EL and 600 000 were registered at a PES. Unemployed represent 77.2% of the total number of registered and 70.6% of unemployed were registered.

Figure 19: PES indicators – ALMP – %



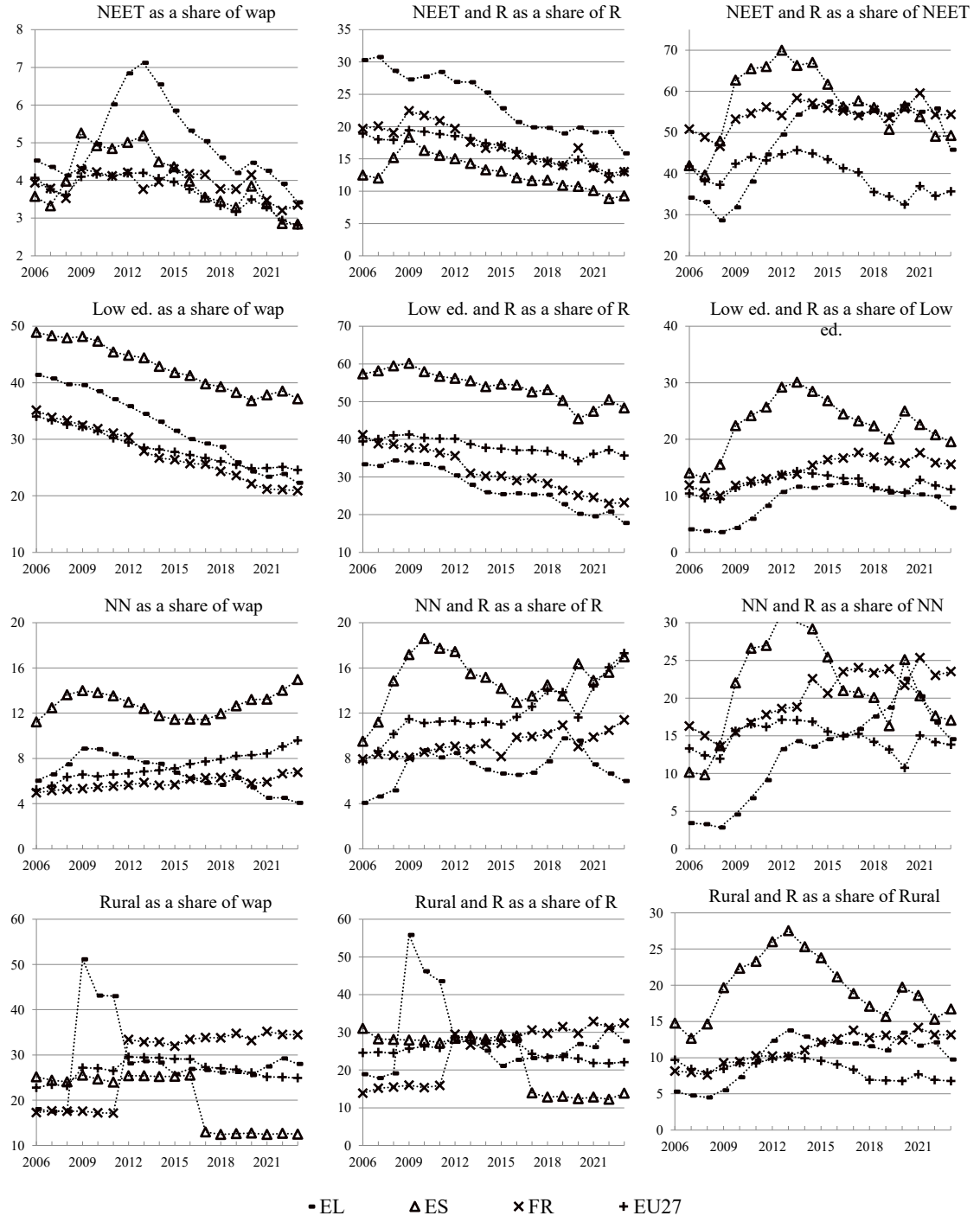
Note: Indicators extracted from yearly EU-LFS files and expressed in percentages. Each row interacts the variable '*register*' (R) with a variable of interest. These are registered claiming to receive active support from PES (R and assit.), Work-based learning (WB), training (Train.) and education (Educ.). Each column presents the indicators expressed in terms of a specific population. Column 1 presents indicators normalised by the working age population (wap) aged 15-64,column 2 by the number of registered individual (R) and column 3 by the population of the interacted variable (e.g. the number of workers on WB) .See Annex C.1 for additional details.

Figure 20: PES indicators – Labour market status – %



Note: Indicators extracted from yearly EU-LFS files and expressed in percentages. Each row interacts the variable '*register*' (R) with a variable of interest. These are employed (E), unemployed (U), long-term unemployed (LTU) and inactive (I). Each column presents the indicators expressed in terms of a specific population. Column 1 presents indicators normalised by the working age population (wap) aged 15-64,column 2 by the number of registered individual (R) and column 3 by the population of the interacted variable (e.g. the number of employed workers) .See Annex C.1 for additional details.

Figure 21: PES indicators – Disadvantaged groups – %



Note: Indicators extracted from yearly EU-LFS files and expressed in percentages. Each row interacts the variable '*register*' (R) with a variable of interest. These are employed (E), unemployed (U), long-term unemployed (LTU) and inactive (I). Each column presents the indicators expressed in terms of a specific population. Column 1 presents indicators normalised by the working age population (wap) aged 15-64,column 2 by the number of registered individual (R) and column 3 by the population of the interacted variable (e.g. the number of employed workers) .See Annex C.1 for additional details.

Annex C.2. Estimated labour market impacts

Annex C.2.1. France: reform of the unemployment insurance system

Indicators and methodological approach

Indicators mentioned in Section 2.2.3 and used for the descriptive analysis are fairly standard. They are computed on a sample restricted to individuals aged 15-64 unless specified otherwise (e.g. employment duration). The labour market status (i.e. employed, unemployed or inactive) is obtained from the variable "ilostat". The temporary and part time figures are computed using the variables "temp" and "ftpt" and information on duration of fixed-term contracts is provided by the variable "tempdur". Average employment duration (tenure) is computed from the variable "startime". This indicator is strongly influenced by (older) individuals with long tenure who tend to raise this average. In an effort to adjust for this effect, average employment duration has been computed for individuals aged 15-39 (with shorter average tenure). Hours worked are obtained from the actual weekly hours reported by the respondent ("hwactual"), which excludes worker reporting flexible working time arrangements.

These indicators are obtained from quarterly EU-LFS files, meaning that the time series can feature a strong seasonal component. Indicators are therefore seasonally adjusted using the software Demetra.

Beyond the potential breaks generated by the new IESS regulation, it is worth mentioning that information on fixed-term contract duration should be treated with care in the EU-LFS. This variable can feature a high share of missing observations, in particular for Spain with close to half of temporary workers that do not report a duration.

Moreover and despite the age restriction, average employment duration still appears to evolve in a countercyclical manner, increasing in slow period of growth and decreasing in good times. This likely reflects the fact that periods of growth are associated with an influx of new workers from unemployment, who mechanically decrease average duration. In bad times, workers with shorter tenure are more likely to lose their jobs first (firing costs/severance pay should be lower for these workers) leading to an increase in average duration. This indicator is therefore less informative in this form and it would be necessary to clear the cyclical components in order to analyse this indicator or impose alternative restrictions could be considered (e.g. compute average duration for workers with a tenure smaller than x years).

As explained in Annex A.2.1, the SCM constructs a synthetic version of the treated unit from a weighted combination of units unaffected by the reform. These

control units correspond to the donor pool and consist in transition rates from. Flows from Greece, Spain and France (other than the flow of interest) are dropped from the sample, together with flows from certain Member States, which introduced their rotation scheme[84] in the EU-LFS only recently (e.g. Belgium, Germany).

A common practical refinement in synthetic control applications is to restrict the donor pool by excluding units that exhibit a poor pre-treatment fit. Because placebo units with very high root mean square prediction error (rmspe) tend to provide little information about the counterfactual for the treated unit, Abadie et al. (2010) recommend discarding donors whose pre-intervention rmspe is excessively large relative to that of the treated unit. This trimming procedure improves the comparability of placebo distributions and helps avoid inference being driven by units that could not plausibly reproduce the treated unit's pre-policy trajectory. In practical terms, the rmspe is first computed based on all available control series included in the donor pool. The 1% and 99% percentiles values are used to trim the sample. This is done iteratively, removing series with rmspe below the 1% or above the 99% thresholds identified in the initial estimation. With six flow rates for 19 countries, this procedures drops 12 additional series and the final donor pool includes 102 (see bottom of Table 19).

An important aspect of SCM relates to the variables selected to compute the weights. As is standard practice, we include all individual data points of the treated units before the COVID-19 shock and the intervention occurs (i.e.; 2019Q4). It is also useful to include additional variables, which could be important for explaining labour market flows, in the set of data points used to compute weights. For instance, separations are known to be linked with the age composition of the workforce (Shimer, 1998). Adding variables related to the age composition (e.g. the average share of employed individuals aged 55-64) to retrieve weights could therefore be relevant, but was not considered in this analysis.

With regards to DID, the main aspects of the approach (e.g. group unit, definition of the treatment) have already been presented in Section 2.2.3. Additional details are discussed here.

First, the sample is restricted to employees. Furthermore, it is worth noting that the group unit defined as the combination of 1-digit NACE sectors and 3-digit ISCO occupations can lead to cells with a low number of observations. This can generate large variations in employment for these groups depending on whether a couple more or less persons are sampled between quarters. To account for this

[84] Rotation schemes ensure that a certain share of respondents remains in the sample across two consecutive quarters. This enables the computation of labour market flows and each Member States is required to have a rotation scheme in place in its national labour force survey. Many Member States introduced these rotation schemes over the last decade, some earlier than others.

potential issue, we drop all group units with a (weighted) employment level below the (lower) reliability threshold defined by Eurostat. In the case of France, this threshold is surprisingly high when compared with other Member States. The threshold is set to 20 meaning that all groups with an employment level below 20,000 should be dropped from the sample. This threshold is very strict and lead to a small number of group units. As a result, we rely on the threshold used for Spain, which is set to 2.

In addition to the baseline specification, which accounts for time and individual level fixed effects, several other specifications are estimated including different sets of control variables. Note that for time constant variables (e.g. sector and occupation fixed effects), it is required to interact the variables with time indicator variables to avoid multicollinearity issues. The control variables include 1-digit sectors and 1-digit occupation fixed effects, sectoral value added and interaction variables between sectoral value added and sectoral fixed effects.

Specifications including control variables are particularly important as these variables can help alleviate concerns related to the validity of parallel trend assumption. In the current framework, it is important to mention that the treated groups, with average prevalence of temporary contracts above 7.5%, is mainly composed of medium to low skill occupation (e.g. Elementary occupations) while the control group includes primarily managers and professionals occupations. Hence, the treated and control groups are likely to be on different employment trends, especially since the period before the treatment included the COVID-19 period and its heterogenous effects between teleworkable and essential service occupations, and face-to-face ones. Occupation fixed-effects are therefore likely to play an important role, as already hinted in the main text (Section 2.2.3).

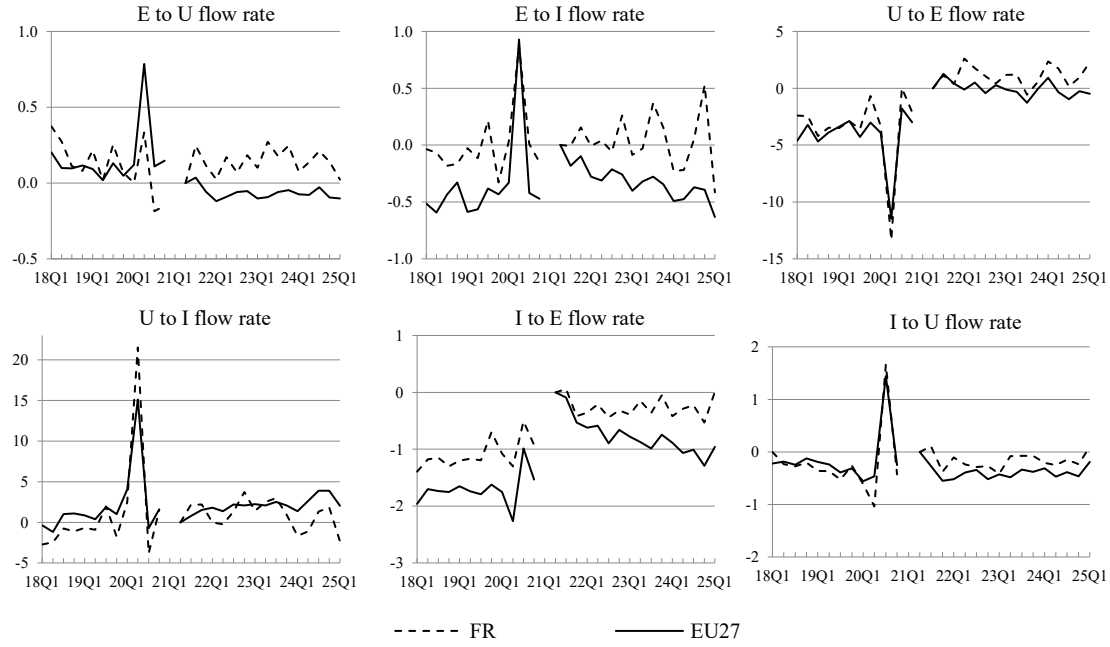
Finally, a series of robustness checks are performed. The first two adjust crucial parameters defining the sample used for estimation. The threshold used to define the treatment group is increased to 10%, which allows for increasing the size of the control group, but could contaminate it with units characterised by a relatively high prevalence of temporary work, and which could therefore be affected, to some extent, by the reform. The second robustness increases the limit below which units are considered to be too small and dropped from the sample. This limit is set originally using the lower reliability threshold provided by Eurostat (i.e. 2) and we use the upper limit (i.e. 8) in order to focus primarily on larger units in terms of employment. The last check recognises that hiring credits implemented to support apprenticeships in 2021 (Section 2.2.3) could bias our results given that these workers would be recorded under a temporary contract in the EU-LFS. Information on the reasons for the temporary contract (which includes traineeship/apprenticeship) is only available at yearly frequency and cannot be used to filter-out these workers. For the large majority, trainees and apprentices are generally young workers and we therefore exclude individuals aged 15-24 in the last set of estimations.

All results discussed and presented below are based on standard errors clustered at the NACE 1-digit and ISCO 1-digit level.

Descriptive evidence

This section provides additional descriptive evidence for the selected indicators. Figure 22 and Figure 23 displays indicators for flows and labour market stocks in the form of indices normalised such that the 2021Q2 for flows and the 2021Q1value for stocks are equal to zero[85]. These two figures are useful to look more closely at the recent evolutions of the indicators. Figure 24, Figure 25 and Figure 26 complement this evidence by providing indicators for labour market stocks for respectively, non-native, young (aged 15-24) and women workers.

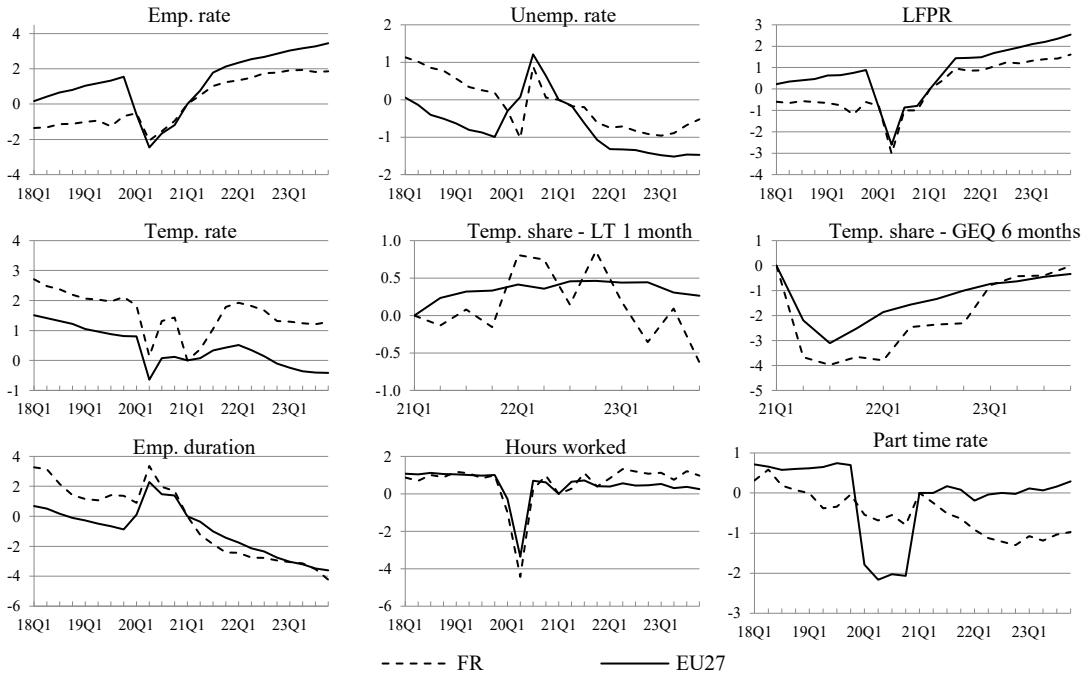
Figure 22: France quarterly flow rates – 2010Q2-2025Q1 – Index 2021Q2 = 0



Note: Seasonally adjusted flows retrieved from Eurostat [lfsi_long_q]. “E” stands for employment, “U” for unemployment and “I” for inactivity. Series are normalised such that flow rates are equal to 0 in 2021Q2. Data for 2021Q1 is missing for several countries due to the introduction of the IESS framework regulation.

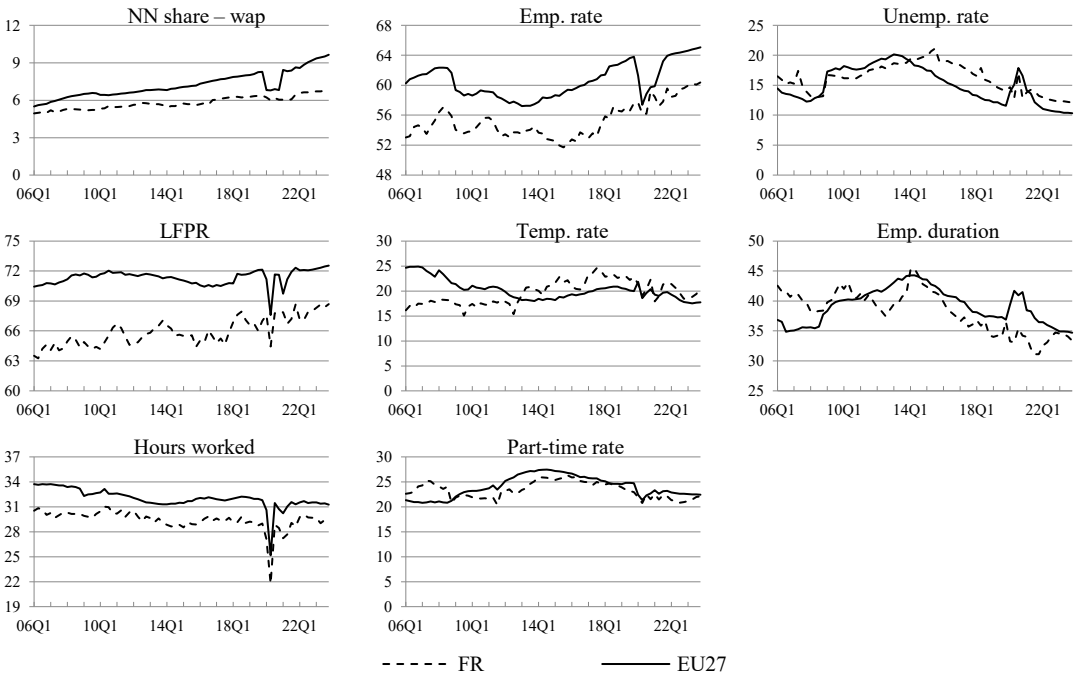
[85] Due to the new IESS framework regulation, flow rates for most Member States are missing in 2021Q1.

Figure 23: France labour market indicators – 20061-2023Q4 – Index 2021Q1 = 0



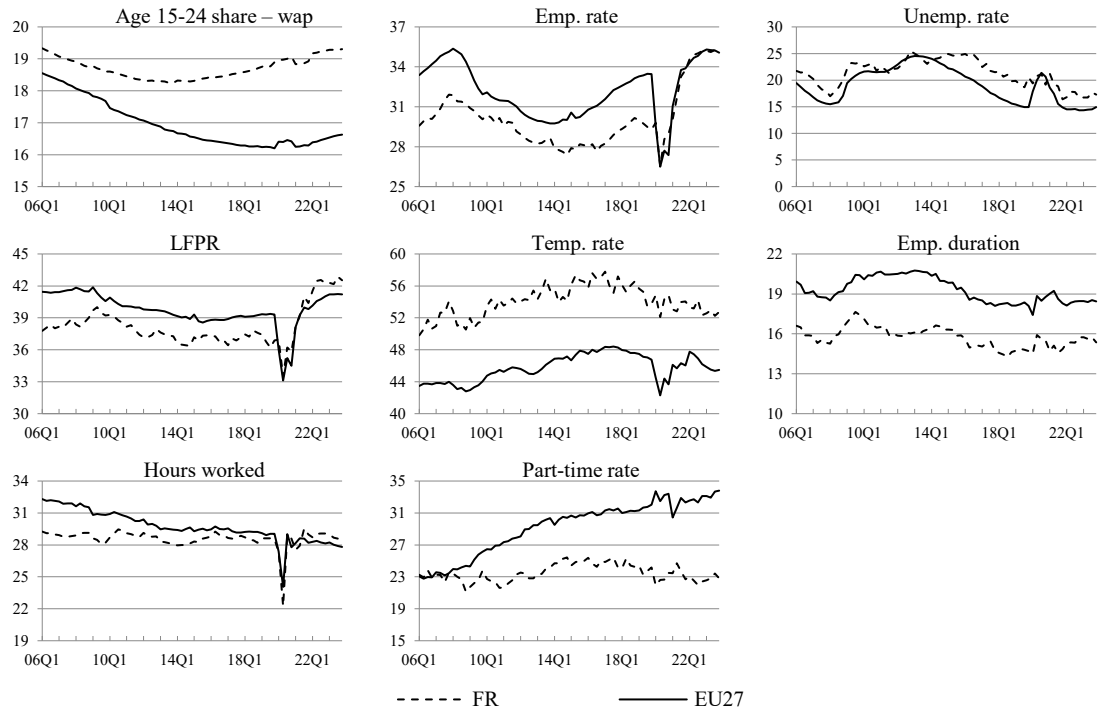
Note: Series are extracted from the EU-LFS and seasonally adjusted using Demetra. Series are expressed as indices such that the 2021Q1 value is equal to zero. 'LFPR' is the labour force participation rate, 'LT' stands for less than and 'GEQ' for greater or equal than.

Figure 24: Labour market indicators – Non-natives – %



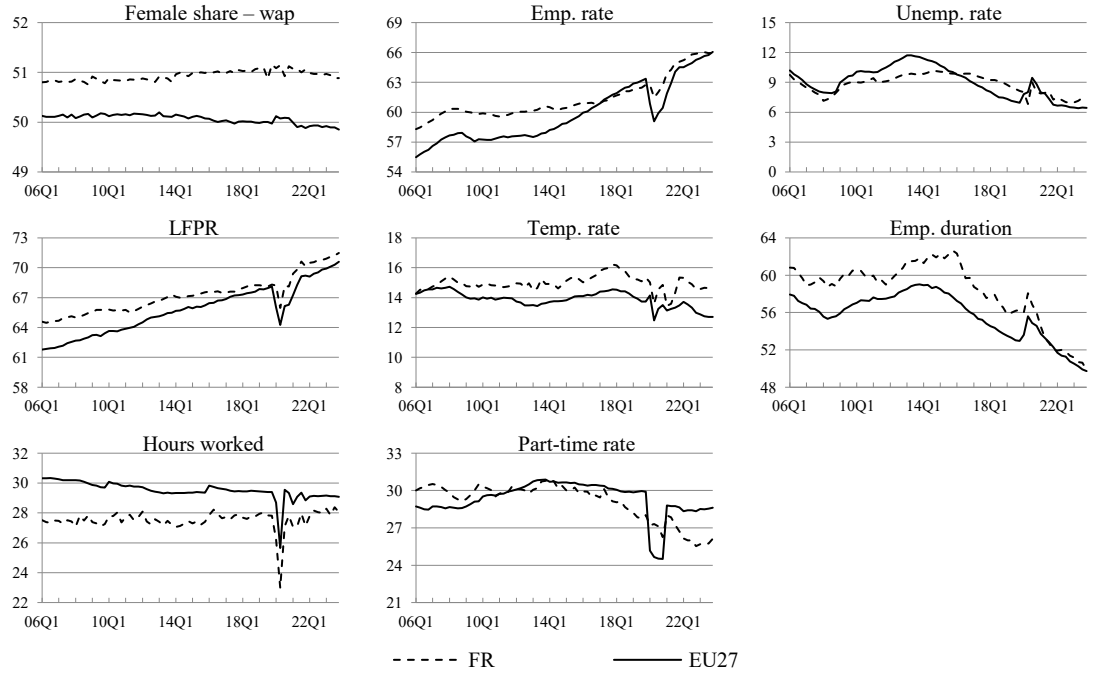
note: Indicators constructed from quarterly EU-LFS data for Non-natives individuals (i.e. with a citizenship other than the one from the country of interest), and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. 'NN' stands for non-natives, 'wap' for working age population aged 15-64 and 'LFPR' for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-39.

Figure 25: Labour market indicators – Age 15-24 – %



note: Indicators constructed from quarterly EU-LFS data for individuals aged 15-24, and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. 'wap' stands for working age population aged 15-64 and 'LFPR' for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-24.

Figure 26: Labour market indicators – Female – %



note: Indicators constructed from quarterly EU-LFS data for female, and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. 'wap' stands for working age population aged 15-64 and 'LFPR' for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-39.

Estimation results

This annex presents detailed results on the SCM used to estimate the impact of reform on labour market flows, and on the DiD estimation results for labour market stocks.

Results for the SCM include the estimated weights in Table 19, and placebo tests whereby the SCM is applied individually to each series in the donor pool in Figure 27. These placebo tests can then be used to assess goodness of fit of the SCM (using e.g. the rmspe) in the donor pool, which is then compared to the same statistic for the treated unit of interest. This allows to perform inference on the estimated effects of the reform and determine statistical significance. As noted in Annex A.2.1, such permutation tests should be treated with care however. The results from this test are displayed in Figure 28.

The results displayed in Table 19 provide information on which flow rates are used to construct the synthetic control as well as their importance (weights). In general, synthetic controls are computed based on around 15 transition rates, with the exception of the U-E flow rates, which is computed as a weighted average from more than 30 flows.

In order to further analyse these results without commenting on each individual weight, it is possible to aggregate the results across countries or across flow rates to understand whether a specific Member State or a specific flow rate is particularly important for the construction of a given synthetic control. When aggregating over countries, it is possible to note that flow rates from Switzerland, Poland and Slovenia account for a total weight of 0.57 (out of approximately 1) for the E-U flow rate. Switzerland and Poland, together with Estonia and Portugal account for the largest share of the E-I synthetic control. The U-E synthetic control is created based on a larger number of transition rates and flows from many different countries contribute, though weights of flows from Austria, Ireland and Latvia sum to 0.4.

When considering results aggregated over flow rates, no distinctive pattern seems to emerge. A priori, it would be possible to expect that flow rates from the same type as the treated one (e.g. E-U flow rates in the donor pool when the E-U flow rate is the outcome of interest) could matter more for the synthetic control (a results found for Spain see Annex C.2.3).

Finally, the placebo and permutation tests confirm that an effect is only detected for the transition rates from unemployment to employment. In particular, the permutation tests in Figure 28 show that results for this flow rate are consistently below or slightly above the 10% value. Moreover, placebo tests indicate larger variance in estimated effects before and after the COVID-19 shock. This is indirectly confirmed in Table 19, which shows higher (average) rmspe after the intervention.

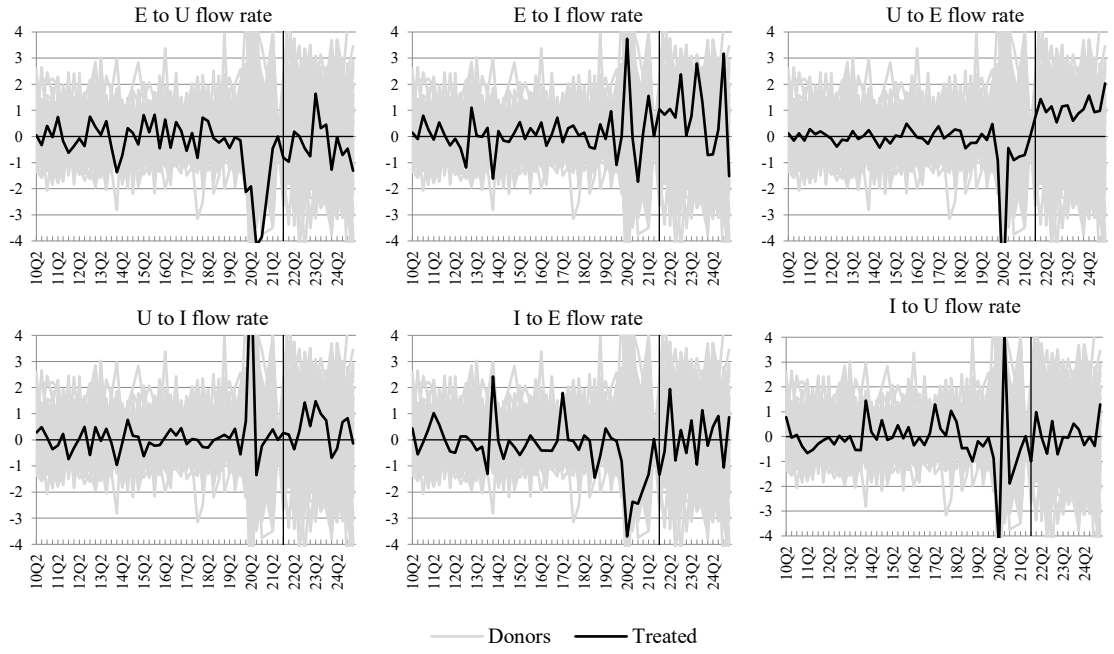
Table 19: SCM weights – Reform FR-C[C8]-R[R4]

	weights					
	E-U	E-I	U-E	U-I	I-E	I-U
AT I-E	-	-	0.10	-	-	-
AT U-E	-	-	0.05	-	-	-
AT U-I	-	0.04	-	0.06	-	-
CH E-U	0.10	0.06	-	-	-	0.03
CH I-U	0.07	-	0.01	-	-	-
CH U-E	0.04	0.21	-	0.11	-	-
CY E-I	-	-	0.01	-	-	-
CY I-E	-	-	0.00	-	0.00	-
CY I-U	-	-	-	0.01	-	-
CY U-E	-	-	0.01	-	-	-
CZ E-I	-	-	-	-	0.08	-
CZ I-E	-	-	0.01	-	0.09	-
CZ I-U	0.01	-	-	-	-	-
CZ U-E	-	-	-	-	-	0.06
CZ U-I	-	-	0.00	-	-	-
DK E-U	-	0.01	-	-	-	-
DK U-E	0.13	-	-	0.00	-	-
EE E-U	0.03	0.05	0.01	-	-	-
EE I-E	0.02	0.07	0.03	0.22	-	-
EE I-U	-	-	-	-	0.03	-
EE U-E	0.03	0.09	-	-	-	-
FI E-I	0.10	-	-	-	-	-
FI E-U	-	-	-	-	-	0.04
HU E-I	-	-	-	0.01	-	-
HU E-U	0.08	0.05	-	-	-	-
HU I-E	-	-	0.02	-	0.25	0.11
HU I-U	-	-	-	-	0.04	0.00
HU U-E	-	-	0.03	-	-	0.04
HU U-I	-	-	-	-	-	0.02
IE E-U	-	-	0.06	-	0.06	0.03
IE I-E	-	-	0.07	-	-	-
IE U-E	-	-	-	-	0.10	-
IT E-U	-	-	-	-	-	0.04
IT I-U	-	-	-	-	-	0.11
LT E-U	-	-	0.01	-	0.04	0.01
LT I-E	-	-	0.02	0.01	0.04	0.11
LT I-U	-	-	0.02	0.03	0.10	0.01
LV E-I	-	-	0.04	-	0.10	0.09
LV I-E	-	-	-	0.08	0.07	-
LV I-U	-	-	0.04	0.04	-	-
LV U-E	-	-	0.04	-	-	-
NL I-U	-	-	-	-	-	0.05
NL U-I	-	0.02	0.02	-	-	-
NO E-U	0.04	-	-	0.06	-	-
NO I-E	-	-	0.04	-	-	-
NO U-E	-	-	-	0.05	-	-
PL I-U	0.01	-	-	-	-	0.15
PL U-E	0.18	0.10	0.06	0.08	-	-

	weights					
	E-U	E-I	U-E	U-I	I-E	I-U
PL U-I	0.03	0.09	0.01	0.13	-	0.07
PT I-E	-	-	0.03	-	-	-
PT N-E	-	-	-	-	-	-
PT U-E	-	0.12	0.01	-	-	-
PT U-I	-	-	0.02	-	-	-
RO E-U	-	0.03	0.02	0.04	0.00	-
RO I-U	-	-	0.01	-	-	-
RO U-E	-	0.03	0.03	0.05	-	-
SI E-I	0.03	0.02	-	-	-	-
SI E-U	0.10	0.03	-	0.04	-	0.00
SI I-E	-	-	0.06	-	-	-
SI I-U	0.01	-	-	-	-	0.04
J	102	102	102	102	102	102
pre rmspe						
treated	0.03	0.04	0.02	0.04	0.05	0.03
donor	0.10	0.10	0.10	0.10	0.10	0.10
post rmspe						
treated	0.06	0.12	0.09	0.10	0.07	0.04
donor	0.19	0.19	0.19	0.19	0.19	0.19

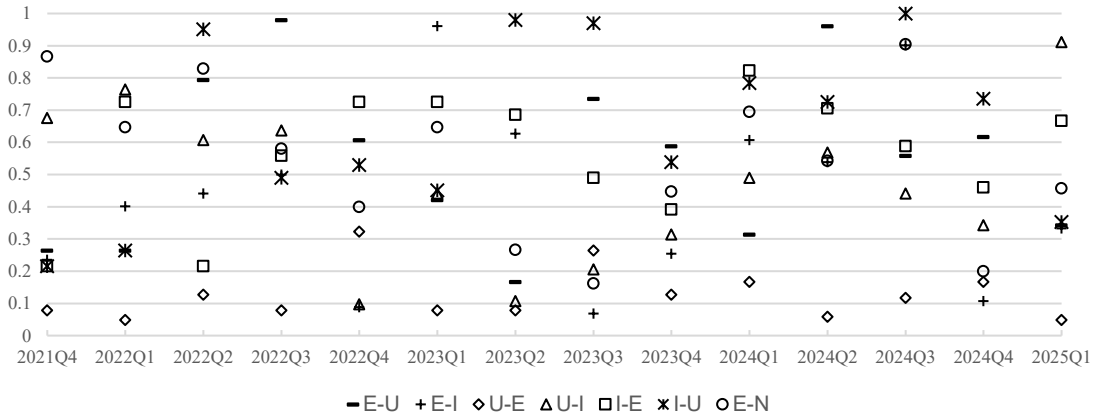
Note: Estimated weights used to generate the synthetic controls and compute the impact of the reform. 'J' corresponds the total number of units in the donor pool and the bottom rows display the root mean square prediction error in the sample before and after the intervention.

Figure 27: Placebo estimations – Reform FR-C[C8]-R[R4]



Note: Placebo tests applying the SCM individually to all series in the donor pool. Effects are displayed in percentage points within a range restricted to +-4 percentage points.

Figure 28: Permutation test significance – Reform FR-C[C8]-R[R4]



Note: P-values from permutation tests for each flow and each period after the intervention.

The tables and figures below present additional results for the **DiD estimation** of the reform's impact on employment and open-ended contracts respectively. Table 20 and Table 21 show results for all the different specifications estimated, which serve as basis for the discussion of labour market effects in Section 2.2.3 and the evidence displayed in Figure 9 and Figure 10.

In addition, this section includes estimation results for the different robustness checks performed. These were discussed already in this annex and include a modification of the average group size below which a group is dropped from the sample, an adjustment to the threshold value used to define the control and treatment groups, and an age restriction applied to the sample (workers aged 25-64).

Using the baseline sample (Table 20 and Table 21), the average treatment effects are negative but modest across all occupations for both employment and open-ended contracts. For employment, the main specification indicates an average decline of around 4 percentage points relative to the control group, with similar results when richer sets of controls are included. For open ended employment, the point estimates are also around 4 percentage points, again with limited sensitivity to the choice of controls. These results seem to indicate a small reduction in employment and permanent contracts among more exposed groups after the reform, although the estimates are generally not statistically significant.

The dynamic coefficients provide further insight into the adjustment path. In the simpler specifications, several negative and sometimes significant pre-treatment coefficients appear between six and four quarters before the reform, indicating some initial divergence. However, these pre reform differences are substantially reduced once occupation fixed effects are included, and in the fully controlled models the pre-treatment coefficients are generally close to zero and no longer statistically significant. This pattern indicates that the initial divergence largely reflects differences in occupational composition between treated and control groups rather than genuine differences in underlying employment trajectories.

Post treatment, the dynamics exhibit an inverted hump-shaped profile. For both employment and open ended employment, the first quarters after the reform show only very small deviations. The effects become more negative around four to five quarters after the reform, where the estimated impact reaches its maximum magnitude, although the coefficients remain statistically insignificant. After this, the effects gradually move back toward zero, indicating a partial recovery in the later quarters. The hump-shaped pattern is more pronounced for open ended employment, where several of the mid-period coefficients are negative and sometimes significant.

The robustness checks broadly confirm these conclusions. Restricting the sample to larger groups results in estimates that remain small and statistically insignificant, while the pre-treatment coefficients again diminish once occupation fixed effects are included. When treatment is defined using a higher threshold of 10 percent for the control group or 8,000 individuals for the unit size, the overall pattern remains consistent with the baseline. However, a more positive picture emerges toward the end of the post treatment period: in these alternative definitions, the estimated effects in the later quarters tend to become positive and somewhat larger in magnitude than in the baseline specification, even though they remain statistically insignificant. This suggests that the central conclusions are robust to the treatment definition and that, if anything, the longer run effects may be slightly more favourable than those observed in the reference sample.

Taken together, the DiD evidence for France points to relatively modest effects of the reform on overall employment and indications of a temporary reduction in open ended employment in the aftermath of the reform. Parallel trend issues disappear once occupation fixed effects are included which strengthens the credibility of the results. At the same time, the limited statistical precision suggest that the results should be interpreted cautiously.

Table 20: Estimation results – log of employment – FR-C[C8]-R[R4]

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.036	-0.036	-0.030	-0.054	-0.028	0.001	-0.036	-0.047
δ(-9)	-0.068	-0.069	-0.080	-0.100	0.017	0.027	-0.068	0.000
δ(-8)	-0.057	-0.057	-0.068	-0.091	0.008	0.008	-0.057	-0.009
δ(-7)	-0.081	-0.081	-0.091	-0.115*	0.015	0.023	-0.081	-0.001
δ(-6)	-0.150‡	-0.151‡	-0.159‡	-0.175‡	-0.039	-0.029	-0.150‡	-0.048
δ(-5)	-0.134*	-0.134*	-0.140‡	-0.129‡	-0.039	-0.018	-0.134*	-0.033
δ(-4)	-0.091	-0.090	-0.100*	-0.069	-0.019	-0.004	-0.091	-0.017
δ(-3)	-0.088	-0.089	-0.097*	-0.037	-0.025	0.000	-0.088	-0.014
δ(-2)	-0.001	-0.003	-0.009	0.003	-0.017	-0.002	-0.001	-0.018
δ(-1)	-0.049	-0.050	-0.053	-0.045	-0.035	-0.019	-0.049	-0.035

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.009	-0.008	-0.005	-0.017	-0.022	0.014	-0.009	-0.030
δ(2)	0.036	0.036	0.041	0.017	0.056	0.094‡	0.036	0.039
δ(3)	-0.037	-0.038	-0.031	-0.056	-0.023	0.021	-0.037	-0.041
δ(4)	-0.079*	-0.079‡	-0.069*	-0.091‡	-0.079‡	-0.079‡	-0.079‡	-0.092‡
δ(5)	-0.095*	-0.096*	-0.084	-0.106‡	-0.108*	-0.072	-0.095*	-0.115*
δ(6)	-0.070	-0.070	-0.060	-0.081	-0.049	-0.012	-0.070	-0.058
δ(7)	-0.027	-0.026	-0.022	-0.047	-0.013	0.031	-0.027	-0.035
δ(8)	-0.032	-0.030	-0.028	-0.060	-0.018	-0.002	-0.032	-0.051
δ(9)	-0.010	-0.009	-0.010	-0.047	0.003	0.019	-0.010	-0.039
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X	N	N	Y	N	N	N	N	Y
Sect.VA X	N	N	N	Y	N	N	N	Y
Occup. FE	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(382; 442)							
Joint placebo test	0.27	0.3	0.309	0.085	0.547	0.641	0.304	0.555
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 21: Estimation results – log of open-ended employment – FR-C[C8]-R[R4]

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.038	-0.037	-0.026	-0.045	-0.036	-0.005	-0.038	-0.036
δ(-9)	-0.095	-0.095	-0.110	-0.111	-0.031	-0.025	-0.095	-0.045
δ(-8)	-0.077	-0.077	-0.091	-0.096	-0.039	-0.040	-0.077	-0.053
δ(-7)	-0.089	-0.089	-0.101	-0.108	-0.018	-0.016	-0.089	-0.031
δ(-6)	-0.159‡	-0.159‡	-0.168‡	-0.173‡	-0.067	-0.057	-0.159‡	-0.075
δ(-5)	-0.128*	-0.128*	-0.134*	-0.125*	-0.056	-0.040	-0.128*	-0.057
δ(-4)	-0.102	-0.101	-0.116*	-0.095	-0.056	-0.052	-0.102	-0.070
δ(-3)	-0.097	-0.097*	-0.103*	-0.058	-0.065	-0.044	-0.097*	-0.058
δ(-2)	0.007	0.007	-0.001	0.009	-0.013	-0.007	0.007	-0.019

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-1)	-0.029	-0.029	-0.034	-0.028	-0.028	-0.023	-0.029	-0.031
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.035	-0.035	-0.030	-0.038	-0.056	0.004	-0.035	-0.054
δ(2)	0.024	0.024	0.033	0.014	0.035	0.082*	0.024	0.030
δ(3)	-0.021	-0.022	-0.009	-0.030	-0.006	0.024	-0.021	-0.008
δ(4)	-0.065	-0.065	-0.049	-0.069	-0.065	-0.065	-0.065	-0.064
δ(5)	-0.110‡	-0.110‡	-0.092	-0.112‡	-0.130‡	-0.071	-0.110‡	-0.123‡
δ(6)	-0.067	-0.067	-0.050	-0.067	-0.056	-0.008	-0.067	-0.045
δ(7)	-0.034	-0.034	-0.022	-0.041	-0.019	0.011	-0.034	-0.017
δ(8)	-0.041	-0.040	-0.031	-0.053	-0.040	-0.035	-0.041	-0.044
δ(9)	0.010	0.011	0.018	-0.008	0.011	0.016	0.010	-0.002
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(370; 432)							
Joint placebo test	0.374	0.344	0.357	0.31	0.858	0.829	0.349	0.88
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment.. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Group unit size equal to at least 8000 workers

Table 22: Estimation results – log of employment – FR-C[C8]-R[R4] – restriction on group unit size

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.007	0.007	0.007	0.016	0.026	0.044	0.007	0.027
δ(-9)	-0.034	-0.035	-0.052	-0.039	0.016	0.016	-0.034	0.001
δ(-8)	-0.034	-0.035	-0.052	-0.039	0.005	-0.003	-0.034	-0.010
δ(-7)	-0.033	-0.034	-0.050	-0.037	0.017	0.019	-0.033	0.004
δ(-6)	-0.118	-0.118*	-0.134‡	-0.118*	-0.059	-0.055	-0.118*	-0.069
δ(-5)	-0.102	-0.102	-0.115*	-0.090	-0.055	-0.043	-0.102	-0.057
δ(-4)	-0.092	-0.090	-0.100*	-0.078	-0.055	-0.053	-0.092	-0.059
δ(-3)	-0.066	-0.068	-0.070	-0.061	-0.048	-0.034	-0.066	-0.039

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-2)	-0.025	-0.026	-0.037	-0.023	-0.005	0.000	-0.025	-0.012
δ(-1)	-0.044	-0.044	-0.050	-0.044	-0.036	-0.026	-0.044	-0.041
δ(0)	0	0	0	0	0	0	0	0
δ(1)	0.012	0.013	0.015	0.012	0.018	0.033	0.012	0.018
δ(2)	0.039	0.039	0.041	0.042	0.074*	0.098‡	0.039	0.073*
δ(3)	-0.015	-0.016	-0.013	-0.008	0.024	0.051	-0.015	0.026
δ(4)	-0.036	-0.036	-0.031	-0.024	-0.036	-0.036	-0.036	-0.028
δ(5)	-0.038	-0.038	-0.033	-0.022	-0.032	-0.017	-0.038	-0.018
δ(6)	0.003	0.003	0.003	0.019	0.038	0.062	0.003	0.047
δ(7)	0.040	0.040	0.035	0.052	0.079	0.106*	0.040	0.076
δ(8)	0.033	0.034	0.028	0.042	0.041	0.051	0.033	0.032
δ(9)	0.026	0.027	0.018	0.032	0.034	0.044	0.026	0.019
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(304; 350)							
Joint placebo test	0.256	0.224	0.14	0.236	0.094	0.046	0.226	0.071
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the size of each group is restricted to unit with at least 8000 workers on average. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 23: Estimation results – log of open-ended employment – FR-C[C8]-R[R4] – restriction on group unit size

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.010	0.010	0.011	0.020	0.021	0.044	0.010	0.025
δ(-9)	-0.090	-0.091	-0.104	-0.094	-0.026	-0.037	-0.090	-0.035
δ(-8)	-0.075	-0.075	-0.090	-0.080	-0.018	-0.035	-0.075	-0.027
δ(-7)	-0.071	-0.071	-0.084	-0.076	-0.003	-0.013	-0.071	-0.011
δ(-6)	-0.146‡	-0.147‡	-0.158‡	-0.152‡	-0.081*	-0.087‡	-0.146‡	-0.087*
δ(-5)	-0.119*	-0.120*	-0.128*	-0.125‡	-0.073	-0.075*	-0.119*	-0.076
δ(-4)	-0.118*	-0.116‡	-0.126‡	-0.111‡	-0.073*	-0.085‡	-0.118‡	-0.082*
δ(-3)	-0.102*	-0.102‡	-0.093*	-0.092‡	-0.075	-0.073	-0.102‡	-0.060
δ(-2)	0.009	0.009	0.000	0.007	0.020	0.013	0.009	0.013

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-1)	-0.016	-0.016	-0.020	-0.019	-0.012	-0.011	-0.016	-0.016
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.010	-0.010	-0.007	-0.009	-0.018	0.021	-0.010	-0.014
δ(2)	0.025	0.026	0.028	0.029	0.048	0.085‡	0.025	0.051
δ(3)	-0.024	-0.024	-0.020	-0.016	0.007	0.034	-0.024	0.012
δ(4)	-0.028	-0.028	-0.024	-0.015	-0.028	-0.028	-0.028	-0.020
δ(5)	-0.041	-0.041	-0.034	-0.024	-0.048	-0.009	-0.041	-0.032
δ(6)	0.018	0.018	0.021	0.037	0.042	0.078	0.018	0.055
δ(7)	0.042	0.042	0.039	0.056	0.072	0.099	0.042	0.074
δ(8)	0.038	0.038	0.033	0.048	0.041	0.043	0.038	0.038
δ(9)	0.067	0.067	0.060	0.074	0.070	0.072	0.067	0.061
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect .VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(301; 349)							
Joint placebo test	0.393	0.168	0.122	0.153	0.119	0.026	0.161	0.067
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the size of each group is restricted to unit with at least 8000 workers on average. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Thresholds for identification of treatment group equal to 10%

Table 24: Estimation results – log of employment – FR-C[C8]-R[R4] – threshold for control group = 10%

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.024	-0.030	-0.033	-0.044	-0.024	-0.010	-0.024	-0.047
δ(-9)	-0.089	-0.094*	-0.106*	-0.112‡	-0.057	-0.049	-0.089	-0.080
δ(-8)	-0.045	-0.049	-0.062	-0.069	-0.021	-0.032	-0.045	-0.044
δ(-7)	-0.068	-0.072	-0.084	-0.091	-0.032	-0.028	-0.068	-0.053
δ(-6)	-0.112‡	-0.116‡	-0.127‡	-0.126‡	-0.069	-0.061	-0.112‡	-0.082
δ(-5)	-0.074	-0.074	-0.085	-0.058	-0.038	-0.008	-0.074	-0.028
δ(-4)	-0.050	-0.047	-0.053	-0.034	-0.023	-0.006	-0.050	-0.017

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-3)	-0.065	-0.067	-0.073	-0.036	-0.043	-0.007	-0.065	-0.033
δ(-2)	-0.045	-0.044	-0.049	-0.039	-0.055*	-0.032	-0.045	-0.052*
δ(-1)	-0.067	-0.066	-0.069	-0.062	-0.064	-0.040	-0.067	-0.061
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.001	-0.004	-0.005	-0.009	-0.001	0.017	-0.001	-0.011
δ(2)	-0.002	-0.006	-0.007	-0.016	-0.003	0.014	-0.002	-0.019
δ(3)	-0.039	-0.045	-0.045	-0.056	-0.040	-0.038	-0.039	-0.057
δ(4)	-0.014	-0.022	-0.021	-0.032	-0.014	-0.014	-0.014	-0.034
δ(5)	-0.030	-0.039	-0.039	-0.050	-0.030	-0.012	-0.030	-0.052
δ(6)	-0.031	-0.038	-0.042	-0.051	-0.033	-0.016	-0.031	-0.057
δ(7)	-0.010	-0.016	-0.024	-0.034	-0.011	-0.009	-0.010	-0.041
δ(8)	-0.033	-0.039	-0.048	-0.059	-0.031	-0.007	-0.033	-0.065
δ(9)	-0.054	-0.059	-0.070	-0.084	-0.051	-0.028	-0.054	-0.091
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(285; 442)							
Joint placebo test	0.023	0.002	0.001	0	0.012	0.004	0.003	0.001
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the threshold to define the control and treatment is set to 10%. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 25: Estimation results – log of open-ended employment – FR-C[C8]-R[R4] – threshold for control group = 10%

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.031	-0.035	-0.035	-0.040	-0.033	-0.031	-0.031	-0.043
δ(-9)	-0.061	-0.065	-0.078	-0.069	-0.037	-0.036	-0.061	-0.052
δ(-8)	-0.041	-0.045	-0.059	-0.051	-0.028	-0.038	-0.041	-0.044
δ(-7)	-0.060	-0.063	-0.077	-0.070	-0.033	-0.036	-0.060	-0.048
δ(-6)	-0.076	-0.079	-0.092*	-0.081	-0.040	-0.033	-0.076	-0.051
δ(-5)	-0.036	-0.038	-0.051	-0.028	-0.008	0.010	-0.036	-0.011
δ(-4)	-0.050	-0.049	-0.060	-0.053	-0.034	-0.033	-0.050	-0.051
δ(-3)	-0.042	-0.044	-0.050	-0.021	-0.032	-0.006	-0.042	-0.028

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-2)	0.012	0.011	0.004	0.013	0.000	0.008	0.012	-0.005
δ(-1)	-0.030	-0.030	-0.034	-0.029	-0.032	-0.027	-0.030	-0.034
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.024	-0.025	-0.024	-0.026	-0.022	-0.005	-0.024	-0.023
δ(2)	-0.020	-0.022	-0.020	-0.027	-0.023	-0.023	-0.020	-0.029
δ(3)	-0.052	-0.055	-0.051	-0.061*	-0.055	-0.071*	-0.052	-0.060
δ(4)	-0.036	-0.041	-0.036	-0.046	-0.036	-0.036	-0.036	-0.045
δ(5)	-0.043	-0.049	-0.046	-0.054	-0.042	-0.024	-0.043	-0.052
δ(6)	-0.032	-0.037	-0.038	-0.042	-0.035	-0.035	-0.032	-0.046
δ(7)	-0.025	-0.030	-0.034	-0.036	-0.028	-0.045	-0.025	-0.043
δ(8)	-0.027	-0.031	-0.037	-0.038	-0.030	-0.025	-0.027	-0.046
δ(9)	-0.020	-0.023	-0.030	-0.032	-0.022	-0.017	-0.020	-0.041
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(275; 432)							
Joint placebo test	0.488	0.079	0.075	0.008	0.216	0.005	0.087	0.023
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the threshold to define the control and treatment is set to 10%. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Excluding workers aged 15-24

Table 26: Estimation results – log of employment – FR-C[C8]-R[R4] – sample restricted to workers aged 25-64

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.040	-0.043	-0.035	-0.059*	-0.040	-0.044	-0.040	-0.051
δ(-9)	-0.047	-0.047	-0.061	-0.067	0.004	0.014	-0.047	-0.015
δ(-8)	-0.025	-0.025	-0.038	-0.047	0.014	0.004	-0.025	-0.006
δ(-7)	-0.047	-0.047	-0.059	-0.069	0.005	0.002	-0.047	-0.013
δ(-6)	-0.090	-0.090*	-0.099*	-0.103*	-0.031	-0.026	-0.090*	-0.039
δ(-5)	-0.060	-0.060	-0.065	-0.046	-0.012	0.017	-0.060	0.003
δ(-4)	-0.028	-0.028	-0.043	-0.015	0.011	0.022	-0.028	0.008

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-3)	-0.063	-0.064	-0.072	-0.025	-0.026	0.005	-0.063	-0.013
δ(-2)	-0.011	-0.011	-0.019	-0.006	-0.021	-0.010	-0.011	-0.021
δ(-1)	-0.045	-0.045	-0.049	-0.041	-0.040	-0.033	-0.045	-0.039
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.021	-0.022	-0.018	-0.027	-0.024	-0.027	-0.021	-0.028
δ(2)	0.011	0.008	0.016	-0.003	0.012	0.013	0.011	0.005
δ(3)	-0.031	-0.036	-0.024	-0.048	-0.032	-0.053	-0.031	-0.038
δ(4)	-0.056	-0.061*	-0.047	-0.073‡	-0.056	-0.056	-0.056	-0.062
δ(5)	-0.051	-0.056	-0.041	-0.069	-0.054	-0.058	-0.051	-0.060
δ(6)	-0.069	-0.071*	-0.061	-0.087‡	-0.068	-0.067	-0.069*	-0.077*
δ(7)	-0.052	-0.053	-0.047	-0.074*	-0.053	-0.074	-0.052	-0.069*
δ(8)	-0.039	-0.039	-0.036	-0.063	-0.034	-0.027	-0.039	-0.054
δ(9)	-0.055	-0.056	-0.055	-0.084	-0.051	-0.044	-0.055	-0.076
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(317; 431)							
Joint placebo test	0.175	0.056	0.069	0.019	0.177	0.128	0.061	0.14
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the sample excludes individuals aged 15-24 Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 27: Estimation results – log of open-ended employment – FR-C[C8]-R[R4] – sample restricted to workers aged 25-64

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.071‡	-0.073‡	-0.064*	-0.077‡	-0.072‡	-0.070‡	-0.071‡	-0.071‡
δ(-9)	-0.059	-0.059	-0.069	-0.063	-0.029	-0.020	-0.059	-0.036
δ(-8)	-0.070	-0.070	-0.080	-0.077	-0.055	-0.055	-0.070	-0.063
δ(-7)	-0.093	-0.093	-0.102	-0.100	-0.062	-0.053	-0.093	-0.069
δ(-6)	-0.130‡	-0.130‡	-0.135‡	-0.131‡	-0.085	-0.067	-0.130‡	-0.084
δ(-5)	-0.084	-0.084	-0.083	-0.073	-0.054	-0.023	-0.084	-0.038
δ(-4)	-0.016	-0.015	-0.027	-0.022	0.001	0.008	-0.016	-0.019

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ(-3)	-0.071	-0.072	-0.080	-0.043	-0.059	-0.024	-0.071	-0.050
δ(-2)	0.001	0.000	-0.006	0.002	-0.013	-0.010	0.001	-0.016
δ(-1)	-0.052	-0.052	-0.055	-0.051	-0.052	-0.051	-0.052	-0.053
δ(0)	0	0	0	0	0	0	0	0
δ(1)	-0.057‡	-0.058‡	-0.054‡	-0.057‡	-0.060‡	-0.047*	-0.057‡	-0.057‡
δ(2)	-0.018	-0.020	-0.013	-0.023	-0.019	-0.004	-0.018	-0.018
δ(3)	-0.057*	-0.061*	-0.047	-0.065*	-0.058*	-0.080*	-0.057*	-0.053
δ(4)	-0.082‡	-0.085‡	-0.071*	-0.089‡	-0.082‡	-0.082‡	-0.082‡	-0.077‡
δ(5)	-0.090‡	-0.093‡	-0.079*	-0.097‡	-0.093‡	-0.079‡	-0.090‡	-0.088‡
δ(6)	-0.103‡	-0.105‡	-0.095‡	-0.108‡	-0.104‡	-0.089‡	-0.103‡	-0.100‡
δ(7)	-0.081*	-0.082‡	-0.075*	-0.088‡	-0.082‡	-0.104‡	-0.081‡	-0.083*
δ(8)	-0.074	-0.074	-0.070	-0.080	-0.074	-0.073	-0.074	-0.077
δ(9)	-0.076	-0.076	-0.073	-0.085	-0.076	-0.075	-0.076	-0.083
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(300; 416)							
Joint placebo test	0.005	0	0.001	0.001	0.003	0.001	0	0.016
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the sample excludes individuals aged 15-24. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Annex C.2.2.Greece: modernisation and simplification of labour law

Indicators and methodological approach

The analysis of **Article 28** makes use of EU-LFS sampling weights and control for standard covariates (including age, age squared, education dummies, and job-contract dummies). We also add sector dummies[86], to capture sectors with

[86] NACE B to F (Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities;

distinct tenure and separation dynamics (industry/construction; consumer-facing services; ICT; public/social services), together with fixed effects for NUTS-2 regions and calendar quarters. To net out differential pandemic shocks, we include three "treated × COVID interactions"[87]. Estimations are run both without and with a linear detrend on the pre-reform coefficients.

We do not include either mothers and fathers with children >13 or mothers or fathers without children in the control group because the parallel-trends assumption would be implausible. Our estimate is the ITT of eligibility for parental leave, which is defined only among parents; comparing eligible mothers or fathers (youngest child 0-7) to ineligible mothers or fathers (9-13, doughnut-hole at 8) holds parent status fixed and places the groups on comparable life-cycle paths (care needs, school/childcare exposure, schedules, access to services). By contrast, individuals without children differ markedly in levels and slopes even absent the policy (fewer care constraints, different sectors/hours, no exposure to school/COVID shocks), so we would expect systematically different pre-trends.

When restricting to mothers (and fathers) whose youngest child is 0–2, the pattern becomes more pronounced but also noisier, because the sample is smaller and pre-reform trends are less balanced.

The estimation of impacts for **Article 64** is similar to that of Article 28. Standard covariates (including age, age squared, education and sector (the same as above) dummies). To net out differential pandemic shocks for blue-collar workers in the pre-reform period, we include three Blue × COVID interactions for the same periods defined above for Article 28. Estimations are run both without and with a linear detrend on the pre-reform coefficients.

It is worth flagging several limitations affecting the analysis of **Articles 28 and 64** for the reform in Greece. Regarding **Article 28**, it would have been ideal to use detailed absence reasons and job-attachment information to pin down parental leave. However, in the EU LFS microdata for Greece detailed absence reasons ("ABSREAS" that, inter alia, include persons reporting being absent from work or business during the reference week for parental leave, code 06) or job-attachment flags ("JATTACH") are largely missing, up to 98% of the sample, so we can only rely on the variable WKSTAT to distinguish presence at work from temporary absence and interpret changes in Employment/Labour Force Participation with caution (treating them as potentially affected by classification rather than separations).

Construction); Nace G to I (Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities); NACE J (Information and communication); NACE O to Q (Public administration and defence; compulsory social security; Education; Human health and social work activities).

[87] 2020S1 (including 2020 q1 and q2), 2020S2 (including 2020 q3 and q4) and 2021S1 (including 2021 q1 and q2) .

Another possibility we have explored was to exploit EU SILC, nevertheless, in the longitudinal EU-SILC, parental leave cannot be identified with sufficient precision to support credible flow analyses. The core labour variables do not distinguish people "at work" from those "absent from work but still employed": the main employment flag counts both anyone who worked at least one hour in the reference week and anyone who had a job but did not work. As a result, individuals on maternity/paternity/parental leave remain mixed with those who actually worked, while others on leave may self-classify as inactive due to "domestic tasks and care," a category that also includes respondents with no current job. Monthly "main activity" fields capture time spent on care or domestic responsibilities, but they do not indicate whether such months occur under an employment contract or reflect out-of-labour-force caregiving.

Furthermore, the ideal evidence for the analysis of **Article 64** would come from sources that record separations/layoffs and employment flows by contract type. In the LFS, separations are not observed in real time: the reason for leaving last job ("LEAVREAS") refers to events that may have occurred up to seven years earlier and while restricting to the last 12 months improves relevance, it leaves a small and noisy sample. Flow measures (Employment ↔ Unemployment/Inactivity) can be built only by linking respondents across quarters within the same year. This sharply reduces the sample size, and once we stratify by blue/white (ISCO) sample size may shrink too much.

Estimation results

Starting with **Article 28** and the indicator for "At work", event-time coefficients are negative from δ(+2) onward and statistically significant over δ(+2)–δ(+5) in both Model 1 (no detrend) and Model 5 (linear detrend), with magnitudes around −0.15 to −0.25 p.p. The average post effect is −0.17 p.p. (significant at 5% in both models). The joint post test strongly rejects ($p = 0.002$ in Model 1; $p = 0.001$ in Model 5), indicating that the set of post-reform coefficients is not jointly zero—i.e., the eligible–ineligible gap changes somewhere after the reform, so there is a statistically detectable reform effect. The joint placebo test does not reject ($p \approx 0.355$ in Model 1; $p \approx 0.297$ in Model 5), supporting the parallel-trends assumption.

For "Absent with job", event-time coefficients are positive and persistent, and statistically significant over δ(+4)–δ(+8) in both Model 2 (no detrend) and Model 6 (linear detrend), with magnitudes around +0.12 to +0.16 p.p. The average post effect is about +0.11 p.p. (significant in both models). The joint post-test strongly rejects (there is a statistically detectable reform effect, i.e., the eligible–ineligible gap increases somewhere after the reform). The joint placebo test does not reject, which supports the parallel-trends assumption for this outcome.

For Employment, post-reform deltas display episodic declines rather than a smooth trend (e.g., around δ(+3) ≈ −0.20 p.p.), with smaller negatives at other horizons. The average post effect is modest and imprecise (≈ −0.08 p.p.). The

joint post-test rejects (p ≈ 0.023 in Model 3; p ≈ 0.008 in Model 7), indicating the post-reform coefficients are not jointly zero. However, the joint placebo is borderline/rejects (p ≈ 0.065 in Model 3; p ≈ 0.030 in Model 7), pointing to residual pre-trend imbalance. These dips are best read as classification effects (long unpaid absences reclassified outside employment) rather than true job loss; we treat employment as a secondary/mechanism outcome.

For Labour-force participation, event-time coefficients are small and mostly negative but not jointly significant with no detrend Model 4 (joint post p ≈ 0.318), and the average post effect is close to zero (≈ −0.10 p.p., not significant). With linear detrending Model 8) the post becomes borderline (p ≈ 0.052) and the average post effect is −0.12 p.p. (marginal), but the joint placebo rejects/borderline (p ≈ 0.023–0.058), indicating pre-period drift. Overall, LFP shows no meaningful or robust post-reform change, consistent with a reallocation within employment (presence → temporary absence) rather than entry/exit from the labour force.

Among fathers (Table 28), the event study shows a classic leave take-up pattern: at work declines and absent with job rises after the reform; the post coefficients are jointly significant and the pattern is robust to linear detrending, with pre-trend tests generally acceptable (borderline only for absent in the no-detrend spec). Employment exhibits occasional dips but no systematic fall –consistent with ILO reclassification of long unpaid absences rather than separations– and LFP remains essentially flat. Mothers and fathers display the same qualitative reallocation within employment (presence decreases and job-attached absence increases), not exits from the labour market; effects for fathers are present but smaller and less stable than for mothers, for whom the evidence is cleaner.

Table 28: Dynamic DiD event study on Article 28 – eligible vs non-eligible fathers

	No detrend				Linear detrend			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	At work	Absent	Empl	LFP	At work	Absent	Empl	LFP
δ (-8)	-0.11	0.12	-0.06	-0.03	-0.10	0.12	-0.05	-0.04
δ (-7)	-0.10	0.15*	-0.03	-0.01	-0.09	0.15**	-0.01	-0.02
δ (-6)	-0.30***	0.15***	-0.19***	-0.05	-0.30***	0.16***	-0.18***	-0.06
δ (-5)	-0.13*	0.09*	-0.06	0.01	-0.12*	0.10**	-0.04	-0.01
δ (-4)	-0.09	0.10*	-0.01	0.00	-0.08	0.12**	0.02	-0.01
δ (-3)	-0.09	0.12**	-0.01	-0.01	-0.09	0.13***	0.01	-0.03
δ (-2)	-0.20***	0.12**	-0.13**	-0.03	-0.20***	0.13***	-0.10**	-0.06
δ (-1)	-0.13	0.09*	-0.08	-0.03	-0.12	0.10*	-0.05	-0.06
δ (0)	0	0	0	0	0	0	0	0
δ (+1)	-0.06	0.07	-0.02	0.01	-0.06	0.07	-0.03	0.02

	No detrend				Linear detrend			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	At work	Absent	Empl	LFP	At work	Absent	Empl	LFP
δ (+2)	-0.09	0.10**	-0.04	0.00	-0.09	0.10*	-0.04	0.02
δ (+3)	-0.08	0.09**	-0.03	0.01	-0.08	0.08*	-0.04	0.01
δ (+4)	-0.11*	0.09**	-0.04	-0.00	-0.11*	0.09*	-0.05	0.00
δ (+5)	-0.04	0.03	-0.04	-0.01	-0.04	0.03	-0.05	0.00
δ (+6)	-0.05	0.04	-0.04	-0.00	-0.05	0.04	-0.04	0.00
δ (+7)	-0.02	0.02	-0.03	0.01	-0.02	0.02	-0.04	0.01
δ (+8)	-0.01	0.02	-0.02	-0.04	-0.01	0.02	-0.03	-0.03
δ (avg)	-0.14**	0.12**	-0.07	-0.02	-0.14**	0.13**	-0.05	-0.03
Joint post (p)	0.000	0.004	0.014	0.503	0.000	0.006	0.001	0.322
Joint placebo (p)	0.738	0.375	0.0346	0.292	0.868	0.537	0.124	0.262
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Group FE	Y	Y	Y	Y	Y	Y	Y	Y

Source: own elaboration

Note: see note to Table 6.

Restricting the treated group to eligible mothers (and alternatively to eligible fathers) whose youngest child is 0–2 targets the subgroup with the highest expected take-up. In this subsample, the event-study profile shows a persistent decline in “at work” and a rise in “absent with job” while employment and labour-force participation remain broadly unchanged on average. Pre-reform leads are not uniformly flat, however, indicating some residual pre-trend imbalance. Because the sample is smaller and there are fewer switchers, estimates are noisier and joint tests have less power; additionally, the greater life-cycle distance between treated (0–2) and controls (9–13) makes pre-trend differences more likely. We therefore view the 0–2 results as suggestive and consistent with the mechanism, but less definitive than the baseline using the full 0–7 eligibility band.

The detailed DID results for **Article 64**, including event-time coefficients, joint tests for pre- and post-reform periods, and robustness to linear detrending can be found in Table 29 and Table 30.

For tenure (in months, blue –white difference among permanents, Table 29), we see that in the no-detrend specification (Model 1), post-reform coefficients are positive throughout. They are statistically clear at several horizons (≈ +9.7*** at δ(+2); ≈ +7.2* at δ(+3); ≈ +7.7* at δ(+4); ≈ +11.3*** at δ(+5)). According to the average post effect blue-collar workers accumulate about +6.8 months ($p<0.05$) with their employer relative to white-collar workers. The joint post-test strongly rejects ($p = 0.00013$), indicating a detectable reform effect somewhere in the post

period. The joint placebo does not reject (p = 0.373), supporting parallel trends in the pre-period.

In the linear detrend specification (Model 3), post coefficients remain positive and are again precise in the early/mid post (≈ +3.9* at δ(+1), ≈ +10.4*** at δ(+2), ≈ +8.1* at δ(+3), ≈ +9.2* at δ(+4), ≈ +12.9** at δ(+5)). According to the average post effect, blue-collar workers accumulate about +8.2 months (p<0.10) with their employer relative to white collar workers. The joint post-test strongly rejects (p = 5.45e-05), indicating a detectable reform effect somewhere in the post period, while the joint placebo does not (p = 0.604), supporting parallel trends in the pre-period.

It appears to be a modest, short-lived dip in new permanent blue-collar hires immediately after the reform and no robust or economically meaningful reduction in inflows.

For new permanent hires (share with tenure ≤3 months, blue–white difference among permanent), we see that in the no detrend specification (Model 2), event-time coefficients are small and mostly negative in the early post (the expected sign if firms briefly slow permanent entries), but magnitudes are tiny (order 0 to −0.01 p.p.). The average post effect is ≈ 0 p.p. The joint post rejects at the 5% level (p = 0.015), while the joint placebo does not reject (p = 0.791). Economically, however, the effects are negligible and not persistent.

In the linear detrend specification (Model 4), coefficients remain very small (≈ −0.01 to 0.00 p.p.) and imprecise; the average post effect is ≈ 0 p.p. The joint post is borderline (p ≈ 0.098), and the joint placebo does not reject (p = 0.408).

There is no robust evidence that **Article 64** changed the contract mix among brand-new hires (i.e., a systematic substitution into fixed-term at entry).

Table 29: Article 64 estimation results – Retention and entry volume effect

	No detrend		Linear Trend	
	Tenure	New perm hires	Tenure	New perm hires
	Model 1	Model 2	Model 3	Model 4
δ (-8)	0.18	-0.00	-2.32	0.00
δ (-7)	1.86	-0.00	-0.65	0.00
δ (-6)	0.76	0.00	-1.14	0.00
δ (-5)	1.72	-0.00	-0.02	0.00
δ (-4)	0.03	-0.00	-1.66	0.00
δ (-3)	1.20	-0.00	0.10	0.00
δ (-2)	1.54	-0.00	0.74	-0.00
δ (-1)	2.40	-0.00	1.99	-0.00
δ (0)	0	0	0	0
δ (+1)	3.58	-0.00	3.89*	-0.01
δ (+2)	9.71***	-0.00	10.35***	-0.00
δ (+3)	7.23*	0.00	8.11*	-0.00
δ (+4)	7.72*	-0.00	9.23*	-0.00

	No detrend		Linear Trend	
	Tenure Model 1	New perm hires Model 2	Tenure Model 3	New perm hires Model 4
δ (+5)	11.25***	-0.00	12.91**	-0.01
δ (+6)	5.81	0.00	7.41	-0.00
δ (+7)	5.30	0.00	7.61	-0.00
δ (+8)	3.79	0.00	6.11	-0.00
δ (avg)	6.81**	-0.00	8.22*	-0.00
Joint post (p)	0.00013	0.0151	5.45e-05	0.0983
Joint placebo (p)	0.373	0.791	0.604	0.408
Controls	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Group FE	Y	Y	Y	Y

Source: own computation

Note: Tenure coefficients are expressed in months and show by how many months the blue–white difference in average tenure changes relative to the baseline quarter (2021Q4)—positive values mean blue-collar workers stay longer with the same employer relative to white-collar. New permanent hires coefficients are expressed in percentage points (p.p.) and show the change, relative to 2021Q4, in the blue–white difference in the share of permanent employees with tenure ≤3 months—negative values indicate a relative dip in the inflow of brand-new permanent blue-collar hires. In the 'Linear trend' columns, outcomes are detrended using group-specific linear pre-trends estimated over 2019Q4–2021Q4 while preserving the 2021Q4 baseline. Event time is denoted by δ(k), with δ(k-) being the 'Placebo' (pre-reform) and δ(k+) the 'Effect' (post-reform), for example, in this case, δ(−8)=2019Q4, δ(0)=2021Q4 (baseline), δ(+1)=2022Q1 (reform quarter), and δ(+8)=2023Q4. We report coefficients for δ ∈ {−8,…,+8}; δ (avg) is the 'average cumulative/total effect', i.e. a summary of the post-reform effects. "Joint post (p)" tests that all post-reform coefficients are jointly zero; "Joint placebo (p)" tests that all pre-reform leads are jointly zero if they are jointly close to zero, parallel trends are more plausible. Standard errors not reported; *** p<0.01, ** p<0.05, * p<0.1.

For the fixed-term share among brand-new hires with tenure ≤ 3 months (Table 30) the pre-period fails the placebo (pre-trend) test, and the post-treatment coefficients are small, imprecise, and sign-inconsistent; therefore, the rejection of the joint post-period null cannot be interpreted causally. The pattern is consistent with high volatility in this very narrow sample (≤3-month hires), where cell sizes are small and composition shifts quarter-to-quarter. This holds in both the undetrended specification (Model 5) and the linear-detrended specification (Model 7).

We do not find credible evidence that firms shifted blue-collar employment from permanent to fixed-term due to **Article 64**. The detailed results are based on Table 30.

For permanent share among all employees, post effects are tiny and mostly not significant throughout. The only "hit" is at δ+8 (2023Q4), about −5 to −6.8 p.p.. Furthermore, the pre-period fails the placebo; indeed the pre-period already drifts downward, so that the negative coefficient at δ+8 looks like a continuation of a pre-existing trend, not a causal effect of the reform. This is confirmed both in the no detrended specification (Model 6) and in the linear detrended specification (Model 8). The last two results are fully consistent with the main finding that the reform acted through retention/longer spells rather than entry-side substitution and/or contract-mix substitution.

Table 30: Article 64 estimation results – contract mix and stock contract mix effect.

	No detrend		Linear detrend	
	Fixed-term share among tenure ≥ 3m	Permanent share	Fixed-term share among tenure ≥ 3m	Permanent share
	Model 5	Model 6	Model 7	Model 8
δ (-8)	-0.120	-0.063	0.129	-0.044**
δ (-7)	-0.105	-0.065*	0.120	-0.044**
δ (-6)	-0.249*	-0.056*	0.263**	-0.039**
δ (-5)	-0.266*	-0.050*	0.274**	-0.038**
δ (-4)	-0.076	-0.024	0.096	-0.015
δ (-3)	-0.164	-0.020	0.176	-0.013
δ (-2)	0.154*	-0.029*	-0.147*	-0.025*
δ (-1)	0.091	-0.027**	-0.089	-0.025**
δ (0)	0	0	0	0
δ (+1)	0.110	0.000	-0.113	-0.002
δ (+2)	0.101	-0.002	-0.108	-0.007
δ (+3)	0.115	-0.025	-0.128	-0.034
δ (+4)	-0.015	-0.006	-0.004	-0.016
δ (+5)	-0.030	-0.016	0.023	-0.028
δ (+6)	0.039	-0.019	-0.053	-0.036
δ (+7)	-0.020	-0.031	0.004	-0.052
δ (+8)	-0.164	-0.050**	0.155	-0.068*
δ (avg)	0.012	-0.019	-0.023	-0.030
Joint post (p)	3.05e-09	0.279	2.25e-07	0.277
Joint placebo (p)	0.0381	0.0115	0.0433	0.00451
Controls	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Group FE	Y	Y	Y	Y

Source: own computation.

Note: see note to previous table. For fixed-term share among brand-new hires (tenure ≤ 3 months). Coefficients are in percentage points and report how the blue–white difference in the share of fixed-term contracts among brand-new hires changes relative to the baseline quarter (event time 0, 2021Q4). Positive values indicate a relative shift toward fixed-term at entry for blue-collar (treated) employees compared with white-collar (control); negative values indicate a relative tilt toward permanent at entry. For permanent share (all employees), coefficients are in percentage points and capture the change, relative to 2021Q4, in the blue–white difference in the share of permanent employees in the workforce stock. Negative values mean the permanent share falls for blue-collar relative to white-collar –consistent with gradual reweighting toward fixed-term in the stock; positive values mean the opposite. In both cases, coefficients at negative event times are placebo (pre-trend) checks.

Overall, the analysis reveals that **Article 28** on Parental leave led to greater take-up without job loss. Employment and labour-force participation remained broadly unchanged, suggesting that the increased take-up was not associated with job losses or exits to inactivity. Regarding **Article 64** on the Abolition of white-/blue-collar distinction, the estimation results indicate improved job stability for blue-collar workers. No significant substitution into fixed-term employment or reduced hiring were detected.

Annex C.2.3.Spain: Simplification of contracts

Indicators and methodological approach

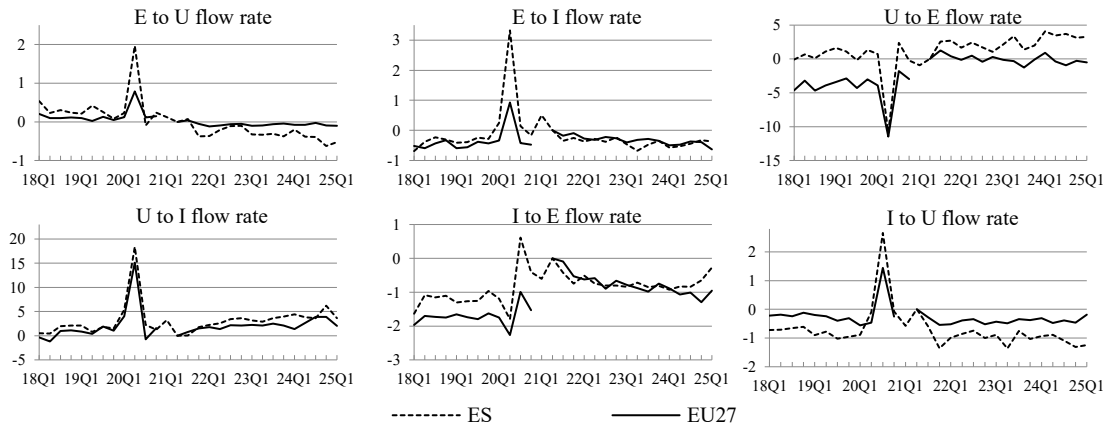
Since the same indicators and methodology are used to analyse the unemployment insurance reform in France and the simplification of contracts in Spain (see discussion in Annex A.2.3), additional details already provided for France at the start of Annex C.2.1 are also relevant for the analysis of the Spanish reform.

The main aspects are only recalled here. First, the all group units with a weighted employment below 2 (2000 workers per group) are dropped from the sample. This value corresponds to the reliability threshold defined by Eurostat. Second, the same controls are included and the same issue with differences in occupations across the treated and control groups are observed (i.e. over-representation of high skill occupation in the control group and of low skill occupation in the treatment group). Finally, similar robustness checks are performed with some slight differences. The threshold to identify the control and treatment group is set to 12.5% and the minimum size value by group is set to 8 (the upper reliability threshold provided by Eurostat, as done for France). In a last check, we explore the potential impacts of the large inflow of migrant workers (see discussion in Section 5.1.3) on the estimation results by restricting the sample to native workers only.

Descriptive evidence

This section displays additional figures for the descriptive analysis. As in the case of the reform of the unemployment insurance system in France, Figure 29 and Figure 30 displays indicators for flows and labour market stocks in the form of indices normalised such that the 2021Q2 for flows and the 2021Q1value for stocks are equal to zero. Due to the new IESS framework regulation, flow rates for most Member States are missing in 2021Q1. These two figures are useful to look more closely at the recent evolutions of the indicators. Figure 31, Figure 32 and Figure 33 complement this evidence by providing indicators for labour market stocks for respectively, non-native, young (aged 15-24) and women workers.

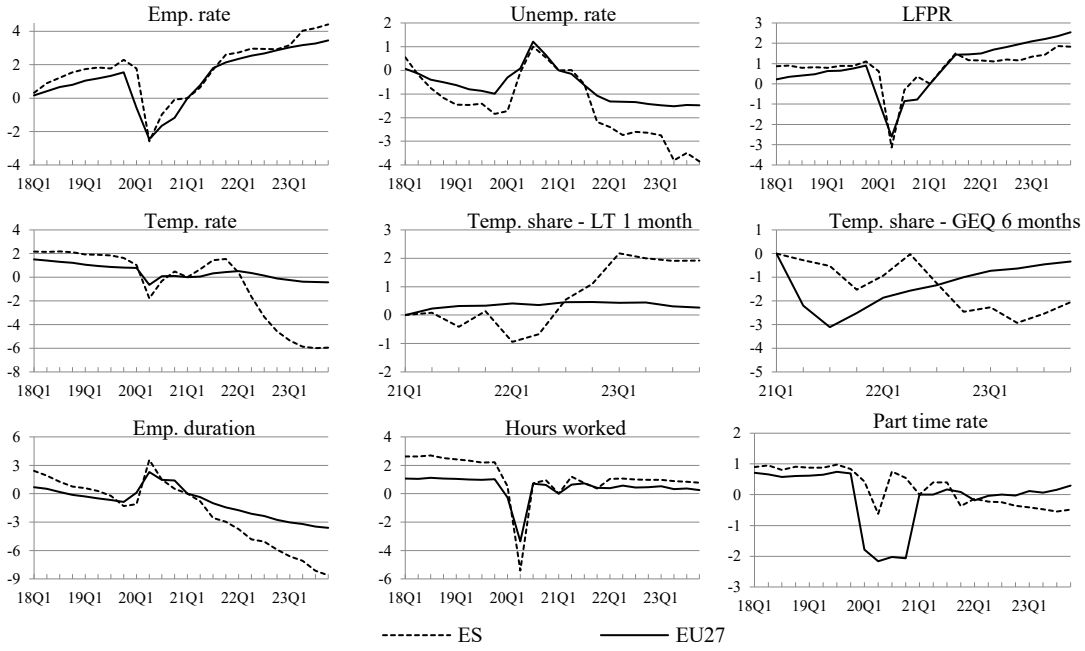
Figure 29: Spain Quarterly flow rates – 2018Q1-2025Q1 – Index 2021Q2 = 0



Note: Seasonally adjusted flows retrieved from Eurostat [lfsi_long_q]. “E” stands for employment, “U” for

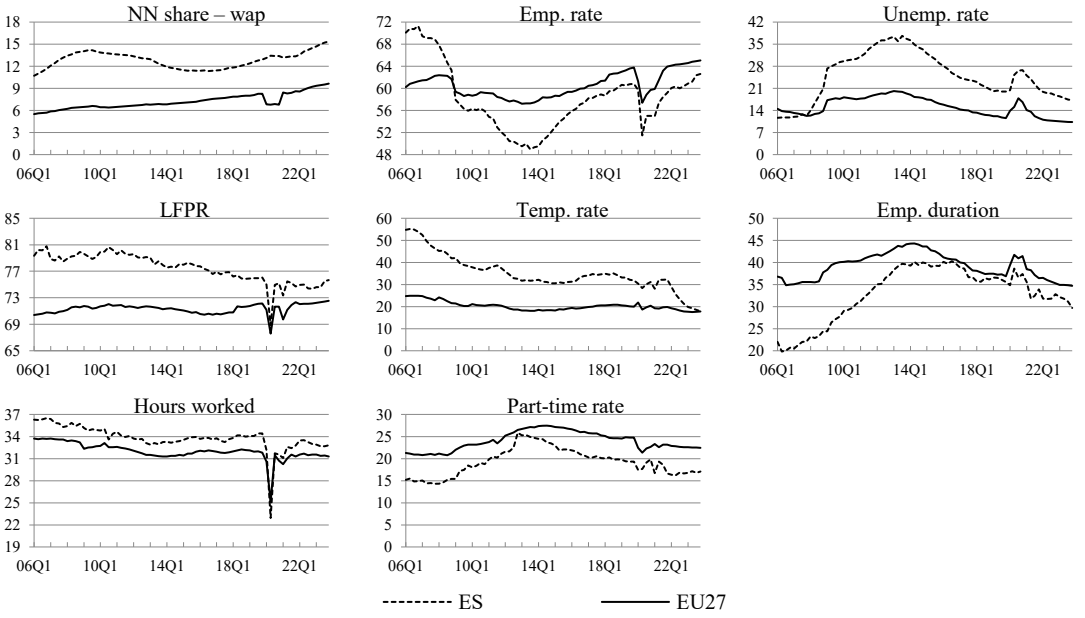
unemployment and “I” for inactivity. Series are normalised such that flow rates are equal to 0 in 2021Q2. Data for 2021Q1 is missing for several countries due to the introduction of the IESS framework regulation.

Figure 30: Spain labour market indicators – 20061-2023Q4 – Index 2021Q1 = 0



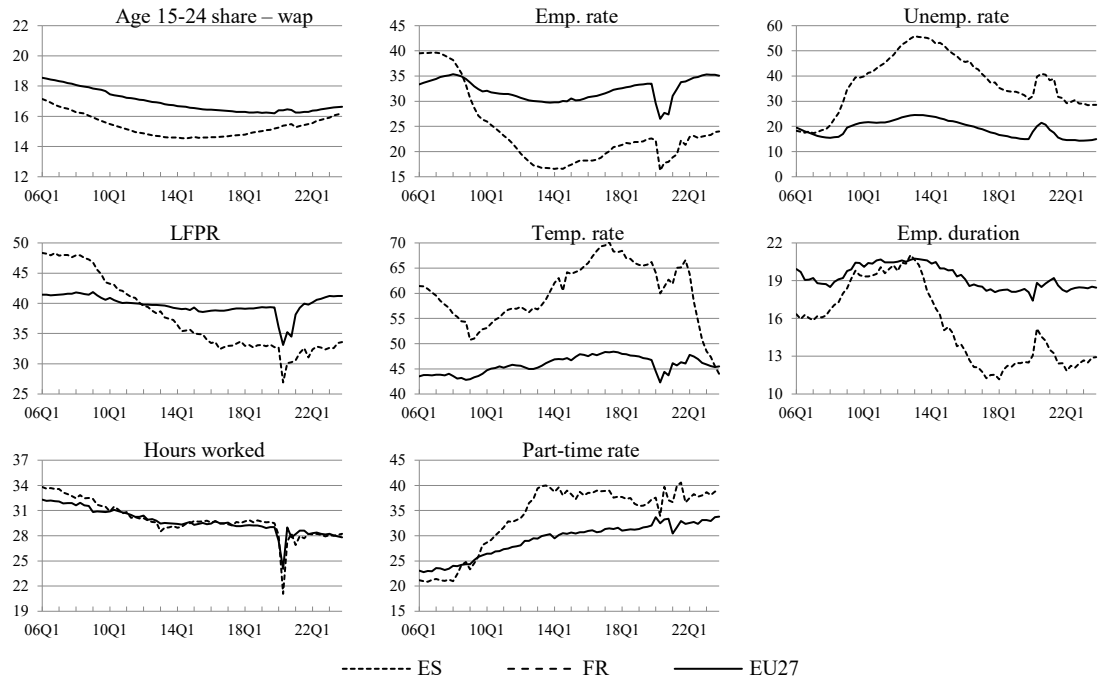
Note: Series are extracted from the EU-LFS and seasonally adjusted using Demetra. Series are expressed as indices such that the 2021Q1 value is equal to zero. ‘LFPR’ is the labour force participation rate, ‘LT’ stands for less than and ‘GEQ’ for greater or equal than.

Figure 31: Labour market indicators – Non-natives – %



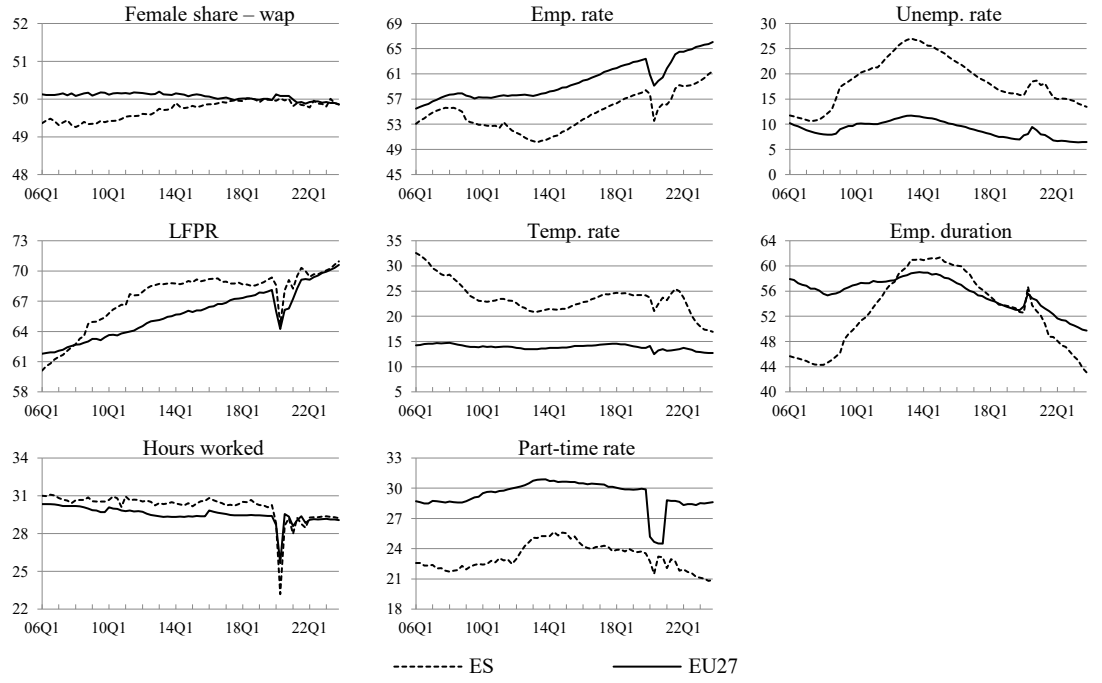
note: Indicators constructed from quarterly EU-LFS data for Non-natives individuals (i.e. with a citizenship other than the one from the country of interest), and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. ‘NN’ stands for non-natives, ‘wap’ for working age population aged 15-64 and ‘LFPR’ for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-39.

Figure 32: Labour market indicators – Age 15-24 – %



note: Indicators constructed from quarterly EU-LFS data for individuals aged 15-24, and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. 'wap' stands for working age population aged 15-64 and 'LFPR' for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-24.

Figure 33: Labour market indicators – Female – %



note: Indicators constructed from quarterly EU-LFS data for female, and expressed as averages (Emp. Duration in months and Hours worked) or in percentages. Series have been seasonally adjusted using Demetra. 'wap' stands for working age population aged 15-64 and 'LFPR' for labour force participation rate. Average employment duration is computed from a sample restricted to workers aged 15-39.

Estimation results

This annex presents detailed results on the SCM used to estimate the impact of reforms FR-C[C8]-R[R4] and ES-C[C23]-R[R4] on labour market flows. The results displayed includes the estimated weights in Table 31, placebo tests whereby the SCM is applied individually to each series in the donor pool in Figure 34. These placebo tests can then be used to assess goodness of fit of the SCM (using e.g. the rmspe) in the donor pool, which is then compared to the same statistic for the treated unit of interest. This allows to perform inference on the estimated effects of the reform and determine statistical significance. Such permutation tests should be treated with care however (see Annex A.2.1). The results from this test are displayed in Figure 35.

Table 31: SCM weights – Reform ES-C[C23]-R[R4]

	weights						
	E-U	E-I	U-E	U-I	I-E	I-U	E-N
AT I-E	-	0.03	-	0.02	0.18	-	-
AT U-I	-	0.00	-	0.05	0.01	-	0.07
CH E-I	-	0.01	-	0.03	-	-	-
CH E-N	-	-	-	-	-	-	0.06
CH E-U	0.11	-	-	-	-	0.07	-
CH I-E	-	-	-	-	-	0.00	-
CY E-I	-	0.00	-	-	-	0.00	-
CY I-E	-	0.04	-	-	-	-	-
CY U-E	-	-	0.19	0.07	0.06	-	-
CZ E-U	0.15	-	-	-	-	0.06	-
CZ I-U	0.09	-	-	-	-	0.06	-
CZ U-E	-	-	0.10	-	-	-	-
CZ U-I	-	0.04	-	-	-	-	-
DK E-I	-	-	-	0.03	-	-	-
DK E-U	-	-	-	-	-	0.01	-
EE E-I	-	-	-	0.09	0.01	-	-
EE E-U	0.01	-	0.00	0.00	0.03	0.02	-
EE I-E	-	0.02	-	0.11	0.14	-	-
EE I-U	-	0.00	-	-	-	0.01	-
EE U-E	-	0.02	-	0.03	-	-	-
EE U-I	-	0.04	-	0.02	-	-	-
FI U-E	-	0.03	-	-	-	-	-
HU E-I	-	-	-	-	-	0.05	-
HU E-N	-	-	-	-	-	-	0.07
HU E-U	0.03	-	-	-	0.01	0.02	-
HU I-U	-	0.02	-	-	-	-	-
IE E-U	0.03	-	-	-	-	-	-
IE I-U	-	0.09	-	-	-	0.05	0.12
IE U-I	-	0.03	0.09	0.11	-	-	-
IT I-U	-	-	-	-	-	0.03	-
IT U-E	-	-	-	-	0.10	-	-
LT E-I	-	-	0.02	0.02	0.00	-	-

	weights						
	E-U	E-I	U-E	U-I	I-E	I-U	E-N
LT E-U	0.04	-	-	-	-	-	-
LT I-E	-	-	-	0.03	-	-	-
LT I-U	-	-	-	0.01	0.04	-	-
LT U-E	-	-	-	0.01	-	-	-
LV E-I	-	-	0.07	0.02	-	-	-
LV E-N	-	-	-	-	-	-	0.15
LV E-U	-	0.09	-	-	0.03	0.03	-
LV I-E	-	0.03	0.00	0.01	-	-	-
LV I-U	0.09	0.08	0.02	-	0.03	0.06	0.08
LV U-E	-	0.04	-	-	-	0.03	-
NL I-E	-	0.07	-	-	-	-	-
NL I-U	-	-	-	-	-	0.13	0.06
NL U-E	-	-	0.20	-	0.28	-	-
NL U-I	0.18	0.22	0.03	0.20	0.02	0.03	0.12
NO I-U	-	-	0.07	0.02	-	-	-
NO U-E	-	-	-	-	-	0.10	-
NO U-I	-	-	-	-	-	0.06	0.01
PL E-I	-	-	-	-	0.03	0.02	-
PL I-E	-	0.01	-	0.08	-	-	-
PL N-E	-	-	-	-	-	-	0.02
PL U-E	-	-	0.05	-	-	-	-
PL U-I	-	-	0.12	-	-	-	-
PT E-N	-	-	-	-	-	-	0.08
PT I-U	0.05	-	-	-	-	-	0.05
PT U-E	-	-	0.02	-	-	-	-
RO E-U	-	0.05	-	0.01	0.02	-	-
RO I-E	-	-	-	-	-	-	0.02
RO I-U	-	0.03	-	-	-	-	-
RO U-E	-	-	0.02	-	-	-	-
RO U-I	-	-	-	0.02	0.02	-	-
SE U-I	-	-	-	-	-	0.08	-
SI E-I	0.05	-	-	-	-	0.01	-
SI E-N	-	-	-	-	-	-	0.07
SI E-U	0.12	-	-	-	-	0.02	-
SI I-U	-	-	-	-	-	0	0.01
SI U-E	0.06	-	-	-	-	-	0.01
J	102.00	102.00	102.00	102.00	102.00	102.00	105.00
pre rmspe	-	-	-	-	-	-	-
treated	0.04	0.03	0.02	0.03	0.04	0.03	0.02
donors	0.10	0.10	0.10	0.10	0.10	0.10	0.08
post rmspe	-	-	-	-	-	-	-
treated	0.18	0.06	0.04	0.28	0.06	0.08	0.08
donors	0.19	0.19	0.19	0.19	0.19	0.19	0.14

Note: Estimated weights used to generate the synthetic controls and compute the impact of the reform. 'J' corresponds the total number of units in the donor pool and the bottom rows display the root mean square prediction error in the sample before and after the intervention.

As noted in Section 5.1.3, the pre-treatment fit is generally strong across transition rates, and the synthetic series closely tracks the Spanish data until the reform date. After the reform, persistent deviations appears in separations from employment to unemployment. This flow consistently lies below its synthetic counterpart, and the divergence appears to increases over time after the reform (Figure 27). This indicates a sustained reduction in separations into unemployment relative to the counterfactual.

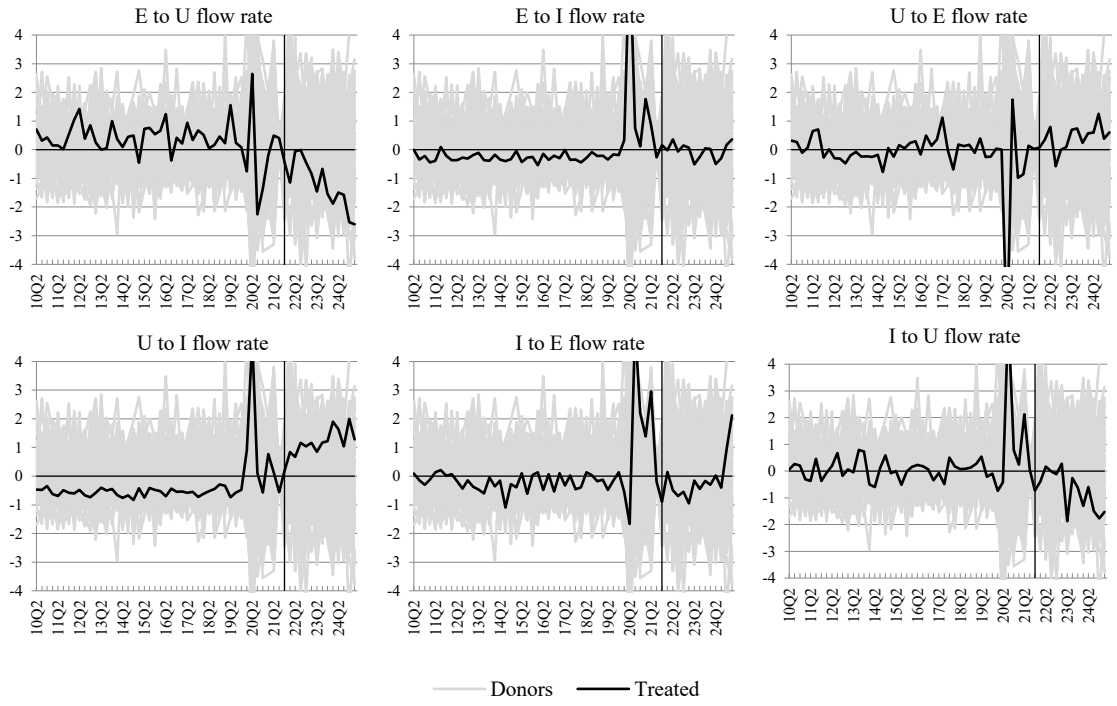
Two other transitions show more limited but noteworthy deviations. The unemployment to inactivity flow displays a visible upward deviation shortly after the reform, suggesting an increase in transitions from unemployment into inactivity. For the inactivity to unemployment transition rate, the Spanish series remains close to its synthetic analogue initially but shows larger deviations toward the end of the period. This late divergence is small in magnitude but may point to some rebalancing taking place for flows between (i.e. both from and to) unemployment and inactivity. For the remaining flows, particularly job finding transitions and movements from employment into inactivity, no systematic post-reform deviation emerges.

The structure of the SCM weights helps can provide interesting insights on the characteristics of Spanish flow rates. For employment to unemployment transitions, a large share of the total weights comes from the same transition rates in the donor pool. This concentration of weight on closely related separation flows indicates that Spain's pre-reform dynamics for this transition are well approximated by a small set of comparable donor flows, which strengthens the credibility of the estimated post-reform divergence (less so in the case of France). A similar, although less pronounced, pattern is found for several other transitions. The transition from unemployment to employment receives its largest contribution from donor transitions of the same type, as is the case for the transitions from inactivity to employment and from inactivity to unemployment, even though each of these transitions incorporates non-negligible contributions from other flow rates. By contrast, the transitions from employment to inactivity and from unemployment to inactivity are clearly more heterogeneous: their synthetic controls are built from a broad mix of flows from the donor pool,

The country-level composition mirrors this pattern of partial concentration and partial dispersion. No single Member State dominates across all transitions, and the synthetic control for Spain is assembled from a diversified set of donors. The Netherlands, Latvia, Estonia, Ireland and Czechia frequently provide sizeable contributions, although their importance varies by transition. For the transition from employment to unemployment, countries such as Czechia, Switzerland, Slovenia, Latvia and the Netherlands together account for a substantial part of the weight, consistent with the relatively homogeneous pre-reform pattern for separations. For the transition from unemployment to employment, the

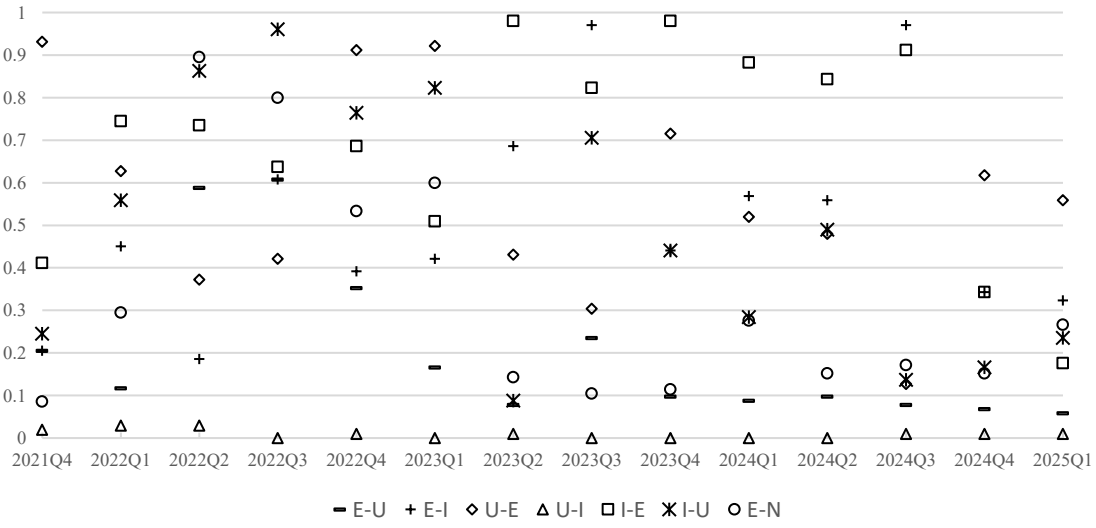
Netherlands, Poland and Cyprus contribute prominently, while the inactivity-related transitions rely on a broader and more variable set of donors, including Estonia, Austria and others.

Figure 34: Placebo estimations – Reform ES-C[C23]-R[R4]



Note: Placebo tests applying the SCM individually to all series in the donor pool. Effects are displayed in percentage points within a range restricted to +-4 percentage points.

Figure 35: Permutation tests' significance – Reform ES-C[C23]-R[R4]



Note: P-values from permutation tests for each flow and each period after the intervention.

The tables and figures below present results for the **DiD** estimation of the reform's impact on employment and open-ended contracts respectively. These results include the different robustness checks performed, which are the restriction on minimum group size, an alternative treatment threshold of 12.5 percent, and a sample restricted to native workers.

Table 32 and Table 33 display results for the baseline sample discussed in the main text of this report. With regards to employment, the average treatment effects are close to zero in the simpler specification. When occupation fixed effects are introduced, the estimated coefficients increase in magnitude and reach values between 6 and 10 percent in some models. This change may reflect the correction of occupational-composition differences between treated and control groups, as suggested by the reduction in pre-treatment estimates once these fixed effects are introduced. In addition, although the average effects remain statistically insignificant, the dynamic estimates exhibit a gradual upward pattern in the post-reform period, with coefficients becoming increasingly positive at longer horizons. This behaviour is qualitatively consistent with the expectation that employment stocks should adjust more slowly (Section 5.1.1). Taken together, however, the variability across specifications and the lack of statistical precision indicate that the reform did not produce robust or clearly measurable effects on overall employment levels.

By contrast, the results for open-ended employment display a clearer and more consistent pattern. In the baseline specification, the estimated average effect is around 9-10 percentage points, increasing to approximately 18-20 percentage points once sectoral and occupational interactions are included. These effects are statistically significant and broadly stable across specifications, pointing to a sustained increase in the stock of permanent contracts among groups more exposed to the reform and a decrease in labour market segmentation. Estimated effects show a gradual and increasingly pronounced rise through time, with limited effects in the first quarters after the reform and progressively stronger estimates from the third or fourth quarter of 2022 onwards. By the end of the observation window, the effects exceed 14 percentage points in the baseline specification and reach above 20 percentage points in models including sectoral and occupational interactions.

The robustness checks confirm the overall results. Restricting the sample to groups with at least 8,000 workers leaves the employment effects small and statistically insignificant, while the open-ended employment effects remain positive and increasing over time, albeit somewhat reduced in magnitude. Applying a higher threshold of 12.5 percent to define treatment yields similarly limited employment effects and preserves the positive, gradually rising pattern for open-ended employment, with average effects of around 7-11 percentage points depending on specification. Excluding non-native workers produces slightly more positive employment estimates at longer horizons in the controlled models, though these remain statistically imprecise, and strengthens the effects on open-

ended employment, which reach magnitudes comparable to or exceeding those in the baseline sample.

Taken together, the DiD evidence for Spain indicates that the reform had limited and statistically fragile effects on total employment, but a robust and sustained positive impact on open-ended employment. The improved pre-treatment balance when occupational composition is accounted for, combined with the stability of results across alternative sample definitions and treatment thresholds, supports the interpretation that the reform contributed to a gradual shift toward more stable employment relationships among the most exposed groups, even if it did not generate measurable gains in employment levels yet.

Table 32: Estimation results – log of employment – ES-C[C23]-R[R4]

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.008	0.007	0.009	0.004	0.095	0.064	0.008	0.101
δ(-8)	0.139‡	0.139‡	0.131*	0.137‡	-0.008	-0.020	0.139‡	-0.023
δ(-7)	0.145‡	0.145‡	0.137‡	0.148‡	0.000	-0.012	0.145‡	-0.013
δ(-6)	0.089	0.091	0.089	0.125*	0.003	0.001	0.089	0.007
δ(-5)	0.014	0.016	0.021	0.048	-0.036	-0.033	0.014	-0.030
δ(-4)	0.046	0.048	0.051	0.031	-0.016	-0.012	0.046	-0.014
δ(-3)	-0.018	-0.017	-0.011	-0.011	-0.027	-0.014	-0.018	-0.019
δ(-2)	0.003	0.003	0.006	0.008	0.004	0.011	0.003	0.009
δ(-1)	-0.037	-0.037	-0.036	-0.034	-0.036	-0.034	-0.037	-0.034
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	-0.002	-0.002	0.000	-0.006	0.088	0.128‡	-0.002	0.089
δ(3)	-0.014	-0.014	-0.013	-0.019	0.112	0.050	-0.014	0.115
δ(4)	0.028	0.028	0.032	0.025	0.110	0.070	0.028	0.119
δ(5)	0.002	0.001	0.005	0.000	0.053	-0.011	0.002	0.065
δ(6)	0.037	0.036	0.038	0.035	0.127	0.167*	0.037	0.138
δ(7)	0.026	0.025	0.026	0.022	0.152	0.090	0.026	0.161
δ(8)	0.026	0.025	0.024	0.021	0.108	0.069	0.026	0.112
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(364; 420)							
Joint placebo test	0.01	0.01	0.03	0.04	0.37	0.32	0.01	0.34
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 33: Estimation results – log of open-ended employment – ES-C[C23]-R[R4]

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.094‡	0.094*	0.112‡	0.099*	0.179‡	0.166‡	0.094*	0.202‡
δ(-8)	0.128‡	0.127*	0.124*	0.132‡	-0.005	-0.001	0.128*	-0.017
δ(-7)	0.138‡	0.138‡	0.134‡	0.146‡	0.001	-0.001	0.138‡	-0.010
δ(-6)	0.088	0.089	0.081	0.118*	-0.004	0.000	0.088	-0.013
δ(-5)	0.030	0.031	0.034	0.052	-0.046	-0.030	0.030	-0.043
δ(-4)	0.063	0.065	0.064	0.036	-0.027	-0.013	0.063	-0.024
δ(-3)	-0.002	-0.001	0.006	-0.002	-0.030	-0.020	-0.002	-0.027
δ(-2)	0.024	0.024	0.025	0.023	0.007	0.012	0.024	0.008
δ(-1)	-0.039	-0.039	-0.040	-0.039	-0.045	-0.045	-0.039	-0.046
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.040	0.040	0.050	0.041	0.126‡	0.179‡	0.040	0.135‡
δ(3)	0.065	0.065	0.083	0.067	0.180‡	0.138‡	0.065	0.201‡
δ(4)	0.134‡	0.133‡	0.160‡	0.139‡	0.218‡	0.194‡	0.134‡	0.251‡
δ(5)	0.113*	0.112*	0.140‡	0.121*	0.166‡	0.125	0.113*	0.202‡
δ(6)	0.126*	0.125*	0.149*	0.135*	0.212‡	0.264‡	0.126*	0.245‡
δ(7)	0.145‡	0.144*	0.165‡	0.152*	0.261‡	0.219‡	0.145*	0.290‡
δ(8)	0.141‡	0.140*	0.159‡	0.149*	0.226‡	0.202‡	0.141*	0.251‡
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect. VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(345; 400)							
Joint placebo test	0.01	0.02	0.03	0.01	0.32	0.36	0.01	0.37
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment.. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Group unit size equal to at least 8000 workers

Table 34: Estimation results – log of employment – ES-C[C23]-R[R4] – restriction on group unit size

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.019	-0.018	-0.022	-0.033	0.060	0.134*	-0.019	0.050
δ(-8)	0.074	0.072	0.069	0.067	-0.001	-0.015	0.074	-0.002
δ(-7)	0.061	0.059	0.059	0.058	0.001	-0.011	0.061	0.002
δ(-6)	-0.063	-0.065	-0.062	-0.039	-0.064‡	-0.067‡	-0.063	-0.060‡
δ(-5)	-0.127‡	-0.128‡	-0.120‡	-0.086*	-0.091‡	-0.102‡	-0.127‡	-0.084‡
δ(-4)	-0.120‡	-0.120‡	-0.118*	-0.106*	-0.077‡	-0.091‡	-0.120‡	-0.080‡
δ(-3)	-0.138‡	-0.138‡	-0.136‡	-0.124‡	-0.063‡	-0.064‡	-0.138‡	-0.062‡
δ(-2)	-0.097*	-0.098*	-0.099*	-0.088	-0.034	-0.038	-0.097*	-0.034
δ(-1)	-0.029	-0.029	-0.032	-0.023	-0.011	-0.011	-0.029	-0.012
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	-0.003	-0.002	-0.003	-0.012	0.082	0.168‡	-0.003	0.076
δ(3)	-0.011	-0.011	-0.013	-0.024	0.073	0.131‡	-0.011	0.063
δ(4)	-0.009	-0.009	-0.013	-0.023	0.062	0.147*	-0.009	0.051
δ(5)	-0.007	-0.006	-0.011	-0.023	0.069*	0.135‡	-0.007	0.056
δ(6)	-0.002	-0.001	-0.006	-0.019	0.082	0.169*	-0.002	0.073
δ(7)	-0.038	-0.037	-0.042	-0.056	0.046	0.104	-0.038	0.036
δ(8)	-0.049	-0.049	-0.056	-0.070	0.022	0.106	-0.049	0.006
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect. FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(364; 420)							
Joint placebo test	0.01	0.01	0.03	0.04	0.37	0.32	0.01	0.34
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the size of each group is restricted to unit with at least 8000 workers on average. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 35: Estimation results – log of open-ended employment – ES-C[C23]-R[R4] – restriction on group unit size

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.048	0.049	0.051	0.041	0.134‡	0.206‡	0.048	0.123‡
δ(-8)	0.075	0.074	0.075	0.072	-0.004	-0.013	0.075	-0.004
δ(-7)	0.072	0.072	0.071	0.070	-0.008	-0.018	0.072	-0.007
δ(-6)	-0.023	-0.024	-0.029	-0.015	-0.080*	-0.080*	-0.023	-0.079‡
δ(-5)	-0.099*	-0.100‡	-0.093*	-0.070	-0.116‡	-0.118‡	-0.099‡	-0.106‡
δ(-4)	-0.111‡	-0.111‡	-0.113*	-0.104*	-0.109‡	-0.114‡	-0.111‡	-0.109‡
δ(-3)	-0.127‡	-0.127‡	-0.128‡	-0.119‡	-0.080‡	-0.079‡	-0.127‡	-0.078‡
δ(-2)	-0.104‡	-0.104‡	-0.107‡	-0.099‡	-0.042*	-0.046*	-0.104‡	-0.041
δ(-1)	-0.047	-0.047	-0.051	-0.044	-0.035	-0.027	-0.047	-0.035
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.016	0.016	0.017	0.011	0.114*	0.200‡	0.016	0.107
δ(3)	0.047	0.047	0.050	0.040	0.146‡	0.198‡	0.047	0.137‡
δ(4)	0.065	0.065	0.068	0.057	0.140‡	0.220‡	0.065	0.129‡
δ(5)	0.078	0.078‡	0.082*	0.069*	0.149‡	0.218‡	0.078‡	0.134‡
δ(6)	0.086	0.086*	0.090*	0.077	0.184‡	0.270‡	0.086*	0.171‡
δ(7)	0.060	0.061	0.063	0.050	0.159‡	0.211‡	0.060	0.143‡
δ(8)	0.045	0.045	0.047	0.033	0.120*	0.200‡	0.045	0.100
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect. VA X Occup. FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(345; 400)							
Joint placebo test	0.01	0.02	0.03	0.01	0.32	0.36	0.01	0.37
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the size of each group is restricted to unit with at least 8000 workers on average. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Thresholds for identification of treatment group equal to 12.5%

Table 36: Estimation results – log of employment – ES-C[C23]-R[R4] – threshold for control group = 12.5%

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	-0.006	-0.006	-0.005	-0.011	0.030	-0.011	-0.006	0.029
δ(-8)	0.099‡	0.099*	0.091*	0.094*	0.022	0.005	0.099*	0.009
δ(-7)	0.084*	0.084*	0.079*	0.084*	0.008	-0.005	0.084*	-0.001
δ(-6)	0.019	0.018	0.024	0.045	-0.026	-0.026	0.019	-0.011
δ(-5)	0.008	0.008	0.015	0.035	-0.018	-0.015	0.008	-0.003
δ(-4)	0.016	0.016	0.018	0.015	-0.016	-0.011	0.016	-0.011
δ(-3)	-0.028	-0.028	-0.026	-0.020	-0.033	-0.019	-0.028	-0.026
δ(-2)	-0.011	-0.012	-0.012	-0.006	-0.011	-0.002	-0.011	-0.008
δ(-1)	-0.008	-0.009	-0.008	-0.006	-0.008	-0.006	-0.008	-0.006
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.004	0.005	0.008	0.001	0.042	0.014	0.004	0.042
δ(3)	0.012	0.013	0.016	0.008	0.064	0.017	0.012	0.064
δ(4)	0.021	0.021	0.024	0.017	0.053	0.006	0.021	0.054
δ(5)	-0.028	-0.028	-0.027	-0.031	-0.004	-0.046	-0.028	-0.003
δ(6)	-0.008	-0.008	-0.009	-0.012	0.030	0.002	-0.008	0.028
δ(7)	-0.009	-0.010	-0.010	-0.015	0.042	-0.005	-0.009	0.039
δ(8)	-0.018	-0.018	-0.022	-0.025	0.015	-0.032	-0.018	0.006
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(364; 420)							
Joint placebo test	0.01	0.01	0.03	0.04	0.37	0.32	0.01	0.34
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the threshold to define the control and treatment is set to 10%. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 37: Estimation results – log of open-ended employment – ES-C[C23]-R[R4] – threshold for control group = 12.5%

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.074‡	0.074*	0.081*	0.072*	0.106‡	0.070	0.074*	0.111‡
δ(-8)	0.089*	0.089	0.087	0.086	0.019	0.026	0.089	0.008
δ(-7)	0.096‡	0.096*	0.093*	0.094*	0.023	0.025	0.096*	0.011
δ(-6)	0.030	0.030	0.026	0.042	-0.018	-0.009	0.030	-0.028
δ(-5)	0.014	0.015	0.016	0.033	-0.026	-0.005	0.014	-0.018
δ(-4)	0.009	0.009	0.007	0.004	-0.038	-0.021	0.009	-0.031
δ(-3)	-0.004	-0.004	-0.003	-0.001	-0.019	-0.012	-0.004	-0.016
δ(-2)	0.004	0.004	0.002	0.006	-0.005	-0.003	0.004	-0.005
δ(-1)	-0.013	-0.013	-0.013	-0.012	-0.016	-0.022	-0.013	-0.016
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.045	0.046	0.050	0.043	0.083‡	0.071	0.045	0.084‡
δ(3)	0.062	0.062	0.069	0.058	0.103‡	0.063	0.062	0.107‡
δ(4)	0.095‡	0.095*	0.106‡	0.093*	0.123‡	0.067	0.095*	0.131‡
δ(5)	0.072	0.072	0.083	0.071	0.094*	0.056	0.072	0.105*
δ(6)	0.090*	0.090	0.100*	0.090	0.128‡	0.116*	0.090	0.136‡
δ(7)	0.111‡	0.111*	0.119*	0.108*	0.152‡	0.112	0.111*	0.158‡
δ(8)	0.119‡	0.119‡	0.124‡	0.117*	0.146‡	0.091	0.119‡	0.149‡
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(345; 400)							
Joint placebo test	0.01	0.02	0.03	0.01	0.32	0.36	0.01	0.37
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the threshold to define the control and treatment is set to 10%. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Excluding non-native workers

Table 38: Estimation results – log of employment – ES-C[C23]-R[R4] – sample restricted to workers native workers

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.048	0.047	0.042	0.036	0.154‡	0.103	0.048	0.139‡
δ(-8)	0.186‡	0.186‡	0.184‡	0.177‡	0.011	-0.004	0.186‡	0.001
δ(-7)	0.223‡	0.224‡	0.218‡	0.219‡	0.036	0.021	0.223‡	0.026
δ(-6)	0.175‡	0.176‡	0.176‡	0.203‡	0.053	0.048	0.175‡	0.056
δ(-5)	0.099	0.100	0.106*	0.127‡	0.008	0.009	0.099	0.019
δ(-4)	0.099*	0.101	0.102	0.107*	0.008	0.013	0.099	0.015
δ(-3)	0.081	0.082	0.088	0.092	0.015	0.026	0.081	0.025
δ(-2)	0.102*	0.102*	0.106*	0.110‡	0.049	0.054	0.102*	0.056
δ(-1)	0.022	0.022	0.025	0.026	-0.013	-0.011	0.022	-0.009
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.039	0.039	0.036	0.030	0.156‡	0.169‡	0.039	0.144‡
δ(3)	0.041	0.041	0.035	0.028	0.176‡	0.091	0.041	0.160‡
δ(4)	0.051	0.051	0.047	0.038	0.153*	0.105	0.051	0.139*
δ(5)	0.040	0.039	0.037	0.028	0.110	0.026	0.040	0.099
δ(6)	0.075	0.074	0.070	0.063	0.192‡	0.204‡	0.075	0.180‡
δ(7)	0.065	0.064	0.056	0.050	0.200‡	0.115	0.065	0.183*
δ(8)	0.056	0.054	0.044	0.040	0.159*	0.110	0.056	0.135*
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(364; 420)							
Joint placebo test	0.01	0.01	0.03	0.04	0.37	0.32	0.01	0.34
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for employment when the sample excludes non-native individuals from any nationality. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Table 39: Estimation results – log of open-ended employment – ES-C[C23]-R[R4] – sample restricted to native workers

	Baseline	Controls						
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
δ	0.107‡	0.107‡	0.112‡	0.099*	0.205‡	0.174‡	0.107‡	0.202‡
δ(-8)	0.155‡	0.155‡	0.154‡	0.149‡	0.006	0.002	0.155‡	-0.005
δ(-7)	0.215‡	0.215‡	0.210‡	0.213‡	0.045	0.033	0.215‡	0.032
δ(-6)	0.185‡	0.185‡	0.180‡	0.209‡	0.068	0.069	0.185‡	0.064
δ(-5)	0.117*	0.117*	0.121*	0.141‡	0.019	0.033	0.117*	0.032
δ(-4)	0.113*	0.113*	0.114*	0.109*	0.013	0.029	0.113	0.023
δ(-3)	0.088	0.088	0.096	0.094	0.027	0.038	0.088	0.037
δ(-2)	0.093	0.093	0.098*	0.097*	0.051	0.058	0.093	0.058
δ(-1)	-0.002	-0.002	0.002	0.000	-0.026	-0.022	-0.002	-0.023
δ(0)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
δ(1)	0	0	0	0	0	0	0	0
δ(2)	0.064	0.064	0.065	0.057	0.177‡	0.201‡	0.064	0.169‡
δ(3)	0.092*	0.092	0.094	0.082	0.210‡	0.149‡	0.092	0.203‡
δ(4)	0.113‡	0.113*	0.122*	0.104	0.202‡	0.175‡	0.113*	0.203‡
δ(5)	0.124‡	0.124*	0.137*	0.117*	0.197‡	0.134	0.124*	0.203‡
δ(6)	0.139‡	0.139*	0.148‡	0.132*	0.252‡	0.276‡	0.139*	0.255‡
δ(7)	0.140*	0.140*	0.141*	0.131	0.258‡	0.197‡	0.140*	0.252‡
δ(8)	0.152‡	0.151‡	0.157‡	0.143*	0.241‡	0.214‡	0.152‡	0.237‡
Controls								
Sect VA	N	Y	Y	Y	N	N	N	Y
Sect.VA X Sect.FE	N	N	Y	N	N	N	N	Y
Sect.VA X Occup.FE	N	N	N	Y	N	N	N	Y
Occup. FE (group 1 only)	N	N	N	N	Y	N	N	Y
Occup. FE	N	N	N	N	N	Y	N	N
Sect. .FE	N	N	N	N	N	N	Y	N
Switcher; total	(345; 400)							
Joint placebo test	0.01	0.02	0.03	0.01	0.32	0.36	0.01	0.37
† p<0.01, ‡ p<0.05, * p<0.1								

Note: Estimation results for open-ended employment when the sample excludes non-native individuals from any nationality. Controls include sectoral value added [namq_10_a10], 1-digit sectors and occupation fixed effects and interaction variables between sectoral value added and sectoral/occupational fixed effects. Switchers correspond to groups being or having been treated already, relevant for the estimation of the reform's impact Standard errors are clustered at the NACE 1-digit and ISCO 1-digit level. Results are obtained by relying on the STATA routine 'DID_multiplegt_dyn' developed by de Chaisemartin et al. (2024).

Annex D. Macroeconomic analysis

Annex D.1. Baseline specification

To estimate the short-term impacts on productivity and GDP of labour market reforms, we consider a standard Cobb-Douglas production function with constant returns to scale:

$$Y_t = A_t \; L_t^{\beta} \; K_t^{1-\beta}$$

Where Y_t is GDP, L_t is the number of workers, K_t is the capital stock, and A_t is the total factor productivity (TFP), β is the labour share, or the output elasticity of labour, and t is the time period in which the variables are observed. The equation is borrowed from the standard growth theory (Solow, 1956; Swan, 1956). This method has the advantage of creating a direct link between the labour input and economic output. The series are taken from Eurostat and Ameco[88] and are seasonally and calendar day adjusted.

Taking the natural logarithm of the original variables denoted in uppercase letters, we obtain:

$$y_t = \beta \times l_t + (1-\beta)k_t + a_t$$

Where y_t, l_t, k_t are observed, while β and a_t are unknowns. To obtain these, the equation above is estimated using Ordinary Least Squares (OLS), which estimates β as a regression coefficient, and a_t as the series for the regression residuals.

To estimate the impacts of the labour market reform in the short run, we need to estimate the level of output that would have been observed in the scenario of no labour market reform. For this, we first estimate the production function above using the entire sample period between 1998q1 and 2023q4, which yields an estimate for the substitution parameter β, and a time series for TFP that is represented by the regression residuals a_t. These can be used to obtain the predicted value of output that would have occurred in the absence of labour market reform:

$$\overline{Y_t} = \overline{L_t}^{\widehat{\beta}} \; K_t^{(1-\widehat{\beta})} \; \hat{A}_t$$

[88] Series [lfsq_eegaed] (L_t) and [namq_10_gdp – Employees] (Y_t) are sourced from Eurostat. For K_t, data come from Ameco [OKCT – Consumption of fixed capital] and [OKND – Net capital stock], combined with Ameco in combination with Eurostat's [namq_10_an6 – Gross fixed capital formation]. These series are used to apply the capital-accumulation equation and derive the capital stock over time.

In the equation above, the only unknown is the output, while K_t is observed, and $\bar{L_t}$ is the counterfactual level of employment derived from the estimation of labour market impacts in Section 5.1.3. For the capital input K_t, the original series is used, which implies that the labour market reform had no significant impact on capital stock.

Comparing the counterfactual level of output obtained as described above with the actual level of output under labour market reform provides an estimate of the impact of the reform on production in the short term.

To assess the long-run effect of the labour market reform on production, actual potential output is compared to the counterfactual level of potential output. Following (Chalaux et al., 2019), potential output is derived from the trend components of labour and TFP, while the capital stock series is left unchanged, since it a slow-moving series that does not necessarily require smoothing. Because the labour input and TFP are influenced by cyclical fluctuations, their series are filtered to extract long-term trends. In practice, potential technology is obtained by applying the Hodrick-Prescott (HP) filter to the TFP series, while potential employment is derived by applying the same filter to the relevant series for employment.

Annex D.2. Extended specification, decomposing the labour input

Recognising that the labour market reform in question did not only change the total labour input but also its composition, an extension of the baseline specification above is tested by decomposing the labour input into Permanent (P) and Temporary (T) workers, each associated with varying labour input elasticities (as done by Caggese et al., 2008; Aguirregabiria et al., 2014; Adessi 2014, Castellani et al., 2020; Nguyen et al., 2024, among others):

$$Y_t = A_t(P_t + s\,T_t)^{\beta}\;\; K_t^{1-\beta}$$

Where the elasticity of productivity with respect to permanent workers is normalised to one, hence s shows the elasticity of productivity with respect to temporary workers compared to that of permanent. If s < 1, the elasticity of productivity with respect to temporary workers is smaller than that of permanent.

In the equation above, Y_t, K_t, P_t and T_t are observed, while β, s and A_t are parameters to be estimated. However, in this new functional form, parameters cannot be estimated by OLS, and a nonlinear estimation approach is required. Despite determining empirically the value of s would be very informative, in this exercise we fix this to different candidate values. This allows to obtain a new series for the labour input, which is then used in the production function to estimate the substitution parameter β and the series for TFP using OLS.

Having chosen a value for s and estimated β and a_t following the same approach as for the baseline specification, one can then obtain the estimated level of output in the absence of the reform, using the counterfactual series for both P_t and T_t derived in chapter 2:

$$\bar{Y}_t = (\bar{P}_t + s\,\bar{T}_t)^{\hat{\beta}} K_t^{(1-\hat{\beta})} \hat{A}_t$$

Results from this specification complement the baseline approach and try to explore whether changes in the composition of employment coming from the reform have an impact on GDP, for instance, if permanent workers are more productive than temporary ones.

For the long-run effect, the same approach as above is followed, where actual potential output is compared to the counterfactual potential output. The only difference is that instead of taking the trend component of the counterfactual series for total employment, now the trend component for both the counterfactual series of permanent and temporary workers is taken and plugged into the production function, alongside the trend component for the estimated TFP series.

Annex D.3. The counterfactual level of employment

Labour market microdata can help to better understand the impact of reforms on the labour market. By controlling for common time effects (e.g. macroeconomic shocks), individual group fixed effects as well as other covariates, estimated impacts of the reform should be cleared from important sources of co-movements. Estimates retrieved from DiD are obtained at the group unit level defined by the combination of 1-digit NACE sectors and 3-digit ISCO occupations.

The DiD estimator proposed by de Chaisemartin et al. (2024) takes the following form (see also discussion in Annex A.2.2):

$$DID_{g,l} = Y_{g,F_g+l-1} - Y_{g,F_g-1} - \left(\frac{1}{N^g_{F_g+l-1}} \sum_{g':F'_g > F_g+l-1} Y_{g',F_g+l-1} - Y_{g',F_g-1} \right), \quad (1)$$

$$DID_l = \frac{1}{N_l} \sum_{g:T_g \geq F_g+l-1} DID^L_{g,l}, \quad (2)$$

Where $DID_{g,l}$ is the estimated effect of the reform for unit g, l periods after the treatment, $Y_{g,t}$ is the outcome of interest for group g at time t, F_g is the first period t in which the treatment takes place, N_{F_g+l-1} is the number of groups not yet treated, and N_l is the number of treated groups used to estimate effects l periods after the treatment.

In our main specification of interest, the outcome is defined in log. Therefore, the quantities in equation (1) corresponds approximately to growth rates:

- $Y_{g,F_g+l-1} - Y_{g,F_g-1}$ is the observed growth rate l periods after the treatment,
- $\frac{1}{N^g_{F_g+l-1}} \sum_{g':F'_g>F_g+l-1} Y_{g',F_g+l-1} - Y_{g',F_g-1}$ is the counterfactual growth rates computed as the average growth rate obtained from not-yet-treated groups g'.

Thus, the counterfactual growth rate for the outcome of interest, $\bar{\gamma}_l$, can be obtained by averaging the growth rates of not-yet-treated unit:

$$\bar{\gamma}_l = \frac{1}{N^g_{F_g+l-1}} \sum_{g':F'_g>F_g+l-1} Y_{g',F_g+l-1} - Y_{g',F_g-1} \quad (3)$$

Using these growth rates, we can then compute the counterfactual evolution for the outcome of interest in level (no longer in log) l periods after the treatment (e.g. total employment $\bar{E}_{g,l}$) as:

$$\bar{E}_{g,l} = (1 + \bar{\gamma}_l) E_{g,F_g-1} \quad (4)$$

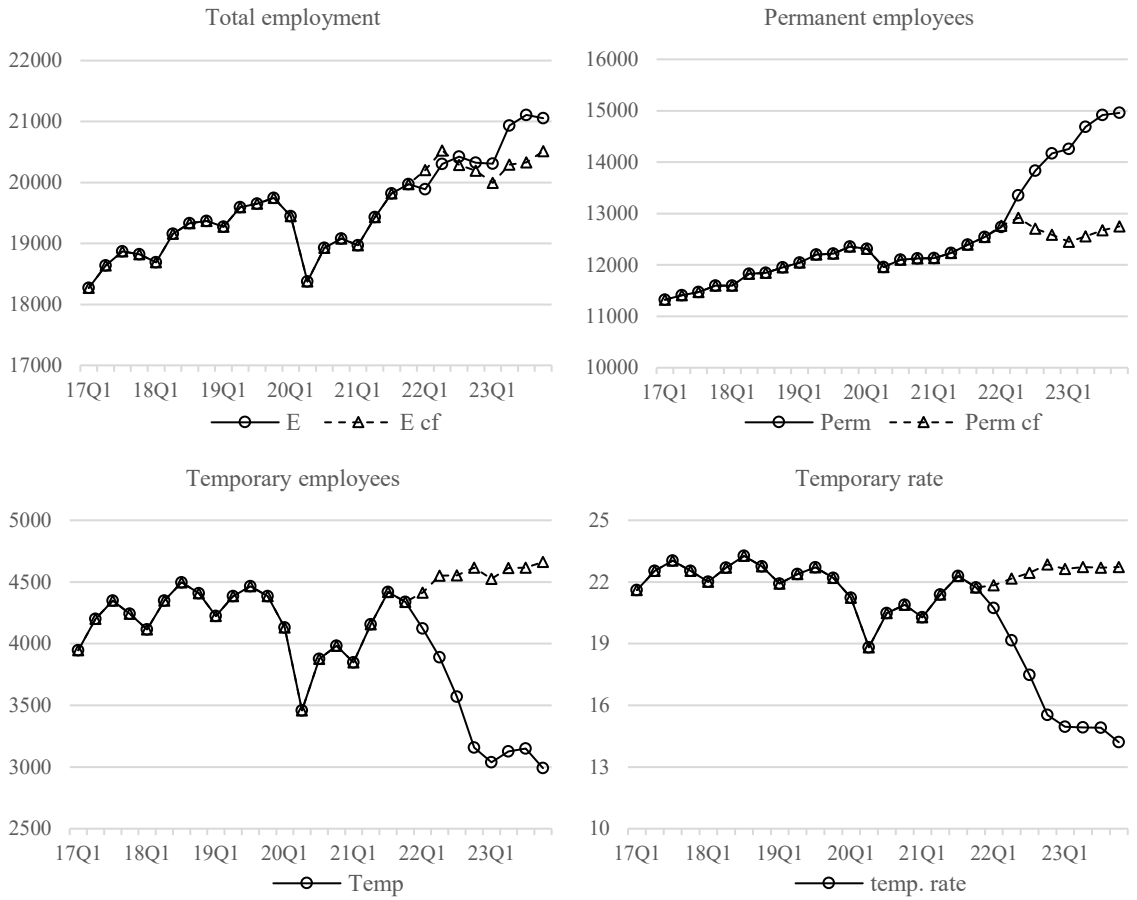
Aggregating over all units provides the counterfactual level of aggregate employment:

$$\bar{E}_l = \sum_g \bar{E}_{g,l} + \sum_{g'} E_{g',l} \quad (5)$$

It should be noted that due to various restrictions on the sample (e.g minimum sample size, restriction to employees), observations used for the estimation represent around 70% of total employment. Hence $\bar{E}_l$ is smaller than the actual level of employment available in official statistics. To correct for this discrepancy, the series for employment is retrieved from Eurostat and $\hat{E}_l$ is converted to an index (2021Q4 = 100). This index is then applied with the official Eurostat employment series to construct the counterfactual employment, which is ultimately used in the macroeconomic analysis.

Figure 36 below displays the counterfactuals obtained for total employment, the stocks of open-ended and temporary contracts and the temporary rate. This figure is important as the evolution of the counterfactual GDP obtained from the production function will closely reproduce the evolution of the employment rate. In particular, it is important to note that the counterfactual level of employment is greater than the actual level if the quarters following entry into force of the reform. Moreover, in the absence of the reform, temporary would have increased by around 300,000 workers from 4,340 million to 4,660 and the temporary rate would have increased by one percentage point to reach 22.7% of total employment.

Figure 36: Counterfactual aggregate labour market outcomes



Source: Own elaboration based on DiD estimation results (see Annex C.2.3) and Eurostat data. "cf" indicates the counterfactual series. Results are displayed in thousands of workers, except for the temporary employment rate expressed in percentages.

Annex D.4. Estimation tables and figures

Table 40: Baseline regression results using OLS

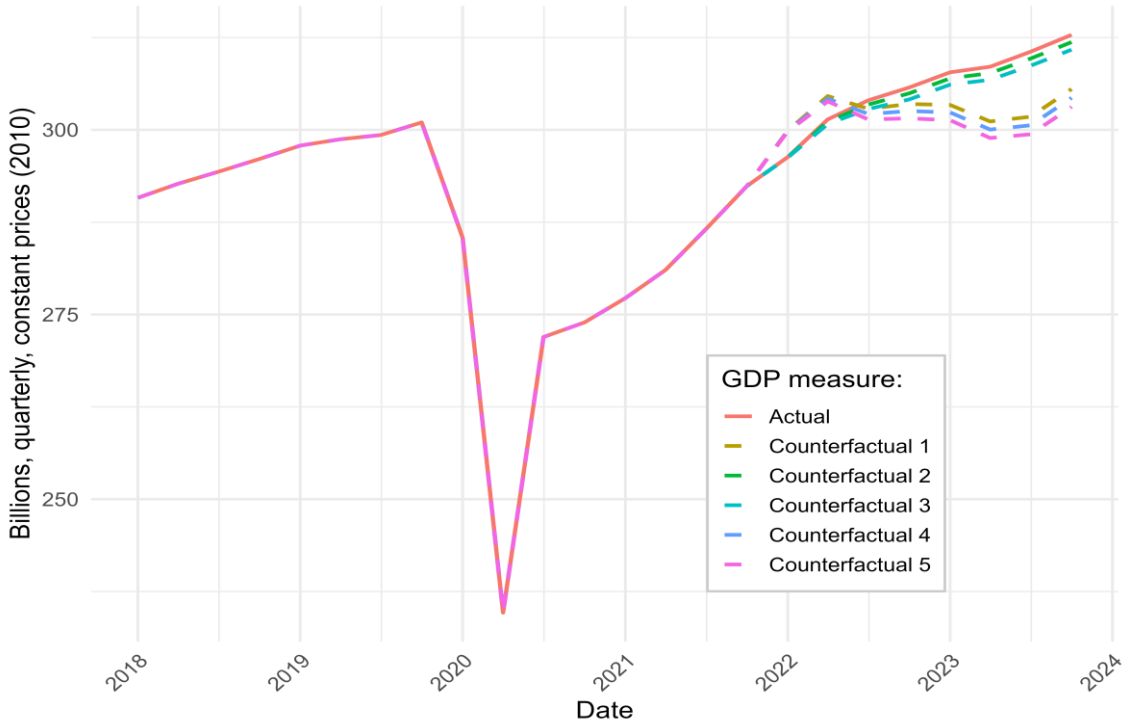
	Dependent variable:
	ln(GDP) – ln(Capital)
ln(Total Employment) - ln(Capital)	0.704***
	(0.014)
Outlier 1998q1-2001q4	0.092***
	(0.005)
Outlier 2002q2	0.073***
	(0.013)
Outlier 2020q2	-0.155***
	(0.013)
Constant	6.091***

	(0.180)
Observations	104
R^2	0.985
Adjusted R^2	0.984
Residual Std. Error	0.017 (df = 99)
F Statistic	1,621*** (df = 4; 99)
Note:	*p**p***p<0.01

Table 41: Baseline regression results using Prais-Winsten estimator

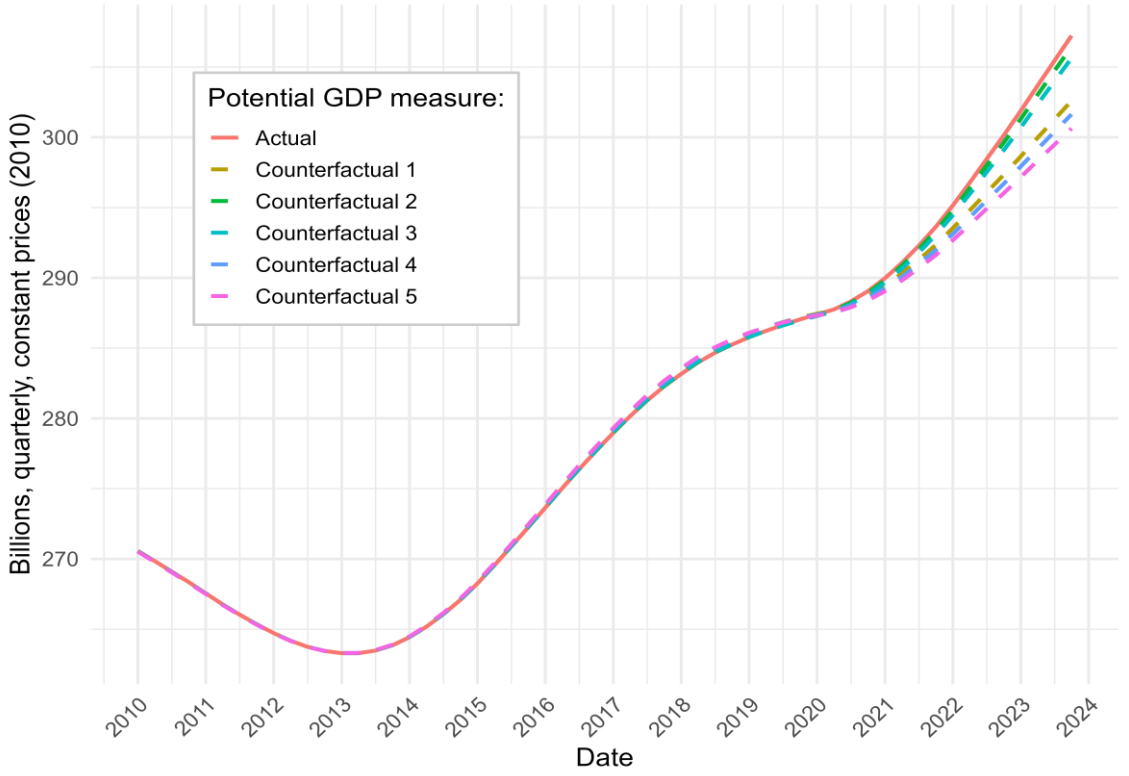
	Dependent variable:
	ln(GDP) – ln(Capital)
ln(Total Employment) - ln(Capital)	0.804***
	(0.056)
Outlier 1998q1-2001q4	0.029**
	(0.011)
Outlier 2002q2	0.000
	(0.011)
Outlier 2020q2	-0.153***
	(0.012)
Constant	7.338***
	(0.696)
Observations	104
R^2	0.983
Adjusted R^2	0.983
Residual Std. Error	0.011 (df = 99)
F Statistic	1,462*** (df = 4; 99)
Note:	*p**p***p<0.01

Figure 37: Actual and Counterfactual GDP, short-term



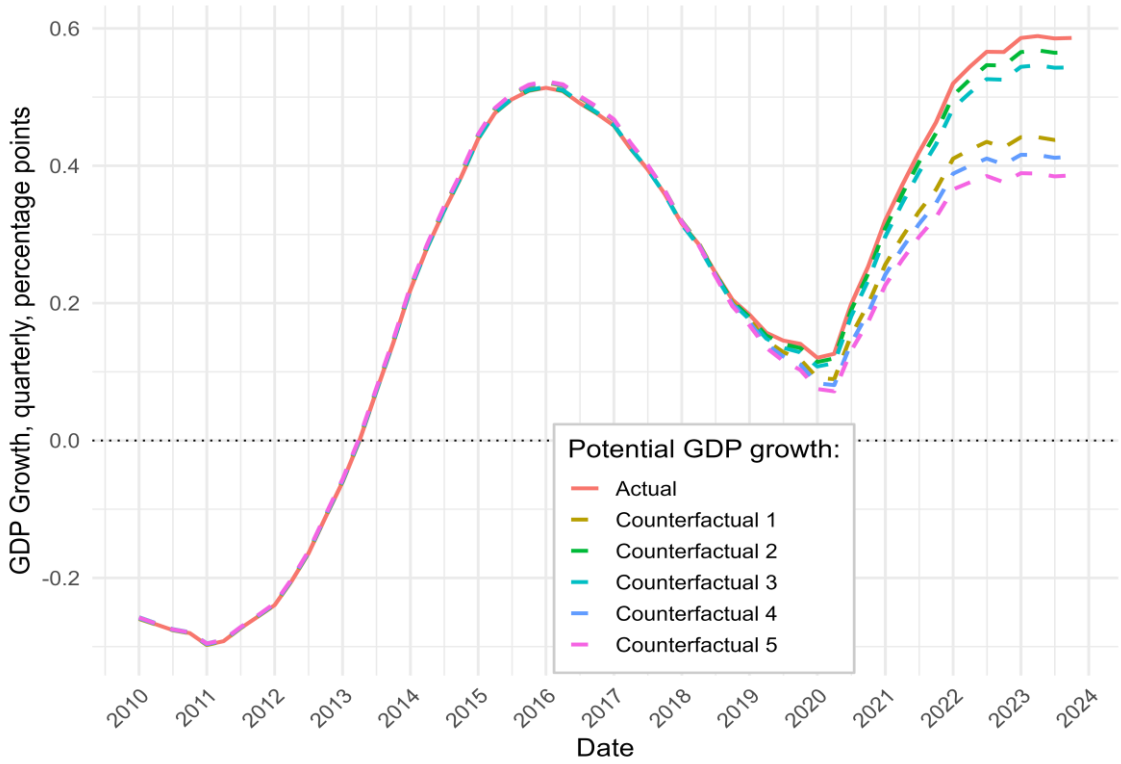
Source: Own elaboration.

Figure 38: Potential actual, counterfactual baseline and counterfactual augmented GDP



Source: Own elaboration.

Figure 39: Actual and counterfactual potential GDP growth



Source: Own elaboration.

Table 30: Real GDP growth, percentage points (YoY)

GDP measure	Type	2022	2023
Actual	Short term	6.18	2.68
	Potential	2.02	2.33
Counter baseline	Short term	6.47	0.08
	Potential	1.58	1.76
Counter, fixed temp. share and s = 0.9	Short term	5.87	2.36
	Potential	1.88	2.16
Counter, fixed temp. share and s = 0.95	Short term	6.03	2.52
	Potential	1.95	2.25
Counter with s = 0.9	Short term	6.10	-0.32
	Potential	1.40	1.55
Counter with s = 0.95	Short term	6.29	-0.12
	Potential	1.48	1.65

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