Fragmented Stability: Recalls and Fixed-Term Contracts in the French Labour Market [1]

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Abstract

This study investigates in a European perspective the phenomenon of recalls, in which previously laid off or furloughed employees are rehired by the same employer. It specifically examines the French labour market, notable for its pronounced degree of contractual dualism. A novel theoretical model is proposed, illustrating that recalls linked to fixed-term contracts contribute to employment fragmentation. Then, drawing on extensive linked employer-employee data from France spanning 2012 to 2019, we offer fresh empirical insights into recall practices. Our findings reveal a substantial recall rate of 44%, primarily involving fixed-term contracts of short duration, highlighting the strong link between recalls and contractual dualism. Contrary to expectations, recalls are prevalent even in sectors with stringent fixed-term contract regulations, suggesting potential lapses in enforcement. Our results suggest that a significant proportion of recalls could breach the legal requirements governing the use of fixed-term contracts. At a more granular level, over a quarter of recalled workers are rehired more than five times a year, with women and older employees disproportionately affected—further intensifying labour market segmentation. Firm-level analysis reveals a positive correlation between recalls and both firm size and productivity, while primarily attributing recall practices to fixed firm characteristics. This is observed both in the share of entries into recalled employment and in the duration of contracts upon recall. Recalls may meet firms' structural needs; however, insufficient incentives to stabilise employment and weak regulatory enforcement contribute to increased employment fragmentation and labour market segmentation. In sum, the joint use of recalls and fixed-term contracts leads to a particular labour market dynamics that we term as *fragmented stability*.

JEL Classification: J21, J41, J42, J63, J64, J68

Keywords: Fixed-term contracts, recalls, rehiring, employment protection legislation

1 Introduction

In the flow of layoffs, an important share of those who experience a period of unemployment are finally *recalled* by their former employer. A recall is therefore the process by which a former employee who was previously laid off or furloughed is hired back to her previous job with the same employer. The extent of this phenomenon was initially highlighted in the 1970s in the United States (Feldstein 1975, 1976) but the data available at the time did not allow for measuring this phenomenon precisely. These measures have been refined over time and recall has received renewed attention recently in the US, and even more so since the Covid-19 outbreak, when it was shown to be widespread.[1]

Perhaps surprisingly, despite improved measurement and data availability, evidence of recalls remains scarce and scattered in European labour markets.[2] This is all the more disconcerting as the magnitude of the recall phenomenon may be as large as in the US, but most likely operates very differently because of marked institutional differences. There are at least two reasons for this. First, many European labour markets are characterised by stringent employment protection legislation (EPL) and a strong divide between stable (open-ended) and more precarious (fixed-term) labour contracts.[3] While such a divide is an essential feature for studying these markets, it is absent in the US. Second, the UI systems differ considerably between Europe and the US, particularly with respect to UI financing, which is not subject to experience rating as it is in the US. These differences can provide very different incentives for hiring and rehiring workers, as well as for the type of contract in which they should be (re)hired.

In this paper, our aim is to shed new light on recall in the context of a prototypical European labour market characterised by a stringent EPL and a strong divide between temporary and permanent contracts. Our main objective is to investigate whether this practice contributes to the fragmentation of employment periods, thereby exacerbating the segmentation in the labour market. To this aim, we first build a model that gives a microfoundation to this claim in a context where recall is mainly concentrated on fixed-term contracts. Then, drawing on unique matched employer-employee data for France span-

[1] See e.g. Fujita & Moscarini (2017) for the pre-pandemic period, and Gallant et al. (2020), Gregory et al. (2020), Forsythe et al. (2022), Kudlyak & Wolcott (2020) or Hall & Kudlyak (2022) for the pandemic period. See also Castro et al. (2024) for a comprehensive assessment of non-employment recalls in North America.

[2] Alba-Ramírez et al. (2007, 2012) for Spain, Benghalem (2016) for France, Nekoei & Weber (2015, 2020) for Austria, Jansson (2002) for Sweden and Røed & Nordberg (2003) for Norway.

[3] This is for instance the case for European labour markets such as in France, Italy, Spain, or Portugal (Bentolila et al. 2019).

ning from 2012 to 2019, we present new and comprehensive insights into recall practices.

Our definition of recall borrows from the literature in that our main concern is rehiring with the last employer, but our quantification of the phenomenon relies on an actual measure of recall as we observe the whole universe of hires in France rather than the recall expectations at the time of layoff.[4] Put differently, our approach relies on an *ex-post* measure of recalls rather than on an *ex-ante* measure based on workers' expectations. As these expectations may not realise, the *ex-post* measure appears to be much more accurate. Besides, the exhaustive nature of our administrative data provides us with sufficient statistical power to characterise recall in a more comprehensive way than in many studies available to date.

In the following, our primary source of information is based on an exhaustive administrative database, which, unlike many other databases, allows tracking flows rather than stocks of contracts (and hence, hirings and rehirings). PEDs (Pre-Employment Declarations) are systematic, nominative declarations for each employee a firm intends to hire. PEDs are mandatory declarations that employers must make to the administration before hiring an employee. They provide information about the new employee, the nature of her employment contract, the expected start date of the contract, and, where applicable, its exact duration. The PEDs consequently enable precise tracking of both new hires and recalls. In addition, we have also been able to match those contract data with the FARE balance sheet data. This dataset provides insights into firms operating within the non-financial private sector, enabling us to gather additional firm-level information about their productivity.

Our analysis of rehiring unfolds in four main steps to explore the relationship between recall and contractual dualism. First, we begin by presenting a theoretical model inspired by our previous research (Cahuc et al. 2016, 2020), which helps illuminate some of our key empirical findings. The model explains the relationship between recall and fixed-term contract durations observed in the data and serves as a foundation for constructing a counterfactual scenario in which recall is absent from our analysis. Second, we turn to

[4] Rehires are often examined in the literature through the lens of temporary layoffs: workers on temporary layoffs typically receive information about the expected duration of the layoff and an estimated date for their return to work. While convenient, this method can be problematic for at least two reasons. First, in practice, the measurement of temporary layoffs often relies on survey data in which workers report their expectations of rehiring with their previous employer (Katz 1986, Katz & Meyer 1990, Burgess & Low 1998). Second, this measure may be flawed because not all temporarily laid-off workers are recalled, while permanently laid-off workers may also be recalled by their last employer. Note that the data requirements to measure temporary layoffs are lower, as it is sufficient to have information on the workers' expectations, whereas measuring actual recalls requires keeping track of the worker's labour market history as in e.g. Fujita & Moscarini (2017) or contractual history as we do in this paper.

the study of our data to provide an in-depth investigation of the link between recall and contractual dualism. This involves a detailed examination of the characteristics of contracts within specific employee-employer dyads. We focus specifically on contract types and their durations at initial hiring and upon rehiring. The last two steps aim at going beyond contract characteristics and proceed in successive passes. The first pass highlights the number and duration of non-employment spells. This leads us to investigate the enforcement of the legislation limiting the use of FTCs, including the waiting period between contracts, their maximum duration and the number of renewals. In the second pass, we turn to a different perspective and study recall at a more granular level, focussing on individual workers and firms. Unfortunately, regarding workers, we have only limited information beyond age and gender, which constrains our analysis, especially since the available (anonymised) identifiers do not enable us to match our data with other sources. In contrast, we have constructed a panel for firms that enables us to investigate the intensive and extensive margins of recall, specifically firms' recall shares and the average duration of contracts upon recall. We relate these margins to firm fixed effects and time-varying characteristics, including size and productivity.

Key findings. Our key findings can be summarised as follows. On the theoretical side, comparing the optimal durations of contracts with and without recall highlights a critical prediction: the practice of recall shortens the optimal duration of fixed-term contracts, resulting in greater fragmentation of employment spells. On the empirical side, recalls account for about 44% of job entries in the data, a significant figure that aligns with trends seen in other countries, notably the United States. However, unlike in the US, rehiring in our context is deeply influenced by labour market segmentation. In other words, while labour market institutions in the US and continental Europe may yield similar statistics, they undoubtedly reflect distinct labour market dynamics. In our context, recalls give rise to what we term as *fragmented stability*, a combination of stable employment relationships through recurrent rehirings and shortened employment spells. This idea is sustained by our empirical findings: that is, the vast majority of recalls are associated with FTCs of short durations, often lasting less than a month. We also conduct a thorough examination of contract characteristics, revealing that the duration of successive contracts exhibits minimal variation, while the intervals between consecutive FTCs are generally short. Overall, this indicates that recalls are linked to specific fixed job characteristics that drive volatile yet recurrent labour demands.

Moreover, our findings raise important concerns about the enforcement of regulations

that, in principle, impose strict conditions on the use of FTCs to promote job stability but, in practice, often fall short of achieving this objective. Accurately evaluating the extent of legislative enforcement is inherently challenging; however, our findings suggest that over one-third of recalls may violate the rules governing the mandatory waiting period between successive contracts. Additionally, we provide further measures of compliance with other aspects of FTC legislation, revealing that half of the contracts exceed the legally mandated limit on the number of allowable renewals. Despite this, most contracts remain within the allowable maximum cumulative duration authorised for FTCs, a result that is partially anticipated given the skewed distribution of contract durations.

At a more granular level, the following results are particularly noteworthy for workers and firms respectively. Two key findings stand out for workers. First, recalls are concentrated among a relatively small group of employees, with over a quarter of recalled workers experiencing five or more successive rehires by the same employer each year, with little to no variation in the duration of their contracts. Second, recalls are more common among women and older workers, suggesting that this practice can contribute to discrimination in the labour market and disproportionately affect the most vulnerable individuals. With respect to firms, our panel data regressions indicate that fixed firm characteristics are crucial to understanding recall practices, both in terms of extensive margin (the number of recalls) and intensive margin (the length of the contract at the time of recall). Firm size and productivity exhibit a positive and statistically significant effect on both recall margins.

In summary, our paper breaks new ground in understanding recalls across several dimensions. The combined use of recalls and fixed-term contracts contributes to fragmented stability. While recalls may address firms' structural needs, inadequate incentives to stabilise employment and weak regulatory enforcement exacerbate employment fragmentation and labour market segmentation, to the detriment of the most fragile workers.

Related literature. This article contributes to several strands of the literature. First, it relates to the literature that has measured and studied recall in the US, highlighting the significance of both temporary and permanent layoffs as, e.g. Feldstein (1976), Topel (1983), Katz (1986), Katz & Meyer (1990) or Anderson & Meyer (1993). The distinction between permanent and temporary layoffs has come under early scrutiny there because of the experience rating system used to finance Unemployment Insurance (UI), making this distinction highly relevant from a policy perspective. This distinction is not unique to the

US, as shown by Nekoei & Weber (2015, 2020) for Austria, where temporary layoffs and recalls are observed on a scale comparable to that of the United States. We complement their findings by showing that high recall rates can be linked to the use of short-duration contracts in the context of dual labour markets. From this perspective, our results suggest that the connection between short-duration contracts and recall may be elucidated by the absence of a mechanism that internalises the consequences of firms' hiring, rehiring, and separation decisions on UI financing.

Second, following Katz & Meyer (1990), several contributions have developed duration models with competing risks to investigate factors that influence the probabilities of leaving unemployment, returning to the same employer, or finding a new job with a different employer in European data. They focus either on UI recipients (Jansson 2002, Alba-Ramírez et al. 2012) or on individuals with a jobless spell of at least 30 days (Alba-Ramírez et al. 2007). Unfortunately, our data are not suitable for this type of approach because our analysis of the jobless period can only be done between two hires. Therefore, it is not possible to identify right-censored spells. Relatedly, Arranz & García-Serrano (2014) use rich Spanish data to distinguish three types of transition (job-to-job, job-to-non-employment, and job-to-insured unemployment) following different contracts. However, the focus is on the jobless period as in the papers cited above and not on the duration of the contracts as in this paper.

Third, our paper primarily adds to the extensive body of literature that has examined the repercussions of the distinction between temporary and permanent contracts in European countries. (see e.g., among many others Blanchard & Landier 2002, Cahuc & Postel-Vinay 2002, Boeri & Garibaldi 2007, Berton & Garibaldi 2012, Kahn 2010, Sala et al. 2012, Cappellari et al. 2012, Centeno & Novo 2012, Cahuc et al. 2016, Hijzen et al. 2017, Cahuc et al. 2020, 2023, Daruich et al. 2023). It has been shown that the combination of rigorous legal constraints on permanent job termination and limited protection for temporary positions results in an increased labour turnover. Nevertheless, as far as we are aware, the connection between contractual dualism and recall has received limited attention to date. A notable exception in the context of France is Benghalem (2016), which emphasises the alternation between brief periods of employment and compensated unemployment. In contrast to her contribution, our study adds to the theoretical literature by providing a microfoundation for recall practices and systematically examines employee recalls, regardless of their eligibility for unemployment insurance. Benghalem (2016) presents statistical evidence that may be more suitable for evaluating the design of the unemployment

insurance system. However, this advantage comes with a trade-off, as our dataset enables more precise quantification of recalls for at least two reasons. First, individuals with short employment durations are unlikely to qualify for unemployment insurance. Second, the uptake rate for unemployment insurance after a short-term contract is low, as noted by Hentzgen et al. (2022).[5] While our evidence broadly supports the key findings in Benghalem (2016), our results are based on an almost comprehensive dataset, providing a stronger foundation for understanding the unintended consequences of employment protection legislation and contractual dualism on recalls.

Finally, our paper can also be contextualised within the macroeconomic and theoretical literature that has explored the effects of recalls on the dynamics of the labour market in the United States (see e.g. Fernández-Blanco 2013, Fujita & Moscarini 2017, Gertler et al. 2022, Albertini et al. 2023). Our paper contributes to this literature by examining the phenomenon from a European perspective and through the lens of contractual dualism. Building on our previous work, it introduces new theoretical foundations to explain contract fragmentation. Furthermore, it raises broader questions about how employment protection legislation (EPL) influences rehiring practices.

Outline. The paper is organised as follows. Section 2 briefly describes the legislation on the use of fixed-term contracts in France. Section 3 proposes a theoretical model that gives a microfoundation to the relationship between recall and the fragmentation of labour contracts. Section 4 presents our data and methodology. Section 5 presents the key stylised facts of our study. Section 6 complements these findings by contextualising non-employment spells and exploring the enforcement of regulations on FTCs. The penultimate Section 7 delves into a more granular analysis, examining the characteristics of workers and firms in relation to rehiring. Finally, Section 8 concludes and suggests some avenues of research.

2 Legislation and institutional context

In this section, we offer a concise summary of the labour contract regulations in France, with a particular emphasis on those concerning fixed-term contracts (FTCs), as this is relevant for understanding firms' recall behaviour.

[5] Hentzgen et al. (2022) estimate that 41% of eligible workers after an FTC do not claim unemployment benefits.

General principle. In accordance with legal principles, the regular type of contract is the open-ended contract (OEC), defined as the normal and general form of any contractual relationship between a firm and a worker.[6] FTC remains derogatory and should, consequently, only be used subsidiarily. The legislation defines a number of conditions regarding its use, length, possibility of renewal, etc., which are detailed hereafter. Any breach of these rules reported to the labour court may result in the court reclassifying the contract as permanent. Consistently with the idea that OECs are the rule, an individual on a permanent contract with a firm cannot be downgraded to a FTC within that very same firm. The law states a number of reasons for allowing the use of FTCs, corresponding to cases where the firm's needs are temporary.[7] In addition to these general provisions, the Labour Code mentions numerous exceptions, such as integration contracts for young people or the long-term unemployed. In what follows, we focus on the general case.

Maximum duration, minimum duration, and renewals. There is no legal constraint on the minimum duration of a FTC, and the maximum duration, including potential renewals, cannot exceed 18 months in most cases.[8] Since 2015, a FTC can be renewed at most twice, instead of once before that date.[9] Note that following an ordinance of 2017 the convention or extended branch agreement takes precedence over the above-mentioned rules.[10] However, this has not led to much change in the use of FTCs, as any agreement involves bipartite negotiation between employers and employees, which limits any movement toward more, or fewer, constraints.

Waiting period. Before rehiring a worker in FTC, whether it is **a recall or a new hire** in the same position or job, a waiting period between two consecutive contracts must apply. Importantly, its length depends on the length of the entire employment spell with the firm. The law distinguishes two cases. If the duration of the employment spell is less than 14 days (including any potential renewal), the waiting period is equal to half the duration of the previous employment spell, and one third otherwise. Note that these provisions only

[6] See article L1221-2 of the French Labour Law.

[7] Such reasons include temporary growth in the firm's activity, seasonal jobs (defined as jobs repeated each year according to a roughly fixed periodicity), and temporarily absent employees (e.g. maternity or sick leaves).

[8] There are a few exceptions to this general rule, e.g. if the firm is hiring temporarily waiting for a permanent worker in which case the maximum duration is 9 months, or in case of a temporary increase in workload following an export order in which case the maximum duration is 24 months.

[9] Law No. 2015-994 of August 17, 2015, relating to social dialogue and employment.

[10] Ordinance No. 2017-1386 of September 22, 2017, relating to the new organisation of social and economic dialogue in the firm and promoting the exercise and enhancement of union responsibilities.

apply in the absence of a branch agreement and therefore correspond to the legislation applicable by default.[11]

Customary FTCs. In addition to the general rules described above, the use of FTCs can be made more flexible in certain sectors or occupations where temporary contracts are said to be customary ('*Contrats d'usage ou contrats à durée déterminée d'usage*'). In this case, the legislation considers that the contract is by nature temporary, as it is customary not to hire a worker on a permanent basis for the task to be accomplished. Customary FTCs (C-FTCs, hereafter) were introduced in 1982 by ordinance in some sectors on the ground of the nature of their activity.[12] It should be noted that the decree defines C-FTCs rather vaguely, primarily because they do not correspond to a clearly identified activity nomenclature (in the statistical sense), making it often difficult to precisely identify the tasks or occupations associated with a job.[13]

Hereafter, and wherever relevant, we will distinguish between *Customary* FTCs (C-FTCs) and *Regular* FTCs (R-FTCs), for which the legislation is more stringent. Most of the rules mentioned above for R-FTCs do not apply to C-FTCs, which are inherently more flexible. For instance, there is no mandatory waiting period between successive contracts, and contracts can be renewed indefinitely without a maximum duration. Although the duration of the contract does not need to be specified, it should include a minimum duration.

3 A prototypical model of recalls

Before analysing our data, we begin by presenting a prototypical model that examines the impact of recalls on the duration of fixed-term contracts. The model is voluntarily kept simple and abstracts from many of the details that will be studied in the empirical investigations of the next sections, but it is meant to emphasise a central feature of our analysis:

[11] Since 2017, articles L1244-3 and L1244-4 of the French Labour Law stipulate that the waiting period can be modulated upwards or downwards, or even eliminated if a branch agreement is reached.

[12] Decree D1242-1 of the Labour Code lists the sectors concerned with C-FTCs: the moving industry, hotel management and food services, leisure centres and holiday camps, funfair activities, recreational, cultural and sporting activities, audio-visual, film production and music publishing companies, education, information and survey activities, intermediate enterprises that aim to re-integrate people through work, domestic employment sectors, forestry and ship repair activities, meat storage or disposal services, technical cooperation/assistance activities, engineering, and foreign research activities.

[13] In a 2015 report, the IGAS (Inspectorate General of Social Affairs) reviewed the use of C-FTCs. The report found that the scope of C-FTCs was poorly defined and has not been updated since its inception. It also concluded that the use of C-FTCs has not been adequately regulated by law, branch agreements, or the unemployment insurance system (Jaouen & Marie 2015).

recall, associated with the use of fixed-term contracts, fosters an augmented fragmentation of employment spells. As a result, the labour market dynamics implied by the recall phenomenon is likely to differ significantly from the one observed in the US. To our knowledge, no theoretical work to date has highlighted this distinction.

The model draws inspiration from Cahuc et al. (2016, 2020). With respect to these articles, our primary departure lies in the assumption that productivity shocks are not irreversible. Productivity can recover, making it beneficial to maintain a recall option after separation. In the following, we outline the key aspects of the model and refer the reader to the aforementioned papers for further details on the modelling of temporary contracts, and to the Appendix B for more details on the formal analysis of the link between temporary contracts and recall. In this framework, firms hire workers to exploit production opportunities of different expected durations. Some of these are expected to last longer, while others are shorter. This is encapsulated by the variable λ, which represents the speed with which production opportunities are hit by a productivity shock that makes them unprofitable.

The fundamental equation of the model is expressed through the value of a temporary job, denoted as $J_t(\lambda, \Delta)$, which satisfies the following equation:

$$J_t(\lambda, \Delta) = \int_0^{\Delta} \left(ye^{-\lambda\tau} - w\right) e^{-r\tau} \mathrm{d}\tau + \mathbb{1} e^{-r\Delta} J_t^m(\lambda) - c, \tag{1}$$

where $\mathbb{1}$ is a dummy that takes the value of 1 when recall is permitted and 0 otherwise. The first term, $\int_0^{\Delta} \left(ye^{-\lambda\tau} - w\right) e^{-r\tau} \mathrm{d}\tau$, stands for the discounted sum of expected profits throughout the job. In this expression, the level of production y is multiplied by the survival function $e^{-\lambda\tau}$ because the production drops to zero at the rate λ. The wage w is not multiplied by the survival function because the employer has to keep and pay the employee until the end of the temporary contract. The second term, $\mathbb{1} e^{-r\Delta} J_t^m(\lambda) \geq 0$, is the present value of mothballing the job at the end of the temporary contract if permitted. The last term c is the cost of writing the contract.

Two comments are in order with respect to the value of a recall in equation (1) above. First, the value of a recall is necessarily positive or nil. This is so because unprofitable jobs are not created and cannot be recalled. Temporary jobs are profitable up to λ_t, which is the value beyond which it is no longer profitable to create a temporary contract (and consequently, not profitable to exercise a recall option). This critical value is defined as $\lambda_t = \{\lambda | J_t(\lambda) = 0\}$. Beyond this point, the value of jobs becomes negative, preventing their creation and, by definition, their recall. Thus, the threshold λ_t is not affected by the

presence / absence of a recall option, as the value of a recall is nil at $\lambda = \lambda_t$. Second, the duration of subsequent contracts (after a recall) is taken as given. The details and validation of this point can be found in Appendix B.[14]

Upon hiring a worker, the firm selects the optimal contract duration, Δ, which maximises the value of a temporary job, $J_t(\lambda, \Delta)$. Maximising (1) with respect to Δ yields the following FOC:

$$\underbrace{ye^{-\lambda\Delta}}_{\text{marginal benefit}} = \underbrace{w + \mathbb{1}rJ_t^m(\lambda)}_{\text{marginal cost}} \tag{2}$$

The LHS of this expression represents the marginal benefit of extending the contract duration. This benefit decreases with duration, since the survival probability $e^{-\lambda\Delta}$ decreases with the duration of the job spell. The RHS corresponds to the marginal cost of extending the contract duration which consists of two components. The first component is the wage the firm must pay until the end of the contract. The second component is the potential flow value that the firm may achieve when a recall option is exercised.

The value of the recall option increases the marginal cost of extending the contract duration. Making use of the FOC (2) above, the optimal duration of a type-λ temporary contract, $\Delta(\lambda)$, is then given by:

$$\Delta(\lambda) = \frac{1}{\lambda} \ln\left(\frac{y}{w + \mathbb{1}rJ_t^m(\lambda)}\right) \tag{3}$$

It is clear from this expression that the existence of a recall option shortens the optimal duration of temporary jobs. This is illustrated below in Figure 1 which shows the optimal duration of temporary contracts with and without recall.

[14] We show in Appendix B (Subsection B.4) that the assumption is relatively inconsequential; even if firms optimise the contract value considering both the initial contract duration and subsequent recalls from the outset, the contract durations persist unchanged.

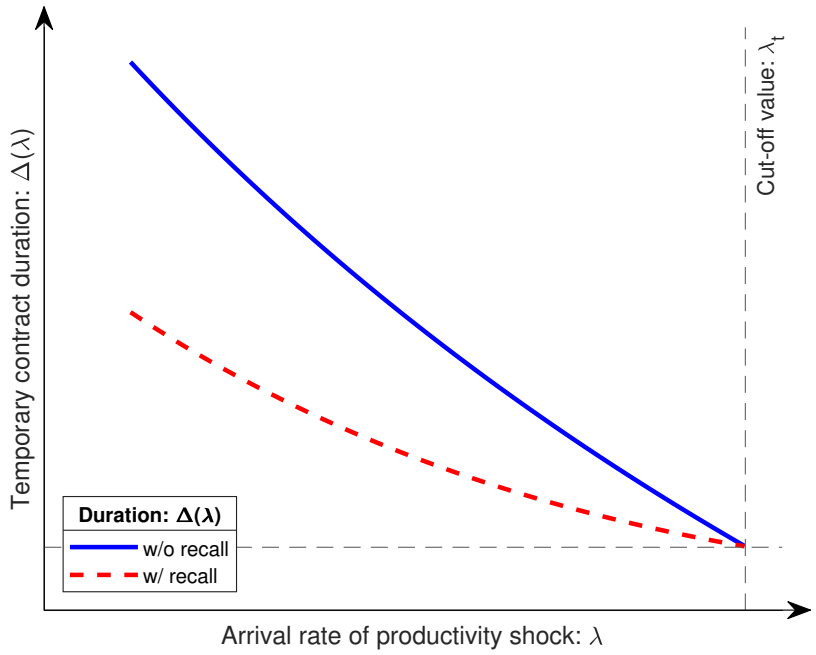


Figure 1: Optimal duration of a temporary contract with and without recall

Notes: The figure describes the relationship between the arrival rate of productivity shock, λ, and the optimal duration of a temporary contract, $\Delta(\lambda)$. The plain blue line is the optimal value without recall. The dashed red line is the optimal value when recall is permitted. The vertical dashed line indicates the endogenous cut-off value, λ_t, below which temporary jobs are profitable.

The result can be inferred from equation (3). The existence of a recall option makes it more beneficial for the firm to offer short contracts and recall workers when the productivity of the job recovers, rather than to offer longer contracts and run the risk of maintaining an unproductive job. As a result, it is optimal to shorten the duration of the contract. Thus, recall, by allowing the emergence of shorter contracts, tends to increase the fragmentation of employment spells. To the best of our knowledge, this is a novel result, which provides a straightforward explanation of the high number of short-duration contracts that will be found in the data in the next sections.

Two additional results can be drawn from equation (3): first, the duration of contracts, with or without a recall option, increases in productivity y. Second, the optimal duration of a contract is closely related to the fixed characteristics of the firm λ, implying that the duration of the contract, initially and upon recall, will be the same for a given productivity. Such findings are consistent with what is observed in the data (see Sections 5 and 7.2).

Taking stock. The main takeaway is that *(i)* the optimal duration of temporary contracts is shortened by the existence of a recall option. In this sense, recall contributes to an increased fragmentation of employment episodes. The model further predicts that *(ii)* firms offer contracts of identical durations initially and upon recall, *(iii)* contract durations are

closely tied to the intrinsic characteristics of the firm and *(iv)* duration increases with productivity.

4 Data and methodology

In this section, we present the data sources used in our study, delineate their processing procedures, and underscore the key methodological aspects related to recalls. First, we detail the main statistical sources used (Section 4.1). Next, we describe the corrections and selections made in the raw database (Section 4.2). Ultimately, we establish our recall metric and contextualise it by comparing it with previous studies (Section 4.3).

4.1 Data

Main data (PED). The pre-employment declarations ("*Déclarations préalables à l'embauche*") are the main data source used in our study. A pre-employment declaration (PED, hereafter) is a systematic and nominative declaration procedure for the organisation in charge of collecting social security contributions (Urssaf) for each employee a firm plans to hire.[15] In concrete terms, the PED is an administrative form that the future employer must fill in before hiring a worker.[16] This form must be sent to Urssaf within 8 days before the expected hiring date. These declarations are mandatory for all employees covered by the general Social Security scheme and, therefore, concern both employees in the private sector and contract agents in the civil service.[17]

A typical PED contains three pieces of information: on the employer, on the employee, and on the contract. First, on the firm side, the PED provides an identification number as well as the main activity, the legal category, and the number of employees. Second, on the worker side, the PED provides an (anonymised) identification number, as well as her age

[15] Urssaf ("*Unions de Recouvrement des cotisations de Sécurité Sociale et d'Allocations Familiales*") is an organization in charge of collecting the social security contributions of employees, employers, and self-employed workers in France. The pre-employment declarations (PEDs) are data made available to us by Urssaf through the CASD, a secure system that allows remote access to administrative data.

[16] See the form in French available at https://travail-emploi.gouv.fr/IMG/pdf/cerfa_14738_01.pdf

[17] Although mandatory, the declarations remain hiring intentions and consequently do not necessarily end in employment. The volume of hires is then likely to be overstated. However, this bias is likely to be small for at least two reasons. First, when the hiring does not materialise, it is required to promptly notify the Urssaf to cancel the registration. Second, a survey on a panel of French firms with less than 20 employees in 2005 shows that 89% to 96% of all PEDs result in actual hiring (these results come from the "*utilisation du contrat nouvelles embauches*" survey of the French Ministry of Labour. For further details, see DARES (2006)). Instances where declarations do not lead to actual hires can be attributed to errors in declarations or renunciations made by either the employee or the employer.

and gender. Third, employers must indicate the nature of the contract (FTC or OEC), the starting date, and in the case of a FTC, the expected ending date. This enables us to assess the expected duration of each FTC, whether it is a new hire or a contract that meets our definition of a recall, as outlined below.

Balance sheet data (FARE). The FARE (*Fichier Approché des Résultats d'ESANE*) database provides balance sheet items for profit-making firms excluding the financial sector. It combines administrative data and survey data to produce structural firm statistics.[18] We leverage these supplementary data to derive a firm-level productivity indicator. Specifically, we calculate the value added per worker and look at the relationship between this indicator and the recall practice of firms. It is important to note that the FARE database has a more limited scope compared to the PED. As a result, we will explicitly specify whenever the analysis of firms' recall practices is conducted within the confines of the FARE data.[19]

4.2 Selection and corrections of the PEDs

Selection. Our research is focused on the private sector, discerned through the legal categorisation of employers. This choice is made because of the exhaustive nature of the data (PEDs) specifically in this sector. Coverage of the public sector is comparatively limited, with a mandatory declaration applicable only to the recruitment of contract agents. Therefore, we excluded it from the primary analysis, incorporating specific findings related to this restricted sample in the (online) Appendix C.

Once the private sector is identified, we exclude two sectors of activity: the agricultural sector and temporary work agencies. Employees in the agricultural sector are excluded from the general Social Security scheme. A pre-employment declaration (PED) must be submitted to a designated social security fund for this sector, resulting in our data not being comprehensive in this regard. For temporary work, the PEDs are not supplied by user firms, but by temporary work agencies for each specific assignment. This facilitates the identification of service-providing firms within the data. However, user firms cannot be accurately identified, which somewhat limits the scope of the analysis. For the sake

[18] The FARE dataset originates from ESANE, a device that produces structural business statistics, providing an annual overview of the population of firms within the production system and their primary characteristics. FARE data are compiled by INSEE and are also made available through the CASD.

[19] We primarily experience a loss of data from firms within the administrative and support services, arts, entertainment and recreational activities, other services, and human health and social work activities sectors.

of completeness, we include some results on recall practices in this specific sector in the (online) Appendix D.

Given that information on the type of contract (OEC or FTC) has been available since 2005, but with employers mandated to specify the end date of FTCs only from 2011 onwards, our study is limited to the years 2012 through 2019. Furthermore, due to the distinctive nature of the COVID-19 crisis, the analyses for this period are treated separately and detailed in the (online) appendix E.[20]

Corrections and data processing. We have made some corrections to remove suspected duplicates or reporting errors. These corrections are four in number (labelled duplicates 1 to 4 hereafter). Table 1 provides, for each correction, the number of PEDs and the corresponding share of the row data in the non-farm private sector.

First, a small part of employers intending to hire a worker complete two declarations, both bearing identical hiring and declaration dates. These two declarations may pertain to distinct types of contracts, yet it remains uncertain which one was ultimately executed. Whether the contracts are the same or not, one declaration is randomly removed. This represents less than 1% of all observations (duplicate 1 in Table 1). Second, we sometimes also observe, for an employer-employee dyad, a FTC that begins before the end of a previous one. The latter is dropped when the time period between the two hiring dates is shorter than or equal to 15 days, which concerns between 2 and 3% of all observations (Duplicate 2 in Table 1). This correction is the most substantial. Retaining these PEDs or adopting a less restrictive approach would result in the consideration of these duplicates as recalls. Consequently, the recall rate would experience a slight increase, ranging from 1 to 1.5 percentage points, while maintaining the overall trend. Third, a stable job in the data can be followed by a FTC (or an unknown contract) for a worker in the same establishment. However, it is legally impossible to demote a worker, thus the first contract is considered a wrong declaration and is deleted (Duplicate 3 in Table 1). Finally, we correct some potential issues concerning the declarations of open-ended contracts. As a matter of fact, it is very likely that the observation of two successive OECs for the same employer-employee dyad in a very short period of time corresponds to a misstatement or a deferral of hiring rather than to a recall. Consequently, if the two hiring dates are less than 30 days

[20] We chose to focus on a more stable period to document the phenomena related to recalls under regular circumstances, as opposed to during or immediately following the outbreak of the COVID-19 pandemic. For further details, see the (online) Appendix E for some figures on the impact of lockdowns and let-ups on recalls.

apart, we keep only the most recent declaration. It follows that about 0.60% of PEDs are deleted (Duplicate 4 in Table 1). If these declarations were not considered duplicates, they would be identified as recalls in OECs, and the recall rate would be around 0.5 percentage points higher. The share of OECs in recalls would be higher, but the phenomenon would still remain marginal.

Table 1: Sample corrections

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Duplicate 1	131,080	135,412	151,528	175,514	184,371	197,891	213,935	207,960	174,711
	(0.74%)	(0.73%)	(0.79%)	(0.88%)	(0.88%)	(0.90%)	(0.95%)	(0.91%)	(0.85%)
Duplicate 2	417,088	478,171	516,371	568,026	636,116	651,697	660,659	694,428	577,820
	(2.35%)	(2.59%)	(2.69%)	(2.85%)	(3.03%)	(2.97%)	(2.95%)	(3.04%)	(2.81%)
Duplicate 3	55,280	59,076	59,396	61,105	57,023	66,916	70,313	67,843	62,119
	(0.31%)	(0.32%)	(0.31%)	(0.31%)	(0.27%)	(0.31%)	(0.31%)	(0.30%)	(0.31%)
Duplicate 4	139,649	131,352	103,393	117,962	122,629	133,572	138,785	140,852	128,524
	(0.79%)	(0.71%)	(0.54%)	(0.59%)	(0.58%)	(0.61%)	(0.62%)	(0.62%)	(0.63%)
Total duplicates	743,097	804,011	830,688	922,607	982,139	1,050,076	1,083,692	1,111,083	940,924
	(4.19%)	(4.36%)	(4.32%)	(4.63%)	(4.67%)	(4.79%)	(4.84%)	(4.86%)	(4.58%)
N before corrections	17,717,530	18,452,235	19,225,436	19,941,317	21,025,048	21,930,882	22,410,786	22,877,330	
N after corrections	16,974,433	17,648,224	18,394,748	19,018,710	20,042,909	20,880,806	21,327,094	21,766,247	

Notes: Corrections described in section 4.2. The sample is restricted to the private sector and the corrections are made from the row database to remove potential duplicates in the PEDs. The shares of each correction are in parentheses and are expressed as a percentage of hires in the row database. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The last two rows of Table 1 give the number of PEDs in the non-farm private sector before and after removing previously identified duplicates. After applying the corrections, our dataset is reduced by approximately 5%, leaving us with an average of around 20 million observations per year. In what follows, most of the statistics are done year-by-year, and so are the corrections. Nevertheless, where useful, statistics and corrections are carried out over the whole period for a more complete assessment. For example, a PED completed at the beginning of a year could be recognised as a duplicate of a PED submitted the preceding year, aligned with one of the duplicate types described above. Table A.1 in Appendix A presents the number of PEDs each year after applying corrections over the entire period.

Final sample. After all these treatments, our final sample comprises just over 156 million observations for the period under study as shown in Table 2. The distribution of PEDs by sector is provided in Appendix A.[21]

[21] See Table A.2 in Appendix A. The hotel and restaurant sector accounts for the largest share of the declarations, closely followed by the human health and social work activities sector and the arts, entertainment, and recreational activities sector.

Table 2: Pre-employment declarations (final sample)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Unknown type of contract	1,050,031	755,283	595,182	438,245	372,055	308,517	281,294	242,945	505,444
	(6.19%)	(4.28%)	(3.24%)	(2.30%)	(1.86%)	(1.48%)	(1.32%)	(1.12%)	(2,72%)
FTCs (w/o termination date)	347,200	184,328	132,193	81,423	47,174	16,516	14,685	14,371	104,736
	(2.05%)	(1.04%)	(0.72%)	(0.43%)	(0.24%)	(0.008%)	(0.007%)	(0.007%)	(0,56%)
FTCs (w/ termination date)	13,155,468	14,351,746	15,274,300	16,017,314	16,846,125	17,448,509	17,604,742	17,943,642	16,080,231
	(77.50%)	(81.32%)	(83.04%)	(84.22%)	(84.13%)	(83.56%)	(82.55%)	(82.44%)	(82,35%)
OECs	2,421,734	2,356,867	2,393,073	2,481,728	2,759,555	3,116,264	3,426,373	3,565,289	2,815,110
	(14.27%)	(13.35%)	(13.01%)	(13.05%)	(13.78%)	(14.92%)	(16.07%)	(16.38%)	(14,35%)
N	16,974,433	17,648,224	18,394,748	19,018,710	20,024 909	20,880,806	21,327,094	21,766,247	

Notes: Number and share of entries into employment between 2012 and 2019 in the non-farm private sector. The last column is the average over the period. The first line lists the number of PEDs for which the exact nature of the contract is not known. The second and third lines list the number of PEDs for FTCs (with and without termination date). The fourth line lists the number of PEDs for OECs. Shares are in brackets and computed as a percentage of total PEDs. N is the size of the sample. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The number of PEDs has grown by around 28% in the private sector between 2012 and 2019. PEDs with a missing type of contract (first row of Table 2) are relatively numerous at the beginning of the period but end up representing only 1% of the PEDs in 2019.[22] This decrease seems to be in favour of FTCs with a termination date, reflecting an improvement in the quality of the information transmitted over the period of analysis. As a result, our measure of the recall rate among FTCs becomes more accurate and refined over time. With respect to FTCs (second and third rows), two conclusions can be drawn. First, the number of missing values for FTC terminations decreases over the period and becomes insignificant. Second, and of greater significance, the number of FTCs increases by approximately 36% during the period under consideration, and this growth is continuous.[23] Finally, it is observed that the number of OECs experienced a slight decrease in 2013 but consistently increased thereafter. Between 2012 and 2019, it has risen by approximately 47%. Overall, the precision of the database is an undeniable asset.

4.3 Measurement of Recall

Recall with the last employer. Each PED includes both a unique employer identifier[24] and a unique anonymised employee identifier. To contextualise our results with the exist-

[22] Given the limited information available on establishments and their workers, we opted not to impute the type of contract or the termination date.

[23] If we assume that the majority of contracts with an unknown type are fixed-term, then the proportions of hires on FTCs and OECs calculated from our sample closely align with those calculated on the same scope by DARES (the statistics institute of the Ministry of Labour), leveraging data on workforce movements (MMO). In volume terms, data on workforce movements also indicate that, on average, approximately 20 million hires are recorded each year over the period from 2012 to 2019. Despite the disparities between these two data sources, the trends exhibit remarkable similarity. See https://dares.travail-emploi.gouv.fr/donnees/les-mouvements-de-main-doeuvre.

[24] The employer identifier is a compulsory business identification provided by the SIRET number at the establishment level and the SIREN number at the firm level.

ing literature, we concentrate on recalls involving the last employer.[25] Therefore, we sort the PEDs of an employee according to their hiring dates and consider a hire as a recall if the previous declaration has the same employer identifier. More precisely, our definition of a recall corresponds to a contract concluded between an employee and an employer that is of the same nature as the one that preceded it for this very same dyad, without the employee having been hired by another employer between these contracts. However, for the sake of completeness, we present additional results in Appendix A (see Tables A.3 to A.5) where a broader definition of recall is considered.[26]

Recall, conversion, and renewal. Due to data limitations, accurately identifying the transformation from e.g. FTCs to OECs is often a challenging task (Malherbet & Martins 2024). PEDs are no exception. We distinguish a recall from the possibility to convert/upgrade a FTC into an OEC in the following manner: for a specific employee, an OEC that directly succeeds a FTC within the same firm is excluded from our calculation of recall. It's important to acknowledge that our data may not provide an exact measurement of conversions, potentially leading to underestimation. This is due to the absence of a legal requirement to submit a new PED in the event of a conversion. Similarly, for renewals of FTCs, as long as there is no break between two consecutive contracts, the omission of a new PED is permissible. Nevertheless, as indicated in Section 2, a waiting period must be observed between two FTCs in the same position, making the declaration *de facto* effective. The substantial volume of PEDs observed annually appears to support this observation. Nevertheless, due to limited information regarding the specific position, accurately identifying renewals and distinguishing them from recalls remains a challenging task.

Recall and customary fixed-term contracts (C-FTCs). As explained in Section 2, some sectors have the possibility of using C-FTCs. Although these contracts may not be explicitly discernible in PEDs, it is feasible to estimate the extent of firms likely to use this type of contract by leveraging accessible information on the sector of activity. By doing so, we can differentiate the sectors that are allowed to use C-FTCs from those that are not. This

[25] See e.g. Katz & Meyer (1990), Alba-Ramírez et al. (2007), Arranz & García-Serrano (2014), Nekoei & Weber (2015), Fujita & Moscarini (2017) for a similar approach.

[26] Once an employee has been hired for the first time by an employer, every subsequent hiring of that same employee by that same employer is regarded as a recall. The proportion of recalls among all hires exhibits a similar trend to the proportion of recalls with the last employer. However, each year, this share is higher by about ten percentage points (Table A.3). Consequently, recall with the last employer accounts for more than half of recalls in a broad sense. Regarding the type of contract in recall, the results are similar to those of the recall with the last employer: more than 90% of recalls in FTC last less than a month (Tables A.4 and A.5).

is based on the classification made by the agency responsible for collecting PEDs. This classification identifies 15 sectors at the level of the 2 or 4-digit main activity code. It also includes intermediary associations identified using the legal category of the firm.[27]

5 Stylised facts on hires and recalls

In the following, we present salient stylised facts on hires, with a particular emphasis on recalls, defined at the level of the establishment-employee dyad. We proceed in two main steps. First, we document the entries into employment and recalled employment with a particular focus on the role played by short-duration contracts (Sections 5.1 to 5.3). Second, we explore the interplay between successive contracts (Section 5.4).

5.1 Entries into employment

We start by documenting entries into employment in the non-farm private sector for all contracts identified in the data. Table 3 provides the number and share of employment entries by contract and (where applicable) by duration.

Table 3: Entries into employment by contract and duration

	2012	2013	2014	2015	2016	2017	2018	2019	Average
OECs	2,421,734	2,356,867	2,393,073	2,481,728	2,759,555	3,116,264	3,426,373	3,565,289	2,815,110
	(14.27%)	(13.35%)	(13.01%)	(13.05%)	(13.78%)	(14.92%)	(16.07%)	(16.38%)	(14,35%)
FTCs	13,502,668	14,536,074	15,406,493	16,098,737	16,893,299	17,465,025	17,619,427	17,958,013	16,184,967
	(79.55%)	(82.37%)	(83.75%)	(84.65%)	(84.36%)	(83.60%)	(82.62%)	(82.50%)	(82.93%)
$\Rightarrow$ FTCs $\leq$ 1 month	10,315,760	11,465,168	12,309,540	12,945,223	13,557,982	14,028,031	14,161,457	14,468,268	12,906,429
	(60.77%)	(64.96%)	(66.92%)	(68.07%)	(67.71%)	(67.18%)	(66.40%)	(66.47%)	(66.06%)
$\Rightarrow$ FTCs from 1 to 3 months	1,355,764	1,391,739	1,413,429	1,450,814	1,511,717	1,592,288	1,632,490	1,656,926	1,500,646
	(7.99%)	(7.89%)	(7.68%)	(7.63%)	(7.55%)	(7.63%)	(7.65%)	(7.61%)	(7.70%)
$\Rightarrow$ FTCs from 3 to 6 months	675,214	679,620	711,894	744,190	739,467	795,097	834,583	833,746	751,726
	(3.98%)	(3.85%)	(3.87%)	(3.91%)	(3.69%)	(3.81%)	(3.91%)	(3.83%)	(3.86%)
$\Rightarrow$ FTCs from 6 to 12 months	543,214	504,117	503,587	526,978	664,532	665,161	625,876	623,601	582,133
	(3.20%)	(2.86%)	(2.74%)	(2.77%)	(3.32%)	(3.19%)	(2.93%)	(2.86%)	(2.98%)
$\Rightarrow$ FTCs $>$ 12 months	265,516	311,102	335,850	350,109	372,427	358,932	350,336	361,101	338,172
	(1.56%)	(1.76%)	(1.83%)	(1.84%)	(1.86%)	(1.72%)	(1.64%)	(1.66%)	(1.73%)
N	16,974,433	17,648,224	18,394,748	19,018,710	20,024,909	20,880,806	21,327,094	21,766,247	

Notes: Number and share of entries into employment between 2012 and 2019 by contract and duration in the non-farm private sector. Shares are in brackets and computed as a percentage of total hires (i.e. entries in OECs, FTCs, or unknown contracts). Hence, in 2019 among the 21,766,247 entries into employment, 17,958,013 are on FTCs, and 14,468,268 on FTCs of less than one month which represent 83% and 66% of all entries into employment respectively. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'

It has already been well documented that while FTCs represent 10 to 12% of the employment stock in the French private sector, most of the entries into employment are in FTCs of very short duration (Cahuc et al. 2016, 2020).[28] In our benchmark sample, from 2012 to

[27] We follow the methodology provided by Urssaf, available at: https://www.urssaf.org/accueil/statistiques/notre-methodologie/les-declarations-d'embauche.html.

[28] See also Le Barbanchon & Malherbet (2013), Fontaine & Malherbet (2016) or Rémy & Simonnet (2021).

2019, an average of 83% of all employment entries were on FTCs, and 66% were on FTCs of less than a month, as shown in Table 3. Focusing solely on FTCs, entries into employment on very short-term contracts account for about 80% of all FTC entries. The overall proportion of entries into FTCs has remained relatively stable throughout the period. However, the percentage of FTCs that last less than a month has increased since 2012. This increase may be partially attributed to improved information on contract types in our dataset, as well as a growing trend in very short-term contracts since the early 2000s (see e.g. Fontaine & Malherbet 2016).

Although these findings have been documented before, recall practices within dual labour markets remain poorly understood. In the following sections, we present the first evidence on recall practices in France using a comprehensive administrative dataset focused on the universe of hiring intentions.

5.2 Entries into recalled employment

Table 4 presents the initial evidence on recalls. It provides the number and share of entries into recalled employment with the last employer in the non-farm private sector for all contract types (OECs and FTCs).

Table 4: Overall entries into recalled employment

	2012	2013	2014	2015	2016	2017	2018	2019	Average
# of recalls	7,264,410	7,826,972	8,345,952	8,734,168	9,084,241	9,338,132	9,424,326	9,631,054	8,706,157
Share of recalls	(42.80%)	(44.35%)	(45.37%)	(45.92%)	(45.36%)	(44.72%)	(44.19%)	(44.25%)	(44.62%)
N	16,974,433	17,648,224	18,394,748	19,018,710	20,042,909	20,880,806	21,327,094	21,766,247	

Notes: Number and share of entries into recalled employment between 2012 and 2019 for all types of contracts (OECS, FTCs, and unknown contracts) in the non-farm private sector. Shares are computed as a percentage of total hires. Hence in 2019, among all entries into employment 44% were a recall with the last employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The data presented in Table 4 unmistakably illustrate the prevalence of recalls with the last employer. On average, over the entire period, 44.6% of entries into employment result from a recall. In 2012, 42.80% of the hires were made between an employee and his last employer, 44.25% in 2019 with a peak of 45.92% in 2015. Therefore, the recall practice is roughly stable throughout the period and highly pervasive.

Remarkably, the figures presented in Table 4 fall within the range of results obtained from other studies conducted in North America and Europe, where the recall rate is estimated to be between 32% and 56%.[29] While the recall rate is high in many countries, labour

[29] Estimated recall rates are for instance (bearing in mind some methodological differences across studies) 32% in Norway (Røed & Nordberg 2003), 35% in Austria (Nekoei & Weber 2015, 2020), 36% in Spain (Alba-Ramírez et al. 2012), 40% in the US (Fujita & Moscarini 2017), 45% in Sweden (Jansson 2002), and 56% in Canada (Corak 1996). This figure is confirmed by Castro et al. (2024) which shows that slightly more than

market dynamics can be very different depending on the institutional characteristics that prevail in each country. Much like many European countries, the French labour market exhibits a significant divide between OECs and FTCs. However, there is still a dearth of understanding about the relationship between dual labour markets and recall practices. Now, we will explore this issue further by examining the types of contracts associated with recalls. Table 5 specifically examines the frequency of recalls based on contract information available in the data.

Table 5: Frequency of recalls by contract

	2012	2013	2014	2015	2016	2017	2018	2019	Average
OECs	0.28	0.27	0.24	0.24	0.25	0.26	0.28	0.29	0.26
FTCs	92.03	94.91	96.63	97.79	98.31	98.69	98.85	99.05	97.03
Unknown	7.69	4.82	3.13	1.98	1.44	1.04	0.86	0.65	2.70
N	7,264,410	7,826,972	8,345,952	8,734,168	9,084,241	9,338,132	9,424,326	9,631,454	

Notes: Frequency of recalls by contract types between 2012 and 2019 in the non-farm private sector. The line 'Unknown' indicates the share of contracts for which the type is not filled in the PEDs. The last line indicates the total number of recalls. Thus in 2019, among all recalls 99% are on FTCs and less than 1% are on OECs. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Strikingly, an overwhelming majority of recalls are associated with FTCs. On average, between 2012 and 2019, approximately 97% of recalls initiated by the last employer involve FTCs. This percentage exhibits an upward trend over the period, reflecting improved accuracy in data on contract information. The increase in the share of FTCs goes hand in hand with a decrease in the number of misinformed contracts, while the share of recalls on OECs is remarkably small – merely 0.3% – and stable. Therefore, although the overall share of recalls aligns roughly with that of many other countries, the distinctive labour market institutions, particularly the differentiation between FTCs and OECs, are likely to result in distinct recall dynamics. The next table reproduces the findings of Table 4 through the lens of FTCs only.

Table 6: Entries into recalled employment on FTCs

	2012	2013	2014	2015	2016	2017	2018	2019	Average
# of recalls on FTCs	6,685,677	7,429,538	8,065,006	8,541,137	8,931,028	9,216,700	9,316,455	9,540,226	8,465,721
Share of recalls	(49.51%)	(51.11%)	(52.35%)	(53.05%)	(52.86%)	(52.80%)	(52.87%)	(53.12%)	(52.21%)
N	13,502,668	14,536,074	15,406,493	16,098,737	16,893,299	17,465,025	17,619,427	17,958,013	

Notes: Number and share of entries into recalled employment on FTCs between 2012 and 2019 in the non-farm private sector. Shares are computed as a percentage of total hires on FTCs. Hence in 2019, among all entries into FTCs, 53% were a recall with the last employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

In our dataset, the overall recall rate (combining OECs and FTCs) is approximately 45%, as documented in Table 4. However, when examining FTCs specifically, this rate increases to

half of all non-employment spells end in recall in Canada.

an average of 52%, as expected due to the predominant occurrence of recalls among FTCs. Furthermore, we observe a 4-percentage point increase in the recall rate concerning FTCs over this period. Given the prevalence of FTCs in our data, the analysis in the following sections will concentrate specifically on these contracts.

5.3 Entries into recalled employment on FTCs by duration and type

Duration. A distinctive aspect of our data set is the high precision of the information on the duration of FTCs. Capitalising on this advantage, we delineate the durations of FTCs upon recall. We begin with a comprehensive overview of FTCs, without distinguishing between their types (regular or customary), to concentrate exclusively on the diversity of durations. The results are gathered in Table 7.

Table 7: Duration of FTCs upon recall

	2012	2013	2014	2015	2016	2017	2018	2019	Average
FTCs $\leq$ 1 month	6,045,673	6,846,995	7,476,443	7,950,824	8,315,702	8,602,730	8,696,827	8,915,465	7,856,332
	(90.43%)	(92.16%)	(92.7%)	(93.09%)	(93.11%)	(93.34%)	(93.35%)	(93.45%)	(92.70%)
FTCs from 1 to 3 months	304,336	329,348	354,401	373,636	402,635	418,065	426,398	433,739	380,320
	(4.55%)	(4.43%)	(4.39%)	(4.37%)	(4.51%)	(4.54%)	(4.58%)	(4.55%)	(4.49%)
FTCs from 3 to 6 months	87,440	95,819	101,713	106,25	108,843	114,911	116,038	114,453	93,730
	(1.31%)	(1.29%)	(1.26%)	(1.24%)	(1.22%)	(1.25%)	(1.25%)	(1.20%)	(1.25%)
FTCs from 6 to 12 months	47,984	45,194	44,392	47,021	60,191	55,734	52,752	52,426	50,712
	(0.72%)	(0.61%)	(0.55%)	(0.55%)	(0.67%)	(0.60%)	(0.57%)	(0.55%)	(0.60%)
FTCs $>$ 12 months	16,753	20,836	21,695	22,102	23,144	20,778	20,730	20,602	20,830
	(0.25%)	(0.28%)	(0.27%)	(0.26%)	(0.26%)	(0.23%)	(0.22%)	(0.22%)	(0.25%)
N	6,685,677	7,429,538	8,065,006	8,541,137	8,931,028	9,216,700	9,316,455	9,540,226	8,465,721

Notes: Number and share of recalls on FTCs by duration between 2012 and 2019 in the private sector. Shares are in brackets and computed as a percentage of all entries into FTCs upon recall (with or without a fulfilled end date). Hence in 2019, among the 9,540,150 recalls on FTCs, 93.45% whose duration was less than one month. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table 7 highlights a key insight from our analysis: a significant majority of rehires involve contracts with short durations. Consequently, between 2012 and 2019, almost 93% of the recalls pertain to FTCs lasting less than a month. This proportion witnessed a notable increase of approximately 3 percentage points during this period, rising from 6 million to nearly 9 million in less than a decade, a staggering trend. Conversely, the proportions remained remarkably consistent for all other durations, averaging 4.5% for contracts lasting between 1 and 3 months, and 0.25% for those exceeding 12 months. This phenomenon is not only concentrated on job entries, but is also significantly bolstered by recalls within the same employer.

Type and duration of FTCs. We now analyse recall with a finer grid by distinguishing both the type and duration of FTCs. Tables 4 and 6 have documented recall rates for all contract types and specifically for fixed-term contracts, respectively. Considering that, as

observed, the recall rate for FTCs consistently exceeds 50% throughout the period of analysis, it prompts us to question whether recalls predominantly pertain to the most flexible contracts (C-FTCs), and consequently, to certain sectors or occupations where, according to the law, it would be *customary by nature not to hire on a permanent basis.*[30] We then supplement our results by crossing the type and duration of the contracts. Results are gathered in Table 8 and Figure 2.

Table 8: Entries into recalled employment by type of FTCs

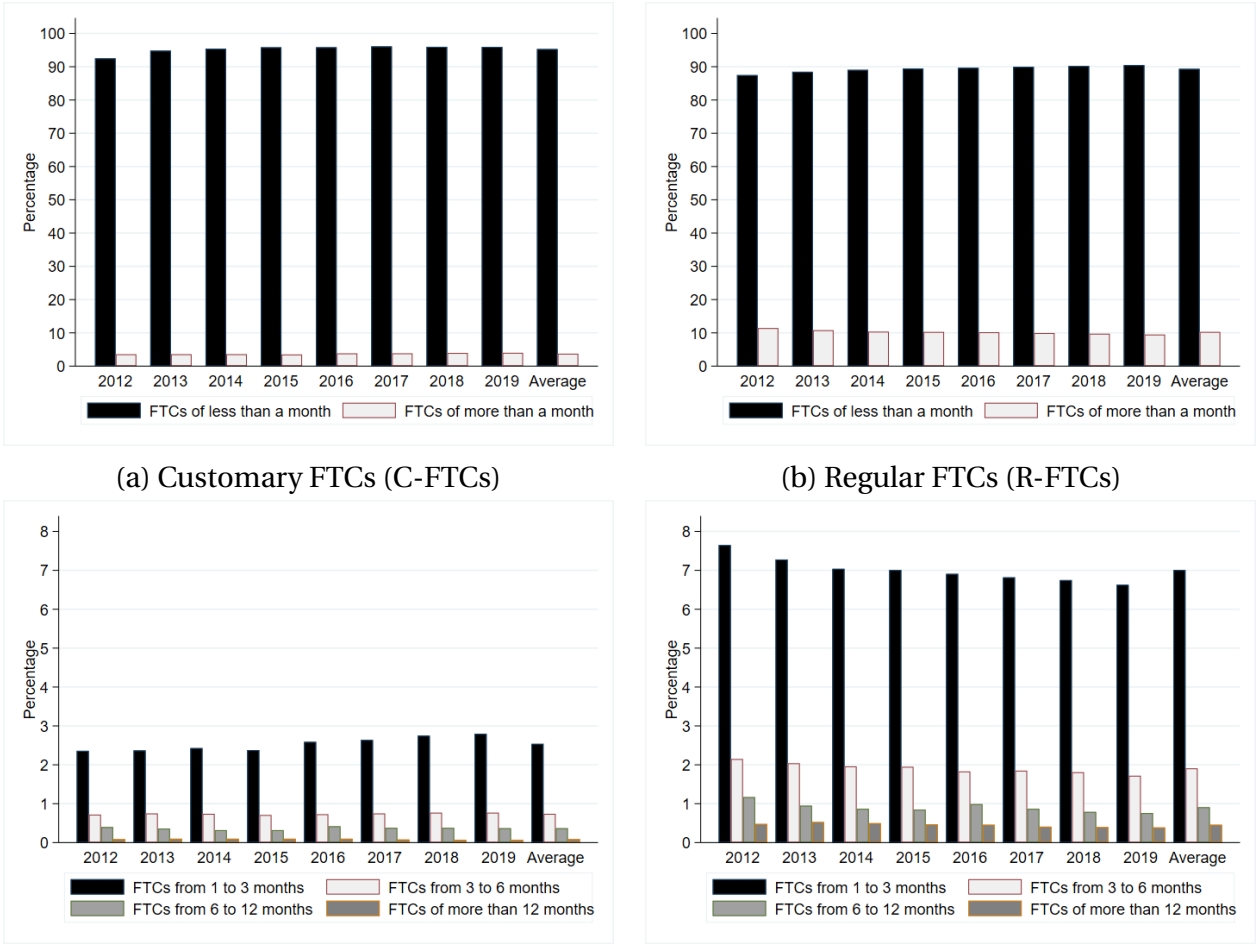
	2012	2013	2014	2015	2016	2017	2018	2019	Average
Regular fixed-term contracts (R-FTCs)									
# of recalls on FTCs	2,768,996	3,129,349	3,438,946	3,675,977	3,968,318	4,174,952	4,252,698	4,347,009	3,719,531
Share of recalls	(42.68%)	(45.25%)	(46.87%)	(47.63%)	(48.31%)	(48.63%)	(48.89%)	(49.35%)	(47.20%)
Customary fixed-term contracts (C-FTCs)									
# of recalls on FTCs	3,916,681	4,300,189	4,626,060	4,865,160	4,962,710	5,041,748	5,063,757	5,193,217	4,746,190
Share of recalls	(55.83%)	(56.42%)	(57.33%)	(58.04%)	(57.18%)	(56.83%)	(56.76%)	(56.76%)	(56.89%)
N (R-FTCs)	6,487,307	6,915,440	7,336,877	7,716,531	8,214,507	8,584,250	8,698,477	8,809,106	
N (C-FTCs)	7,015,361	7,620,634	8,069,616	8,382,206	8,678,792	8,871,775	8,920,950	9,148,907	

Notes: Number and share of entries into recalled employment on R-FTCs and C-FTCs between 2012 and 2019 in the non-farm private sector. Shares are computed as a percentage of total hires on R-FTCs or C-FTCs. R-FTCs and C-FTCs stand for regular FTCs and customary contracts respectively. Hence in 2019, among all entries into customary FTCs (C-FTCs), 56% were a recall with the last employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Upon careful examination of Table 8, it becomes evident that this assumption is not correct. First, while the recall rate is indeed higher for Customary FTCs (C-FTCs), it remains significant for Regular FTCs (R-FTCs). In both instances, this rate exceeds the overall rate reported in Table 4. Secondly, there is a noticeable upward trend in the number of recalls for both categories. However, the increase in the recall rate is significantly more pronounced for R-FTCs compared to C-FTCs. As a result, our findings indicate that the practice of recall is widespread and is becoming more prevalent even in sectors where the use of FTCs is more regulated.

Figure 2 divides Table 7 into four distinct panels. Panels (a) and (c) on the left-hand side deal with Customary FTCs, while panels (b) and (d) on the right-hand side focus on Regular FTCs.

[30] It is important to note that this is only an approximation, as the use of C-FTCs is not precisely documented in the data and is ambiguously defined by law. We use an identification procedure similar to that employed by ACOSS (see Acoss 2011). For further details, refer to Sections 2 and 4 above.



(a) Customary FTCs (C-FTCs)

(b) Regular FTCs (R-FTCs)

(c) Customary FTCs (C-FTCs)

(d) Regular FTCs (R-FTCs)

Figure 2: Duration of FTCs upon recall by type

Notes: Share of entries into recalled employment on FTCs by duration and type of contracts between 2012 and 2019 in the non-farm private sector. Panels (a) and (b) contrast entries into recalled employment for contracts of less than one month and those of more than one month, in sectors or occupations where C-FTCs are authorised –Panel (a)– and in those where they are not –Panel (b)–. Panels (c) and (d) contrast entries into contracts of 1-to-3, 3-to-6, 6-to-12, and more than 12 months, in sectors or occupations where C-FTCs are authorised –Panel (c)– and in those where they are not –Panel (d)–. Shares are computed as a percentage of all entries into FTCs upon recall (with or without a fulfilled end date). Hence in 2019, entries into recalled employment on FTCs of 1 to 3 months account for 3% of all entries in FTCs upon recall in sectors or occupations where C-FTCs are authorised and 7% in sectors where they are not. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The plots in Figure 2 support the findings presented in Table 7: regardless of whether C-FTCs are feasible, the majority of recalls are associated with very short-term contracts. However, the proportion of FTCs lasting less than one month appears to be significant in all cases (although it is slightly higher for C-FTCs): from 2012 to 2019, on average, 95% of C-FTCs have a duration shorter than one month, compared to 89% for R-FTCs. As a result, the bottom part of Figure 2 reveals that the shares of contracts that are more than a month are significantly higher and somewhat more evenly distributed for R-FTCs. A closer inspection of panels (c) and (d) shows that the difference between the two types of contracts

tends to narrow very slightly over time. Figure 2 reveals, for instance, a slight upward trend between 2012 and 2019 in the share of recalls in C-FTCs whose durations are between 1 and 3 months –panel (c)– and a slight downward trend for R-FTCs with the same duration –panel (d). Overall, this trend may have structural roots, but the relatively ambiguous legal definition of the conditions for using these contracts, along with their lenient interpretation by case law, has undoubtedly contributed to their proliferation beyond the scope of those contracts.[31]

5.4 The interplay between successive contracts

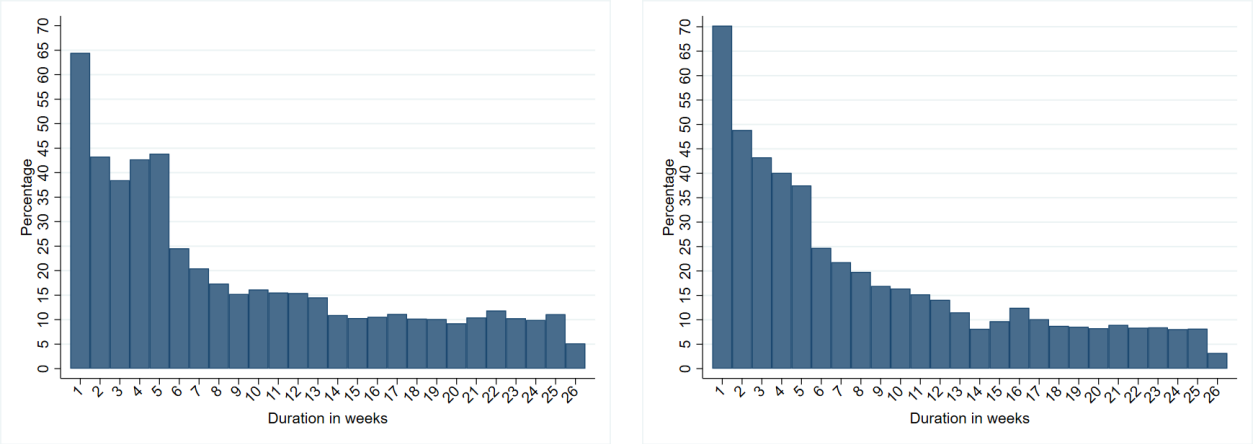
Until now, our focus has been on the attributes of FTCs upon recall. However, examining the characteristics of the contracts that precede them is a key feature in understanding the phenomenon. We will proceed in two steps. First, we examine the likelihood of being recalled based on the duration of the initial contract. Second, we analyse the difference in duration between the initial contract and the contract upon recall.

5.4.1 Probability of being recalled by contract duration

Figure 3 below presents the first evidence on the probability of being recalled conditional on the duration of the previous FTC.[32] The analysis remains confined to FTCs, with an additional restriction: contracts without a specified termination date in the data are excluded from consideration.

[31] Figure A.1 in Appendix A.4 complements Figure 2 above by illustrating the distribution of contract durations ranging from 1 to 30 days in the C-FTC and R-FTC sectors. Similar patterns emerge: recalls are concentrated on short contracts which are a bit more common in the C-FTC sector.

[32] Probabilities are calculated as the ratio between the number of recalls for which the employee's previous FTC (with the same employer) lasted a given number of weeks and the number of hires on FTCs of the same duration.



(a) Customary FTCs (C-FTCs)

(b) Regular FTCs (R-FTCs)

Figure 3: Probability of being recalled after a FTC, by type and duration (in weeks)

Notes: Average share of FTCs of a given duration in weeks followed by a recall by sectors between 2012 and 2019 in the non-farm private sector. Durations range from 1 to 25 weeks. The duration 26 gathers FTCs of more than 26 weeks. Panel (a) is for sectors or occupations where C-FTCs are allowed and Panel (b) is for sectors where they are not. Shares are expressed as a percentage of entries into FTCs of the given duration in weeks. Hence, on average, over 2012-2019, FTCs of less than a week followed by a recall account for 64% of all entries into employment on FTCs of less than a month in sectors or occupations where C-FTCs are authorised and 67% in sectors where they are not. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Figure 3 illustrates a clear pattern: the shorter the initial FTC, the higher the likelihood of being recalled by the employer. This pattern is consistent for both C-FTCs and R-FTCs. To improve the accuracy of this finding, we use logistic regression and include control variables. The primary econometric specification is defined by the following equation:

$$\mathbb{P}(Y = 1|X) = \frac{1}{1 + e^{-(\alpha + X'\beta)}} \tag{4}$$

where $P(Y = 1|X)$ represents the probability of being recalled, X are the independent variables, and β are the coefficients associated with each independent variable. The dependent variable can take one of the two values: $(Y = 0)$ for a new hire and $(Y = 1)$ for a recall. In what follows, independent variables are binary variables equal to 1 if the worker's current FTC is less than one month or if the worker's previous FTC lasted less than one month. The regression results for the year 2019 are reported in Table 9.

Table 9: Logistic regression with recall and new match as dichotomised dependent variable, contract characteristics as independent variables

	(1)
Current FTC is less than a month	1.321***
	(0.0026)
Previous FTC was less than a month	3.035***
	(0.0025)
Constant	-3.275***
	(0.0037)
Log-likelihood value	-9 342 096.1
Pseudo R-squared	0.3748
N	21 766 247

Notes: Estimates of a logistic regression on the entire sample of hires. The dependent variable is dichotomised as 1 if the hire is a recall and 0 if a new match. Standard errors are clustered at the employer-employee dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Our estimates corroborate the trends shown in Figure 3: the likelihood of an entry into employment being a recall is greater when the duration of the contract, whether current or previous, is shorter. The odds of being rehired are then multiplied by about 3.75 and 20.8 respectively.[33].

5.4.2 Durations of consecutive contracts with the same employer

Now, we examine the connection between the durations of two consecutive contracts. Our analysis focusses on investigating whether there is a change in contract duration when a worker is recalled by her last employer. FTCs are often argued to be used as screening devices. If this is the case, it is reasonable to anticipate an increase in contract duration upon recall. Figure 4 shows the cumulative frequency of the difference in duration (in days) between two consecutive contracts with the same employer.

[33]For the coefficients reported in Table 9, the odds ratios are given respectively by $\exp^{1.321}$ and $\exp^{3.035}$.

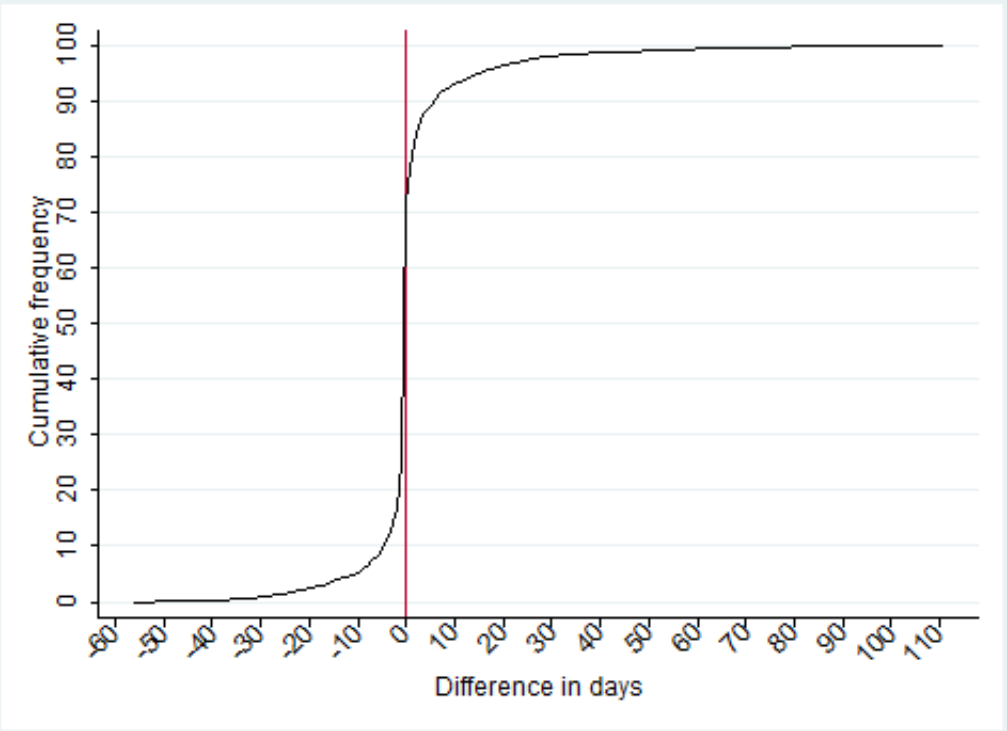


Figure 4: Difference in duration (in days) between two FTCs with the same employer

Notes: This figure represents the average cumulative frequency of the difference in duration (in days) between two FTCs with the same employer from 2012 to 2019 in the non-farm private sector. The difference is calculated by subtracting the duration of the FTC upon recall from the duration of the previous FTC with the same employer. A negative difference indicates that the duration of the FTC upon recall is shorter than that of the previous FTC with the same employer. The calculations are based on the sample of FTCs upon recall for which the end date of the contract is known. Observations with extreme differences in duration (those in the bottom 1% and top 1% of the initial distribution) have been removed. In 2019, half of the FTCs upon recall had the same duration as the previous FTC with the same employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The results are striking. We observe very little (if any) variation in the duration of two consecutive contracts with the same employer. For the period under review, the average difference is approximately one day, while the median is zero. Considering that FTCs account for the majority of hirings, that recalls primarily involve FTCs, and that firms generally offer similar contracts initially and upon recall, these findings overall mitigate the idea that FTCs are used as screening devices. Instead, it appears that the labour market is leaning toward increasingly fragmented contracts with little variation in expected duration.[34] Yet, there remains a question as to whether these results might be influenced by the prevalence of very short contracts (i.e., contracts with a duration of less than one week or

[34]This result may be related to the possibility of offering multiple FTCs, for at least two different reasons. First, Cahuc et al. (2012, 2016) show that if firms are allowed to renew FTCs, the total duration of the job spell will be equal to that of a single contract, absent the possibility of renewal. Second, recall may reduce the duration of FTCs as shown in Section 3. We provide a rationale for this property at the beginning of the paper building on an extension of the above-cited papers. The main difference between both explanations is that in the first case, the durations of the first and subsequent contracts will differ, whereas in the second case, contract durations are identical initially and upon recall. See Section 3 and Appendix B for more details on the durations of the contracts in the presence of recall.

one month). We provide in Appendix A further evidence that our results are robust across different samples.[35]

Finally, it is worth emphasising that the findings above are in line with our theoretical model of Section 3, where the duration of a contract is intimately linked to a (fixed) characteristic of the job, yielding identical durations initially and upon recall.

Taking Stock. Overall, our evidence highlights that each year: *(i)* about one-half of entries into employment are rehiring with the last employer; *(ii)* most of the entries into recalled employment are in FTCs with short durations; *(iii)* recall rates are higher in sectors where C-FTCs are allowed; however, this practice is significant and increasingly common in other sectors as well; *(iv)* the probability of being recalled with the last employer is decreasing with the duration of the contract; *(v)* there is little variation in the duration of an initial FTC and of a FTC upon recall.

6 Looking beyond contract characteristics: a first pass

Here we provide additional findings aimed at complementing those of the previous section, which focused solely on contract characteristics. We begin by examining the number and duration of non-employment periods (Section 6.1). It is important to note that our data do not allow us to precisely distinguish the nature of these periods—whether they resemble voluntary or involuntary inactivity, or whether they represent unemployment, compensated, or otherwise. Given the widespread use of temporary contracts, we then address the issue of enforcement of the legislation (Section 6.2).

6.1 Number and duration of non-employment spells

The results presented below are derived from the PEDs, where we analyse contract dynamics throughout the period 2012-2019, rather than performing an annual analysis as previously done.[36] This approach enables us to capture all rehires that extend over multiple years. We adopt this method because a year-by-year analysis often underestimates the time elapsed between two consecutive contracts, especially when they are of long duration (e.g., six months or more).

To begin with, we measure the number of workers in non-employment at 10-day intervals. Figure 5 below illustrates the number of workers between two FTCs before being

[35] See Figure A.2 in Appendix A.

[36] The number of PEDs obtained each year from this sample is provided in Appendix A, Table A.1.

recalled or hired by a different employer.

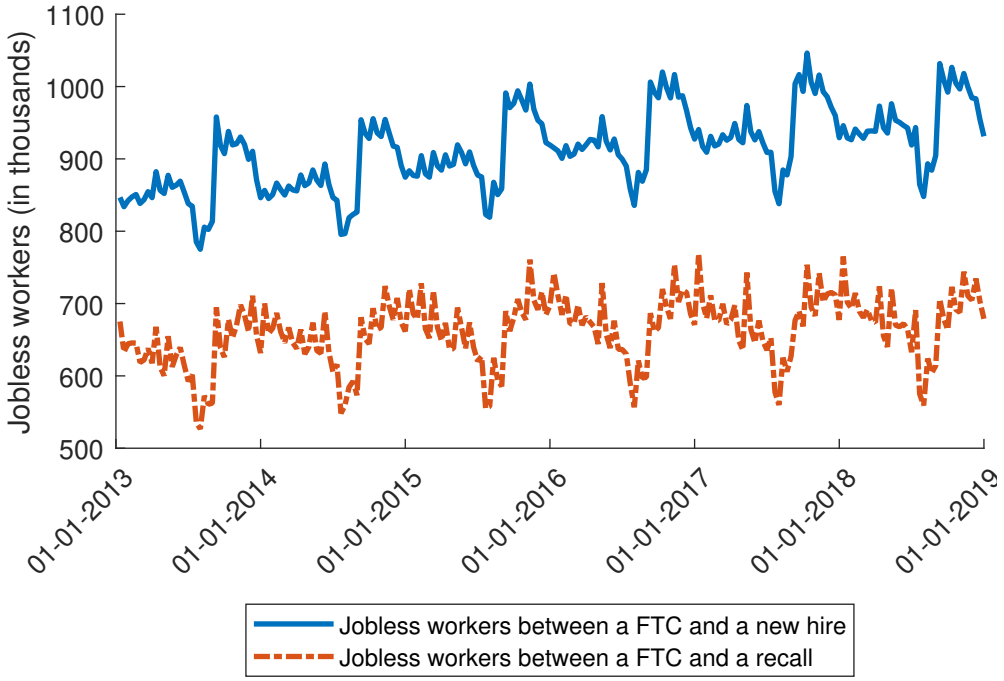


Figure 5: Number of workers between two FTCs before a recall or a new hire

Notes: Number of workers (in thousands) between two FTCs before a recall with the same employer or a new hire with a different employer in the non-farm private sector every 1st, 10th, 20th and 30th of each month from 2013 to 2018 (x-axis). All series are seasonally adjusted. The plain blue line represents the number of workers in a non-employment spell (in thousands) between two FTCs and two different employers (new hire). The dashed red line represents the number of workers in a non-employment spell (in thousands) between two FTCs and the same employer (recall). Calculations are made on the sample for which the recall definition and corrections described in section 4.2 are applied on the overall period 2012-2019. Given that the years 2011 and 2020 are not included in the analysis period, the number of individuals between two contracts is underestimated during the years 2012 and 2019. Therefore, we focus on the period 2013-2018. Hence, on 20 December 2018, about 900 thousand workers experienced a non-employment spell between two FTCs and two different employers, whereas about 700 thousand workers experienced a non-employment spell between two FTCs and were eventually recalled by their last employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

In Figure 5, we first observe that the number of workers moving between two FTCs with the same employer is notably lower than the number transitioning between FTCs with different employers. Over the observed period, the average ratio remains around 1.4. Secondly, both series display an upward trend, although the increase is more pronounced in the workers count between two FTCs with different employers.[37] One possible explanation for the discrepancy between the two series is the limited renewal options for fixed-term contracts. Many FTCs are designed to meet temporary needs and often face legal or policy restrictions on how many times they can be renewed with the same employer.

Before exploring this further, we examine the duration of non-employment periods between two contracts with the same employer. Table 10 presents the mean and median duration between two consecutive FTCs for specific employer-employee dyads. The mean

[37]The average annual growth rate is approximately 2.5% for the former, compared to 1.8% for workers transitioning between FTCs with the same employer. Both series are also slightly pro-cyclical.

and median values are calculated in calendar days between successive FTCs with the same employer, based on the duration of the initial FTC. Additionally, we distinguish between customary FTCs (C-FTCs) and regular FTCs (R-FTCs).

Table 10: Time elapsed between two FTCs (in days) with the same employer

		Median	Mean	N
All contract types	Previous FTC of less than a month	3	20.35	67,560,453
	Previous FTC between 1 and 3 months	18	88.16	3,751,558
	Previous FTC between 3 and 6 months	62	122.92	1,104,588
	Previous FTC of more than 6 months	56	110.71	886,837
	Overall	4	26.46	73,303,436
Customary FTCs (C-FTCs)	Previous FTC of less than a month	3	15.36	38,125,440
	Previous FTC between 1 and 3 months	15	85.35	1,121,806
	Previous FTC between 3 and 6 months	80	130.68	392,792
	Previous FTC of more than 6 months	91	123.63	333,419
	Overall	3	19.36	39,973,457
Regular FTCs (R-FTCs)	Previous FTC of less than a month	4	26.80	29,435,013
	Previous FTC between 1 and 3 months	20	89.36	2,629,752
	Previous FTC between 3 and 6 months	52	118.64	711,796
	Previous FTC of more than 6 months	19	102.92	553,418
	Overall	5	34.96	33,329,979

Notes: Median and mean durations are calculated as the elapsed time between the end of a FTC and the beginning of a new FTC with the same employer (recall). Calculations are in calendar days and are based on the sample for which the recall definition and corrections described in Section 4.2 are applied for the overall period from 2012 to 2019. The top panel gives the average and median time elapsed between two contracts with the same employer, both overall and categorised by duration. The middle and bottom panels provide, respectively, the same information for C-FTCs and R-FTCs. Hence, in the top panel, if the previous FTC lasted less than a month, the elapsed time between this contract and the next FTC with the same employer is on average 20.35 days. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The average duration between two consecutive FTCs with the same employer is 26.46 days, with half of these periods lasting less than 4 days, covering all FTC types (top panel). When distinguishing between Customary FTCs (C-FTCs) and Regular FTCs (R-FTCs), these figures vary. For C-FTCs (middle panel), the average duration is 19.36 days, with half of the intervals being less than 3 days. In contrast, for R-FTCs (bottom panel), the average duration increases to 34.96 days, with half of the intervals lasting fewer than 5 days. This outcome aligns with expectations, given the greater flexibility associated with C-FTCs, particularly in terms of the waiting period between successive contracts. However, this assertion requires some nuance. Upon closer inspection, a slightly different trend becomes apparent. Contracts lasting less than 3 months show lower average and median durations for C-FTCs, whereas the pattern reverses for longer-duration contracts. This observation further indicates that contract fragmentation is more pronounced for very short contracts, suggesting that their utilisation is driven by imperatives distinct from those influencing longer contracts.

6.2 Enforcement of legislation on FTCs

In this section, we examine the enforcement of legislation related to the use of FTCs. Our primary focus is on the enforcement of waiting periods, while also exploring supplementary legislative measures aimed at limiting the use of FTCs. These additional measures encompass restrictions on the maximum duration of an FTC employment period and the maximum allowable number of contract renewals.

6.2.1 Waiting period

The duration of waiting periods between two FTCs is rigorously regulated by law, yet evidence of its enforcement is scarce, if not entirely lacking. A legal mandate stipulates the necessity of observing a waiting period between two consecutive contracts with the intention of reducing the appeal of FTCs and discouraging firms from their frequent use. Nonetheless, the substantial volume of FTCs and recalls raises concerns regarding the enforcement of this law.[38]

Before we present our results, it is crucial to address a few caveats. Firstly, it is important to recall that when utilising C-FTCs, an employer is not legally obligated to adhere to a waiting period between two consecutive contracts. To avoid introducing bias into our findings, we restrict our analysis to R-FTCs. Secondly, our dataset lacks detailed information on tasks and characteristics of jobs. Therefore, when a worker holds two consecutive contracts with the same employer in a short timeframe, it is highly probable, though not certain, that the contracts are for the same tasks. Due to this lack of precise information, we assume that this is the case, potentially leading us to underestimate the enforcement, as we default to assuming that the regulation always applies. However, note that anecdotal evidence suggests that the reclassification of tasks to be performed can serve as a means of circumventing the legislation, particularly since it is an aspect of the contract that is challenging for a third party to verify. Third, the calculation of the waiting period is based on the duration of the employment spell with the employer, rather than on the duration of the last contract. This approach potentially accounts for the maximum cumulative duration of two FTCs, as it is generally forbidden to renew a temporary contract more than twice. However, we limit our analysis to the last contract with the employer. Therefore, our approach tends to overestimate enforcement. However, considering the over-representation

[38]This obligation applies regardless of whether a worker is recalled or newly hired. Given our study's primary focus on recall, our main interest lies in the waiting time period between two FTCs for specific employer-employee dyads. For further details on the legislation, we refer the reader to Section 2.

of short contracts in our data, this effect is likely to be small in magnitude.[39]

With these caveats in mind, we consider our approach to be reasonable and, to our knowledge, the first in the literature to offer empirical evidence on the degree of enforcement of legislation regarding FTCs.[40] The results are presented in Table 11.

Table 11: Share of recalls which abide by the waiting time period rule

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Regular FTCs (R-FTCs)	60.71	64.03	64.28	64.38	63.92	63.96	63.60	63.62	63.56

Notes: Share of recalls adhering to the waiting time period rule in the non-farm private sectors between 2012 and 2019. The sample is limited to Regular FTCs (R-FTCs). A recall is considered to respect this waiting period when half of the duration of the previous contract with the same employer (respectively one-third) has elapsed before the re-employment if this previous contract lasted less (respectively more) than 14 days. Shares are computed as a percentage of all entries into FTCs upon recall excluding Customary FTCs (C-FTCs). Calculations of the waiting time period are in calendar days and made on the sample for which the recall definition and corrections described in Section 4.2 are applied on the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The analysis of Table 11 shows that, on average, about 64% of the transitions between two FTCs with the same employer comply with the minimum legal waiting period. This period is defined as one third (or half) of the preceding FTC's duration, depending on whether it lasted more than (or less than) 14 days. In particular, compliance remains fairly constant throughout the studied period, fluctuating between 60% and 64%. Therefore, around 37% of the transitions do not meet the legal minimum waiting period.

Several factors could explain this non-compliance. First, transitions may occur between contracts with different tasks, exempting the employer from the waiting period requirement. Second, the employer can circumvent or violate the law by altering contract terms deceitfully. Although such practices are illegal and risky, proving them can be challenging. Lastly, and most significantly, reemployment may be advantageous for the worker.[41] The prevalence of short-term FTCs and the reliance on recall can discourage workers from seeking legal action for fear of permanent exclusion from the workforce.

6.2.2 Maximum duration of FTCs and number of renewals

The legislation on FTCs covers more than just the waiting period. To provide a comprehensive analysis, we examine two additional aspects. We classify contracts with the same

[39] To ensure comprehensive coverage, we introduce an additional measure in Appendix A by computing the waiting period based on a maximum of three successive contracts (the maximum allowed by law). As anticipated, the proportion of employers complying with the legislation is lower in this alternative calculation (see Appendix A, Table A.8 for further details).

[40] Note that we calculate the waiting periods in calendar days, while the legislation uses working days. Although this approach is practical, it may slightly overestimate enforcement. We tested the robustness of our results with alternative methods, as detailed in Appendix A, and found no significant changes.

[41] The average duration of unemployment in France is over a year. See the OECD labour force statistics at https://stats.oecd.org

employer, separated by no more than 30 days, as successive contracts for the same job. This allows us to enforce regulations on the maximum duration of an FTC employment spell, including renewals, typically capped at 18 months, and the maximum number of renewals, initially one before 2015 and expanded to two thereafter. We then compute the proportion of recalls that do not comply with these regulations. The results are presented in Table 12 below.

Table 12: Share of recalls on FTCs that are above the maximum duration or maximum number of renewals among recalls on FTCs

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Maximum duration	0.26	0.78	1.28	1.42	1.48	1.49	1.45	1.46	1.20
# Renewals	55.44	53.02	54.20	44.83	46.06	47.13	47.86	48.75	49.66

Notes: Share of recalls on FTCs with a cumulative duration with the previous FTC above the maximum duration of 18 months (first line) or exceeding the maximum number of renewals -1 before 2015, 2 since then- (second line). Shares are computed as a percentage of all entries into FTCs upon recall excluding Customary FTCs (C-FTCs). Calculations of the maximum duration and the number of renewals apply to successive contracts with the same employer, provided the duration elapsed between two contracts is less than 30 days. The recall definition and corrections described in Section 4.2 are applied throughout the period 2012 to 2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

We do observe that nearly all recalls (approximately 98.8%) comply with the regulation on the maximum duration of FTCs. This high compliance rate suggests that the duration of FTCs, being a key contract characteristic, is easier to observe and enforce than other FTC regulations. This is further supported by the second row of Table 12, which reveals that nearly half of the recalls exceed the maximum number of renewals. Although some contracts may not be subject to renewal limits, the percentage of non-compliance remains notably high.[42]

Taking Stock. The following lessons can be drawn from this section: *(i)* A significant number of non-employed workers, approximately 1.6 million, are between two FTCs; *(ii)* the number of non-employed workers between two contracts with the same employer is lower than that with different employers, and the ratio between the two remains stable over time; *(iii)* the average time elapsed between two consecutive FTCs with the same employer is below a month, with a median duration of four days; *(iv)* the average time between two contracts with the same employer is shorter in sectors or tasks where the legislation is more flexible; *(v)* the enforcement of legislation regarding waiting periods and the number of renewals appears to be low. More than a third of contracts fail to comply with the waiting

[42] In Appendix A, we present alternative measures of non-compliance, treating contracts with gaps of no more than 60 and 90 days as successive contracts for the same job. The results, shown in Tables A.9 and A.10, confirm our previous findings: the share of contracts exceeding the maximum duration remains very low, but the proportion violating the renewal limits increases with the gap between successive contracts. In particular, in all cases, a significant proportion of FTCs do not comply with this rule.

period, and half exceed the maximum number of renewals. However, our data indicates no tendency to exceed the maximum cumulative duration of short-term contracts, with a compliance rate close to 99%.

7 Looking beyond contract characteristics: a second pass

Up to this point, with the exception of Section 6, our focus has primarily been on the duration and type of contract upon recall. Moving forward, we adopt a different and complementary approach, examining recall from the perspectives of the worker (Section 7.1) and the firm (Section 7.2).

7.1 Workers

What can be said about recalled workers? To underscore the significance of this issue at the individual level, we proceed in two main steps. First, we aim to comprehend the intensity of rehires by examining the recurrence of rehires at the individual level. Second, having highlighted the intensity of the phenomenon, our objective is to improve our understanding of which workers are most impacted by rehiring practices. This point is of paramount importance for understanding the consequences of dualism and beyond, for the formulation of public policies geared toward enhancing job stability.

7.1.1 Number and recurrence of workers in recalls

We begin by documenting the aggregate number of workers hired each year. As mentioned earlier, these entries into employment may result from transitions from unemployment or inactivity, as well as job-to-job transitions, potentially with the same employer. Table 13 below presents the numbers and shares of workers who have been recalled at least once by their former employer.

Table 13: Number and share of workers recalled

	2012	2013	2014	2015	2016	2017	2018	2019	Average
# of recalled	1,257,625	1,320,304	1,373,251	1,416,204	1,477,512	1,513,860	1,520,480	1,531,937	1,426,397
Share of recalled	(22.06%)	(23.32%)	(23.85%)	(24.01%)	(23.66%)	(22.93%)	(22.25%)	(22.12%)	(23,03%)
N	5,699,899	5,660,561	5,757,171	5,898,834	6,245,502	6,602,269	6,832,904	6,926,099	

Notes: Number and share of recalled workers between 2012 and 2019 in the non-farm private sector. Shares are computed as a percentage of workers hired at least once during the year. Hence in 2019, among people hired at least once, 22.12% experienced at least one recall during the year. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

According to the last line of Table 13, each year we observe between 5.7 to 7 million workers entering employment. The first line of the table shows that, on average, 1.4 million of these

workers experience at least one rehiring with the same employer during the year. The second line indicates that over the period, the share of recalled workers remains almost stable, varying between 22% and 24%. While recalls account for more than 44% of hires, as documented in Table 4, they are concentrated among a relatively small fraction of workers, about 23% according to our data. This concentration naturally raises questions about the recurrence of recalls, a phenomenon that, to our knowledge, is largely undocumented in the literature. To answer this question, we compute the number of times a worker has been recalled by the same employer in a given year.[43] The findings are presented in Table 14.

Table 14: Share of recalled workers who experienced a maximum of # consecutive recalls with the same employer during the year

	2012	2013	2014	2015	2016	2017	2018	2019	Average
1	42.87	41.44	40.61	40.36	40.17	40.14	40.19	39.98	40.72
2	16.67	16.77	16.72	16.68	16.69	16.68	16.65	16.57	16.57
3	9.52	9.71	9.74	9.73	9.74	9.78	9.71	9.69	9.69
4	6.16	6.34	6.43	6.42	6.46	6.42	6.41	6.42	6.42
5 and more	24.78	25.74	26.50	26.82	26.93	26.98	27.04	27.35	27.35
N	1,257,625	1,320,304	1,373,251	1,416,204	1,477,512	1,513,860	1,520,480	1,531,937	

Notes: Share of workers recalled who experienced a maximum of 1, 2, 3, 4, or more than 5 recalls with the same employer during the year, from 2012 to 2019 in the non-farm private sector. Shares are computed as a percentage of workers recalled at least once. Hence in 2019, 6% of recalled workers experienced a maximum of 4 recalls with the same employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Drawing on Table 14, we observe that each year about 1.2 to 1.5 million workers experience recalls, with roughly 55% undergoing a maximum of one or two successive recalls during the year with the same employer. Most strikingly, more than a quarter of these workers experience five or more recalls each year. The share of recalled workers remains almost stable throughout the period, except for those recalled more than five times, whose share increases from 25% to 27%. Overall, our results indicate that recall is a large-scale phenomenon, but it tends to be concentrated among a small number of workers frequently recalled by their last employers, thereby increasing the fragmentation of the labour market. We now seek to substantiate this finding by examining the individual characteristics of workers more closely.

7.1.2 Individual characteristics of recalled workers

A limitation of our data is the lack of detailed information on workers' individual characteristics beyond just age and gender. Regrettably, we lack information on their education or

[43] To provide a comprehensive analysis, we also calculated the instances in which a worker was recalled within a specific year, regardless of whether the employer was the same. The results show minimal, if any, variations, suggesting that recalls predominantly occur with a single employer, typically the last one. These results are available upon request to interested readers.

qualifications. With this caveat in mind, Table 15 presents information on recalled workers classified by age and gender.

Table 15: Demographic variables

		2012	2013	2014	2015	2016	2017	2018	2019	Average
Workers never recalled	16-24	36.59	36.22	35.62	35.07	34.32	33.85	33.58	34.03	34.91
	25-34	28.06	28.16	28.57	28.77	28.98	29.03	28.70	28.15	28.55
	35-44	17.64	17.52	17.48	17.53	17.73	17.87	17.90	17.69	17.67
	45-54	12.77	12.94	13.13	13.33	13.54	13.72	14.05	14.10	13.45
	55 +	5.62	5.85	5.90	6.00	6.12	6.21	6.47	6.76	6.12
	Female	47.37	47.09	47.05	46.84	46.53	46.38	46.36	46.63	46.78
	Male	52.63	52.91	52.95	53.16	53.47	53.62	53.64	53.37	53.22
	N	4,442,274	4,340,257	4,383,944	4,482,630	4,767,990	5,088,409	5,312,424	5,394,162	
Workers recalled	16-24	36.57	36.17	35.73	35.26	35.00	34.87	34.59	34.83	35.38
	25-34	25.11	25.50	25.64	25.67	25.36	24.96	24.43	23.72	25.05
	35-44	17.49	17.37	17.39	17.44	17.48	17.43	17.31	17.07	17.37
	45-54	14.13	14.11	14.22	14.46	14.67	14.96	15.32	15.45	14.67
	55 +	7.59	7.73	7.89	8.07	8.41	8.74	9.33	9.95	8.46
	Female	57.87	57.82	57.89	57.71	57.67	57.88	58.42	58.25	57.94
	Male	42.13	42.18	42.11	42.29	42.33	42.12	41.58	41.75	42.06
	N	1,257,625	1,320,304	1,373,251	1,416,204	1,477,512	1,513,860	1,520,480	1,531,937	

Notes: Characteristics of workers upon first entry or recall in the non-farm private sector between 2012 and 2019. The shares of each age group and gender are given as a percentage of (a) workers hired at least once and never recalled, and (b) workers recalled at least once. For example, in 2019, 47% of workers who were never recalled were women, compared to 58% of workers who were recalled. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

We find that the share of entries into employment declines with age, as do rehirings. This result is not surprising, as transitions to employment decrease as workers gain experience and obtain more stable jobs. More interestingly, the comparison between entries (top panel of the table) and recalls (bottom panel of the table) shows that these shares remain fairly stable over time, except marginally for workers aged 25 to 34 years and those over 55. The latter group is slightly over-represented in recalls, with a difference of about 2 percentage points. However, age does not appear to be the main factor explaining the concentration of recalls among certain groups of workers. Instead, gender plays a much more significant role. While the share of entries into employment is almost equal for men and women who are never recalled, the share of women recalled at least once is much higher, with a difference of nearly 12 percentage points. Overall, these results suggest significant differences in recall patterns at the beginning and end of careers, and between men and women.

We extend these results by examining the share of recalled workers in more detail, stratified by age and gender. Unlike our previous aggregate approach, we now analyse the evolution of recall rates throughout the workers' lifecycle. Specifically, we calculate the share of workers recalled by their former employer within each age and gender group. For example, we calculate the share of 16-year-old women hired at least once who were recalled by their former employer. The results are presented in Figure 6 below.

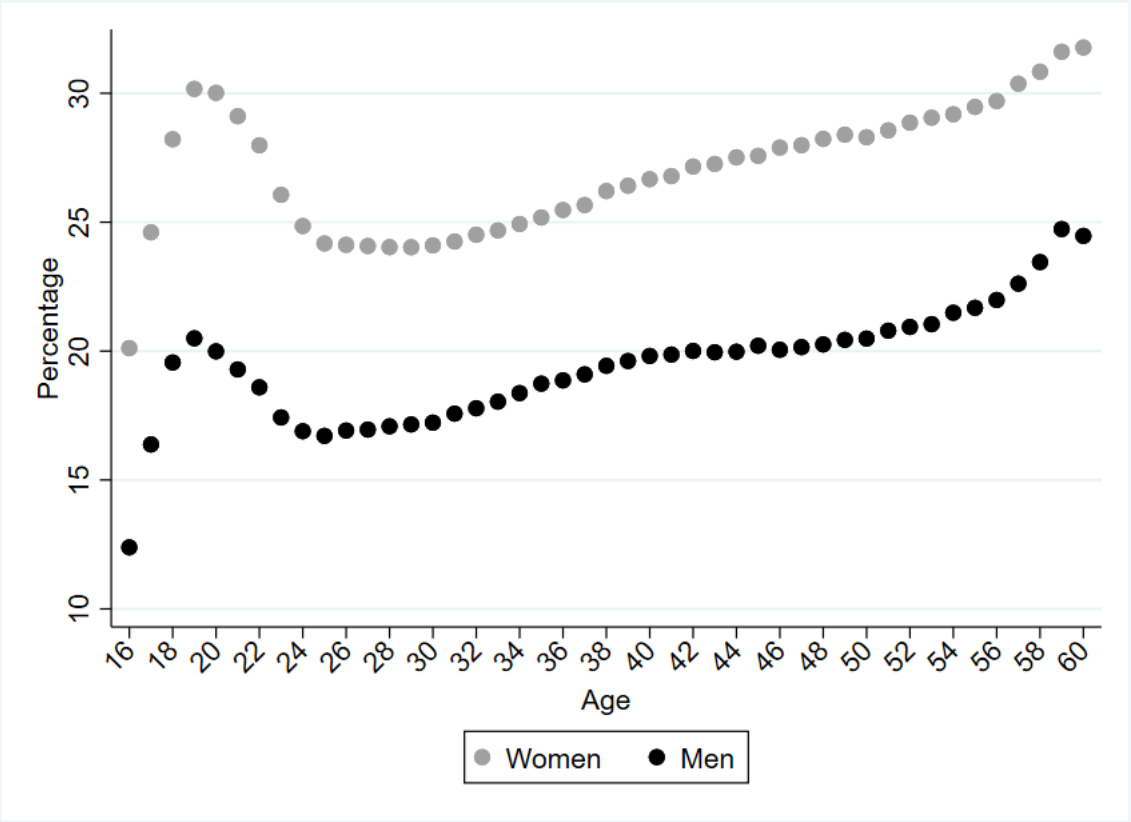


Figure 6: Share of recalled workers by age and gender

Notes: Average share of recalled workers between 2012 and 2019 in the non-farm private sector by age and sex. Shares are computed as a percentage of workers of a given age and sex hired at least once. For example, on average over the period 2012-2019, 30% of women aged 20 are recalled at least once, compared to 20% of men aged 20. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Keeping in mind that a significant fraction of the individuals aged between 16 and 24 may still be enrolled in education, Figure 6 illustrates three distinct patterns. First, the recall rate is consistently higher for women, with a significant difference compared to men at all ages. Second, the proportion of recalled workers is greater early in their careers, peaking around age 20. Third, it then increases almost monotonically from age 25 until retirement, at a rate of about 0.9% per year.[44]

Our results in terms of gender can reflect a phenomenon of job segmentation to the detriment of women. Women often occupy roles that are more susceptible to temporary work or contracts, such as administrative, clerical, or service-oriented positions. As a result, they may be recalled more frequently to fill these jobs. Our findings may also be related to potential bias as employers might assume that women will be more committed to temporary or recall positions due to societal expectations, potentially leading to a pattern

[44] In a recent study on the US, Lam & Qiu (2023) document a similar age-related trend between 25 and 55, but with a steeper increase, as the recall rate doubles from about 30% to almost 60%.

of increased recalls.

Our results also align with the fact that there is more job churning at the beginning of a career, as it takes time to find a stable position. The recall rate increases significantly until age 20, then reaches a minimum around age 25, with rates of about 17% for men and 24% for women. Afterward, it increases almost monotonically, reaching 24% for men and 32% for women shortly before retirement. Interestingly, for adults over 25, men only reach recall rates comparable to women near the end of their career, at levels similar to those women achieve in the early stages of their career. Nevertheless, the recall rate remains consistently higher for women, with an average difference of 7 to 8 percentage points.

Finally, the growing trend towards recall as we approach retirement age can be explained by the desire of flexible work arrangement as older workers, especially those near retirement, may prefer FTCs over OECs, as these contracts offer flexibility without the expectation of a long-term commitment. This flexibility aligns with companies' needs for temporary or project-based work and reduces the pressure to offer permanent positions. More negatively, it can also be related to age discrimination. Many older workers face challenges in securing new, permanent positions due to age-related biases in the labour market. Employers may perceive younger workers as more adaptable or technologically savvy, making it harder for older workers to find stable, full-time jobs. As a result, older workers may rely on FTC recalls as one of their few viable employment options.

7.1.3 Probability of being recalled according to workers' characteristics

We complement our analysis with a logistic regression. The econometric specification is similar to the baseline regression (4), augmented with two additional variables: gender and a categorical age variable, using individuals aged 25 to 34 as the reference group. The regression results are presented in the following table.

Table 16: Logistic regression with recall and new match as dichotomised dependent variable, contract and workers' characteristics as independent variables

	(1)	(2)
Contract on FTC of less than a month	1.321***	1.332***
	(0.0026)	(0.0027)
Previous FTC lasted less than a month	3.035***	3.073***
	(0.0025)	(0.0028)
Worker's age (reference category: 25-34)		
16-24		0.236***
		(0.0038)
35-44		-0.0800***
		(0.0047)
45-54		-0.0380***
		(0.0051)
55+		0.0584***
		(0.0060)
Women		0.274***
		(0.0031)
Constant	-3.275***	-3.506***
	(0.0037)	(0.0051)
Log-likelihood value	-9 342 096.1	-9 283 956
Pseudo R-squared	0.3748	0.3781
N	21 766 247	21 745 130

Notes: Estimates of a logistic regression on the entire sample of hires. The dependent variable is dichotomised as 1 if the hire is a recall and 0 if a new hire. Standard errors are clustered at the employer-employee dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The results in Table 16 corroborate the patterns shown in Figure 6. Individuals aged 16–24 or 55+ are more likely to return to their previous employer, with probabilities increasing by 27% and 6%, respectively, both statistically significant at the 1% level. With respect to gender, women are more likely to be recalled, with being a woman increasing the probability of a recall by about 31%, an estimate that is also statistically significant at the 1% level. Finally, consistent with the results in Table 9, the probability of being rehired is higher the shorter the duration of the current or previous contract.

Taking stock. The previous section delivers a number of evidence: *(i)* recalls are concentrated on a fairly small number of workers; *(ii)* more than a quarter of the workers are recalled more than 5 times in a given year; *(iii)* women are more frequently recalled than men; *(iv)* recalls are more common at the beginning and end of a career.

7.2 Firms

We will now explore the characteristics of firms that rehire employees, focussing on non-farm, profit-making firms identified in the PEDs, and utilising information on firms' productivity provided by the FARE data. Our analysis unfolds in two stages. First, we present descriptive statistics on the share of entries into recalled employment, overall and by contract duration, categorised by firm size and productivity. Second, we conduct panel data regressions covering the period 2012-2019 to accommodate time-varying explanatory variables and the impact of time-, sector-, and firm-fixed effects on the share of entries into recalled employment and on the duration of the contracts. This enables us to examine the recall both at the extensive and intensive margins.

7.2.1 Firm-level statistics

We present descriptive statistics on firm size and productivity in Table 17. Firm size is defined as the number of employees declared by the employer in the PEDs, with this information being well reported for about 94% of the PEDs on average each year.

Firm productivity is measured as the value added per worker, calculated by dividing the value added from the FARE database by the number of employees in the PEDs. Data are aggregated at the firm-by-year level and weighted by the number of declarations for each firm i in year t relative to the total number of declarations made by all firms in the same year. The matched data encompass about 74% of the PEDs relative to our benchmark sample.[45]

[45] After matching our databases, we are left with over 100 million observations, providing substantial statistical power despite a reduction of more than 25% in our initial sample size.

Table 17: Recall by firm characteristics

	Hiring firms		Rehiring firms		
	Firms rehiring (%)	Entries into recall (%)	Entries into recall (%)	Mean duration upon recall (days)	Median duration upon recall (days)
Total	0.2207	0.4468	0 .5226	20.11	6.95
	(0.4147)	(0.3145)	(0.2748)	(40.45)	
Firm size					
(# of employees)					
0-19	0.1951	0. 3403	0.4972	19.95	4.45
	(0.3964)	(0.3163)	(0.2633)	(41.31)	
20-49	0.3242	0.4459	0.5462	17.79	4.82
	(0.4681)	(0.3256)	(0.2741)	(38.45)	
50-99	0.4386	0.5110	0.5772	16.85	6.15
	(0.4962)	(0.3162)	(0.2736)	(36.14)	
100-199	0.4819	0.5021	0.5539	18.43	5.05
	(0.4997)	(0.3038)	(0.2710)	(40.36)	
+ 200	0.6176	0.5092	0.5307	22.35	10.97
	(0.4860)	(0.2820)	(0.2679)	(41.57)	
Firm productivity quartiles					
(value added per worker)					
p25	0.2358	0.3935	0.4731	19.95	11.93
	(0.4223)	(0.2905)	(0.2544)	(34.14)	
p50	0.2407	0.4843	0.5658	18.82	7.95
	(0.4275)	(0.3178)	(0.2687)	(33.79)	
p75	0.2122	0.4630	0.5672	22.32	6.27
	(0.4089)	(0.3364)	(0.2829)	(44.49)	
p100	0.1951	0.4329	0.5151	19.79	3.37
	(0.3963)	(0.3049)	(0.2617)	(48.07)	
Observations	5,014,249		1,014,341		

Notes: Recall practices by firm characteristics in the non-farm private sector are analyzed using the DPAE×FARE data. We distinguish two samples: on the left-hand side, the entire sample of hiring firms, and on the right-hand side, firms that performed at least one recall. Shares and durations are averages over the period 2012-2019, with standard deviations in brackets. Over this period, an average of 32.42% of firms with 20 to 49 employees engaged in rehiring, and 44.59% of their hires were recalls. For firms that rehired, the average recall share was 54.62%, and they offered FTCs upon recall with an average duration of 17.79 days. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)' and FARE data.

Table 17 is divided into two main parts. Columns 1 and 2 consider all hiring firms, while columns 3 to 5 focus exclusively on rehiring firms. The summary data from the first row indicate that 22% of hiring firms engage in rehiring, with rehirings making up an average of 44% of their hires. This proportion rises to around 53% when we restrict ourselves to firms that have rehired at least once, which excludes all firms for which we have not observed any recalls. The last two columns of the table indicate that the mean and median duration of a typical contract upon recall are 20 days and 7 days respectively. This, combined with insights from previous sections, indicates an asymmetric distribution of contract durations that is skewed to the right.

The rest of the table breaks down the aggregate results by firm size and productivity. When examining all hiring firms, we observe that the proportion of firms that rehire grows with firm size but appears relatively stable by productivity levels (column 1). This share is relatively high, fluctuating between 20% and 61% depending on the specifications. The proportion of entries into recalled employment entries is also notable, following a mild

bell-shaped distribution (column 2). When we focus only on firms that engage in rehiring, we observe similar patterns, though with notably higher rates—approximately 10 percentage points higher (column 3). The average contract length remains generally stable and displays a rightward skew, without any clear association with firm size or productivity (columns 4 & 5). The key takeaway from Table 17 is that rehiring is concentrated among roughly one-third of firms and that when firms do rehire, the share of recalls among entries into employment is significant.

Given that our results indicate considerable heterogeneity among firms, it appears that additional factors may be affecting rehiring patterns relative to firm size and productivity, suggesting a need for further statistical analysis. This is the topic of the next subsection.

7.2.2 Firm-level regressions

The previous descriptive statistics gave us insight into the extent of rehiring based on the size and productivity of firms. However, these findings might be influenced by additional confounding variables. Therefore, it is important to understand the respective importance of structural characteristics at both the firm and sectoral levels. The prevalent assumption is that the use of FTCs is largely driven by certain sectors with significant flexibility requirements, an assumption that we might also be tempted to apply to the recall practice. However, recent studies conducted in Spain and Italy suggest that this hypothesis lacks support, indicating that industry variability plays a minor role in the overall variability of temporary employment (Auciello et al. 2023, Palladino & Sartori 2023, Pijoan-Mas & Roldan-Blanco 2022).[46]

Our matched data allow us to build a panel and control for time-, sector-, and firm-fixed effects. This enables us to assess their respective importance and determine the impact of time-varying explanatory variables on several outcomes. Therefore, to improve our initial findings, we conducted a more comprehensive examination at the firm level using multivariate regression analysis. We estimate the following equation:

$$Y_{ft} = \alpha_t + \alpha_s + \alpha_f + \beta X_{ft} + \epsilon_{ft} \tag{5}$$

[46]Some figures regarding the range of recall rates across sectors are presented in Table A.11, available in the Appendix A. Sectors are defined using the 1-digit main activity code, following the French classification of activities by the INSEE. See https://www.insee.fr/fr/information/2120875 We differentiate among 20 non-farm private sectors. Recall rates range from a low 1.4% in the electrical, gas, steam, and air conditioning supply industry to a high 63% in Human health and social work activities. This sector not only boasts the highest recall rate, but also exhibits the highest recall growth rate, increasing by approximately 5 percentage points between 2012 and 2019. The use of recalls appears to be widespread among a relatively limited number of sectors, with 7 out of the 20 sectors having a recall rate that exceeds 40%.

where Y_{ft} is a firm level outcome at time t. We are examining two outcomes: the share of employees rehired by their last employer and the average duration of contracts upon rehiring. The above-mentioned specification includes time-varying firm characteristics denoted as X_{ft}. These variables encompass the size of the firm, represented by the logarithm of total employees, and the log of the value added per worker. We also regress the share of entries in recall and contract duration upon recall against three types of fixed effects sequentially: α_t for year fixed effects, α_s for (2-digit) sector fixed effects, and α_f for firm fixed effects. The complete set of results for various combinations of fixed effects and explanatory variables is presented in Tables 18 and 19.

Share of entries into recalled employment. We begin by examining the proportion of recalls among firms' hires. The results are presented in the table below.

Table 18: Firm-level regressions, share of entries into recalled employment

	(1)	(2)	(3)	(4)	(5)	(6)
Firm size (log)	0.0250***	0.0250***	0.0271***	0.0271***	0.0152***	0.0154***
	(0.0000535)	(0.0000534)	(0.0000500)	(0.0000500)	(0.000147)	(0.000150)
Value added per worker (log)	0.0202***	0.0203***	0.0217***	0.0219***	0.0129***	0.0132***
	(0.000146)	(0.000146)	(0.000136)	(0.000136)	(0.000140)	(0.000141)
Constant	0.254***	0.254***	0.239***	0.238***	0.328***	0.327***
	(0.000676)	(0.000676)	(0.000615)	(0.000615)	(0.00110)	(0.00112)
Year FE	No	Yes	No	Yes	No	Yes
Sector FE	No	No	Yes	Yes	No	Yes
Firm FE	No	No	No	No	Yes	Yes
Observations	5,014,249	5,014,249	5,014,249	5,014,249	4,643,048	4,643,048
R^2	0.042	0.043	0.351	0.352	0.940	0.940
Adjusted R^2	0.042	0.043	0.351	0.352	0.923	0.923

Notes: Estimates of the multivariate regression given by equation (5) at the firm level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)' and FARE data. Data are aggregated at the firm- by-year level and weighted by the number of declarations for each firm i in year t relative to the total number of declarations made by all firms in the same year.

Table 18 highlights a key finding: the decision to rehire is mainly influenced by structural requirements within the firm, rather than by sector-specific characteristics or broader economic conditions. Indeed, one crucial insight to glean from Table 18 above is that the unobserved time-invariant characteristics of the firms account for the largest part of the overall variability in the share of entries into recalled employment.[47]

[47] Specifically, when time and sector fixed-effects are included individually, they explain 0.04% and 35% of the overall variation in the share of entries into recalled employment, respectively (Table 18, columns (1) to (3)). The model explains only 35.2% of the variation when these effects are combined (column (4)). However, with the addition of firm-fixed effects, the adjusted R-squared increases significantly to 92.3% (see Table 18, column (5)).

Table 18 also brings out a positive association between the share of entries into recalled employment and both the size and productivity of the firm. These findings are statistically significant at the 1% level across all specifications. In our preferred specification (column 6), a 1% increase in firm size and productivity results in a 3.45% and 2.95% relative increase, respectively, in the share of entries into recalled employment. In concrete terms, the proportion of recalls rises from 44.68% to 46.22%—an increase of 1.54 percentage points—due to firm size, and from 44.68% to 46%—an increase of 1.32 percentage points—due to productivity. These positive correlations are not surprising and can be explained as follows. First, larger and more productive firms typically have more complex operations and a greater variety of tasks, which requires a more diverse set of skills. Recalling employees who are already familiar with the firm's specific processes and culture can be more efficient than hiring new employees. Second, larger firms often have multiple projects running simultaneously, some of which might be temporary or seasonal, and highly productive firms often operate in dynamic markets where they need to respond quickly to changes in demand. Employees may be laid off when a project ends and then recalled when a new project begins or when there is an increase in demand.

Duration of FTCs upon recall. Larger and more productive firms tend to recall their workers more frequently than smaller and less productive ones. However, it remains unclear whether they provide longer contracts upon recall. Existing studies on short-term contracts often do not address this question comprehensively or establish connections between contract duration, rehiring practices, and firm characteristics.

Having explored the factors influencing the share of entries in recalled employment (the extensive margin), we now turn our attention to the duration of contracts upon recall, representing the intensive margin of rehiring. To complement our analysis, we performed a multivariate regression similar to equation (5), focussing on the average duration of the contract upon recall (in days) as the outcome of interest. The set of covariates remains similar to those detailed previously. The results are shown in Table 19.

Table 19: Firm-level regressions, average duration of FTCs (upon recall)

	(1)	(2)	(3)	(4)	(5)	(6)
Firm size (log)	0.746***	0.746***	0.0211	0.0212	0.511***	0.718***
	(0.0158)	(0.0158)	(0.0160)	(0.0160)	(0.0996)	(0.102)
Value added per worker (log)	0.0928*	0.0862*	0.410***	0.400***	1.120***	1.216***
	(0.0421)	(0.0421)	(0.0422)	(0.0422)	(0.0946)	(0.0953)
Constant	16.15***	16.17***	18.41***	18.45***	12.27***	10.88***
	(0.202)	(0.202)	(0.197)	(0.197)	(0.791)	(0.804)
Year FE	No	Yes	No	Yes	No	Yes
Sector 2dig FE	No	No	Yes	Yes	No	Yes
Firm FE	No	No	No	No	Yes	Yes
Observations	1,014,341	1,014,341	1,014,339	1,014,339	804,722	804,721
R^2	0.002	0.003	0.221	0.221	0.716	0.717
Adjusted R^2	0.002	0.003	0.221	0.221	0.613	0.614

Notes: Estimates of the multivariate regression given by equation (5) at the firm level with the average duration of recalls in days as dependent variable. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)' and FARE data. The data are aggregated at the firm- by-year level and weighted by the number of declarations for each firm i in year t relative to the total number of declarations made by all firms in the same year.

Table 19 offers several insights, presenting the same six specifications as those analysed above. Specifically, the duration of FTCs upon recall increases with both the size and productivity of the firm. These results are consistently significant across most specifications, with only two exceptions regarding firm size. A 1% increase in firm size is associated with a 3.57% increase in the duration of the contract upon recall, while a 1% increase in productivity results in a 6.57% increase (column 6). However, these effects remain relatively modest in scale, as the mean duration of the contract upon recall is small, as documented in Table 17. This suggests that although larger and more productive firms often undertake large-scale projects that require longer completion times, on average, FTC workers benefit only marginally from these factors. This may indicate that contracts upon recall are relatively standardised and typically involve auxiliary or supplementary tasks. Moreover, it is noteworthy that both the extensive and intensive margins are aligned and mutually reinforce each other.

Comparing the adjusted R-squared values across the various specifications, we observe that the unobserved time-invariant characteristics of firms explain the largest portion, almost 40%, of the overall variability in contract durations upon recall. In contrast, year-fixed effects play a minor role in explaining this variability, while industry-fixed effects account for approximately 22% of the variability in the duration of FTCs upon recall. Therefore, firm-fixed effects emerge as the most significant factor.

Taking stock. The main points to bear in mind here are: *(i)* the fixed attributes of firms

play a crucial role in explaining the variability in recall shares; *(ii)* firms fixed-effects account for a larger portion of this variation than sectoral characteristics, challenging some conventional beliefs; *(iii)* firm size and productivity have a positive and statistically significant effect on both the extensive and intensive margins of recall.

8 Conclusion

In many countries, the rehiring of a former employee is a common practice. Despite its pervasiveness, this practice remains understudied, particularly in the European context. The objective of this paper was to provide new insights into recall practices within a typical European labour market, characterised by a marked division between secure (open-ended) labour contracts and more precarious (fixed-term) contracts.

The contribution of this paper is twofold. First, we present a novel theoretical model that illustrates how recalls combined with the use of fixed-term contracts contribute to the fragmentation of employment spells, a finding that aligns closely with our empirical results. Second, drawing on extensive linked employer-employee data from France spanning 2012 to 2019, we offer fresh empirical insights into recall practices. Our findings reveal a substantial recall rate of 44%, primarily involving fixed-term contracts of short durations, highlighting the strong link between recalls and contractual dualism.

Recalls are typically seen as a means of promoting greater stability through long-term relationships between firms and workers. However, in our context, the reality appears quite different. Our findings uncover a paradox: although many workers maintain durable attachments to firms, they face increasingly fragmented employment episodes, a phenomenon that we refer to as *fragmented stability*. This fosters an illusion of stability through repeated rehirings, but it may ultimately result in workers being confined to recurring periods of non-employment and short-duration contracts. This has been shown to disproportionately impact vulnerable groups, including women and older workers, deepening existing labour market inequalities, and providing limited prospects for those already marginalised.

Our results also raise concerns about the enforcement of labour laws. High recall rates on short-term contracts, despite stringent regulations, suggest that employers may exploit legal loopholes or that enforcement mechanisms are insufficient. As a result, a significant proportion of recalls could breach the legal requirements governing the use of fixed-term contracts. Although accurately assessing the degree of compliance with the law is chal-

lenging, our findings lend support to this perspective: up to 37% of recalls may not comply with regulations governing the waiting period between consecutive fixed-term contracts, and nearly half of the contracts may violate the rules regarding the maximum allowed number of renewals. Thus, recalls may undermine the objectives of employment protection legislation, which seeks to promote job security and reduce workforce turnover. The prevalence of high recall rates combined with fragmented contracts highlights a disconnect between the intended goals of labour regulations and the realities of labour market practices.

At a more granular level, recall is often regarded as being concentrated in specific sectors, but this view is only partially accurate. This is confirmed by our panel data regressions, which reveal that the time-invariant attributes of firms account for most of the variation in recall practices at both extensive and intensive margins of recall, and that firm size and productivity positively affect both margins. Thus, the reliance on recalls and short-term contracts may reflect structural needs at the firm level, but it can also signal inefficiency. As a matter of fact, while firms may benefit from this flexibility, it could also reflect the perverse effects of labour market institutions or inadequate enforcement.

The primary objective of this article was to provide a comprehensive analysis of the recall phenomenon within a dual labour market. This has led us to highlight a wealth of evidence from administrative data on the universe of hires in France. However, we acknowledge some limitations of our study. First and foremost, our study is constrained by limited information on workers, and the use of anonymised identifiers prevents us from linking our dataset to other databases. Second, it reveals a lack of incentives to stabilise employment. The exploration of corrective mechanisms inspired by experience rating and aligned with the bonus-malus policy introduced in France in 2021 presents a promising area for research. However, this requires a structural approach that goes beyond the scope of this paper.

In conclusion, we have introduced the concept of *fragmented stability* to capture the dual nature of the French labour market, where recalls provide firms with operational flexibility but deepen labour market segmentation and inequality. By shedding light on the extensive use of recalls, especially linked to fixed-term contracts, our research underscores the need for a deeper understanding of the mechanisms driving this phenomenon. This calls for additional empirical investigation and theoretical model-driven approaches, both of which are central to our ongoing research agenda.

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A Supplementary Tables and Figures

This appendix includes supplementary tables and figures aimed at conducting robustness checks on the results emphasised in the main text.

A.1 Correction of the sample on the entire period

Table A.1 below reports the number of observations when the corrections described in Section 4.2 are applied to the entire period instead of year by year, which is relevant when focussing on the waiting time between successive recalls, analysed in Section 6. The data presented in this table serve as a supplement to the last two rows shown in Table 1, indicating a relatively minor alteration in the number of observations compared to the sample size.

Table A.1: PEDs sample when corrections are made over the whole period

	2012	2013	2014	2015	2016	2017	2018	2019
N	16,915,131	17,590,304	18,339,438	18,965,271	19,974,841	20,831,685	21,287,695	21,766,247

Notes: Number of PEDs between 2012 and 2019 in the non-farm private sector when corrections described in Section 4.2 are applied on the overall period 2012-2019. Tables and Figures of Section **??** are obtained from this sample. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

A.2 Sectoral distribution of hires

Table A.2 below presents some descriptive statistics on the share of entries into employment by sector between 2012 and 2019. It can be seen that on average 7 of 20 sectors represent more than 80% of all entries. As highlighted in the text, the hotel and restaurant sector has the largest portion of the declarations, closely followed by the human health sector, as well as social work activities, and the arts, entertainment, and recreational activities sector.

Table A.2: Entries into employment by sectors

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Extractive industry	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Manufacturing industry	3.82	3.52	3.46	3.37	3.35	3.39	3.44	3.31	3.46
Electricity, gas, steam and air conditioning supply	0.11	0.10	0.10	0.09	0.08	0.08	0.07	0.07	0.09
Water supply, sewerage, waste management and remediation activities	0.25	0.23	0.24	0.22	0.22	0.22	0.22	0.21	0.23
Construction	3.31	3.07	2.75	2.61	2.69	2.82	2.90	2.90	2.88
Wholesale and retail trade	11.06	10.83	10.77	10.65	10.60	10.80	10.95	10.78	10.81
Transportation and warehousing	3.98	3.99	3.92	3.87	3.92	3.95	4.05	3.89	3.95
Hotel management and food services	17.57	17.62	17.42	17.94	17.23	17.23	17.33	17.65	17.50
Information and communication	8.04	7.90	7.77	7.40	7.64	7.48	7.14	7.26	7.58
Finance and insurance services	1.18	1.09	1.14	1.16	1.14	1.09	1.08	1.05	1.12
Real estate activities	0.61	0.61	0.60	0.57	0.58	0.57	0.58	0.57	0.59
Professional, scientific and technical activities	7.99	7.97	8.41	8.21	7.73	7.75	7.30	7.00	7.80
Administrative and support services	9.49	9.60	9.65	9.91	10.28	10.30	10.40	10.46	10.01
Public Administration	0.26	0.24	0.19	0.21	0.19	0.17	0.14	0.18	0.20
Education	1.99	1.94	1.94	1.87	1.95	1.87	1.87	1.86	1.91
Human health and social work activities	13.26	14.32	15.13	15.95	16.61	16.88	17.36	17.74	15.91
Arts, entertainment and recreational activities	12.72	12.72	12.47	12.11	12.06	11.78	11.65	11.67	12.15
Other services	4.16	4.06	3.88	3.69	3.59	3.48	3.40	3.27	3.69
Activities of households as employers	0.13	0.15	0.15	0.14	0.12	0.10	0.10	0.09	0.12
Extra-territorial organization and bodies	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Missing	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01
N	16,974,433	17,648,224	18,394,748	19,018,710	20,024 909	20,880,806	21,327,094	21,766,247	

Notes: Share of entries into employment between 2012 and 2019 by sectors in the non-farm private sector. Shares are calculated as a percentage of all entries. Classification NAF rev.2, nomenclatures of French activities and products. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

A.3 Alternative (broader) definition of recalls

Overall entries into recalled employment. Table A.3 below presents the numbers and shares of recalls obtained when using a broader definition of recall than the one used in the text. Here, we consider all recalls, and not only those with the last employer. Comparing these figures with those in Table 4 in the text reveals that adopting a broader definition would result in an average addition of nearly 1.7 million recalls to the existing 8.7 million recalls when concentrating solely on recalls with the last employer. Using this alternative definition, the average proportion of recalls within entries into employment would rise from 44.62% to 53.55%. The main conclusion is therefore that the recall with the last employer accounts for the largest share of recalls, although other recalls are not insignificant in number. Therefore, the following two tables complement the analysis presented in the text by providing the figures obtained using the broader definition.

Table A.3: Overall entries into recalled employment - broad definition of recall

	2012	2013	2014	2015	2016	2017	2018	2019	Average
# of recall	8,711,138	9,412,878	10,022,829	10,435,230	10,892,280	11,200,716	11,315,915	11,599,146	10,448,767
Share of recall	(51.32%)	(53.34%)	(54.49%)	(54.87%)	(54.39%)	(53.64%)	(53.06%)	(53.29%)	(53.55%)
N	16,974,433	17,648,224	18,394,748	19,018,710	20,042,909	20,880,806	21,327,094	21,766,247	

Notes: Numbers and shares of recalls between 2012 and 2019 for all types of contracts (OECs, FTCs and unknown contracts) in the non-farm private sector. Shares are computed as a percentage of total hires. The recall is defined in a broad sense, meaning that a hire is a recall if the employee already met the employer at some point during the year, i.e. the employer is not necessarily the last employer. Hence in 2019, among all entries into employment 53.29% were a recall in a broad sense. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Frequency of recalls by contract. Table A.4 below can be compared with Table 5 in the text. In both instances, it remains consistent that approximately 97% of the recalls are on FTCs. Thus, the emphasised result in the text persists when utilising this alternative definition of recall.

Table A.4: Frequency of recalls by contract - broad definition of recall

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Unknown	8.04	5.19	3.57	2.30	1.77	1.31	1.12	0.92	3.03
FTC	91.62	94.51	96.17	97.43	97.96	98.39	98.56	98.75	96.67
OEC	0.35	0.30	0.26	0.26	0.27	0.30	0.32	0.33	0.30
N	8,711,138	9,412,878	10,022,829	10,435,230	10,892,280	11,200,716	11,315,915	11 ,599,146	

Notes: Frequency of recalls between 2012 and 2019 by contract types in the non-farm private sector. The recall is defined in a broad sense, meaning that a hire is a recall if the employee already met the employer at some point during the year, i.e. the employer is not necessarily the last employer. The line 'Unknown' indicates the share of contracts for which the type is not filled in the PEDs. The last line indicates the total number of recalls. Thus in 2019, among all recalls 98.75% are on FTCs and less than 1% are on OECs. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Duration of FTCs upon recall by type. The first part of Table A.5 below complements Table 7 by showing that FTCs lasting less than a month consistently account for 90 to 93% of recalls, irrespective of the definition employed. The second and third parts of Table A.5 show that this percentage is somewhat higher in the sectors where Customary FTCs are allowed than in those where they are not, but that the percentages are very high in all cases (95.59% in the former against 90.58% in the latter, on average). This confirms the statement in the text regarding Figure 2 and shows that the figures are quite similar in both cases.

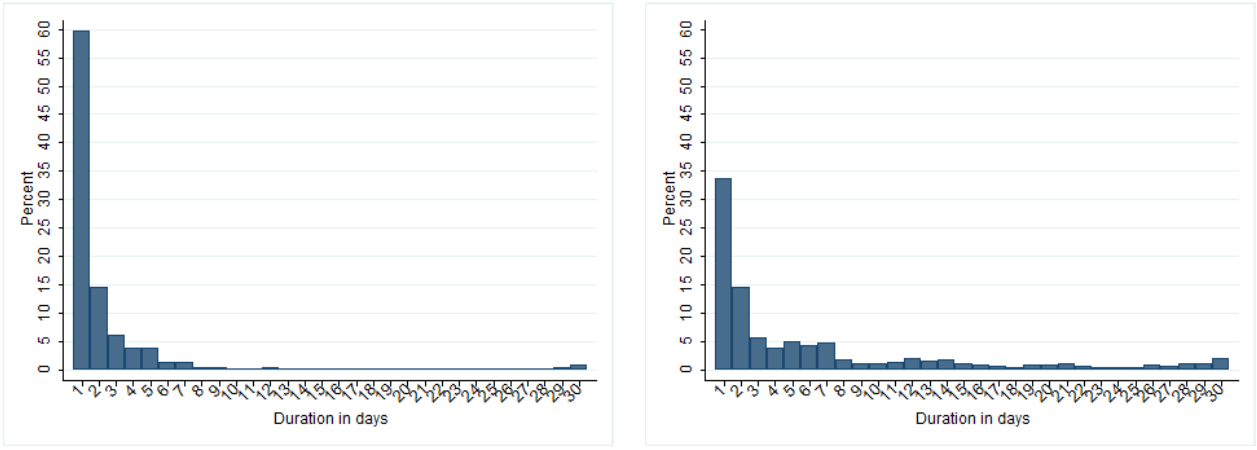
Table A.5: Duration of FTCs upon recall by type - broad definition of recall

		2012	2013	2014	2015	2016	2017	2018	2019	Average
All FTCs	FTC $\leq$ 1 month	90.73	92.54	93.11	93.48	93.52	93.74	93.76	93.86	93.09
	FTC from 1 to 3 months	4.3	4.18	4.15	4.13	4.25	4.29	4.33	4.29	4.24
	FTC from 3 to 6 months	1.22	1.20	1.17	1.16	1.14	1.16	1.16	1.11	1.17
	FTC from 6 to 12 months	0.67	0.57	0.51	0.51	0.62	0.56	0.52	0.51	0.56
	FTC $>$ 12 months	0.23	0.25	0.24	0.23	0.23	0.20	0.20	0.19	0.22
Customary FTCs (C-FTCs)	FTC $\leq$ 1 month	92.67	95.08	95.70	96.09	96.16	96.42	96.31	96.29	95.59
	FTC from 1 to 3 months	2.24	2.24	2.28	2.23	2.41	2.46	2.55	2.59	2.38
	FTC from 3 to 6 months	0.66	0.69	0.68	0.65	0.67	0.67	0.69	0.69	0.68
	FTC from 6 to 12 months	0.37	0.33	0.29	0.29	0.38	0.34	0.34	0.34	0.34
	FTC $>$ 12 months	0.08	0.09	0.09	0.08	0.08	0.07	0.06	0.06	0.08
Regular FTCs (R-FTCs)	FTC $\leq$ 1 month	87.61	88.58	89.15	89.57	89.78	90.08	90.30	90.58	89.46
	FTC from 1 to 3 months	7.59	7.24	7.00	6.96	6.87	6.80	6.73	6.60	6.97
	FTC from 3 to 6 months	2.12	2.01	1.93	1.92	1.81	1.83	1.78	1.68	1.89
	FTC from 6 to 12 months	1.15	0.94	0.85	0.83	0.97	0.86	0.78	0.74	0.89
	FTC $>$ 12 months	0.47	0.51	0.48	0.46	0.44	0.39	0.38	0.37	0.44

Notes: Share of entries into recalled employment on FTCs between 2012 and 2019 by duration and sector in the non-farm private sector. The recall is defined in a broad sense, meaning that a hire is a recall if the employee already met the employer at some point during the year, i.e. the employer is not necessarily the last employer. Shares are computed as a percentage of all entries into FTCs upon recall. Hence in 2019, entries into recalled employment on FTCs of 1 to 3 months account for 3% of all entries in FTCs upon recall in sectors where C-FTCs are authorised and 7% in sectors where they are not. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

A.4 Duration of FTCs (Regular and Customary contracts)

Figure A.1 complements Figure 2 in the text by providing a more detailed breakdown of contract durations. This figure presents the distribution of FTCs with durations ranging from 1 to 30 days upon recall.



(a) Customary FTCs (C-FTCs)

(b) Regular FTCs (R-FTCs)

Figure A.1: Duration of very short FTCs upon recall by type

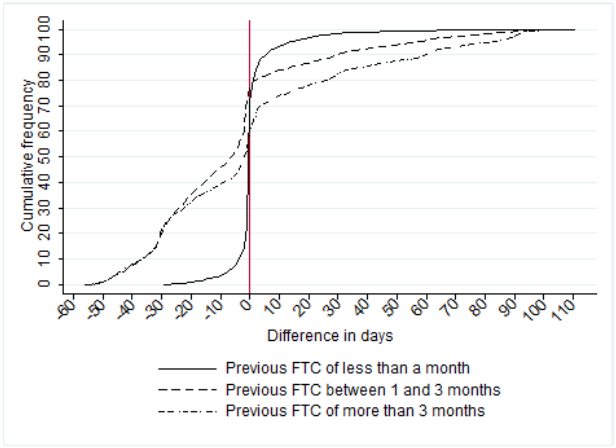
Notes: Average share of entries into FTCs upon recall by duration and type of contracts between 2012 and 2019 in the non-farm private sector. Durations range from 1 to 30 days. Panel (a) is for sectors or occupations where C-FTCs are allowed and Panel (b) is for sectors or occupations where they are not. Shares are expressed as a percentage of entries into FTCs of less than one month upon recall. Hence on average over 2012-2019, entries into recalled employment on FTCs of one day account for 60% of all entries in FTCs upon recall of less than one month in sectors or occupations where C-FTCs are feasible and 34% in sectors or occupations where they are not. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Similar patterns emerge. Recalls are centred on very short contracts and are notably more prevalent for C-FTCs in panel (a) compared to R-FTCs in panel (b). From 2012 to 2019, on average, 60% of recalls with a duration of less than one month lasted only one day when C-FTCs were feasible,

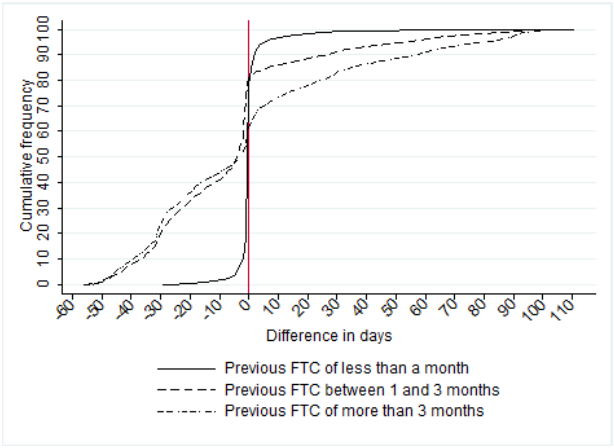
compared to 34% for R-FTCs. Additionally, it is noteworthy that most of these contracts, regardless of type, are FTCs lasting less than a week. They represent 91% in panel (a) and 73% in panel (b) of recalls on FTCs shorter than a month, respectively. In short, recalls are massively made on very short duration contracts and are slightly longer when considering R-FTCs, as argued in the text.

A.5 Difference in contract durations

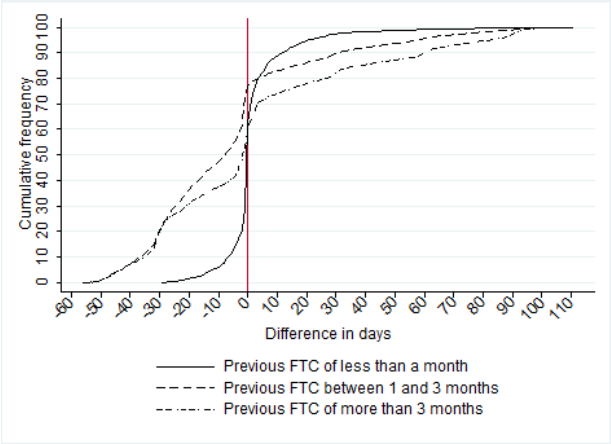
Figure A.2 complements Figure 4 in the text. It shows that the main result in Figure 4 is not driven by the prevalence of short-duration contracts. Namely, when we compute the difference in duration in days between two FTCs with the same employer by duration of the first contract (less than a month, between 1 and 3 months, and above three months), we find again that, on average, the difference in durations is close to zero. This holds true considering all sectors (panel (a) of the figure) or separating the sectors where Customary FTCs are allowed (panel (b) of the same figure) from those where they are not (panel (c)).



(a) All



(b) Customary FTCs (C-FTCs)



(c) Regular FTCs (R-FTCs)

Figure A.2: Difference in duration (in days) between two FTCs with the same employer, by duration of the first FTC and by type

Notes: Average cumulative frequency of the difference in duration (in days) between two FTCs with the same employer between 2012 and 2019 in the non-farm private sector by duration of the first FTC and by type. The difference is obtained by subtracting the duration of the FTC upon recall from the duration of the previous FTC with the same employer. A negative difference means that the duration of the FTC upon recall is shorter than the previous FTC with the same employer. The calculations are based on the sample of FTCs upon recall for which the end date of the contract is given. We also remove observations with extreme differences in duration, at the bottom 1% and at the top 99% of the initial distribution. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

A.6 Alternative measures of enforcement of the legislation

Table A.6 below provides some robustness checks of the figures provided in Table 11 in the text. As explained in the text, Table 11 calculates waiting periods in calendar days, whereas the law refers to working days. For this reason, we have tried two alternative methods and the results are in Tables A.6 and A.7. The first table computes the waiting period by removing one day every seven days of the waiting time period. The second table computes the waiting period by retaining 5/7th of the waiting period, provided the waiting period is above a week. In both scenarios, we observe a slightly lower percentage compared to the one provided in the text, but overall, the differences remain marginal.

Table A.6: Share of recalls which abide by the waiting time period, adjusted for non-working days (robustness)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Regular FTCs (R-FTCs)	60.34	63.59	63.86	63.95	63.53	63.58	63.21	63.24	63.16

Notes: Share of recalls which abide by the waiting time period rule in the non-farm private sectors not allowed to use C-FTCs between 2012 and 2019. A recall is considered to respect this waiting period when half of the duration of the previous contract with the same employer (respectively one-third) has elapsed before the re-employment if this previous contract lasted less (respectively more) than 14 days. Shares are computed as a percentage of all entries into FTCs upon recall in sectors where C-FTCs are not allowed. Calculations of the waiting time period are first made in calendar days and then we remove one day every seven days of waiting time period. Calculations are made on the sample for which the recall definition and the corrections described in Section 4.2 are applied to the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table A.7: Share of recalls which abide by the waiting time period, adjusted for non-working days (robustness)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Regular FTCs (R-FTCs)	59.45	62.68	62.96	63.08	62.69	62.75	62.43	62.50	62.32

Notes: Share of recalls which abide by the waiting time period rule in the non-farm private sectors not allowed to use C-FTCs between 2012 and 2019. A recall is considered to respect this waiting period when half of the duration of the previous contract with the same employer (respectively one-third) has elapsed before the re-employment if this previous contract lasted less (respectively more) than 14 days. Shares are computed as a percentage of all entries into FTCs upon recall in sectors where C-FTCs are not allowed. Calculations of the waiting time period are first made in calendar days and then multiplied by 5/7 as soon as the period is greater than or equal to 7 days. Calculations are made on the sample for which the recall definition and the corrections described in Section 4.2 are applied to the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table A.8 below presents an alternative calculation of the proportion of recalls adhering to the waiting time period, considering a maximum of three successive contracts (the maximum allowed by law) instead of two as mentioned in the text. The proportion of employers complying with the legislation is lower than in Table 11 in this alternative calculation, as expected.

Table A.8: Share of recalls which abide by the waiting time period, alternative definition of the employment spell(robustness)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Regular FTCs (R-FTCs)	56.22	58.40	59.67	59.60	59.15	59.24	58.84	58.91	58.75

Notes: Share of recalls which abide by the waiting time period rule in the non-farm private sectors not allowed to use C-FTCs between 2012 and 2019. A recall is considered to respect this waiting period when half of the duration of the previous contract with the same employer (respectively one-third) has elapsed before the re-employment if this previous contract lasted less (respectively more) than 14 days. Shares are computed as a percentage of all entries into FTCs upon recall in sectors where C-FTCs are not allowed. Calculations of the waiting time period are made in calendar days and may include the duration of the two contracts that preceded the recall. Calculations are made on the sample for which the recall definition and the corrections described in Section 4.2 are applied to the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Tables A.9 and A.10 below compute the same figures as Table 12 in the text. In Table 12, contracts with the same employer that are not more than 30 days apart are considered successive contracts for the same job, to which the rules regarding (i) the maximum duration of an employment spell in FTC, and (ii) the maximum number of renewals apply. Here, we consider that such rules may apply to contracts that can be up to 60 days apart in Table A.9 and 90 days apart in Table A.10. In all cases, the results on the compliance with the rules on the maximum duration of an employment spell in FTC are not very significantly altered. The results regarding compliance with the rules on the maximum number of renewals differ somewhat between the three tables. The main takeaway is that the noncompliance rate with this rule increases when we lengthen the elapsed duration between contracts, which is quite intuitive.

Table A.9: Share of recalls on FTCs that are above the maximum duration and/or maximum number of renewals among recalls on FTCs (robustness)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Maximum duration	0.26	0.89	1.63	1.92	2.06	2.09	2.08	2.10	1.63
Renewals	62.12	60.54	61.47	51.71	52.68	53.68	54.42	55.15	56.47

Notes: Share of recalls on FTCs with a cumulative duration with the previous FTC above the maximum duration of 18 months (first line) or exceeding the maximum number of renewals -1 before 2015, 2 since then- (second line). Shares are computed as a percentage of all entries in FTCs upon recall in sectors where C-FTCs are not allowed. Calculations of maximum duration and number of renewals apply to successive contracts at the same employer provided the duration elapsed between 2 contracts is less than 60 days. The recall definition and corrections described in Section 4.2 are applied for the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table A.10: Share of recalls on FTCs that are above the maximum duration and/or maximum number of renewals among recalls on FTCs (robustness)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Maximum duration	0.27	0.97	1.84	2.20	2.39	2.46	2.44	2.48	1.88
Renewals	64.80	63.90	64.70	54.65	55.51	56.48	57.13	57.84	59.38

Notes: Share of recalls in FTCs with a cumulative duration with the previous FTC above the maximum duration of 18 months (first line) or exceeding the maximum number of renewals -1 before 2015, 2 since then- (second line). Shares are computed as a percentage of all entries in FTCs upon recall in sectors where C-FTCs are not allowed. Calculations of maximum duration and number of renewals apply to successive contracts at the same employer, provided the duration elapsed between 2 contracts is less than 90 days. The recall definition and corrections described in Section 4.2 are applied for the overall period 2012-2019. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

A.7 Sectoral shares of recall

Table A.11 below presents the recall rates by sector discussed in the text (Section 7.2). As emphasised in the text, these rates vary substantially between sectors from nearly 1% in the Electricity, gas, steam and air conditioning supply sector to more than 60% in Human health and social work activities.

Table A.11: Share of entries into recalled employment by sector

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Extractive industry	10.04	5.83	6.27	5.68	6.37	5.53	5.95	4.67	6.29
Manufacturing industry	15.30	15.98	15.79	15.33	14.69	13.47	12.27	11.72	14.32
Electricity, gas, steam and air conditioning supply	1.05	1.85	1.33	1.20	1.62	1.41	1.42	1.29	1.40
Water supply, sewerage, waste management	26.38	28.79	29.57	27.73	23.70	21.33	16.90	12.67	23.38
Construction	6.74	6.77	7.26	7.61	7.05	6.44	6.18	5.89	6.74
Wholesale and retail trade	26.04	27.91	28.47	28.21	27.65	27.39	27.05	26.65	27.42
Transportation and warehousing	44.63	45.76	45.07	44.01	42.32	39.96	39.61	39.62	42.62
Hotel management and food services	53.83	54.73	55.05	56.34	54.56	53.67	52.87	52.29	54.17
Information and communication	42.67	43.38	43.93	43.41	42.63	42.05	40.55	40.58	42.40
Finance and insurance services	16.59	15.58	16.73	15.36	15.09	13.89	13.08	11.97	14.79
Real estate activities	22.77	23.80	25.24	24.38	23.00	21.62	21.56	21.31	22.96
Professional, scientific and technical activities	41.78	42.29	44.20	43.64	42.34	41.93	38.71	39.31	41.78
Administrative and support services	38.73	41.77	43.67	43.83	44.63	44.10	43.64	43.59	43.00
Public Administration	36.51	34.99	32.42	31.12	29.68	20.08	25.78	27.98	29.82
Education	33.83	33.30	34.76	34.72	35.69	34.88	34.20	34.63	34.50
Human health and social work activities	59.67	61.90	63.36	64.47	64.70	64.70	64.77	65.13	63.59
Arts, entertainment and recreational activities	55.42	55.22	55.27	55.22	54.38	53.36	53.55	52.86	54.41
Other services	30.97	31.44	31.73	32.02	32.02	32.51	33.31	33.33	32.17
Activities of households as employers	9.99	9.39	9.80	8.73	7.64	6.49	5.76	6.03	7.98
Extra-territorial organization and bodies	5.04	9.71	9.57	9.49	9.88	8.50	11.10	9.35	9.08

Notes: Share of recalls for 20 industries between 2012 and 2019 in the non-farm private sector. Shares are computed as a percentage of entries into employment in firms of a certain industry. Hence in 2019, 65% of entries into employment in Human health and social work activities are recalls against 1% in Electricity, gas, steam, and air conditioning supply industry. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

B A Prototypical Model of Recalls and Temporary Jobs

The model builds on Cahuc et al. (2016, 2020) and extends it to account for recalls. In the following section, we offer a succinct overview of the main hypotheses in the model and guide the reader to our original articles for a more comprehensive understanding of the assumptions underlying the modelling of temporary contracts. Our main departure from these papers lies in assuming that productivity shocks are not irreversible. Productivity can recover, making it beneficial to maintain a recall option. Given our primary focus on recall, our simple model excludes the option to convert temporary contracts into permanent ones or to engage in contract renewals.[48] Our objective is to establish a microfoundation for a fundamental claim in the paper: the inclusion of a recall option diminishes the duration of temporary contracts, thus playing a role in the fragmentation of employment periods. Given that most recalls in our dataset involve temporary contracts, our focus is specifically on these contracts.

B.1 Main assumptions

Our focus is on steady-states. Time is continuous and there is a measure one of infinitely-lived, risk-neutral agents who discount the future at a common rate $r > 0$.

Firms are competitive and create jobs to produce a numéraire output, using labour as the sole input. There is only one job per firm. All jobs produce the same quantity of output per unit of time, denoted by $y > 0$. Firms are heterogeneous with respect to λ, the rate at which productivity drops to zero. When a job is created, its type λ is randomly selected from $[\lambda_{\min}, +\infty)$, $\lambda_{\min} > 0$, according to a sampling distribution with cumulative distribution function G and density g. It is assumed that the distribution of λ has a positive density over all its support and no mass point.

When a job becomes unproductive, the firm and the worker might opt for a separation while retaining a recall option. Under these circumstances, jobs are reactivated at a rate $p(\lambda)$ and the worker may be recalled by her former employer if he has not found another job in the meantime. The function $p(\lambda)$ is assumed to be continuous and increasing in λ.[49] This specification considers the observation that the likelihood of being recalled diminishes with the duration of the job, as illustrated in Figure 3. Furthermore, we assume that the characteristic of the job λ remains constant throughout different employment spells. This aligns with empirical evidence indicating minimal variation in the duration of temporary jobs within the same job-worker dyad across employment spells, as illustrated in Figure 4.

Upon recall, a job-worker dyad can be reassembled at no cost for each party. Although they have a recall option linked to their former employer, furloughed workers are engaged in the search and sample job offers at a rate $\mu > 0$. Hence, the firm faces the potential loss of its recall option if the employee secures alternative employment before being called back. The process of job searching being unobservable, it is assumed to be non-contractible.

Given the frictional nature of the labour market, a firm can find itself in one of three states: *(i)* endowed with a vacancy and actively seeking a suitable worker to match with, *(ii)* currently matched and engaged in production, or *(iii)* separated from its former employee with the possibility of a recall option. Under these circumstances, the job becomes inactive, and the worker enters the pool of the unemployed. We follow the bulk of the literature and make the assumption that both firms and workers maintain records solely of their most recent match. Consequently, an inactive firm has a recall option exclusively with its last employee, and each unemployed individual

[48] We refer the interested reader to the working paper version of the first article cited above, Cahuc et al. (2012), for more details regarding the impact of renewals, in particular on contract durations.

[49] The function $p(\lambda)$ is continuous with $p(0) = 0$ and increasing such that $p'(\lambda) \geq 0$.

holds only one recall option with their most recent employer.[50] While this assumption may appear limiting, it aligns closely with the observed patterns in the data.[51]

Considering that the bulk of recalls is observed within temporary contracts in our dataset, our primary focus lies in investigating the impact of recall on the duration of these particular contracts. We assume that there is a (small) cost to write a contract which is denoted by $c > 0$. Temporary contracts specify the wage w and a fixed duration, which is determined endogenously. Temporary contracts are neither renegotiable nor renewable.[52]

B.2 The value of a temporary contract

To assess the value of a temporary contract, we follow a two-step process. First, we consider the contract duration as a given parameter. Second, we endogenise the contract duration by maximising its value. The value for a firm of starting temporary jobs with shock arrival rate λ and duration Δ, denoted by $J_t(\lambda, \Delta)$, satisfies:

$$J_t(\lambda, \Delta) = \int_0^{\Delta} \left(y e^{-\lambda \tau} - w \right) e^{-r\tau} \mathrm{d}\tau + \mathbb{1} e^{-r\Delta} J_t^m(\lambda) - c, \tag{B.1}$$

where $\mathbb{1}$ is a dummy that takes the value of 1 when recall is permitted and 0 otherwise. The first term, $\int_0^{\Delta} \left(y e^{-\lambda \tau} - w \right) e^{-r\tau} \mathrm{d}\tau$, stands for the discounted value of expected profits over the duration of the contract. In this equation, the production level y is multiplied by the survival function $e^{-\lambda\tau}$ because the production decreases to zero at a rate of λ. The wage w is not multiplied by the survival function because the employer is obligated to retain and compensate the employee until the contract termination date. The second term, $\mathbb{1} e^{-r\Delta} J_t^m(\lambda)$, stands for the value of the recall option at the end of the contract. The last term corresponds to the cost of writing the contract c.

The value of the recall option, $J_t^m(\lambda)$, writes as follows:[53]

$$r J_t^m(\lambda) = \underbrace{p(\lambda) \left[J_t(\lambda) - J_t^m(\lambda) \right]}_{\text{recall}} + \underbrace{\mu \left[0 - J_t^m(\lambda) \right]}_{\text{find a job with another firm}} \tag{B.2}$$

or equivalently:

$$J_t^m(\lambda) = \frac{p(\lambda)}{r + p(\lambda) + \mu} J_t(\lambda) \tag{B.3}$$

where $J_t(\lambda) = \max_{\Delta} J_t(\lambda, \Delta)$. Temporary jobs with an arrival rate of λ can be reactivated at a rate of $p(\lambda)$ but the value of the recall option is lost when the worker finds a job elsewhere, which happens at a rate of μ. According to (B.3), $J_t^m(\lambda) \geq 0$ if and only if $J_t(\lambda) \geq 0$. By definition, jobs where $J_t < 0$ are not advertised because they are not profitable. Let us define λ_t as the critical parameter

[50] See e.g. Fernández-Blanco (2013), Fujita & Moscarini (2017) or Lam & Qiu (2023).

[51] Tables 4 and A.3 provide a more comprehensive insight into this aspect. Specifically, Table 4 illustrates the count of rehires with the most recent employer, while Table A.3 presents the count of rehires involving a previous employer, regardless of whether it was the last employer. The difference between these tables reveals the number of rehires with a different employer. On average, throughout the entire period, 83% of the rehires occurred with the last employer (8,706,157 out of 10,448,767), while 17% involved another employer.

[52] Interested readers can refer to Cahuc et al. (2012, 2016, 2020) for an in-depth analysis of the effects of renewals on the duration of temporary contracts. It is important to note that both renewals and recalls have the potential to decrease the duration of temporary contracts. Additionally, it should be emphasised that renewals are not observable and cannot be distinguished from recalls in our data set.

[53] It's important to observe that based on this expression, the value of the recall option must be positive. Jobs for which $J_t(\lambda) < 0$ are not advertised.

value beyond which it is no longer profitable to create a temporary contract (and consequently not profitable to sustain a recall option):

$$\lambda_t = \{\lambda | J_t(\lambda) = 0\} \tag{B.4}$$

It follows that the value of a recall on a temporary contract becomes worthless both when λ approaches zero and for $\lambda \geq \lambda_t$. Reiterating, it is crucial to emphasise that the value of λ_t remains unaffected by the recall option, given that the value of a recall is zero at that specific threshold. Moving forward, our attention is directed to the jobs that are deemed profitable, i.e., those for which $\lambda \leq \lambda_t$.

B.3 Optimal duration and the fragmentation of employment spells

We now turn our attention to determining the optimal duration of temporary contracts. The optimal duration of a temporary job is the value of Δ that maximises the value of a temporary job, denoted as $J_t(\lambda, \Delta)$:

$$\Delta \in \arg\max J_t(\lambda, \Delta) \tag{B.5}$$

Our emphasis is on scrutinizing the influence of the recall option on the optimal contract duration. To understand how the prospect of rehiring shapes labour market dynamics, we will compare contract durations with and without a recall option.

Maximising (B.3) with respect to Δ yields the following FOC:[54]

$$\underbrace{ye^{-\lambda\Delta}}_{\text{marginal benefit}} = \underbrace{w + \mathbb{1}rJ_t^m(\lambda)}_{\text{marginal cost}} \tag{B.6}$$

The LHS of this expression represents the marginal benefit of extending the contract duration. This benefit decreases as the contract duration increases, given that the survival probability $e^{-\lambda\Delta}$ declines with the duration of the job spell. The RHS represents the marginal cost associated with extending the contract duration, comprising two components. The first term is the wage that the firm is required to pay until the end of the contract. The second term is the flow value that the firm may receive in the event of a recall.

We can make two observations. First, the value of a recall option $J_t^m(\lambda)$ is nil when $\lambda = \lambda_t$ and when $\lambda = 0$. Consequently, the marginal cost in (B.6) is the same with and without recall in those cases. Second, and possibly of greater significance, the presence of the recall option increases the marginal cost associated with extending the contract duration. Due to the potential risk of the job becoming unproductive, having a recall option becomes advantageous in shortening the contract duration and recalling the worker once the job's productivity improves. Consequently, the existence of the recall option leads to a reduction in the optimal duration of a temporary contract.

Specifically, making use of the FOC (B.6) above, the optimal duration of a type-λ temporary contract, $\Delta(\lambda)$, is then given by:

$$\Delta(\lambda) = \frac{1}{\lambda} \ln\left(\frac{y}{w + \mathbb{1}rJ_t^m(\lambda)}\right) \tag{B.7}$$

This expression shows that the presence of a recall option reduces the optimal duration of temporary jobs.[55] This trend is depicted in the core of the text within Figure 1. Therefore, this implies that the process of recalling employees significantly influences the reduction in the duration of temporary contracts, thus contributing to the fragmentation of employment spells. This aligns with the overarching theme presented throughout this paper.

[54] The SOC writes $-\lambda e^{-\lambda\Delta} < 0$. It is thus always fulfilled.

[55] Notice that the FOC (B.6) above implies that $y > w + \mathbb{1}rJ_t^m(\lambda)$ in equation (B.7), as $0 < e^{-\lambda\Delta} < 1$.

B.4 Additional properties of the duration of temporary contracts

We enhance the analysis provided earlier by demonstrating that the duration of the initial contract and subsequent contracts following a recall will be identical. Furthermore, we establish that this characteristic remains unaffected by the firm's ability to commit to future contract durations or lack thereof—contract durations will remain precisely identical in both scenarios. To achieve this objective, let us reformulate (with a slight abuse of notation regarding the dependence of J_t on the next contract durations for the sake of simplification) the value of a temporary contract (B.1) as follows:

$$J_t(\lambda,\Delta)=\int_0^{\Delta}(ye^{-\lambda\tau}-w)e^{-r\tau}\mathrm{d}\tau+\mathbb{I}e^{-r\Delta}J_t^m(\lambda,\Delta')-c \tag{B.8}$$

where $\mathbb{I}$ takes value 1 when recall is permitted and 0 otherwise. In this expression, Δ and Δ' represent the duration of the first contract and the second contract, respectively. Accordingly, the value of a recall option (B.3) can then be rewritten as follows:

$$J_t^m(\lambda,\Delta')=\frac{p(\lambda)}{r+p(\lambda)+\mu}J_t(\lambda,\Delta') \tag{B.9}$$

In the subsequent discussion, we examine two cases based on whether the firm has the capability to commit to the durations of the contracts or not.

No commitment. Let's begin by assuming that firms maximise the value of a temporary contract solely with respect to Δ, considering the duration of the subsequent contract, Δ', as given and applicable upon recall. This situation arises due to the absence of commitment between the firm and the worker following a separation, potentially dissuading the firm from offering a contract that specifies durations in the event of a recall. In this case, the FOC for the initial contract duration, Δ, can be expressed as follows:[56]

$$\partial J_t(\lambda,\Delta)/\partial\Delta=ye^{-(r+\lambda)\Delta}-we^{-r\Delta}-\mathbb{I}re^{-r\Delta}J_t^m(\lambda,\Delta')=0 \tag{B.10}$$

or equivalently as:

$$ye^{-\lambda\Delta}=w+\mathbb{I}rJ_t^m(\lambda) \tag{B.11}$$

where $J_t^m(\lambda)=\frac{p(\lambda)}{r+p(\lambda)+\mu}\max_{\Delta'}J_t(\lambda,\Delta')$.

Now, let's examine the duration of a contract at the time of a recall. At that point, the firm will find itself in precisely the same position as it did during the initial hiring process. Therefore, iterating on (B.8) then maximising $J_t(\lambda,\Delta')$ with respect to Δ' yields a FOC that can be expressed in a manner analogous to (B.10) above:

$$\partial J_t(\lambda,\Delta')/\partial\Delta'=ye^{-(r+\lambda)\Delta'}-we^{-r\Delta'}-\mathbb{I}re^{-r\Delta'}J_t^m(\lambda,\Delta'')=0 \tag{B.12}$$

The aforementioned FOC will also be applicable for subsequent contract durations $\Delta'',\Delta''',\ldots,\Delta^{(n)}$ in the event of additional recalls. Hence, it follows that $\Delta=\Delta'=\Delta''=\Delta'''=\ldots=\Delta^{(n)}$, meaning that the contract durations remain consistent for both the initial contract and subsequent ones resulting from successive recalls. Using this property and defining $J_t(\lambda)=\max_{\Delta'}J_t(\lambda,\Delta')$, we can thus rewrite (B.8) as:

$$J_t(\lambda,\Delta)=y\frac{1-e^{-(r+\lambda)\Delta}}{r+\lambda}-w\frac{1-e^{-r\Delta}}{r}+\mathbb{I}e^{-r\Delta}J_t^m(\lambda)-c \tag{B.13}$$

which is similar to (1) in the core of the text. Maximising this expression with respect to Δ results in the FOC (2) in the text and yields an expression similar to (B.11) above.

[56] It is worth noting that for the sake of notational simplicity, subsequent contract durations $\Delta'',\Delta'''\ldots\Delta^{(n)}$ are omitted from this expression, as they will all be equal to Δ', as demonstrated hereafter.

Commitment. Now, let's consider an alternative scenario where firms have the capability to commit to the contract duration following a recall, denoted as Δ'. In this case, they can advertise contracts right from the outset, specifying both the initial duration Δ and the post-recall duration Δ'.[57] In this new context, the firm chooses the durations Δ and Δ' simultaneously. Maximising, the FOCs satisfies:

$$\partial J_t(\lambda,\Delta)/\partial\Delta = ye^{-(r+\lambda)\Delta} - we^{-r\Delta} - \mathbb{I}re^{-r\Delta}J_t^m(\lambda,\Delta') = 0 \tag{B.14}$$

$$\partial J_t^m(\lambda,\Delta')/\partial\Delta' = 0 \tag{B.15}$$

Considering (B.9), it is evident that $\partial J_t^m(\lambda,\Delta')/\partial\Delta' = 0$ is equivalent to $\partial J_t(\lambda,\Delta')/\partial\Delta' = 0$. It follows that:

$$\partial J_t(\lambda,\Delta')/\partial\Delta' = ye^{-(r+\lambda)\Delta'} - we^{-r\Delta'} - \mathbb{I}re^{-r\Delta'}J_t^m(\lambda,\Delta'') = 0 \tag{B.16}$$

The FOC aligns with FOC (B.14) in situations where the firm is unable to commit to the contract's duration upon recall from the outset. Hence, the contract durations are uniform both initially and upon recall, or more formally $\Delta = \Delta' = \Delta'' = ... = \Delta^{(n)}$.

Irrespective of the firm's capacity to commit to the contract length upon rehiring, the contract's duration remains constant. In both instances, durations are obtained from the FOC (2), consequently resulting in identical durations as given by equation (3) in the text. This theoretical prediction of our model aligns remarkably well with our findings, as depicted in Figure 4, where we observe minimal variation in the duration of successive contracts.

[57] For simplicity, we continue to omit subsequent contract durations, denoted as $\Delta'', \Delta''', \ldots, \Delta^{(n)}$, as they are all assumed to be equal to Δ', as demonstrated hereafter.

(Online Appendix, not to be published)

C Recall in the public sector

As a reminder, pre-employment declarations are mandatory for employees covered by the general Social Security system. Thus, for the civil service, this database only captures the hiring of contract agents. We compare the recall behaviour between the three public services: State, Regional and Hospital.

The hiring of contract workers is mainly done on FTCs. Their share is higher than in the private sector. Approximately two out of five hires are made on FTCs of less than a month (Table C.1). The second most common type of contract is the FTC that lasts between one and three months. Between 2012 and 2019, the drop in the number of FTCs of 6 to 12 months seems to be to the benefit of contracts of 12 to 24 months. Although authorised, FTCs of more than 24 months are infrequent. Most hires of contract workers in the public sector are made by the Regional civil service.

We find that recall is a widespread practice of hiring contract workers. More than one in three hires is a recall with the last employer. The proportion of entries into recalled employment is the highest for the Regional civil service with an average of 38% over the whole period (Table C.2). This share increased over the period by just over three percentage points. The share of recalls in the Hospital civil service is a little lower but close to that of the Regional civil service. It increases over the period by six percentage points. On the other hand, recalls do not seem to be a recruitment strategy in the State civil service. Recalls are done in relatively long FTCs, like the hiring in this sector (Tables C.1 and C.4). A large majority of recalls are FTCs of less than three months. This last result is mainly driven by the Regional civil service and the Hospital public service: for these two public services, nearly 85% of recalls are on FTCs of less than three months (Table C.4). In the State civil service, one out of two recalls concerns a FTC of less than a month. In 2012, a significant proportion of recalls on FTC is made on contracts lasting between 6 and 12 months. Subsequently, their share decreased in favour mainly of FTCs of more than 12 months. Although authorised, recall on FTC of more than two years remains rare.

We observe that half of the recalls are made immediately after the end of the previous contract. However, on average, waiting time is relatively long (Table C.5). All duration and civil services combined, it never drops below 38 days. This waiting time is particularly long on average when recall is made after a FTC having lasted between one and three months or 24 and 36 months.

Table C.1: Entries into employment by contract and duration (public sector)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Unknown type of contract	82,452	86,145	87,692	83,753	86,266	87,644	84,400	87,053	85,676
	(8.49%)	(8.13%)	(8.01%)	(7.57%)	(7.50%)	(7.57%)	(7.20%)	(7.20%)	(7.71%)
FTCs (w/o termination date)	4,448	3,862	2,599	1,340	1,867	1,392	1,553	1,693	2,344
	(0,46%)	(0,36%)	(0,24%)	(0,12%)	(0,16%)	(0,12%)	(0,13%)	(0,14%)	(0.22%)
FTCs (w/ termination date)	835,683	919,834	957,412	977,902	1,018,492	1,020,749	1,035,155	1,068,412	979,205
	(86.05%)	(86.76%)	(87.49%)	(88.40%)	(88.52%)	(88.15%)	(88.26%)	(88.35%)	(87.75%)
$\Rightarrow$ FTCs $\leq$ 1 month	364,315	393,718	419,297	434,636	449,446	463,487	475,900	480,107	435,113
	(37.51%)	(37.14%)	(38.32%)	(39.29%)	(39.06%)	(40.03%)	(40.58%)	(39.70%)	(38.95%)
$\Rightarrow$ FTCs from 1 to 3 months	180,841	196,261	202,376	198,383	207,138	214,987	223,253	228,502	206,468
	(18.62%)	(18.51%)	(18.49%)	(17.93%)	(18.00%)	(18.57%)	(19.03%)	(18.89%)	(18.51%)
$\Rightarrow$ FTCs from 3 to 6 months	83,089	80,064	84,333	86,842	89,976	90,465	102,860	106,173	90,475
	(8.56%)	(7.55%)	(7.71%)	(7.85%)	(7.82%)	(7.81%)	(8.77%)	(8.78%)	(8.11%)
$\Rightarrow$ FTCs from 6 to 12 months	137,452	124,036	108,645	111,905	112,242	111,670	106,474	110,335	115,345
	(14.15%)	(11.70%)	(9.93%)	(10.12%)	(9.76%)	(9.64%)	(9.08%)	(9.12%)	(10.44%)
$\Rightarrow$ FTCs from 12 to 24 months	61,050	105,794	126,622	131,161	144,648	126,470	114,849	106,707	114,663
	(6.29%)	(9.98%)	(11.57%)	(11.86%)	(12.57%)	(10.92%)	(9.79%)	(8.82%)	(10.23%)
$\Rightarrow$ FTCs from 24 to 36 months	3,373	5,971	5,849	6,566	5,978	5,858	4,802	4,681	5,385
	(0.35%)	(0.56%)	(0.53%)	(0.59%)	(0.52%)	(0.51%)	(0.41%)	(0.39%)	(0.48%)
$\Rightarrow$ FTCs $>$ 36 months	5,563	13,990	10,290	8,409	9,064	7,812	7,017	31,907	11,757
	(0.57%)	(1.32%)	(0.94%)	(0.76%)	(0.79%)	(0.6%)	(0.60%)	(2.64%)	(1.03%)
OECs	48,579	50,348	46,596	43,185	43,975	48,171	51,778	52,194	48,103
	(5.00%)	(4.75%)	(4.26%)	(3.90%)	(3.82%)	(4.16%)	(4.41%)	(4.32%)	(4.33%)
N	971,162	1,060,189	1,094,299	1,106,180	1,150,600	1,157,956	1,172,886	1,209,352	

Notes: Number and share of entries into employment between 2012 and 2019 in the public sector by contract and duration. We distinguish FTC with and without a termination date. The duration of FTCs is computable if the termination date is filled in. The last column is the average over the period. Shares are in brackets and computed as a percentage of total PEDs. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table C.2: Entries into recalled employment by civil services (public sector)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Recall - all civil services	32.04	31.97	32.16	33.85	34.68	35.11	36.22	35.58	33.95
Recall - State civil service	14.34	11.95	10.06	11.15	12.19	12.46	12.99	12.91	12.26
Recall - Regional civil service	35.9	36.03	36.36	38.41	39.32	39.37	40.2	39.1	38.09
Recall - Hospital civil service	29.46	31.17	32.33	33.9	33.78	33.74	34.66	35.9	33.12
N (all civil services)	971,162	1,060,189	1,094,299	1,106,180	1,150,600	1,157,956	1,172,886	1,209,352	
N (State civil service)	122,511	142,970	146,484	153,751	156,502	141,785	129,857	135,587	
N (Regional civil service)	676,252	738,458	765,088	763,351	797,529	817,521	837,455	854,274	
N (Hospital civil service)	172,399	178,761	182,727	189,078	196,569	198,650	205,574	219,491	

Notes: Share of recalls between 2012 and 2019 for all types of contract (OECs, FTCs and unkown contracts) by civil services in the public sector. Shares are computed as a percentage of total hires. Hence in 2019, among all entries into employment in the public sector, 36% were recalls with the last employer. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table C.3: Frequency of recalls by contract (public sector)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Unknown	10.39	10.06	9.96	9.05	8.97	9.10	8.41	8.77	9.34
FTC	89.26	89.23	89.56	90.60	90.59	90.43	91.20	90.88	90.22
OEC	0.36	0.71	0.48	0.36	0.44	0.47	0.38	0.34	0.44
N	311,131	338,891	351,975	374,426	399,037	406,593	424,790	430,291	

Notes: Frequency of recalls between 2012 and 2019 by contract types in the public sector. The line 'Unknown' indicates the share of contracts for which the type is not filled in the PEDs. The last line indicates the total number of recalls. Thus in 2019, among all recalls 91% are on FTCs and less than 1% are on OECs. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table C.4: Duration of FTCs upon recall by civil services (public sector)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
ALL CIVIL SERVICES									
FTC $\leq$ 1 month	63.19	64.04	65.83	65.6	65.52	65.96	65.13	64.61	64.99
FTC from 1 to 3 months	19.06	18.86	19.18	19.34	19.43	19.19	19.54	19.18	19.22
FTC from 3 to 6 months	7.83	7.34	7.07	7.24	6.95	7.39	7.93	7.98	7.47
FTC from 6 to 12 months	7.8	6.17	5.21	5.3	5.34	5.12	4.96	5.28	5.65
FTC $>$ 12 months	1.71	3.3	2.55	2.44	2.59	2.3	2.4	2.9	2.52
N	277,703	302,391	315,231	339,226	361,490	367,680	387,428	391,067	
STATE CIVIL SERVICE									
FTC $\leq$ 1 month	38.6	35.86	48.37	49.74	52.41	55.96	57.87	53.03	48.98
FTC from 1 to 3 months	14.46	13.35	15.05	13.67	13.99	14.08	13.04	12.2	13.73
FTC from 3 to 6 months	8.38	8.67	9.74	9.17	8.01	8.01	7.59	7.18	8.34
FTC from 6 to 12 months	28.69	18.63	9.99	11.07	10.09	9.79	7.26	5.07	12.57
FTC $>$ 12 months	9.62	23	16.36	15.8	15.14	12.14	14.23	22.51	16.10
N	15,911	15,710	13,617	16,473	18,361	16,939	16,208	16,887	
REGIONAL CIVIL SERVICE									
FTC $\leq$ 1 month	65.31	66.09	66.92	66.64	66.44	66.31	65.16	63.7	65.82
FTC from 1 to 3 months	18.88	18.91	19.4	19.63	19.7	19.57	20.06	20.46	19.58
FTC from 3 to 6 months	7.33	6.68	6.36	6.61	6.46	7.02	7.6	7.99	7.01
FTC from 6 to 12 months	6.64	5.62	5.01	5.13	5.15	5.03	5.02	5.52	5.39
FTC $>$ 12 months	1.36	2.43	2.15	1.95	2.14	2.04	2.15	2.31	2.07
N	211,631	232,419	244,255	260,180	278,689	285,780	301,590	296,863	
HOSPITAL CIVIL SERVICE									
FTC $\leq$ 1 month	62.07	63.42	65.33	65.45	65.28	67.02	66.7	70.62	65.74
FTC from 1 to 3 months	21.29	20.22	19.23	19.62	19.79	18.86	18.81	15.78	19.20
FTC from 3 to 6 months	9.78	9.78	9.45	9.4	8.76	8.85	9.46	8.09	9.20
FTC from 6 to 12 months	6.1	5.08	4.93	4.47	4.81	4.33	4.2	4.41	4.79
FTC $>$ 12 months	0.64	1.32	0.95	0.99	0.94	0.89	0.69	0.81	0.90
N	50,161	54,262	57,359	62,573	64,440	64,961	69,630	77,317	

Notes: Share of entries into recalled employment on FTCs between 2012 and 2019 by duration and civil services in the public sector. Shares are computed as a percentage of all entries into FTCs upon recall (with and without a fulfilled end date). Hence in 2019, entries into recalled employment on FTCs of 1 to 3 months account for 12% of all entries in FTCs upon recall in state civil services, 20% in regional civil services and 16% in hospital civil services. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table C.5: Waiting period (in days) between a FTC and a recall on FTC with the same employer (public sector)

		Median	Mean	N
All civil services	Previous FTC of less than a month	9	65.83	2,252,495
	Previous FTC between 1 and 3 months	7	94.40	791,917
	Previous FTC between 3 and 6 months	0	79.72	293,439
	Previous FTC between 6 and 12 months	0	84.38	328,544
	Previous FTC between 12 and 24 months	0	62.23	268,306
	Previous FTC between 24 and 36 months	0	140.36	3,860
	Previous FTC of more than 36 months	0	84.12	4,188
	Overall	6	74.00	3,942,749
State public service	Previous FTC of less than a month	23	115.87	92,333
	Previous FTC between 1 and 3 months	31	133.22	36,809
	Previous FTC between 3 and 6 months	14	104.58	27,418
	Previous FTC between 6 and 12 months	0	67.59	74,031
	Previous FTC between 12 and 24 months	0	38.85	137,779
	Previous FTC between 24 and 36 months	0	184.98	1,742
	Previous FTC of more than 36 months	0	82.89	1,309
	Overall	0	78.77	371,421
Regional public service	Previous FTC of less than a month	10	66.42	1,762,787
	Previous FTC between 1 and 3 months	12	91.63	611,400
	Previous FTC between 3 and 6 months	2	81.59	215,023
	Previous FTC between 6 and 12 months	35	90.19	217,578
	Previous FTC between 12 and 24 months	0	83.73	117,295
	Previous FTC between 24 and 36 months	0	99.02	1,920
	Previous FTC of more than 36 months	0	79.41	2,604
	Overall	9	75.29	2,928,607
Hospital public service	Previous FTC of less than a month	6	51.59	397,375
	Previous FTC between 1 and 3 months	0	96.23	143,708
	Previous FTC between 3 and 6 months	0	58.49	50,998
	Previous FTC between 6 and 12 months	0	83.79	36,935
	Previous FTC between 12 and 24 months	0	115.18	13,232
	Previous FTC between 24 and 36 months	0	148.58	198
	Previous FTC of more than 36 months	0	134.65	275
	Overall	3	65.34	642,721

Notes: Median and mean of the period that has elapsed between the end of a FTC and the start of a recall on FTC for a worker with the same employer in the public sector. Figures are expressed in calendar days. Calculations are made in the sample for which the recall definition and corrections described in 4.2 are applied in the overall period 2012-2019. The results are given for different civil services and depending on the duration of the FTC that preceded the recall. Thus, if the previous FTC lasted less than a month, the elapsed time between this contract and the recall on FTC is on average 66 days for all civil services against 74 days if we do not condition the mean by the duration of the previous FTC. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

D Recall in temporary work agencies

Recalls are explicitly allowed for temporary agency workers. Unsurprisingly, Table D.1 shows that this practice is widespread among temporary work agencies. On average, among all entries into temporary agency work, 78% are recalls with the last temporary work agency, and 83% are recalls defined in broader senses, that is, not necessarily with the last temporary work agency. Our findings suggest that a small number of hired temporary workers is repeatedly recalled, in a vast majority by the agency they just left. More strikingly, we observe that the number of recalls in temporary work agencies is huge and comparable in magnitude to the total number of entries into employment in the non-farm private sector (see Table 3). Put differently, a relatively small proportion of agency workers experiences a turnover rate almost equivalent to that observed for the economy as a whole.[58]

The law does not require temporary work agencies to declare the end date of a temporary posting. This makes it difficult to assess the duration of the assignment as well as the waiting time between successive postings. It is, however, possible to calculate the length of time elapsed between the beginning of a posting and the beginning of the following. This duration is on average equal to 14 days between two non-consecutive postings with the same agency and 13 days between two consecutive postings. Half of the recalls are made less than 6 days after the start of the previous contract. Therefore, assignments in temporary work agencies follow each other very quickly.

Table D.1: Overall entries into recalled employment (temporary work agencies)

	2012	2013	2014	2015	2016	2017	2018	2019	Average
With the last temporary work agency	14,192,184	14,679,906	15,878,214	17,013,867	17,597,741	18,962,293	19,508,843	19,247,406	17,135,057
	(77,74%)	(78,75%)	(80,03%)	(80%)	(79,03%)	(78,54%)	(78,39%)	(77,07%)	(78,69%)
Broad definition	15,010,051	15,462,835	16,653,970	17,887,955	18,515,149	20,005,292	20,633,731	20,618,474	18,098,432
	(82,22%)	(82,95%)	(83,94%)	(84,11%)	(83,15%)	(82,86%)	(82,91%)	(82,56%)	(83,09%)
N	18,255,961	18,641,151	19,840,327	21,267,334	22,267,166	24,143,485	24,886,903	24,973,927	

Notes: Numbers and shares of recalls between 2012 and 2019 in temporary work agencies. Shares are computed as a percentage of total hires. We distinguish *(i)* recall with the last employer, the employee is not hired by another temporary work agency before the recall; *(ii)* recall in a broad sense, a hire is a recall if the employee has already worked with the temporary work agency at some point during the year. Hence in 2019, among all entries into temporary work 77% were recalls with the last employer and 83% were recalls in a broad sense. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table D.2: Elapsed time (in days) between two temporary contracts with the same temporary work agency

		2012	2013	2014	2015	2016	2017	2018	2019	Average
	Median	6	6	6	6	6	6	6	6	6
With the last employer	Mean	13,64	13,2	12,85	12,52	12,71	12,78	12,97	12,85	12,94
	N	13,775,971	14,218,300	15,350,277	16,376,341	16,883,402	18,200,995	18,708,989	18,434,110	
	Median	6	6	6	6	6	6	6	6	6
Broad definition	Mean	14,97	14,48	14,09	13,75	14,03	14,13	14,29	14,16	14,24
	N	14,593,612	14,998,211	16,124,630	17,248,829	17,798,817	19,242,052	19,830,789	19,801,122	

Notes: Median and mean of the period which has elapsed between two temporary contracts for a worker with the same temporary work agency. Figures are expressed in calendar days. We distinguish *(i)* recall with the last employer, the employee is not hired by another temporary work agency before the recall; *(ii)* recall in a broad sense, a hire is a recall if the employee has already worked with the temporary work agency at some point during the year. Hence in 2019, the elapsed time between two consecutive temporary contracts in a temporary work agency is on average 13 days, 14 days between two temporary contracts not necessarily consecutive. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

[58] In 2022, the number of workers in the private sector in France is estimated at 20 million, including just under 850 000 temporary workers.

E Recall during the Covid-19 pandemic

The COVID crisis has renewed the interest for the study of recalls and temporary layoffs (see e.g. Forsythe et al. 2022, Gallant et al. 2020, Gregory et al. 2020, Hall & Kudlyak 2022, Kudlyak & Wolcott 2020). We here document in particular the impact of the first lockdown (from the 3/17/20 to 5/11/20) and of the second lockdown (from the 10/30/20 to the 12/15/20) in France and the recoveries that followed. We proceed in several steps: (i) we provide monthly time series showing the evolution of the volumes of hires and recalls during the years from the beginning of 2018 (before the crisis) to the end of 2021 (after); (ii) we then compute year-to-year growth rates for recalls and hires in 2020 to highlight the impact of the crisis for all contracts and for FTCs in particular during that year; (iii) we finally provide a yearly analysis: we compute the distribution of contract types in 2020 and 2021, and analyse the evolution of the recall practice during the crisis and the year after. Overall, we observe a decrease in volumes, especially at the monthly level, for hires and rehires on FTCs of less than a month. However, the annual analysis of the frequencies shows that the recall mechanisms do not change.

E.1 Monthly analysis

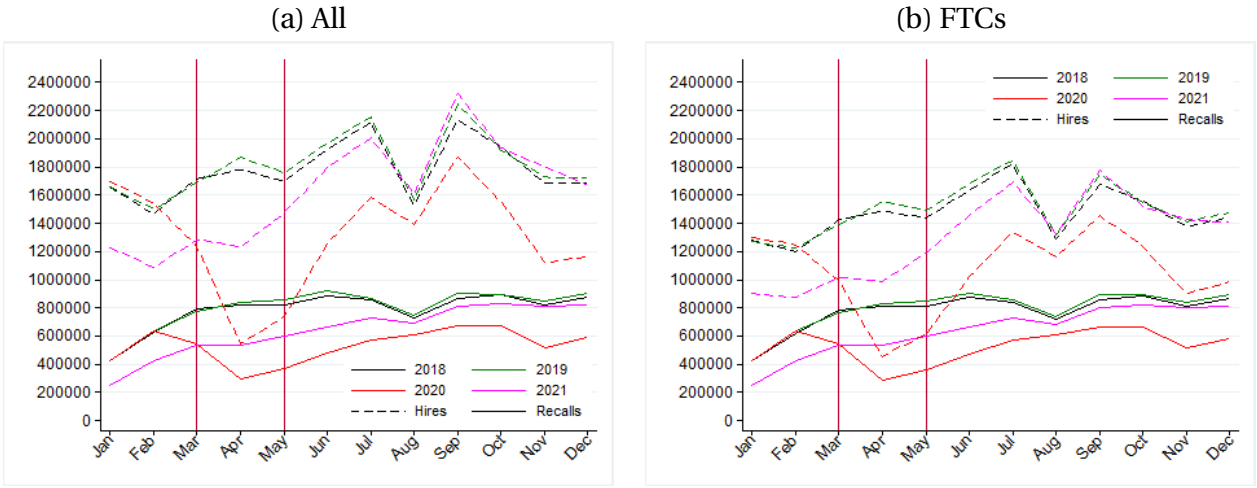
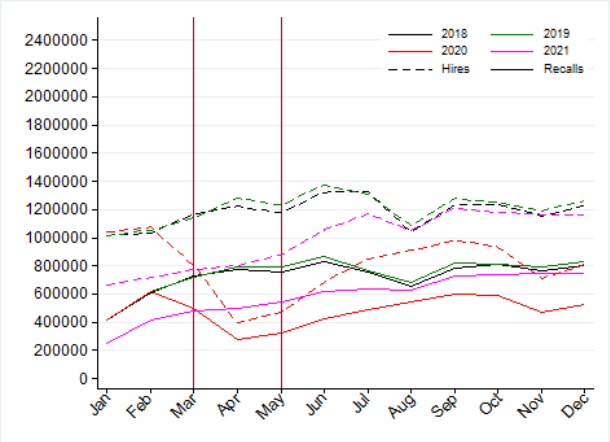


Figure E.1: Monthly number of hires and recalls (Covid-19)

Notes: Monthly number of hires and recalls from January to December 2018, 2019, 2020 and 2021. Panel (a) is for hires and recalls for all types of contracts and Panel (b) is for hires and recalls on FTCs. The red vertical lines mark the beginning and end of the first lock-down. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'

(a) FTCs of less than a month



(b) FTCs of more than a month

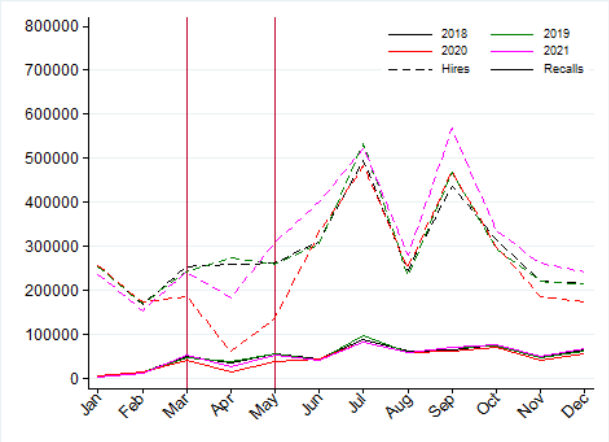


Figure E.2: Monthly number of hires and recalls on FTCs (Covid-19)

Notes: Monthly number of hires and recalls from January to December 2018, 2019, 2020, and 2021. Panel (a) is for hires and recalls on FTCs of less than one month and Panel (b) is for hires and recalls on FTCs of more than one month. The red vertical lines mark the beginning and end of the first lock-down. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'

A monthly analysis on the volume of hires and recalls is displayed in Figures E.1, E.2 and E.3. There is a sharp decline in the number of hires and recalls during the first lockdown, from March to May 2020. Thereafter, the level remains below the pre-crisis one, and declines again in November 2020 following the second lockdown (Figure E.1, panel(a) and E.3 panel (a)). These declines are explained by the drop in hiring and recalls on FTC (Figure E.1, panel (b) and E.3, panel(b)).

During lockdowns, recalls have a lower year-on-year growth rate in absolute terms than hires. Emerging from lockdowns, this dynamic is reversed. In April 2020, the number of recalls has declined by 65% from its April 2019 level. The same growth rate is found for recalls on FTC and on FTC of less than a month (Figure E.3, panels (a), (b), and (c)). Recalls on FTC of more than a month decline by 63% (Figure E.3, panel (d)). FTCs of more than a month are rapidly returning to their pre-crisis level. For FTCs of less than a month, the catching up does not take place until August 2021 (Figure E.2).

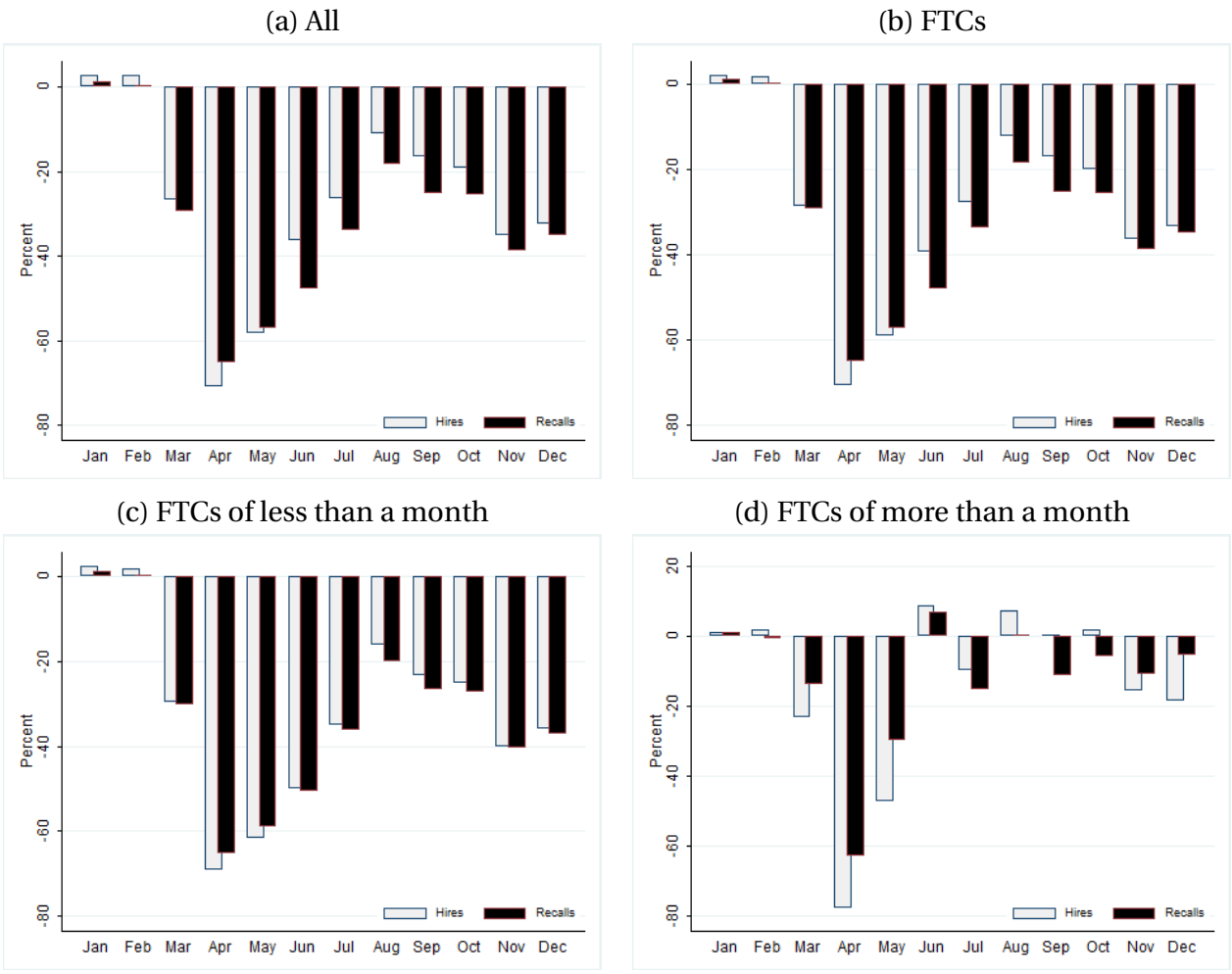


Figure E.3: Year-over-year growth rates in 2020 (Covid-19)

Notes: Monthly year-over-year growth rate in 2020 for the private sector of: (a) hires and recalls; (b) hires and recalls on FTC; (c) hires and recalls on FTC of less than a month; (d) hires and recalls on FTC of more than a month. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

E.2 Yearly analysis

A yearly analysis of the volume and frequency of hires and recalls is found from Table E.1 to Table E.3. The number of hires in 2020 falls to the level of 2012 (Table E.1), and decreases by 28% between 2019 and 2020. The number of recalls decreases by 43% between 2019 and 2020. There is no big catch-up in 2021, the hiring is close to that of 2015.

The share of recalls decreases by around 3-4 percentage points in 2020 and 2021 compared to 2019 (Table E.2). This decline is mainly driven by the contraction of the share of recalls made among hiring on FTC of less than a month in sectors allowed to use C-FTCs (Table E.3).

But overall the nature of recall contracts does not substantially change, they are still mainly FTCs of less than a month, even if we observe a slight decrease in the share of FTCs of less than a month in favour of FTCs between 1 and 3 months (see Tables 7 and E.3).

Table E.1: Entries into employment by contract and duration (Covid-19)

	2020	2021
Unknown type of contract	97,782	139,916
	(0.62%)	(0.72%)
FTC without a termination date	6,616	7,408
	(0.04%)	(0.04%)
FTC with a termination date	12,686,465	15,569,295
	(80.84%)	(80.13%)
$\Rightarrow$ FTC $\leq$ 1 month	9,672,965	11,829,173
	(61.64%)	(60.88%)
$\Rightarrow$ FTC from 1 to 3 months	1,448,082	1,683,434
	(9.23%)	(8.66%)
$\Rightarrow$ FTC from 3 to 6 months	678,962	893,980
	(4.33%)	(4.60%)
$\Rightarrow$ FTC from 6 to 12 months	511,535	632,138
	(3.26%)	(3.25%)
$\Rightarrow$ FTC $>$ 12 months	374,921	530,570
	(2.39%)	(2.73%)
OEC	2,901,917	3,714,303
	(18.49%)	(19.12%)
N	15,692,780	19,430,922

Notes: Number and share of entries into employment in 2020 and 2021 in the non-farm private sector by contract and duration. We distinguish FTC with and without a termination date. The duration of the FTCs can be calculated if the end date is indicated. The last column is the average over the period. Shares are in brackets and computed as a percentage of total PEDs. Hence in 2021, 60.88% of PEDs were FTCs of less than a month in the private sector. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table E.2: Entries into recalled employment and frequency of recall by contract (Covid-19)

	2020	2021
Entries into recall		
# of recalls	6,394,496	7,711,643
Share of recall	40.75	39.69
N	15,692,780	19,430,922
Frequency by contract		
Unknown	0.43	0.50
FTC	99.11	99.17
OEC	0.45	0.33
N	6,394,496	7,711,643

Notes: The upper panel of the table gives the number and share of recalls for all types of contracts in 2020 and 2021 in the non-farm private sector. Shares are computed as a percentage of total hires. The bottom panel gives the frequency of recalls by contract type. Shares are computed as a percentage of recalls. Hence in 2021, 40% of PEDs in the private sector were recalls and 99% of recalls are FTCs. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Table E.3: Duration of FTCs upon recall by type (Covid-19)

		2020	2021
All FTCs	FTC $\leq$ 1 month	91.45	92.04
	FTC from 1 to 3 months	6.09	5.61
	FTC from 3 to 6 months	1.50	1.42
	FTC from 6 to 12 months	0.65	0.59
	FTC $>$ 12 months	0.29	0.32
Customary FTCs (C-FTCs)	FTC $\leq$ 1 month	94.55	94.93
	FTC from 1 to 3 months	3.84	3.59
	FTC from 3 to 6 months	1.00	0.95
	FTC from 6 to 12 months	0.47	0.40
	FTC $>$ 12 months	0.11	0.12
Regular FTCs (R-FTCs)	FTC $\leq$ 1 month	89.23	89.70
	FTC from 1 to 3 months	7.70	7.24
	FTC from 3 to 6 months	1.86	1.81
	FTC from 6 to 12 months	0.77	0.74
	FTC $>$ 12 months	0.42	0.49

Notes: Share of recalls on FTCs by duration and type in 2020 and 2021 in the non-farm private sector. Shares are computed as a percentage of all entries into FTCs upon recall (with and without a fulfilled end date). The top panel gives shares overall by duration. The middle and bottom panels provide respectively the same information for the sectors allowed to use C-FTCs and those that are not. Hence 4% of recalls on FTC last between 1 and 3 months in 2021 for C-FTCs sectors against 7% for non C-FTCs sectors. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.